FY 2023

(April 1, 2023～March 31, 2024)

Annual Report

Nuclear Regulation Authority

Japan

The Nuclear Regulation Authority reports the state of affairs under its jurisdiction to the Diet based on the provisions of Article 24 of the Act for Establishment of the Nuclear Regulation Authority (Act No. 47 of 2012).

Major Activities in Fiscal Year 2023

(1) Impact on the Nuclear Facilities Due to 2024 Noto Peninsula Earthquake and Emergency Response

In 2024 Not Peninsula Earthquake on January 1 and 6 of 2024, in Shika Machi, Hakui Gun, Ishikawa Prefecture as a municipality with a nuclear site, since a seismic intensity of 6- or more was observed, which led to the alert level event, Nuclear Regulation Authority and Cabinet Office Joint Nuclear Accident Alert Headquarter was established to take measures such as information collection subject to Shika Nuclear Power Plant of Hokuriku Electric Power and TEPCO's Kashiwazaki-Kariwa NPS and information sharing with related organizations, and external communication of information immediately after the disaster through the website of the Nuclear Regulation Authority, extraordinary briefing of the Secretariat of the NRA, and social networking service (SNS).

In Shika Nuclear Power Plant (out of service), during the earthquake of January 1, while overflow due to sloshing of spent fuel pool and oil leakage etc. due to a partial transformer failure was caused, it was confirmed that required safety functions such as cooling of spent fuel and power sources were secured. Additionally, it is found that there were no abnormalities in monitoring post indicated values within and in the vicinity of the nuclear power plant sites and it was confirmed that there are no problems caused that have impacts for securing safety for the nuclear power plant such as leakage of radioactive substances etc. Furthermore, as the situation in which measurements cannot be confirmed in 18 monitoring posts that are located beyond 15 km from the nuclear power plant, the NRA prepared airborne monitoring as well as installing mobile monitoring posts. A series of measures were reported at the NRA Commission Meeting on January 10, 2024.

As the measures to the challenges revealed in emergency response, taking into account the fact that the situation occurred in which measurements cannot be confirmed in some monitoring posts, the NRA aims at diversification of radiation monitoring by strengthening mobility of monitoring system by airborne monitoring etc. using unmanned aircraft as well as implementing measures for improving reliability of communication.

In addition, the NRA prepared the pages where the information on Noto Peninsula Earthquake etc. that has been disseminated since occurrence of the Earthquake is arranged in an easy-to-understand manner and publicized such information within the website of the NRA. In the future, in case where similar measures are required, the NRA will continue to work on improvement such as preparing summary pages from the start.

（for details, see Section 1 and 5 of Chapter 1 and Section 4 of Chapter 5）

(2) Continuous improvement of regulatory requirements on safety regulations related to aging nuclear reactor facilities etc

Regarding study of safety regulations of aging power reactors, in FY2022, the NRA approved a bill to partially amend the Reactor Regulation Act that integrate and strengthen

"The System of Approval for Extension of Operational Period" to review whether the operation period of a commercial power reactor is allowed to be extended only once for a period not exceeding 20 years before its 40th year after starting its operation and "The System for Assessing Aging Technologies" that review long-term facility management policies for the aging reactor facilities which have been in operation for 30 years since the start of operation and every ten years after that to "The System of Approval for Long-Term Facility Management Plan". The revision bill was included in the bill to partially revise the Electricity Business Act to establish an electricity supply system to realize a decarbonized society, and was promulgated on June 7, 2023.

The NRA approved the establishment of a study team on safety regulations of ageing nuclear power reactors in order to study the matter in greater detail on safety regulations of aging nuclear power reactors in FY2022. Based on the results of the study by the Study Team and after soliciting public comments on items to be stated in Long-Term Facility Management Plan, relevant laws and regulations that prescribe the items to be verified upon examination and examination standards, the NRA decided them on August 30, 2023, and the date of full-scale enforcement for the new system was set as June 6, 2025 and the enforcement for the procedure to prepare the transition to the new system as October 1, 2023. According to these, during the period of preparatory actions after October 1, 2023, the NRA proceeds the review concerning the application for approval of Long-Term Facility Management Plan.

(for details, see Section 4 of Chapter 2)

(3) Concerning Discharge of ALPS-Treated Water into the Sea by TEPCO's Fukushima Daiichi NPS

Following the change in the implementation plan on establishment of facilities relating to discharge of ALPS-treated water into the sea etc. approved in July, 2022, the NRA also reviewed and confirmed strictly the application for approval of changes in the implementation plan on the operations etc. upon discharging ALPS-treated water whether they comply with the regulatory requirements and the Government's policies at a public meeting, and after scientific and technical comment was solicited, the NRA approved the plan on May 10, 2023. Furthermore, by strictly conducting pre-service inspections on whether the facilities to discharge ALPS-treated water comply with the approved implementation plan, the NRA issued the certificate of completion on July 7, 2023. The results for the reviews and inspections were explained and questioned during visits to local governments and other entities that requested them.

Regarding these measures, in response to IAEA regulatory review on discharging ALPS-treated water into the sea from FY2021 to FY2023, IAEA disclosed their contents and results to the public as a comprehensive report on July 4, 2023. In the said comprehensive report, it was concluded that the relevant activities by Nuclear Regulation Authority meet the relevant international safety standards.

The discharge of ALPS-Treated Water to the sea was started on August 24, 2023 and the NRA continuously confirmed through inspections that the discharge of ALPS-Treated Water is appropriately performed in accordance with the approved implementation plan.

Additionally, based on the strengthened and enhanced “Comprehensive Radiation Monitoring Plan,”, the NRA confirms that there are no impacts on humans and environments through the monitoring of the waters around TEPCO’s Fukushima Daiichi NPS, released the results on the NRA website, and engages in maintaining transparency and reliability of monitoring by conducting inter-laboratory comparison of monitoring results as part of a joint project with the IAEA.

（for details, see Section 2 of Chapter 1, Section 1 and 3 of Chapter 4）

(4) Strict and appropriate implementation of inspections etc. for TEPCO's Kashiwazaki-Kariwa NPS etc.

In the supplemental inspection of TEPCO's Kashiwazaki-Kariwa NPS based on the improper use of ID cards and the partial loss of function of physical protection of nuclear material at the Kashiwazaki-Kariwa NPS which were discovered in FY2020, TEPCO’s activities for improvement measures were confirmed through three verification policies ((1) to realize robust physical protection of nuclear materials, (2) to take root of a system for autonomous improvement, and (3) to establish a system to ensure that improvement measures are not transitory). The NRA approved the results of the inspection and the policies to confirm four observations in further supplemental inspections on May 17,2023. The NRA received the report on the status of inspections as needed, conducted on-site investigations by the NRA Chairman YAMANAKA and the NRA Commissioner BAN and exchanged views between the president of TEPCO and the NRA Commissioner in December, 2023. The NRA approved the supplemental inspection team’s report on “Report on the nuclear regulatory inspection of TEPCO’s Kashiwazaki-Kariwa Nuclear Power Station of TEPCO” and the supplementary inspections were completed. Additionally, the Action Category Action Category of the nuclear regulatory inspection was changed from Category 4 (although the purpose of the activities in each observation area are satisfied, it is assessed that there is a long-term or significant deterioration in the safety activities conducted by the operator) to Category 1 (the purpose of the activity in each observation area was satisfied, it is assessed that autonomous improvement can be expected.). The NRA required TEPCO to maintain the present improved status and make efforts for further improvement and decided to particularly focus on overseeing the efforts of monitoring on the perimeter in stormy weather, PPCAP (Physical Protection Corrective Actions program) and Physical Protection Office in the

baseline inspections even after completion of the supplementary inspections.

Other than the above-mentioned, in line with the supplementary inspections, the NRA reaffirmed determination of eligibility of TEPCO as the installer of power reactor. As a result of confirming the issues pointed out in the nuclear regulatory inspections for Kashiwazaki-Kariwa NPS and compliance with “Basic Posture for Nuclear Operators” prescribed in operational safety program of the said power plant, the NRA determined that there is no reason to change the determination of those days.

(for details, see Section 2 of Chapter 2)

・All data for FY2023 in the report indicates figures up to March 31, 2024 unless otherwise specified for individual ones.

・The legal personality such as “Corporation” or “National Research and Development Agency” is partially omitted.

・The following terms are partially abbreviated throughout this report.

Abbreviations used in the text, etc	Official name and definition
Nuclear Reactor Regulation Act	Act on the Regulation of Nuclear Source Material, Nuclear Fuel Material and Reactors (Act No. 166 of June 10, 1957)
Radioisotope Regulation Act	Act on the Regulation of Radioisotopes, etc. (Act No. 167 of June 10, 1957)
Nuclear Emergency Act	Act on Special Measures Concerning Nuclear Emergency Preparedness (Act No. 156 of December 17, 1999)
Incident under obligation to report	In Chapter 2 and Section 1-8 of Chapter 4, events that nuclear operators and other entities are required to report to the NRA under Article 62-3 of the Reactor Regulation Act. In Chapter 5, events that are required to report to the NRA by the regulated parties in accordance with Article 31-2 of the Radioisotope Regulation Act.
TEPCO	Tokyo Electric Power Company Holdings, Inc.
JAEA	Japan Atomic Energy Agency
IAEA	International Atomic Energy Agency
ICRP	International Commission on Radiological Protection
ERC	Emergency Response Center

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References

Chapter 1 . Ensuring Independence, Impartiality and Transparency, and Improving the Organizational Structure/System

○Summary of Chapter 1

(Nuclear Regulatory Activities that Embody the NRA's Core Values and Principles)

Based on the NRA's Core Values and Principles, the NRA has continued to strive to ensure transparency, including thorough public discussions, and has made its decisions in an impartial, neutral and independent manner from the scientific and technological perspective. In FY2023, the NRA held 73 NRA Commission Meetings, and made decisions based on the scientific and technological perspective. The NRA also strove for greater diversity of communications with local residents and regulated parties, including explanatory meetings in local communities on approval of operation period extension for Sendai NPS of Kyushu Electric Power Co. Inc. and approval results of changes to the Implementation Plan pertaining to Specified Nuclear Facility of the Fukushima Daiichi NPS (operations upon discharging ALPS-Treated Water into the sea), 9 exchanges of opinions in total with Chief Executive Officers (CEOs) of six operators, and 2 opinion exchange meetings with Chief Nuclear Officers (CNOs) and Atomic Energy Association (ATENA), on-site investigations and exchanges of opinions with local parties (of Saga Prefecture and Miyagi Prefecture) by NRA commissioners. In addition, five "NRA Information Notices (NINs)" were issued with the issuance guidelines set forth at the end of FY2021.

As part of PR efforts, in the 2024 Noto Peninsula Earthquake, the NRA disseminated information that it is confirmed that there had been no abnormalities in power supply and cooling of spent fuel etc. immediately after the disaster and there have also been no abnormalities in the values of monitoring posts. Further, as new efforts from FY2023, the NRA prepared and publicized explanatory materials in an easy-to-understand format on the matters as a precondition for the decision for the Nuclear Regulation Authority. Additionally, following FY2022, the NRA provided the photos upon implementation of on-site investigations and on-site inspections by the NRA Chairman and Commissioners etc. and video footage taken on the analysis of the accident at TEPCO's Fukushima Daiichi with media organizations. Moreover, the NRA developed its archive search system, "N-ADRES" of the next version and started the operation thereof.

(Enhancement of Infrastructure to Support Regulatory Operations)

Regarding the operation of the management system, the NRA strived to promote operations steadily, amidst promotion of its business in accordance with the Operational Plan for FY2023, considering the results of the interim report for operational progress based on the NRA Annual Operational Plan for FY2023, while appropriately reviewing the plan such as decision on the changes in the said plan in response to the changes in the

circumstances etc. Additionally, internal audits were conducted in seven divisions of the NRA Secretariat, and operation improvements were studied. The NRA also studied and sought to improve corrective actions for the 11 newly reported issues requiring improvement, and alerted the staff members by regularly disseminating the cases on past incidents.

The NRA has also conducted the ongoing questionnaire and interview survey of staff to foster a safety culture within the regulatory body in FY2023, leading to improvements in the activities to foster and maintain a safety culture and management within the organization-Additionally, the NRA has conducted the feedback of results etc. by conducting analysis for each section in order to contribute to improvement activities for each section.

In terms of international relations, the NRA has continued to share the knowledge and lessons learned from the accident at TEPCO's Fukushima Daiichi NPS with the international community and has promoted cooperation with international organizations and nuclear regulatory agencies of other countries to improve international nuclear safety by collecting information and exchanging opinions. In FY2023 as well, in addition to participation in multinational framework meetings including Bilateral meetings and the 51st and 52nd INRA Meetings and WENRA etc., the NRA disseminated information to the international community, including receiving the IAEA’s second regulatory review on discharging of ALPS-treated water into the sea at TEPCO's Fukushima Daiichi NPS.

(Securing and Developing Personnel Resources)

In FY2024, the NRA offered 86 positions (including 38 newly recruited staff members, 47 staff members with work experience, and one staff member hired by the Mid-career Recruits Selection Examination (for the Employment Ice Age Generation).

Universities, colleges of technology and other institutions implemented a total of 17 nuclear regulatory human resource development programs aimed at securing and fostering human resources who will be involved in nuclear regulatory activities in the future. Additionally, in FY2023, the NRA held meetings for exchanging views with the institutions subject to grants in addition to grasping achievements of programs.

In the human resource development of NRA staff, staff competence was managed by job qualifications in 5 job fields, which was reflected in the assignment and treatment of staff. Moreover, in order to surely develop human resources in accordance with career path images, the NRA established and started operations of career consulting system.

Additionally, regarding the hours of study that staff members should undertake per year set forth in "Basic Policy on Human Resource Development of NRA Staff", the NRA adopted such hours of study into personal evaluation as well as grasping achievement.

Furthermore, the NRA engaged a total of 70 research staff members in joint research

to promote human resource development and exchange through joint research and continued dispatching one of the research staff to JAEA and had such person dedicated in test and research conducted by JAEA

Section 1. Implementation of Regulatory Activities that Embody the NRA's Core Values and Principle

1. Efforts for Ensuring Independence, Impartiality and Transparency of Nuclear Regulatory Administration

(1) Ensuring Independence

Independent decision-making in nuclear regulation is vital for proper regulation and is also emphasized by many foreign nuclear regulatory organizations as one of the most significant factors of the NRA's Core Values and Principles. The NRA was established as a highly independent Article 3 Authority. In its Core Values and Principles, the principle of its activities is to "make decisions independently, based on the latest scientific and technological perspective, free from any outside pressure or bias." Under these principles, while attempting to ensure transparency by thoroughly implementing public discussions and so on, the NRA is continuing to make decisions in an impartial, neutral and independent manner from a scientific and technological perspective. Independence of nuclear regulatory administration was ensured through thorough discussion and decision making from the scientific and technological perspective at 73 NRA Commission Meetings (on a total of 233 subjects) throughout the year in FY2023.

(2) Ensuring Impartiality

The NRA prohibits the Chairman and Commissioners from receiving donations from nuclear operators during their term of office. The NRA also discloses information about any donations they have received in the 3 years prior to assuming office and any situation in which their students find jobs with nuclear operators. Information on five members appointed as of the end of March of FY2023 is also fully disclosed on the NRA website.

In addition, when the NRA takes advice from external experts as a reference in making a decision on nuclear safety regulations on electric operators, the NRA shall ensure the disclosure of information on the relationship between such external experts and electric operators, etc., to ensure transparency and impartiality. Furthermore, when asking external experts to review the safety of an individual facility of an electric operator, etc., or re-review the early assessments of an individual facility, the NRA requires the external experts to confirm that they have not served as executives of the relevant electric operators in the previous three years, that they have not personally received 500,000 yen or more as remuneration during one fiscal year from relevant electric operators and that

they have not been involved in earlier reviews of said facility. Similar efforts are being made for the appointment of members of the Reactor Safety Examination Committee (Hereinafter referred to as "RSEC."), the Nuclear Fuel Safety Examination Committee (Hereinafter referred to as "NFSEC.") and the Radiation Council.

In FY2023 as well, based on self-reports from external experts belonging to various study groups, the stipulated information was posted on the NRA's website and made publicly available.

(3) Ensuring Transparency

Based on the "Policy on Ensuring Operational Transparency of the NRA"(adopted by the NRA on September 19, 2012), the NRA has a fundamental policy of disclosing information without requiring disclosure requests, conducting thorough public discussions, and ensuring document- based administration, thereby holding meetings of the NRA, councils, review sessions, and study teams in public, as well as making the minutes and documents of these meetings available to the public and disseminating them in real time via Internet video streaming site[1].

In addition, the NRA stipulated that a summary of all regulatory meetings attended by three or more Commissioners, as well as interviews of regulated parties by the NRA Chairman, Commissioners, or the NRA Secretariat staff, is prepared and published, along with the names of participants and reference materials used. In addition, briefings on important issues are reported at NRA Commission Meetings.

In FY2023, the NRA continued to implement these efforts to ensure steady transparency and posted meeting materials on the NRA website to make them available simultaneously at the start of the meeting for the convenience of Internet video viewers. Also, regular press conferences by the NRA Chairman (hereinafter referred to as "Chairman's Press Conference") are generally held once a week. Regular briefings by the spokesperson of the NRA Secretariat were held twice a week. The minutes were posted on the NRA website as soon as possible the following day (48 Chairman's Press Conferences and 88 regular briefings by the NRA Secretariat were held in FY2023). When the NRA Chairman and Commissioners conducted on-site investigations and on-site inspections, the NRA provided post-investigation interviews with the Chairman and others, as well as photographs and other media, coverage (26 interviews conducted in FY2023).

Furthermore, to improve the transparency of the review process, the NRA continues to conduct operation to release the results of automatic transcriptions of the interviews with

[1] "YouTube" and "Niconico Channel"

the regulated parties since April of 2019 and posted the minutes of the interviews with the regulated parties on its website with automatic transcriptions (2,043 minutes posted in FY2023).

In addition to the above, the NRA decided to hold liaisons and coordination meetings with the Agency for Natural Resources and Energy, the Japan Nuclear Damage Liability and Decommissioning Corporation, TEPCO, and other related organizations as necessary from FY2019 to improve the transparency of work related to accident analysis and coordination required for the proper implementation of decommissioning work at TEPCO's Fukushima Daiichi NPS. In FY2023, the NRA held two liaison and coordination meetings related to decommissioning and accident investigation at Fukushima Daiichi NPP. The minutes and documents of these meetings were made available to the public and distributed in real time via the aforementioned Internet video streaming site.

2. Enhancing External Communication

(1) Enhancing Efforts on Diverse Communication

By the "Policy on Commissioners' Visits of Nuclear Facilities and Exchanges of Opinions with Local Parties" (adopted by the NRA Commission Meeting on November 15, 2017), NRA Commissioners visit nuclear facilities and exchange views with local parties.

In FY 2023, the NRA held the commissioners' on-site visits and exchanges of opinions with the local parties at two sites. Specifically, on July 22, 2023, NRA Chairman YAMANAKA and NRA Commissioner BAN had on-site visit of the special facilities for severe accident management of the Genkai NPS of Kyushu Electric Power Co., Inc. in Saga Prefecture and exchanges of opinions with the local parties including Governor of Saga Prefecture and Mayor of Genkai Town at Saga Offsite Center. Additionally, on January 13, 2024, NRA Chairman YAMANAKA and NRA Commissioner SUGIYAMA visited emergency response building etc. of Onagawa NPS of Tohoku Electric Power Co., Inc., in Miyagi Prefecture and had exchanges of opinions with the local parties including Governor of Miyagi Prefecture and Mayor of Onagawa Town etc. at Miyagi Prefecture Onagawa Offsite Center.

The NRA provides explanations of its regulatory activities in response to requests from local governments. In FY2023, the NRA provided explanations etc. to local governments and citizens of Satsuma Sendai regarding approval of operation period extension for Sendai NSP of Kyushu Electric Power Co., Inc. and the results of reviews in the application for approval of changes in the Implementation Plan pertaining to Specified

Nuclear Facility of the Fukushima Daiichi NPS (operations upon discharging ALPS-Treated Water into the sea).

With regard to the regulated parties, the NRA held nine meetings for to exchange opinions with Chief Executive Officers (CEOs) of six operators on the subject of mutual understanding between the management levels of both parties regarding the licensing review of conformity to the new regulatory requirements. Also, the NRA had two meetings with Chief Nuclear Officers (CNOs) of major nuclear power facilities installers and ATENA to exchange opinions about efforts to improve safety for the purpose of enhancing and clarifying regulatory requirements and reviews to ensure a smooth introduction of regulations and to increase predictability. In addition, the NRA Secretariat issued five "NRA Information Notices (NINs) for Regulated Parties" in FY2023, which were approved at the 58th FY2021 NRA Commission Meeting (January 12, 2022) in order to disseminate the regulatory authority's awareness of the issues. The NRA is striving to enhance communication through these activities.

(2) Efforts for Developing the Information Management System

The NRA established development of the latest version of "N-ADRES", a system for archiving and publishing important information that is currently available on the NRA's website, and has started its operation.

(3) Reinforcing the Transmission of Information on NRA Initiatives

In light of the public interest in nuclear regulation, the NRA strived to disseminate information to the public in a timely and detailed manner. The NRA continued efforts to distribute through social networking services (SNS) the summary of discussions at the NRA Commission Meetings that are considered to be of high public interest, incidents reported based on the Act, the impact of the earthquake on nuclear facilities, and other information determined to need immediate dissemination. In addition, the NRA posted a summary of the results of each NRA agenda item on the NRA website.

Especially, in 2024 Noto Peninsula Earthquake, the NRA disseminated information that it is confirmed that there had been no abnormalities in power supply and cooling of spent fuel etc. immediately after the disaster and there have also been no abnormalities in the values of monitoring posts through the NRA website and extra briefing by the NRA Secretariat and social networking services (SNS). The NRA also disseminated information that there are no new abnormalities caused after the huge earthquake to the nuclear power plants and no problems in the monitoring system for radiation even though some of the monitoring posts have not been confirmed. Regarding the measures for the 2024 Noto

Peninsula Earthquake, the NRA Secretariat reported in the 57th FY2023 NRA Commission Meeting (January 10, 2023) and the 63rd FY 2023 NRA Commission Meeting (February 7, 2024).

Furthermore, with regard to the investigation and analysis of the accident at TEPCO's Fukushima Daiichi NPP, the NRA continued to strengthen its efforts to disseminate information on the importance of accident analysis and matters of high social interest, such as on-site investigations inside the reactor buildings, by providing video footage taken at the site to news organizations etc.

In addition, triggered by preparation of explanatory materials in an easy-to-understand format[2] on the System of Approval for Long-Term Facility Management Plan, as the new efforts from FY2023, in order to distribute the efforts by the NRA in an easy-to-understand manner, the NRA prepared explanatory materials in an easy-to-understand format aiming at distributing their images by using plain and easily understandable language to the extent possible and making great use of illustrations for the scientific knowledge and the contents of the regulatory system as the prerequisites for judgement. The materials prepared were publicized as the reference materials of the NRA (47 materials were publicized in FY2023).

Further, regarding the results of supplementary inspections for the incidents of physical protection of nuclear material at the Kashiwazaki-Kariwa Nuclear Power Plant which were discovered in FY2020 and the results of reconfirmation for the determination concerning eligibility of TEPCO as the installer of power reactor, the NRA held the explanatory meeting for the local residents etc. in the said nuclear power plant.

3. Allegation System based on Information related to the Nuclear Facilities

The Whistleblower Protection Act (Act No. 122 of June 18, 2004) prescribes the Reactor Regulation Act, Act on the Regulation of Radioisotopes, etc., Electricity Business Act (Act No. 170 of 1964) and Act on Special Measures Concerning Nuclear Emergency Preparedness as the act for the NAR to accept whistleblowing.

The NRA establishes “Allegation System Based in Information Related to the Safety of Nuclear Facilities” to accept whistleblowing, to thoroughly investigate the facts and to take corrective action such as instructions to the operator, as necessary.

Upon operating this system, the NRA launched “the Allegation Committee based on Information related to the Safety Nuclear Facility (hereinafter refers to as “Allegation Committee”)” consisting of external experts to supervise the investigations and provide

[2] “Entire Picture of Regulatory System to Secure Safety for Nuclear Reactor After the Lapse of a Long Period Since the Start of Its Operation” (prepared by Nuclear Regulation Agency on November 13, 2023) (https://www.nra.go.jp/data/000458869.pdf)

instructions/advice. Under the supervision of the Committee, the NRA will process allegations as promptly as possible while paying attention to privacy protection of the informant and disclose the operational status of the allegation system to the public. In FY2023, there were no new cases accepted, and the cumulative number of cases processed since the establishment of this system in FY2012 is six.

Section 2. Enhancement of Infrastructure to Support Regulatory Operation

1. Continuous Improvement of Management System

(1) Steadfast Execution of Operations Based on the NRA Annual Operational Plan

In order to steadily carry out its operations, the NRA formulates an annual operational plan based on the NRA mid-term goals and periodically checks the progress of its operations in light of the plan. In FY2023,upon the interim evaluation concerning the progress status as of the end of September of the operational plan, as the necessity to review the plan considering operation progress by then and the changes in the situations including occurrence of new challenges is recognized, the NRA decided the changes in the plan in-the 44th FY2023 NRA Commission Meeting (November 15, 2023).

Considering that the issues concerning the quality of evaluation for policies were identified, the 1st NRA Policy Evaluation Meeting in FY2023 (July 21, 2023), to enable appropriate evaluation and reflection in line with the actual situations, the NRA has reconsidered the concept of policy evaluation including the evaluation methods of the aforementioned plan etc.

Other than the above-mentioned, as continuous improvements of the management system, the NRA reviewed each manual for 27 major processes that cover the jurisdictions of the NRA developed in 2021,changed to the format to enable description of records for inspections and improvements of the manual and confirmed that the operation manuals etc. related were included in the manuals.

(2) Conducting Internal Audits and Identifying Issues Requiring Improvement for Continuous Improvement of Operation

In accordance with the NRA Management Rules, the NRA periodically conducts internal audits of the status of operations in each division to ascertain good practices that should be shared to other divisions, as well as issues where improvement is recommended. In the FY2023, seven divisions were subject to internal audits and 14 cases of good practices and four cases of issues where improvement was recommended were identified.

Additionally, 11 cases requiring improvement of issues were identified in FY2023, and have been appropriately managed, along with previously identified case. The list of these cases was reported at the 67th FY2023 NRA Commission Meeting (February 28, 2024)

through the management review. The issues requiring improvement that occurred in FY2022 was classified by occurrence factors. Along with issuing alerts on preventative measures for similar incidents, the NRA also disseminated the cases confirmed in FY2023 to the staff members as quarterly bulletins to regularly bring these issues to their attention.

(3) Fostering a Healthy Safety Culture Within the Regulatory Body

The NRA Secretariat has been conducting a questionnaire and interview survey for its employees to confirm the situations involved in fostering and maintaining a safety culture within the regulatory body. Within the finding from survey conducted in FY2022, which identified "Job Satisfaction among Young and Mid-Level Employees" and "Connection between Staff Members" as issues, in FY2023, the NRA Secretariat conducted a more detailed analysis in FY2023 to gain deeper insights into their causes The NRA Secretariat targeted young and mid-level employees from late twenties to thirties for the questionnaire survey and conducted group interview focusing on the employees in this ages.

Regarding the obtained results from the surveys, in order to lead them to specific improvements of the activities to foster and maintain a safety culture and management in each section, as well as in the entire organization, the NRA Secretariat has conducted the feedback etc. for each section as did in FY2022.

Additionally, as the measures for the issues identified in the FY2022 survey, the NRA Secretariat conducted "Communication/Team Building Training" aimed at promoting active communication within the organization and improvement of problem-solving abilities. This included creating opportunities for dialogue between Secretary-General of the NRA Secretariat and staff members. Each section of the NRA Secretariat mainly took the measures to enhance connection among staff members.

2. Cooperation with International Organizations and Contribution to the International Community

(1) Cooperation with International Organizations

The NRA continued to share with the international community the findings and the lessons learned from the accident at TEPCO's Fukushima Daiichi NPS, as well as to disseminate information and exchange opinions to improve international nuclear safety, by attending various meetings of the International Atomic Energy Agency (IAEA[3]) and the Organization for Economic Cooperation and Development/Nuclear Energy Agency

[3] International Atomic Energy Agency

(OECD/NEA[4]) and dispatching expert staff to these organizations.

In FY2023, expert staffs attended international meetings such as the IAEA's Commission on Safety Standards (CSS[5]), Nuclear Safety Standards Committee (NUSSC[6]), Waste Safety Standards Committee (WASSC[7]), Transport Safety Standards Committee(TRANSSC[8]), Radiation Safety Standards Committee (RASSC[9]), Emergency Preparedness and Response Standards Committee (EPReSC[10]), Nuclear Security Guidance Committee (NSGC[11]) and the International Commission on Radiological Protection (ICRP[12]). The expert staff participated in discussions based on the latest knowledge obtained in Japan and contributed to the formulation of international standards and common understanding. (For details on the joint research with international organizations, see Chapter 2, Section 3).

The NRA jointly held Technical Meeting for Member States of IAEA Regulatory Cooperation Forum (RCF[13]) and a site visit to TEPCO's Fukushima Daiichi NPS with IAEA from February 28 to March 1 of 2024. In the technical meeting the NRA Commissioner SUGIYAMA attended and the regulatory activities and current status at TEPCO's Fukushima Daiichi NPS were shared to the 10 participants from seven countries, including the senior regulatory officers.

Additionally, in order to identify issues and improve understanding of safety, security, and safeguards in the regulation of Small Modular Reactors (SMR[14]) the expert staffs participated in the SMR Regulators' Forum (SMR-RF[15]), and the NRA participated in the Nuclear Harmonization and Standardization Initiative (NHSI[16]) to exchange views.

As part of the international information dissemination, the NRA continues to periodically publish the results of Sea Area monitoring near TEPCO's Fukushima Daiichi NPS and other areas, as well as conducting joint sampling of marine samples and intercomparison of analysis results with the IAEA (for details, see Section 3 of Chapter 4). In addition, with regard to the International Radiation Monitoring Information System

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4 Organization for Economic Co-operation and Development / Nuclear Energy Agency
5 Commission on Safety Standards
6 Nuclear Safety Standards Committee
7 Waste Safety Standards Committee
8 Transport Safety Standards Committee
9 Radiation Safety Standards Committee
10 Emergency Preparedness and Response Standards Committee
11 Nuclear Security Guidance Committee
12 International Commission on Radiological Protection
13 Regulatory Cooperation Forum
14 Small Modular Reactor (These reactors are smaller than conventional ones and are called this way because they are designed as standardized modules that are manufactured in a factory.)
15 SMR Regulator's Forum
16 Nuclear Harmonization and Standardization Initiative

(IRMIS[17]), which is a framework established by the IAEA to collect and share environmental radiation monitoring information from various countries, data on environmental radiation (air dose rates) at representative monitoring posts in Japan collected by the NRA, has been transmitted to IRMIS since February 2020.

The NRA has received the IAEA's regulatory review on the handling of ALPS-treated water, which is conducted based on the Terms of Reference for the comprehensive cooperation framework on the handling of ALPS[18]-treated water signed between the IAEA and the Government of Japan on July 8, 2021 (for details, see Section 1 of Chapter

Japan has proactively contributed to improving the safeguards technical capabilities of the IAEA and other member states through frameworks including the Japan Support Programme for Agency Safeguards (JASPAS[19]).

The NRA agreed with IAEA to set the period to host the International Physical Protection Advisory Service (IPPAS[20]) mission as from July 22 to August 2 of 2024 and held an official preparatory meeting with IAEA toward acceptation from September 21 to 22 of 2023. Additionally, at the 42nd NRA Commission Meeting in FY2023 (November 8, 2023), the NRA decided to formally request the IAEA to have the Integrated Regulatory Review Service (IRRS[21]) mission around the second half of FY2025.

In the 50th Committee on Nuclear Regulatory Activities (CNRA[22]) of OECD/NEA, which was held from December 7 to 8 of 2023,the Deputy Secretary-General for Technical Affairs ICHIMURA was selected as the chair of the said committee. Further, in the Working Group on Leadership and Safety Culture (WGLSC[23]) under the said Committee, the NRA Commissioner BAN served as the chair and contributed to establishment of the report concerning mutual impact of nuclear regulatory bodies and license holders from a safety culture perspective and leadership. The NRA Chairman YAMANAKA and the NRA Commissioner BAN attended the Country Specific Safety Culture Forum (CSSCF[24]) which OECE/NEA and the World Association of Nuclear Operators (WANO[25]) jointly held in Japan from December 14 to 15 of 2023.

(2) Participation in Initiatives under Various International Conventions on Nuclear

[17] International Radiation Monitoring Information System
[18] Advanced Liquid Processing System
[19] Japan Support Programme for Agency Safeguards
[20] International Physical Protection Advisory Service
[21] Integrated Regulatory Review Service
[22] Committee on Nuclear Regulatory Activities
[23] Working Group on Leadership and Safety Culture
[24] Country Specific Safety Culture Forum
[25] World Association of Nuclear Operators

Safety etc.

The NRA, together with the relevant Ministries and Agencies, has been participating on various activities under the Convention on Nuclear Safety, the Joint Convention on the Safety of Spent Fuel Management and on the Safety of Radioactive Waste Management, the Convention on Early Notification of a Nuclear Accident, the Convention on Assistance in the case of a Nuclear Accident or Radiological Emergency, the Convention on the Physical Protection of Nuclear Material, and its Amendment.

(3) Cooperation with Overseas Nuclear Regulatory Authorities in the Multinational Framework

From the viewpoint of improving nuclear safety, etc., the NRA proceeded information exchange with nuclear regulatory bodies in other countries as described below.

The International Nuclear Regulators Association (INRA[26]), consisting of the heads of regulatory bodies in major countries possessing nuclear power plants, is a framework to exchange opinions twice a year, as a rule, on a wide range of issues on nuclear safety regulations. Nine countries: Japan, the U.S., France, the U.K., Germany, Canada, Sweden, Spain and the Republic of Korea are members of the INRA. The NRA chairman YAMANAKA attended the 51st INRA Meeting held in Toronto, Canada from May 4 to 5, 2023,and the 52nd one held in Vienna, Austria on September 26, 2023 and discussions on nuclear regulation.

The Western European Nuclear Regulators Association (WENRA[27]) consists of the heads of the nuclear regulatory bodies mainly European countries and holds the plenary meetings twice a year as a rule. In addition to the plenary meeting on April 5 and 6, 2023, the Deputy Secretary-General KANEKO attended the meeting held in Paris, France on November 14 and 15, 2023 where the change of the membership of the NRA from the observer to the associated member was approved.

(4) Cooperation with Overseas Nuclear Regulatory Authorities in the Bilateral Framework

The NRA has cooperation in information exchange etc. with 9 countries (11 nuclear regulatory organizations[28]) and in FY2023, exchanged information on nuclear regulations

[26] The International Nuclear Regulators Association
[27] Western European Nuclear Regulators Association
[28] U.S. Nuclear Regulatory Commission (NRC), Department of Energy (DOE), French Nuclear Safety Authority (AASN), Institute for Radiation Protection and Nuclear Safety (IRSN), Office for Nuclear Regulation (ONR),Federal Service for Environmental, Industrial, and Nuclear Supervision (Rostechnadzor), Swedish

with foreign nuclear regulatory bodies through these bilateral frameworks.

From April 17 to 19, 2023, the 8th Japan-France Regulatory Information Exchange Meeting was held in Tokyo. The NRA Chairman YAMANAKA, the NRA Commissioner SUGIYAMA and the NRA Commissioner BAN attended the meeting, and exchanged views on long-term operations and aging management, the outline of nuclear regulatory inspection systems and challenges for the future, regulatory activities etc. concerning discharge of ALPS-treated water into the sea. From March 12 to 14, 2024, the NRA Commissioner BAN attended the Regulatory Information Conference (RIC[29]) hosted by the U.S. Nuclear Regulation Commission (NRC) and participated in the session on leadership and safety culture. The Japan-US Steering Committee Meeting was held in Tokyo on March 26, 2024 under the memorandum of cooperation with the NRC and views were exchanged on the influence on the nuclear power plants due to the 2024 Noto Peninsula Earthquake, and the countermeasures by the NRA, and the actual status of the nuclear regulatory inspection system, etc.

Furthermore, the NRA Chairman YAMANAKA exchanged views with the high-ranked officers of UAE Federal Authority of Nuclear Regulation (FANR), Canadian Nuclear Safety Commission (CNSC), Swedish Radiation Safety Authority (SSM) , Finnish Radiation and Nuclear Safety Authority(STUK), France Nuclear Safety Authority (ASN) and UK Office for Nuclear Regulation (ONR) upon having a business trip to Austria in order to attend the 67th IAEA General Meeting in September 2023.

Upon discharging ALPS-Treated water into the sea etc., the NRA answered the written questions several times from the Nuclear Safety and Security Commission of the Republic of Korea (NSSC[30]).

(5) Opinion Exchange with International Advisors on Nuclear Regulation

The NRA, with the aim of proactively incorporating the latest overseas knowledge concerning the safe use of nuclear energy, commissions foreign experts with abundant experience and advanced knowledge on nuclear regulation as External Advisors to exchange opinions on issues such as expectations for nuclear regulatory systems and the organization of the NRA. As of October 1, 2023, the NRA commissioned Ms. Rumina Velshi as a new External Advisor. On May 9 and November 9 of 2023, the NRA held information exchange meetings with External Advisors, and exchanged views on the

Radiation Safety Authority (SSM), German Ministry for the Environment, Nature Conservation, Building and Nuclear Safety (BMUB), Spanish Nuclear Safety Council (CNS), Finnish Radiation and Nuclear Safety Authority (STUK), Canadian Nuclear Safety Commission (CNSC).

[29] Regulatory Information Conference

[30] Nuclear Safety and Security Commission

way of ensuring safety to respond to extension of operational period, roles of technical support organizations and their relationship with regulatory bodies, relationships between operators and regulatory bodies and the concept of regulation application corresponding to the properties of wastes concerning landfill disposal of radioactive wastes.

3. Utilization of Digital Technologies

(1) Review of analog regulations based on the digital principles etc.

At the 52nd FY2023 NRA Commission Meeting (December 13, 2023), the NRA approved the proposal to conduct the public comments on "Proposal for Partial revision to the Ordinance for Enforcement of the Act on the Use of Information and Communication Technology in the Preservation of Documents by Private Business Operators, etc. concerning Laws and Regulations under the Jurisdiction of the Nuclear Regulatory Commission" (hereinafter referred to as "Proposed Revision to the Enforcement Regulations of the e-Document Law") in order to review analog regulations in light of digital principles formulated by the Special Commission on Digital Administrative Reform. The NRA approved the draft interpretations that the use of digital technology is not precluded by the provisions of the laws and regulations under the jurisdiction of the NRA on seven analog regulations including "visual regulation" and "periodic inspection/inspection regulations" etc. After that, based on the results. of the public comments, the NRA decided Proposed Revision to the Enforcement Regulations of the e-Document Law at the 64th FY2023 NRA Commission Meeting (February 14, 2024).

(2) Correspondence for digitalization of procedures for applications/notifications

At the 35th FY 2023 NRA Commission Meeting (September 27, 2023), the NRA was reported from the NRA Secretariat on response status and response policies toward digitalization of various kinds of procedures for applications/notifications for the NRA based on the policies of the Government as a whole in the regulatory reform implementation plan. Mainly, the policies to start reception of applications and notifications based on Nuclear Reactor Regulation Law, Nuclear Emergency Act and the others by FY2025 through e-Gov was announced.

4. Responses to Legal Affair

(1) Steady Responses to Legal Affair

The NRA responded to legal and litigation affairs related to the work of the NRA in cooperation with relevant authorities. Specifically, the NRA has rapidly and appropriately prepared briefs and responded to examinations of witnesses in collaboration with the

Ministry of Justice and related agencies with respect to 46 pending cases. Additionally, among the currently pending cases, judgment was made for eight ones in FY2023.

(2) Continuous Review and Improvement of Laws and Regulation

The NRA constantly reviewed and improved laws and regulations under its jurisdiction, for example, incorporating the latest scientific and technological knowledge into the regulations.

Specifically, laws and regulations were established and revised as follows:

Names of Laws and Regulations	Overview
Cabinet Order for Stipulating the Enforcement Date of Part of the Act ~~to~~ for Partial Revision of the Electricity Business Act and Other Acts for Establishing Electricity Supply Systems for Realizing a Decarbonized Society (Cabinet Order No.281, 2023)	Enforced on September 13, 2023 The partial effective date of the act to partially revise the Electricity Business Act and other acts was decided upon in order to establish an electricity supply system for a decarbonized society (Act No. 44 of 2023. Hereinafter referred to as "Revised Act" in this table.) was prescribed.
Cabinet Order to prescribe the amount of fees etc.to be paid pursuant to the provisions of Article 4, paragraph (6) of supplementary provisions to partially revise the Act for Partial Revision of the Electricity Business Act and Other Acts for Establishing Electricity Supply Systems for Realizing a Decarbonized Society (Cabinet Order No.282, 2023).	Enforced on October 1, 2023 The amount of fees to be paid by the persons who intends to obtain the approval of Article 4 to 6 of the supplementary provisions of Revised Act was prescribed.
Cabinet Order to partially revise the NRA Organization Order (Cabinet Order No.94, 2024)	Enforced on April 1. 2024 The number of "the equivalent positions to the director of the division" was increased to eight in order to improve the examination system pertaining to applications for approval of long-term facility management plan in accordance with enforcement of Revised Act.
Ordinance to partially revise the regulations on the Rules on Use of Nuclear Fuel Materials etc. (the NRA Ordinance No. 3, 2023)	Enforced on June 28, 2023 Regarding the facilities that do not use nuclear fuel materials prescribed in Article 41 of the Order for Enforcement of the Act on the Regulation of Nuclear Source Material, Nuclear Fuel Material and Reactors (Cabinet Order No.324, 1957), attachment documents of a written explanation etc. were abolished regarding the development of the system necessary for quality management concerning activity for operational safety of the applications regarding the application for approval for change in nuclear fuel materials.

Ordinance to partially revise Ordinance on Installation and Operation etc. of commercial power Reactors and Ordinance on Installation and Operations of Reactors in the Stage of Research and Development (NRA Ordinance No. 4, 2023)	Enforced on June 6, 2025 (partial provisions were enforced on October 1, 2023) In accordance with enforcement of Revised Act (June 6, 2025) , the items required for application procedures concerning long-term facility management plan and the method to implement deterioration assessment in accordance with establishment of long-term facility management plan were prescribed.
NRA Ordinance to partially revise the regulations concerning Events to be Reported by the Nuclear Emergency Preparedness Manager under the Act on Special Measures Concerning Nuclear Emergency Preparedness (the NRA Ordinance No.5, 2023)	Enforced on November 1, 2023 An emergency control room as the special facility for severe accident management was added to the criteria for judgement for emergency activity level of boiling water reactor.
Notification to partially revise the NRA Guide for Emergency Preparedness and Response (Notification of the NRA No.10, 2023)	Applied on November 1, 2023 The same as mentioned above.
Ordinance to partially revise Ordinance on Installation and Operation etc. of commercial power Reactors and Ordinance on Installation and Operations of Reactors in the Stage of Research and Development (the NRA Ordinance No. 6, 2023)	Enforced on December 21, 2023 The fact that “Article 46, paragraph (3)” was revised to “Article 47, paragraph (3)” of the Order for Enforcement of Electricity Business Act (Cabinet Order No.206, 1965) was reflected in accordance with enforcement of Cabinet Order on development of relevant cabinet orders in accordance with enforcement of the Act to partially revise the High-Pressure Gas Safety Act (Cabinet Order No. 286, 2023).
Regulations to partially revise Ordinance for Enforcement of the Act on Utilization of Telecommunications Technology in Document Preservation, etc. Conducted by Private Business Operators, etc. Concerning Laws and Regulations under the Jurisdiction of the Nuclear Regulation Authority (the NRA Ordinance No.1 2024)	Enforced on March 7, 2024 In order to review analog regulations based on digital principles established in Special Commission of Digital Administrative Reform, the provisions of “guards” regarding the laws and regulations under jurisdiction of the NRA etc. were reviewed.

Ordinance to partially revise the NRA Organization Regulation (the NRA Ordinance No. 2, 2024)	Enforced on April 1, 2024 The number of the directors deployed in the Nuclear Regulation Department was increased to eight in order to improve the examination system regarding the application for approval for Long-Term Facility Management Plan in accordance with enforcement of Revised Act.

5. Constructing a Workplace Environment where Each Staff can Feel Fulfilled in their Work

(1) Formulation of Work-Life Balance Action Plan

In order to promote reforms in workstyles to promote work-life balance and women's active engagement in professional life the NRA formulated the first phase of the "Specified Employer Action Plan for Measures to promote Women's active engagement of professional life, Work-Life Balance and Support Raising Next- Generation Children" (hereinafter "Action Plan") in FY2016. From FY2021, the second phase of the Action Plan formulated by the Headquarters for Promotion of Women's Activities and Work-Life Balance has been in effect. In FY2022, the second phase action plan was revised to incorporate specific initiatives of particularly high priority, based on the results of a questionnaire survey of employees conducted by the Cabinet Bureau of Personnel Affairs in FY2021.

In FY2023, in accordance with the cabinet decision of “Children’s Future Strategy” and revision of “policy on Promotion to Take Childcare Leave/short-term Leave by Male National Public employees (Decision by the Council for Promotion of Women's active engagement in professional life and Work-Life Balance of Employees) on December 27, 2019 , the objectives for the rate of childcare leave by male employees in the 2nd Action Plan were revised.

In addition, based on this action plan, the NRA publishes the "Follow-up on the Action Plan for Promotion of Women's Activities and Work-Life Balance of Employees" and "Information that Contributes to Choice of Occupations" on its website every fiscal year.

(2) Diversification of Working Styles

The NRA revised to make the system on the standards to allocate working hours by flextime system more flexible (March 29, 2023) and partially revised “Rules on management of working hours etc. of the NRA Committee” as of June 26 of 2023, to enrich the working phases.

Additionally, for the employee who was expecting, or whose spouse was expecting a childbirth, the NRA disseminated information on the systems for the pre-parenting registration in an easy-to-understand manner, thereby promoting the use of childcare leave.

(3) Employment of Persons with Disabilities

The NRA promoted employment of persons with disabilities based on Act to Facilitate the Employment of Persons with Disabilities (Act No.123 of 1960) and achieved the employment of over 2.6% of statutory rate. The NRA developed the system where the employees with disabilities can accept the work extracted from the sections and offices, providing periodical counselling by clinical psychologists and experts and paid proper attention to safety by identifying the problems that would be detrimental to the work of such persons and their health conditions.

Additionally, in cooperation with the job assistance organizations for the persons with disabilities, the NRA exchanged information on newly hiring the persons with disabilities who seek for job as well as sharing information on employment status of current employees.

⑷ Introduction of 360-degree Evaluation

In the "Action Plan on the Management System and Nuclear Safety Culture" decided at the 16th FY2020 NRA Commission Meeting (July 15, 2020), regarding the 360-degree evaluation whose introduction was discussed in order to promote open communication from the viewpoint of fostering and maintaining nuclear safety culture, the NRA started its operation by appointing staff members in managerial positions such as designated positions and heads of divisions and offices as evaluation targets from FY2022.

In FY2023, a total of 2,548 evaluations were conducted by all staff members of the NRA Secretariat and the NRA Human Resource Development Center, evaluating a total of 173 staff members in managerial positions by expanding the scope of evaluations to Deputy Director in charge of management of divisions and offices.

It was determined that the evaluation results obtained are fed back to the evaluation targets to promote their own awareness by communicating the favorable items to be communicated to the evaluation targets themselves in the comments described in a free description field by the staff members, in addition to the results of five-grade evaluation.

(5) Implementation of Workplace Visiting Day

The NRA held the workplace visiting day of the NRA (; interoffice event to foster career path development and enhance communication within the NRA) twice in FY2023, as the opportunities to deepen the staffs' understanding for the work of the NRA they engage in in order to embody the staffs'awareness of career path images which were organized and established as a model after FY2021 and enable staffs to clearly create.

In these events the staff members of the NRA including young staffs deepened their

understanding on the work of the NRA that they engage in by visiting the within the NRA Secretariat and the office of the NRA Commissioners and receiving explanations on their work etc.

Additionally, regarding this event in order to promote communication between the NRA staff members and their families, to enhance motivation of the staff members, and to deepen their families' understanding of their workplace environments and work, the NRA encouraged their families' participation. In FY2023, approximately 100 families of the staff members participated in total.

(6) Promotion of Diversifying Workstyles

For transfer to new office of the NRA Committee, the NRA advanced preparation of new working environment. On this occasion, the NRA established Workstyle Diversify Team in order to boldly review the conventional workstyle and create-environments that work to be easy. Under this team, four themes were set up, including workstyle diversify and maximum use of ICT (Information and Communications Technology,) and working groups were formed for each of these themes, and the staff members were recruited to take charge of them. A series of considerations which was held mainly by such staff members, made some departments trial introducing hot desking and paperless materials, etc.

(7) Safety Assurance and Service Continuity in the event of a nuclear disaster

The NRA formulated "NRA Business Continuity Plan (Countermeasures for Tokyo Inland Earthquakes)" (hereinafter referred to as "NRA's Business Continuity Plan".) based on "Business Continuity Plan of the Central Government (Measures against a Tokyo Inland Earthquake) (hereinafter referred to as "Service Continuity Plans".) (Cabinet Decision of March 28, 2014). The NRA conducted self-evaluation for NRA's Business Continuity Plan from June to August 2023, and as a part of comprehensive disaster prevention drills on "Disaster Prevention Day" in FY2023, conducted drills related to concerning NRA's Business Continuity Plan including the start-up of the NRA's alternative site. The NRA identified items for improvement such as adding descriptions on the standards to return from the NRA's alternative office to the regular one and preparing stockpiled goods with consideration to diverse needs for the staff members etc. The NRA formulated FY2023 improvement plans concerning these items to be improved.

Furthermore, at the 30th FY2023 NRA Commission Meeting (September 6, 2023), the NRA received report on the policies for examination for formulation of FY2023 improvement plans and partial revision of NRA's Business Continuity Plan.

Section 3. Securing and Developing Personnel Resources

1. Ensuring High Sense of Ethics

Within NRA's Core Values and Principles, the NRA requires its employees to perform their duties with a "high sense of ethics," and to fulfill its mission to protect people and the environment. Each and every employee performs his or her duties in accordance with the five Guiding Principles for Activities.

To ensure this, the NRA distributed the Core Values and Principles Card to all new staff members and conducted ethics training for public servants on April 11, 2023, and October 4, 2023.

In addition, during National Public Service Ethics Month in December, a message from the Ethics Supervisory Officer (Secretary-General of the NRA Secretariat) was distributed to all staff members. Furthermore, the NRA strives to effectively spread ethical awareness by distributing awareness posters with each director's own message and training textbooks, additionally leaflets where the NRA's own rules and requiring all staff members to complete public service ethics training through e-learning.

2. Securing Human Resources for Nuclear Regulation

(1) New Establishment of Organization and Filling Personnel Position

In order to enable proper implementation of "Chapter 2, Section 4-3 Safety Regulations Related to Aging Power Reactors", it is determined that the NRA takes measures to newly establish Director, Division of Long Term Operation of Nuclear Power Plants to implement strict and appropriate examination for aging power reactors in FY 2024 and increase the prescribed number of personnel of 23 in total

To attract large numbers of promising qualified personnel, the NRA actively carried out a campaign for recruitment including presentations on the activities/missions of the NRA to heighten interest in the organization. Specifically, for newly recruited staff members, the NRA participated in employment seminars where nuclear power-related industries gather and seminars hosted by employment websites, to introduce the NRA's activities. Additionally, in order to increase recognition of the NRA, by visiting universities, specialized vocational high schools and high schools, the NRA conducted full-scale publicity activities for their staff members in charge of recruitment. Furthermore, targeting mid-career hires from the private sectors etc., the NRA strove to secure human resources by utilizing career-change websites, newspaper advertising and municipal PR magazines of the locations of nuclear power plants, and displaying posters at the nearest stations where the nuclear power-related companies are located.

As for newly recruited staff, the NRA made unofficial offers to those selected through

visits to government offices after passing the National Civil Service Examination. In addition, the NRA conducted the "NRA Secretariat Nuclear Engineering Staff Recruitment Examination," a unique recruitment examination for the NRA Secretariat to actively recruit students majoring in nuclear engineering or equivalent, and the Research Staff Selection and Recruitment Examination to recruit research staff in charge of technical research and technical investigation work, and made unofficial offers to those who were selected. The NRA made unofficial employment offers to 38 persons for FY2024 (2 for career positions, 18 for general positions (university graduates), 13 for general positions (high school graduates), 2 for general positions (nuclear engineering), 3 for research staff).

In FY2023, the NRA adopted 47 mid-career hires mainly in the areas of safety review/inspection, nuclear disaster prevention and radiation hazard prevention. The number of NRA staff recruited in FY2023 is 49, including the one unofficially employed in FY2022.

The NRA offered unofficial employment for 1 person who passed the Mid-career Recruits Selection Examination (for the Employment Ice Age Generation). The number of NRA staff is 1,061 with the ratio of personnel to the prescribed number of personnel being 94.6%, as of January 1, 2024.

Table1-1　Situation of securing human resources from FY2017 to 2023 (Unit: persons)

	FY2017	FY2018	FY2019	FY2020	FY2021	FY2022	FY2023	Total
Mid-career hires※1	44	23	33	21	16	23	49	209
New graduates※2	25	29	22	29	26	40	38	209
Total	69	52	55	50	42	63	87	418

※1 Number of personnel hired in the relevant fiscal year
※2 Number of personnel hired by April 1 of the next fiscal year based on the recruitment activities in the relevant fiscal year

(2) Efforts Concerning the Program of NRA Human Resource Development

To broadly secure personnel and develop human resources engaged in nuclear safety and regulation, aiming at steadily improving nuclear regulations, the NRA launched a subsidy program for human resource development for nuclear regulations, which has been carried out in collaboration with universities and other institutions since FY2016. In FY2023, this program was applied in a total of 17 cases (4 cases adopted in FY2020, 6 cases in FY2021, 4 cases in FY2022 and 3 cases in FY2023) and implemented by universities, colleges of technology and other institutions.

Additionally, in FY2023, the results of operations were recognized by using entrustment of investigations.

Furthermore, in order to make operations more effective, the NRA conducted hearing for requests and views from the institutions subject to grants that have been adopted so far and held meetings for exchanging views with the institutions subject to grants at public meetings.

3. Developing Human Resources for Nuclear Regulation

(1) Staff members Career Paths

In order to clarify the basic principles and general framework of measures for staff development as human resources, the NRA established the "Basic Policy on Human Resource Development for NRA Staff" in FY2014, and on September 3, 2014, established career paths as a model for administrative and research staff to accumulate experience and deepen responsibility, taking into account the work to be performed by the NRA.

In FY2021 for general technical staff, career-track and clerical staff, and in FY2022, for research staff, the NRA established a career path image, which embodied their expected roles according to their years of experience, areas of expertise they should possess, provision of opportunities to improve their expertise, and qualifications they can obtain, and held a briefing session on these career paths. Additionally, while taking into account the desires of the staff members, in order to ensure human resource development and consideration for human affairs in line with career path images, to establish career consulting system and to reduce anxieties etc. of the staff members at the time of transfer, the NRA made efforts to communicate information on transfer to the persons to be transferred with one voice.

As a result of these efforts, in the survey whose targets are limited to the staff members to be transferred after October of 2022 (including the persons who were recruited and moved-in etc.), after the previous survey of October, 2022, the degree of satisfaction has been increased; as for “Very Satisfied” from 6.1% to 10.3% and “Satisfied" from 30.2% to 33.0%. These results shows that there are certain results obtained.

In addition, with regard to skill improvement related to back-office work, which is primarily carried out by general clerical staff, the NRA introduced the competency management system which is based on improving competency through OJT[31]. In order to effectively carry out OJT, the NRA prepared the skills and knowledge for each job that general clerical staff should acquire based on supporting laws, and manuals. Based on the results of this trial operation in FY2022, the NRA specified the targeted work, and started

[31] On the Job Training.

its operation after reviewing its procedures, in FY2023.

(2) Implementing and Improving Training

Under the job qualification system for five job fields, “nuclear inspection,” “nuclear safety review,” “safeguard inspection,” “emergency preparedness and response” and “radiation regulation”, the NRA provided training and OJT and bestowed job qualifications[32] for 123 personnel in FY2023.

In addition, The NRA provided educational training courses for basic qualifications in five job fields to continually secure and develop human resources capable of carrying out regulatory work. In FY2023, while nine staff members who had taken the "Intensive Program" in which they leave their work to concentrate on training completed the same educational training courses on April 30, 2023, five staff members were newly selected to take the “Intensive Course”. 39 staff members selected by FY2023 have been continuing to take the "Part-time Program" in which they took training courses concurrently with their work duties. In 2023, two trainees obtained the basic qualification in one field respectively for the first time from the said course. Further, the NRA started to consider the educational training courses concerning basic qualifications for mid-career recruited staff.

Furthermore, the NRA carried out ongoing education program for those who have been certified for a certain period to learn the latest standards to maintain their expertise, The program also focuses on maintaining and improving communication skills for those with intermediate qualifications and management skills for those with advanced qualifications.

In FY2023, the competence of the NRA staff continued to be managed by bestowing job qualifications in 5 job fields and reflected in their assignments and treatments.

In order to enhance training and improve the quality of training, the NRA conducted survey and interviewed to those who completed the training, their supervisors, the center of senior instructors and technical advisors. After this process, the NRA carefully reviewed, and analyzed the results, and considered improvement measures.

From the perspective that all staff members, regardless of their position, status, qualifications, or the amount of knowledge they have acquired, need to continue their learning and training and strive for self-improvement, the NRA revised the "Basic Policy on Human Resource Development of the NRA Staff" on February 22, 2023, setting a target for the number of hours of study that staff members should undertake per year. Based on these, as a new initiative, some of the training videos from FY 2022 were made

[32] Qualifications that must be possessed by persons appointed to positions with high levels of expertise and experience in the in the Secretariat of the NRA or the NRA Human Resource Development Center.

available to staff members to facilitate their self-learning. Additionally, in order that the NRA can surely grasp the number of hours of study that the staff members actually undertake, the NRA requested to record to personnel evaluation and summarized the results including average number of hours of study.

(3) Human Resource Development for Research Staff

To promote human resource development and exchange through joint research, the NRA engaged a total of 70 staff members in joint research in FY2023, and one staff member dispatched to JAEA to work exclusively on research activities. Additionally, the NRA developed the circumstances for the research staff to receive instructions in universities to obtain doctoral degrees in order that they can enhance their own expertise. Thus, three personnel obtained the doctoral degree in FY2023.

Furthermore, the NRA actively engaged in publication activities such as presentations at academic conferences based on safety research results, and sought to improve the skills of research staff through discussions with experts at academic conferences and other venues.

(4) Efforts Concerning Development and Securing of Global Human Resource

To enhance the necessary skills for international operations, the NRA recruited personnel with abundant international experience as mid-career professionals, improved the staff members' basic skills such as English language proficiency through education and training programs, enhanced their competence in international activities through joint research with foreign research institutions, and ensured that young staff members had opportunities to gain international experience. As a part of human resource development, 13 staff members have been dispatched to international organizations such as the IAEA and OECD/NEA, and each national nuclear regulatory body such as U.S. Nuclear Regulatory Commission(NRC) or UK Office for Nuclear Regulation(ONR), and some staff members have participated as reviewers in the IAEA Integrated Regulatory Review Service (IRRS[33]) and the International Physical Protection Advisory Service (IPPAS). In addition, the NRA has promoted mid-career and young staff as members to participate in international conferences, striving to secure opportunities for them to gain international experience and work as international human resources on a long-term and continuous basis.

[33] Integrated Regulatory Review Service

Chapter 2. Implementation of Strict and Appropriate Nuclear Regulations and the Reinforcement of the Technology Base

○Summary of Chapter 2

(Implementation of Review based on the Reactor Regulation Act)

The NRA rigorously reviews nuclear operators' applications for permission to make changes in basic design, and so on, from scientific and technical perspectives in light of the new regulatory requirements established based on the lessons learned from the accident at TEPCO's Fukushima Daiichi NPS. In order to ensure transparency, the reviews are in principle conducted at open review meetings, except for those that cannot be disclosed due to security reasons.

In FY2023, as for commercial power reactors, the NRA approved changes in design and construction plans of the Shimane Nuclear Power Station Unit 2 of Chugoku Electric Power Co., Inc. Concerning the special facilities for severe accident management, the NRA approved changes in design and construction plans of Tokai Daini NPS of Japan Atomic Power Co. (2 and 3 of 4 installments in total). Additionally, In addition, in order to ensure transparency and predictability of the review, the NRA disclosed a report to show the entire picture of the progress in the conformity review on new regulatory requirements and the like once per quarter.

Regarding nuclear fuel cycle facilities, the NRA approved changes in basic design of Experimental Fast Reactor Facility (Joyo) at the Oarai Research and Development Institute of the JAEA (south area), approved changes in design and construction plans of Fabrication facility, Global Nuclear Fuel-Japan Co., Ltd. (4 of 7 applications) and Experimental Fast Reactor Facility (Joyo) at the Oarai Research and Development Institute of the JAEA (south area), and approved changes in the operational safety program of the Recyclable-Fuel Storage Center of Recyclable-Fuel Storage Co., the Kumatori Works of Nuclear Fuel Industries, Ltd. and Spent Fuel Storage Facility of Recycle Fuel Storage. Additionally, the NRA granted 17 permissions for nuclear material utilization facilities. In addition to ensuring transparency and predictability of the reviews, in order to organize the status of the reviews of various types of nuclear fuel cycle facilities and other centers, the NRA disclosed a report to show the entire picture of the progress in the conformity review on licensing review of conformity to the new regulatory requirements and the like semiannually.

(Implementation of inspections based on the Reactor Regulation Act)

In order to ensure the safety of commercial power reactors and nuclear fuel cycle facilities, the NRA conducts nuclear regulatory inspections based on the Reactor Regulation Act. Nuclear regulatory inspections have a system to conduct the baseline inspections by combining routine inspections and team inspections through active

communication with operators and conduct supplemental inspections and special inspections, as necessary. Furthermore, operators are determined to report the safety performance indicator that indicate their performance concerning safety activities of nuclear power facilities (the indicator to appropriately identify the signs of deterioration of the operators' activities such as the number of unscheduled shutdowns of nuclear reactors and the number of failures of safety system facilities. Hereinafter referred to as "PI".) In case where the inspection findings are found or where PI value exceeds the designated threshold value, it is determined that the state of deterioration of the operators' activities are evaluated by ranking by colors (red, yellow, white and green)

On May 24, 2023, the NRA implemented a comprehensive assessment for FY2021, and evaluated TEPCO's Kashiwazaki-Kariwa NPS as being in a state where the operator's safety activities have continued to either deteriorate over a long period of time or significantly overall, as was the case in FY2022. In FY2023, along with continuing the baseline inspections, the NRA continued the supplemental ones. The supplemental inspections were completed on December 27, 2023 and the Action Category for the NPS was changed from Category 4 (although the purpose of the activities in each observation area are satisfied, it is assessed that there is a long-term or significant deterioration in the safety activities conducted by the operator) to Category 1 (the purpose of the activity in each observation area was satisfied, it is assessed that autonomous improvement can be expected.). Other nuclear facilities were evaluated to be in a state where autonomous improvements can be expected of the operators, and regular baseline inspections were continuously conducted in FY2023 as well.

There were 18 inspection findings in the nuclear regulatory inspections conducted up in FY2023 (commercial power reactors: significance level "green," severity level "SL IV" (including one case "with notification"); nuclear fuel cycle facilities and other centers: significance level "no additional action," and severity level "SL IV"). Furthermore, in FY2023, as a part of legal requirements, the NRA completed 96 legal confirmations and 14 pre-service inspections which were carried out based on the transitional measures at the time of the revision of the Reactor Regulation Act.

The "TEPCO's Kashiwazaki-Kariwa NPS Supplemental Inspection Team" was established and at the Extraordinary Meeting of the 4th FY2023 NRA Commission Meeting (April 12, 2023), the NRA received the Team's report on Phase II inspection status for TEPCO's Kashiwazaki-Kariwa NPS, which had been undergoing supplemental inspections. Thereafter, the NRA reported on the status of inspections as needed, and at the 10th FY2023 NRA Commission Meeting (May 17, 2023), the NRA approved the results of supplemental inspections through 27 "viewpoints of confirmation" conducted

in accordance with three verification policies for supplemental inspections up to Phase II ((1) to realize robust physical protection of nuclear materials, (2) to take root of a system for autonomous improvement, and (3) to establish a system to ensure that improvement measures are not transitory), and that the supplemental inspections in the Phase III would confirm the status of four items found in the Phase II inspections and confirmation policies in the inspection of Phase III. Then, the NRA continued to receive the report on the status of the inspection according to the confirmation policies as needed. At the 51st NRA Commission Meeting (December 6, 2023) where the inspection up to Phase III was completed, the NRA receive the Team's report on "Report on the Nuclear Regulatory Inspection of Kashiwazaki-Kariwa Nuclear Power Station of TEPCO (Draft) (supplemental inspection concerning physical protection of nuclear materials) and discussed about the future measures for Kashiwazaki-Kariwa Nuclear Power Station of TEPCO. Base on the results of discussions, the NRA Chairman YAMANAKA and the NRA Commissioner BAN conducted on-site investigation at the nuclear power station and exchanged views with the president of TEPCO at the 54th FY2023 NRA Commission Meeting (December 20, 2023). After that, at the 56th FY2023 NRA Commission Meeting (December 27, 2023), the NRA approved Team's report: "Report on the Nuclear Regulatory Inspection of Kashiwazaki-Kariwa Nuclear Power Station of TEPCO" and changed the Action Category from Category 4 (although the purpose of the activities in each observation area are satisfied, it is assessed that there is a long-term or significant deterioration in the safety activities conducted by the operator) to Category 1 (the purpose of the activity in each observation area was satisfied, it is assessed that autonomous improvement can be expected.). Additionally, after completion of the supplemental inspection as well, the NRA required TEPCO to maintain the statue that is currently improved on physical protection of nuclear materials and make efforts for further improve and decided to particularly focus on overseeing the efforts of monitoring on the perimeter in stormy weather, PPCAP and Physical Protection Monitoring Office in the baseline inspections.

Additionally, at the Extraordinary Meeting of the 18th NRA Commission (June 22, 2023), the NRA completed the supplemental inspections for TEPCO's Kashiwazaki-Kariwa NPS and upon examining change in the Action Category and handling of the order to prohibit movement of special nuclear fuel materials, the NRA decided to reaffirm determination of eligibility of TEPCO as the installer of power reactor. Upon reaffirmation the handling of change in the Action Category and the order to prohibit the transfer of specified nuclear fuel materials, at the 21st FY2023 NRA Commission Meeting (July 12, 2023), the NRA approved to comprehensively determine eligibility taking the following three items into account: (a) Inspection findings in the nuclear regulatory inspection for TEPCO's

Kashiwazaki-Kariwa NPS;(b) Impacts on nuclear safety (safety side) in the results of the supplemental inspection on the security side; (c) Compliance status of “basic approach as nuclear operators” prescribed in the operational safety program of TEPCO's Kashiwazaki-Kariwa NPS.

At the 51st FY2023 NRA Commission Meeting, the NRA received the report on the results confirmed by the NRA Secretariat. The NRA Chairman YAMANAKA and the NRA Commissioner BAN conducted on-site investigations on the status of efforts to comply with basic approach in TEPCO's Kashiwazaki-Kariwa NPS and exchanged views on the approach of TEPCO’s Chairman etc. as a nuclear operator at the 54th FY2023 NRA Commission Meeting (December 20, 2023). As a result, at the 56th FY2023 NRA Commission Meeting (December 27, 2023), the NRA approved the results of confirmation by the NRA Secretariat and determined that there is no reason to change the conclusion of judgement concerning eligibility of TEPCO as an installer of power reactor.

As of August 9, 2023, the NRA received the report on PI of the first quarter of FY2023 at the Takahama PS Unit 3,which indicated that it falls under the “White”(The standard that indicates that there is some impacts on the function or performance of safety assurance and they should be improved under the involvement of regulations although degree of safety tolerances reduction is small) of PI of the first quarter of FY2023 at Unit 3 of the same PS. In response to this, the NRA approved the change in the Action Category from Category 1 to 2 from April 1, 2023, at the 27th FY2023 the NRA Commission Meeting (August 23, 2023), decided the contents of the notification concerning implementation of the supplemental inspections and issued it to Kansai Electric Power Co., Inc. After receiving the report on cause analysis and improvement measures from Kansai Electric Power Co., Inc. as of November 30, 2023, the NRA developed the plan for supplemental inspections based on these contents and notify such plan as of December 25 of the same year and then implemented the supplemental inspections for the same PS Unit 3. The NRA received the report on the said supplemental inspections at the 73rd FY2023 NRA Commission Meeting (March 27, 2024), approved the change in the Action Category for the same PS Unit 3 to Category 1 from March 27, 2024 and notify Kansai Electric Power Co., Inc. as of the said day.

In FY2023, an "Information Exchange Meeting on the Inspection Program" was held three times to exchange opinions with external experts and nuclear operators for the continuous improvement of the nuclear regulatory inspection system. With regard to the adequacy confirmation of the operator's probabilistic risk assessment (PRA) model used in nuclear regulatory inspections, the NRA received a report from the NRA Secretariat at the 51st FY2023 NRA Commission Meeting (December 6, 2023) on the status of the operator's responses to the points identified in the adequacy confirmation to date.

(Promotion of Safety Research and Continuous Improvement of Regulatory Requirements)

In FY2023, the NRA conducted 19 safety research projects in 13 fields. The results of the safety research were published as 3 NRA Technical Notes. Additionally, 24 papers and 11 conference proceedings (peer-reviewed) were published, and 44 presentations at academic conferences were made.

In the evaluation of safety research, the NRA carried out a post-evaluation of 3 safety research projects completed in FY2022, a mid-term evaluation of 2 ongoing safety research projects and a pre-evaluation of 3 safety research projects to be started from FY2024. The NRA also received the results of follow-up evaluations of 20 safety research projects that were completed from FY2018 to FY2020.

Regarding the policy for safety research, on July 12, 2023, the NRA approved "Safety Research Field to be Promoted and its Implementation Policy (For Safety Research in and after FY2024)."

In addition, the NRA conducted bilateral information exchange and participated in 15 international joint research projects in OECD/NEA and 10 meetings under OECD/NEA/CSNI to gather technical knowledge, including the latest trends in each research field. Additionally, the NRA implemented 18 joint research projects with universities and other organizations.

Furthermore, as necessary, the NRA provides support for regulatory activities, such as participation in the review of conformity to the new regulatory requirements and on-site investigations by the staff members of the research field.

For the continuous improvement of regulatory requirements, the NRA steadily developed regulatory standards etc. concerning reflection to the regulations of findings obtained from investigations and analysis of TEPCO's Fukushima Daiichi NPS and exchanged views with ATENA on Countermeasures against Common Factor Failures of Digital Safety Protection Systems at Power Reactor Facilities etc. In addition, the NRA amended the regulatory requirements reflecting the experience and achievements of the review, conducted technical evaluation of private standards, and collected information for analysis of accidents and troubles inside and outside of Japan as well as natural hazards.

(Continuous Improvement of Regulatory Activities and Response to New Regulatory Needs)

Regarding "differences" obtained from comparison of design with other plants and new technologies, in "out-of-date designs", at the 22nd FY2023 NRA Commission Meeting (July 19, 2023), the NRA approved the policies to be considered in the review of the concept and operation of the Safety Improvement Evaluation Report System in RSEC and NFSEC. In

response to this three discussions were conducted on cRSEC and NFSEC (August 25, 2023, December 21, 2023 and March 8, 2024)

Regarding safety regulations on aging power reactors, in FY2022, at the 72nd FY2022 NRA Commission Meeting (February 13, 2023), the NRA decided on the "Overview of Safety Regulations on Aging Power Reactors" and approved a bill to partially amend the Reactor Regulation Act (hereinafter referred to as "Revised Act".) based on this outline. The revision bill integrates and strengthens "The System of Approval for Extension of Operational Period" to review whether the operation period of a commercial power reactor is allowed to be extended only once at its 40th year after starting its operation and "The System for Assessing Aging Technologies" to review long-term facility management policies for the aging reactor facilities which have been in operation for 30 years since the start of operation and every ten years after that to "The System of Approval for Long-Term Facility Management Plan". Such revision bill was included in the bill to partially revise the Electricity Business Act to establish an electricity supply system to realize a decarbonized society, and was decided upon by the Cabinet on February 28, 2023, and then through the discussion at the 211th ordinary Diet session, promulgated on June 7, 2023.

In addition, at the 73rd FY2022 NRA Commission Meeting (February 15, 2023), the NRA approved the establishment of a study team on safety regulations of ageing nuclear power reactors in order to study the matter in greater detail. Based on the study results and hearing from operators, the NRA discussed establishment and revision of relevant laws and their cabinet deliberation and relevant regulations etc. and solicited public opinions and then decided them at the 29th FY2023 NRA Commission Meeting (August 30, 2023). In the said Revised Act, it is determined that the new system is to be introduced within two years after its promulgation and the procedures to prepare for smooth transition to the new system (hereinafter referred to as "Preparatory Actions".) is to be started within six months after its promulgation. At the 29th FY2023 NRA Commission Meeting (August 30, 2023), the NRA approved the bill of Cabinet Order to determine the full-scale enforcement date as June 6,2025, and the enforcement date of Preparatory Actions as October 1, which was approved in the Cabinet on September 12, 2023. In response to this, during the period of Preparatory Actions after October 1 of the same year, the review has been advanced concerning application for approval for long-term facility management plan

Regarding clearance centralized treatment business of demolition waste of NPS for which Fukui Prefecture has been advancing its investigations for commercialization, at the 17th FY2023 NRA Commission Meeting (June 21, 2023), in order to confirm positioning for use policies and review legal points and technological points, the NRA approved to hold open discussion for exchange of views among the NRA Secretariat,

Agency for Natural Resources Energy, Fukui Prefecture and relevant installers of power reactor and conducted three meetings for exchange of views.

Section 1. Conducting Reviews, etc. based on the Reactor Regulation Act

1. Status of Reviews, etc. for Commercial Power Reactors

Since the new regulatory requirements for commercial power reactors came into effect on July 8, 2013, the NRA is currently reviewing applications for changes in basic design compliance with the new regulatory requirements, based on the policy approved by the NRA. A total of 111 review meetings were held in FY2023. In addition, in order to ensure transparency and predictability of the review process, the NRA compiled the status of applications and dispositions regarding the licensing review of conformity to the new regulatory requirements once per quarter and published them on the NRA website

(1) Licensing Review of Conformity to the New Regulatory Requirements

(a) Main Facility

To date, 27 plant applications have been submitted and are being reviewed as shown in Table 2-1.

With regard to the review of changes in permission for basic design of the Tomari NPS Unit 3 of Hokkaido Electric Power Co., Inc., the 1157th Review Meeting (June 9, 2023), evaluated that setting of design basis ground motion reviewed by operators are largely valid. Additionally, on October 30 and 31, 2023, the NRA Commissioner ISHIWATARI conducted on-site investigations concerning evaluation on the impacts by volcanos. Continuously, the NRA conduct reviews concerning setting of the design basis tsunami and the impacts by volcanos, and the seawall design policy etc. Moreover, in the review meetings, the issues pointed out by the NRA Secretariat are documented and shared with other parties to steadily proceed with the review.

As for the Higashidori NPS Unit1 of Tohoku Electric Power Co., Inc., on the evaluation on the setting of design basis tsunami and the design basis ground motion evaluated at the 1225th Review Meeting (February 9, 2024) and the 1235th Review Meeting (March 8, 2024) respectively, the NRA evaluated that the assessment implemented by the operator was largely valid.

As for the Hamaoka NPS Unit 3 and 4 of Chubu Electric Power Grid Co., Inc., the NRA is reviewing the geology and geological structure of the sites in conjunction with the design basis ground motion and the design basis tsunami. Furthermore, the NRA Commissioner ISHIWATARI conducted on-site investigations concerning evaluation of tsunami deposit and tsunami height estimated therefrom on March 25 and 26, 2024.

As for the Ohma of J-POWER, the NRA is reviewing the geology and geological structure of the sites in conjunction with the design basis ground motion and the design

basis tsunami.

As for the Shika NPS Unit 2, Hokuriku Electric Power Co., Inc., the NRA is reviewing the geology and geological structure of the sites and their surroundings in conjunction with the design basis ground motion.

As for the Shimane NPS of Chugoku Electric Power Co., Inc., the NRA pointed out confirmation of validity of core analysis code (LANCR/AETNA) etc,- and the 1184th Review Meeting (September 14, 2023) etc. confirmed the answers from operators.

As for the Tsuruga NPS Unit 2 of the Japan Atomic Power Co., the NRA is reviewing the geology and geological structure of the sites. In response to the rewriting of the borehole map in the review documents for the Tsuruga NPS Unit 2 of the Japan Atomic Power Co.-which was revealed at the 833rd Review Meeting (February 7, 2020), the 25 th FY2021 NRA Commission Meeting (August 18, 2021) decided not to hold a review meeting until the operational process for preparing review documents is confirmed to have been established. Subsequently, at the 47 th FY2022 NRA Commission Meeting (October 26, 2022), it was confirmed that the operator had improved its work process for preparing review documents, and the NRA decided to resume the review from the 1099th Review Meeting (December 9, 2022). However, improvement in review documents was not found even after resuming the review. Taking into account the fact that there is no possibility to enter into substantial review, as a result of discussion between commissioners on the review process in the future, the 1st FY2023 NRA Commission Meeting(April,5,2023) determined that the application contents of applications for changes in permission for design needs to be optimized, the decision was made to request Japan Atomic Power Co. to partially revise the contents of the application on the activity of K-fault identified on-site D-1 trench and the continuity with fracture zones that pass directly under the reactor buildings (hereinafter referred to as “Activity/Continuity of Kault”.) by August 31, 2023 and the intention of Japan Atomic Power Co. is confirmed. At the 3rd FY 2023 NRA Commission Meeting(April 11 2023), the NRA exchanged views with the management of Japan Atomic Power Co. and confirmed it intention to partially revise the said application by August 31, 2023, and at the 6th FY2023 NRA Commission Meeting (April 18, 2023), the NRA decided to issue guidance documents to request revision of the contents of application on the Activity/Continuity of K-fault by August 31, 2023. On August 31, 2023, Japan Atomic Power Co. submitted application to revise the part on the Activity/Continuity of K-fault. In response to this, the 30th FY2023 NRA Commission Meeting (September 6, 2023) confirmed that the application for revision was the one in conformity with the requirements of application format and the revision required in the guidance documents was made, the NRA approved to restart future response policy and review meetings. Regarding the Activity/Continuity of K-f

faults, the 1187th Review Meeting (September 22, 2023) confirmed that the contents that was originally considered to be insufficient in the application on the descriptions and data etc. required to explain the conformity with new regulatory requirements shall be included and that the activity of K fault should be firstly discussed and then the continuity with fracture zones that pass directly under the reactor buildings etc. should be discussed as the future review proceedings, and thus is conducting review concerning the activity of K fault. Additionally, the NRA Commissioner ISHIWATARI conducted on-site investigations concerning K fault on December 14 and 15, 2023. In addition, the 1239th Review Meeting (March 22, 2024) the review concerning the continuity of K fault in addition to the activity of K fault was started. Further, after the 1187th Review Meeting (September 22, 2023), as for the Tsuruga NPS Unit 2 of the Japan Atomic Power Co., in order to make the indications etc. from the NRA Secretariat common understanding with Japan Atomic Power Co., such indications were documented during the meeting and the review has been steadily proceeded.

With regard to the review of the design and construction plan, in FY2023, the NRA approved the Shimane NPS Unit 2 of Chugoku Electric Power Co. on August 30, 2023. Additionally, as for Kashiwazaki-Kariwa NPS Unit 6 of TEPCO's, the NRA accepted the application of design and construction plan that reflected contents of the application for change in permission for basic design (approved in December, 2017) on September 4, 2023 and is proceeding with the review.

In FY2023, the NRA has been reviewing the operational safety program for the Onagawa NPS Unit 2 of Tohoku Electric Power Co., Inc.

(b) Review of Special Facilities for Severe Accident Management

In the review of Special Facilities for Severe Accident Management, it is confirmed that there is no risk concerning functions necessary to respond to a major accident or other incidents even in the event of an intentional collision by a large aircraft or other terrorism. Applications for 19 plants have been submitted so far and the NRA is reviewing the applications as shown in Table 2-2.

With regard to the review of the change in permission for basic design ,in FY2023, about the review of NRA permitted the application for permission to changes in design as for the Onagawa NPS Unit 2 of Tohoku Electric Power Co., Inc. On April 20 and 21, 2023, the NRA Commissioner ISHIWATARI conducted on-site investigations concerning the geology and geological structure of the sites and permitted on October 4, 2023. Additionally, the NRA permitted the changes in partial structure of Special Facilities for

Severe Accident Management the Kashiwazaki-Kariwa NPS Units 6 and 7 of TEPCO's on October 25, 2023. Besides, on August 29, 2023, the NRA Commissioner ISHIWATARI conducted on-site investigation on the Shimane NPS-Unit 2 of Chugoku Electric Power Co. The NRA continues the review concerning the geology and geological structure of the sites.

With regard to the review of the design and construction plan ,in FY2023, as for the Onagawa NPS Unit 2 of Tohoku Electric Power Co., Inc., the NRA accepted the first installment of two ones on December 14, 2023 and is proceeding with the review. In addition, among four installments by Tokai Daini NPS of Japan Atomic Power Co., the NRA approved the second one on May 31, 2023 and the third one on October 2, 2023. Additionally, on May 31, the NRA accepted the fourth one and is proceeding with the review. Furthermore, as for the Kashiwazaki-Kariwa NPS Unit 7 of TEPCO's, among four installations, the NRA approved the second one on July 6, 2023 and the third one on January 16, 2023 and is proceeding the review.

(c) Others

The NRA conduct continuous improvement of regulations by reflecting the new findings to the regulations through revision of laws and regulations and regulatory requirements and applying (backfitting) such new regulations to the existing facilities as well.

Regarding the review of incorporating the standard spectrum into regulations, the 3rd FY2021 NRA Commission Meeting (April 21, 2021) decided to revise the interpretation of the regulations on the NRA Ordinance on Standards for the Location, Structure, and Equipment of Commercial Power Reactors (NRA Rule No. 5 of 2013) etc. and requested response to application for changes in permission for basic design to incorporate the standard spectrum on the nuclear facilities with earthquake resistance of S-class facilities by April 20, 2022[34].So far, applications for 6 plants (the Ikata NPS Unit 3 of Shikoku Electric Power Co., Inc., Tokai Daini NPS of Japan Atomic Power Co. and Units 1 and 2 of Sendai NPS, and Units 3 and 4 of Genkai NPS of Kyushu Electric Power Co. Inc.) have been submitted and approved as shown in Table 1 (2) (a) at the Reference 3.

As for the end stage of transitional measure concerning approval and pre-service inspections of design and construction plans (hereinafter referred to as “Latter

[34] Documents to explain that no changes to the design basis for tremors are required were submitted by the operators of the Units 3 and 4 of KEPCO's Ohi PS, Units 1 to 4 of KEPCO’s Takahama PS and Unit 3 of KEPCO’s Mihama PS, the Onagawa NPS Unit 2 of Tohoku Electric Power Co., Inc., the Shimane NPS Unit 2 of Chugoku Electric Power Co., Inc. and Units 6 and 7 of TEPCO's Kashiwazaki-Kariwa NPS, After review at the public meeting, the NRA approved that no change of the design basis ground motion was necessary in FY2021.

Regulations".) concerning incorporation of the standard spectrum into regulations (hereinafter referred to as "End Stage of Transitional Measures of Latter Regulations".), as it is determined to specify the uniform end stage of all the facilities, at the time when the review on approval for changes in installation etc. based on the interpretation after revision is proceeded and the details of the impacts on the facilities and the scale and perspective of construction etc. are clarified, the NRA conducted hearing from operators etc. in the 4th Meeting to Hear Opinions Concerning Transitional Measures to Introduce Regulations of Tremors Evaluated without Specifying Seismic Sources (November 2, 2023), based on the results of the said opinions of hearing, the NRA approved the policy on End Stage of Transitional Measures of Latter Regulations that specifies the end date of the first operator's periodic inspection after April 19, 2031 as the five years after the end stage of transitional measures of the approval for changes in installation. Then, regarding the rules to specify End Stage of Transitional Measures of Latter Regulations based on the said policy, the NRA approved the draft of the said rules and implementation to solicit public comment therefor at the 52nd FY2023 NRA Commission Meeting, and decided the rules to specify End Stage of Transitional Measures of Latter Regulations based on the results of public comment.

With regard to reviews concerning clarification of installation requirements for fire detection equipment, the 59th FY2018 NRA Commission Meeting (February 13, 2019) revised the review criteria on the installation requirements and other matters for the fire detection equipment. This revision was requested to comply with the new regulatory requirements at the stage of application for approval of design and construction plans in which fire zones and sections are specifically determined. In FY2023, the NRA granted 33 approvals as shown in Table 1 (2) (b) in Reference 3 and reviews for individual applications for approval were completed.

With regard to clarification of positioning as the measures for hydrogen protection of reactor buildings of the reactor containment vessel bent in BWR[35], the 75th NRA Commission Meeting (February 22, 2023) revised the interpretation of the regulations on the Standards for the Location, Structure, and Equipment of Commercial Power Reactors and this revision is requested to comply with the new regulatory requirements at the stage of application for approval of operational safety program that specifies the procedures etc. for severe accident management. The NRA granted two approvals as shown in Table 1 (2) (c) in Reference 3 and reviews for individual applications for approval were completed.

[35] Boiling water reactor

Table 2-1 Status of Reviews and Inspections of Conformity of Commercial Power Reactors Concerning Conformity to New Regulatory Requirement

○ Commercial Power Reactor

No.	Applicant	Targeted Power Reactor			New Regulatory Requirements Conformity Review			Pre-service Check, etc.※1
					Permission of Change in Design	Approval of Design and Construction Plans	Approval of Change in Safety Requirements	
1	Japan Atomic Power Company	Tokai Daini NPS		BWR	Completed	Completed	Under review	Under inspection
2		Tsuruga NPS	Unit 2	PWR	Under review	Not applied	Under review	
3	Electric Power Development Co. Ltd.	Ohma NPS		Under construction	Under review	Under review	Not applied	
4	Hokkaido Electric Power Co., Inc.	Tomari NPS	Unit 1	PWR	Under review	Under review	Under review	
5			Unit 2	PWR	Under review	Under review	Under review	
6			Unit 3	PWR	Under review	Under review	Under review	
7	Tohoku Electric Power Co., Inc.	Higashidori NPS		BWR	Under review	Under review	Under review	
8		Onagawa NPS	Unit 2	BWR	Completed	Completed	Completed	Under inspection
9			Unit 3	BWR	Not applied	Not applied	Not applied	
10	TEPCO Holdings	Higashidori NPS		Under construction	Not applied	Not applied	Not applied	
11		Kashiwazaki Kariwa NPS	Unit 1	BWR	Not applied	Not applied	Not applied	
12			Unit 2	BWR	Not applied	Not applied	Not applied	
13			Unit 3	BWR	Not applied	Not applied	Not applied	
14			Unit 4	BWR	Not applied	Not applied	Not applied	
15			Unit 5	BWR	Not applied	Not applied	Not applied	
16			Unit 6	BWR	Completed	Under review	Not applied	
17			Unit 7	BWR	Completed	Completed	Completed	Under inspection
18	Chubu Electric Power Co., Inc.	Hamaoka NPS	Unit 3	BWR	Under review	Not applied	Not applied	
19			Unit 4	BWR	Under review	Under review	Under review	
20			Unit5	BWR	Not applied	Not applied	Not applied	
21	Hokuriku Electric Power Co., Inc.	Shika NPS	Unit 1	BWR	Not applied	Not applied	Not applied	
22			Unit 2	BWR	Under review	Under review	Under review	
23	Kansai Electric Power Co., Inc.	Mihama NPS	Unit 3	PWR	Completed	Completed	Completed	Completed
24		Ohi NPS	Unit 3	PWR	Completed	Completed	Completed	Completed
25			Unit 4	PWR	Completed	Completed	Completed	Completed
26		Takahama NPS	Unit 1	PWR	Completed	Completed	Completed	Completed
27			Unit 2	PWR	Completed	Completed	Completed	Completed
28			Unit 3	PWR	Completed	Completed	Completed	Completed
29			Unit 4	PWR	Completed	Completed	Completed	Completed
30	Chugoku Electric Power Co., Inc.	Shimane NPS	Unit 2	BWR	Completed	Completed	Under review	Under inspection
31			Unit 3	Under construction	Under review	Not applied	Not applied	
32	Shikoku Electric Power Co., Inc.	Ikata NPS	Unit 3	PWR	Completed	Completed	Completed	Completed
33	Kyushu Electric Power Co., Inc.	Genkai NPS	Unit 3	PWR	Completed	Completed	Completed	Completed
34			Unit 4	PWR	Completed	Completed	Completed	Completed
35		Sendai NPS	Unit 1	PWR	Completed	Completed	Completed	Completed
36			Unit 2	PWR	Completed	Completed	Completed	Completed
					Permitted:17 Under review:10	Approved:16 Under review:8	Approved: 14 Under review:9	Inspected :12 Under inspection:4

(Notes) Power reactors whose decommissioning plans have been approved or whose decommissioning has been announced by the nuclear operator are excluded.

※1) Including pre-service inspections pursuant to Article 7-1 of Supplementary Provisions of the Act on the Regulation of Nuclear Source Material, Nuclear Fuel Material, and Reactors for Strengthening Safety Measures in the Use of Nuclear Power (Act No.15 of 2017)

: Nuclear power stations whose status changed in FY2023.

Table 2-2 Status of Reviews and Inspections of Conformity of Commercial Power Reactors Concerning Conformity to New Regulatory Requirement (Special Facilities for Severe Accident Management)

○ Commercial Power Reactors【Special Facilities for Severe Accident Management】

No.	Applicant	Targeted Power Reactor			New Regulatory Requirements Conformity Review			Pre-service check, etc.※1
					Permission of Change in Basic Design	Approval of Design and Construction Plans	Approval of Change in Safety Requirements	
1	Electric Power Development Co., Ltd	Ohma NPS		Special facility	Under review			
2	Japan Atomic Power Company	Tokai Daini NPS		Special facility	Completed	**1st: Completed 2nd Completed 3rd :Completed 4th : Under review**	**Under inspection**	Under inspection
3	Hokkaido Electric Power Co., Inc	Tomari NPS	Unit 3	Special facility	Under review			
4	TEPCO Holdings	Kashiwazaki Kariwa NPS	Unit 6	Special facility	Completed			
5			Unit 7	Special facility	Completed	**1st :Under review 2nd :Under review 3rd : Under review**		
6	Kansai Electric Power Co., Inc.	Mihama NPS	Unit 3	Special facility	Completed	Completed	Completed	Completed
7		Ohi NPS	Unit 3	Special facility	Completed	Completed	Completed	Completed
8			Unit 4	Special facility	Completed	Completed	Completed	Completed
9		Takahama NPS	Unit 1	Special facility	Completed	Completed	Completed	**Completed**
10			Unit 2	Special facility	Completed	Completed	Completed	**Completed**
11			Unit 3	Special facility	Completed	Completed	Completed	Completed
12			Unit 4	Special facility	Completed	Completed	Completed	Completed
13	Chugoku Electric Power Co., Inc.	Shimane NPS	Unit 2	Special facility	Under review			
14	Shikoku Electric Power Co., Inc.	Ikata NPS	Unit 3	Special facility	Completed	Completed	Completed	Completed
15	Kyushu Electric Power Co., Inc	Genkai NPS	Unit 3	Special facility	Completed	Completed	Completed	Completed
16			Unit 4	Special facility	Completed	Completed	Completed	Completed
17		Sendai NPS	Unit 1	Special facility	Completed	Completed	Completed	Completed
18			Unit 2	Special facility	Completed	Completed	Completed	Completed
19	Tohoku Electric Power Co., Inc.	Onagawa NPS	Unit 2	Special facility	**Completed**	**1st :Under review**		
					Approved: 16 Under review: 3	Approved: 12 Under review: 3	Approved: 12 Under review: 1	Inspected: 12 Under inspection: 1

(Notes) Power reactors whose decommissioning plans have been approved or whose decommissioning has been announced by the nuclear operator are excluded.

*1) Including pre-service inspections pursuant to Article 7-1 of Supplementary Provisions of the Act on the Regulation of Nuclear Source Material, Nuclear Fuel Material, and Reactors for Strengthening Safety Measures in the Use of Nuclear Power (Act No. 15 of 2017).

: Nuclear power stations whose status changed in FY2023

(2) Review concerning aging power reactor facilities

In compliance with Act to partially revise the Electricity Business Act to establish an electricity supply system to realize a decarbonized society which was promulgated on June 7, 2023, the system concerning measures for aging nuclear power plants was reviewed and it was determined that the existing "The System of Approval for Extension of Operational Period" and "The System for Assessing Aging Technologies" should be unified into "The System of Approval for Long-Term Facility Management Plan" (for details, see Chapter 2, Section 4).

While the full-scale enforcement of the new system starts from June 6, 2025, the procedures to prepare for smooth transition to the new (hereinafter referred to as "Preparatory Actions".) was started from October system 1, 2023. During Preparatory Actions, while continuing the review on application for approval of changes in operational safety program concerning application for approval for extension of operational period and assessment of aging technologies, the NRA is reviewing application for approval for long-term facility management plan. In addition, with regard to the way to proceed with the review of application for approval for long-term facility management plan, the 42nd FY2023 NRA Commission Meeting (November 8, 2023) determined the policy to strive for reasonable review by making use of confirmation contents of assessment of aging technologies and approval for extension of operational period of the existing systems that have already been confirmed by the NRA Commission.

In FY2023, the NRA approved the review of application for approval for extension of operational period (including the review for application for approval of changes in operational safety program concerning evaluation under the assumption of operation) of Sendai NPS Units 1 and 2 of Kyushu Electric Power Co. Inc. on November 1, 2023.

The NRA approved the review for application for approval of changes in operational safety program concerning evaluation under the assumption of operation of Sendai NPS Unit 3 of Kyushu Electric Power Co. Inc. on March 13, 2024.

The NRA approved the review for application for approval of changes in operational safety program concerning evaluation under the assumption of a cold shutdown of Unit 1 of the Shika NPS, Hokuriku Electric Power Co., Inc. on July 24, 2023 and of TEPCO's Kashiwazaki-Kariwa NPS Unit 3 on August 1, 2023, the Hamaoka NPS Unit 4 of Chubu Electric Power Grid Co., Inc. on August 28, 2023, and Unit 4 of TEPCO's Kashiwazaki-Kariwa NPS on December 20, 2023, respectively.

Regarding the review for application for approval of long-term facility management plan, the NRA accepted the application for approval of long-term facility management plan of the Ohi NPS Unit 3 and 4 of Kansai Electric Power Co., Inc., as the first application matter since the period for preparatory actions started on October 1, 2023 on December 21, 2023 and is proceeding with the review.

(3) Submission for the Evaluation of Safety Improvement

The system for the evaluation of safety improvement is a system under which the

installer of nuclear reactors for power generation conducts a comprehensive evaluation of the safety of the reactors, thereby simultaneously evaluating its safety and notifying the NRA of the results of the evaluation.

In FY2023, the NRA confirmed the contents of the notification in accordance with the Operational Guide for Safety Improvement Assessment of Commercial Power Reactors as well as received notification on the evaluation for safety improvement of the following: the Takahama NPS Unit 4 of Kansai Electric Power Co., Inc. (June 9, 2023), the Genkai NPS Unit 3 of Kyushu Electric Power Co., Inc. (July 10, 2023), the Ohi NPS Unit 3 of Kansai Electric Power Co., Inc. (July 13, 2023), the Genkai NPS Unit 4 of Kyushu Electric Power Co., Inc. (September 8, 2023), the Sendai NPS Unit 1 of Kyushu Electric Power Co., Inc. (November 20, 2022), the Ikata NPS of Shikoku Electric Power Co., Inc. (December 19, 2023) and the Sendai NPS Unit 2 of Kyushu Electric Power Co., Inc. (February 15, 2024).

2.Status of Review on Type Certification, etc. of Specified Equipment Design related to Nuclear Power Reactor Facilities

The type certification system for type certification is a system that allows to partially omit the review of permission and approval in case of installation of the general-purpose equipment by confirming conformity to the standards for the design of such equipment.

(1) Specific Dual-use Casks

In 2023, the NRA certificated the type of the specific dual-use casks[15] that can be used for both transportation and storage of spent fuel for five applications from Hitachi Zosen Corp., Mitsubishi Heavy Industries and TN TOKYO. Additionally, the NRA designated the type of PWR[36] of Mitsubishi Heavy Industries as the first matter after establishing the system on May 31, 2023.

(2) Fuel Assemblies

In FY2023, the NRA is reviewing one application of type certification (for 10x10 fuel for BWR) from the Global Nuclear Fuel - Japan Co, Ltd.

3. Status of Licensing Review of Conformity to the New Regulatory Requirements of Nuclear Fuel Cycle Facilities, etc

(1) Status of Review for Conformity with New Regulatory Requirements

After the new regulatory requirements were enforced on December 18, 2013, the NRA has been reviewing the application for permission to change facility operations in the

[36] Pressurized water reactor

nuclear fuel cycle facilities and other centers regarding compliance with the new regulatory requirements in accordance with the "Conducting Conformity Reviews of Nuclear Fuel Cycle Facilities, etc. after the Enactment of New Regulatory Requirements" (decided at the 37th FY2013 NRA Commission Meeting (December 25, 2013), partially revised on June 1, 2016), and review meetings were held 38 times in FY2023.

In addition, the NRA compiled reports showing the overall progress of licensing review of conformity to the new regulatory requirements once per every 6 months in order to organize the status of review on various nuclear fuel cycle facilities and other centers as well as to ensure the transparency and predictability of the review, and published them on the NRA website.

As for the permission to change facility operations, 9 operators have submitted applications for the permission to change facility operations at 21 facilities so far, and the NRA granted the permission to 19 facilities of 8 operators by FY2023, and is reviewing the remaining applications in accordance with the above-mentioned policy. At the 82nd FY2022 NRA Commission Meeting (March 15, 2023), concerning the waste storage facility at Oarai Research & Development Institute of JAEA, the NRA summarized the results of the review as a draft of the application for the permission to change facility operations of waste management with regard to the change of tornado countermeasures and partial suspension of use of the liquid waste treatment facility, and approved the change of operation on May 2, 2023. In addition, as for Experimental Fast Reactor Facility (Joyo) at the Oarai Research and Development Institute of the JAEA (south area), taking into account the features of sodium-cooled fast reactor, the NRA reviewed such review process based on the review process of countermeasures for large-scale sodium fire and other matters at the NRA Commission Meeting, compiled the draft for the results of the review for the applications for approval of changes in installation to comply with the new regulatory requirements and approved such change in installation at the 24th FY2023 NR A Commission Meeting. In addition, the NRA permitted (approved) a total of 17 cases in FY2023 for Nuclear Material Utilization Facilities, such as the Nuclear Fuel Cycle Engineering Laboratories of JAEA. Furthermore, with regard to the application for permission (approval) for change in nuclear material utilization facilities not subject to Article 41 of the Cabinet Order, in order not to require the attachment of a written explanation regarding the development of the system necessary for quality management etc. because the items required as criterion for the system necessary for quality management concerning activity for operational safety are limited and conformity can be judged from the main text of the application without any attached documents, regarding the revision of the NRA Ordinance on Use, etc. of Nuclear Fuel Material (Prime Minister's Office Ordinance No.84 of 1957) and the Review Standards for the Decommissioning Plans for Nuclear Material Utilization Facilities not subject to Article 41 of the Cabinet Order, etc., the 83rd FY2022 NRA Commission Meeting (March 22, 2023) accepted the proposed revision and implementation to solicit public comment on the proposal. The 13th FY2023 NRA Commission Meeting (May 31, 2023) decided the partial revision based on the results of public comment and enforced on June 28, 2023.

With regard to design and construction plans, the NRA approved the fourth installation (seven installations in total) of Global Nuclear Fuel-Japan Co., Ltd. on December 22, 2023,

and the first installation (two installations in total) of the Experimental Fast Reactor Facility (Joyo) at the Oarai Research and Development Institute of the JAEA (south area) on January 19, 2024, respectively (see 4 in this Section for the status of review of Reprocessing Plant and MOX Fuel Fabrication Plant of Japan Nuclear Fuel Limited).

The NRA granted approvals for the operational safety program as follows: for the Kumatori Works of Nuclear Fuel Industries, Ltd. on Jun 19, 2023; for the Recyclable-Fuel Storage Center of Recyclable-Fuel Storage Co. on August 28, 2023, respectively. In addition, the NRA approved six cases in FY2023 for Nuclear Material Utilization Facilities of the Nuclear Fuel Cycle Engineering Laboratories of JAEA.

Further, the NRA granted one permission for the application for approval of merger in Nuclear Material Utilization Facilities.

As for incorporating the standard response spectrum into regulations, six applications for permission for changes in basic design (approved) or for permission to change facility operations of the following have been submitted: (1) from JAEA for the research reactor facilities of the High Temperature Engineering Test Reactor (HTTR) at the Oarai Research & Development Institute (North District), (2) from Kyoto University for the research reactor facilities of Kyoto University Research Reactors (KUR), (3) from Recyclable-Fuel Storage Co. for the Recyclable-Fuel Storage Center, and (4) from JNFL for the Reprocessing Plant, the MOX Fuel Fabrication Plant and the Vitrified Waste Storage Center. In FY2023, the NRA granted permission for changes in basic design (approved) or for permission to change facility operations of the High Temperature Engineering Test Reactor (HTTR) at the Oarai Research & Development Institute (North District) on November 28, 2023, of Kyoto University for the research reactor facilities of Kyoto University Research Reactors (KUR) on June 22, 2023 and of JNFL for the Reprocessing Plant, the MOX Fuel Fabrication Plant and the Vitrified Waste Storage Center on October 27, 2023, respectively.

On June 22, 2023, the NRA granted permission to change the design and construction plan of Recyclable-Fuel Storage Center of Recyclable Fuel Storage Co.

(2) Status of Review for Type Certification and Designation for Specific Containers related to Spent Fuel Storage Facilities and for Approvals of Design and Container for Nuclear Fuel Shipments

Regarding type certification and designation for specific containers related to spent fuel storage facilities and for approvals of design and container for nuclear fuel shipments, the NRA is in the process of reviewing them at the “review meeting on specific containers related to transportation containers and spent fuel storage facilities”. In FY2023, review meetings were held twice, and approved two changes of type designations on September 1, 2023. In addition, the NRA approved, six approvals of designs and five approvals of containers for nuclear fuel shipment.

(3) System for the Evaluation of Safety Improvement

The system for the evaluation of safety improvement is a system under which the licensees of fuel fabrication activity and reprocessing activity conduct a comprehensive evaluation of the safety of the facilities by themselves, thereby simultaneously evaluating its safety and notifying the NRA of the results of the evaluation.

In FY2023, the NRA received notification on the evaluation of safety improvement from Mitsubishi Nuclear Fuel Co. on February 28, 2024.

4. Status of Review of Reprocessing Plant and MOX Fuel Fabrication Plants of Japan Nuclear Fuel Limited

The NRA is reviewing applications for approval of changes to the design and construction plans of Reprocessing Plants at JNFL's reprocessing plant based on the "Conducting Review of Approval of Design and Construction Plans, and Checking of Pre-Service Operator Inspections, relating to Reprocessing Plant of Japan Nuclear Fuel Limited," which was accepted at the 12th FY2020 NRA Commission Meeting (June 24, 2020). The first application (1 out of 5 applications in total) was approved on December 21, 2022. Currently, the second round of applications (4 out of 5 applications) was received on December 26, 2022 and is being reviewed. As for applications for approval of design and construction plans of the MOX Fuel Fabrication Plant at JNFL's Reprocessing Plant, the first application (1 out of 7 applications in total) was approved on September 14, 2022. Currently, the second round of applications (2 out of 7 applications in total) were received on February 28, 2023, and are being reviewed.

In FY2023, the NRA is confirming the status of development of structure model and input ground motions of seismic design of Reprocessing Plant and, in both facilities, based on the above-mentioned process, the NRA is also confirming the facility type that requires the evaluation of seismic resistance etc. In addition, the review meeting concerning Reprocessing Plant and MOX Fuel Fabrication Plant of JNFL is making efforts to steadily proceed with the review by documenting the issues pointed out by the NRA Secretariat from the 500th Review Meeting (October 13, 2023) and share with other parties.

Table 2-3 Status of Licensing Review of Conformity on New Regulatory Requirements and Inspections of Nuclear Fuel Cycle Facilities, etc.

○ Nuclear Fuel Cycle Facilities, etc.

No.	Applicant	Facility	New Regulatory Requirements Conformity Review※1			Pre-service Check, etc. ※4
			Permission of Change in Basic Design/ Facility Operation	Approval of Design and Construction Plans※2	Approval of Operational Safety Program※3	
1	Japan Nuclear Fuel Ltd.	Reprocessing plant	Completed	Under review	Not applied	Under inspection
2		MOX fuel fabrication plant	Completed	Under review	Not applied	Under inspection
3		Uranium enrichment plant	Completed	Completed	Completed	Completed
4		Vitrified waste storage facility	Completed	Under review	Not applied	
5		Waste disposal center※5	Completed		Completed	
6	Recyclable-Fuel Storage Company	Spent fuel storage facility	Completed	Completed	Completed	Under inspection
7	Mitsubishi Nuclear Fuel	Uranium fuel fabrication facility	Completed	Completed	Completed	Completed
8	Japan Atomic Energy Agency	Waste storage facility	Completed	Under review	Under review	Under inspection
9		Research reactor facility (JRR-3)	Completed	Completed	Completed	Completed
10		Research reactor facility (HTTR)	Completed	Completed	Completed	Completed
11		Research reactor facility (Common radioactive waste disposal facility)	Completed	Under review	Not applied	Under inspection
12		Research reactor facility (NSRR)	Completed	Completed	Completed	Completed
13		Research reactor facility (STACY)	Completed	Completed	Completed	Under inspection
14		Research reactor facility (Joyo)	Completed	Under review	Under review	
15	Nuclear Fuel Industries, Ltd.	Uranium fuel fabrication (Tokai Works)	Completed	Under review	Not applied	Under inspection
16		Uranium fuel fabrication (Kumatori Works)	Completed	Completed	Completed	Completed
17	Global Nuclear Fuel Japan	Uranium fuel fabrication facility	Completed	Under review	Not applied	Under inspection
18	Kyoto University	Research reactor facility (KUR)	Completed	Completed	Completed	Completed
19		Research reactor facility (KUCA)	Completed	Completed	Completed	Completed
20	Kinki University	Research reactor facility (Kinki University Nuclear Reactor)	Completed	Completed	Completed	Completed
21	Japan Atomic Power Company	Category 2 waste disposal facility (trench disposal)	Under review		Not applied	

(Notes) Nuclear fuel facilities whose decommissioning plans have been approved or whose decommissioning has been announced by the nuclear operator are excluded.

※1) This shall not preclude implementation of activities other than "those that greatly increase facility risk or that reduce facility risk" only for five years. (Refer to "Policies on the Application of New Regulatory Requirements to Nuclear Fuel Cycle Facilities" enacted by the NRA Secretariat on November 6, 2013).

※2) Regarding phased applications for permission to change design and construction plans, the review shall continue until the final application is approved.

※3) Regarding the review of permission to change operational safety programs, no application is assumed to be filed when only a part of an application is submitted.

※4) Including pre-service inspections pursuant to Article 7-1 of Supplementary Provisions of the Act on the Regulation of Nuclear Source Material, Nuclear Fuel Material, and Reactors for Strengthening Safety Measures in the Use of Nuclear Power (Act No. 15 of 2017).

※5) Waste burial is underway at facilities that have completed the confirmation of waste disposal stipulated in Article 51-6, item 1 of the Reactor Regulation Act.

In the Table, the names of the following facilities are indicated in parentheses: the enrichment and disposal sites of Japan Nuclear Fuel Limited (Uranium enrichment facility), the recyclable fuel storage center of Recyclable-Fuel Storage Company (Spent fuel storage facility).

: Facilities whose status changed in 2023.

5. Actions related to Decommissioning

(1) Commercial Power Reactors

In general, in the decommissioning of a commercial power reactor, a plan for each stage is applied by the operators in order because the final dismantling of the facility takes a long time after the reactor functions are stopped, the fuel assemblies and other materials are removed and carried out, the system is isolated and the facility is sealed, and safe storage is performed to ensure temporal decay of the remaining radioactivity in the reactor facility. Since the establishment of the NRA in 2012, the NRA has accepted decommissioning plans from 15 plantsand approved all of the 15 plants.

In FY2023, the NRA received three applications for modification of decommissioning plans and approved four of them.

(2) Prototype Fast Breeder Reactor MONJU of the JAEA

In order to continuously confirm the current status of JAEA's Prototype Fast Breeder Reactor MONJU and the status of JAEA's efforts to ensure safety for decommissioning, it was decided on January 18, 2017 to establish the "Safety Oversight Team for Prototype Fast Breeder Reactor MONJU Decommission (hereinafter referred to as “MONJU Oversight Team”.)" and the NRA has been monitoring it. In FY2023, one meeting by MONJU Oversight Team was held.

At MONJU Oversight Team Meeting, because the removal work of fuel assemblies from the reactor core was began from August 30, 2018 in accordance with the decommissioning plan approved at the 75th FY2017 NRA Commission Meeting (March 28, 2018), the NRA has been hearing on decommissioning. The JAEA completed the removal work of all 530 fuel rods from the reactor core. and completed decommissioning work to be implemented at the first phase. From 2023,

From 2023, the work was shifted to the second phase of decommission as the preparatory period for dismantlement. As the first half of the second phase of the decommission, the JAEA commenced the removal work of all 599 shielding bodies placed at the reactor core. and undertook dismantlement of water-based system/steam system power-generating equipment and other things. Regarding removal work etc. of shielding bodies etc. the transfer work from the reactor core etc. to fuel pond was commenced on June 2, 2023 and the transfer work of 14 bodies was completed as of the end of March, 2024.

(3) Prototype Advanced Converter Reactor Fugen, JAEA

Regarding Prototype Advanced Converter Reactor Fugen, as the JAEA decided to reprocess its spent fuels in Areva S.A. of Republic France and to transfer plutonium collected through reprocessing to the said company, the JAEA submitted the application for approval

of the change in basic design on July 28, 2023. The NRA approved the said application for approval of the change in basic design on January 17, 2024.

(4) Tokai Reprocessing Plant of the JAEA

To periodically confirm the status of implementation of vitrification for risk reduction at JAEA's Tokai Reprocessing Plant, its safety, the way of ensuring safety for decommissioning and other matters. January 27, 2016, it was decided to establish the "Safety Oversight Team for Tokai Reprocessing Facility and Other Facilities" to conduct the required monitoring. At the 4th FY2019 NRA Commission Meeting (April 17, 2019), the "JAEA Back-end Measures Monitoring Team" was divided from the oversight team and the reorganized "Safety Oversight Team for the Tokai Reprocessing Plant" (hereinafter referred to as the "oversight team") continues to monitor issues related to the decommissioning of the Tokai Reprocessing Plant. In FY2023, the oversight team meeting was held four times in total.

Regarding the decommissioning of JAEA's Tokai Reprocessing Plant, it is necessary to proceed with safety measures for its high radioactivity liquid waste (hereinafter referred to as "safety measures" in (a)), vitrification and other measures with the immediate priority of reducing the risk of radioactive liquid waste and other matters at the Plant for the time being.

(a) Status of Implementation of Safety Measures, etc

The JAEA submitted applications for approval of change in the decommissioning plan for formulating safety measures five times from December 19, 2019 to September 30, 2021, and all of the applications were approved by March 3, 2022. Based on the decommissioning plan, the JAEA is to proceed with safety measures for the high-activity liquid waste storage facility (HAW) and the Tokai Vitrification Facility (TVF) with the highest priority, and it plans to complete constructions for safety measures including initiatives against earthquakes and tsunamis, such as ground improvement and installation of tsunami barriers, by the end of FY2023. At the oversight team meeting of on September 25, 2023, regarding, the NRA received explanation that a part of construction for safety control for tornado countermeasures would be completed at the end of 2024 due to interference of operation area.

(b) Status of Vitrification

In the initial approval of the decommissioning plan granted on June 13, 2018, the JAEA planned to produce 571 vitrified canisters from the point when the decommissioning plan is approved to FY2028.

The vitrification was resumed on August 17, 2021, after construction work for a leakage of electricity event that occurred on July 29, 2019, but was interrupted earlier than expected due to a decrease in the compensated resistance values between the main

electrodes caused by the deposition of platinum group metals. As a result, there were only 20 vitrified canisters to be produced compared to the initial plan to produce 110 vitrified canisters by the end of FY2021 after the approval of the decommissioning plan.

Subsequently, the JAEA resumed the vitrification on July 12, 2022, but suspended it again due to a decrease in the compensated resistance values between the main electrodes caused by the deposition of platinum group metals. In FY2022, only 25 vitrified canisters were produced compared to the initial plan to manufacture 60 vitrified canister.

At the oversight team meeting held on September 6, 2022, the JAEA explained that, based on the results of the shutdown of vitrification at this time, the JAEA would consider suspension of the use of the No. 2 melter, replacement with the No.3 melter ahead of schedule, aiming at commencement of operation at the end of FY2024. Regarding No. 3 melter, the JAEA implemented glass cullet test from March 6 to April 11, 2023, confirmed the basic performance, implemented the test using simulated liquid waste to confirm operation conditions from November 1 to January 12, 2024, and confirmed operation parameter etc. As the JAEA decides to continue the review for some items such as review for management indicator etc., The oversight team continues to confirm the contents of the review.

At the Meeting of Tokai Reprocessing Oversight Team held on December 20, 2023 and March 25, 2024, the JAEA indicated the prospects that the operation of No.3 melter will be started in the first quarter of FY2026. based on the status of inspection and maintenance of bilateral arm type manipulator within solidification cell and decommission work etc., and explained that the original plan of FY2028 to complete the production of vitrification will be reviewed to the plan to complete it by FY2038. The oversight team will continue to identify the status of shift work to No.3 melter and vitrification.

(c) Status of Other Decommissioning

On December 17, 2021, the JAEA submitted application for approval of change in the decommissioning plan for process cleaning, which is an operation to recover and stabilize recoverable nuclear fuel materials (such as shear pulverization and uranium/ plutonium solution) in the process, and the application was approved on May 17, 2022. The said process cleaning was completed on February 5, 2024.

Regarding the facilities other than the high-activity liquid waste storage facility (HAW) and the Tokai Vitrification Facility (TVF), the JAEA submitted the applications for approval of changes in decommissioning plans concerning the modification of facilities etc. for initiatives against tsunami on May 31, 2023 and approved the applications on October 30, 2023.

At the oversight team held on March 25, 2024, the NRA received explanation that the JAEA schedules to submit the applications for approval of changes in decommissioning plans that reflect the plans for decontamination of system to be conducted before undertaking dismantling of equipment.

(5) Research Reactor

Regarding Fast Critical Assembly of the JAEA (FCA), as it was decided that low-enriched uranium fuel will be transferred to the United States Department of Energy, the applications for approval of change in basic design and of change in decommissioning plans were submitted on March 4, 2024.

(6) Nuclear Material Utilization Facilities

In FY2023, decommissioning plans were approved for Hanawa Mining Co. Ltd. on August 22, 2023 and issued confirmation certificate of decommissioning completion.

Section 2 Implementation of Inspections in accordance with the Reactor Regulation Act

1. Implementation of Nuclear Regulatory Inspections of Commercial Power Reactors and Nuclear Fuel Cycle Facilities, etc.

(1) Status of Inspections

In order to ensure the safety of commercial power reactors and nuclear fuel cycle facilities, nuclear regulatory inspections are conducted under the Reactor Regulation Act through the baseline inspections consisting of routine inspections (mainly conducted by inspectors stationed at the NRA Regional Offices) and team inspections (mainly conducted by inspectors with expertise at the NRA headquarters) and also supplemental inspections and special inspections are conducted, as necessary. In FY2023, as a part of legal requirements, the NRA confirmed 96 cases' appropriateness of licensees' activities related to pre-operator inspections, waste disposal facilities, waste packages, vehicle transportation, decommissioning and radioactivity concentration by utilizing the results of nuclear regulatory inspections

In addition, the NRA conducted 14 pre-service inspections in accordance with the transitional measures stipulated in Article 7 of the Supplementary Provisions of the Act partially amending the Reactor Regulation Act (Act No. 15 of 2017) in 2023.

Furthermore, operators are determined to report the safety performance indicator that indicate their performance concerning safety activities of nuclear power facilities (the indicator to appropriately identify the signs of deterioration of the operators' activities such as the number of unscheduled shutdowns of nuclear reactors and the number of failures of safety system facilities. Hereinafter referred to as "PI".) In case where the inspection findings are found or where PI value exceeds the designated threshold value, it is determined that the state of deterioration of the operators' activities are evaluated by ranking by colors (red, yellow, white and green). In FY2023, the PI reported to the NRA Commission in FY2023 and required the change in the Action Category was one commercial power reactor, which was determined as "white".

(a) Comprehensive Assessment of Inspection Results for FY2022 and Inspection Plans for FY2023

With regard to the nuclear regulatory inspections conducted in the fourth quarter of FY2022, the NRA confirmed 8 findings. The inspection findings were reported at the 10th FY2023 NRA Commission Meeting (May 17, 2023) and the Extraordinary Meeting of 11th FY2023 NRA Commission Meeting (May 17, 2023) for commercial power reactors, and safety significance level of the findings was all "green." In addition, the NRA secretariat reported to the NRA that one case of a nuclear fuel cycle facility with inspection findings, which was only assessed as "no additional action" at severity level. As a result, a total of 31 inspection findings were identified in the nuclear regulatory inspections in FY2022, and their severity and significance levels were rated as "green ("no additional action" for nuclear fuel cycle facilities) and "SL IV." In addition, there were 3 other cases in which only the severity level was assessed (2 cases of SL IV (including one with notification) and 1 case of SL III).

In light of this, at the 12th FY2023 NRA Commission Meeting (May 24, 2023), the comprehensive assessment for FY2022 and the inspection plans for FY2023 were approved. For nuclear facilities other than the TEPCO's Kashiwazaki-Kariwa NPS, the safety performance indicator is "green" (or no additional action) and since there were no inspection finding during the nuclear regulatory inspections, or the significance and severity levels of the inspection finding found during the nuclear regulatory inspections were all "green (or no additional action), SL IV", the Action Category[23] was the first category throughout the year. It means that the facility condition is expected to improve autonomously by its licensee, and a regular baseline inspection will be continued in FY2023 as the first category. For TEPCO's Kashiwazaki-Kariwa NPS, in FY2022 the inspection findings were confirmed, but the significance level and severity level were rated "green, SL IV", and the safety performance indicator was "green" for the entire year. The NPS had been classified as Category 4 in FY2020, and supplemental inspection was continued throughout FY2021 as well, in which the NRA evaluated the NPS as having a long deterioration trend or significant deterioration in safety activities. In FY2023, the NPS remained in Category 4 and supplemental inspections were conducted, and at the same time, the NRA performed baseline inspections more frequently as well as in FY2022.

(b) Baseline Inspection Results in FY2023

As for the results of nuclear regulatory inspections from the first to the third quarter in FY2023, a total of 18 inspection findings were reported (commercial power reactors: the significance level of "green" and the severity level of "SL IV (including one with notification)," nuclear fuel cycle facilities: the significance level of "no additional action" and the severity level of "SL IV") at the following meetings: the 27th FY2023 NRA Commission Meeting (August 23, 2023), the Extraordinary Meeting of the 28th FY2023 NRA Commission Meeting (August 23, 2023), the 46th FY2023 NRA Commission Meeting (November 22, 2023), the 65th FY2023 NRA Commission Meeting (February 21, 2024I and the Extraordinary Meeting of the 66th FY2023 NRA Commission Meeting (February 21, 2024), including the below-mentioned case reported in the 72nd FY2023

NRA Commission Meeting (March 19, 2024) concerning Unit 3 of the Ikata PS Unit 3 of Shikoku Electric Power Co., Inc. In addition, the NRA secretariat reported to the NRA that there was another case (SL IV) where only the severity level was assessed.

(2) Response to Items Found during Baseline Inspections

(a) Nuclear Regulatory Inspection for Inadequate Fire Protection Measures Related to the Auxiliary feed water Function of the Mihama PS Unit 3 of Kansai Electric Power Co., Inc.

In the nuclear regulatory inspection of Mihama PS Unit 3 of Kansai Electric Power Co., conducted from October 18, 2021 (the inspection based on the operational guide for the baseline inspection, "Fire Protection (3 Years)"), nuclear inspectors checked the status of fire protection measures for equipment related to the auxiliary feed water function of the Steam Generator (SG). The nuclear inspectors found that the required design evaluation of some equipment had not been performed and that the equipment had not been constructed in accordance with the approved construction plan. As a result of evaluation for this case, the 25th FY2022 NRA Commission Meeting (July 22, 2022) approved an evaluation of "green, SL IV" for the safety significance and severity levels of the inspection findings although performance deficiency exists in terms of lack of necessary design evaluation because the possibility of–affecting for safety caused by this performance deficiency was low.

Based on the inspection finding, the operators of PWR-type reactors that comply with the new regulatory requirements (Kansai Electric Power Co., Inc., Shikoku Electric Power Co., Inc., and Kyushu Electric Power Co., Inc.) conducted surveys on the status of fire protection measures at their respective power plants, and it turned out that there were facilities which were inconsistent with the approved design and construction plans at the power generation reactor facilities of Kansai Electric Power Co., Inc. and Kyushu Electric Power Co., Inc. Therefore, the NRA received a report on the implementation status of nuclear regulatory inspections in response to the above at the 84th FY2022 NRA Commission Meeting (March 29, 2023) and approved the future action plan of the Secretariat of the NRA.

As a result of implementation of nuclear regulatory inspections in FY2023 based on the above-mentioned action plan, nuclear inspectors confirmed that the proper measures for fire separation of cables have not been for the Takahama PS Units 3 and 4 of Kansai Electric Power Co., Inc. (June 9, 2023), the Genkai NPS Unit 3 of Kyushu Electric Power Co., Inc., the Genkai NPS Units 3 and 4 of Kyushu Electric Power Co., Inc., Units 1 and 2 of the Sendai NPS of the Kyushu Electric Power Co., Inc., Units 3 and 4 of the Ohi PS of the Kansai Electric Power Co., Inc. (February 20, 2023) and Unit 3 of the Mihama PS of the Kansai Electric Power Co., Inc., and that some equipment for fire protection measures. have not been selected due to wrong evaluation for the impacts by the fire and the required measures for system separation have not been taken for the Genkai NPS Units 3 and 4 of Kyushu Electric Power Co. and Units 1 and 2 of the Sendai NPS of the Kyushu Electric Power Co., Inc. (all findings were evaluated as "green, SL IV" for the significance and severity levels). the NRA was reported these inspection findings pointed

out as the results of nuclear regulatory inspections for each quarter at the 27th FY2023 NRA Commission Meeting (August 23, 2023) and the 46th FY2023 Commission Meeting (November 22, 2023.

Subsequently, in the team inspection implemented from October, 2023 to March, 2024, while inadequate measures for fire separation of cables were confirmed for the Ikata PS Unit 3 of Shikoku Electric Power Co., Inc., it was found that the operator explained that the fire protection measures are in conformity with the technical standards to nuclear inspectors in routine inspection of January, 2023. Although no intentional act of misconduct was confirmed, considering that an untrue explanation was provided to nuclear inspectors, which was judged to have affected the regulatory activities of the NRA, the NRA decided this inspection finding pointed out to rate as "green" of safety significance and "SLIV (with notification)"of the severity level and approved to notify it of the operator at the 72nd FY2023 NRA Commission Meeting (March 19, 2024).

In addition, taking inadequate measures for fire protection due to a series of inappropriate design and management activities, on March 28, 2024, the NRA was to issue a document to provide information for regulated parties form the NRA Secretariat (NRA Information Notice) as reference information to be shared in order for appropriate security activities conducted by other operators etc.

(3) Status of Supplemental Inspection of TEPCO's Kashiwazaki-Kariwa Nuclear Power station

On April 22, 2021, the "TEPCO's Kashiwazaki-Kariwa NPS Supplemental Inspection Team" was established and the team has been conducting supplemental inspections on the plant. In the Phase II, in line with three verification policies ((1) to realize robust physical protection of nuclear materials, (2) to take root of a system for autonomous improvement, and (3) to establish a system to ensure that improvement measures are not transitory) which were approved at the NRA Commission Meeting, the NRA confirmed the corrective actions of TEPCO through 27 "viewpoints of confirmation" , and received the Team's report at the Extraordinary Meeting of the 4th FY2023 NRA Commission (April 12, 2023). Thereafter, the NRA received the results of supplemental inspections up to Phase II at the Extraordinary Meeting of the 8h FY2023 NRA Commission (May 10, 2023)The NRA approved that the supplemental inspections in the Phase III would confirm the status of four items found in the Phase II inspections (realization of normal monitoring on the perimeter, realization of effective PPCAP, thorough operation of improved change management, practical efforts not to make improvements transitory through effective behavior observation) and the confirmation policies in the inspection of Phase III at the 10th FY2023 NRA Commission Meeting (May 17, 2023). At the 18th FY2023 16th NRA Commission Meeting, the NRA exchanged views with the executives of TEPCO on acceptance of the results of supplemental inspections up to Phase II and the future measures.

The status of inspections that followed the confirmation policy was reported four times to the NRA (Extraordinary Meeting of the 16th FY2023 NRA Commission Meeting (June

14, 2023), Extraordinary Meeting of the 26thFY2023 NRA Commission Meeting (August 2, 2023), Extraordinary Meeting of the 34th FY2023 NRA Commission Meeting (September 20, 2023), Extraordinary Meeting of the 43rd FY2023 NRA Commission Meeting (November 14, 2023).

The NRA received the Team's report on "Report on the nuclear regulatory inspection of Kashiwazaki-Kariwa Nuclear Power Station of TEPCO (draft) (supplemental inspections concerning physical protection of nuclear materials)" regarding the inspection results up to Phase III three times (Extraordinary Meeting of the 49th FY2023 NRA Commission Meeting (November 29, 2023), Extraordinary Meeting of the 50th FY2023 NRA Commission Meeting (December 4, 2023), the 51st FY2023 NRA Commission Meeting (December 6, 2023)) and discussed the future measures for TEPCO's Kashiwazaki-Kariwa NPS. Based on the results of the discussion, on December 11, 2023, in order to confirm the status of improvement of TEPCO described in"Report on the Nuclear Regulatory Inspection of Kashiwazaki-Kariwa Nuclear Power Station of TEPCO (Draft) (supplemental inspections concerning physical protection of nuclear materials)", the NRA Chairman YAMANAKA and the NRA Commissioner BAN conducted on-site investigations at the nuclear power station and exchanged views on improvement of physical protection of nuclear materials and the measures for the basic posture as nuclear operators with the president of TEPCO at the 54th FY2023 NRA Commission Meeting (December 20. 2023).

Taking into account the above-mentioned results, at the 56th FY2023 NRA Commission Meeting (December 27, 2023), the NRA approved the Team's report: "Report on the Nuclear Regulatory Inspection of Kashiwazaki-Kariwa Nuclear Power Station of TEPCO" where the inspection results up to Phase III were compiled, the Action Categoryof the nuclear regulatory inspection of the NPS was changed from Category 4 (although the purpose targets of the activities in each observation area are satisfied, it is assessed that there is a long-term or significant deterioration in the safety activities conducted by the operator) to Category 1 (the purpose of the activity in each monitoring area was satisfied, it is assessed that autonomous improvement can be expected.). In conjunction with this, the NRA required TEPCO to maintain the present improved status and make efforts for further improvement and decided to particularly focus on overseeing the efforts of monitoring on the perimeter in stormy weather, PPCAP and Physical Protection Monitoring Office in the baseline inspections even after completion of the supplementary inspections.

(4) Reaffirmation for determination in 2015 of eligibility of TEPCO as the installer of power reactor

At Extraordinary Meeting of the 18th FY2023 NRA Commission Meeting (June 22, 2023), the supplemental inspections of Kashiwazaki-Kariwa Nuclear Power Station of TEPCO were completed. Upon reviewing the handling of change in the Action Category and the order to prohibit the transfer of specified nuclear fuel materials, the NRA decided to reaffirm the judgement concerning eligibility of TEPCO as an installer of power reactor by the NRA on December 27, 2017. Upon reaffirmation, specifically, at the 21st FY2023 NRA Commission Meeting (July 12, 2023), the NRA approved to comprehensively determine

taking the following three items into account: (a) Indicated matters in the nuclear regulatory inspection for TEPCO's Kashiwazaki-Kariwa NPS;(b) Impacts on nuclear safety (safety side) in the results of the supplemental inspection on the security side;(c)Compliance status of "basic approach as nuclear operators" prescribed in the operational safety program of TEPCO's Kashiwazaki-Kariwa NPS.

Among these, after hearing the item (c) from the operator at the public meeting on August 31, 2023, the NRA confirmed the matters whose records can be confirmed at TEPCO's Kashiwazaki-Kariwa NPS from September 11 to 13, 2023 and October 16 to 20, and at the headquarter office from October 25 to November 22 of the same year. Additionally, together with the above-mentioned, the NRA compiled the contents that can be confirmed in the regulatory activities including reviews and inspections conducted by the NRA Commission so far.

At the 51st FY2023 NRA Commission Meeting, the NRA received the report on these results confirmed by the NRA Secretariat. The NRA Chairman YAMANAKA and the NRA Commissioner BAN conducted on-site investigation on the status of efforts to comply with basic approach in TEPCO's Kashiwazaki-Kariwa NPS and exchanged views on the approach etc. of TEPCO's Chairman etc. in compliance with the basic approach as a nuclear operator at the 54th FY2023 NRA Commission Meeting (December 20, 2023). As a result, at the 56th FY2023 NRA Commission Meeting (December 27, 2023), the NRA approved the results of confirmation by the NRA Secretariat and determined that there is no reason to change the conclusion of judgement concerning eligibility of TEPCO as an installer of power reactor in 2017 "that determined that there is no reason to judge that TEPCO's Kashiwazaki-Kariwa NPS has no technological ability sufficient to appropriately conduct its operation as an installer of power reactor from the viewpoint of the eligibility as the operation entity".

(5) Status of Supplemental inspections for Unit 3 of Takahama PS of Kansai Electric Power Co., Inc.

As of August 9, 2023, the NRA received the report on PI of Unit 3 of Takahama PS of Kansai Electric Power Co., Inc. of the first quarter of FY2023. In the past continuous quarters (from the second quarter of FY2022 to the first quarter of FY2023), there are four deviations from limit conditions for operation in the Facility for Severe Accident Management etc., which resulted in one case of "white" of PI for Unit 3 of Takahama PS.

In response to this, based on Implementation Guide for Nuclear Regulatory Inspections etc., the 27th FY2023 NRA Commission Meeting (August 23, 2023) approve the change in the Action matrix of Unit 3 of Takahama PS to Category 2 from April 1, 2023, decided the contents of the notification concerning implementation of supplemental inspections and issue it to Kansai Electric Power Co., Inc.

After receiving the report on a detailed factual investigation for identification of root causes and plans of action for remedial measures requested in the above-mentioned notification as of November 30, 2023, establishing the plans for supplemental inspections based on these contents and notifying them of Kansai Electric Power Co., Inc. as of December 25 of the same year, the NRA conducted the supplemental inspections for Unit

3 of Takahama PS.

As a result of confirming the actions of Kansai Electric Power Co., Inc. through the supplemental inspections, the NRA accepted the report that it is recognized that autonomous improvement can be expected for Unit 3 of Takahama PS at the 73rd FY 2023 NRA Commission Meeting (March 27, 2024). Accordingly, the NRA approved to change the Action matrix of Unit 3 of Takahama PS to Category 1 from March 27, 2024 and notify such change of Kansai Electric Power Co., Inc. as of the same date.

With the above-mentioned, the supplemental inspections for Unit 3 of Takahama PS were completed. The NRA continues to monitor the baseline inspections on the action for remedial measures of Kansai Electric Power Co., Inc.

2. Confirmation of Causes and Preventive Measures for Problems in Nuclear Facilities

When incidents under obligation to report that are specified in Article 134 of the Ordinance Concerning the Installation and Operation of Commercial Power Reactors (The Ministry of International Trade and Industry Order No. 77 of 1978) for accidents and troubles with safety significance occur, nuclear operators must report them to the NRA. In FY2023, there were three incidents under obligation to report for commercial power reactors. The NRA received reports on these incidents from the operators and confirmed that the investigations into the causes and preventive measures were taken by the operators.

Additionally, incidents under obligation to report are subject to evaluations according to the International Nuclear and Radiological Event Scale (INES[37]). Three incidents that occurred at Takahama PS of Kansai Electric Power Co., Inc. on October 17, 2023 and January 22 2024 are being evaluated.

Besides, on January 1, 2024, oil leakage from a start-up transformer of Unit 1 and a main transformer of Unit 2 at Shika Nuclear Power Station of Hokuriku Electric Power Company due to 2024 Noto Peninsula Earthquake and the NRA received the report related to electricity accidents pursuant to the provisions of Article 3 of Regulation on Report Related to Electricity Concerning Facilities for Nuclear Power Generation (the Ministry of International Trade and Industry Order No. 54 of 1965). Thereafter, as of January 30, 2024, the Hokuriku Electric Power submitted the report on investigation of causes and corrective measures and the NRA Secretariat confirmed it.

(1) Response to Accidents and Failures in FY2023

(a) Wear on Steam Generator Tubes of Unit 3 of Takahama PS of Kansai Electric Power Co., Inc.

On October 17, 2023 Kansai Electric Power Co., Inc. reported to the NRA that when eddy current testing (ECT[38]) was conducted to confirm the integrity of heat transfer tubes in three steam generators (SGs[39]) at Unit 3 of Takahama PS, which has had periodic

[37] The International Nuclear and Radiological Event Scale
[38] Eddy Current Testing
[39] Steam Generator

outages, significant signal indications (one showing scratches of the inner surface and one showing wall thinning of the outer surface) were observed in two tubes of two of three SGs in total, and this corresponds to incidents reported based on the Act..

As of November 9, 2023, Kansai Electric Power Co., Inc. submitted a report on the cause of the event and countermeasures to be taken. In the said report, Kansai Electric Power Co., Inc. attributed the scratches on the inner surface to stress corrosion cracking in the primary coolant due to a combination of localized tensile residual stress on the inner surface of the heat transfer tubes during SG manufacturing, internal pressure during operation and the high temperature primary coolant environment. Additionally, Kansai Electric Power Co., Inc. also reported that the thinning of the outer surface to abrasion caused by the dense scale that remained after the chemical cleaning during the previous periodic inspection and remained near the tube support plate during plant operation and repeatedly contacted the vibrating heat transfer tubes. The contents of the said report is currently being confirmed by the NRA Secretariat.

The NRA will receive the report on the evaluation of this incident under obligation to report from the NRA Secretariat.

(b) Wear on Steam Generator Tubes of Unit 4 of Takahama PS of Kansai Electric Power Co., Inc.

On January 22, 2024, Kansai Electric Power Co., Inc. reported to the NRA that when ECT was conducted to confirm the integrity of heat transfer tubes in three SGs at Unit 4 of Takahama PS, which has had periodic outages, significant signal indications (four showing wall thinning of the outer surface) were observed in 4 tubes of two of three SGs in total, and this corresponds to incidents reported based on the Act..

As of February 22, 2024, Kansai Electric Power Co., Inc. submitted a report on the cause of the event and countermeasures to be taken. In the said report, Kansai Electric Power Co., Inc. attributed the thinning of the outer surface to abrasion caused by the dense scale that remained after the chemical cleaning during the previous periodic inspection and remained near the tube support plate during plant operation and repeatedly contacted the vibrating heat transfer tubes. The contents of the said report is currently being confirmed by the NRA Secretariat.

The NRA will receive the report on the evaluation of this incident under obligation to report from the NRA Secretariat.

(c) Steam Leakage from Inlet Pipe of B-1 Feed Water Booster Pump of Unit 1 of Takahama PS of Kansai Electric Power Co., Inc.

On January 22, 2024, as the NRA received a report from Kansai Electric Power Co., Inc. that steam leakage from the cooling water of the secondary system and increased water leakage from the gland part of Feed Water Booster Pump were identified in Unit 1 of the Takahama PS which was operating at constant rated thermal power. As a result of

lowering a power generation output and implementing penetrant testing for the said piping, it was reported that, as the indications to show the existence of scratches, this corresponds to incidents reported based on the Act on January 24, 2024.

As of February 6, 2024, Kansai Electric Power Co., Inc. submitted a report on the cause of the event and countermeasures to be taken. In the said report, Kansai Electric Power Co., Inc. stated that the steam leakage was caused as follows: the bases of the top of vent pipe of the said piping and the upper part of piping were contacted due to thermal expansion of feed water pipe which was heated up to a high temperature by operations, which resulted in acting of bending force to the base portion of the vent pipe, in addition, as the top of the vent pipe was bound, the force was caused at the weld toe section of the piping matrix by mechanical vibration due to operation of the said feed water booster pump, causing a crack was caused on the outer surface of the vent pipe and as the mechanical vibration continued further, the crack growth occurred, which resulted in the leakage due to penetration of the piping by the crack.

Additionally, regarding the gland part of the feed water booster pump, it was reported that there was no abnormal result in the inspection and that the sealing performance of the gland part was sound as the draining amount was reduced due to additional tightening of the nut to hold packing.

The contents of the said report is currently being confirmed by the NRA Secretariat.

The NRA will receive the report on the evaluation of this incident under obligation to report from the NRA Secretariat.

(2) Response to Accidents And Trouble That Occurred in FY 2022

(a) Automatic Reactor Shutdown at Unit 4 of Takahama PS of Kansai Electric Power Co., Inc.

On January 30, 2023, the NRA received a report from Kansai Electric Power Co., Inc. that Unit 4 of Takahama PS, which was operating at constant rated thermal power, was subject to an incident under obligation to report because the reactor automatically shut down after an alarm was activated for Power Range (PR[40]) neutron flux high negative rate trip.

With regard to this case, at the 83rd FY2022 NRA Commission Meeting (March 22, 2023), the Secretariat of the NRA approved the evaluation of the causes and countermeasures for this event, and as a result of the nuclear regulatory inspections, etc., the Secretariat of the NRA reported the event inspection findings as a significance level of "green" and severity level of "SL IV."

Subsequently, with regard to the cause of this incident where poor continuity was caused by the state being covered by extra cable during construction, as the similar problem could be caused for maintenance management and construction etc. in other nuclear power plants, the NRA Secretariat considered that such problem need to be disseminated to the regulated parties etc., it issued "NRA Information Notices for Regulated Parties" on May 24, 2023.

[40] Power Range

3. Continuous Improvement of Nuclear Regulatory Inspection

In order to continuously improve the nuclear regulatory inspection system, which started from April in 2020, “Meeting for Exchange of Opinions on Inspection System” was established to exchange opinions with external experts and nuclear licensees. The meeting was held three times in FY2023 and exchanged opinions on the implementation status of nuclear regulatory inspections, the operation status of licensees’ the Corrective Action Program (CAP) system, the status of the efforts and planned actions to address issues in nuclear regulatory inspections, etc. The revision of the inspection guides for improvement based on the inspection practices in FY2022 was approved at the 14th FY2023 NRA Commission Meeting (June 7, 2023).

In FY2023, as efforts to improve and maintain the competence of inspectors, in addition to training and education necessary for acquisition of inspector qualifications, an inspector exchange program where inspectors from the Nuclear Regulation Offices in charge of non-operating plants were dispatched to Nuclear Regulation Offices in charge of operating plants (one inspector of Tokai Oarai NRA Regional office dispatched to Takahama NRA Regional office from August 28, to September 22, 2023, and one inspector of Sendai NRA Regional office to Tsuruga NRA Regional office from June 26 to July 28, 2023)was implemented. In addition, information on inspection practices and results was shared through inspectors’ counterpart meetings, etc., and management observations were conducted by managers of the NRA Secretariat and others. Results of appropriateness confirmation of the operator’s Probabilistic Risk Assessment (PRA) model used in nuclear regulatory inspections were reported at the 51st FY2023 NRA Commission Meeting (December 6, 2023). In the meeting, the results of the level 1 PRA models of Unit 3 of Mihama PS and Units 3 and 4 of Takahama NPS were reported to NRA. Also, the operator’s responses concerning the items pointed out by the NRA Secretariat in the process of the confirmation of eligibility so far were reported to the NRA.

Section 3 Promotion of Safety Research and Continuous Improvement of Regulatory Requirements

1. Proactive Study on Safety

(1) Implementation of Safety Research and Publication of Result

Based on the “Basic Policy on Safety Research in the NRA” (decided by the NRA on July 6, 2016) and the “Safety Research Field to be Promoted and its Implementation Policy (For Safety Research in and after FY2023)” (approved by the NRA on July 6, 2022), the NRA has conducted safety research projects. In FY2023, 19 safety projects were conducted in 13 fields, including one new project (See Table 2-4).

In addition to these, targeted to independent administrative institutions and universities etc. and aiming at establishing technology base to cope with regulatory research subjects in the future (including systems, facilities and human resources) such as fostering abilities

to be able to provide proposals for regulatory research subjects in the future and abilities to surely support regulatory activities, the NRA decided to newly implement "Business to Establish Technology Base for Strengthening of Study on Nuclear Regulation" from FY2024.

Table 2-4. Safety Research Projects Conducted in FY2023

No.	Area	Project Name
1	External Events	Study on the advancement of seismic hazard assessment methods near the epicenter (FY2020-FY2023)
2		Research on tsunami evaluation methods and source estimation of past tsunamis (FY2021-FY2024)
3		Study on evaluating the activity of faults (FY2020-FY2023)
4		Research on Investigation of a large-scale eruption process (FY2019-FY2023)
5		Research on sophistication of fragility evaluation methods for facilities and equipment related to external events (FY2021-FY2024)
6	Fire Protection	Research on impact assessment for fire protection (Phase 2) (FY2021-FY2024)
7	Risk Assessment	Research on Level 1 PRA for Nuclear Regulatory Inspection (FY2022-FY2026)
8	Severe Accident	Research on hydrogen behavior, etc. considering severe accident progression (FY2023-FY2026, new project)
9		Experiment concerning reduction of physical and chemical phenomena including large uncertainties under severe accident (FY2020-FY2025)
10	Reactor Physics	Research on Optimal Evaluation Method and Uncertainty Evaluation Method in Nuclear Characteristic Analysis (FY2021-FY2024)
11	Nuclear Fuel	Research on evaluation of fuel failure effects on core cool-ability during accidents (FY2019-FY2023)
12	Materials and Structures	Research on evaluation and verification of ageing degradation using actual materials (FY2020-FY2024)
13	Specified Nuclear Facility	Development of criticality evaluation methods for fuel debris of Fukushima Daiichi Nuclear Power Plant (FY2014-FY2024)
14	Nuclear Fuel Cycle Facility	Research on the development of events such as major accidents in reprocessing facilities and MOX fuel fabrication facilities (FY2021-FY2025)
15		Research on evaluation methods for the latest analytical methods in the field of transportation and storage of spent fuel (FY2020-FY2023)
16	Radioactive waste disposal facilities	Research on long-term performance assessment for radioactive waste disposal (FY2021-FY2024)
17	Decommissioning and Clearance	Research on quantitative evaluation techniques for ~~radio~~activity concentration of radioactive waste (FY2021-FY2024)
18	Nuclear Disaster Preparedness	Research on the revision of Emergency Action Levels (EAL) considering special facility for severe accident management (FY2021-FY2025)
19	Radiation Protection	Research on improving the accuracy of dose and health risk assessment for radiation protection (FY2022-FY2026)

Additionally, the NRA published the results of its research through "NRA Technical Reports," which are reports that summarize the experimental data, etc. obtained in safety research mainly including safety research projects from the viewpoint of their application to regulations and serve as the basis for decisions in regulatory requirements, various guidelines, reviews, and inspections, "NRA Technical Notes", which summarize data and information obtained through surveys, academic papers, conference presentations, and other means. In FY2023, the NRA published three NRA Technical Notes including the ones outlining their backgrounds and grounds by compiling publicly available materials on the process up to decision of "matters that should be considered at least for ensuring safety in geological disposal" etc. (See Table 2-5).

Table 2-5 Publication of Safety Research Results (NRA Technical Note)

No.	Category	Report Title
1	NRA Technical Note	Investigation on Fire Protection Inspection in U.S. (Electrical Systems)
2		Background and Evidences of the Considerations to Ensure Nuclear Safety in the Site Selection Phases for Geological Disposal
3		A Study on Regulatory Activities in the U.S.A. for Downstream Effects of PWR and BWR ECCS Strainer Clogging Issues (Supplemental Edition on Regulatory Activities in Japan).

In addition, 24 papers were published, 11 proceedings (refereed) were published at international conferences, and 44 presentations were made at academic conferences. Further, as an activity to promote publication of safety research, in cooperation with the JAEA Nuclear Safety Research Center, two oral presentations and five poster presentations were made by the research staff of the NRA at the joint debriefing session with the Center.

(2) Participation in Joint Research Activities

The NRA, in cooperation with the JAEA Nuclear Safety Research Center, participates in international joint research projects. In FY 2023, they, participated in 15 international joint research projects at OECD/NEA, 10 working groups and senior experts' meetings under OECD/NEA/CSNI[41] collecting technical knowledge including the latest trends in each research field. As bilateral international activities, they exchanged information with the U.S. NRC and the French Institute for Radiation Protection and Nuclear Safety (IRSN[42])

With regard to the advancement of severe accident analysis of TEPCO's Fukushima Daiichi Nuclear PowerStation, to share information on accident progression and related fission product behavior and hydrogen explosion behavior, fuel debris analysis techniques, and accident investigation. the international joint project (FACE[43]) conducted by OECD/NEA has started concrete activities, and therefore the NRA participated in the project.

Additionally, 18 joint research projects were conducted with universities, JAEA, and other organizations based on the joint research implementation rules established on April 21, 2017, with the intent to improve technical skills of research staff of the NRA.

[41] Organization for Economic Co-operation and Development / Nuclear Energy Agency / Committee on the Safety of Nuclear Installations

[42] Institut de radioprotection et de sûreté nucléaire

[43] Fukushima Daiichi Nuclear Power Station Accident Information Collection and Evaluation

(3) Evaluation of Safety Research and Formulation of Policies

At the 17th FY2023 NRA Commission Meeting (June 21, 2023), the NRA approved the post-evaluation of three safety research projects completed in FY2022 and the mid-term evaluation of two safety research projects to be completed in FY2025 and received the report on the results of the additional evaluation of 20 safety research projects that have been completed from FY2018 to FY2020. In addition, at the 59th FY2023 NRA Commission Meeting (January 17, 2024), the NRA approved the pre-evaluation of three safety research projects to be started in FY2024.

Furthermore, at the 27th FY2023 NRA Commission Meeting (August 23, 2023), an evaluation of the performance of JAEA as a technical support organization in FY2022 (the part under the jurisdiction of the NRA) was decided.

Based on the "Basic Policy on Safety Research in the NRA," the NRA approved "Safety Research Field to be Promoted and its Implementation Policy (For Safety Research in and after FY2024)" at the 21st FY2023 NRA Commission Meeting (July 12, 2023). In this Implementation Policy, it was determined that with regard to safety assurance, technological issues on safety of final disposal will be extracted and organized in FY2024, and planning a new safety research project, which is titled study on safety assurance of final disposal, will be progressed based on these after FY 2025.

Furthermore, it is considered to be effective to exchange views on the trends and status of efforts of safety research and research and development after sharing information with nuclear operators etc. in order to promote continuous safety improvement, at the 52nd FY2023 NRA Commission Meeting (December 13, 2023), the NRA approved to implement exchange of technological views with the nuclear operators and held the meeting to exchange views with the nuclear operators on February 26, 2024.

2. Accumulation of the Latest Scientific and Technical Knowledge and Findings

(1) Collecting the Latest Scientific and Technical Knowledge and Findings

With regard to the method of collecting information on the latest findings in Japan and abroad as part of the activities for continuous improvement of regulatory requirements based on the latest scientific and technical findings, the NRA performs activities (GENERIC ISSUES Task Force) to identify information that needs to be considered in relation to Japanese regulations and the safety of nuclear facilities after organizing information on regulatory trends in other countries, safety research, international standards, academic societies, etc., which is based on the process to reflect the latest findings in the regulations approved at the 45th FY2016 NRA Commission Meeting (November 22, 2016).

In addition, the Secretariat of the NRA establishes the Technical Information Committee within the Secretariat and holds regular public meetings with the participation of relevant NRA Commissioners in order to judge whether or not knowledge gained from accident troubles of Japan and abroad and safety research needs to be incorporated into regulations. For the cases where regulatory action is deemed necessary as a result of the deliberations, the matter is reported to the NRA to make it a standard and take other

actions. Further, the screening results of the Technical Information Committee are reported to the Reactor Safety Examination Committee and the Nuclear Fuel Safety Examination Committee in order to receive their advice.

In FY2023, the Technical Information Committee was held 6 times and reported 16 cases of the latest technical findings from April, 2023 to March, 2024. Of these, through screening of GENERIC ISSUES task force, seven cases were reported but not identified as technical findings that could be judged to require some regulatory action.

(2) Use of Scientific and Technical Findings from Safety Research in Regulatory Activities

The Research Division of the Secretariat of the NRA implements technical support such as providing information to the Nuclear Regulation Department for the purpose of applying the latest scientific and technical knowledge and findings of Japan and abroad, which was obtained from the safety research conducted by the NRA to regulatory activities such as reviews and inspections. In FY2023, there were 51 cases of technical support to be delivered, including support for review of conformity to the new regulatory requirements and participation in the review meetings.

3. Continuous Improvement of Regulatory Requirement

(1) Reflecting the Latest Findings in Regulatory Requirements

(a) Consideration of Reflecting the Findings from the "Interim Report on the Investigation and Analysis of the TEPCO's Fukushima Daiichi NPS Accident" in the Regulations

The NRA is implementing consideration regarding the reflection in regulations on the findings obtained from investigation and analysis of TEPCO's Fukushima Daiichi NPS Accident.

Regarding the reflection of findings on hydrogen protection in regulations, at the 4th meeting for hearing opinions on incorporation of the findings on TEPCO's Fukushima Daiichi NPS Accident from working team operators (hereinafter referred to as "1F Meeting for Hearing Opinions to Reflect Findings".)(June 21, 2023), when hearing about the status of efforts for autonomous and systematic implementation, as the policies, approaches and actual situations to advance the efforts autonomously and systematically by the operators etc. could be confirmed, the NRA approved the response policies to continue to follow up the status of the efforts by the operators etc. at the 29th FY2023 NRA Commission Meeting (August 30, 2023).

On the other hand, at the 15th FY2023 NRA Commission Meeting (June 14, 2023), regarding the findings obtained from investigation and analysis on contamination of reactor auxiliary cooling system of Unit 1 of TEPCO's Fukushima Daiichi NPS Accident (hereinafter referred to as "Findings on RCW Contamination".) the NRA approved to start considering regulatory handling and requested the operators etc. to investigate and

provide the information required for proceeding the said consideration at the 4th 1F Meeting for Hearing Opinions to Reflect Findings. Additionally, at the 29th FY2023 NRA Commission Meeting (August 30, 2023), the NRA approved the policy to prioritize the consideration concerning RCW contamination for the time being taking into account the fact that the direction of the consideration of the findings on RCW contamination is clearer compared to other findings. Thereafter, at the 5th 1F Meeting for Hearing Opinions to Reflect Findings (November 1, 2023), the NRA conducted hearing of investigation results on the information requested to the operators, and based on the results, at the 60th FY2023 NRA Commission Meeting (January 24, 2024), the NRA conducted discussions among commissioners regarding regulatory handling of the findings on RCW contamination, the NRA conducted hearing of the status of establishment of procedures etc. at the time of accidents taking into account the findings on RCW contamination.

(b) Response of Japanese Nuclear Power Plants to Open Phase Condition (OPC)

The NRA decided to continue to collect information on the development of automatic detection technology for the Open Phase Condition (OPC[41]) at domestic nuclear power plants and other facilities, and to consider whether or not regulatory requirements for equipment response should be required.

At the 41st FY2023 NRA Commission Meeting (November 1, 2023), the NRA received the response status of the operators concerning the OPC automatic detection system from the NRA Secretariat and approved that there is no need to revise interpretations of the rules etc. as it is possible to handle such system through the response that has been implemented by the operators based on the current guideline of technical ordinance and nothing occurs to hinder disaster prevention, and the automatic detection system is for further improvement of safety.

(c) Endurance Test for 24 hours of Emergency Diesel Generators

The NRA decided to confirm the views of the operators on the necessity of endurance test for 24 hours of emergency diesel generator (EDG[42]), taking into account the overseas case where an incipient fire occurred near the penetration part of exhaust pipe of ceiling part of EDG room.

At the 59th Technical Information Committee (May 25, 2023), the NRA Secretariat reported it is decided that there is no need for operators to conduct periodical continuous operation test for 24 hours of EDG as a result of EDG endurance test for 24 hours that were reported at the 17th FY2023 NRA Commission Meeting (June 21, 2023). The NRA directed the NRA Secretariat to confirm the technical grounds to determine periodical continuous operation test for 24 hours of EDG as unnecessary to conduct for operators.

At the 24th Meeting concerning Hearing Opinions of Licensees on New Regulatory

[41] Open Phase Condition; The event where one phase of external power source (three-phase AC power source) causes an open circuit failure by a certain factor.

Requirements (November 6, 2023), the NRA Secretariat heard opinions from ATENA and ATENA indicated that it plans continuous operation test for 24 hours of EDG by adding continuous operation test for eight hours to the maintenance program.

At the 62nd Technical Information Committee (November 30, 2023), the NRA Secretariat determined to continue hearing and the report on the status of efforts by ATENA. The results of Technical Information Committee was reported at the 57th FY2023 NRA Committee Meeting (January 10, 2024).

(d) Intergranular Cracking of Stainless-Steel Piping in PWR Primary System

The NRA decided to interview the licensees of the PWR about the plan, progress, and results of their investigations regarding intergranular cracking of stainless-steel piping of pressurizer spray line. This is based on the investigation of cracks in the pressurizer spray line piping of the Unit 3 of Ohi NPS of Kansai Electric Power Co., Inc. from the viewpoint of the validity of Ultrasonic Testing (UT) during in-service inspection and the feasibility of a Leak Before Break (LBB) for piping belonging to the reactor pressure boundary.

At 59th Technical Information Committee (May 25, 2023), the NRA Secretariat reported the information obtained from the investigation by operators in FY2022. At the 23rd Meeting Concerning Opinions of Operators on New Regulatory Requirements (September 5, 2023), the NRA Secretariat conducted hearing of progress status and results of investigation and study by the operators of FY2022 from ATENA. It was determined that the results of hearing is to be reported at the 61st Technical Information Committee (September 28, 2023), hearing of consideration by operators to be continued and views to be exchanged with Nuclear Regulatory Commission (NRC). The results of Technical Information Committee was reported at the 38th FY2023 NRA Commission Meeting (October 18, 2023).

(e) Studies on Countermeasures for Software Common Cause Failure for Digital Safety Protection Systems

At the 25th FY2022 NRA Commission Meeting (August 18, 2021), the NRA decided to confirm the details of the voluntary measures to be taken by the operators based on the results of the Study Team on Countermeasures against Common Factor Failures of Digital Safety Protection Systems at Nuclear Power Plants Reactor Facilities.

At the 10th FY2023 NRA Commission Meeting (Mary 17, 2023), the NRA received the report on the status of autonomous response by the operators for the measures for software common cause failure (CCF) of digital safety protection system (CCF) in power reactor facilities and decided to exchange views between the NRA and ATENA on the approach and ideas of ATENA and top management on involvement of ATENA in autonomous response by operators. Based on the above-mentioned, the NRA exchanged views with ATENA at the 22nd FY2023 NRA Commission Meeting (July 19, 2023).

At the 8th and 9th meetings of the Study Team on Countermeasures against Common Factor Failures of Digital Safety Protection Systems at Power Reactor Facilities (July 25 and October 26, 2023), the NRA Secretariat received the explanation on the response status of Units 1 and 2 of Sendai NPS of Kyushu Electric Power Co. Inc. and Unit 7 of TEPCO's Kashiwazaki-Kariwa NPS and the details of involvement by ATENA from ATENA and operators. At the 56th FY2023 NRA Commission Meeting (December 27, 2023), the NRA received the report and decided to have ATENA continuously implement the said measures within the framework of ATENA's activities and hear mainly difference with the contents of explanations that have been made at the consideration team meeting so far at the interviews from ATENA.

(2) Technical Evaluation of Consensus Codes and Standards

The NRA conducted Technical evaluation on the "Code of application of digital computers to safety Protection systems of nuclear power plants (JEAC4620) of 2020 Edition" and the "Guidelines for Verification and Validation (V&V) of Digital Safety Protection Systems of nuclear power plants (JEAG4609)" developed by the Japan Electric Association in accordance with the "Technical Evaluation plan of consensus codes and Standards " for FY2021. At the 22nd FY2023 NRA Commission Meeting (July 19, 2023), the NRA approved to solicit public comments concerning revision proposal of guideline of technical ordinance and draft of technical evaluation report. (NRA Ordinance No.6 of 2013) (hereinafter referred to as "Technical ordinance"). The NRA solicited public comments from July 20 to August 18, 2023, approved the thought for the comment submitted and decided to formulate technical evaluation reports and revise Technical ordinance at the 37th FY2023 NRA Commission Meeting (October 11, 2023).

In addition, as for the result of technical evaluation of the atomic energy society of Japan"Basic Procedures for Determination of Radioactivity Concentration of Radioactive Waste for Medium-Deep Disposal, at the 62nd FY2023 NRA Commission Meeting, the NRA decided to defer quotation of interpretation of regulations of the said standards at the moment, have the NRA Secretariat to compile the results of technical evaluation as reports and received the reports at the 65th FY2023 NRA Commission Meeting (February 21, 2024).

Furthermore, the NRA held the 2nd, 3rd, 4th and 5th Study Team Meetings on Technical Evaluation of Codes of by the Japan Society of Mechanical Engineers on Designs and Construction, Materials and Welding"(April 10, July 14, October 2 of 2023, January 16 of 2024) and proceeded with study to establish technical evaluation reports of "Rules on design and construction for nuclear power plants, 2020 edition "Rules on materials for nuclear power plants, 2020 edition " "Rules on welding for nuclear power plants, 2020 edition " and the " Considerations for preventing the occurrence of stress corrosion cracking in nuclear power generation facilities, 2013 edition " by the Japan Society of Mechanical Engineers.

(3) Collection and Analysis of Information on Troubles and Natural Phenomena in Japan and Abroad

(a) Collection and Analysis of Information on Domestic and International Operating experience

The NRA collects and analyzes information on Operating experience at nuclear facilities in Japan and abroad to incorporate the latest scientific and technical knowledge, and conducts a two-step screening process from the viewpoint of whether or not regulatory action is required. In FY2022, there were 189 cases to be conducted as primary screening, including information on accidents and troubles collected through cooperation with international organizations and foreign countries, as well as public information on accidents and troubles in Japan and overseas. As a result, 185 cases were screened out at the primary screening, and there were no cases transferred to the secondary screening. In addition, there was no case that completed the secondary screening and there are 3 cases that are still under investigation as part of the secondary screening. Besides, there are another case where preparations is underway to implement regulations.

The Secretariat of the NRA reported the results of the screening of information on those domestic and overseas accidents and troubles, which were conducted by the Technical Information Committee, to the Reactor Safety Examination Committee and the Nuclear Fuel Safety Examination Committee composed of external experts, and sought advice from them (the 13th Subcommittee on Reactor Safety and the 7th Subcommittee on Nuclear Fuel Safety (April 26, 2023), the 14th Subcommittee on Reactor Safety and the 8th Subcommittee on Nuclear Fuel Safety (August 25, 2023), the 15th Subcommittee on Reactor Safety and the 9th Subcommittee on Nuclear Fuel Safety (December 21, 2023) and the 16th Subcommittee on Reactor Safety and the 10th Subcommittee on Nuclear Fuel Safety (March 8, 2024)).

(b) Collection and Analysis of Information on Natural Phenomena in Japan and Abroad

The NRA gathered and analyzed information on natural phenomena in Japan and overseas, including publicly available materials from government agencies and academic papers. In particular, the Secretariat of the NRA considered whether or not future regulatory action is necessary with respect to the following three papers and reported at the 61st Technical Information Committee (September 28, 2023): “Probabilistic Fault Displacement Hazard Analysis Using Model of Seismic Source Characteristics at the Ikata Site Based on Guidelines for SSHAC Level 3” by KUMAMOTO published in Journal of Japan Association for Earthquake Engineering (May, 2022), “Geochemical variability as an indicator for large magnitude eruptions in volcanic arcs” by G. Weber published in Scientific Reports (September, 2022) and “New Insights into Real-Time Detection of Tephra Grainsize, Settling Velocity and Sedimentation Rate” by V. Freret-Lorgeril published in Scientific Reports (March, 2022). Additionally, the NRA has been proactively proceeding with collection of findings on the 2024 Noto Peninsula Earthquake

and reported to the Technical Information Committee. Further investigation is to be conducted including the necessity of their reflection to regulations.

(c) Review of Subcommittees on Volcanic Hazards of RSEC and NFSEC

The NRA Secretariat evaluated the results of volcanic activity monitoring in FY2022 by Kyushu Electric Power Company for the Sendai NPS and Genkai NPS as well as by Japan Nuclear Fuel Limited for reprocessing and waste management facilities using the report from the Subcommittee on Volcano Monitoring of the RSEC (regarding" measure to judge significant changes in observation data" during volcano monitoring). At the 12th of Subcommittees on Volcano Monitoring of RSEC and NFSEC (November 10, 2023), the evaluation result by the Secretariat of the NRA concluding the appropriateness of the assessments by Kyushu Electric Power Company and Japan Nuclear Fuel Limited that there is no significant change in the activity situation of the target caldera volcano was confirmed. At the same Subcommittee, the NRA reported two volcano-related findings mentioned in (b) above dealt with by the 61st Technical Information Committee and received advice on whether regulatory response is needed or not In addition, the Secretariat of the NRA reported on the site visit to JNFL's fuel reprocessing facility by 10 commissioners of Subcommittees on Volcanic Hazards of RSEC and NFSEC implemented on May 10, 2023.

(d) Review by the Subcommittee on Earthquake and Tsunami Hazards of RSEC and NFSEC

At the 3rd meeting of the Subcommittee on Earthquake and Tsunami Hazards of RSEC and NFSEC (June 19, 2023), the NRA reported 11 findings dealt with in the past 54th to 58th Technical Information Meetings and received advice on whether regulatory response is needed or not. Additionally, in the same subcommittees, the NRA was requested to pay close attention to and report on the articles of Japan and other countries on 2023 Turkey-Syria Earthquakes by the Chairman.

(4) Review on System for Obligation to Report

Regarding to improvement of obligation to report under Article 62-3 of Nuclear Reactor Regulation Act, at the 71st FY2021 NRA Commission Meeting (March 16, 2022), the NRA decided the review on submission dates of reports and on obligation to report for incidents of over insertion of control rods in nuclear power reactor facilities, and revised relevant regulations etc. On that occasion, regarding nuclear fuel facilities, the graded approach of obligation to report concerning failure and the targets for obligation to report after permission of decommission plans were still in the consideration stage. Additionally, upon soliciting public comments concerning the said review, there was an opinion on the status of obligation to report concerning theft or location unknown of the objects contaminated

by nuclear fuel materials in the Regulations for Transport of Nuclear Fuel Material Outside Plants (Ministerial Ordinance issued by the Prime Minister's Office No.57, 1988) and the NRA decided to consider it by the NRA Secretariat. The NRA received the report on the status of consideration based on the discussion with the operators in public meetings, received the report from the NRA Secretariat and approved to conduct the work for revision of relevant regulations etc. at the 14th FY2023 NRA Commission Meeting (June 7, 2023).

Thereafter, at the 42nd FY2023 NRA Commission Meeting (November 8, 2023), taking into account the exchange of views with the operators, the NRA decided to designate the incidents on safety of nuclear facilities on failure of nuclear fuel facilities etc. as the incident subject to report, to limit the incidents that require obligation to report at the stage of decommission to the ones related to safety of the facilities at the moment and approved the proposal to revise relevant regulations etc. The NRA solicited public opinions on the proposal to revise the regulations and is scrutinizing the contents of the submitted opinions.

Section 4. Continuous Improvement of Regulatory Activities and Response to New Regulatory Need

1. Efforts to Improve the Review Process

Improving the review process is essential from the perspective of appropriately allocating the NRA's limited resources to safety-critical issues, and the NRA is striving to make improvements by continuously exchanging opinions with regulated parties, such as electric power companies, on how to proceed with the review process.

Regarding the review of commercial power reactors, based on the policies concerning the improvement of review process approved at the 37th FY2022 NRA Commission Meeting (September 7, 2022), regarding the review meetings in general, the NRA is making efforts such as holding the review meetings with high frequency in order to confirm the response policies of operators, aiming at sharing recognition by documenting the items pointed out from the NRA Secretariat in the review meetings, and confirming the policies for investigation of geological conditions and the contents of implementation by operators in advance and pointing out them at the earlier stage. For example, in the review of the Tomari NPS Unit 3 of Hokkaido Electric Power Co., Inc. and the Tsuruga NPS Unit 2 of the Japan Atomic Power Co., the NRA devised to eliminate rework of the review as much as possible by aiming at sharing the recognition by documenting the items pointed out in the review meetings, and in the review of the Hamaoka NPS Units 3 and 4 of Chubu Electric Power Grid Co., Inc., by discussing the evaluation policies of combination of tsunami etc. from the earlier stage of consideration of operators.

2. Reinforcement of Efforts at the Interface for Nuclear Safety, Nuclear Security and Safeguards

As the fields of nuclear safety (Safety), nuclear security (Nuclear Security, and safeguards (Safeguards) (hereinafter referred to as "3S".) have mutual influences on each other, the NRA continues to respond to 3S aiming to achieve a higher level of harmony

among 3S. Once again, aiming at organizing challenges and reviewing information sharing system etc. among relevant departments and sections within the NRA Secretariat, the NRA established “Practices concerning the Interface for Nuclear Safety, Nuclear Security and Safeguards (nuclear regulation department, radiation protection group)”and received the response status at the 7th FY2023 NRA Commission Meeting (April 25, 2023).

Regarding the reviews, aiming at eliminating mutual effects to the greatest extent possible, in cases where applications for permits and licenses related to nuclear safety, nuclear security, and safeguards are submitted, the responsible department shares the confirmation results provided by the applicant with relevant departments. The department also conducts operator meetings, if necessary, to assess potential adverse effects on other measures. In terms of inspections, the NRA has been implementing procedures where inspection officers from the NRA regional office share information with the relevant departments if they have any observations related to other measures of S during nuclear regulatory inspections related to nuclear safety. Additionally, nuclear security inspection officers or safeguard inspectors share information with the relevant departments if they have any observations related to other measures of S. Furthermore, inspection officers from the NRA regional office conduct on-site checks and inspections, including the verification of Corrective Action Programs (CAP) related to the physical protection of nuclear material. If they make any observations during these checks, they share them with the relevant departments. Other than the above-mentioned, in the ongoing educational programs for inspectors etc. the NRA endeavors to hold the lectures concerning 3S collaboration and 3S joint session to improve expertise of staff members.

Additionally, in the operator meetings, the NRA communicated viewpoints etc. of confirmation concerning 3S mutual effects upon submission of applications for permits and licenses to the NRA Secretariat and aimed at sharing good practices concerning 3S with operators in each company.

Furthermore, in the nuclear safety department, the applications for change in approval of regulations on protection of nuclear materials based on revision of review standards concerning information system security (decided on March 30, 2022) were jointly reviewed with the nuclear security department. In the safeguards department, for the purpose of fostering understanding for safeguards in the nuclear safety department and in the nuclear security department, by sharing information concerning safeguards through inspectors’ meetings and sharing inspection schedule with nuclear regulation offices, the actual opportunities for the inspectors to participate in on-site inspections with IAEA were provided.

In the nuclear security department, participation in “Discussions on the Training and Regulatory Involvement Regarding Emergency Response of Nuclear Operators” allowed for collaboration with nuclear safety in matters related to emergency response based on events related to the physical protection of nuclear material. Progress was made in discussions on coordination and information sharing between the two departments. Additionally, the education for protection of nuclear materials is being provided for nuclear operation inspectors.

3. Safety Regulations of Ageing Power Reactors

At the 72nd FY2022 NRA Commission Meeting (February 13, 2023), the NRA decided on the "Overview of Safety Regulations on Aging Power Reactors" and approved a bill to partially amend the Reactor Regulation Act (hereinafter referred to as "Revised Act".) based on this outline. Such revision bill was included in the bill to partially revise the Electricity Business Act to establish an electricity supply system to realize a decarbonized society, and was decided upon by the Cabinet on February 28, 2023, and then through the discussion at the 211th ordinary Diet session, promulgated on June 7, 2023.

Revised Act integrated and strengthened "The System of Approval for Extension of Operational Period" to review whether the operation period of a commercial power reactor is allowed to be extended only once at its 40th year after starting its operation and "The System for Assessing Aging Technologies" that review long-term facility management policies for the aging reactor facilities which have been in operation for 30 years since the start of operation and every ten years after that to "The System of Approval for Long-Term Facility Management Plan". In addition, the NRA decided to request "Long-Term Facility Management Plan" whose establishment is obliged as new target for permission to include detailed descriptions on the state of degradation of the reactor and degradation predictions including the method for evaluating degradation in addition to the contents of policies for long-term facility management that had been conventionally required to specify based on "The System for Assessing Aging Technologies Evaluation" . Furthermore, through request to include detailed descriptions in the same Plan, in case where changes in the method for degradation evaluation etc. is required due to the latest findings, the NRA decided to make the system easier to improve safety by requesting the rework of degradation evaluation and change of plans more flexibly and agilely.

In addition, at the 73rd FY2022 NRA Commission Meeting (February 15, 2023), the NRA approved the establishment of a study team on safety regulations of ageing nuclear power reactors in order to study the matter in greater detail. In response, the Study Team on Safety Regulations for Ageing Power Reactors met seven times to study the details of safety regulations of ageing power reactors and to study materials in order to explain the regulatory system for ageing power reactors to the public in an easy-to-understand manner. In addition, in the said study team, based on the results studied while hearing opinions from operators after reviewing the following laws and regulations etc. and soliciting public comments, the NRA decided the petition of relevant Cabinet orders and establishment and revision of relevant regulations etc. at the 29th FY2023 NRA Commission Meeting (August 30, 2023).

- Cabinet Order to prescribe the amount of fees etc.to be paid pursuant to the provisions of Article 4, paragraph (6) of supplementary provisions to partially revise the Act for Partial Revision of the Electricity Business Act and Other Acts for Establishing Electricity Supply Systems for Realizing a Decarbonized Society (overview).
- Ordinance to partially revise Ordinance on Installation and Operation etc. of commercial power Reactors and Ordinance on Installation and Operations of Reactors in the Stage of Research and Development.
- Review Standard of Long-Term Facility Management Plan of Commercial Power

Reactors

- Statement method of Long-Term Facility Management Plan of Commercial Power Reactors

In addition, Revised Act specifies introduction of new system within two years from its promulgation and its start within six month after promulgation of preparatory actions. At the 29th FY2023 NRA Commission Meeting (August 30, 2023), the NRA approved the bill of Cabinet Order to determine the full-scale enforcement date as June 6, 2025 and the enforcement date of preparatory actions as October 1, 2023, which was approved in the Cabinet on September 12, 2023..

4. Study on the Concept of Safety Improvement Evaluation Systems in RSEC and NFSEC

At the 53rd FY2022 NRA Commission Meeting (November 22, 2022), the NRA decided to revise the matters of study and deliberation of RSEC and NFSEC and request advice on the concept of evaluation systems for safety improvement of commercial power reactors pursuant to Article 43-3-29 of Nuclear Reactor Regulation Act (hereinafter referred to as "Submission System for Safety Improvement Evaluation Systems".) and review of operation.

Furthermore, in the process of study on Revision Act, response to out-of-date design was discussed. As a result, at the 9th FY2023 NRA Commission Meeting (May 10, 2023) regarding "differences" obtained from comparison of design with other plants and new technologies, in "out-of-date design", the NRA decided to proceed in conformity with the discussion of review for Submission System for Safety Improvement Evaluation Systems. Thereafter, at the 22nd FY2023 NRA Commission Meeting (July 19, 2023), the NRA approved the policies to be considered in the review of the concept and operation of the Safety Improvement Evaluation Report System in RSEC and NFSEC. In response to this, three discussions were conducted on RSEC and NFSEC (August 25, 2023, December 21, 2023 and March 8, 2024).

5. Exchange of Views Concerning Clearance Centralized Treatment Business in Fukui Prefecture

Regarding clearance centralized treatment business of demolition waste of NPS for which Fukui Prefecture has been advancing its investigations for commercialization, at the 17th FY2023 NRA Commission Meeting (June 21, 2023), in order to confirm positioning for use policies and review legal points and technological points, the NRA approved to hold open discussion for exchange of views among the NRA Secretariat, Agency for Natural Resources and Energy, Fukui Prefecture and relevant installers of power reactor and conducted three meetings for exchange of views (July 31, 2023, October 11, February 5, 2024).

6. Intensive Management of Radioactive Materials including Nuclear Fuel Materials without Actual Use State

Radioactive materials (radioisotopes, nuclear fuel materials, and nuclear source materials) have been widely used in the fields of research, medicine, industry, agriculture, etc. However, there are concerns that risks may emerge in terms of safety and nuclear material management if they are no longer used, stored without actual use, or not under legal control without a clear source or history. Taking into account the description that "Radioactive materials that are not in the actual state of use but only stored are scattered throughout Japan in many private and public facilities, and there are many cases of radioactive materials being discovered that are not under legal control, and there are concerns about the emergence of risks in physical protection of nuclear material. In order to reduce these risks, the relevant administrative agencies, JAEA, and others should cooperate and collaborate in conducting necessary studies on concrete measures to realize intensive management of radioactive materials," of “Basic Policy for Nuclear Energy” (decision by the NRA, February 20, 2023), the NRA proceeded with the study for realizing centralized management of nuclear fuel materials without actual use states in cooperation with the relevant administrative agencies and JAEA.

The NRA Secretariat has established a contact point to receive consultations on the handling of such radioactive materials when they are discovered in a state where they are not properly managed, and is taking measures to ensure that they are properly managed according to the situation. In FY2023, a total of 101 discovery cases were reported: 18 cases for radioisotopes, 64 cases for nuclear fuel materials, and 19 cases for nuclear source materials.

Chapter 3. Promotion of Nuclear Security Measures and Steadfast Implementation of Safeguards

○Summary of Chapter 3

(Promotion of Nuclear Security Measure)

The NRA rigorously conducted the review of applications for changes in security plans for nuclear facilities

and generally carried out planned nuclear regulatory inspections as scheduled. Additionally, the NRA effectively implemented security regulations for specified radioisotopes through on- site inspections and other means.

Furthermore, to prevent nuclear security incidents and ensure rapid response in case of occurrence, continuing since FY2022, the NRA deployed nuclear security inspectors to the NRA Regional Offices, and worked in cooperation with the headquarters.

Additionally, to promote nuclear security measures, the NRA agreed with the IAEA to have the International Physical Protection Advisory Service (IPPAS) mission from July 22 to August 2 of 2024.

(Steady Implementation of Safeguards)

In the IAEA's report on safeguards activities in Japan for 2022, it was concluded that all nuclear materials in the State remained in peaceful activities (broader conclusion)

For the TEPCO's Fukushima Daiichi NPS of Unit 1-3 where routine inspections cannot be conducted, in addition to the additional safeguards measures implemented until FY2022, the NRA conducted necessary verification activities including inspections for the transfer of fuel assemblies from the spent fuel pool to the dry cask interim storage facility through continuous discussions and consultation with the IAEA.

The IAEA has developed a state-level safeguards approach for each country to maintain efficient and effective safeguards measures with limited resources. In response to the development of such an approach for Japan, the NRA discussed and consulted with the IAEA on facility-type specific implementation procedures to be applied to each nuclear facility in Japan, and applied these procedures to all the facilities. In addition, the NRA facilitated the international community's understanding of Japan's safeguards measures and contributed to strengthening and improving the efficiency of international safeguards through participation in various international conferences related to safeguards, education of safeguards personnel, and support for development of safeguards technologies.

Additionally, the NRA provided necessary guidance and supervision for the designated information processing organization and designated organization implementing safeguards inspections to ensure the appropriate and accurate performance of their duties.

Section 1 Promotion of Nuclear Security Measures

1. Rigorous and Proper Implementation of Regulations on Nuclear Security

(1)Rigorous and Proper Implementation of Regulations on Physical Protection

(a) Rigorous Implementation of Nuclear Regulatory Inspection Relating to Physical Protection

The NRA conducts nuclear regulatory inspections related to the physical protection of nuclear materials and associated facilities in accordance with the Reactor Regulation Act. Based on the inspection plan for FY2023, a total of 135 nuclear regulatory inspections were conducted, which included the confirmation of facilities related to the physical protection of nuclear materials and assessment of information system security measures (for the status of supplemental inspections at TEPCO's Kashiwazaki-Kariwa NPS, see Section 2, Chapter 2).

Furthermore, in order to prevent nuclear security incidents and enable a swift response in case of occurrence, nuclear security inspectors were stationed at the NRA Regional Offices from FY2022. They worked in collaboration with the NRA headquarters to carry out their duties. Additionally, necessary FY2024 budgets have been incorporated to further strengthen the system.

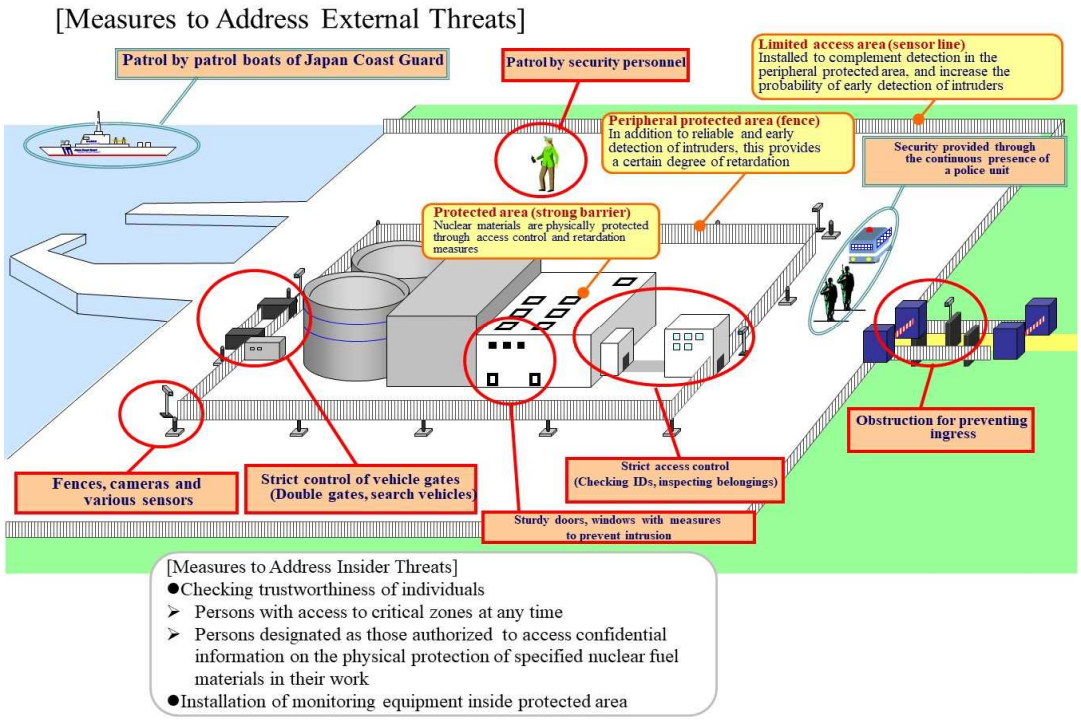


Figure 3-1: Overview of Protection Measures for Nuclear Facilities

(b) Rigorous Review of Security Plan

The NRA conducts reviews of the security plans in accordance with the Reactor

Regulation Act to establish necessary matters related to the protection of specific nuclear fuel materials. In FY2023, 52 changes to security plans were approved.

Furthermore, the NRA continued the review on application to changes in security plan submitted by operators based on the Review Standards for Security Plan which had been revised on April 8, 2019 in light of the Threat of Sabotage and Destruction Acts related to the Information Systems of Nuclear Facilities (established on October 15, 2018) (hereinafter referred to as "Review Standards" in this section). Changes to the security plans to address threats related to sabotage and destruction acts on information systems were approved for 10 cases.

(c) Efforts for Improving Physical Protection Training

Among the initial response measures that operators should take in the event of a physical protection of nuclear material and associated facilities, determination of whether it is an information collection level event or alert level event, implementation of measures such as evacuation instructions and sharing of information between the NRA Secretariat and security organizations are especially important. Through FY2023 nuclear regulatory inspections, by using the NRA Emergency Response Center (ERC[43]), the NRA participated in simulated physical protection training provided by operators and issued technical advice as well as confirming the approach of the Secretariat of the NRA to nuclear safety.

(d) Nuclear Security Measures During the Transport of Specific Nuclear Fuel Material

The NRA, based on the Reactor Regulation Act, requires nuclear operators to implement protective measures when they transport specific nuclear fuel materials outside of their facilities or premises. These measures include locking and sealing the transport containers containing specific nuclear fuel materials. Additionally, before transportation commences, agreements must be established among relevant parties, such as shippers and recipients, to clarify responsibilities related to the transportation process. These agreements must then be subject to confirmation by the NRA.

In FY2023, the NRA conducted confirmation of 17 agreements related to the transportation of specific nuclear fuel materials based on relevant regulations and engaged in discussions with relevant government agencies regarding nuclear security measures during transport.

(e) Consideration of Improvements to the System Related to the Physical Protection

In order to consider improvements to the system related to the physical protection of nuclear material and associated facilities, "Meeting for Exchange of Views on the Physical Protection of Nuclear Material" were held to exchange opinion with nuclear

[43] Emergency Response Center

operators and ATENA, continuing from FY2022, where views were exchanged on the direction of concrete improvements in order to make the efforts on protection of nuclear materials and associated facilities more effective and efficient. These meetings took place on April 20, June 16, and September 29, 2023. Taking into account exchange of views with nuclear operators and ATENA, the NRA held discussions at the Extraordinary Meeting of the 23rd FY2023 NRA Commission Meeting (July 19, 2023) and the Extraordinary Meeting of the 43rd FY 2023 NRA Commission Meeting (November 14, 2023), for strengthening measures for access control and optimization of application procedures on security plan etc. and, approved to conduct hearing of opinions to nuclear operators on the revision of the Review Standards and the Guideline for Documenting the Security Plan (hereinafter referred to as "Guideline".) Based on the results of the said hearing of opinions the NRA decided to revise the Review Standards and the Guideline at the Extraordinary Meeting of the 61st FY2023 NRA Meeting (January 24,2024).

(2) Steady Implementation of Security Regulations for Specified Radioisotope

The NRA requires operators that handle highly hazardous radioisotopes (hereinafter referred to as "specified radioisotopes") to take security measures to prevent theft under the Radioisotope Regulation Act and verifies that security measures have been in place through on-site inspections of the facility where specified radioisotopes are handled. In FY2023, the NRA carried out 43 on-site inspections related to the security of specified radioisotopes. Additionally, the Registered Periodic Training Organizations for Specified Radioisotope Security Managers implemented periodic training for Specified Radioisotope Security Manager seven times in FY2023.

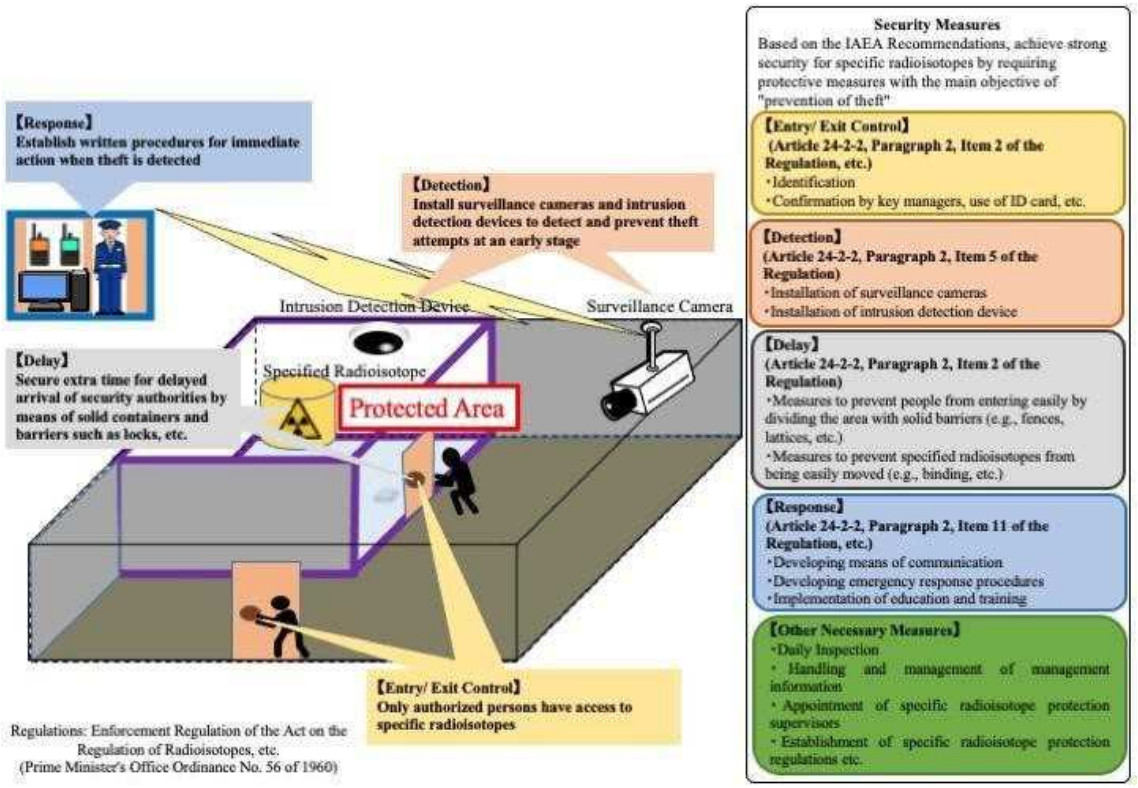


Figure 3-2: Protection Measures for Specified Radioisotopes

2. Response to Nuclear Security Challenge

(1) Fostering a Nuclear Security Culture

The NRA formulated a “Code of Conduct on Nuclear Security Culture” on January 14, 2015 as a guideline to foster and maintain a nuclear security culture based on the “NRA's Core Values and Principles” developed in January 2013. In line with these guidelines, the NRA continuously conducts training and activities related to nuclear security culture for newly recruited staff and inspectors, as well as those expected to assume new responsibilities within the organization.

Additionally, in order to discuss about importance of roles played by the executives of nuclear operators in physical protection, the NRA conducted exchanged of views with installers of major nuclear facilities and managers of nuclear power division on July 14, 2023.

(2) Enhancement of Computer Security Measures

The NRA made some revision based on advice received during the IAEA’s International Physical Protection Advisory Service (IPPAS) Follow-Up Mission, which took place from November 26 to December 7 of 2018. The advice pertained to standardizing the criteria for the provisions outlined in the guidelines and ensuring the implementation of information system security measures as indicated in the guidelines among nuclear operators. These amendments involved positioning certain provisions of the guidelines within the “Review Standards for Security Plan.” (decided on March 30, 2022, and enforced on October 1, 2023). In FY2023, with the revised Review Standards in place, the NRA continued its review of applications for changes to the security plans submitted by operators. At the Extraordinary Meeting of the 58th FY2023 Commission (January 10, 2024), the NRA compiled the examination results of applications for approval of changes in security plan of the Mihama PS of the Kansai Electric Power Co., Inc., conducted exchange of views to security agencies and approved the applications on February 26, 2024.

In addition, in order to further enhance computer security measures, the NRA provided technical advice in the training for physical protection etc to operators.

(3) Actions Taken to Prepare for receiving the IPPAS (International Physical Protection Advisory Service) Missions

The NRA agreed with the IAEA to set the period to receive the International Physical Protection Advisory Service (IPPAS) mission as from July 22 to August 2 of 2024, and held the Preparatory Meeting with the IAEA on September 21, 22 of 2013, to prepare for the implementation of the mission.

3. Participation in International Conference

To continually improve regulations for nuclear security measures, the NRA makes it its policy to incorporate the latest knowledge relating to nuclear security, obtained through international conferences and so on, into applicable laws and regulations.

The NRA actively participated in international conferences on nuclear security held in FY2023, gathered the latest information related to the physical protection of nuclear material and associated facilities and incorporated Japan's experiences and opinions into discussions. Notably, during meetings of the IAEA's Nuclear Security Guidance Committee (NSGC) held on June 13-16 and December 11-13, 2023, the NRA contributed to discussions on the review process of nuclear security series documents and drafts of nuclear security series documents. The outcomes of these meetings were reported during an Extraordinary Meeting of the 23rd FY2023 NRA Commission Meeting (July 19, 2023) and at the Extraordinary Meeting of the 61st FY2023 NRA Commission Meeting (January 24, 2024).

Furthermore, the NRA participated in the 12th meeting of the U.S.-Japan Bilateral Nuclear Security Working Group held on August 22-25, 2023, and agreed on plans for technical information exchange activities related to the implementation of Nuclear Security Recommendations on Physical Protection of Nuclear Material and Nuclear Facilities (INFCIRC/225/Rev.5). As a part of this plan, technical information exchanges on Nuclear Material Accounting and Control for the purpose of nuclear security were conducted from January 22 to 25, 2024.

Section 2. Steady Implementation of Safeguards

1. Steady Implementation of Safeguards Activities in Japan

In accordance with the Atomic Energy Basic Act (Act No. 186 of 1955), Japan has established a fundamental policy of limiting nuclear energy utilization to peaceful purposes. Japan is a signatory to the Treaty on the Non-Proliferation of Nuclear Weapons (NPT) and has entered into agreements with the IAEA in implementation of Article III, paragraph 1 and 4 of the NPT. These agreements, known as the "Japan- IAEA Safeguards Agreements" and their additional protocols, ensure that Japan adheres to non-proliferation commitments. Bilateral nuclear cooperation agreements to promote cooperation concerning the peaceful use of nuclear power have also been concluded with 14 countries and one international organization. By complying with these international commitments in good faith, Japan is demonstrating to the international community that it is limiting the use of nuclear power to peaceful purposes.

The NRA implements the necessary regulatory controls in Japan and coordinates operations with the IAEA and other organizations in Japan and overseas in order that Japan can fulfill its obligations under its international commitments and maintain the trust of Japan by the international community pertaining to the peaceful use of nuclear power.

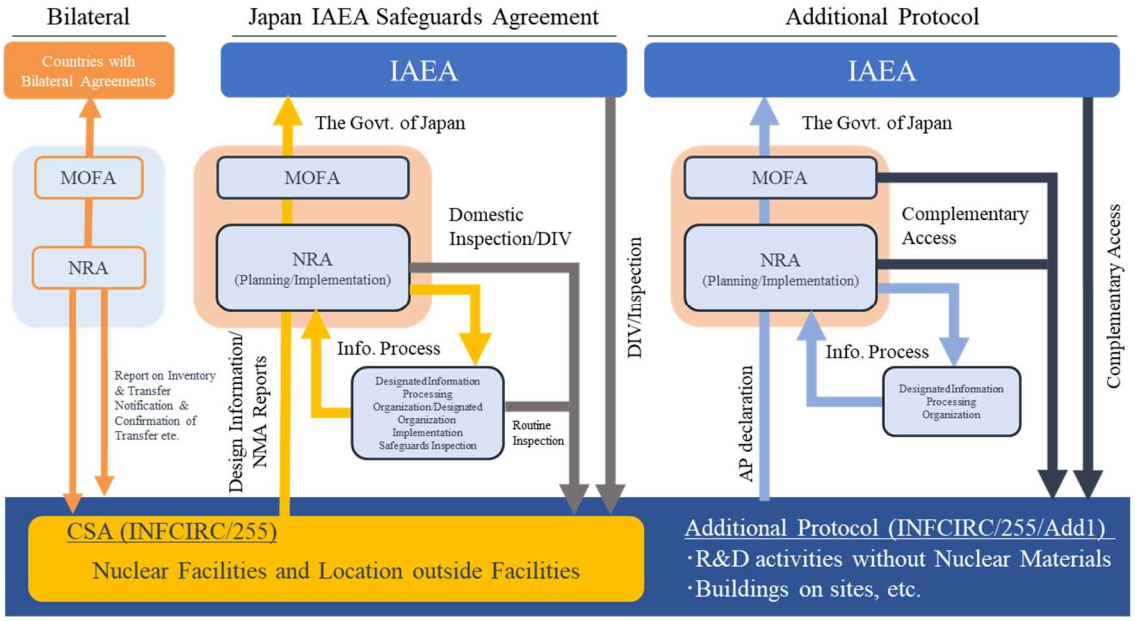


Figure 3-3: Safeguards Implementation Arrangement

(1) Fulfilling the Japan-IAEA Safeguards Agreement

(a) Permission for the Use of Internationally Controlled Material and Approval of Accounting Provisions

As a general rule under the Japan-IAEA Safeguards Agreement, all nuclear materials possessed in Japan are subject to this agreement. Thus, even if nuclear fuel materials not subject to safety controls are used, they are subject to permission or approval to use as international controlled material. In FY2023, there were 34 permits or approvals for the use of such international controlled materials and 346 notifications of changes. To ensure the proper accounting for and control of international controlled materials in Japan, nuclear operators, including users of international controlled materials (hereinafter referred to as "international controlled material users"), are obligated to stipulate their accounting provisions. In FY2023, there were 37 approvals for accounting provisions and 112 approvals for changes to accounting provisions.

(b) Accounting Reports, Information Provisions Such as Facility Design and Declarations Based on the Additional Protocols

Nuclear material accounting is an important basic step in Safeguards. international controlled materials users are obligated to report the current inventory and changes of inventory of nuclear materials to the NRA in accordance with the Reactor Regulation Act. In FY2023, 2,156 operators were subject to submitting accounting reports, with the number of reports for each category as shown in Table 3-1. Once the submitted accounting information is processed at the Nuclear Material Control Center (NMCC), which is designated as an information processing organization under the Reactor

Regulation Act, the NRA compiles it into an accounting report and submits it to the IAEA through the Ministry of Foreign Affairs on a timely basis.

In addition, the NRA provides design information relating to facilities subject to the Japan-IAEA Safeguards Agreement and other information required to implement safeguards and submits a declaration based on the Additional Protocol to the IAEA through the Ministry of Foreign Affairs.

Table 3-1: The Number of Accounting Reports for FY2023
(April 1, 2023, to March 31, 2024)

Type	No. of Cases
Inventory change reports	863
Material balance reports	380
Physical inventory listings	4,445
Nuclear fuel material management reports	3,714

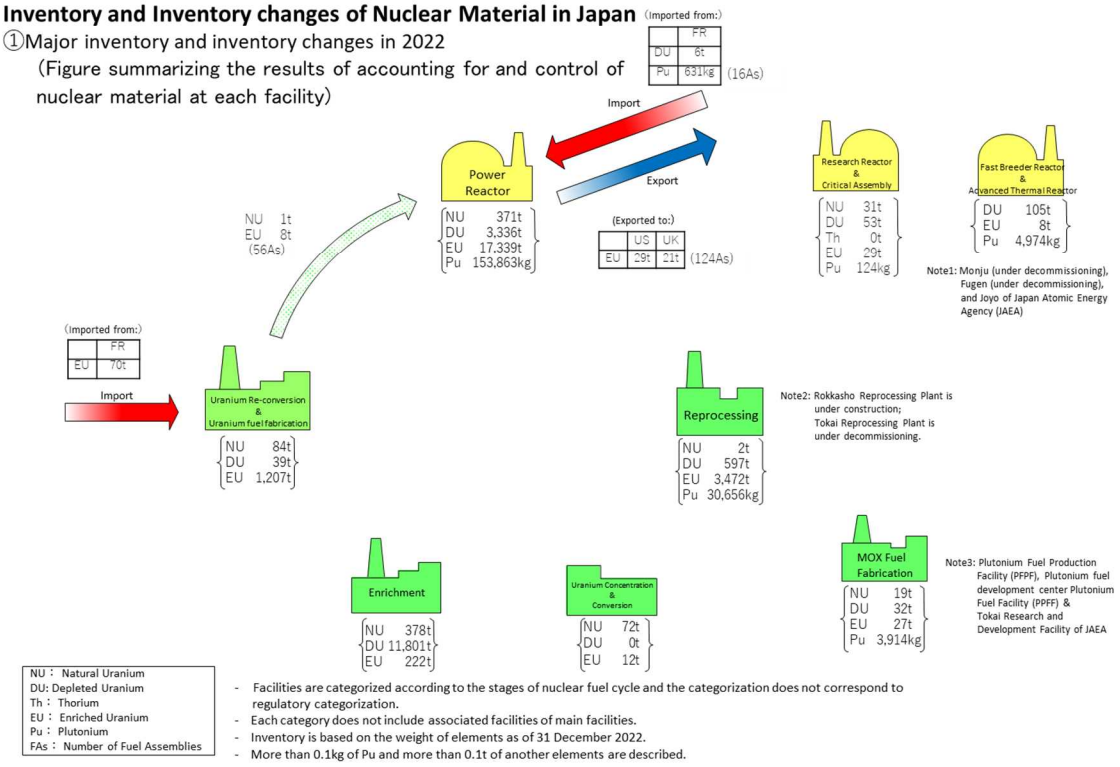


Figure 3-4. Number of Nuclear Materials in Japan

(c) Verification Activities

The IAEA conducts on-site verification activities, including inspections of facilities, based on information submitted by Japan. Of these on-site verification activities, inspections are carried out after going through communications and adjustments by the NRA and at the same time as Japan's safeguards inspections are carried out, in the presence of officials of the national government or of an organization designated by the NRA.

Most of the safeguards inspections are conducted by the NMCC, which has been a designated organization implementing safeguards inspections [44] under the Reactor Regulation Act, according to instructions issued by the NRA. The IAEA's verification of facility design information is conducted together with on-site inspections conducted by the NRA, in the presence of NRA staff. The IAEA's complementary access under the Additional Protocol is attended by the staff of the NRA and the Ministry of Foreign Affairs. Table 3-2 shows the record of safeguards inspections carried out by the State in FY2023.

Table 3-2: The Results of Safeguards Inspections and Related Activities Conducted by Japanese Government Personnel in FY2023
(April 1, 2023, to March 31, 2024)

Type	Nuclear Regulation Authority	Nuclear Material Control Center	Ministry of Foreign Affairs
Safeguards Inspection	102 person-days	1,971 person-days	
Design information verification	105 person-days		
Complementary access	35 person-days		18 person-days

Inspection Activities

Example of Sealing

Maintenance and Management of Monitoring Equipment

Figure 3-5. Safeguards-Related Activities

[44] The Nuclear Material Control Center has been designated as a designated information processing organization under Article 61-10 of the Reactor Regulation Act since 1977 and as a designated organization implementing safeguards inspections under Article 61-23-2 of the same Act since 1999.

(d) Coordination for the Implementation of Safeguards

To facilitate the implementation of safeguards, the NRA has held meetings with the IAEA with the attendance of relevant domestic organizations for the purpose of sharing information on the state of facilities, investigating issues that arise when safeguards are implemented and adjusting. In FY2023,a total of 13 specialized working group meetings focusing on specific types of facilities were held to facilitate discussions and coordination on safeguards-related issues.

(e) Treatment of Safeguards Equipment in Terms of Safety Regulations

To prevent the occurrence of safety problems caused by safeguards equipment such as monitoring cameras installed in nuclear facilities in line with the implementation of the Japan-IAEA Safeguards Agreement, close coordination was made among the IAEA, nuclear operators, relevant NRA Secretariat departments and others.

(f) IAEA's Safeguards Conclusion

At the 13th FY2023 NRA Commission Meeting (May 31, 2023), the NRA received a report from the Secretariat of the NRA regarding the implementation results of safeguards activities in Japan throughout 2022. This report was provided to contribute to the evaluation of Japan's safeguards activities by the IAEA. The IAEA draws safeguards conclusion every year based on the evaluation of all information obtained through safeguards activities by the contracting countries to the Safeguards Agreements and reports it at the IAEA's Board of Governors in June of the following year. As a result of the safeguards activities in Japan in 2022, the IAEA found no indication of the diversion of declared nuclear material from peaceful nuclear activities and no indication of undeclared nuclear material or activities. On this basis, the IAEA also concluded in 2022 that all nuclear material remained in peaceful activities (broader conclusion). This conclusion marked the 20 consecutive years since the broader conclusion was drawn for Japan, for the first time in 2003.

(g) Response to the Occurrence of Complete Blackout Events in the Surveillance Area

Regarding the occurrence of complete blackout events in the surveillance area that occurred in the reprocessing plant of JNFL (Japan Nuclear Fuel Limited), the NRA requested JNFL to report on the investigation of the cause of the incident and implementation of measures to prevent recurrence on February 22, 2023, and received the report on March 22 of the same year.

At the 2nd FY2023 NRA Commission Meeting (April 11, 2023), the NRA approved to

request JNFL to resubmit the said report as due to insufficient verification of the analysis and the statement of the incident cause and preventative measures. At the meeting for exchange of views with the executives of JNFL of the 5th FY2023 NRA Commission Meeting (April 14, 2023), the NRA requested JNFL to resubmit the report, confirmed the recognition concerning importance of safeguards measures, and received the reconsidered report on February 2, 2024.

At the 68th FY2023 NRA Commission Meeting (March 6, 2024), the NRA approved that the NRA Secretariat evaluated the report containing the cause analysis of the incident and measures to prevent recurrence properly and confirms the implementation status of the preventative measures by on-site inspections. Additionally, at the meeting for exchange of views with the executives of JNFL of the 71st NRA FY2023 NRA Commission Meeting (March 18, 2024), the NRA identified the status to face this inappropriate incident, the efforts as a president and basic policies concerning safeguards measures.

Additionally, regarding the fact that the NMCC as a designated organization implementing safeguards inspections did not communicate with the NRA Secretariat on this incident, the NRA Secretariat received a report where the cause and preventative measures etc. thereof are compiled on March 24, 2023 from the NMCC. At the 2nd FY2023 NRA Commission Meeting (April 11, 2023), the NRA received a report from the NRA Secretariat stating that the cause and preventative measures on the NMCC's report are appropriate, and the NRA Secretariat continues to identify through supervisory activities if the preventative measures are properly implemented.

(2) Implementation of Procedures related to Internationally Controlled Material based on Bilateral Nuclear Cooperation Agreements

Japan has concluded bilateral nuclear cooperation agreements with 14 countries and 1 international organization. Under these agreements, Japan and its partners commit to using transferred nuclear source materials, nuclear fuel materials, moderator materials, and nuclear fuel materials produced by using these transferred materials only for peaceful purposes. Japan also undertakes various procedures regarding the materials subject to these agreements. In FY2023, the NRA conducted 9 confirmation of the transferred nuclear materials, etc., from contracting parties, and 4confirmations of the transferred nuclear materials to contracting parties based on the agreements. Additionally, with the support of the designated information processing organization, the NMCC, the NRA submitted 14 inventory lists to contracting parties.

2 Safeguards at TEPCO's Fukushima Daiichi NPS

Normal on-site verification activities have been carried out by the IAEA for all nuclear materials in reactors except Units 1 to 3 at the Fukushima Daiichi NPS. Normal inspections cannot be carried out for Units 1 to 3 reactors, due to the difficulty of entering these reactors. Therefore, through consultations with the IAEA and relevant domestic organizations, a continuous monitoring system composed of surveillance cameras and radiation monitors, and special additional verification activities applicable only to this NPS site have been introduced, contributing to building a framework to allow the IAEA to verify that no undeclared nuclear material has been moved from Units 1 to 3. In FY2023, in the presence of NRA staff, the NRA conducted special additional verification activities applicable to Units 1 to 3 seven times as a part of complementary access. Regarding the Fukushima Task Force Meeting, the meeting was held on March 19, 2024. During this meeting, discussions were held on accounting and safeguards methods for the temporary storage facility for fuel debris to be constructed within the Fukushima Daiichi NPS site and information on on-site activities necessary for the implementation of safeguards was also shared.

3. New Safeguards Inspection

The IAEA has developed "State-level safeguards approaches" for each Member State, considering their nuclear activities and technological capabilities as it utilizes its experience of safeguards implementation and new technologies to maintain efficient and effective safeguards within limited resources. In response to the implementation of this approach in Japan, discussions have been conducted at IAEA's working group meetings and others since FY2019 to formulate facility-type specific inspection procedures. These procedures have been gradually applied to facilities such as fuel fabrication plants and reprocessing plants. On the last set of procedures, for the Nuclear Fuel Cycle Engineering Laboratories of the JAEA, the agreement was reached on March 20, 2023, and their application was started on April, 1 of the same year. Herewith, application of all the facility-type specific inspection procedures based on all the "state-level safeguards approaches" was started for which discussions have been started since 2018.

The IAEA has expressed its intention to strengthen verification activities for about 200 "locations outside facilities" [45] in Japan and has recommended that Japan conducts safeguards inspections independently to complement these activities. Therefore, in FY2023, with the aim of improving the quality of nuclear material accounting and control at "locations outside facilities" and enhancing the reliability of Japan's safeguards activities, the NRA conducted the safeguards inspections independently for 11 such "locations outside facilities" based on the domestic safeguards inspection implementation guidelines established on February 19, 2020, by the NRA.

[45] A structure or location that does not fall under the category of "facilities" (such as nuclear reactors, critical assemblies, conversion plants, fabrication plants, reprocessing plants, isotope separation plants, or independent storage facilities) and where quantities of nuclear material normally used do not exceed 1 effective kilogram. In terms of related laws and regulations under the Reactor Regulation Act, "usage facilities are primarily referred as "locations outside facilities".

4. Information Transmission and Human Resource Development Related to Japan's Safeguards Activities

(1) Transmission of Information on Japan's Safeguards Activities

The NRA has made efforts to distribute information on Japan's safeguards to promote international understanding, including introduction of good practices of Japan's verification activities at the Asia-Pacific Regional Seminar (June 5 to 9, 2023) and participation in the training course of the European Safeguards Research and Development Association (ESARDA, April 25, 2023[46]), IAEA Webinar Series (July 13, 2023) and the annual meeting of Asia-Pacific Safeguards Network (APSN, November 1-3, 2023[47]).

(2) Support for the Implementation of Safeguards by the IAEA and Foreign Countries

The technological development required for the IAEA to implement safeguards has been supported by the key IAEA member states. Japan has proactively contributed to improving technological capabilities of the IAEA and member states and strengthening international safeguards through frameworks such as the Japan Support Programme for Agency Safeguards (JASPAS). The program covers a broad array of specific support plans including participation in the IAEA Network of Analytical Laboratories where environmental samples collected by IAEA inspectors are analyzed, dispatch of experts to a consultation meeting and training opportunities provided for IAEA inspectors and safeguards officials of member states. The NRA has coordinated overall support programmes and provided necessary funds. As of the end of FY2023, 31 projects are in progress. Furthermore, Japan has offered its expertise during the training course on nuclear material accountancy jointly organized by the JAEA and the IAEA.

5. Guidance and Supervision of Designated Information Processing Organization and Designated Organization Implementing Safeguards Inspections, etc. Under the Reactor Regulation Act

NMCC is obligated to perform its duties appropriately as a designated information processing organization and a designated organization implementing safeguards inspections under the Reactor Regulation Act. In order to ensure the proper execution of NMCC's safeguards-related tasks, the NRA encourages the enhancement of the center's safeguards implementation structure. Additionally, the NRA conducts regular inspections based on the Reactor Regulation Act to confirm compliance with relevant provisions of the Act and the implementation status of information security measures and so on.

[46] European Safeguards Research and Development Association
[47] Asia-Pacific Safeguards Network

Chapter 4 Ensuring the Safety of Decommissioning of TEPCO's Fukushima Daiichi NPS and Investigating the Causes of the Accident

○Summary of Chapter 4

(Oversight of Efforts Toward Decommissioning of TEPCO's Fukushima Daiichi NPS)

The NRA reviewed applications submitted by TEPCO for approval of changes to the "Implementation Plan pertaining to Specified Nuclear Facility of the Fukushima Daiichi NPS" and approved 14 of them in FY2023.

Following application approved on July 22, 2022 for approval of changes to the Implementation Plan for the installation and other aspects of discharge facilities of ALPS treated water into the sea, the NRA also approved operations etc. of ALPS treated water at the time of discharge into the sea on May 10, 2023 after review and confirmation at a public meeting through a call for scientific and technical opinions. The results of the review were also explained and questioned during visits to local governments that requested them. As the of ALPS-treated water was started from August 24 of the same year, the NRA continues to confirm that the facilities for the discharge into the sea has necessary functions even after starting its use and such facilities are operated appropriately in compliance with the approved Implementation Plan.

The efforts of TEPCO to comply with the Implementation Plan approved to date are oversighted through operational safety inspections, pre-service inspections, welding inspections, periodic facility inspections, security inspections, and daily patrol activities by nuclear operation inspectors stationed near the site.

(Revision of the Measures for Mid-term Risk Reduction)

The NRA updates the "Mid-term Risk Reduction Target Map for TEPCO's Fukushima Daiichi Nuclear Power Station" (the Risk Map) (revisedonFebruary 18, 2015) in accordance with the progress of the decommissioning work and other factors.

At the 110th Committee on Oversight and Evaluation (December 18, 2023), the NRA received the report from TEPCO on the status of the efforts for the present items for the Risk Map, where it was found that there were items where steady progress was made, but on the other hand, there were many items that were falling behind the target and the items whose process was being currently scrutinized. At the 59th FY2023 NRA Commission Meeting (January 17, 2024), as taking into the above-mentioned progress and also based on the current situation where more than ten years have passed since the accident occurred, the risks to be responded in a short term has been reduced and the challenges to be addressed in a mid-and-long term have become more prominent. Therefore, the NRA concretely represents the ideal form (hereinafter referred to as "Ideal Form".) by considering 10 years as a discrete period. Regarding the targets to be achieved for Ideal Form, after hearing views of TEPCO for the purpose of encouraging the initiative-taking

efforts of TEPCO, the NRA approved to set such targets. The NRA discussed the draft of revision of the Risk Map at the 63rd FY2023 NRA Commission Meeting (February 7, 2024) and heard opinions from the stakeholders in the 111th Committee on Oversight and Evaluation (February 19, 2024). The NRA approved the revision of the Risk Map based at the 67th FY2023 NRA Commission Meeting (February 28, 2024).

(Analysis of TEPCO's Fukushima Daiichi NPS Accident)

As for accident analysis, which is one of the significant jurisdictions of the NRA, research and analysis are underway from the technical aspects. The accessibility to the inside of the reactor building has improved thanks to the improvement of the site environment, the progress of decommissioning work and other factors, and it is now possible to check the condition of the facility and collect samples, which leads to the promotion of on-site investigations.

In FY2023, based on the method for research and analysis of the accident which was approved at the 84th FY2022 NRA Commission Meeting (March, 29, 2023), the NRA appropriately confirmed the progress status of research and analysis of the accident by TEPCO and conducted on-site investigations while collaborating with TEPCO, as necessary. As further research and examination in light of "Interim Summary of Investigation and Analysis of TEPCO's Fukushima Daiichi NPS Accident" compiled on March 5, 2023, the NRA mainly conducted examination, such as analysis of chemical composition and heating experiment in collaboration with Osaka University and National Institute of Technology, Fukushima College, aiming at clarification of the causes of accumulated hydrogen and radioactive contamination in the reactor auxiliary cooling system (RCW system) of Unit 1, and clarification of the cause of the event where only the rebar remains while the concrete was damaged which was identified by an internal survey about the primary containment vessel of Unit 1. Furthermore, in order to ensure consistency between efforts related to accident analysis and decommissioning, the "Fukushima Daiichi NPS Decommissioning and Accident Investigation Liaison and Coordination Meeting" was held with relevant administrative agencies, and necessary coordination was carried out.

Besides, with regard to the investigation of the accident at TEPCO's Fukushima Daiichi NPS, the NRA has participated in projects such as the FACE project of the OECD/NEA which was newly launched in FY2022 and is chaired by the NRA. In this project, the NRA participated in two meetings and had diverse discussions with 13 participating countries and one participating region.

(Monitoring After TEPCO's Fukushima Daiichi NPS Accidents)

Based on the "Comprehensive Radiation Monitoring Plan," the NRA continuously

implemented general environmental monitoring throughout Fukushima Prefecture, as well as the sea area monitoring around TEPCO's Fukushima Daiichi NPS and Tokyo Bay. Additionally, in FY2023, the NRA implemented the sea area monitoring concerning ALPS-treated water, publicizing it on the website of the NRA by confirming that there are no impacts on humans and environments and strove to maintain transparency and accountability of the monitoring by conducting inter-laboratory comparison of monitoring results as a part of IAEA reviews.

Section 1 Oversight of Efforts to Decommission Reactor

1. Approval, Inspection and Others of the Implementation Plan Pertaining to the Fukushima Daiichi NPS

For implementing appropriate management methods in accordance with the state of the facilities, the NRA designated the TEPCO's Fukushima Daiichi NPS as the "Specified Nuclear Facility" on November 7, 2012, and instructed TEPCO to take measures for the operational safety of nuclear power reactor facilities and protection of specified nuclear fuel material. Subsequently, the "Implementation Plan pertaining to Specified Nuclear Facility of the Fukushima Daiichi NPS" (hereinafter referred to as the "Implementation Plan") formulated by TEPCO based on this was approved on August 14, 2013, and the measures for the safety of the facilities are implemented according to the Implementation Plan.

In FY2023, the NRA approved 13 cases in total for changes of Implementation Plan, such as operation etc. of the ALPS-Treated Water at the time of discharging into the sea and addition of storage fuel for transfer vessel for the internal sites due to fuel removal from Unit 6, and confirmed the compliance status through operational safety inspections by nuclear operational inspectors stationed at the site and other . The NRA completed nine pre-service inspections and four welding inspections. In addition, the NRA oversaw TEPCO's efforts by focusing on facilities that are considered important to maintain performance at specified nuclear facilities through periodic facility inspections, and conducted security inspections for matters related to protective measures for specified nuclear fuel materials.

The NRA approved the application for change of the Implementation Plan concerning operation of ALPS-Treated Water at the time of discharging into the sea submitted as of November 14, 2022 on May 10, 2023 and TEPCO started the offshore discharge of ALPS-Treated water on August 24 of the same year (for details, see 6.(1)).

2. Oversight of Efforts to Reduce by Half and Treat Stagnant Water in Reactor Buildings

(1) Oversight of Efforts to Lower S/C Water Levels in Unit 1/3

From the viewpoint of improving the seismic resistance and inventory of radioactive materials of suppression chambers (suppression chambers are below the primary containment vessel, hereinafter referred to as the "S/C") of Units 1 and 3, TEPCO has worked on lowering the water level in the primary containment vessels and S/C. After installing water level indicator, water levels are scheduled to be lowered in both Units 1 and 3.

As for Unit 1, sampling work of included water in S/C was completed on November 17, 2023 and installation of water level indicator utilizing the existing piping of clean-up water system (CUW) has been prepared. As for Unit 3, operation of the water intake system has been started gradually on a trial basis in April, 2022 and the operation has been started from October 3, 2022. Additionally, as in light of the fact that high concentrations of hydrogen and oxygen were found from the sampling of the gas accumulated in Unit3 S/C, purging of the gases has been proceeded, and then the water level indicator will be installed. The NRA continues to confirm the status of efforts to lower the water levels of Unis 1 and 3 S/C carefully.

(2) Now and Future Countermeasures against Contaminated Water

Regarding production of contaminated water, while the amount of contaminated water has been substantially suppressed from approximately 490m^3/day in FY2015 to approximately 80m^3/day in FY2023 by measures such as installing prevention around buildings and facing etc., the NRA still hac concerns, such as countermeasures against secondary waste produced by contaminated water treatment and ALPS-Treated water, and leakage risk of contaminated water due to aging of buildings. Thus, the NRA considers that it is important to continuously proceed with suppressing the amount of contaminated water production. In light of these, at the 109th Special Committee on Oversight and Evaluation (December 18, 2023) and the 110th Committee on Oversight and Evaluation (December 18, 2023), the NRA restarted the discussions to suppress contaminated water production as much as possible. Through the discussions so far, the direction was clarified for TEPCO to proceed with fundamental measures against production source of contaminated water with the perspective of the entire site including identification contaminated areas and their isolation above 2.5m sea level as one of the production sources of contaminated water, in addition to all possible reduction of the amount of entry of groundwater by waterproof of reactor buildings and reduction of water levels of accumulated water in the buildings. The NRA continues to discuss concrete measures with TEPCO.

3. Oversight of Efforts to Spent Fuel

(1) Oversight of Efforts to Remove Fuels From Units 1 and 2

Regarding the efforts to remove fuels from spent fuel pool from Unit 1, the NRA approved changes of the Implementation Plan for the installation of the large covers of nuclear buildings of Unit 1 as of March 23, 2023 and the construction for installation of the large covers etc. has been proceeded in accordance with the Implementation Plan. While proceeding with the work, the hotspot (the area with higher levels of radiation compared to the surrounding areas) was found on the south side outer wall of the reactor building of Unit 1 in December, 2023. Although decontamination work was conducted by TEPCO, the decontamination work did not bring sufficient effects, it was determined to continue to consider the efforts to reduce radiation levels of the area. The NRA continues to confirm the work by TEPCO including the said efforts.

Regarding the efforts to remove fuels from spent fuel pool from Unit 2, at the 76th Oversight and Review Meeting (November 18, 2019), TEPCO suggested a method for removing fuel from the spent fuel pool of Unit 2 through an opening with a gantry built on the south side outer wall of the reactor building as the dose was still high in the Unit 2 reactor building. On January 15, 2024, the NRA also approved the application of changes of the implementation plan concerning installation of runway garter which was submitted as of August 10, 2023. For installation of the fuel handling equipment, it is underway to remove obstructions in the operating floor of Unit 2 at the reactor building and to install a fuel removal platform, and the NRA will continue to oversee the progress of these works.

4. Oversight of Efforts to Address Solid Radioactive Material

(1) Consideration on Solid Radioactive Material

The NRA established the Risk Map for the purpose of clarifying the targets on

decommissioning to be handled on a priority basis (for details, see 7.). In the Risk Map established on March 1, 2023, because the field concerning solid radioactive materials is placed at high priority, the NRA subdivided the field, set the targets according to their radioactivity concentration and properties, and set the goals concerning strengthening of analysis system required to grasp them. At the 104th Committee on Oversight and Evaluation (April 14, 2023), the NRA shared the recognition with TEPCO that, to proceed discussions on the newly set target including solidification and storage and management according to radioactivity concentration and properties of treated water waste, solidification of Muddy sediment generated in the ALPS pretreatment facility (hereinafter referred to as the "ALPS slurry"), and storage and management of waste including concrete were discussed primarily at the Technical Meetings for Review of Implementation Plans for Specific Nuclear Facilities (hereinafter referred to as "1F Technical Meeting".). As a result of discussions at 1F Technical Meetings so far, at the 15th 1F Technical Meeting, TEPCO shared their future directions that they should proceed with consideration by prioritizing cement solidification of ALPS slurry, they should establish policy for solidification treatment including other secondary waste produced by contaminated water treatment by FY2025, they should establish the method etc. to evaluate radioactivity concentration by surface dose rate of storage container for debris by FY2028, and they should proceed with analysis in order to promote them etc. The NRA will continue to oversee the above-mentioned efforts of TEPCO and confirm TEPCO's concrete plan and system for necessary analysis.

(2) Oversight of Efforts for installation of ALPS slurry dehydration facilities

While ALPS slurry is stored in a High Integrity Container of polyethylene (hereinafter referred to as "HIC."), there are concerns about degradation of the HIC due to beta-rays etc. Because of this, TEPCO considered to install a stabilization treatment facility to dehydrate and solidify the ALPS slurry as soon as possible and to store the ALPS slurry in a more stable condition, and the NRA received an application of changes to the Implementation Plan as of January 7, 2021. While proceeding with the reviewing, the gaps for perception were found between the NRA and TEPCO on safety measures such as confinement functions to be secured as a facility, these issues were raised as points for the reviewing at the 102nd Committee on Oversight and Evaluation (September 12, 2022). On the other hand, at the 103rd Committee on Oversight and Evaluation (October 26, 2022), TEPCO responded that they would change design policies of facilities by taking into account such points raised. At the 109th Committee on Oversight and Evaluation (October 5, 2023), TEPCO explained about establishment of the policy that they would install the filter presses the ALPS slurry to dehydrate and operate them by remote operation on reduction of radiation exposure during the work by dust to be secured as a facility. As the capacity of HIC to store ALPS slurry has gotten stringent, it is dispensable to TEPCO should take a steady step for this. The NRA requested TEPCO to promptly present the concepts for seismic resistance classification, confinement and emergency power supply as important factors for the reviewing.

Besides, the relocation of 51 ALPS slurries in HIC out of 57 ones as scheduled during FY2023 were completed, concerning about maintaining the HIC integrity because the

accumulated absorbed dose exceeds or was likely to exceed 5,000 kGy. The NRA will continuously confirm the progress of this work in FY2024, including for the transfers that have not been completed in FY2023.

(3) Oversight of Efforts for Establishing Analysis System

In order to steadily proceed with the decommissioning of TEPCO's Fukushima Daiichi NPS, in addition to the analysis and measurement of liquids collected on a daily basis, it is important to analyze the properties of high-dose wastes and to ALPS-Treated Water with improved detection performance. However, even at this point, TEPCO's analysis to determine the type and amount of radioactive substances is still insufficient. The NRA requested that TEPCO should make its utmost efforts to secure an analysis system in order to resolve issues such as the increase in the analysis types and quantities, and the lack of studies on the stabilization treatment and long-term storage of radioactive waste, including those arising from the building demolition expected in the future. At the same time, in order to make these efforts steady, at the 102nd Committee on Oversight and Evaluation (September 12, 2022), the NRA requested the Agency for Natural Resources and Energy to consider resolutions to the above mentioned challenges and present them to NRA.

In response to that, at the 1st FY2023 NRA Commission Meeting (April 5, 2023) and the 104th Committee on Oversight and Evaluation (April 5, 2023), the Agency for Natural Resources and Energy explained about the immediate measures concerning development of analysis system including the explanation that the Government-wide enhancement of measures for development of framework to secure human resources, develop the analysis facilities and implement analysis steadily. The NRA will continuously confirm the efforts for establishment of analysis system by the Government and TEPCO and analysis plan based thereon.

5. Oversight of Efforts to Address External Event

(1) Status of Response Based on the Status of Pedestal of Unit 1

As the damage of concrete in the entire circumference of the pedestal was found at investigation of inside the primary containment vessel of Unit 1 which was implemented by TEPCO in March, 2023, at the 12th FY2023 NRA Commission Meeting (May 24, 2023), the NRA Secretariat decided "(1) to evaluate the impacts if radioactive substances are discharged into the environment based on the assumption that an opening is created in a containment vessel, (2) to examine the measures based on the assumption that there are impacts on environment. In parallel, (3) to examine if there are structural impacts on pressure vessel and containment vessel, assuming that the function of the pedestal is lost.", and communicated the response policy to TEPCO on the same day based on the NRA's instruction.

Regarding (1) and (2), at the 10th 1F Technical Meeting (June 5, 2023) and the 12th 1F Technical Meeting (July 11, 2023), the NRA heard the status of examination of TEPCO and shared the results of the examination at the 108th Committee on Oversight and Evaluation (July 24, 2023) and confirmed at the 24th FY2023 NRA Commission Meeting (July 26, 2023) that the effective dose remains 0.04mSv at maximum at the site

boundaries due to dispersion of radioactive substances and remains far below 5mSv as the regulatory value in the event of an accident in safety evaluation of normal commercial power reactors even if a large opening is produced in the containment vessel due to loss of supporting function of the pedestal, and that sealing of nitrogen is to be suspended in case of occurrence of the earthquake with over an intensity of lower 6 or in case dust concentration within the containment vessel is increased.

Regarding (3), at the 13th 1F Technical Meeting (September 11, 2023), the NRA heard about the status of examination of TEPCO, at the 109th Committee on Oversight and Evaluation (October 5, 2023), the results of evaluation of TEPCO and views of the NRA Secretariat were shared, and at the 37th FY2023 NRA Commission Meeting, the NRA confirmed that the structural integrity of the nuclear reactor as a whole would be sufficiently maintained by evaluating the impacts on the nuclear reactor buildings on the extreme assumption that pressure vessel falls down due to damages on the pedestal, as it was difficult to precisely investigate the actual status after the accident due to high level dose within nuclear reactor building of Unit 1 and within the containment vessel and thus there was no choice but to set the prerequisites of evaluation and input values based on the assumption, and there was a limit to implement the evaluation that reflects the actual state after the accident.

The NRA will continue to closely monitor new findings by analysis and investigation of the accident, to include them into the parameter including uncertainties that are used for the evaluation of structural impacts as necessary, and to oversee and instruct TEPCO about installation of seismographs to the upper part of the nuclear reactor building of Unit 1 that was supposed to be useful to monitor the changes in rigidity of the nuclear reactor building.

(2) Study of Possibility of Landslide at TEPCO's Fukushima Daiichi NPS

In the preparatory stage of on-site investigation conducted on April 8, 2022,as geographical features were found that could cause landslide in the surrounding area with the high gantry (33m panel) of the NPS, the NRA requested TEPCO to collect information on and provide views on : (a) possibility of landslide at TEPCO's Fukushima Daiichi NPS and (b) possibility of existence of the geographical features that could cause landslides in the surrounding areas of TEPCO's Fukushima Daiichi NPS. At the 2nd 1F Technical Meeting (December 7, 2022) and the 9th IF Technical Meeting (April 25, 2023), TEPCO provided the following views: regarding (a), i) weathering part located immediately beneath terrace deposit (hereinafter referred to as "Weathering Part") was spreading throughout the site, ii) as a result of seismic response analysis of the ground with consideration of Weathering Part, the impacts of Weathering Part on the evaluation of seismic resistance and stability of the ground was small, and iii) it will conduct boring survey in order to concretely grasp the physical properties of Weathering Part. Regarding (b), TEPCO provided the view that no large-scale landslides were found in the surrounding areas and the terrace surface of the high gantry (33m panel) of the site was not the starting point of a large-scale landslide according to the results of topographic interpretation. In response to this, the NRA decided to instruct TEPCO to continue the study on stability of surrounding slopes of critical facilities for earthquake

resistance etc. taking into account existence of Weathering Part and confirm it in 1F Technical Meetings.

Besides, regarding stability of critical facilities for earthquake resistance etc. taking into account the discussions at the 11th 1F Technical Meeting (June 19, 2023), TEPCO presented the flow chart for determining the necessity of the construction as a countermeasure at surrounding slopes and response policies based thereon. Specifically, from the viewpoint of early reduction of comprehensive risks throughout 1F, for shared facilities to assist operation (shared pool buildings) which is to be used for a relatively long period, while implementation of setback construction to dig down the back slopes, the NRA requested TEPCO to take on and complete the setback construction whose construction period is expected to be around 10 years as early as possible.

6. Oversight of Efforts to Address Important Points for Moving forward with Decommissioning Work

(1) Oversight of Efforts to Discharge ALPS-Treated Water into the Sea

The NRA approved the application of changes to the Implementation Plan for installation and other measures for facilities related to offshore discharge of ALPS-Treated Water (received on December 21, 2021) on July 22, 2022 and the application of changes to the Implementation Plan concerning organizational system of operation and maintenance and management of facilities to discharge into the sea etc. (received on November 14, 2022) on May 10, 2023. Furthermore, the NRA completed pre-service inspections on the facilities related to offshore discharge of ALPS-Treated Water and issued certificate of completion on July 7, 2023. The offshore discharge of ALPS-Treated Water was started on August 24 of the same year and the discharges were conducted four times in FY 2023. The NRA continues to confirm if such facilities have necessary function, and such facilities are appropriately operated by inspections. The results of the NRA review were also explained and questioned during visits to local governments that requested them.

The NRA received the IAEA regulator review related to the offshore discharge of ALPS-Treated water from March 21 to 25, 2022, and January 16 to 20 , 2023 and IAEA publicized the contents and results thereof as a progress report. In the IAEA's comprehensive report before starting the offshore discharge, it was concluded that relevant activities by the NRA was in conformity with relevant international safety standards. Furthermore, from October 24 to 27, for the purpose of confirming safety of the offshore discharge being implemented, IAEA review was conducted as the first mission after starting the offshore discharge.

7. Revision of the Risk Map

For the purpose of indicating targets for decommissioning of TEPCO's Fukushima Daiichi NPS, the NRA established the Risk Map on February 18, 2015, and continuously revises the Risk Map according to the progress of decommissioning work.

At the 110th Committee on Oversight and Evaluation (December 18, 2023), the NRA received the report from TEPCO on the status of the efforts for the presented items for the measures, where it was found that there were steady progress for some items, but on

the other hand, there were many items that were expected to fall behind the target and the items whose process was currently being scrutinized. At the 59th FY2023 NRA Commission Meeting (January 17, 2024), as the policies for future revision taking into the above-mentioned progress, based on the current situation where more than ten years have passed since the accident occurred, the risks to be responded in a short term has been reduced and the challenges to be addressed in a mid-and-long term have become more prominent, the NRA concretely represented the ideal form (hereinafter referred to as "Ideal Form".) by considering 10 years as a discrete period. Regarding the targets to be achieved for Ideal Form, after hearing views of TEPCO for the purpose of encouraging the initiative-taking efforts of TEPCO, the NRA approved to set such target. The NRA discussed draft revision of the Risk Map at the 63rd FY2023 NRA Commission Meeting (February 7, 2024) and heard opinions from the stakeholders. The NRA approved the revision of Risk Map at the 67th FY2023 NRA Commission Meeting (February 28, 2024).

Mid-term Risk Reduction Target Map for TEPCO's Fukushima Daiichi Nuclear Power Station

February 28, 2024

Nuclear Regulation Authority

Objectives of the Mid-term Risk Reduction Target Map for TEPCO's Fukushima Daiichi Nuclear Power Station

- The Mid-term Risk Reduction Target Map for TEPCO's Fukushima Daiichi Nuclear Powe Station (hereinafter referred to as the "Risk Map") is described by the NRA for the purpose of clarifying "Ideal Form" to be realized in mid- and long term toward decommissioning and goals toward it from the viewpoint of reducing and optimizing risks of the entire facility.
- Ideal Form of the Risk Map and the goals toward it should be set from the overview of the location of radioactive materials in the entire facility.
- The Risk Map should be revised periodically according to the progress of the decommissioning work.
- The progress of TEPCO's efforts toward each goal set forth in the Risk Map should be monitored and guided by the Committee on Oversight and Evaluation of Specified Nuclear Facilities.

Revision Policy in March of 2024 Edition

■ Setting of Ideal Form in ten years (FY2033)

- Based on the current situation where more than ten years have passed since the accident occurred, the risks to be responded in a short term has been reduced and the challenges to be addressed in a mid-and-long term have become more prominent, by presenting Ideal Form to be realized in ten years by field, the goals to be reached toward it should be set.
- Regarding the mid- and long-term goals, concrete fiscal year does not always need to be described, but indicating the pathway to realize Ideal Form should be focused on. On the other hand, regarding the items to be achieved in a short term, the concrete period to reach the goals should be continuously set.

■ Changes in field setting

- In light of significance of transition to stable storage of radioactive substances, "radioactive substances in solid form" should be positioned as the area to be addressed on a priority basis.
- Regarding other fields, in order to describe Ideal Form clearly, the classification should be changed to the one according to the purposes as follows:
  - ✓ As it is necessary to conduct further study to control generation of contaminated water with a view to the entire site.
  - ✓ As it is necessary to appropriately manage the debris in the reactors and atmosphere in the containment vessel according to the conditions and status thereof in addition to removal of nuclear spent fuel from nuclear spent fuel pool, "Risk reduction in nuclear reactor buildings" should be set as one area.
  - ✓ As it is necessary to grasp deterioration situations of the facilities that have been used for a long period required for decommissioning and to appropriately conduct maintenance of functions and enhancement of reliability in addition to removal of unnecessary facilities, "Maintenance and Removal of Equipment/Facilities" should be

Figure 4-1: The Risk Map

The Risk Map

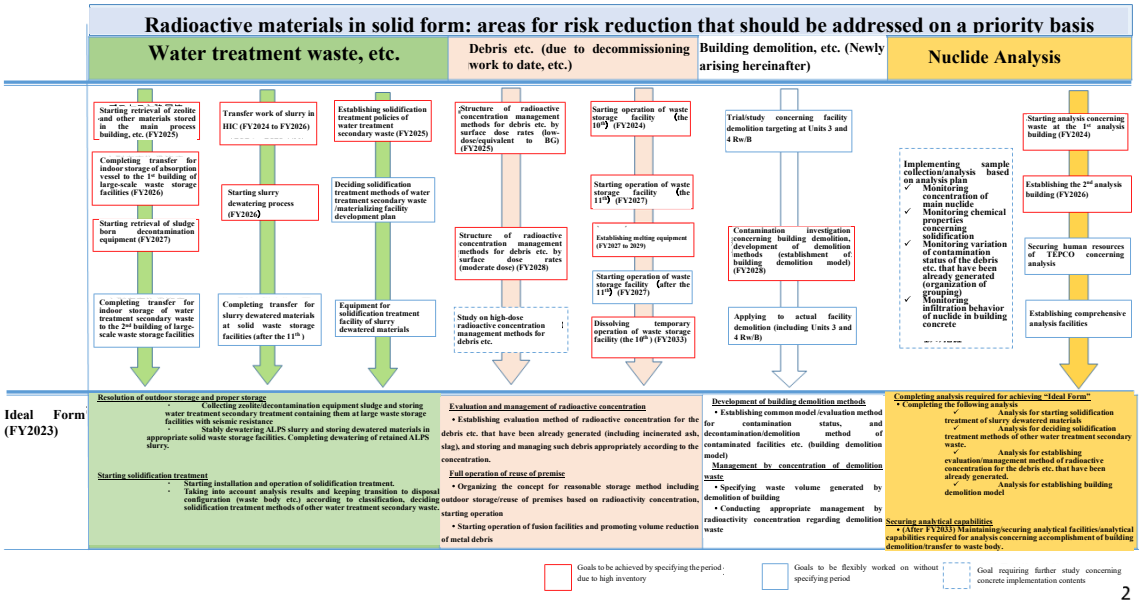


Figure 4-2. The Risk Map, the Radioactive material in solid form

東京電力福島第一原子力発電所の中期的リスクの低減目標マップ（固形状の放射性物質以外の主要な目標）

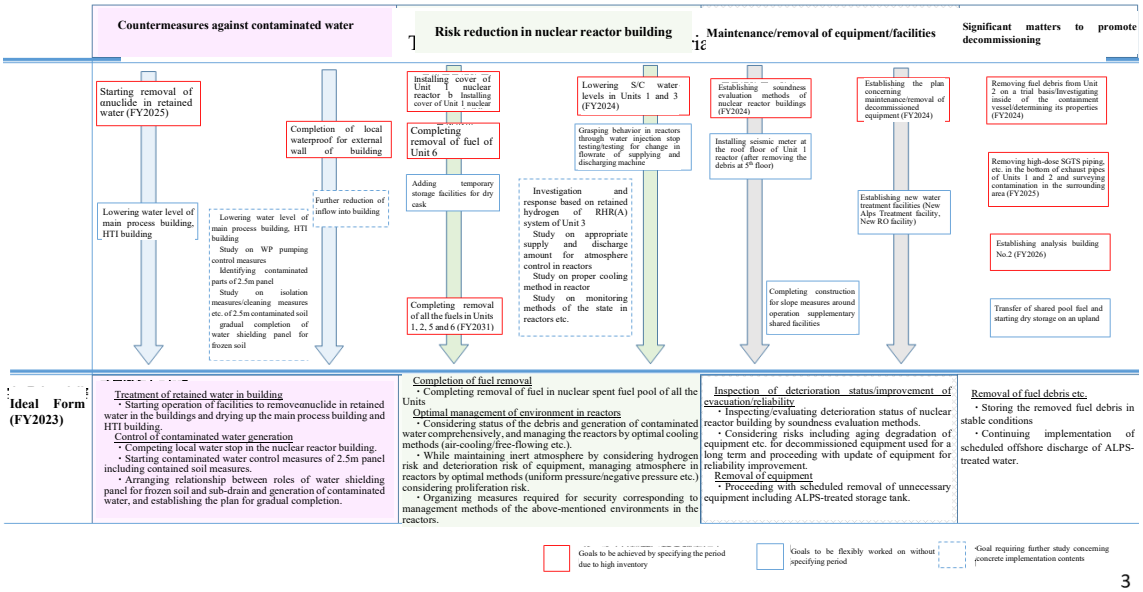


Figure 4-3. The Risk Map, the Main goals targeting other than radioactive substances in solid form

Mid-term Risk Reduction Target Map for TEPCO's Fukushima Daiichi Nuclear Power Station (Those with ongoing implementation※)

・Monitoring of contamination in the reactor building, etc. (nuclide analysis, etc.)
・Monitoring of cooling water properties after cooling the reactor (nuclide analysis, etc.)
・Monitoring of the flow of contaminated water in the reactor building, etc.
・Direct monitoring of the situation in the containment vessel and the pressure vessel (to be conducted in the future for the pressure vessel)
・Decrease in radioactive material concentration of water in drainage canals
・Reduction of exposure under high doses
・Measures to prevent dust scattering from buildings, etc.
・Improvement of occupational health and safety environment
・Strengthening of quality control system (risk extraction for work and strengthening of operational management)
・Development of analysis system available for timely and appropriate analysis

※Items which are important for the progress of decommissioning work that will be either implemented on a continuous basis or difficult to set a specific target year.

Figure 4-4: The Risk Map (Items with continuous implementation)

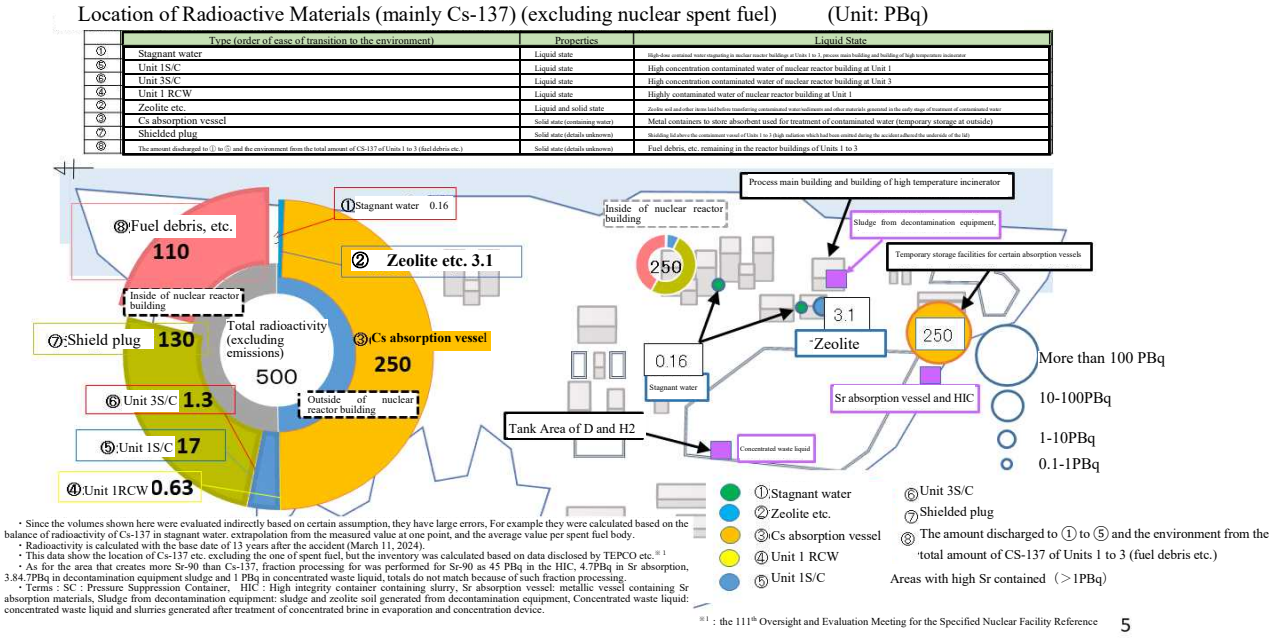


Figure 4-5. The Risk Map, Location of radioactive substances (mainly Cs-137, excluding spent fuel)

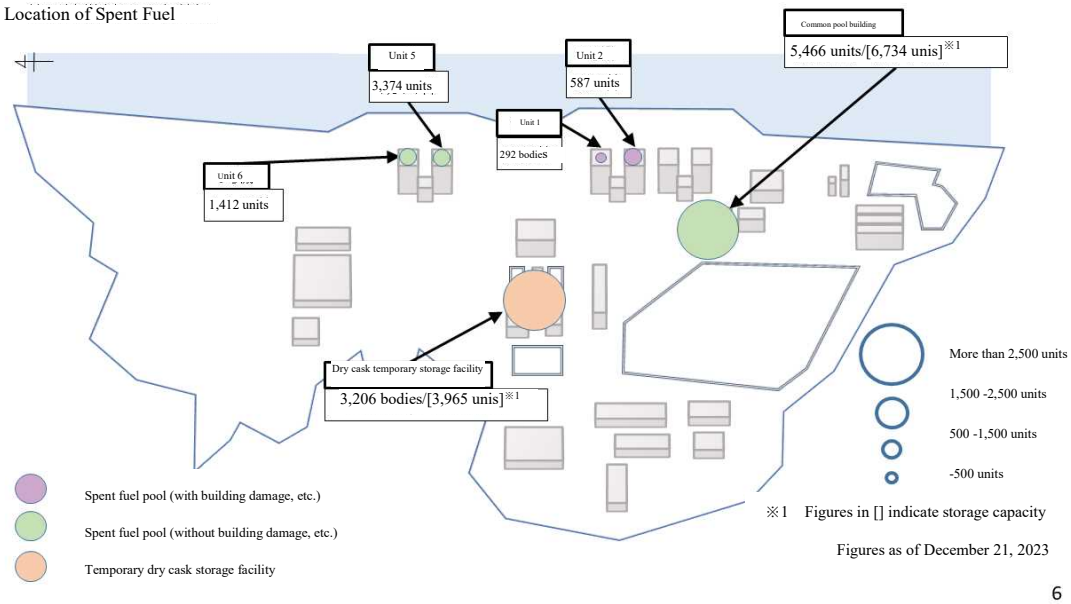


Figure 4-6. The Risk Map, Location of spent fuel

List of Major Inventory （Cs-137）

Existing in Buildings or Absorption Vessel

Location	Inventory (PBq)
Stagnant water (①)	0.16
Zeolite, etc. (②)	3.1
Cs absorption vessel (③)	250
RCW of Unit 1 (④)	0.63
S/C of Unit 1 (⑤)	17
S/C of Unit 3 (⑥)	1.3
Shielded plug (⑦)	130
The amount discharged to ① to ⑦ and the environment from the total amount of CS-137 of Units 1 to 3 (fuel debris etc.	110
The amount released to the environment (atmosphere and ocean) during several week period after the accident	14
Total amount of Cs-137 in Units 1-3	520

Nuclear Spent Fuel

Location	Inventory (PBq)
Spent fuel pool at Unit 1	120
Spent fuel pool at Unit 2	330
Spent fuel pool at Unit 3	0
Spent fuel pool at Unit 4	0
Spent fuel pool at Unit 5	700
Spent fuel pool at Unit 6	720
Common pool	2,800
Dry storage casks	1,600
Total amount	6,200

As of December 21, 2023

- Red boxes indicate high priority items which should be addressed.
- Since the values shown here were evaluated indirectly based on certain assumptions, they have large errors. For example, they were calculated based on the balance of radioactivity of Cs-137 in stagnant water, extrapolation from the measured value at one point, and the average value per spent fuel body.
- Totals do not match because of fractional processing.

7

Figure 4-7: The Risk Map, List of major inventories (Cs-137)

8. Identification of Causes of Trouble at TEPCO's Fukushima Daiichi NPS and Confirmation of Measures to Prevent Their Recurrence

(1) Reportable Event and Others Concerning TEPCO's Fukushima Daiichi NPS

(a) Response to Body Contaminations incident occurred during cleaning operation of Additional ALPS Piping

On October 25, 2023, while conducting cleaning work within the pipeline of the outlet of crossflow filter of the Additional ALPS, which was out of service due to maintenance, an incident occurred where temporarily installed hose to transfer washing liquid waste was disconnected accidentally from the inside of receiving tank, the washing liquid waste scattered to two nearby workers, and body contaminations were found for four workers including the two workers. Regarding the incident, NRA resident inspectors mainly conducted operational safety inspections immediately after occurrence of the said incident. The NRA determined that the incident does not fall under criteria of reportable event. However, as it was found by the operational safety inspection that the procedures specified by TEPCO have not been appropriately implemented, including that radiation workers engaged in the work without wearing anoraks (raincoat) specified in its radiation protection guideline, at the 110th Committee on Oversight and Evaluation (December 18, 2023), the NRA indicated a provisional evaluation as "posing some impacts but minor ones" as a whole, as this incident fell under an observation that constitutes a violation of the Implementation Plan as it falls under "non-fulfillment of the matters on quality management specified by the Implementation Plan (including in-house manual)" but it was determined that its degree of impacts did not fall under "the incident leading to exposure or body contamination exceeding the limits specified in the laws and regulations for radiation workers". At 65th FY2023 NRA Commission Meeting (February 21, 2024), the NRA received report on the status of the operational safety inspection as the implementation status of the operational safety inspection in the third quarter and determined the incident violated the Implementation Plan was classified as "minor violation (oversight)" and was to be continuously overseen. Additionally, the improvement status by TEPCO for restarting the operation was confirmed by the operational safety inspection in January and February, 2024. Through discussions at the 111th Committee on Oversight and Evaluation (February 19, 2024), the NRA also received report thereon at the above-mentioned NRA Commission Meeting. Specifically, the NRA confirmed that potential risks were extracted at the operation step in the said pipeline cleaning, the extracted risks were confirmed and approved based on quality assurance activities by TEPCO, re-education that TEPCO's engagement in contracted radiation control subordinate was specified in the Implementation Plan and dissemination

to foster awareness for proactive management etc. were started.

(b)Leakage of Water Containing Radioactive substances from Building of High Temperature Incinerator

On February 7, 2024, it was confirmed that there was water leakage from vent port of secondary cesium adsorption apparatus (SARRY) (exhaust port of hydrogen generated in the absorber) located at approximately 5m height on the ground of the east side of the building of high temperature incinerator. The NRA received the report that the incident falls under criteria of reportable event according to the results of immediate evaluation of leakage volumes. On February 8, 2024, the NRA instructed TEPCO to conduct the following three points: (a) to identify contaminated scope (not limited to the surface layer but to include inside of the soil) due to the leakage and collect the contaminated water and contaminated soil as much as possible, (b) to strengthen oversight of the status including storm drainage system adjacent to the location of leakage in order to prevent spread of the contamination to the outside of the site and to take measures for isolation if necessary, and (c) to promptly examine and report necessity to implement alternative measures after understanding increased risk throughout the facilities in case of stopping SARRY. The NRA continues to confirm the cause and measures to prevent recurrence in the issue through the operational safety inspection etc.

Section 2 Analysis of the Accident

1. Continuous Analysis of the Accident

The accident analysis is one of the important jurisdictions of the NRA which carries out investigations and analyses from a technological viewpoint.

The NRA decided on the implementation policy and system for supplemental investigation and analysis at the 28th FY2019 NRA Commission Meeting (September 11, 2019) based on the fact that the accessibility to the inside of the reactor building has enhanced due to the improvement of the environment at the site and the progress of decommissioning work, and that it has become possible to check the condition of the facility and collect samples. Through the "Committee on Accident Analysis of Fukushima Daiichi Nuclear Power Station" (hereinafter referred to as the "Accident Analysis Review Committee") the NRA has conducted research and analysis using the results of the on-site investigation, records and other sources at the time of the accident at TEPCO's Fukushima Daiichi NPS.

In FY2023, based on the method for future research and analysis of the accident which was approved at the 84th FY2022 NRA Commission Meeting (March, 29, 2023), the NRA appropriately confirmed the progress status of research and analysis of the accident by

TEPCO and conducted 21 on-site investigations while collaborating with TEPCO, as necessary. As further research and examination in light of "Interim Summary of Investigation and Analysis of TEPCO's Fukushima Daiichi NPS Accident" compiled on March 5, 2023, the NRA conducted examination such as the viewpoint that discharging of hydrogen and radioactive substances within nuclear reactor vessel due to damage of the pipelines of the reactor auxiliary cooling system (RCW system) of Unit 1 identified by an internal research about the primary containment vessel of Unit 1. And it was considered as the cause of accumulated hydrogen and contamination identified in the system. Also, the NRA conducted examination with a viewpoints of analysis of chemical composition and heating experiment in collaboration with Osaka University and National Institute of Technology, Fukushima College, aiming at clarification of the causes of the event where only the rebar remains while the concrete was damaged which was identified by an internal research about the primary containment vessel of Unit 1. As a result, as it was found that damages on concrete were not caused at the temperature of 800℃, the NRA will continue to identify the mechanism leading to damages by conducting rapid cooling and heating experiments at further higher temperature. Additionally, the Accident Analysis Review Committee was held 8 times to examine the above-mentioned incident of pedestal damage, the incident of accumulated hydrogen and contamination in the RCW system of Unit 1 and the cause of high dose rates in Units 1 and 3 observed at the early stage of the accident and monitoring post data etc. inside and outside the site of Fukushima Daiichi NPS etc. in the event of the accident based on the information obtained from the on-site investigations.

Furthermore, in order to ensure consistency between works related to accident analysis and decommissioning, the "Fukushima Daiichi NPS Decommissioning and Accident Investigation Liaison and Coordination Meeting" was held with the participation of Agency for Natural Resources and Energy, the Japan Nuclear Damage Liability and Decommissioning Corporation, TEPCO and the NRA Secretariat, and necessary coordination was carried out.

2. Efforts to Disseminate Information About Analysis of TEPCO's Fukushima Daiichi NPS Accident

The NRA disseminates information on the accident analysis both domestically and internationally.

In FY2023, in the meeting with French Nuclear Safety Authority (ASN) and the French Institute for Radiation Protection and Nuclear Safety (IRSN), the NRA disseminated information on the status of the study concerning the accident analysis.

Besides, with regard to the investigation of the accident at TEPCO's Fukushima Daiichi NPS, the NRA has participated in projects such as the FACE of the OECD/NEA which was newly launched in FY2022 and is chaired by the NRA. In this project, the NRA participated in two meetings on June 28 to 30, 2023 and January 20 to 31, 2024 and had discussions on the latest topic concerning the accident analysis at TEPCO's Fukushima Daiichi NPS with 13 participating countries and one participating region.

Section 3 Implementation of Radiation Monitoring

1. Implementation of Radiation Monitoring of Land and Sea Areas in Response to TEPCO's Fukushima Daiichi NPS Accident

The NRA engaged in post-accident radiation monitoring of TEPCO's Fukushima Daiichi NPS according to the Comprehensive Radiation Monitoring Plan (established at the Monitoring Coordination Meeting on August 2, 2011 and revised on March 21, 2024) including general environmental monitoring throughout Fukushima Prefecture and the sea area monitoring around TEPCO's Fukushima Daiichi NPS and of Tokyo Bay, and released the analysis results every quarter of the fiscal year on the NRA website. The NRA is also monitoring details of difficult-to-return zones and released the results on the NRA website.).

(1) Long-term Perspective on the Distribution of Radioactive substances in Fukushima and Neighboring Prefectures

Air-borne monitoring was conducted in Fukushima Prefecture and neighboring prefectures, and a distribution map of air dose rates in Fukushima Prefecture and neighboring prefectures was published on February 22, 2024. It also released the results of surveys on the distribution status of air dose rates by driving surveys, radioactive cesium deposition in soil in Fukushima and neighboring prefectures and other matters on the NRA website on February 2, 2024.

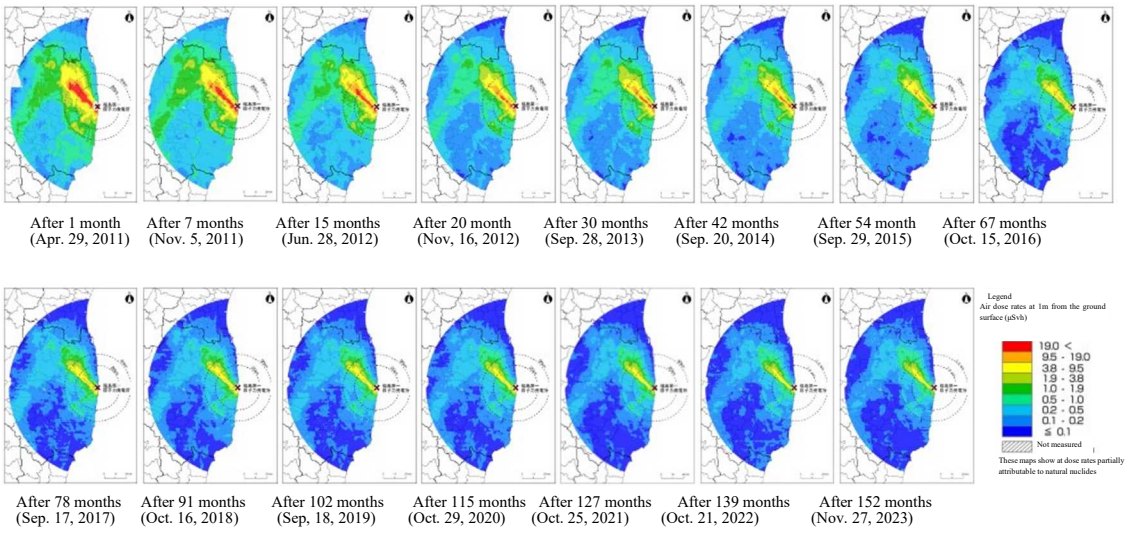


Figure 4-8. Changes in Air Dose Rate Distribution Map Within 80 km Zone

(2) Measuring Air Dose Rates in Fukushima and Neighboring Prefectures through Monitoring Post

At the request of local governments, the air dose rates are measured continuously with about 700 units of Monitoring Posts and about 3,000 units of Real-time Dose Measuring Systems installed at public locations, such as schools in Fukushima and its neighboring prefectures. The results are released on the NRA website in real time.

(3) Monitoring Sea Area

Based on the "Comprehensive Radiation Monitoring Plan," the relevant organizations are cooperating to conduct the sea area monitoring. The NRA collects seawater and sediment from nearshore, coastal, offshore, and open sea of TEPCO's Fukushima Daiichi NPS and from Tokyo Bay, analyzes the radioactivity in those samples, and releases the results on the NRA website.

Based on the Government Policy decided on April 13, 2021, the government and TEPCO were to strengthen and enhance monitoring before and after the discharge of ALPS-treated water. In this case, it was decided that they should ensure reliability of analytical capabilities as part of a joint project with the IAEA, for instance, by inter-laboratory comparison of the monitoring results. In response to this, in FY2023, the NRA confirms that there are no impacts on humans and environments through strengthened and expanded the monitoring of the waters around TEPCO's Fukushima Daiichi NPS and

released the results on the NRA website.

Since FY 2014, joint collection of samples in the vicinity of TEPCO's Fukushima Daiichi NPS and inter-laboratory comparison of analysis results have been conducted annually as part of a joint project with the IAEA. From FY2022, as part of the IAEA review of safety related aspects of the handling of ALPS -treated water stored at TEPCO's Fukushima Daiichi NPS, the NRA also conducted an inter-laboratory comparison to corroborate the results of the Japanese sea area monitoring. From October 16 to 23 in 2023, experts from analytical laboratories in Canada, China and the Republic of Korea, which are members of ALMERA[48], visited Japan in addition to the IAEA to confirm the status of sample collection and other activities.

[48] Analytical Laboratories for the Measurement of Environmental Radioactivity (a cooperative network of international analytical laboratories established by the IAEA.).

Chapter 5 Implementation of Effective Radiation Protection Measures and Emergency Response

○Summary of Chapter 5

(Promotion of Radiation Protection Measures)

At the Radiation Council, follow-up activities were conducted regarding the reassessment of the equivalent dose limit for the lens of the eye. Regarding the adoption of the ICRP 2007 recommendation into domestic regulations, after comparing and summarizing effective dose coefficients etc. between ICRP 1990 recommendation and ICPR 2007 recommendation, future response strategies were deliberated. Furthermore, the NRA received report with the contents of the past large-scale surveys in Japan on indoor radon and deliberate evaluation on radiation protection against indoor radon of Japan.

(Implementation and Continuous Improvement of Regulations Under the Radioisotope Regulation Act)

The NRA reviewed applications for permission and approval, and inspected operators regarding the use, sale, lease, waste management and other handling of radioisotopes, use of radiation generators, disposal of radioactively contaminated objects and other handling based on the Radioisotope Regulation Act.

In addition, the NRA enforced the revised Order for Enforcement of the Act on the Regulation of Radioisotopes, etc., (Cabinet Order No. 259 of 1960) and the public notice on January 1, 2024, to resolve the double regulations under the Medical Care Act (Act No.205, 1948) and the Radioisotope Regulation Act, particularly for unapproved radio pharmaceuticals used in specific clinical research and make efforts to raise awareness of the revised Cabinet Order and public notice. Additionally, upon on-site inspection for authorized operators, the NRA made efforts to raise awareness of a guideline for reviews and a guideline for on-site inspection concerning the Radioisotope Regulation Act.

(Continuous Improvement of the NRA Guide for Emergency Preparedness and Response)

In line with the revision of the NRA Guide for Emergency Preparedness and Response on April 6, 2022, the NRA approved to jointly establish the "Implementation Manual for Thyroid Exposure Dose Monitoring" by the Secretariat of the NRA and the Cabinet Office.

At the 38th FY2023 NRA Commission Meeting (October 18, 2023), the NRA decided the revision of the NRA Guide for Emergency Preparedness and Response and reviewed Emergency Action Levels concerning special facilities for severe accident management of boiling water reactor.

For the purpose of operation of sheltering in place most effectively, the NRA approved to establish "Study team on the operation of sheltering in place in the event of nuclear emergency" at the 73rd FY2023 NRA Commission Meeting (March 27, 2024).

(Establishment and Operation of Crisis Management System)

In Shika Nuclear Power Station of Hokuriku Electric Power Company (suspended), because of the earthquake of January 1, 2024, while overflow due to sloshing of spent fuel pool and oil leakage etc. due to a partial transformer failure was caused, it was confirmed that required safety functions such as cooling of spent fuel and power sources were secured. Additionally, it is found that there were no abnormalities in the value of exhaust pipe monitor on the premises and monitoring post within and in the vicinity of the nuclear power plant sites and it was confirmed that there are no problems caused that have impacts for securing safety for the nuclear power plant such as leakage of radioactive substances etc. Furthermore, as the situation in which measurements cannot be confirmed in 18 monitoring posts that are located beyond 15 km from the nuclear power plant, the NRA prepared airborne monitoring as well as installing mobile monitoring posts.

As the response in the event of nuclear emergency situations, at the 36th FY 2023 NRA Commission Meeting (October 4, 2023), the NRA received the report on technical manual for

emergency response to easily evaluate and grasp the status of nuclear reactors and the impacts at the time of discharging radioactive substances. Additionally, the NRA started the training for the members of ERC team plant group that utilize the technical manual for emergency response.

In order to enhance emergency response capabilities, tabletop training for emergency response (twice), involving decision-makers such as the NRA Chairman, Commissioners, and executives of the Secretariat of the NRA, was conducted. The commissioners of the NRA and others participated in nuclear operator disaster prevention training. In nuclear operation disaster prevention training, the NRA made efforts to improve capabilities of nuclear operators and ERC Plant Team including implementation of simulated training of simultaneous occurrence of disaster at multiple nuclear sites of the same area targeting at Rokkasho Area and Tokai/Oarai Area, and training to confirm off-site response procedures based on scenarios and the flow of the day during operator disaster preparedness training. Moreover, efforts were made in the implementation and evaluation of training, identification and improvement of challenges obtained through training and strengthening of communication network facilities and systems.

To enhance the emergency response capabilities of operators, discussions were initiated with operators regarding the training approach. Initiatives included conducting peer reviews among nuclear operators using diverse accident scenarios, improving the effectiveness of emergency response organizations, and collaborating with administrative agencies to enhance disaster response. These efforts, including the use of evaluation criteria by the NRA, were operated as a trial starting from FY2023 nuclear operator disaster prevention training.

Regarding development of the nuclear emergency medical system, Fukui University newly joined as an Advanced Radiation Emergency Medical Support Center from April 1, 2023, and the operation system was established as six facilities to designate as Advanced Radiation Emergency Medical Support Center and Nuclear Emergency Medical Support Center.

(Conducting Radiation Monitoring)

The NRA publishes monitoring information on a routine basis using the “Radiation Monitoring Information Sharing and Publication System (RAMIS)” aimed at aggregating results of emergency monitoring in the event of a nuclear emergency, sharing them among the parties concerned, and disclosing relevant information promptly. It also continuously measures environmental radiation dose nationwide and publishes results on its website.

Technical considerations related to radiation monitoring are actively discussed, leading to revision of Series of Environmental Radioactivity Measuring Method No.9, titled No.9: Tritium Analysis Method” and “No.15: Radioiodine Analysis in Emergencies” on October 16, 2023 and “Emergency Monitoring (supplemental reference materials for the NRA Guide for Emergency Preparedness and Response) (additional information on aircraft monitoring by using uninhabited vehicle) on March 21, 2024.

Section 1 Promotion of Radiation Protection Measures

1. Investigation and Deliberation by the Radiation Council

The NRA has established the Radiation Council, based on the law (Law No. 162 of 1958) related to technical standards for prevention of radiation hazards. The purpose of the Radiation Council is to ensure uniformity in technical standards for prevention of radiation hazards.

The Radiation Council held two meetings, addressing issues highlighted in the report related to the review of the equivalent dose limit for the lens of the eye. It conducted follow-up discussions on the operation after amendments to regulations such as the Regulation on Prevention of Ionizing Radiation Hazards (Ordinance of the Ministry of Labour, 1972). The Council also received reports from the Secretariat of the NRA on international developments in radiation protection. Additionally, regarding the adoption of the ICRP 2007 recommendation into domestic regulations, the Council received report on future response strategies etc. after comparing and summarizing effective dose coefficients etc. between ICRP 1990 recommendation and ICPR 2007 recommendation, and on new definition of operational quantity from external experts, and the challenges that are assumed to be considered upon such adoption were deliberated.

In addition, the Council received report with the contents of the past large-scale surveys in Japan on indoor radon from the NRA Secretariat and deliberate how to proceed with the evaluation on radiation protection against indoor radon of Japan.

Section 2 Implementation and Continuous Improvement of Regulations Related to the Radioisotope Regulation Act

1. Rigorous and Proper Implementation of the Radioisotope Regulation Act

To prevent radiation hazards due to the use of radioisotopes or radiation generators, and ensure public safety by protecting specific radioisotopes, the NRA regulates the use, sale, lease, waste management and other handling of radioisotopes, the use of radiation generators, disposal of radioactively contaminated objects, etc. based on the Radioisotope Regulation Act.

The implementation status of these regulations is as follows:

(1) Applications and Notifications

In FY2023, there were 9,364 applications and notifications based on the Radioisotope Regulation Act.

The number of certificates issued for Radiation Protection Supervisors were 523 for first-class, 237 for second-class, and 294 for third-class in FY2023.

(2) Inspection

The NRA carried out 158 inspections for radiation hazard prevention and 43 inspections for security of specified radioisotopes in FY2023.

(3) Confirmation of Causes and Preventive Measures for Problems in Operator's Site

Based on the Act, operators must report to the NRA when an incident under obligation to report occurs. The NRA conducts INES evaluation on events that occur at operator's sites.

In FY2023, the NRA responded to six incidents under obligation to report that occurred in FY2021 and 2022 as follows.

(a) Leakage of Radioisotopes in a Controlled Area at Koa Kogyo

On January 28, 2022, Koa Kogyo reported a leakage of radioisotopes in the controlled area at their head factory in Shizuoka Prefecture. As of October 27, 2022, the company submitted the

report regarding the causes and measures of the incident. At the 9th FY2023 NRA Commission Meeting (May 10, 2023), the NRA evaluated this incident as Level 0 (an incident with no safety significance).

(b) Loss of Radioisotopes at Japan Ministry of Defense's Air Self-Defense Force 6th Air Wing

On April 15, 2022, Japan Ministry of Defense's Air Self-Defense Force 6th Air Wing reported the loss of radioisotopes off the coast of Komatsu City, Ishikawa Prefecture. As of June 10, 2022, Japan Air Self-Defense Force submitted the report regarding the causes and measures of this incident. At the 9th FY2023 NRA Commission Meeting (May 10, 2023), the NRA evaluated this incident as Level 0 (an incident with no safety significance).

(c) Leakage of Radioisotopes Outside the Controlled Area at Sekisui Medical

On August 5, 2022, Sekisui Medical reported a leak of radioisotopes outside the controlled area at their Drug Development Solutions Center in Ibaraki Prefecture. As of November 22, 2023, the company submitted the report regarding the causes and measures of this incident.

The report states that there are no impacts on human and the environment according to the results of the soil recovery survey, the evaluation of air dose rate, the radioactivity measurement of the neighboring well water and the evaluation of radioactive concentration leaked into the soil. In addition, according to the verification results of the status of the site, it is determined that the cause of leakage was the fracture or dropping out of the draining pipes due to instantaneous application of strong force by strong earthquake tremor as balancing support fitting was not installed. Furthermore, as an indirect cause, it is mentioned that the said draining pipes are not subject to self-inspection and that the underfloor area was not designated as the controlled area.

As the preventative measures, the company decided to implement the countermeasures against tremor of earthquakes etc. for the draining pipes used in the usage facilities, to periodically review the reports of self-inspection, and to designate the area where the draining pipes run as a controlled area etc. after changing the pipes which radioisotopes go through to fail-safe structure so that such radioisotopes could be sufficiently recovered in case of leakage.

(d) Unplanned Exposure of Radiation Workers at WITHSOL

On October 16, 2022, WITHSOL. reported that unplanned exposure of radiation workers at their oil refinery in Ibaraki Prefecture. As of September 21, 2023, the company submitted the report regarding the causes and measures of the incident (supplemented on October 3, 2023).

The report states that the radiation dose of two radiation workers that received an unplanned exposure does not exceed the annual limits of dose according to the evaluation of the effective dose, and the evaluation of the equivalent dose for the lens of the eye and the skin. In addition, it also states there are no impacts on the environment according to the results of measurement of dose at the boundary of the controlled area. Furthermore, it also states that the causes of such exposure were that the two workers engaged in their work forgot to rewind the line sources and to confirm safety specified in work procedures upon using gamma-ray transmission testing equipment and that they failed to notice the alarm sound and vibration of the dose meter due to working environment.

As the preventative measures, the company decided to newly establish the work procedures for gamma-ray transmission testing according to the contents of the work, to provide the education for the workers and to implement the method by which the workers can perceive visually and aurally that the line sources are under irradiation.

(e) Leakage of Radioisotopes Outside the Controlled Area at Tohoku Medical and Pharmaceutical University

On December 23, 2022, Tohoku Medical and Pharmaceutical University reported leakage of radioisotopes outside the controlled area at their Komatsushima Campus in Miyagi Prefecture. As of February 19, 2024, the University submitted the report regarding the causes and measures of this incident.

The report states that there are no impacts on human and the environment according to radioisotopes in waste liquid bottle and the results of measurements of assumed leakage volume and surface contamination density. Additionally, it is mentioned that the cause of the leakage is that the waste liquid bottle was not properly handled although it should have been brought into waste storage chamber due to the lack of safety management awareness of the workers in charge at that time. Other causes are, that there was no label indicating that there is liquid containing radioisotopes on the said waste liquid bottle, and that the workers brought out the bottle with other equipment etc. when taking out the objects for the reconstruction of the facilities.

As the preventative measures,the University decided to review the rules in the University including review of management of radioisotopes, to provide the educational training for the purpose of improvement of safety management awareness, to prepare the records to bring out equipment etc., and to apply the label to the bottle so that it can be easily recognized when looked from the outside.

(f) Loss of Radioisotopes at Nippon Soda

On February 7, 2023, Nippon Soda reported the loss of radioisotopes at their Odawara Research Institute in Kanagawa Prefecture. As of December 14, 2023, the company submitted the report regarding the causes and measures of this incident.

The report states that there are no impacts on human and the environment according to the results of the survey on three radioactive compounds that were considered to be lost. The company confirmed that all amount of three radioactive compounds were either used, disposed of, or confirmed of their location by the survey and concluded loss, taking out of radioactive compounds out of the controlled area or leakage were not occurred.

Additionally, it is determined that the cause of this incident was miscommunication between the user and the person responsible for the management, omissions in entry as the records of other laws and regulations were also prepared, lack of management as an organization due to the organizational lack of understanding on the Radiation Hazard Prevention Program and personalization of the management work, and the lack of verification on the inventory.

As the preventative measures,the company decided to manage both the records of other laws and regulations and the records of the Radioisotope Regulation Act together, and to review its Radiation Hazard Prevention Program.

In FY2023, six incidents under obligation to report were reported, which were all evaluated as not being likely to cause radiation hazards to any employees or the public.

The summary of six incidents is as follows.

(g) Loss of Radioisotopes at Prefectural University of Kumamoto

On May 12, 2023, Prefectural University of Kumamoto reported that gas chromatography with electron capture detector (ECD [49]) containing sealed radiation sources (Nickel63, 555 megabecquerels) was accidentally disposed at Faculty of Environmental & Symbiotic Science of

[49] Electron Capture Detector

the same University in Kumamoto Prefecture, and that this event was determined to fall under the incident under obligation to report (loss of radioisotopes). After this report, the University submitted the report regarding the causes and measures of this incident as of December 14, 2023.

The report states that there are no impacts on human and the environment, because beta rays emitted from Nickel63 can be shield by thin metal panel as the range of beta rays emitted in the air is short, the sealed source is sufficiently diluted as the sealed source is kept within stainless steel vessel, melted and treated with other scrap metals after pressed and crashed upon disposal treatment, and beta rays emitted from the sealed source is shielded by the metal coating. The report also states that the cause of such loss was that the notification and disposal was not promptly conducted as the check by faculties upon the disposal was not sufficient and the responsibility on the notification and disposal upon the discontinuation of its use was ambiguous.

As the preventative measures, the University decided to prepare the list specifying the person responsible, storage procedures, and procedures upon disposal, to conduct mutual management by the person responsible for use and the central office of the University, and to require the approval of the office upon disposal, regarding the equipment which needs caution upon storage or disposal.

(h) Unplanned Exposure of Radioactive Workers at TECHNOS MIHARA

On August 3, 2023, TECHNOS MIHARA reported that the incident at the irradiation chamber of their factory in Hiroshima Prefecture was categorized as an incident under obligation to report (unplanned exposure). During non-destructive testing of pipes using a gamma-ray transmitting testing device containing a sealed source (Iridium-192, 370 giga-becquerels) the two radiation workers conducting the testing received an unplanned exposure exceeding 5 millisieverts.

At present, the company is investigating the cause and considering preventive measures.

(i) Leakage due to damage of sealed radioisotopes at Fukuoka Prefectural Police's First Riot Police Unit

On October 5, 2023, Fukuoka Prefectural Police's First Riot Police Unit reported an incident at Kirishima Maneuvering Ground of Ground Self-Defense Force in Miyazaki Prefecture was categorized as an incident under obligation to report (leakage outside the controlled area). When an officer dropped the gun equipped with sighting components containing radioisotopes (Tritium, 0.666 giga-becquerels), the sighting components were broken, and the sealed tritium was leaked. After the incident, the Governor of Fukuoka Prefecture submitted the report concerning the causes and measures as of November 16, 2023.

The report states that there are no impacts on human and the environment based on the results of the evaluation on the dose rate for the surface of the sighting components and for the surrounding area. The report also states that the cause of leakage was due to a decline in consciousness in safe handling of the radiation source for sighting components such as loosen holster as the officer concentrated on the training and a simplistic assertion that the gun would not drop off as long as bunding band etc. is installed. As the preventative measures, since the radiation source for sighting components is vulnerable to shock such as dropping off, the Prefecture decided to disseminate the fact that the radiation source for sighting components is vulnerable to shock to the staff members who handle the radiation source for sighting components and make efforts to prevent the same incident.

(j) Loss of Radioisotopes at Tsukuba University

On October 31, 2023, Tsukuba University reported an incident at Institute of Life and Environmental Science, where they accidentally disposed gas chromatography with ECD

containing sealed radiation source (Nickel63, 370 megabecquerels). They reported this incident to be categorized as an incident under obligation to report (loss of radioisotopes).

At present, the University is investigating the cause and considering preventive measures.

(k) Leakage of Radioisotopes Outside the Controlled Area at Hokuetsu Corporation

On November 13, 2023, Hokuetsu Corporation reported an incident at Osaka Factory of the same company in Osaka Prefecture was categorized as an incident under obligation to report (leakage outside the controlled area). The company found that the signal value of basic weight sensor is lower than usual during inspection for equipment malfunction of the basic weight sensor and determined that the gaseous radioisotopes from the sealed radiation source (Krypton-85, 18.5 gigabecquerels) was leaked outside the controlled area.

At present, the company is investigating the causes and considering preventive measures.

(l) Loss of Radioisotopes at RIKEN KEIKI

On March 12, 2024, RIKEN KEIKI reported an incident at Development Center of the same company in Saitama Prefecture, that one of 800 sealed radiation sources (Americium 241, 18.5 kilobecquerels) collected from expired pyrolysis-particle detection sensors was lost and that sealed radiation source could not be found although the company had been searching. The company reported that they determined this incident to be categorized as an incident under obligation to report (loss of radioisotopes).

At present, the company is investigating the causes and considering preventive measures.

2. Continuous Improvement of Regulation pertaining to the Radioisotope Regulation Act

(1) Amendment of Cabinet Order Regarding the Resolution of Double Regulations for Unapproved Radioactive Pharmaceuticals and Similar Items

In 2019, an amendment to the Enforcement Regulations of the Medical Care Act (Ministry of Health, Labour, and Welfare Order No. 50 of 1948) included unapproved radiopharmaceuticals[50], specifically those used in specific clinical research, within the regulations for radiation protection under the Medical Care Act. Recognizing that these unapproved radiopharmaceuticals were regulated under both the Medical Care Act and the Radioisotope Regulation Act, in order to eliminate this double regulation and to make systems that secure radiation protection on its use and other handling to be designated by NRA, the NRA revised the Article 1 of Order for Enforcement of the Act on the Regulation of Radioisotopes, etc. in FY2022.

In FY2023, the revised Cabinet Order and new public notice were enforced on January 1, 2024 and the NRA raised awareness of the revised Cabinet Order and new public notice through seminars.

(2) Development of Guidelines for Reviews and Guidelines for On-site Inspections related to Regulations Based on the Radioisotope Regulation Act

In response to the gradual enforcement of the Radiation Regulation Act, which was amended in 2017, the NRA has been developing guidelines related to the Radioisotope Regulation Act that include references which the NRA uses when it assesses compliance with regulatory requirements stipulated in the Act.

The guidelines for reviews and on-site inspections established on March 29, 2023 compile "viewpoints of confirmation" concerning the Radioisotope Regulation Act. In order to contribute

[50]It refers to radioactive pharmaceuticals that have not received approval for sale under the Pharmaceuticals, Medical Devices, and Other Therapeutic Products Act (Law No. 145 of 1960), which ensures the quality, efficacy, and safety of pharmaceuticals and medical devices.

to better foreseeability for authorized operators, the NRA raised awareness of the guidelines upon on-site inspections.

(3) Response to The Action Plan for Promotion of Production and Utilization of Medical Radioisotopes

The Cabinet Office reported the progress on relevant ministries and agencies in FY2022 regarding implementation of actions based on "The Action Plan for Promotion of Production and Utilization of Medical Radioisotopes" decided by the Japan Atomic Energy Commission in 2022, in their regular meeting. In the report, it is indicated that the NRA will consider to improve regulations as necessary, based on the progress in the use of radioisotopes in the medical field and the deliberations of relevant ministries and agencies.

Section 3 Continuous Improvement of the NRA Guide for Emergency Preparedness and Response

1. Revision of the NRA Guide for Emergency Preparedness and Response

Based on the Nuclear Emergency Act, the NRA has developed the NRA Guide for Emergency Preparedness and Response to ensure smooth implementation of nuclear emergency response to be taken by nuclear operators, the national government, and local governments, etc. The Guide is to be continuously improved based on newly acquired knowledge, status of efforts by local governments and the results of nuclear emergency drills.

(1) Establishment of the "Implementation Manual for Thyroid Exposure Dose Monitoring"

In consideration of the revision of the "NRA Guide for Emergency Preparedness and Response" at the 1st FY2022 NRA Commission Meeting (April 6, 2022), the NRA approved to establish the "Implementation Manual for Thyroid Exposure Dose Monitoring," outlining the matters to be referenced upon implementing thyroid exposure dose monitoring to be jointly formulated by the Secretariat of the NRA and the Cabinet Office at the 13rd FY2023 NRA Commission Meeting (May 31, 2024).

(2) Revision of Emergency Action Levels (EALs)

In light of the review of Emergency Action Levels (EAL[51]) to assess whether nuclear operators fall under the classification of emergency situations, as reported in the 14th FY2022 NRA Commission Meeting (June 1, 2022), the NRA held "Meetings on Responses to the Review of Emergency Action Levels" concerning the special facilities for severe accident management etc. on April 28, 2023 and discussed the draft of EAL revision with nuclear operators at the meeting.

Thereafter, at the 25th FY2023 NRA Commission Meeting (August 2, 2023), the NRA approved to solicit public comments on the Guideline for Nuclear Emergency Preparedness and Response concerning the review on EAL and proposal to revise relevant regulations etc. At the 38th FY2023 NRA Commission Meeting, the NRA approved approach to the opinions submitted and decided the revision of the Guideline for Nuclear Emergency Preparedness and Response and relevant regulations etc.

(3) Study on the Operation of Sheltering in Place in the Event of Nuclear Emergency

On the issues on sheltering in place based on exchange of views held in Onagawa district with the local government on January 13, 2024, after the discussion at the 59th FY2023 NRA Commission Meeting (January 17, 2024), the NRA decided to start study on the point of the

[51] Emergency Action Level

discussion at the 64th FY2023 NRA Commission Meeting (February 14, 2024) that the secretariat arranged in order to operate sheltering in place most effectively. For the purpose of operation of sheltering indoors most effectively, the NRA approved to establish “Study team on the operation of sheltering in place in the event of nuclear emergency” at the 73rd FY2023 NRA Commission Meeting (March 27, 2024).

Section 4 Establishment and Operation of Crisis Management System

1. Strengthening Emergency Response Capabilities

(1) Emergency Response

Due to an earthquake that occurred off the coast of Noto Peninsula on May 5, 2023, at local time 14:42, the NRA strengthened its information collection and coordination system. Regarding the missile launched by North Korea on April 13, May 31, August 24 and November 21 of the same year, the NRA also strengthened its information collection and coordination system, which allowed for a quick confirmation of the absence of abnormalities at nuclear facilities, and information was promptly shared with relevant government agencies. External communication of information was also conducted.

(2) Response to 2024 Noto Peninsula Earthquake

In 2024 Noto Peninsula Earthquake on January 1 2024, at 16:10 in Shika Machi, Hakui Gun, Ishikawa Prefecture as a municipality where nuclear facilities are located, since a seismic intensity of 6 lower or more was observed, which led to the alert level event, Nuclear Regulation Authority and Cabinet Office Joint Nuclear Accident Alert Headquarter was established at 16:19 of the same day to take measures such as information collection subject to Shika Nuclear Power Stationof Hokuriku Electric Power Company and TEPCO's Kashiwazaki-Kariwa NPS and information sharing with related organizations, and external communication of information. The NRA received report on the status of facilities and radiation measurement value in the surrounding environment from the nuclear operators immediately after occurrence of the earthquake, confirmed the presence of abnormalities including in the ones in monitoring post installed in municipalities, shared information with relevant ministries and agencies and communicate information through the website of the Nuclear Regulation Authority and e-mail. As it was confirmed at 16:49 of the same day that there were no abnormalities in the functions of “Shutdown/Cooling /Confinement” of nuclear reactors and the state of “Cooling” of spent nuclear fuel and the Meteorological Agency switched major tsunami warning to tsunami warning at 20:30 of the same day, Nuclear Regulation Authority and Cabinet Office Joint Nuclear Accident Alert Headquarter concerning Shika Nuclear Power Stationof Hokuriku Electric Power Company was abolished at 21:50 of the same day.

Impacts of this earthquake on Shika Nuclear Power Station of Hokuriku Electric Power Company were that two of five lines of external power source were unavailable due to oil leakage of transformers. However, necessary power sources were secured including emergency power supply in addition to continuous maintenance of receiving electricity power. While the event of overflow stream from spent nuclear fuel pool occurred, there was no leakage outside the controlled area and were no abnormalities in the water level of the pool and cooling functions. Furthermore, it is found that there were no abnormalities in the values of exhaust pipe monitor on the premises and monitoring post within and in the vicinity of the nuclear power plant sites and it was confirmed that there are no problems caused that have impacts for securing safety for the nuclear power plant such as leakage of radioactive substances etc. Furthermore, as the situation in which measurements cannot be confirmed in 18 monitoring posts that are located beyond 15 km from the nuclear power plant, the NRA prepared airborne monitoring as well as installing mobile monitoring posts.

Additionally, at 23:20 of January 6, 2024, similarly, in Shika Machi, a seismic intensity of 6

lower or more was observed, which also led to the alert level event, Nuclear Regulation Authority and Cabinet Office Joint Nuclear Accident Alert Headquarter was established at 23:20 of the same day to take similar measures. Thereafter, as it was confirmed at 0:09 of January 7 that there were no abnormalities in the functions of "Shutdown/Cooling /Confinement" of nuclear reactors and the state of "Cooling" of spent nuclear fuel, Nuclear Regulation Authority and Cabinet Office Joint Nuclear Accident Alert Headquarter concerning Shika Nuclear Power Station of Hokuriku Electric Power Company was abolished at 0:20 of the same day.

The NRA received the report on these measures from the NRA Secretariat at the 57th FY2023 NRA Commission Meeting (January 10, 2024) and at the 63rd FY2023 NRA Commission Meeting (February 7, 2024). Thereafter, the following measures have been taken for the challenges that became apparent upon taking emergency response:

- Taking into account the fact that the situation occurred in which measurements cannot be confirmed in some monitoring posts, the NRA aims at diversification of radiation monitoring by strengthening mobility of monitoring system by airborne monitoring etc. using unmanned aircraft as well as implementing measures for improving reliability of communication.
- The pages for information on 2024 Noto Peninsula Earthquake arranged in an easy-to-understand way that have been distributed since the occurrence of the Earthquake were prepared and publicized. The NRA will continue to make efforts including preparation of summarized pages from the beginning in case where similar measures are required to be taken in the future.

By organizing the lessons obtained from a series of emergency responses, the NRA will continue to work on improvement in order to realize further effective emergency response.

(3) Establishment of Manuals for Crisis Management Response

Taking lessons from the Nuclear Energy Disaster Prevention Drills of FY2022 and FY2023, the Nuclear Emergency Response Headquarters Secretariat and the Nuclear Emergency Response Headquarters have been engaged in the revision of the "Nuclear Emergency Response Manual".

Regarding a manual for transport accident response that specifies the initial response in the event of disasters due to the overland transport of radioactive substances, in order to confirm its effectiveness, training briefing was conducted on December 21, 2023 and the training was conducted according to the scenario on the assumption of an actual accident on February 26, 2024.

Furthermore, in nuclear emergency, not solely depending on the information shared with nuclear operators on the status of nuclear reactors and the impacts at the time of discharging radioactive substances, for the purpose of evaluating and grasping the situations by themselves as necessary, the NRA received the report on establishment of Technical Manual for Emergency Response developed by reference to Response Technical Manual prepared by US Nuclear Regulatory Commission (NRC) at the 36th FY2023 NRA Commission Meeting (October 4, 2023). Additionally, it was initiated that training for ERC plant team utilizing the Emergency Response Technical Manual.

(4) Functional Enhancement in Disaster Preparedness Training

The NRA continues to enhance the capabilities of staff involved in disaster preparedness and extraction and improvement of challenges in the disaster management system, through implementation and participation of various training.

In FY2022, to enhance emergency response capabilities, the NRA conducted tabletop exercises for emergency response, focusing on decision-makers such as the NRA Chairman, Commissioners, and the Secretariat of the NRA (twice). Additionally, the Chairman of the NRA

participated in certain operator disaster preparedness training.

Furthermore, training exercises connected to operator disaster preparedness were conducted to pursue smoother information sharing between the Secretariat of the NRA Emergency Response Center (ERC) Plant Team and the operator's Nuclear Facility Emergency Response Center. Two training sessions were held to confirm off-site response procedures based on scenarios and the flow of the day during operator disaster preparedness training. To verify communication with local governments in the vicinity of nuclear facilities using landlines and satellite communication, emergency communication drills were conducted 17 times. Activity training of the emergency monitoring center for the swift establishment and smooth operation of it was conducted 14 times. Additionally, to establish effective information sharing with operators in the event of physical protection of nuclear material during an incident, drills related to physical protection of nuclear material were conducted 59 times.

Moreover, in the Nuclear Energy Disaster Prevention Drill held for Kashiwazaki Kariwa area from October 27 to 29, 2023, by adding the situation on temporary relocation of residence for ERC team off-site function group, the training was implemented for the purpose of smoothly proceeding with establishing temporary relocation areas, preparing request documents and temporarily relocating residence of inspections at the time of evacuation and exit screening etc. Additionally, for the ERC comprehensive team group, ERC operation and support group and ERC actual corresponding group that are not directly engaged in these activities, by adding the situation on dispatching experts to the temporary relocation areas, the training was implemented aiming at improvement of the proficiency of these groups.

Furthermore, to enhance the effectiveness of service continuity plans in response to events like the Tokyo Inland Earthquakes, drills such as foot gathering exercises, communication exercises, headquarters establishment exercises, and alternative off-site center activation exercises were conducted to confirm equipment and functionality.

(5) Strengthening and Enhancement of Nuclear Emergency Medical System

Regarding development of the nuclear emergency medical system, by six facilities including Fukui University newly designated as an Advanced Radiation Emergency Medical Support Center from April 1, 2023, Hirosaki University, Fukushima Medical University, Hiroshima University and Nagasaki University designated as Advanced Radiation Emergency Medical Support Center and Nuclear Emergency Medical Support Center, other than the National Institutes for Quantum and Science and Technology designated as Core Advanced Radiation Emergency Medical Support Center, the operation system was established. Additionally, the NRA made efforts to support development of facilities and equipment in the above-mentioned six facilities, accept the persons exposed to radiation and sick and injured persons and develop environment to educate and train medical professionals.

2. Strengthening Disaster Preparedness for Nuclear Operators

(1) Implementation and Continuous Improvement of Nuclear Operator Disaster Preparedness Training

The NRA has been holding the Debriefing Session of Emergency Drills by Nuclear Operators and evaluating drills conducted by nuclear operators since FY2013.

In the report meeting held on July 26, 2023, the evaluation results for nuclear operator disaster preparedness training were presented by the Secretariat of the NRA.

Regarding Commercial Power Reactor facilities, views on the desired status of training and regulatory involvement for the purpose of training to improve the ability for emergency response have been proceeded since FW2021. It is determined that further flexible and voluntary training

is to be promoted, that the policies to improve effectiveness of training are to be reflected to the training implementation policy of FY2023, and the FY2023 training was implemented. In the future, extraction and improvement of the challenges will continue to be conducted.

Specifically, in order to improve the ability for emergency response, as the approach to evaluate the Disaster Prevention Drill for nuclear operators, the NRA started its operation by newly adding the following matters:

- Implementation of training according to diverse scenarios, which do not always lead to nuclear emergency situations (implementing whistle-blowing and disaster drill concerning system constructure assuming the occurrence of nuclear emergency situations as elementary drills)
- Upon evaluating training, utilizing results of peer review among nuclear operators and results of self-evaluation by nuclear operators based on the training evaluation indicators of the NRA Secretariat. By allowing information sharing with simulated ERC team plant group by the nuclear operators, promoting implementation of further flexible and voluntary Disaster Prevention Drill for nuclear operators.
- Implementing the Disaster Prevention Drill for nuclear operators with participation in and collaboration with a wide range of emergency response organizations including physical protection departments, for the purpose of improvement of effectiveness of emergency response organizations.

Regarding the Japan Atomic Energy Agency and Japan Nuclear Fuel Limited among the nuclear fuel facilities and other operators, as the training on assumption of simultaneous occurrence of disasters of neighboring nuclear sites etc. was implemented, the NRA confirmed their improvement of crisis response capabilities through their improvement efforts even under challenging situations. It was decided to continue monitoring to ensure that improvement efforts are well-established.

For other nuclear fuel facilities, in order to establish appropriate information sharing with the ERC Plant Team, aiming at visualizing information by promoting introduction of information sharing system utilizing the Internet, the training was implemented on assumption of the situations close to an actual one by implementing the training with non-disclosure scenario at many nuclear sites. It was decided to continue monitoring to take action on extraction of challenges and ensure that improvement efforts are well-established.

Furthermore, the NRA reported at the 14th FY2022 NRA Commission Meeting (June 1, 2022), that for nuclear facilities with relatively low risk, there was no risk of a nuclear emergency due to the characteristics of these facilities, and unnecessary EALs were not set. After that, the NRA Secretariat verified that the nuclear operator's disaster preparedness operational plan for the corresponding facility was revised and that the review of EALs has been appropriately conducted. Additionally, the NRA will continue to verify if the nuclear emergency preparedness and response after revision of EAL is appropriately conducted in the nuclear operator's disaster preparedness training.

For the nuclear fuel facilities etc., multiple nuclear sites are established in the same area. In the event of large-scale disasters, it is assumed that the disasters occur simultaneously in areas with multiple nuclear sites. Therefore, in the Disaster Prevention Drills for nuclear operators, targeting at Rokkasho Area and Tokai/Oarai Area, training of simultaneous occurrence of disaster at multiple nuclear sites of the same area was implemented. In the future, extraction and improvement of the challenges will continue to be conducted.

Table 5-1: Results of Nuclear Operator Disaster Preparedness Training in FY2023 for Commercial Power Reactor

○Record of Emergency Drills Held by Nuclear Operators at Commercial Power Reactors in FY2023

№	Implementation Date	Place	
1	September 1, 2023	Tokyo Electric Power Company Holdings, Inc.	Fukushima Daiichi/Fukushima Daini NPS
2	September 5, 2023	Tohoku Electric Power Co., Inc.	Tokai NPS
3	September 22, 2023	Kansai Electric Power Co., Inc.	Mihama NPS
4	November 24, 2023	Chugoku Electric Power Co., Inc.	Shimane NPS
5	December 6, 11, 2023	Japan Atomic Power Company	Tsuruga NPS
6	December 19, 2023	Kyushu Electric Power Co., Inc.	Sendai NPS
7	January 12, 2024	Kansai Electric Power Co., Inc.	Ohi NPS
8	January 23, 2024	Tohoku Electric Power Co., Inc.	Onagawa NPS
9	January 26, 2024	Hokkaido Electric Power Co., Inc.	Tomari NPS
10	February 2, 2024	Shikoku Electric Power Co., Inc.	Ikata NPS
11	February 9, 2024	Chubu Electric Power Co., Inc.	Hamaoka NPS
12	February 13※1 14, 2024	Japan Atomic Power Company	Tokai Daini NPS
13	February 16, 2024	Tokyo Electric Power Company Holdings, Inc.	Kashiwazaki-Kariwa NPS
14	February 20, 2024	Kansai Electric Power Co., Inc.	Takahama NPS
15	February 27, 2024	Kyushu Electric Power Co., Inc.	Genkai NPS
16	Postponed to FY2024※2	Hokuriku Kyushu Electric Power Co., Inc.	Shika NPS

※1 Emergency drill on assumption of simultaneous occurrence of disaster with Tokai NPS of Japan Atomic Power Co. and Nuclear Fuel Cycle Engineering Laboratories.
※2 Due to 2024 Noto Peninsula Earthquake that occurred on January 1, 2024, it was postponed in FY2024.

○Assessment Indices Assessment Indices for Emergency Drills by Nuclear Operators at Commercial Power Reactors in FY2023

Category	№	Index
Information sharing/notification	1	Information flow for information sharing
	2	Information sharing with ERC plant team: (1)Status of accident and plant, (2) forecast of progress and strategies for dealing with the accident, (3) progress of strategies, and (4) fostering and deployment of personnel
	3	Use of tools for information sharing: (1)Use of plant information display system (drills using ERSS or SPDS etc.), (2) liaison activities, (3) utilization of COP, and (4) utilization of documents provided with ERC
	4	Ensuring reliable reporting and communication: (1)Accuracy of notification text, (2) explanation grounds for EAL judgement, (3) response of Article 10 confirmation meeting, and (4) report on Article 25
Efforts to improve emergency drills by nuclear operators	5	Formulation of drill implementation plan based on issues in previous drills
	6	Diversification and difficulty of scenarios
	7	Implementation of on-site field training
	8	Public relation activities: (1)Press response linked with ERC public relations team, (2) participation of players from outside company such as reporters, (3) participation of players of outside company such as persons in charge of public relations at other nuclear operators, (4) holding mock press conference, and (5) Dissemination of information to the outside using information dissemination tools
	9	Ability improvement of emergency response organizations: (1)Mid-term plan concerning improvement of effectiveness of emergency response organizations, (2) annual plan concerning improvement of effectiveness of emergency response organizations, (3) on-site field training concerning improvement of effectiveness of emergency response organizations, (4) training setting associated with more realistic operation concerning improvement of effectiveness of emergency response organizations,
	10	Site-visits and observations of drills: (1)Site-visits of other nuclear operators, (2) acceptance for inspections to operators' drills, (3) acceptance of peer review, and (4) inspection of on-site field training of other nuclear operators
	11	Self-assessment and analysis of drill results

Table 5-2: Results of Nuclear Operator Disaster Preparedness Training in FY2023 for Nuclear Fuel Cycle Facilities (Nuclear Science Research Institute , Nuclear Fuel Cycle Engineering Laboratories, Oarai Research and Development Institute, Prototype fast breeder reactor MONJU, and Reprocessing facility of Japan Nuclear Fuel Ltd.)

○Record of Emergency Drills by Nuclear Operators at Nuclear Fuel Facilities (Nuclear Science Research Institute , Nuclear Fuel Cycle Engineering Laboratories, Oarai Research and Development Institute, Prototype fast breeder reactor MONJU and J Reprocessing facility of Japan Nuclear Fuel Ltd.) in FY2023

№	Implementation Date	Place	
1	October 3, 2023※1	Japan Nuclear Fuel Ltd.	Reprocessing facility
2	December 22, 2023	JAEA	Prototype fast breeder reactor MONJU
3	January 19, 2024※2	JAEA	Nuclear Science Research Institute
			Oarai Research and Development Institute
4	February 13, 2024※3	JAEA	Nuclear Fuel Cycle Engineering Laboratories

※1 Emergency drill on assumption of simultaneous occurrence of disaster with enrichment and disposal plant of Japan Nuclear Fuel Ltd., Nuclear Material Control Center, and Rokkasho Safeguard Center.
※2 Emergency drill on assumption of simultaneous occurrence of disaster with Japan Atomic Energy Agency, Nuclear Science Research Institute, and Oarai Research and Development Institute.
※3 Emergency drill on assumption of simultaneous occurrence of disaster with Tokai NPS and Tokai Daini NPS of Japan Atomic Power Co.

○Evaluation Indices of Emergency Drills by Nuclear Operators at Nuclear Fuel Facilities (Nuclear Science Research Institute , Nuclear Fuel Cycle Engineering Laboratories, Oarai Research and Development Institute, Prototype fast breeder reactor MONJU and Reprocessing facility of Japan Nuclear Fuel Ltd.) in FY2023

Category	№	Index
Information sharing/notification	1	Information flow for information sharing
	2	Information sharing with ERC plant team: (1)Status of accident and plant, (2) forecast of progress and strategies for dealing with the accident, (3) progress of strategies, and (4) fostering and deployment of personnel
	3	Use of tools for information sharing: (1)Use of plant information display system (drills using ERSS etc.), (2) liaison activities, (3) utilization of COP, and (4) utilization of documents provided with ERC
	4	Ensuring reliable reporting and communication: (1)Accuracy of notification text, (2) explanation grounds for EAL judgement, (3) response of Article 10 confirmation meeting, and (4) report on Article 25
Efforts to improve emergency drills by nuclear operation	5	Formulation of drill implementation plan based on issues in previous drills
	6	Implementation of drills with no scenarios
	7	Diversification and difficulty of scenarios
	8	Public relation activities: (1)Press response linked with ERC public relations team, (2) participation of players from outside company such as reporters, (3) holding mock press conference, and (4) Dissemination of information to the outside using information dissemination tools
	9	Logistical support activities: (1)Support activities among nuclear operators, (2) linkage with disaster response support centers of nuclear operators, and (3) linkage with nuclear emergency support organizations,
	10	Site-visits and observations of drills: (1)Site-visits of other nuclear operators, (2) acceptance for inspections to operators' drills, and (3) acceptance of peer review
	11	Self-assessment and analysis of drill results (1)Identification of issues from problem points, (2) analysis of causes, and (3) countermeasures based on causal analysis results
Results of emergency drills by nuclear operators	12	Percentage of participation in training by emergency response personnel (facilities)
	13	Percentage of participation in training by emergency response personnel (immediate response centers)

Table 5-3: Results of Nuclear Operator Disaster Preparedness Training in FY2023 for Nuclear Fuel Cycle Facilities (excluding Nuclear Science Research Institute, Nuclear Fuel Cycle Engineering Laboratories, Oarai Research and Development Institute, Prototype fast breeder reactor MONJU and Reprocessing facility of Japan Nuclear Fuel Ltd.)

○Record of Emergency Drills by Nuclear Operators at Nuclear Fuel Facilities (excluding Nuclear Science Research Institute, Nuclear Fuel Cycle Engineering Laboratories, Oarai Research and Development Institute, Prototype fast breeder reactor MONJU and

№	Implementation Date	Place
1	September 12, 2023	Nuclear Fuel Industries, Kumatori Works
2	September 19, 2023	The JAEA, Ningo-toge Environmental Engineering Center
3	October 3, 2023※1	Japan Nuclear Fuel Ltd., the enrichment and disposal plant (enrichment division and burial division)
		Nuclear Material Control Center, Rokkasho Safeguard Center
4	October 17, 2023	The JAEA, FUGEN, prototype advanced converter reactors
5	October 24, 2023	Toshiba Energy Systems & Solutions Corporation, Nuclear Engineering Laboratory
6	November 7, 2023	Kyoto University, Institute for Integrated Radiation and Nuclear Science
7	November 21, 2023	Kindai University, Atomic Energy Research Institute
8	November 28, 2023	Global Nuclear Fuel-Japan Co., Ltd.
9	December 12, 2023※2	Nuclear Fuel Industries Ltd. Tokai Works
		Mitsubishi Heavy Industries (MHI) Nuclear Fuel Corporation
10	December 15, 2023※3	Nuclear Material Control Center, Tokai Safeguard Center
		University of Tokyo, Nuclear Professional School, School of Engineering
11	January 19, 2024※4	Japan Atomic Power Company
12	January 30, 2024	Mitsubishi Nuclear Fuel Co., Ltd.
13	February 13, 2024※5	Japan Atomic Power Company, Tokai NPS

○Evaluation Indices of Emergency Drills by Nuclear Operators at Nuclear Fuel Facilities (excluding Nuclear Science Research Institute, Nuclear Fuel Cycle Engineering Laboratories, Oarai Research and Development Institute, Prototype fast breeder reactor

Category	№	Index
Information sharing/notification	1	Information sharing with emergency response station and ERC plant team
	2	Ensuring reliable reporting and communication: (1)Notification of occurrence of Article 10 and 15 events, (2) Accuracy of notification text, (3) explanation grounds EAL judgement, (3) progress of strategies, and (4) report on Article 25
	3	Operation of communication equipment (operation of communications equipment for connecting emergency response station with ERC plant team)
Efforts to improve emergency drills by nuclear operation	4	Formulation of drill implementation plan based on issues in previous drills
	5	Implementation of drills with no scenario indicated
	6	Diversification and difficulty of scenarios
	7	Public relation activities: (1)Press response linked with ERC public relations team, (2) participation of players from outside company such as reporters (including persons in charge of public relations at other nuclear operators), (3) holding mock press conference, and (4) dissemination of information to the outside using information dissemination tools
	8	Logistical support activities: (1)Support activities among nuclear operators, and (2) linkage with disaster response support centers of nuclear operators
	9	Site-visits and observations of drills: (1)Site-visits of other nuclear operators, (2) acceptance for inspections to operators' drills, (3) acceptance of peer review, and (4) inspection of training to ERC
	10	Self-assessment and analysis of drill results (1)Identification of issues from problem points, (2) analysis of causes, and (3) countermeasures based on causal analysis results
Results of emergency drills by nuclear operators	11	Percentage of participation in training by emergency response personnel (facilities)

※1 Emergency drill on assumption of simultaneous occurrence of disaster with enrichment facilities and disposal facilities of Japan Nuclear Fuel Ltd. Reprocessing Center.
※2 Emergency drill on assumption of simultaneous occurrence of disaster with Nuclear Fuel Industries, Tokai Works and MHI Japan Atomic Energy Agency.
※3 Emergency drill on assumption of simultaneous occurrence of disaster with Nuclear Material Control Center, Tokai Safeguard Center and the University of Tokyo, Nuclear Professional School, School of Engineering.
※4 Emergency drill on assumption of simultaneous occurrence of disaster with Japan Atomic Energy Agency, Nuclear Science Research Institute, Oarai Research and Development Institute.
※5 Emergency drill on assumption of simultaneous occurrence of disaster with Tokai Daini NPS of Japan Atomic Power Co and Japan Atomic Energy Agency, Nuclear Fuel Cycle Engineering Laboratories.

(2) Cooperation With Relevant Government Agencies on Nuclear Disaster Preparedness

Based on the provisions of the Basic Disaster Management Plan and to coordinate emergency responses and necessary support at nuclear sites, the NRA has been holding Central Liaison Council for Nuclear Emergency Preparedness and Responses, which consists of relevant ministries and agencies, nuclear operators and the Atomic Energy Association (ATENA). In FY2023, Central Liaison Council for Nuclear Emergency Preparedness and Responses were jointly held with Shimane Regional Liaison Conference to discuss the implementation status of training and cooperation with relevant agencies, as well as the efforts of nuclear operators. Additionally, in the regions where Nuclear Power Plants (NPPs) are located, the NRA holds Nuclear Disaster Preparedness Regional Liaison Meetings, involving regional branches of the constituent ministries of the Central Liaison Council, prefectural police headquarters responsible for the region (and, if necessary, those serving as evacuation destinations for wide-area

evacuations), fire departments, regional Coast Guard headquarters (and, if necessary, the Coast Guard divisions covering the region), the Self- Defense Forces, and nuclear operators as members. In FY2023, these meetings were held in eight regions, contributing to the strengthening of collaboration among relevant agencies.

3. Improvement of Communication Network Infrastructure and System

The Integrated Nuclear Disaster Prevention Network System undergoes appropriate maintenance and management, including regular inspections and functional checks etc. to ensure stable and reliable usage.

Regarding the next system update, after changing the original plan based on the contract situations, revising the completion time for switching from "by the end of FY2024" to "during FY2025", and deciding the contractor in FY2023, the operation for update was started.

The Emergency Response Support System (ERSS[52]) whose system update was conducted in FY2019 planned and underwent system modifications in coordination with the nuclear operator's facility update plans. Proper system maintenance has been consistently carried out to ensure the continuous provision of information from nuclear facilities. Regarding update for the next system update scheduled from FY2024, the drafts of procurement specifications and requirement definition documents have been formulated based on the results of research and study as well as procurement support, and procurement procedures were started.

The Radiation Monitoring Information Sharing and Publication System (RAMIS[53]), designed for aggregating emergency monitoring results and facilitating rapid public sharing and disclosure among stakeholders, is subject to proper system maintenance. To facilitate smooth information dissemination to the public during an emergency, monitoring information is publicly disclosed even during normal times.

In addition, to strengthen coordination regarding disaster information among relevant government ministries and agencies, discussions have taken place with the Cabinet Office based on the content of the Disaster Digital Platform-related meeting held on February 6, 2023. The coordination involves connecting the radiation monitoring information collected by RAMIS with disaster-related information held by the Cabinet Office's Comprehensive Disaster Information System. In FY2024, in order to realize such information coordination, the drafts of procurement specifications and requirement definition document have been formulated based on the results of research and study as well as procurement support and procurement procedures were started.

Considering suggestions received during FY2022 Administrative Project Review Public Process regarding the utilization of the radiation monitoring information collection system funded by the Radiation Surveillance Grant Program, efforts have been made to investigate current conditions and technological trends for fundamental enhancement and efficiency by relevant parties including exploring the use of the Government Cloud[54] and draft documents for development policies were prepared.

[52]The Emergency Response Support System is a system designed to collect parameters and information from nuclear facilities, allowing real-time monitoring of the status of equipment at nuclear facilities.

[53] The Radiation Monitoring Information Sharing and Publication System is a system that aggregates emergency monitoring information, including measurements from monitoring posts, atmospheric monitors, and analytical results of environmental samples. This information is shared among emergency workers in Emergency Response Centers (ERC) and is also publicly disclosed.

[54]The cloud service usage environment commonly provided by the Digital Agency of Japan.

Section 5 Implementation of Radiation Monitoring

1. Implementation of the Emergency Monitoring System in the Vicinity of Nuclear Facility Locations

The NRA Guide for Emergency Preparedness and Response stipulates that the level of emergency will be determined in accordance with the situation of the affected nuclear facility to implement preventive protective measures. Emergency response at an early stage or measures after the release of radioactive substances, for instance, evacuation or temporary relocation, will be decided and conducted appropriately based on the actual measurement values of the emergency monitoring. In line with this, the NRA is working to establish an effective emergency monitoring system, including the permanent presence of a senior radiation protection specialist to command emergency monitoring around nuclear facilities. Furthermore, the authority provides technical support to local governments responsible for maintaining and managing measurement equipment like monitoring posts, aiming to further enhance the measurement system. From FY2023, operation of airborne monitoring using unmanned aircraft and demonstration flights were conducted in comprehensive disaster prevention drills.

2, Operation of the Radiation Monitoring Information Sharing and Publication System

The purpose of RAMIS is to aggregate emergency monitoring results in the event of a nuclear disaster, share them among relevant parties, and promptly disclose them. To facilitate the smooth communication of information to the public during emergencies, monitoring information is regularly disclosed even during normal times.

3. Strengthening Emergency Response Capabilities Through Training, etc.

To enhance the effectiveness of emergency monitoring in local public entities, basic courses on monitoring technology were conducted for local public entity employees and others a total of 24 times in FY2023. Additionally, 14 training sessions for emergency monitoring center activities were carried out.

4. Measuring Radiation and Other Environmental Factors Nationwide

(1) Survey for Environmental Radioactivity Levels

In the 47 prefectures throughout Japan, the NRA collected environmental samples, such as atmospheric suspended dust, fallout and soil for radioactivity analysis. The results of measurement were put into a database in sequence and published on the NRA website. Furthermore, dose rate is continuously measured at 296 monitoring posts throughout Japan to open the measured data on the NRA website in real time.

(2) Comprehensive Assessment on Radioactivity in Oceanic Environment

To investigate radiation effects in the surrounding areas of nuclear power plants and nuclear fuel reprocessing facilities as well as nationwide environmental radioactivity levels, the NRA continued the radiation analysis of sea water in 16 ocean areas. The results from FY2023 are planned to be entered into a database and disclosed on the NRA's website.

(3) Radiation Monitoring around Nuclear Power Plants

Financial support by the NRA was provided for the development of facilities necessary for radiation monitoring and radioactivity measurement implemented by prefectures where nuclear facilities are located or neighboring prefectures (24 prefectures). In addition, the measured results reported by those local governments were put into a database sequentially to be published on the NRA website.

(4) Monitoring the Impact of Overseas Nuclear Incidents

The NRA has installed monitoring posts on Tsushima and Yonaguni Islands to assess the impact of radioactive substances on Japan in the event of nuclear incidents occurring abroad. In FY2023, the measured values continue to be disclosed on the NRA website.

(5) Training Program for Local Government Officers Engaging in Radiation Monitoring

The NRA carried out "training for environmental radiation analysis" 18 times, targeting environmental radiation monitoring personnel in each prefecture.

5. The Strengthening of Environmental Radiation Measurement and Emergency Monitoring Capabilities in Ports Visited by Nuclear Warships

(1) Measurement of Radiation in the Environment at Ports where Nuclear Warships Are Anchored

The NRA periodically conducted radiological surveys in cooperation with related organizations such as the Japan Coast Guard at the three ports of Yokosuka, Sasebo and Kinnakagusuku, where the United States nuclear-powered warships make port calls, regardless of the presence or absence of such ships. Specifically, during the anchoring of nuclear warships, on-site radiation survey teams are formed to conduct radiation measurements and analyze seawater samples. The results of these measurements are confirmed to be consistent with pre-entry survey values. The radiation survey results during the entry and exit of nuclear warships and their port calls are published daily on the NRA's website. Additionally, past survey results, including regular surveys, are stored in a database, and made publicly available.

(2) Strengthening the Emergency Monitoring System

Completed the renewal design for one monitoring station at Sasebo Port to address the aging of the facility where monitoring equipment is installed.

6. Consideration of Technical Matters Related to Monitoring

The NRA holds the meeting of the "Technical Study Team on Environmental Radiation Monitoring" which is engaged in continuous studies on technical aspects of monitoring. On October 16, 2023, taking into account the study conducted in the same meetings by FY2022, Series of Environmental Radioactivity Measuring Method No.9: Tritium Analysis Method" and "No.15: Radioiodine Analysis in Emergencies" were revised. To No.9: Tritium Analysis Method", uncertainties required for skill tests of mutual comparison analysis etc. between analysis institutes and the contents of calculation of detected lower limit based on ISO11929 were added. Also, in order that it can be applied to the purpose for prompt analysis etc. for other than tritium analysis in the environment samples at normal times, a wide range of relevant information and documents were included. Regarding "No.15: Radioiodine Analysis in Emergencies", description of I-132 and I-133 additional description of soil etc. as kinds of samples, setting of priority and description of iodine samples with automatic sample changer and atmospheric monitor were added.

Furthermore, the meetings for the said Study Team were held on December 21, 2023 and March 7, 2024, the proposal for revision and the policies for the structure of No.2: "Radiostrontium analysis", No.25: "Radiocarbon analysis" and No.26: "Iodine-129 analysis", and revision of "Emergency monitoring (Supplementary Reference Material for The Guideline for Emergency Preparedness and Response) were studied. On March 21, 2024, "Emergency monitoring (supplemental reference materials of the Guideline for Nuclear Emergency Preparedness and Response) was revised(additional description of airborne monitoring etc. using unmanned aircraft).

References

TABLE OF CONTENT

Reference 1 Materials related to Ensuring Independence, Impartiality and Transparency, and Improving the Organizational Structure/ System (related to Chapter 1)

1. Members of NRA

	Sep. 19, 2012 to Sep. 18, 2014	Sep. 19, 2014 to Sep. 18, 2015	Sep. 19, 2015 to Sep. 21, 2017	Sep. 22, 2017 to Sep. 25, 2022	Sep. 26, 2022 to present
Chairman	TANAKA Shunichi	TANAKA Shunichi	TANAKA Shunichi	FUKETA Toyoshi	YAMANAKA Shinsuke
Commissioner (Substitute for the Chairman)	SHIMAZAKI Kunihiko	FUKETA Toyoshi	FUKETA Toyoshi	TANAKA Satoru	TANAKA Satoru
Commissioner (Second substitute for the Chairman)	FUKETA Toyoshi	TANAKA Satoru	TANAKA Satoru	YAMANAKA Shinsuke	SUGIYAMA Tomoyuki
Commissioner (Third substitute for the Chairman)	NAKAMURA Kayoko	NAKAMURA Kayoko	ISHIWATARI Akira	BAN Nobuhiko	BAN Nobuhiko
Commissioner (Fourth substitute for the Chairman)	OHSHIMA Kenzo	ISHIWATARI Akira	BAN Nobuhiko	ISHIWATARI Akira	ISHIWATARI Akira

2. Establishment of the NRA and Organizational Change

○September 19, 2012: NRA was established.

○March 1, 2014: Japan Nuclear Energy Safety Organization (JNES) was abolished and integrated.

○October 14, 2014: Policy Director for Nuclear Emergency Preparedness was established in the Cabinet Office. Officials belonging to the NRA were primarily appointed as concurrent officials of the Office for the Nuclear Emergency Preparedness, Cabinet Office. To reinforce the nuclear emergency response system, changing the appointment scheme, full-time officials were assigned to the Cabinet Office.

3. Breakdown of Budget of NRA (after the second supplementary budget for FY2023

	Budget Section	Budget for FY2023 (after budget revision) (million yen)
General Account	General and administrative costs	4,460
	NRA facility costs	3,774
	Costs of ensuring nuclear safety	5,188
	Radioactivity investigation and research costs	1,523
Special Account for Energy Measures	Costs of power-usage measures	979

	Costs of nuclear safety regulatory measures	19,186
	Administrative handling costs	24,996
	Disbursements	0.27
	Reserve funds	100
Special Account for Reconstruction from the Great East Japan Earthquake	Costs of policies for environmental conservation and restoration	3,386
Total		63,592

4. Organization of the NR

Figure i Organizational Structure of the NRA (April 2023 - March 2024)

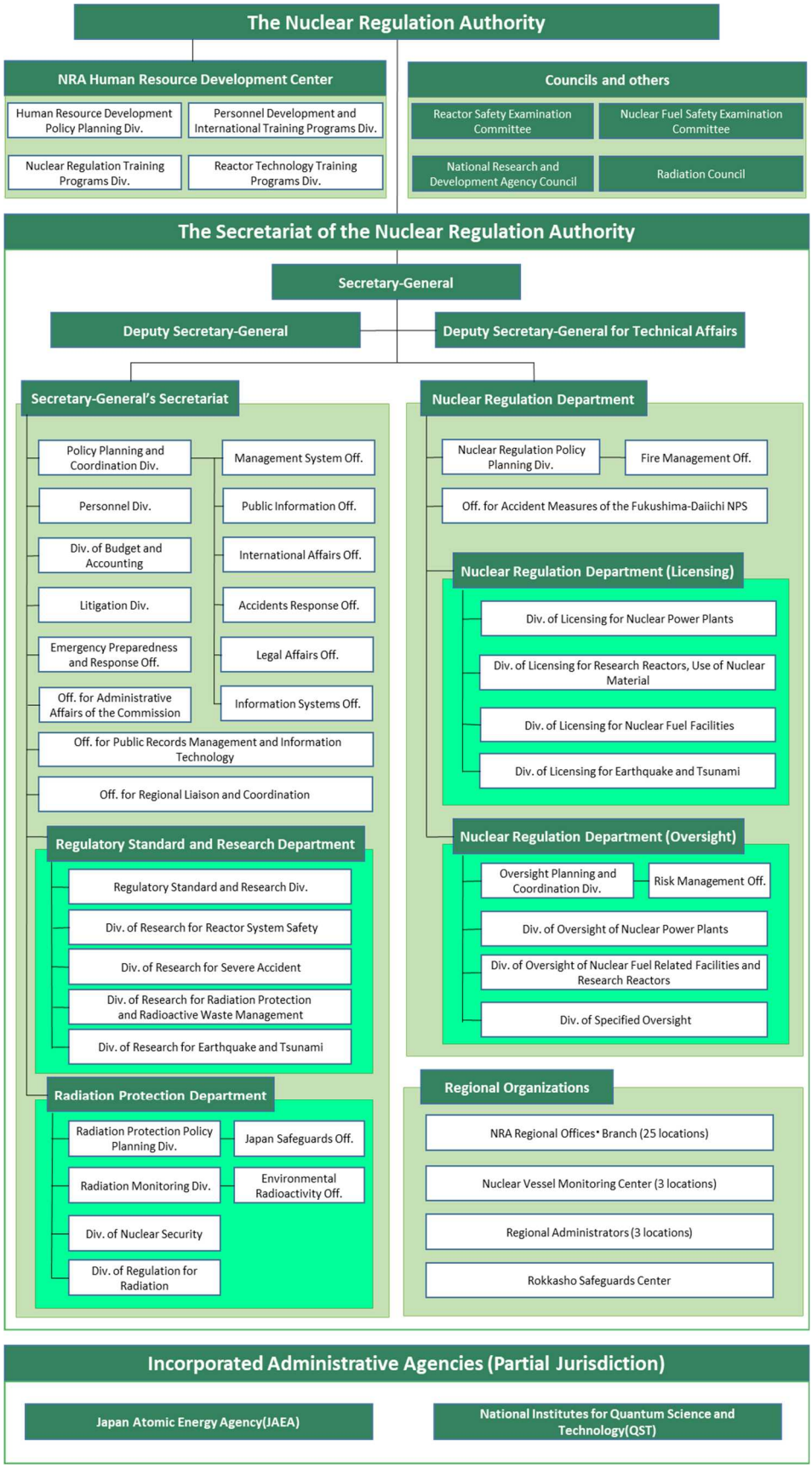


Figure ii Location of NRA Regional Offices and Stationing of Regional Administrators

5. NRA's Core Values and Principles

(Determined on January 9, 2013 by the NRA)

Bearing in mind that:

- The NRA was established to learn from the Fukushima Daiichi nuclear accident of March 11, 2011;
- Nuclear accidents should never be allowed to happen again;
- Restoring public trust, in Japan and abroad, in the nation's nuclear regulatory organization is of utmost importance and;
- The nuclear safety system and management must be rebuilt on a solid basis, placing the highest priority on public safety and a genuine safety culture;

Determined that:

- Everyone involved in nuclear activities must have a high degree of responsibility and ethical values and seek to achieve the highest levels of global safety;

We hereby solemnly pledge our full commitment and unwavering efforts to the foregoing.

Mission

Our fundamental mission is to protect the public and the environment through rigorous and reliable regulation of nuclear activities.

Guiding Principles for Activities

We in the NRA and its supporting Secretariat shall perform our duties diligently acting in accordance with the following principles.

(1) Independent Decision Making

We shall make decisions independently, based on the latest scientific and technological information, free from any outside pressure or bias.

(2) Effective Actions

We shall discard the previously ineffective approach to regulatory work and stress the importance of a field-oriented approach to achieve genuinely effective regulations.

(3) Open and Transparent Organization

We shall ensure transparency and appropriate information disclosure on regulations, including the decision-making process. We shall be open to all opinions and advice from Japan and the international community and avoid both self- isolation and self-righteousness.

(4) Improvement and Commitment

We shall be diligent in learning and absorbing the latest regulatory know-how and best practices, enhancing individual capacity, and performing our duties, mindful of the highest ethical standards, a sense of mission, and rightful pride.

(5) Emergency Response

We shall be ready to swiftly respond to all emergencies, while ensuring that in 'normal' times a fully effective response system is always in place.

6. Code of Conduct on Nuclear Security Culture

(Determined on January 14, 2015 by the NRA)

The Nuclear Regulation Authority (NRA) recognizes that it is the responsibility of everyone involved in nuclear activities to establish and maintain a positive nuclear security culture.

The NRA has therefore decided to establish a code of conduct to foster and continually enhance its own nuclear security culture.

On this basis, the NRA is committed to take action to enhance nuclear security culture throughout Japan.

Code of Conduct

1. Recognizing Threat

The NRA and its Secretariat shall recognize that nuclear security threats exist at all times and constantly keep the importance of nuclear security in mind.

2. Interface with Safety

Nuclear security and safety do not exist independently and measures for security and safety are mutually dependent on each other and could negatively affect one another. We shall make all possible efforts for the harmonization of both measures and senior management shall be responsible for providing the most appropriate solution in cases of conflicts.

3. Responsibilities of Senior Management

Senior management shall demonstrate their commitment to nuclear security and shall make an assessment on how a positive nuclear security culture is developed within the NRA. In addition, senior management shall continuously work to foster a positive culture through setting up concrete goals and measuring achievements.

4. Capacity Building and Self-improvement

Nurturing competent staff is the responsibility of an organization, and the NRA shall provide capacity building programs on nuclear security. We shall have a ‘questioning attitude’ towards nuclear security issues at all times and strive to improve our effectiveness.

5. Confidentiality and Communication

While strictly observing confidentiality of nuclear security information, we shall proactively communicate with relevant stakeholders, as necessary, with a view to fostering a positive nuclear security culture in Japan.

7. Statement on Nuclear Safety Culture

(Determined on May 27, 2015 by the NRA)

Safety shall be given the overriding priority in the utilization of nuclear energy. Safety culture is recognized as continued practices with mindful awareness of this principle. It is the duty of everyone involved in nuclear energy to foster safety culture.

Recognizing its importance, the Nuclear Regulation Authority (NRA) has developed the code of conduct on safety culture taking due account of the lessons learned from the accident at the Fukushima Daiichi Nuclear Power Station of Tokyo Electric Power Company, Inc. The NRA will take the initiative in acting based on it.

Thereby, the NRA will strive to raise awareness of the importance of safety culture among everyone involved in nuclear energy and hence contributing to fostering safety culture in Japan.

Code of Conduct

1. Priority on Safety

In full recognition that absolute safety is not achievable, and the possibility of a serious accident remains, the overriding priority shall be placed on safety for "protecting people and the environment".

2. Decision-making Taking into Account the Risks

Decisions shall be made in an independent and objective manner taking due account of the risks. Anyone who makes a decision is responsible for logically explaining the rationale of the decision while clarifying its own roles, responsibilities, and authority.

3. Fostering, Sustaining and Strengthening Safety Culture

Managers shall take the initiative in fostering the attitudes and actions that place the overriding priority on safety in their respective organizations. For sustaining and further strengthening safety culture, they shall also be vigilant to any early warning signs of decline in safety culture and shape and enhance the working environment so that the staff can maintain high morale.

4. **Maintaining High Level of Expertise and Organizational Learning**

Recognizing the importance of scientific and technical expertise for safety, each organization shall collect and analyze the latest information in Japan and overseas on regulatory activities, operating experience, and others to utilize the findings in its activities. Managers shall shape and enhance the working environment to promote such organizational learning.

5. Effective Communication

Open and frank discussion in the workplace shall be the basis in the pursuit of safety. Managers shall create such a working environment and promote active discussion in their respective organizations. Adequate communication shall be pursued both within the organization and with stakeholders for enhancing transparency and building trust by taking the initiative in information disclosure and exchange of a wide range of opinions.

6. Questioning Attitude

All the personnel shall always have one's own "questioning attitude" without complacency concerning any weaknesses that may affect safety, as well as whether there is any room for further improvement, and thereby identify safety issues.

7. Rigorous and Prudent Decisions and Agile Action

In response to any challenges to ensuring safety, all the staff shall make conservative decisions for safety taking into account even the worst-case scenario, and quickly take necessary actions.

8. Harmonization with Nuclear Security

It is necessary to recognize that nuclear safety and security activities do not exist independently, they complement each other and interfere with each other. All the personnel involved in nuclear safety and security activities shall respect each other's way of thinking and make efforts for harmonizing both activities. Senior managers shall take responsibility to select the most appropriate solution.

8. NRA Commission Meetings

(April 1, 2023 - March 31, 2024)

No.	Date	Deliberation Topic
1	Apr 5	・Policy efforts concerning enhancement of analysis system of Fukushima Daiichi Nuclear Power Station, Tokyo Electric Power Company Holdings, Inc. ・Appointment of Immediate Emergency Response members ・The way forward for the examination taking into account the errors in examination materials of Tsuruga NPS Unit 2 of the Japan Atomic Power Company ・Status of discussions in ”Study Team on Safety Regulations for Ageing Power Reactors” (interim report) ・Status of Review on licensing conformity to the new regulatory requirements of nuclear power plant ・Status of Review on licensing conformity to the new regulatory requirements of nuclear fuel cycle facilities and other centers
2	Apr 11	・Summary of review results as a draft for application for permission for change in basic design of Ikata PS of Shikoku Electric Power Co., Inc. (change of power reactor facilities for Unit 3) -addition of the design basis for tremors with consideration of the standard response spectrum etc.- ・Appointment of review commissioners of the Advisory Committee on Reactor Safety and the Advisory Committee on Nuclear Fuel Safety ・Appointment of Radiation Council members ・Report on the status of the FY2022 Radiation Council meetings ・Outline of the FY2022 Annual Report of the NRA ・Evaluation and response policy for the future on the report concerning the lights-out incident in an area monitored by inspection equipment at the reprocessing plant of Japan Nuclear Fuel Ltd.
3	Apr 11	・Discussion between the NRA and executives of Japan Atomic Power Co.
4 ※1	Apr 12	・Status of preparation for acceptance of the International Physical Protection Advisory Service (IPPAS) missions of the International Atomic Energy Agency (IAEA) ・Status of supplemental inspections of Kashiwazaki-Kariwa NPS, Tokyo Electric Power Company Holdings, Inc.
5	Apr 14	・Discussion between the NRA and executives of Japan Nuclear Fuel Ltd.
6	Apr 18	・Issuance of guidance documents requiring amendment toapplication for permission for change of reactor installation for Tsuruga NPS of the Japan Atomic Power Company (change of power reactor facility of Unit 2) ・Status of discussions in ”Study Team on Safety Regulations for Ageing Power Reactors” (the 2nd interim report) ・Summary of results of the 58th Technical Information Committee
7	Apr 25	・Response status of reinforcement of efforts at the interface for nuclear safety, nuclear security and safeguards ・Response by future nuclear regulatory inspections in the Takahama PS Unit 3 of

		Kansai Electric Power Co., Inc. ・Report on NRA Committee TANAKA's overseas business trip
8 ※2	May 10	・Report on supplemental inspections of TEPCO's Kashiwazaki-Kariwa NPS
9	May 10	・Permission for change changes to the Implementation Plan with Regards to Fukushima Daiichi NPS, Tokyo Electric Power Company Holdings, Inc. (operation at the time of discharge of ALPS-Treated Water to the sea, etc.) ・Overview of progress report of IAEA regulatory review regarding the discharge of ALPS-Treated Water into the ocean (2nd mission) ・Status of discussions in ”Study Team on Safety Regulations for Ageing Power Reactors” (the 3rd interim report) ・Evaluation of accidents and failures s at sites handling radioisotopes, etc. in FY2022 ・Report on NRA Committee TANAKA's business trip ・Report on NRA Committee BAN's business trip
10	May 17	・Summary of review results as a draft for application for permission for change in basic design of power reactor at the Institute for Integrated Radiation and Nuclear Science, Kyoto University (change of research reactor) -addition of the design basis for tremors with consideration of the standard response spectrum etc.- ・Results and future policies of supplemental inspections of Kashiwazaki-Kariwa NPS, Tokyo Electric Power Company Holdings, Inc. ・Status of Countermeasures against software common cause failures of digital safety protection systems, policies and future response to nuclear regulatory inspections ・Results of nuclear regulatory inspection and the like for the fourth quarter of FY2022 ・Overview of results of Information Exchange Meeting between International Advisors of nuclear regulations and the NRA
11 ※3	May 17	・Results of nuclear regulatory inspection and the like for the fourth quarter of FY2022 (related to physical protection of nuclear material)
12	May 24	・Permission for change in basic design of Ikata PS of Shikoku Electric Power Co., Inc. (change of power reactor facilities for Unit 3) -addition of the design basis for tremors with consideration of the standard response spectrum etc.- ・Summary of a draft on examination related to application of permission for change in basic design of research reactor facilities of experimental fast reactor facility at the Oarai Research and Development Institute (south area) of the JAEA ・Annual Report of the NRA in FY2022 ・Inspection results and comprehensive assessment for FY2022 and inspection plans for FY2023 ・Future response based on the status of Unit 1 pedestal and piping of reactor auxiliary cooling system of the Fukushima Daiichi NPS, Tokyo Electric Power Company Holdings, Inc. ・Status of inspection regarding the discharge of ALPS-Treated Water into the ocean of the Fukushima Daiichi NPS, Tokyo Electric Power Company Holdings,

		Inc.
13	May 31	・Designation of type of specific equipment (specified dual-use cask) concerning nuclear reactor facilities (Mitsubishi Heavy Industries, Ltd. MSF-24P(S) type) ・Revisions to the Rules on Use of Nuclear Fuel Materials, etc. ・Results of solicitation of public comments and establishment of Implementation Manual for Thyroid Exposure Dose Monitoring ・Results of implementation of safeguard activities in Japan in 2022 ・Overview of results of the 8th and 9th Joint Review Meeting to the Convention on Nuclear Safety
14	Jun 7	・Proposed revision and soliciting public comments of "the operational guide for pre-operational inspections, regular operational inspections and the measures for the safety for nuclear operators etc." and revision of guide for operational improvement of nuclear regulatory inspections. ・Status of review of improvement of report based on the Reactor Regulation Act in nuclear fuel facilities etc. and future direction ・Establishment of "Act for Partial Revision of the Electricity Business Act and Other Acts for Establishing Electricity Supplying Systems for Realizing Decarbonized Society" and future response thereto ・Overview of IAEA comprehensive review mission on discharge of ALPS-Treated water into the sea ・Arbitrary decisions in the 4th quarter of FT2022 (report)
15	Jun 14	・Draft of rules concerning technical assessment of technical documents concerning specific common matters and soliciting public comments therefore and future response policies ・Review on regulatory handling of knowledge on the status of piping of reactor auxiliary cooling system of the Fukushima Daiichi NPS, Tokyo Electric Power Company Holdings, Inc. ・Report on the deliberation results of the 13th Subcommittee Meeting on Reactor Safety of RSEC and the 7th Subcommittee Meeting on Nuclear Fuel Safety of NFSEC ・Results of on-site inspections for registered organizations that conduct inspections and other services based on the Radioisotope Regulation Act (FY2022)
16 ※4	Jun 14	・Appointment of executives at designated organizations implementing safeguard inspections etc. ・Report on supplemental inspections of Kashiwazaki-Kariwa NPS, Tokyo Electric Power Company Holdings, Inc.
17	Jun 21	・Basic concept on radiation protection measures in special residential zones for returnees ・Ex-post, interim and follow-up evaluations concerning safety study ・Future response related to clearance centralized treatment business of demolition waste of NPS ・Summary of Results of the 59th Technical Information Committee ・Release of the "2022 Safeguard Statement by the International Atomic

		Energy Agency “ (IAEA)
18	Jun 22	・Discussion between the NRA and executives of Tokyo Electric Power Company Holdings, Inc.
19	Jun 28	・Summary of results of the 53rd Meeting of Commission on Safety Standards (CSS) of the IAEA- Status of development of IAEA safety standards- ・Status of inspection of vehicle-type equipment in nuclear power facilities etc. ・ Appointment of members of National Research and Development Agency Council
20	Jul 5	・Proposed revision of ordinance on installation and operation etc. of commercial power reactors etc. for partial enforcement to partially revise the Electricity Business Act and Other Acts for Establishing Electricity Supplying Systems for Realizing Decarbonized Society and soliciting public comments ・Status of inspection regarding the discharge of ALPS-Treated Water into the ocean of the Fukushima Daiichi NPS, Tokyo Electric Power Company Holdings, Inc. (results report) ・Overview of IAEA comprehensive report on safety of discharge of ALPS-Treated water into the sea ・Status of licensing review of conformity to the new regulatory requirements of nuclear power plant ・ Participation in holding Country Specific Safety Culture Forum (CSSCF) in Japan ・Report on NRA Committee SUGIYAMA's business trip
21	Jul 12	・How to proceed with reaffirmation of determination in 2017 of eligibility of TEPCO as the installer of power reactor ・How to proceed with safety research in FY2024 and beyond ・Explanatory materials in an easy-to-understand format on The System of Approval for Long-Term Facility Management Plan ・Results of the selection in the NRA Human Resource Development Program in FY2023
22	Jul 19	・Discussion between the NRA and executives of Atomic Energy Association ・ Results of Technical Evaluation of Japan Electric Association Standards for Digital Safety Protection Systems and revision proposal of guideline of technical ordinance for commercial power reactor and implementation of soliciting public comments therefor. ・How to proceed with discussions on utilization of Safety Improvement Evaluation Systems on response to “out-of-date design”
23 ※5	Jul 19	・Status of review for improvements to the system related to the physical protection of nuclear material and direction of such improvements ・Summary of results of the 23rd Nuclear Security Guidance Committee (NSGC) of the International Atomic Energy Agency (IAEA)
24	Jul.26	・ Permission for change in basic design of research reactor facilities of experimental fast reactor facility at the Oarai Research and Development Institute (south area) of the JAEA (change of research reactor facilities of experimental fast reactor facility)

		・Status of response based on the status of Unit 1 pedestal and piping of reactor auxiliary cooling system of the Fukushima Daiichi NPS, Tokyo Electric Power Company Holdings, Inc.
25	Aug 2	・Comments by external experts on the NRA's administrative review of FY2023 ・Radiation protection measures in special residential areas for returnees ・Revision of "the operational guide for pre-operational inspections, regular operational inspections and the measures for the safety for nuclear operators etc." ・Soliciting public comments for proposed revision for draft revision of the NRA Guide for Emergency Preparedness and Response and solicitation of public comments Report on results of review for EAL by operators of nuclear power facilities etc. with relatively low risk.
26 ※6	Aug 2	・Status of supplemental inspections of Kashiwazaki-Kariwa NPS, Tokyo Electric Power Company Holdings, Inc.
27	Aug 23	・Change in action matrix taking into account the results of safety performance indicator of the first quarter of FY2023 for the Takahama PS Unit 3 of Kansai Electric Power Co., Inc. and issuance of notification concerning implementation of supplemental inspections therefor. ・Results of nuclear regulatory inspection and the like for the first quarter of FY2023 ・Evaluation etc., concerning the operational performance of National Institutes for Quantum Science and Technology (co-jurisdictional part of the NRA) ・Evaluation etc., concerning the operational performance of the JAEA (co-jurisdiction of part of the NRA) in FY2022 ・Policy evaluation concerning FY2022 implementation policies and the future policy evaluation
28 ※7	Aug 23	・Draft review reports related to the matters with regard to installation of special facilities for severe accident management in application for permission for change in basic design of power reactor at the Onagawa NPS Unit 2 of Tohoku Electric Power Co., Inc. ・Results of nuclear regulatory inspection and the like for the first quarter of FY2023 (related to Physical Protection of Nuclear Material)
29	Aug 30	・Summary of review results as a draft related to application for permission for change in basic design of power reactor at the Onagawa NPS Unit 2 of Tohoku Electric Power Co., Inc.(change of power reactor facilities for Uni 2)-Installation of special facilities for severe accident management and abolishment of pressure venting system for preventing vessel rupture- ・Revision of ordinance on installation and operation etc. of commercial power reactors etc. for partial enforcement to partially revise the Electricity Business Act and Other Acts for Establishing Electricity Supplying Systems for Realizing Decarbonized Society ・Response policies toward review of provisions concerning approval for change of type designation ・Future response policies concerning incorporation of knowledge on the accident at the Fukushima Daiichi Nuclear Power Station of Tokyo Electric Power Company, Inc.

		・Results of emergency drills by nuclear power of FY2022 and report on implementation policies for drills of FY2023 and soliciting public comments for proposed revision of “Guide for Nuclear Operator's EPR plan”
30	Sept 6	・Acceptance of partial amendment of application for permission for change of reactor installation eactor for Tsuruga NPS of the Japan Atomic Power Company (change of power reactor facility of Unit 2) and future policies ・Report on deliberation results of and the 3rd Subcommittee Meeting on Earthquake and Tsunami Hazards of the Reactor Safety Examination Committee and the Nuclear Fuel Safety Examination Committee ・Establishment of FY2023 improvement plan for NRA Business Continuity Plan (Measures against a Tokyo Inland Earthquake) and policies for review to partially revise NRA's Business Continuity Plan (report) ・Budget request for FY2024 and request for the organization and capacity of the NRA ・Arbitrary decisions in the first quarter of FY2023 (report)
31 ※8	Sept 11	・Draft review reports on for application for permission for change in basic design of Kashiwazaki-Kariwa NPS of TEPCO (change of power reactor facilities for Units 6 and 7) -Partial structural special facilities for severe accident management-
32	Sept 13	・Summary of review results as a draft on application for permission for change in basic design of Kashiwazaki-Kariwa NPS of TEPCO (change of power reactor facilities for Units 6 and 7) -Partial structural special facilities for severe accident management- ・Arrangement status for acceptance of the International Physical Protection Advisory Service (IPPAS) missions of the International Atomic Energy Agency (IAEA) ・Summary of results of the 60th Technical Information Committee ・Report on NRA Committee BAN's business trip
33	Sept 20	・The NRA’s comments on “FY2023 Plans for Nuclear Energy Disaster Prevention Drill” ・Summary of review results as a draft on operations of reprocessing and operations of waste management at the Reprocessing Plant of Japan Nuclear Fuel Ltd. and application for permission for change in MOX fuel fabrication facilities-addition of the design basis for tremors with consideration of the standard response spectrum etc.- ・Report on the deliberation results of the 14th Subcommittee Meeting on Reactor Safety of RSEC and the 8th Subcommittee on Nuclear Fuel Safety of NFSEC
34 ※9	Sept 20	・Status of supplemental inspections of Kashiwazaki-Kariwa NPS, Tokyo Electric

		Power Company Holdings, Inc.
35	Sept 27	・Establishment of rules concerning technical assessment of technical documents concerning specific common matters and future response policies ・ Response policies for digitalization of procedures for applications and submissions ・Commission of international advisors on nuclear regulation
36	Oct 4	・Permission for change in basic design of power reactor at the Onagawa NPS Unit 2 of Tohoku Electric Power Co., Inc.(change of power reactor facilities for Uni 2)- Installation of special facilities for severe accident management and abolishment of pressure venting system for preventing vessel rupture- ・Status of Review on licensing conformity to the new regulatory requirements of nuclear power plant ・Status of Review on licensing conformity to the new regulatory requirements of nuclear fuel cycle facilities and other centers ・Establishment of technical manual for emergency response ・Report on results of official preparatory meeting of the International Physical Protection Advisory Service (IPPAS) with the International Atomic Energy Agency (IAEA) ・Report on NRA Committee YAMANAKA's business trip
37	Oct 11	・Establishment of a technical evaluation report of the Japan Electric Association Standards for Digital Safety Protection Systems and revision of guideline of technical ordinance for commercial power reactor etc. ・Status of response based on the status of Unit 1 pedestal and piping of reactor auxiliary cooling system of the Fukushima Daiichi NPS, Tokyo Electric Power Company Holdings, Inc. (the 2nd time) ・Implementation of information exchange meeting on nuclear regulation
38	Oct 18	・Results of soliciting public comments on proposed revision for draft revision of the NRA Guide for Emergency Preparedness and Response and relevant ordinances ・Summary of results of the 61st Technical Information Committee ・Arbitrary decisions in the 2nd quarter of FY2023 (report)
39	Oct 25	・Permission for change in basic design of Kashiwazaki-Kariwa NPS of TEPCO (change of power reactor facilities for Units 6 and 7) -Partial structural special facilities for severe accident management- ・Summary of review results as a draft for application for permission for change in basic design of nuclear reactor at the Oarai Research and Development Institute (north area) of the JAEA [change of the reactor facilities of HTTR (High Temperature Engineering Test Reactor)] -addition of the design basis for tremors with consideration of the standard response spectrum etc.- ・Future response concerning reflection of the latest findings in Genkai NPS Units 3 and 4 of Kyushu Electric Power Co., Inc. ・Report on NRA Committee TANAKA's business trip ・Report on NRA Committee BAN's business trip

40 ※10	Oct 25	・Approval of appointment of executives at designated organizations implementing safeguard inspections
41	Nov 1	・Approval of change in the operational safety program for power reactor facilities related to technical assessment of the ageing management of Ohi PS Units 1 and 2 of the Sendai NPS of Kyushu Electric Power Co. Ltd. ・Future policies related to Response of Japanese Nuclear Power Plants to Open Phase Condition (OPC) ・Overview of IAEA' s review mission on discharge of ALPS-Treated water into the sea
42	Nov 8	・How to proceed with examination of application for permission for Long-Term Facility Management Plan during preparatory action period ・Proposed revision of relevant regulations concerning improvement of obligation to report based on the Reactor Regulation Act in nuclear fuel facilities etc. and soliciting public comments thereon and future response policies ・ Acceptance of the Integrated Regulatory Review Service missions of the International Atomic Energy Agency (IAEA)
43 ※11	Nov 14	・Proposed revision of Policy on response based on the examination standards concerning physical protection of nuclear material of nuclear power facilities and soliciting public comments from operators ・Status of supplemental inspections of Kashiwazaki-Kariwa NPS, Tokyo Electric Power Company Holdings, Inc.
44	Nov 15	・Discussion with the Chairmen of the RSEC and NFSEC ・Change of the NRA Annual Operational Plan for FY2023 ・Overview of NRA's supplementary budget of FY2023 ・Overview of results of Information Exchange Meeting with International Advisors and the NRA Committee ・Report on holding ICRP2023 Symposium
45	Nov 15	・Discussion between the NRA and executives of Hokkaido Electric Power Co., Inc.
46	Nov 22	・Summary of review results as a draft for application for permission for change in basic design of nuclear reactors at Tokai Daini NPS of Japan Atomic Power Co. (change of power reactor facilities) -addition of the design basis for tremors with consideration of the standard response spectrum etc.- ・Results of soliciting public comments on proposed revision of "Guide for Nuclear Operator's EPR plan" ・Results of nuclear regulatory inspection and the like for the second quarter of FY2023
47 ※12	Nov 22	・Results of nuclear regulatory inspection and the like for the second quarter of FY2023 (related to Physical Protection of Nuclear Material)
48	Nov 29	・Summary of review results as a draft for application for permission for change in basic design of the nuclear reactor of a prototype advanced converter reactor at the Prototype Advanced Converter Reactor FUGEN of the JAEA -change of disposal method of nuclear spent fuel-

		・Results of discussions from the operators etc. concerning the transitional measures for incorporation of the standard response spectrum ・Status of examination of the operational safety program for power reactor facilities of Kashiwazaki-Kariwa NPS, Tokyo Electric Power Company Holdings, Inc.-Change of "Basic Posture for Nuclear Operators"-
49 ※13	Nov 29	・Report on results of supplemental inspections of Kashiwazaki-Kariwa NPS, Tokyo Electric Power Company Holdings, Inc.
50 ※14	Dec 4	・Report on results of supplemental inspections of Kashiwazaki-Kariwa NPS, Tokyo Electric Power Company Holdings, Inc.
51	Dec 6	・Report on results of supplemental inspections of Kashiwazaki-Kariwa NPS, Tokyo Electric Power Company Holdings, Inc. ・Results of reaffirmation of determination in 2017 of eligibility of TEPCO as the installer of power reactor ・Future response by the NRA concerning Kashiwazaki-Kariwa NPS, Tokyo Electric Power Company Holdings, Inc. ・Results of affirmation of the Probabilistic Risk Assessment (PRA) models of operators used for nuclear regulatory inspections
52	Dec 13	・Soliciting public comments on draft of rules to specify the End Stage of Transitional Measures of Latter Regulations to incorporate the standard response spectrum etc. ・Implementation of exchange of technological views with the nuclear operators on safety research and research and development ・Proposed draft of relevant ordinances etc. concerning reviews etc. of analog regulations etc. based on the digital principles. ・Results overview of summary of results of the CSS meeting (the 54th) of the International Atomic Energy Agency (IAEA) ・Results of on-site investigations at Kashiwazaki-Kariwa NPS, Tokyo Electric Power Company Holdings, Inc.
53	Dec 13	・Discussion between the NRA and the executives of Chugoku Electric Power Co., Inc.
54	Dec 20	・Discussion between the NRA and the executives of Tokyo Electric Power Company Holdings, Inc. ・Permission for change in basic design of power reactor at Tokai Daini NPS of Japan Atomic Power Co. (change of power reactor facilities) -addition of the design basis for tremors with consideration of the standard response spectrum etc.- ・Applications for summary of review results as a draft for application for permission for change in basic design of power reactor of the Sendai NPS of Kyushu Electric Power Co. Ltd. (change of power reactor facilities for Units 1 and 2) and for application for permission for change in basic design of power reactor of the Genkai NPS of Kyushu Electric Power Co., Inc. (change of power reactor facilities for Units 3 and 4) -addition of the design basis for tremors with consideration of the standard response spectrum etc.-
55 ※15	Dec 20	・Selection of Radiation Council members

56	Dec 27	・Change of the action matrix concerning nuclear regulatory inspections at Kashiwazaki-Kariwa NPS, Tokyo Electric Power Company Holdings, Inc. ・Reaffirmation of determination conducted in 2017 concerning eligibility of TEPCO as the installer of power reactor ・Response status of operators to countermeasures against software common cause failures of digital safety protection systems and future response thereto ・Outline of the NRA's proposed initial budget for FY2024
57	Jan 10	・Impacts on and response to nuclear facilities etc. in the 2024 Noto Peninsula Earthquake ・Status of licensing conformity to the new regulatory requirements of nuclear power plant ・Summary of results of the 62nd Technical Information Committee
58 ※16	Jan 10	・Summary of review results as a draft for application for permission for change of provisions on physical protection of nuclear material at the Mihama PS of Kansai Electric Power Co., Inc. based on revision of based on the examination standards concerning information system security measures of nuclear power facilities ・How to proceed with selection of review members for the Reactor Safety Examination Committee and the Nuclear Fuel Safety Examination Committee in the future
59	Jan 17	・Permission for change in basic design of the nuclear reactor of a prototype advanced converter reactor at the Prototype Advanced Converter Reactor FUGEN of the JAEA -change of disposal method of nuclear spent fuel- ・Summary of review results as a draft for application for permission for change in application for permission for modification of the spent fuel fabrication facility of Recyclable Fuel Storage Center, Recyclable-Fuel Storage Company-addition of metal cask that received type certification- ・Preliminary evaluations concerning safety research project starting from FY2024 ・Progress status and revision policies of efforts in the Measures for Mid-term Risk Reduction at TEPCO's Fukushima Daiichi Nuclear Power Station
60	Jan 24	・Review status for reflection to the regulations of findings obtained from research/analysis on contamination of reactor auxiliary cooling system ・Report on participation in Country Specific Safety Culture Forum (CSSCF)
61 ※17	Jan 24	・Revision of the examination standards concerning physical protection of nuclear material of nuclear power facilities etc. ・Response policy of nuclear regulatory inspections concerning the physical protection of nuclear material ・Summary of results of the 24th Nuclear Security Guidance Committee (NSGC) of the International Atomic Energy Agency (IAEA)-status of revision of superior documents of IAEA nuclear security series-
62	Jan 31	・Draft for technical evaluation documents concerning the atomic energy society of Japan "Basic Procedures for Determination of Radioactivity Concentration of Radioactive Waste for Medium-Deep Disposal" and draft for establishment of interpretation of the ordinance on operation of the category 2 waste disposal site

		of the objects contaminated by nuclear fuel material and soliciting public comments therefor ・Report on review results of the Reactor Safety Examination Committee and the Nuclear Fuel Safety Examination Committee (Subcommittee on Earthquake and Tsunami Hazards and Subcommittee on Volcanic Hazards)
63	Feb 7	・Permission for change in basic design of power reactor of the Sendai NPS of Kyushu Electric Power Co. Ltd. (change of power reactor facilities for Units 1 and 2) and permission for change in basic design of power reactor of the Genkai NPS of Kyushu Electric Power Co., Inc. (change of power reactor facilities for Units 3 and 4) -addition of the design basis for tremors with consideration of the standard response spectrum etc.- ・Revision of the Measures for Mid-term Risk Reduction at TEPCO's Fukushima Daiichi Nuclear Power Station (the 1st revision) ・Summary of report on the 1st Mission of IAEA Safety Review after starting discharge into the sea on discharging ALPS-Treated Water into the sea ・Current status and future response to Shiga NPS after the 2024 Noto Peninsula Earthquake
64	Feb 14	・The point at issue on sheltering in place in the event of nuclear emergency ・Appointment of Radiation Council members ・Results of soliciting public comments for revision of relevant ordinances etc. concerning reviews etc. of analog regulations etc. based on the digital principles. ・Arbitrary decisions in the 3rd quarter of FY2023 (report)
65	Feb 21	・Permission for modification of the spent fuel fabrication facility of Recyclable Fuel Storage Center, Recyclable-Fuel Storage Company-addition of metal cask that received type certification- ・Results of technical evaluation the atomic energy society of Japan "Basic Procedures for Determination of Radioactivity Concentration of Radioactive Waste for Medium-Deep Disposal" ・Results of nuclear regulatory inspections etc. in the 3rd quarter of FY2023 ・Summary of Results of the 63rd Technical Information Committee
66 ※18	Feb 21	・Selection of review members for the Reactor Safety Examination Committee and the Nuclear Fuel Safety Examination Committee ・Results of nuclear regulatory inspections etc. in the 3rd quarter of FY2023 (related to physical protection of nuclear material)
67	Feb 28	・Publication of the NRA's initiatives (March 11 report) ・Revision of the Measures for Mid-term Risk Reduction at TEPCO's Fukushima Daiichi Nuclear Power Station (the 2nd revision) ・FY2024 Implementation Plan of the NRA Human Resource Development Program ・FY2023 Management Review
68	Mar 6	・Publication of the NRA's initiatives (March 11 report) (the 2nd) ・Revision of Order for organization of the NRA and ordinances for organization of the NRA

		・FY2023 Management Review (the 2nd) ・Evaluation of the report resubmitted concerning the occurrence of all lights out at the installation place of the inspection equipment at the reprocessing plant of Japan Nuclear Fuel Ltd. and future response policies ・Future response concerning organizational revision of the JAEA
69	Mar 13	・Decision of rules to specify the End Stage of Transitional Measures of Latter Regulations to incorporate the standard response spectrum etc. ・Approval of change in the operational safety program for power reactor facilities related to technical assessment of the ageing management of the Genkai NPS Unit 3 of Kyushu Electric Power Co., Inc. ・Revision of procedures for administrative document management of the NRA
70 ※19	Mar 18	・Inspection plan of basic inspection (routine inspection) concerning physical protection of nuclear material
71	Mar 18	・Discussion between the NRA and the executives of the Japan Nuclear Fuel Ltd. ・Discussion between the NRA and the executives of the JAEA
72	Mar 19	・Results and response policies of hearing from Kyushu Electric Power Co., Inc. concerning findings of long-term evaluation of (the 1st version) offshore active fault in the southern west Sea of Japan ・Results of nuclear regulatory inspections for the Ikata PS Unit 3 of Shikoku Electric Power Co., Inc. ・Basic policy of FY2024 implementation plan inspections at Fukushima Daiichi Nuclear Power Station, Tokyo Electric Power Company Holdings, Inc. ・Modification of FY2023 management review material and decision of the NRA Annual Operational Plan for FY2024 ・Policy assessment implementation plan in FY2024 and the status of their reflection in the policy of the policy assessment results (published in FY2023) ・Appointment of review members for the Reactor Safety Examination Committee and the Nuclear Fuel Safety Examination Committee ・Report on NRA Committee BAN's business trip
73	Mar 27	・Report on organizational modification scheduled to be conducted by the JAEA on April 1, 2024 ・Establishment of study team on operation of sheltering in place in the event of nuclear emergency. ・Results of supplemental inspections and change of the action matrix at the Takahama PS Unit 3 of Kansai Electric Power Co., Inc. ・Implementation policy of Business to Establish Technology Base for Strengthening of Study on Nuclear Regulation for enhancement of nuclear regulatory study ・Response policies for formal change of organization name etc. in review standards and applications for existing permission due to enforcement of new Nuclear Reprocessing Act

※1 The 4th FY2023 NRA Commission Meeting was closed to the public (1) because the first of the agenda items dealt with information on deliberations, studies or consultations among or between national institutions, and if such information was made public, this may (1) unreasonably impair the frank exchange of opinions or the impartiality of decision-making, this

may (a) unreasonably impair the frank exchange of opinions or the impartiality of decision-making, (b) unjustly cause confusion among the public, or (c) unfairly bring benefit or disadvantage to specific persons, (2) and (2) because the second of the agenda items addressed information on inspection and it could be difficult to ascertain accurate facts if such information and deliberations became public and indicated inspection details such as targets and policies. Additionally, the second agenda item included information on the physical protection of nuclear materials which might endanger public safety if such information and deliberations became known by those who plan to sabotage nuclear facilities.

※2 The 8th FY2023 NRA Commission Meeting was closed to the public because the agenda item addressed information on inspection, and it could be difficult to ascertain accurate facts if such information and deliberations became public and indicated inspection details such as targets and policies. Additionally, the second agenda item included information on the physical protection of nuclear materials which might endanger public safety if such information and deliberations became known by those who plan to sabotage nuclear facilities.

※3 The 11th FY2023 NRA Commission Meeting was closed to the public because the agenda item included information on the physical protection of nuclear materials which might endanger public safety if such information and deliberations became known by those who plan to sabotage nuclear facilities.

※4 The 16th FY2023 NRA Commission Meeting was closed to the public (1) because the first of the agenda items to be discussed was the selection of personnel at the organization, and there was a risk of harm to the rights and interests of individuals and an obstacle to ensuring fair and smooth personnel affairs related to personnel management at the organization if this information and discussion were to become public, and (2) because the second of the items addressed information on inspection and it could be difficult to ascertain accurate facts if such information and deliberations became public and indicated inspection details such as targets and policies. Additionally, the second of the items included information on the physical protection of nuclear materials which might endanger public safety if such information and deliberations became known by those who plan to sabotage nuclear facilities.

※5 The 23rd FY2023 NRA Commission Meeting was closed to the public because the agenda item included information on the physical protection of nuclear materials which might endanger public safety if such information and deliberations became known by those who plan to sabotage nuclear facilities.

※6 The 26th FY2023 NRA Commission Meeting was closed to the public because the Meeting addressed information on inspection, and it could be difficult to ascertain accurate facts if such information and deliberations became public and indicated inspection details such as targets and policies. Additionally, the Meeting included information on the physical protection of nuclear materials which might endanger public safety if such information and deliberations became known by those who plan to sabotage nuclear facilities.

※7 The 28th FY2023 NRA Commission Meeting was closed to the public (1) because the first of the agenda items handled information on the review contents related to the special facilities for severe accident management, and there is a risk of disruption to the maintenance of public safety and order, and (2) because the second of the agenda items included information on the physical protection of nuclear materials which might endanger public safety if such information and deliberations became known by those who plan to sabotage nuclear facilities.

※8 The 31st FY2023 NRA Commission Meeting was closed to the public because it handled information on the review contents related to the special facilities for severe accident management, and there is a risk of disruption to the maintenance of public safety and order.

※9 The 34th FY2023 NRA Commission Meeting was closed to the public because the Meeting addressed information on inspection, and it could be difficult to ascertain accurate facts if such information and deliberations became public and indicated inspection details such as targets and policies. Additionally, the Meeting included information on the physical protection of nuclear materials which might endanger public safety if such information and deliberations became known by those who plan to sabotage nuclear facilities.

※10 The 40th FY2023 NRA Commission Meeting was closed to the public because the Meeting handled the selection of personnel at the designated organization, and there was a risk of harm to the rights and interests of individuals and an obstacle to ensuring fair and smooth personnel affairs related to personnel management at the organization if this information and discussion were to become public,

※11 The 43rd FY2023 NRA Commission Meeting was closed to the public (1) because the first of the agenda items included information on the physical protection of nuclear materials which might endanger public safety if such information and deliberations became known by those who plan to sabotage nuclear facilities, and (2) because the second of the agenda items addressed information on inspection and it could be difficult to ascertain accurate facts if such information and deliberations became public and indicated inspection details such as targets and policies. Additionally, the second agenda item included information on the physical protection of nuclear materials which might endanger public safety if such information and deliberations became known by those who plan to sabotage nuclear facilities.

※12 The 47th FY2023 NRA Commission Meeting was closed to the public because the agenda item included information on the physical protection of nuclear materials which might endanger public safety if such information and deliberations became known by those who plan to sabotage nuclear facilities.

※13 The 49th FY2023 NRA Commission Meeting was closed to the public because the Meeting addressed information on inspection, and it could be difficult to ascertain accurate facts if such information and deliberations became public and indicated inspection details such as targets and policies. Additionally, the Meeting included information on the physical protection of nuclear materials which might endanger public safety if such information and deliberations became known by those who plan to sabotage nuclear facilities.

※14 The 50th FY2023 NRA Commission Meeting was closed to the public because the Meeting addressed information on inspection, and it could be difficult to ascertain accurate facts if such information and deliberations became public and indicated inspection details such as targets and policies. Additionally, the Meeting included information on the physical protection of nuclear materials which might endanger public safety if such information and deliberations became known

by those who plan to sabotage nuclear facilities

※15 The 55th FY2023 NRA Commission Meeting was closed to the public because the agenda of the Meeting covered selection of candidates of the members for the Council and partially handled personal information and information related to human resources management.

※16 The 58th FY2023 NRA Commission Meeting was closed to the public (1) because the first of the agenda items included information on the physical protection of nuclear materials which might endanger public safety if such information and deliberations became known by those who plan to sabotage nuclear facilities, and (2) because the first agenda item covered selection of candidates of the Committees and partially handled personal information and information related to human resources management, and there was an obstacle to ensuring fair and smooth personnel affairs.

※17 The 61st FY2023 NRA Commission Meeting was closed to the public because the agenda item included information on the physical protection of nuclear materials which might endanger public safety if such information and deliberations became known by those who plan to sabotage nuclear facilities.

※18 The 61st FY2023 NRA Commission Meeting was closed to the public (1) because the first of the agenda items selected candidates of the members for the Advisory Committees and others and partially handled personal information and information related to human resources management, and (2) because the second included information on the physical protection of nuclear materials which might endanger public safety if such information and deliberations became known by those who plan to sabotage nuclear facilities.

※19 The 70th FY2023 NRA Commission Meeting was closed to the public included information on the physical protection of nuclear materials which might endanger public safety if such information and deliberations became known by those who plan to sabotage nuclear facilities.

9. Decisions by NRA Commission Meetings

(April 1, 2023 - March 31, 2024)

Date of determination	Decision made in the Meetings
Apr 5	・Appointment of Immediate Emergency Response members (as of June 1, 2023)
Apr 11	・Application for permission for change in basic design of Ikata PS of Shikoku Electric Power Co., Inc. (change of power reactor facilities for Unit 3) (addition of the design basis for tremors with consideration of the standard response spectrum etc.) (hearing of views) ・Appointment of review commissioners of the Advisory Committee on Reactor Safety and the Advisory Committee on Nuclear Fuel Safety ・Appointment of Radiation Council members (as of June 15, 2023)
Apr 18	・Issuance of guidance documents requiring amendment to permission for change in basic design of a power reactor for Tsuruga NPS of the Japan Atomic Power Company (change of power reactor facility of Unit 2)
May 10	・Permission for change changes to the Implementation Plan with Regards to Fukushima Daiichi NPS, Tokyo Electric Power Company Holdings, Inc. (operation at the time of discharge of ALPS-Treated Water to the sea, etc.)
May 17	・Hearing opinions etc. on application for permission for change in basic design of power reactor at the Institute for Integrated Radiation and Nuclear Science, Kyoto University (change of research reactor)
May 24	・Application for change in basic design of Ikata PS of Shikoku Electric Power Co., Inc. (change of power reactor facilities for Unit 3) (permission) (addition of the design basis for tremors with consideration of the standard response spectrum etc.) ・Application of permission for change in basic design of nuclear reactor at the Oarai Research and Development Institute (south area) of the JAEA (Change of research reactor facilities of experimental fast reactor facility) ・Decision and release of Annual Report of the NRA in FY2022
May 31	・Designation of type of specific equipment (specified dual-use cask) concerning nuclear reactor facilities (Mitsubishi Heavy Industries, Ltd. MSF-24P(S) type) ・Decision of partial revision of “the NRA Ordinance on Use, etc. of Nuclear Fuel Material” and “the Review Standards for the Decommissioning Plans for Nuclear Material Utilization Facilities not subject to Article 41 of the Cabinet Order, etc.” and notification of results of public comments thereon.
Jul 26	・Application for change in basic design of nuclear reactor at the Oarai Research and Development Institute (south area) of the JAEA (change of research reactor facilities of experimental fast reactor facility) (permission)
Aug 2	・Notification of results of public comments on partial revision of “the operational guide for pre-operational inspections, regular operational inspections and the measures for the safety for nuclear operators etc.” and a draft for revision of the Guide
Aug 23	・Implementation of supplemental inspections for the Takahama PS Unit 3 of Kansai Electric Power Co., Inc. (notification) ・Evaluation etc. concerning the operational performance of National Institutes for Quantum Science and Technology in FY2022 and during the first period of the medium to long-term goals (co-jurisdictional part of the NRA) ・Evaluation etc. concerning the operational performance of the JAEA (co-jurisdiction part of the NRA) in FY2022

	・Determination of policy assessment report on policies implemented in FY2022, and an ex-post-assessment report of regulations regarding policies for the purpose of establishing or revising or abolishing regulations
Aug 30	・Application for permission for change in basic design of power reactor at the Onagawa NPS of Tohoku Electric Power Co., Inc.(change of power reactor facilities for Uni 2) (installation of special facilities for severe accident management and abolishment of pressure venting system for preventing vessel rupture) ・Revision of ordinance on installation and operation etc. of commercial power reactors etc. for partial enforcement to partially revise the Electricity Business Act and Other Acts for Establishing Electricity Supplying Systems for Realizing Decarbonized Society (decision of a draft for revision and notification of results of public comments) ・Partial revision of examination standards concerning disposition of the NRA based on Act on the Regulation of Nuclear Source Material, Nuclear Fuel Material and Reactors etc.
Sept 13	・Application for permission for change in basic design of Kashiwazaki-Kariwa NPS of TEPCO (change of power reactor facilities for Units 6 and 7) (hearing of opinions) (Partial structural special facilities for severe accident management)
Sept 20	・Hearing opinions on the FY2023 Nuclear Energy Disaster Prevention Drill (answer) ・Hearing of opinions on change in permission for operations of waste management at the Reprocessing Plant of Japan Nuclear Fuel Ltd. (2021 Issuance No. 287 dated January 12, 2022, (addition of the design basis for tremors with consideration of the standard response spectrum etc.)) ・Hearing opinions on change in permission for operations of processing of nuclear fuel materials at the Reprocessing Plant of Japan Nuclear Fuel Ltd.((2021 Issuance No. 1 dated January 12, 2022, (addition of the design basis for tremors with consideration of the standard response spectrum etc.)) ・Hearing opinions on change in permission for operations of reprocessing at the Reprocessing Plant of Japan Nuclear Fuel Ltd.((2021 Issuance No. 286 dated January 12, 2022, (addition of the design basis for tremors with consideration of the standard response spectrum etc.))
Sept 27	・Establishment of rules concerning technical assessment of technical documents concerning specific common matters (determination of establishment and notification of results of public comments etc.)
Oct 4	・Application for permission for change in basic design of power reactor at the Onagawa NPS (change of power reactor facilities for Uni 2) (Installation of special facilities for severe accident management and abolishment of pressure venting system for preventing vessel rupture)
Oct 11	・Establishment of a technical evaluation report of the Japan Electric Association Standards for Digital Safety Protection Systems and revision of guideline of technical ordinance for commercial power reactor etc. (decision of proposed establishment and proposed revision, and notification of results of public comments)
Oct 18	・Partial revision of the NRA Guide for Emergency Preparedness and Response and relevant ordinances and results of BWR special facilities for severe accident management)
Oct 25	・Application for permission for change in basic design of Kashiwazaki-Kariwa NPS of TEPCO (change of power reactor facilities for Units 6 and 7) (permission) (partial structural special facilities for severe accident management) ・Hearing of opinions on permission for change in basic design of nuclear reactor at the Oarai Research and Development Institute (north area) of the JAEA [change of the reactor facilities of HTTR (High Temperature Engineering Test Reactor)] -addition of the design

	basis for tremors with consideration of the standard response spectrum etc.- ・Approval of appointment of executives at designated organizations implementing safeguard inspections
Nov 1	・Approval of change in the operational safety program for power reactor facilities of the Sendai NPS of Kyushu Electric Power Co., Inc. (addition of long-term facilities management policies for Units 1 and 2) ・Approval of change in application for permission for operation period extension of the Sendai NPS of Kyushu Electric Power Co., Inc. (extension of operation period extension of Unit 1 nuclear power reactor) ・Approval of change in application for permission for operation period extension of the Sendai NPS of Kyushu Electric Power Co., Inc. (extension of operation period extension of Unit 2 nuclear power reactor)
Nov 15	・Change of the NRA Annual Operational Plan for FY2023
Nov 22	・Application for permission for change in basic design of nuclear reactors at Tokai Daini NPS of Japan Atomic Power Co. (change of power reactor facilities) (addition of the design basis for tremors with consideration of the standard response spectrum etc.) (hearing of opinions) ・Results of soliciting public comments on proposed revision of "Guide for Nuclear Operator's EPR plan"
Nov 29	・Application for permission for change in basic design of the nuclear reactor of a prototype advanced converter reactor at the Prototype Advanced Converter Reactor FUGEN of the JAEA (change of disposal method of nuclear spent fuel) (hearing of opinions)
Dec 20	・Application for permission for change in basic design of power reactor at Tokai Daini NPS of Japan Atomic Power Co. (change of power reactor facilities) (addition of the design basis for tremors with consideration of the standard response spectrum etc.) ・Application for permission for change in basic design of power reactor of the Sendai NPS of Kyushu Electric Power Co. Ltd. (change of power reactor facilities for Units 1 and 2) (change of power reactor facilities) (addition of the design basis for tremors with consideration of the standard response spectrum etc.) (hearing of opinions) ・Application for permission for change in basic design of power reactor of the Genkai NPS of Kyushu Electric Power Co., Inc. (change of power reactor facilities for Units 3 and 4) (addition of the design basis for tremors with consideration of the standard response spectrum etc.) (hearing of opinions)
Dec 27	・Change of the action matrix concerning nuclear regulatory inspections at Kashiwazaki-Kariwa NPS, Tokyo Electric Power Company Holdings, Inc. ・Reaffirmation of determination conducted in 2017 concerning eligibility of TEPCO as the installer of power reactor
Jan 17	・Application for Permission for change in basic design of the nuclear reactor of a prototype advanced converter reactor at the Prototype Advanced Converter Reactor FUGEN of the JAEA (change of disposal method of nuclear spent fuel) (permission) ・Hearing of opinions on permission for change in the spent fuel fabrication facility of Recyclable Fuel Storage Center, Recyclable-Fuel Storage Company (Issuance RFS 5 No.9 as pf September 21, 2023) (addition of metal cask that received type certification))
Jan 24	・Partial revision of clause-by-clause descriptions of the rules concerning nuclear security measures and statement method of security plan
Feb 7	・Application for permission for change in basic design of power reactor of the Sendai NPS of Kyushu Electric Power Co. Ltd. (change of power reactor facilities for Units 1 and 2)

	(change of power reactor facilities) (addition of the design basis for tremors with consideration of the standard response spectrum etc.) (permission) ・Application for permission for change in basic design of power reactor of the Genkai NPS of Kyushu Electric Power Co., Inc. (change of power reactor facilities for Units 3 and 4) (permission) (addition of the design basis for tremors with consideration of the standard response spectrum etc.)
Feb 14	・Appointment of Radiation Council members ・Results of soliciting public comments for revision of relevant ordinances etc. concerning reviews etc. of analog regulations etc. based on the digital principles and determination of the draft for revision
Feb 21	・Permission for change in the spent fuel fabrication facility of Recyclable Fuel Storage Center, Recyclable-Fuel Storage Company (Issuance RFS 5 No.9 as pf September 21, 2023) (addition of metal cask that received type certification))
Mar 6	・Determination and publication of “The NRA's Initiatives” ・Partial revision of ordinances for organization of the NRA ・Draft Cabinet Order on the partial revision of Order for organization of the NRA (petition)
Mar 13	・Partial revision of the rules to partially revise the interpretation of the regulations on the Standards for the Location, Structure, and Equipment of Commercial Power Reactors (determination of revise and notification of results of soliciting public comments) ・Approval of change in the operational safety program for power reactor facilities of the Genkai NPS Unit 3 of Kyushu Electric Power Co., Inc. (addition of long-term facility management policy of Unit 3) ・Partial revision of procedures for administrative document management of the NRA
Mar 19	・Determination of the NRA Annual Operational Plan for FY2024 ・Determination of policy assessment implementation plan in FY2024 and the status of their reflection in the policy of the policy assessment results (published in FY2023) ・Appointment of review members for the Reactor Safety Examination Committee

10. Overview of Safety Regulations of Ageing Power Reactors

February 13, 2023
NRA

On July 29, 2020, the NRA clarified its view that "a decision on how long nuclear power reactor facilities should be allowed to be used is none other than a policy decision concerning how nuclear power should be utilized, and is not a matter for the NRA to express its opinion on." At the 52nd Strategic Policy Committee of the Advisory Committee for Natural Resources and Energy held on December 16, 2022, it was indicated that the policy regarding the operational period should be revised in terms of the policy for utilization. In response to this, the legal framework that needs to be established in the Nuclear Reactor Regulation Act is as follows so that the necessary safety regulations regarding ageing power reactors can continue to be strictly enforced.

1. When a power reactor is to be operated for more than 30 years after the start of its operation, a plan for managing the deterioration of the power reactor facilities for a period not exceeding 10 years (long-term facility management plan (tentative name)) shall be established and require the NRA's approval.
2. In case of operating a power reactor more than the period of the long-term facility management plan approved in 1. As above, in the same manner as in 1., the long-term facility management plan for a period not exceeding 10 years shall be formulated and obtain the NRA's approval. The same shall apply thereafter.
3. In case of a change in the long-term facility management plan approved under 1. or 2. during the period set in the plan, the change shall be approved by the NRA. If the change is minor, the operators shall notify the NRA of the change.
4. In case of formulating or changing the long-term facility management plan, a technical assessment of the deterioration status of the power reactor facilities (deterioration assessment) shall be carried out, except for the case where the change is minor.
5. In the long-term facility management plan, the period of the plan, the method and results of the degradation assessment, measures to manage the degradation of the power reactor facilities and other information shall be described.
6. The criteria for approval of the long-term facility management plan are that the plan conforms to all of the following: (1) degradation assessments have been conducted properly, (2) the measures taken to control degradation of the power reactor facilities do not interfere with disaster prevention, and (3) the plan conforms to technical standards even if degradation that will occur during the period of the plan is taken into account.
7. The power reactor installer shall take necessary measures to manage the deterioration of the power reactor facilities in accordance with the long-term facility management plan approved in 1. or 2. The implementation status of such measures shall be subject to nuclear regulatory inspections conducted by the NRA.
8. In cases where the NRA finds that the approved long-term facility management plan does not conform to the criteria in 6. above or that the power reactor installer is in violation of 7. above, the NRA can order the power reactor installer to implement degradation assessment, change the long-term facility management plan, and take other measures necessary to manage the degradation of the power reactor facilities.
9. In cases where the power reactor installer has operated the power reactor in violation of 1. or 2. above or has violated the NRA's orders as described in 8. above, the NRA can revoke the permission for basic design for the power reactor or order the suspension of its operation for a period not exceeding one year.
10. Penalties shall be established for cases where the power reactor installer has operated the power reactor in violation of 1. or 2. above or has violated the NRA's orders as described in 8. above in conjunction with provisions for fees to implement 1. through 9. above and other necessary provisions.
11. In order to ensure a smooth transition to the new system, the following preparatory acts and other necessary transitional measures shall be established.

(a) During a certain period of time before the new system comes into effect, the application for and approval of a long-term facility management plan should be made in advance.

(b) If the application is approved before the new system comes into effect, it shall be deemed to be approved under the new system on the date the new system comes into effect.

(c) If the application is not approved before the new system comes into effect, it shall be considered as an application under the new system on the date the new system comes into effect.

12. For power reactors that have been in operation for more than 30 years but are not planned to be operated further, this framework does not apply. Instead, it requires that deterioration management be conducted within the existing framework for power reactors that have been shut down for a long period, in other words, within the special measures for facility management stipulated in the operational safety program.

(End)

11. Exchange of Opinions with Operators

(1)Exchange of Opinions between the NRA and Operators (CEOs)

Dates	Nuclear Operators
April 11, 2023	The Japan Atomic Power Company
April 14, 2023	Japan Nuclear Fuel Ltd.
June 22, 2023	Tokyo Electric Power Company Holdings, Inc.
November 15, 2023	Hokkaido Electric Power Co., Inc.
December 13, 2023	Chugoku Electric Power Co., Inc.
December 20, 2023	Tokyo Electric Power Company Holdings, Inc.
March 18, 2024	Japan Nuclear Fuel Ltd.
March 18, 2024	Japan Atomic Energy Agency
March 27, 2024	Japan Atomic Energy Agency

(2) Exchange of Opinions with Chief Nuclear Officers (CNOs) of Major Nuclear Power Facilities Installers

Dates	Nuclear Operators	Main Issues of Discussions
October 17, 2023	Tokyo Electric Power Company Holdings, Inc., Chubu Electric Power Co., Inc., Kansai Electric Power Company, Inc., Shikoku Electric Power Co., Inc. and Atomic Energy Association (ATENA)	・ SA facility/Effective improvement operational improvements based on operational results of plants after development of special facilities for severe accident management (LCO/AOT review, On-Line Maintenance Guideline (OLM) and utilization of risk information ・ Response to “unknown-unknowns”
March 25, 2024	Tokyo Electric Power Company Holdings, Inc., Chubu Electric Power Co., Inc. Kansai Electric Power Company, Inc., Central Research Institute of Electric Power Industry and Atomic Energy Association (ATENA)	・ Regulations on “Innovative Light Reactor” ・ Collection of data of used for probabilistic risk assessment (PRA) used for failure rate of equipment ・ System to resolve issues of Atomic Energy Association (ATENA)

(3) Visits to Nuclear Facilities by NRA Commissioners

	Dates	Purposes	Places of Visit (NPP, etc.)	Visiting Commissioner
1	April 6 to 7, 2023	On-site investigation	Sendai Nuclear Power Station of Kyushu Electric Power Co., Inc.	Commissioner SUGIYAMA
2	April 20 to 21, 2023	On-site investigation	Onagawa Nuclear Power Station Tohoku Electric Power Co., Inc.	Commissioner ISHIWATARI
3	April 27 to 28, 2023	On-site inspection	Rokkasho Reprocessing Plant, UriniumEnrichment Plant and Low-Level Radioactive Waste Disposal	Commissioner TANAKA

			Center, Japan Nuclear Fuel Ltd.	
4	May 19, 2023	On-site inspection	University of Fukui Hospital, Advanced Radiation Emergency Medical Support Center and Fukui Prefectural Hospital	Commissioner BAN
5	June 16, 2023	On-site investigation	Onagawa Nuclear Power Station, Tohoku Electric Power Co., Inc.	Commissioner SUGIYAMA
6	June 24, 2023	On-site inspection	Fukushima Daiichi Nuclear Power Station, TEPCO	Chairman YAMANAKA
7	July 22, 2023	On-site inspection	Genkai Nuclear Power Station of Kyushu Electric Power Co., Inc.	Chairman YAMANAKA & Commissioner BAN
8	August 9, 2023	On-site investigation	Kashiwazaki-Kariwa Nuclear Power Station, TEPCO	Commissioner SUGIYAMA
9	August 29, 2023	On-site investigation	Shimane Nuclear Power Station, Chugoku Electric Power Co., Inc.	Commissioner ISHIWATARI
10	October 13, 2023	On-site inspection	Takahama Nuclear Power Station of Kansai Electric Power Co., Inc.	Commissioner SUGIYAMA
11	October 14, 2023	On-site inspection	Fukushima Daiichi Nuclear Power Station, TEPCO	Chairman YAMANAKA
12	October 24, 2023	On-site inspection	National Institutes for Quantum Science and Technology	Commissioner SUGIYAMA
13	October 30 to 31, 2023	On-site investigation	Tomari Nuclear Power Plant of Hokkaido Electric Power Co., Inc.	Commissioner ISHIWATARI
14	November 7, 2023	On-site inspection	Tsuruga Power Station of the Japan Atomic Power Company	Commissioner SUGIYAMA
15	November 30, 2023	On-site inspection	Nuclear Fuel Cycle Engineering Laboratories and Nuclear Science Research Institute, Japan Atomic Energy Agency	Commissioner TANAKA
16	December 8, 2023	On-site inspection	Fukushima Daiichi Nuclear Power Station, TEPCO	Commissioner TANAKA
17	December 11, 2023	On-site investigation	Kashiwazaki-Kariwa Nuclear Power Station, TEPCO	Chairman YAMANAKA & Commissioner BAN
18	December 14 to 15, 2023	On-site investigation	Tsuruga Power Station of the Japan Atomic Power Company	Commissioner ISHIWATARI

19	December 15, 2023	On-site inspection	Central Research Institute of Electric Power Industry, Abiko District	Commissioner TANAKA
20	December 21 to 22, 2023	On-site inspection	Fukushima Daiichi Nuclear Power Station, TEPCO	Chairman YAMANAKA
21	January 13, 2024	On-site inspection	Onagawa Nuclear Power Station, Tohoku Electric Power Co., Inc.	Chairman YAMANAKA & Commissioner SUGIYAMA
22	February 1, 2024	On-site inspection	Fukushima Daiichi Nuclear Power Station, TEPCO	Commissioner BAN
23	February 9, 2024	On-site investigation	Takahama Nuclear Power Station of Kansai Electric Power Co., Inc.	Commissioner SUGIYAMA
24	March 23, 2024	On-site inspection	Fukushima Daiichi Nuclear Power Station, TEPCO	Chairman YAMANAKA
25	March 25 to 26, 2024	On-site investigation	Hamaoka Nuclear Power Station, Chubu Electric Power Co., Inc.	Commissioner ISHIWATARI

12 Meetings and Opinion Exchange with Local Parties

(1) Meetings with Local Parties

Dates	Meeting with	NRA Representatives
June 7, 2023	Governor of Shimane Prefecture	Secretary-General
June 7, 2023	Deputy Governor of Shiga Prefecture	Deputy Secretary-General
July 24, 2023	Chairperson of Prefectural Government Assembly on Nuclear Power (Chairperson of Shimane Prefectural Assembly)	Secretary-General
July 25, 2023	Mayor of Himi City	Deputy Secretary-General
July 25, 2023	Deputy Chairperson of Greater Fukuoka Administrative Promotion Council (Mayor of Kasuga City, Fukuoka Prefecture)	Deputy Secretary-General
July 26, 2023	Governor of Kagoshima Prefecture	Secretary-General
August 23, 2023	Chairperson of the Special Committee for Measures for Nuclear Power Generation of National Governors' Association (Governor of Hokkaido Prefecture)	Secretary-General
October 10, 2023	Mayor of Matsue City	Deputy Secretary-General
October 17, 2023	Governor of Tottori Prefecture	Secretary-General
November 15, 2024	Chairperson of Prefectural Government Assembly on Nuclear Power (Chairperson of Shimane Prefectural Assembly), Deputy-Chairman (Chairperson of Hokkaido	Secretary-General

	Prefectural Assembly), Deputy-Chairman (Deputy-Chairperson of Ehime Prefectural Assembly), Chairperson of Aomori Prefectural Assembly, Chairperson of Fukui Prefectural Assembly and Chairperson of Shizuoka Prefectural Assembly,	
December 25, 2023	Mayor of Satsumasendai City	Deputy Secretary-General
February 9, 2024	Governor of Niigata Prefecture	Secretary-General

(2) Exchange of Opinions with Local Stakeholders by Committee Members

Dates	Overview	Attendees	Representing Commissioners
July 22, 2023	Discussions with local stakeholders on regulatory issues related to nuclear facilities	Governor of Saga Prefecture, Mayor of Genkai Town, Karatsu City, Mayor of Imari City, Governor of Nagasaki Prefecture, Mayors of Matsuura City, Hirado City, Sasebo City and Iki City, Governor of Fukuoka Prefecture and Mayor of Itoshima City etc.	Chairman YAMANAKA & Commissioner BAN
January 13, 2024	Discussions with local stakeholders on regulatory issues related to nuclear facilities	Governor of Miyagi Prefecture, Mayor of Onagawa Town, Mayors of Ishinomaki City, Tome City, and Higashi Matsuyama City, Mayors of Wakuya Town, Misato Town and Minami Sanriku Town etc.	Chairman YAMANAKA & Commissioner SUGIYAMA

(3) Results of On-site Exchange of Opinions with Local Stakeholders by Officials of the Nuclear Regulation Authority

Dates	Venues	Names of meeting/ session	Main attendees
April 11, 2023	Hokkaido	Exchange of opinions on industrial accident etc.	Otaru Labor Standards Inspection Office, Kucchan Branch Office
April 18, 2023 - September 22, 2023 (twice in total)	Hokkaido	Exchange of opinions on fire protection	Iwanai-Suttsu Regional Fire Department Association, Tomari Branch Office
May18, 2023 - February 28, 2024 (4 times in total)	Hokkaido	Briefing on the nuclear regulatory inspection results	Local government
May 15, 2023	Aomori Prefecture	Meeting of FY 2023 Aomori Prefecture's nuclear emergency drill (field training) plan	Prefectural Office
May 15, 2023 - February 19, 2024 (4	Aomori Prefecture	Opinion exchange on nuclear regulatory inspections, etc.	Rokkasho Village

times in total)			
May 17, 2023 - February 21, 2024 (10 times in total)	Aomori Prefecture	Explanation and opinion exchange regarding the nuclear regulation inspection results	Aomori Prefectural Press Association, Aomori Prefectural Government
July 6, 2023 – December 20,2023 (3 times in total)	Aomori Prefecture	Explanation and opinion exchange regarding the nuclear regulation inspection results	Higashidori Village
August 1, 2023 - October 19, 2023 (twice in total)	Aomori Prefecture	Meeting of FY 2023 Aomori Prefecture's nuclear emergency drill (field training)	Local governments, relevant bodies
September 27, 2023	Aomori Prefecture	Schedule arrangement for approach light installation drills	Aomori Prefectural Office
October 11,2023-October26, 2023 (5 times in total)	Aomori Prefecture	Opinion exchange meeting on Aomori Prefecture nuclear power	Local residents etc. (Imabetsu Town, Itayanagi Town, Oirase Town, Sumikami Town and Inakadate Village)
November 7, 2023	Aomori Prefecture	FY 2023 Aomori Prefecture's nuclear emergency drill (field training)	Local governments, relevant bodies
November 15, 2023	Aomori Prefecture	Drills for operating evacuation routes and shelters of Village	Rokkasho Village, local residents etc.
November 15, 2023	Aomori Prefecture	Approach light installation drills	Aomori Prefectural Office, Rokkasho Village, Regional Fire-Fighting Stations etc.
November 16 - December 18, 2023 (twice in total)	Aomori Prefecture	FY2023 Adjustment Meeting on Aomori Prefecture Emergency Response Headquarters Drills	Aomori Prefectural Office
December 20, 2023	Aomori Prefecture	FY2023 Aomori Prefecture Emergency Response Headquarters Drills	Aomori Prefectural Office, relevant local government
January 9, 2024	Aomori Prefecture	Aomori Prefecture Disaster Management Council Nuclear Energy Subcommittee	Local governments, relevant bodies
January 23, 2024- January 24, 2024 (twice in total)	Aomori Prefecture	FY2023 Aomori Prefecture Emergency Response Headquarters Disaster Imagination Game	Local governments, relevant bodies
February 6, 2024	Aomori Prefecture	Aomori Prefecture Nuclear Policy Committee	Organization representatives, experts, local residents, etc.
May 19, 2023 - March 1, 2024 (4 times in total)	Miyagi Prefecture	Explanation and opinion exchange regarding the nuclear regulation inspection results	Local governments

June 7, 2023	Miyagi Prefecture	Nuclear energy administration section managers meeting	Local governments
July 31, 2023 - October 11, 2023 (twice in total)	Miyagi Prefecture	Miyagi Prefecture nuclear emergency system reinforcing working group meeting	Local governments
August 28,2023- September 29, 2023 (twice in total)	Miyagi Prefecture	General meeting for nuclear emergency by concerned institutions	Local governments etc.
October 11, 2023 - March 6, 2024 (twice in total)	Miyagi Prefecture	Nuclear emergency system reinforcing working group meeting	Local governments
April 28,2023 - September 29, 2023 (3 times in total)	Fukushima Prefecture	Fukushima Prefecture Nuclear Power Plant Safety Assurance Technology Review Committee	Local governments, experts
May 23, 2023 - February 20, 2024 (6 times in total)	Fukushima Prefecture	Fukushima Prefectural Council for Safety Monitoring of Reactor Decommissioning	Local governments, experts
June 13, 2023 - January 30, 2024 (twice in total)	Fukushima Prefecture	Fukushima Prefectural Council for Ensuring the Safety of Reactor Decommissioning	Local residents, various organizations, experts
June 14, 2023 - February 26, 2024 (3 times in total)	Fukushima Prefecture	Fukushima Prefecture Labor Safety and Health Subcommittee	Local governments, experts
October 30, 2023 - January 23, 2024 (twice in total)	Fukushima Prefecture	Naraha Nuclear Facility Monitoring Committee	Experts
April 12, 2023 - March 6, 2024 (11 times in total)	Niigata Prefecture	Regional Panel for Ensuring Transparency of Kashiwazaki-Kariwa NPS	Experts, local governments, operator, related ministries and agencies
May 25, 2023 - February 22, 2024 (4 times in total)	Niigata Prefecture	Explanation regarding the nuclear regulation inspection results	Relevant local governments
June 2, 2023 - February 15, 2024(4 times in total)	Niigata Prefecture	Niigata Prefecture Technology Committee Meeting	Experts, local governments
July 27, 2023 - February 6, 2024 (twice in total)	Niigata Prefecture	Municipal Study Group on Nuclear Safety Measures	Experts, local governments, operator, related ministries and agencies
October 27, 2023 October 29, 2023	Niigata Prefecture	FY2023 Niigata Prefecture Nuclear Disaster Prevention General Drill	Local governments, operators, related ministries and agencies
November 10, 2023	Niigata Prefecture	Association Communities for Ensuring Transparency of Kashiwazaki-Kariwa NPS-information sharing meeting	Heads of local governments, experts, local governments, operators, related ministries and agencies

January 22, 2024 - February 6, 2024 (3 times in total)	Niigata Prefecture	Explanation regarding supplementary inspections and reaffirmation inspections for determination of eligibility	Prefectural assembly members of Liberal Democratic Party, Kashiwazaki City Council, KariwaVillage Council
January 22, 2024 - February 18, 2024 (twice in total)	Niigata Prefecture	Explanatory meetings to the residents regarding supplementary inspections and reaffirmation inspections for determination of eligibility	Niigata Prefecture, Kashiwazaki City
February 23, 2024	Niigata Prefecture	Municipal Study Group on Nuclear Safety Measures, briefing by the heads of local government	Heads of local governments, experts, local governments, operators, related ministries and agencies
February 28, 2024	Niigata Prefecture	Fire prevention and safety liaison committee	Local governments, public fire department, operators
March 28, 2024	Niigata Prefecture	Nagaoka City disaster prevention conference	Heads of local governments, experts
May 16, 2023 - February 21, 2024 (4 times in total)	Ibaraki Prefecture	Explanation regarding the nuclear regulation inspection results	Relevant local governments
June 26, 2023	Ibaraki Prefecture	Ibaraki Prefecture Briefing on Notification Liaison Drills	Prefectural government, relevant local government, operators
December 27, 2023	Ibaraki Prefecture	Tokai Village disaster prevention conference	Tokai Village and relevant bodies
January 18 - 19, 2024	Ibaraki Prefecture	Disaster Imagination Game by Relevant Bodies	Relevant local governments and relevant bodies
May 18, 2023 - May 22, 2024 (4 times in total)	Kanagawa Prefecture	Explanation and opinion exchange regarding the nuclear regulation	Relevant local governments
June 19, 2023	Kanagawa Prefecture	Opinion exchange on disaster prevention with Kanagawa Prefectural Police Headquarter	Kanagawa Prefectural Police
October 4, 2023	Kanagawa Prefecture	Nuclear Disaster Prevention Information Liaison Committee	Local government, Self-Defense Forces, operators
October 26, 2023	Kanagawa Prefecture	Kurihama District nuclear emergency preparedness drills	Yokosuka City, citizens, operators
November 9, 2023	Kanagawa Prefecture	Yokosuka Off-site Center Disaster Imagination Game	Local government, Self-Defense Forces, Japan Coast Guard, operators

January 15, 2024	Kanagawa Prefecture	Kawasaki Nuclear Facility Safety Committee Secretariat Meeting	Local governments, operators, etc.
February 9, 2024	Kanagawa Prefecture	Kawasaki Nuclear Facility Safety Committee	Local governments, operators, etc.
April 14, 2023 - November 22, 2023 (10 times in total)	Shizuoka Prefecture	Opinion exchange associated with status confirmation of Off-Site Center by Staff Members Involved in risk management of municipality	Shizuoka Prefecture, Shimada City, Kikukawa City, Yaizu City and Yoshida Town etc.
June 21, 2023	Shizuoka Prefecture	Omaezaki City Special Committee on Nuclear Countermeasures	Omaezaki Members of municipal assemblies, relevant bodies etc.
June 28, 2023	Shizuoka Prefecture	General Meeting of Countermeasures Council for Safety etc. for Hamaoka NPS	Omaezaki Members of municipal assemblies, relevant bodies etc.
November 14, 2023 - December 12, 2023 (twice in total, web conference)	Shizuoka Prefecture	Shizuoka Prefecture Nuclear Emergency Preparedness Drills Preliminary Coordination Conference	Shizuoka Prefecture, relevant local governments, relevant bodies etc.
December 18, 2023	Shizuoka Prefecture	Regional Liaison Committee (Hamaoka) on Nuclear Emergency Preparedness	Shizuoka Prefecture, Omaezaki City, relevant bodies etc.
June 23, 2023 - November 29, 2023 (twice in total)	Ishikawa Prefecture	Shika Town "Nuclear Power Station" Safety Promotion Committee	Heads of local governments, representatives of residents, etc.
June 23,2023 - November 29, 2023 (3 times in total)	Ishikawa Prefecture	Joint Meeting of Akasumi Area Committee and Safety Promotion Liaison Committee	Heads of local governments, representatives of residents, etc.
July 18, 2023 - March 27, 2024 (3 times in total)	Ishikawa Prefecture	Ishikawa Prefecture Nuclear Environmental Safety Management Council	Relevant local governments
April 21, 2023 - February 27, 2024 (3 times in total)	Fukui Prefecture	Fukui Prefecture Nuclear Safety Expert Council	Experts
May 16, 2023	Fukui Prefecture	Inspection of Ohi Off-Site Center by the group of members of Ohi Town Council	Members of Ohi Town Council
May 16, 2023 - February 21, 2024 (4 times in total)	Fukui Prefecture	Explanation regarding the nuclear regulation inspection results	Takahama Town
May 17, 2023 - February 19, 2024 (4 times in total)	Fukui Prefecture	Explanation regarding the nuclear regulation inspection results	Ohi Town

May 17, 2023 - February 21, 2024 (4 times in total)	Fukui Prefecture	Fukui Prefecture NPP liaison meeting	Relevant local governments
June 21, 2023	Fukui Prefecture	Fukui Prefecture liaison meeting for Nuclear Emergency preparedness (held on paper)	Relevant local governments, relevant bodies
July 27, 2023 - February 29, 2024 (4 times in total)	Fukui Prefecture	Fukui Prefecture Nuclear Environmental Safety Management Council	Representatives of heads of the groups in Fukui Prefecture, head of municipalities and members of prefectural assembly etc.
October, 2023 20 October 21, 2023	Fukui Prefecture	Fukui Prefecture Nuclear Energy Disaster Prevention Drill	Municipalities etc.
October 30, 2023	Fukui Prefecture	Nuclear power generation-related cities manager meeting	Prefectures
November 2, 2023 - March 27, 2024	Fukui Prefecture	Obama City Nuclear Power Station Environmental Safety Council	Mayor of Town, Obama City council members, residents, etc.
November 9, 2023	Fukui Prefecture	Opinion exchange concerning cooperation with Tsuruga labor standards inspection office	Directors of Tsuruga labor standards inspection office, etc.
November 10, 2023	Fukui Prefecture	Firefighting information liaison committee of Fukui Prefecture nuclear power plants, etc.	Municipalities (Tsuruga Mikata Fire Department officials)
February 7, 2024	Fukui Prefecture	Wakasa Nuclear Power Station Environmental Safety Council	Mayor of Town, town council members, representatives of organizations, residents, etc.
May 18, 2023	Kyoto Prefecture	Kyoto Prefecture Regional Council/Secretariat Meeting	Kyoto Prefecture, Heads of municipalities, experts etc.
May 22, 2023	Gifu Prefecture	Explanation regarding the nuclear regulation inspection results	Municipalities
May 30, 2023	Osaka Prefecture	Nuclear facilities liaison conference	Higashiosaka City, Osaka Prefectural Police, public fire departments, operators
June 7, 2023 - February 29, 2024 (4 times in total)	Osaka Prefecture	Explanation regarding the nuclear regulation inspection results	Relevant local governments

July 13, 2023 - March 13, 2024 (twice in total)	Osaka Prefecture	Kumatori Town Nuclear Problems Countermeasures Council	Town Council members, representative of residents, experts, municipalities
August 4, 2023	Osaka Prefecture	Izumisano City Nuclear Problems Countermeasures Council	City Council members, representative of residents, experts, municipalities
June 9, 2023 - February 27, 2024 (4 times in total, web conference)	Okayama Prefecture	Briefing on the nuclear regulatory inspection results	Relevant local governments
August 7, 2023	Okayama Prefecture	Discussion regarding the contents of field training in nuclear disaster preparedness drills	Municipalities, Tsuyama Regional Firefighting Association
May 17, 2023 - February 21, 2024 (4 times in total)	Shimane Prefecture	Briefing on the nuclear regulatory inspection results	Local governments
June 1, 2023	Shimane Prefecture	Unnan City disaster prevention conference	Heads of local governments, experts
March 6, 2024	Shimane Prefecture	Matsue City disaster prevention conference	Heads of local governments~~s,~~ experts
May 17, 2023 - February 20, 2024 (3 times in total)	Ehime Prefecture	Explanation regarding the nuclear regulation inspection results	Relevant local governments
November 24, 2023	Ehime Prefecture	Regional Liaison Committee	Relevant bodies, operators
April 20, 2023 - January 26, 2024 (4 times in total)	Saga Prefecture	Explanation regarding the nuclear regulation inspection results	Relevant local governments
June 30, 2023	Saga Prefecture	Karatsu City disaster prevention conference	Heads of local governments, experts
February 15, 2024	Saga Prefecture	Regional Liaison Committee on Nuclear Emergency Preparedness	Relevant institutions, relevant local governments, operators
April 10, 2023 - January 18, 2024 (4 times in total)	Kagoshima Prefecture	Nuclear power generation- related cities manager meeting	Local governments, relevant bodies, operators
April 28, 2023 - February 19, 2024 (4 times in total)	Kagoshima Prefecture	Satsuma Sendai City Nuclear Safety Measures Promotion Council	Heads of local governments, Members of Municipal Assemblies, relevant bodies, representatives of residents, etc.
January 31, 2024	Kagoshima Prefecture	Nuclear Safety Measures Liaison Council	Heads of local governments, assembly members, relevant bodies, operator, etc

March 13, 2024	Kagoshima Prefecture	Kagoshima Prefecture Nuclear Safety - Special Committee on Disaster Prevention including Evacuation Planning, etc.	Experts, governor, local governments, operators etc.

*In addition to those stated in the table, meetings of working groups of local nuclear preparedness councils and committees on radiation oversight or monitoring are occasionally held in relevant prefectures, and the personnel of the NRA Secretariat attend.

(4) Explanations on Results of Review of Nuclear Facilities

Dates	Venues	Names of meeting/ session	Contents
April 15, 2023	Ehime Prefecture	Ikata Nuclear Power Plant Environmental Safety Management Committee Nuclear Specialized Safety Subcommittee	Explanation on examination results concerning permission for change in expansion of spent resin storage tanks for Unit 3 nuclear reactor of Ikata PS of Shikoku Electric Power Co., Inc.
April 28, 2023	Fukushima Prefecture	Fukushima Prefecture Nuclear Power Plant Safety Assurance Technology Review Committee	Explanation on examination results of review. pre-service inspection and future response on operation of discharging ALPS-Treated water into the sea of Fukushima Daiichi NPS of TEPCO
May 18, 2023	Kyoto Prefecture	Secretariat meeting of Regional Council concerning Takahama NPS	Explanation from Kansai Electric Power Co., Inc. on shutdown of Unit 4 reactor of Takahama NPS of Kansai Electric Power Co., Inc. and explanation on restart of Unis 1 and 2 reactors
July 14, 2023	Ehime Prefecture	The Special Committee for Measures for Nuclear Power Generation of Ikata Town Council Environmental Monitoring Committee of Ikata Town	Explanation concerning expansion construction of spent resin storage tanks for Unit 3 nuclear reactor of Ikata PS of Shikoku Electric Power Co., Inc.
July 24, 2023	Tokyo Metropolitan	Prefectural Government Assembly on Nuclear Power	Explanation concerning the status of Licensing Review of Conformity to the New Regulatory Requirements of Nuclear Power Plants
July 24, 2023	Ehime Prefecture	Briefing on expansion construction of spent resin storage tanks for Unit 3 nuclear reactor of Ikata PS of	Explanation concerning expansion construction of spent resin storage tanks for Unit 3 nuclear reactor

		Shikoku Electric Power Co., Inc.	of Ikata PS of Shikoku Electric Power Co., Inc.
October 31, 2023	Tokyo Metropolitan	Training session of Fukui Prefecture Nuclear Power Plant Quasi-Location Cities and Towns Liaison Council	Summary of review on discharging ALPS-Treated water into the sea of Fukushima Daiichi NPS of TEPCO, explanation on standard for radioactive substances and radiation emission and explanation concerning new regulatory requirements etc.
November 10, 2023	Niigata Prefecture	Regional Panel for Ensuring Transparency of Kashiwazaki- Kariwa NPS	Review of Units 6 and 7 reactors of Kashiwazaki-Kariwa NPS of TEPCO, results of FY2023 nuclear regulatory inspections, explanation concerning the status of supplemental inspections
November 15, 2023	Tokyo Metropolitan	Prefectural Government Assembly on Nuclear Power	Explanation concerning the status of Licensing Review of Conformity to the New Regulatory Requirements of Nuclear Power Plants
November 21, 2023	Kagoshima Prefecture	Kagoshima Prefecture Nuclear Safety - Special Committee on Disaster Prevention including Evacuation Planning, etc.	Explanation concerning confirmation of safety for the Sendai NPS of Kyushu Electric Power Co. Ltd. and explanation concerning nuclear disaster preparedness
November 22, 2023	Kagoshima Prefecture	Special Committee of countermeasures survey for Sendai NPS of Kyushu Electric Power Co. Ltd.	Explanation concerning the contents of review (results of review) of application for Approval for Extension of Operational Period of Units 1 and 2 of Sendai NPS of Kyushu Electric Power Co. Ltd.
December 13, 2023	Kagoshima Prefecture	Kagoshima Prefectural Assembly General Affairs and Police Committee	Explanation concerning the results of review of application for Approval for Extension of Operational Period of Units 1 and 2 of Sendai NPS of Kyushu Electric Power Co. Ltd.
January 27, 2024	Kagoshima Prefecture	Sendai NPS Citizen Seminar	Explanation concerning the results of review of application for Approval for Extension of Operational Period of the Sendai NPS of Kyushu Electric Power Co. Ltd.

13. Record of Opinion Exchange with Foreign Experts, etc

(1) Opinion Exchange with Foreign Experts

Dates	Attendees	Attendance of Commissioners
May 9, 2023	Richard A. Meserve, External Advisor Dana Drábová, External Advisor Philippe Jamet, External Advisor	Chairman YAMANAKA Commissioner TANAKA Commissioner SUGIYAMA Commissioner BAN Commissioner ISHIWATARI
November 9, 2023	Richard A. Meserve, External Advisor Dana Drábová, External Advisor Rumina Velshi, External Advisor	Chairman YAMANAKA Commissioner TANAKA Commissioner SUGIYAMA Commissioner BAN Commissioner ISHIWATARI

(2) Opinion Exchange with Foreign Regulatory Authorities

Dates	Participants, Meetings Attended	Attendance of Commissioners
April 17, 29, 2023	Chairman Doroszczuk of French Nuclear Safety Authority (ASN)	Chairman YAMANAKA Commissioner SUGIYAMA Commissioner BAN
May 4 - 5, 2023	International Nuclear Regulators Association (INRA) (nuclear regulators from the United States, United Kingdom, France, Germany, Canada, Spain, Sweden, and Republic of Korea)	Chairman YAMANAKA
September 25, 2023	Deputy Director General Knochenhauer of Swedish Radiation Safety Authority (SSM)	Chairman YAMANAKA
September 25, 2023	Director General Tiippana of Finnish Radiation and Nuclear Safety Authority (STUK)	Chairman YAMANAKA
September 25, 2023	Director General Foy of UK Office for Nuclear Regulation (ONR)	Chairman YAMANAKA
September 26, 2023	International Nuclear Regulators Association (INRA) (nuclear regulators from the United States, United Kingdom, France, Germany, Canada, Spain, Sweden, and Republic of Korea)	Chairman YAMANAKA
September 26, 2023	Director General Viktorsson of UAE Federal Authority for Nuclear Regulation (FANR)	Chairman YAMANAKA
September 26, 2023	President Velshi of Canadian Nuclear Safety Commission (CNSC)	Chairman YAMANAKA
September 27, 2023	Chairman Doroszczuk of French Nuclear Safety Authority (ASN)	Chairman YAMANAKA
December 12, 2023	Deputy Chairman for Licensing and Inspection Sumbarjo of Indonesian Nuclear Energy Regulatory Agency	Commissioner BAN
March 1, 2024	Chairman Shabaan of Egyptian Nuclear and Radiological Regulatory Authority (ENRRA)	Chairman YAMANAKA
March 12, 2024	Commissioner Crowell of US Nuclear Regulatory Commission (NRC)	Commissioner BAN

March 13, 2024	Commissioner Lachaume of French Nuclear Safety Authority (ASN) and Commissioner Pina of French Nuclear Safety Authority (ASN)	Commissioner BAN

14. Continuous Improvement of Management

(1)Internal Audit of Management System

In FY2023, in the following seven divisions:

- Tsuruga NRA Regional Office (July 11, 2023)
- Mihama NRA Regional Office (July 12, 2023)
- Fukui Regional Administrators　Office (July 13, 2023)
- Legal Affairs Office (August 23 and 24, 2023)
- Fukushima Regional Administrators　Office (November 20, 2023)
- Fukushima Daichi NRA Regional Office (November 21, 2023)
- Office for Accident Measures of the Fukushima-Daiichi NPS (January 18, 2024)

Overall, no items required improvement, with four items classified as desirable for issues recommended improvement and 14 good practices.

(2) List of Items Requiring Improvement Confirmed in FY2023

	Date of Confirmation	Items Requiring Improvement
1	June 1, 2023	Insufficient masking of non-disclosed information in materials released on the NRA website and others
2	June 1, 2023	Failure and error in publication of the official gazette of notification of change in type certification and designation related to spent fuel storage facilities
3	August 1, 2023	Failure in communication to Director-General of the Japan Coast Guard concerning permission for change in installation of High Temperature Engineering Test Reactor (HTTR)
4	October 25, 2023	Leakage of personal information (mail address) due to e-mail erroneous transmission
5	October 27, 2023	Error in publication of data for interview (non-disclosed information)
6	February 9, 2024	Inadequate procedures concerning documents issued under the name of the chairperson
7	February 14, 2024	Failure in disclosure of targeted documents to respond to disclosure request of administrative documents under Act on Access to Information Held by Administrative Organs
8	February 14, 2024	Delay in processing application for approvals for changes to accounting provisions
9	February 14, 2024	Error in submission of outsourced result reports including non-disclosed information to the library of Ministry of Environment etc. and error in publication on the website of the NRA
10	February 26, 2024	Inadequate confirmation of specification document and materials indicating reasonable grounds in business contracts and no implementation of verification inspection
11	March 8, 2024	Clerical errors related to the results of review as a draft on application for permission for change in reprocessing operation etc.

Reference 2. Relevant Materials related to Implementation of Various International Treaties on Nuclear Safety (related to Section 2 in Chapter 1)

The NRA is promoting cooperation with international organizations and overseas regulatory agencies through treaties and participation in the development and reviews of the IAEA's safety standards and in joint research to continuously improve nuclear regulation in Japan and contribute to nuclear safety in the international society.

1. Implementation of Various International Treaties on Nuclear Safety

(1) Convention on Nuclear Safety (Nuclear Safety Convention)

This convention applies to nuclear power plants and intends to globally achieve and maintain a high-level of nuclear safety. It is aimed to establish and maintain radiation protection at nuclear power plants, to prevent an accident with radiological consequences, and to mitigate its consequences in the event of an accident. According to the Convention, the NRA has been implementing activities (so-called "review process") every three years such as (1) developing a national report, (2) conducting a peer review among contracting parties and (3) participating in the meeting of contracting parties (review meeting).

(The Most Recent Record of Major Activities under the Convention on Nuclear Safety)

Periods	Overviews
August, 2019	Submission of Japan's 8th National Report
August, 2022	Submission of Japan's 9th National Report
March 20 - 31, 2023	The 8th and 9th Joint Review Meeting under the Convention on Nuclear Safety (participated by Commissioner Tanaka and others)

(2) Joint Convention on the Safety of Spent Fuel Management and on the Safety of Radioactive Waste Management (Joint Convention on Nuclear Waste)

This convention applies to the safety of the management of spent fuel and radioactive waste generated from facilities including nuclear power plants, research reactors and other nuclear facilities such as reprocessing plants and rad-waste storage facilities, etc. It is aimed to achieve and maintain a high level of safety worldwide in spent fuel and radioactive waste management, and to ensure radiation protection during all stages of spent fuel and radioactive waste management, to prevent an accident with radiological consequences and to mitigate its consequences in the event of an accident. According to the Convention, the NRA has been implementing activities (so called "review processes") every three years such as (1) preparing a national report, (2) conducting a peer review among contracting parties and (3) participating in the meeting of contracting parties (review meeting).

（The Most Recent Record of Major Activities under the Joint Convention on Nuclear Waste）

Periods	Overviews
October, 2020	Submission of Japan's 7th National Report
June 27 - July 8, 2022	The 7th Review Meeting under the Joint Convention on Nuclear Waste (participated by Commissioner TANAKA and others)

(3) Convention on Early Notification of a Nuclear Accident and the Convention on Assistance in the Case of a Nuclear Accident or Radiological Emergency

The Early Notification Convention is a framework for providing "information on an accident

causing a transborder radiation impact" to countries that may be affected and the IAEA, whereas the Assistance Convention is a framework for providing assistance in case of a nuclear accident or a radiological emergency.

The meetings of the competent authorities of the contracting parties under the Early Notification Convention and the Assistance Convention are held every two years. The most recent meeting of the countries was held from June 13 to 17 in 2022, in which the NRA staff participated along with the Ministry of Foreign Affairs and the Cabinet Office.

(4) The Convention on the Physical Protection of Nuclear Material and its Amendments

The Physical Protection Convention obligates the contracting countries to take protective measures for nuclear materials during their international transportation, and requires them to protect nuclear materials against their illegal acquisition and use. The amendment of the Physical Protection Convention took effect in Japan on May 8, 2016 and the targets of protection based on the convention were expanded to domestic peaceful uses of nuclear materials, storage and transportation, and nuclear facilities.

2. Cooperation under International Organizations

(1) International Atomic Energy Agency (IAEA)

The IAEA is an international organization established in 1957 under the leadership of the UN with the aim of promoting peaceful uses of nuclear energy, and consists of 176 member states, as of March, 2024. Its secretariat is located in Vienna and the director- general is Rafael Mariano Grossi.

The IAEA's activities in the field of nuclear safety range widely, such as the development or review of its safety standards, activities relating to emergency arrangements, radiation protection and physical protection, and international cooperation for improving nuclear regulation.

The Commission on Safety Standards (CSS), which is a standing committee, reviews the safety standard documents. The NRA also is actively participating in the activities of CSS and its subcommittees.

Through the IAEA, NRA has been contributing internationally as an international, professional organization by joining the IAEA's standing advisory groups such as the International Nuclear Safety Advisory Group (INSAG), Advisory Groupon Nuclear Security (AdSec, of which NRA Commissioner Tanaka is a member), and others.

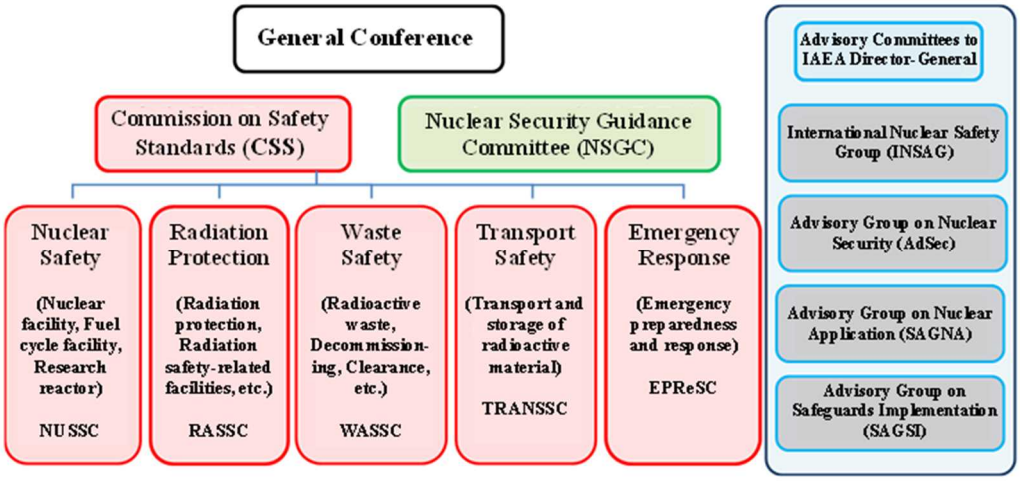


Figure iii Major IAEA Committees in which the NRA Participates

In response to requests from member states, the IAEA has been conducting peer reviews such as the Integrated Regulatory Review Service (IRRS), which comprehensively reviews nuclear regulation legal systems and regulatory organizations. The NRA invited an IRRS mission from January 10 to 22 in 2016, an IRRS follow-up mission from January 14 to 21 in 2020, an International Physical Protection Advisory Service (IPPAS) mission (for reviewing the situation of nuclear security measures) from February 16 to 27 in 2015 and an IPPAS follow-up mission from November 26 to December 7 in 2018.

In addition, through the IAEA's projects, the NRA actively participates in and contributes to efforts to improve nuclear safety worldwide, as well as collects and shares technical information and knowledge.

(IAEA's Major Cooperative Projects in which the NRA Participates)

Projects	Overviews
RCF: Regulatory Cooperation Forum	The forum is designed to promote and improve cooperation and coordination among regulatory bodies and international organizations in Member States that have already established nuclear power generation and those that plan to introduce or expand it. Japan is serving as Steering Committee Member.
ANSN: Asian Nuclear Safety Network	A cooperative framework for improving the safety of nuclear facilities in the Asia region, and Japan serves as the Chair of the Steering Committee and the Chair and Vice Chair of the Self-Assessment Coordination Group (SACG).
EESS-EBP	Develops detailed guides to the IAEA safety standards for external events
IGALL	Formulates technological and practical guidelines for the ageing management of systems, structures and components important for the safety of light-water and heavy-water reactors to ensure long-term operation.

Interlaboratory comparison(ILC) to demonstrate the results of Marine Monitoring: Confidence Building and Data Quality Assurance with IAEA and sea area monitoring of Japan.	In marine-monitoring activities joined by the IAEA at the coastal sea area of Fukushima Prefecture, the project takes samples to evaluate the method and mutual comparison of the analytical results (ILC). In addition to the above-mentioned from FY2022, ILC is conducted to demonstrate sea area monitoring of Japan as a part of safety review on handling ALPS-Treated water.

(2) Organization for Economic Co-operation and Development/Nuclear Energy Agency (OECD/NEA)

Established in 1958, the OECD Nuclear Energy Agency (headed by Director General Magwood, with 34 member states as of March, 2024) is headquartered in Paris and its activities are deliberated in steering committee meetings held twice a year. Benefiting from its characteristic of sharing the latest knowledge among advanced nuclear energy countries, the OECD/NEA discusses the prevention and mitigation of a possible nuclear accident and carries out related activities (including the sharing of OECD/NEA member countries' situations of regulatory efforts and joint safety research based on lessons learned from the accident at the Fukushima Daiichi Nuclear Power Station).

Among the standing committees, the Committee on Nuclear Regulatory Activities (CNRA), the Committee on the Safety of Nuclear Installations (CSNI), the Committee on Radiation Protection and Public Health (CRPPH), the Radioactive Waste Management Committee (RWMC) and working groups operating under them are studying various issues concerning nuclear safety, and also the NRA is actively participating in these activities.

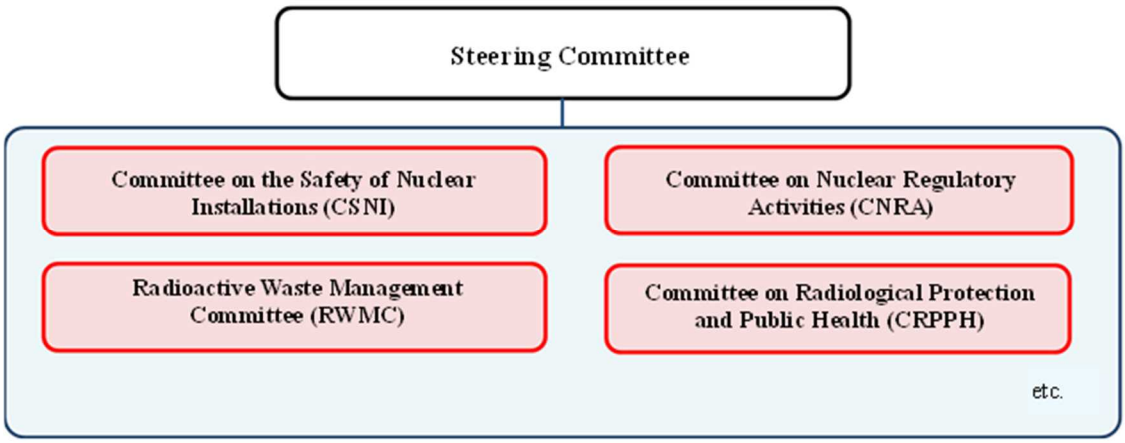


Figure iv Major OECD/NEA Committees in which the NRA Participates

In addition, the NRA has been joining various joint projects under the OECD/NEA, and contributing to the gathering of the latest technological information of advanced countries in order to make technological advancement.

(Major OECD/NEA Joint Projects in which the NRA Participates)

Project Names	Overviews
FACE	Analyze information on the accident at TEPCO's Fukushima Daiichi NPS and share data and knowledge to enhance analysis techniques relating to severe accidents in order to improve reactor safety. Additionally, share methods to establish analytical techniques on fuel debris for decommissioning.
SMILE	Conduct various tests focusing on ageing phenomenon with high priority that may affect long-term operation, and obtain technical knowledge on ageing events.

(3) Record of NRA Chairperson and Committee Members' Participation in Meetings Held by International Organizations, etc.

Dates	Meetings Held by International Organizations	Participants of the NRA
April 17 to 19, 2023	IAEA Advisory Group on Nuclear Security (AdSec) (Austria)	Commissioner TANAKA
April 25 to 27, 2023	OECD/NEA/CNRA Working Group on Leadership and Safety Culture (WGLSC) (France)	Commissioner BAN
June 27, 2023	IAEA Meeting on Nuclear Harmonization and Standardization Initiative (NHSI) concerning SMR (Austria)	Commissioner SUGIYAMA
September 5 - 7, 2023	OECD/NEA Stakeholder Involvement Workshop(France)	Commissioner BAN
September 25, 2023	IAEA General Meeting (Austria)	Chairman YAMANAKA
October 16 - 19, 2023	IAEA Advisory Group on Nuclear Security (AdSec) (Austria)	Commissioner TANAKA
October 16 - 19, 2023	OECD/NEA/CNRA Working Group on Leadership and Safety Culture (WGLSC) (France)	Commissioner BAN
November 7 - 8, 2023	International Symposium on the System of Radiological Protection (ICRP2023) (Tokyo)	Chairman YAMANAKA Commissioner BAN
December 14 - 15, 2023	Country Specific Safety Culture Forum (CSSCF) (Tokyo)	Chairman YAMANAKA Commissioner BAN
February 28, 2024	Technical Meeting for Member States of IAEA Regulatory CooperationForum (RCF) (Tokyo)	Commissioner SUGIYAMA

(4) Record of Participation in International Nuclear Regulators Association (INRA)

*Since FY2020

Periods	Main participants from the NRA
September 22, 2020	Chairman FUKETA
May 10, 2021	Chairman FUKETA
September 21, 2021	Chairman FUKETA
May 3 - 4, 2022	Chairman FUKETA
September 27, 2022	Chairman YAMANAKA

May 4 - 5, 2023	Chairman YAMANAKA
September 26, 2023	Chairman YAMANAKA

(5) Record of Participation in Western European Nuclear Regulators Association (WENRA)

*Since FY2020

Periods	Main participants from the NRA
November 4 - 5, 2020	Director-General KANEKO
April 13 - 14, 2021	Director-General KANEKO
October 14 - 15, 2021	Director-General for Emergency Response, KANEKO
April 5 - 6, 2022	Director-General for Emergency Response, KANEKO
November 9 - 10, 2022	Deputy Secretary-General KANEKO
April 5 - 6, 2023	Deputy Secretary-General KANEKO
November 14 - 15, 2023	Deputy Secretary-General KANEKO

(6) Record of Participation in the Top Regulators Meeting on Nuclear Safety (TRM)

*Since FY2020

Periods	Main participants from the NRA
November 30 to December 1, 2021	Commissioner BAN
December 9, 2022	Commissioner BAN

3. Bilateral Cooperation

(Organizations Having Signed a Bilateral Cooperation Document (As of the End of March, 2024))

Countries	Organizations
U.S.	Nuclear Regulatory Commission (NRC) Department of Energy (DOE)
France	Nuclear Safety Authority (ASN) Institute for Radiation Protection and Nuclear Safety (IRSN)
UK	Office for Nuclear Regulation (ONR)
Russian Federation (Russia)	Federal Environmental, Industrial and Nuclear Supervision Service of Russia (Rostechnadzor)
Sweden	Swedish Radiation Safety Authority (SSM)
Germany	Federal Ministry for the Environment, Nature Conservation, Building and Nuclear Safety (BMUB)
Spain	Spanish Nuclear Safety Council (CSN)
Finland	Finnish Radiation and Nuclear Safety Authority (STUK)
Canada	Canadian Nuclear Safety Commission (CNSC)

4. Overseas External Advisors

(External advisors with whom the NRA exchanged opinions in FY2023 (As of the Opinion Exchange on November 9, 2023)

Names	Careers
Richard Meserve	Former chairman of the U.S. Nuclear Regulatory Commission (NRC) Former Chairperson of International Nuclear Safety Advisory Group (INSAG), IAEA
Dana Drábová	Director-General of the Czech Republic (Czech) State, Office for Nuclear Safety (SUJB) Former chairperson of IAEA Commission on Safety Standards (CSS)
Philippe Jamet	Former commissioner of the Nuclear Safety Authority (ASN), France Former director of the Division of Nuclear Installation Safety, IAEA
Rumina Velshi	Former president of Canadian Nuclear Safety Commission (CNSC) Chairperson of IAEA Commission on Safety Standards (CSS)

Reference 3 Materials related to Implementation of Regulations pertaining to the Reactor Regulation Act (related to Section 1 and 2 in Chapter 2)

1. Status of Applications, Permissions or Approvals, and so on, related to Conformity of Commercial Power Reactors to New Regulatory Requirements

(1) Main Facility and Special Facility for Severe Accident Management

Applicant	Targeted Power Reactor	Application type	Application date	Review Meeting (times)	Documentary review (times)	On-site investigation (times)	Date of permission or approval
Hokkaido Electric Power Co., Inc	Tomari PS (Units 1, 2)	Change in basic design Change in design and construction Change in operational safety	July 8, 2013	–	–	–	–
	Tomari PS (Units 3)	Change in basic design Change in design and construction Change in operational safety	July 8, 2013	24	–	1	–
	◆Tomari PS (Units 3)	Change in basic design	December 18, 2015	–	–	–	–
Tohoku Electric Power Co., Inc.	Onagawa NPS (Unit 2)	Change in basic design Change in design and construction Change in operational safety	December 27, 2013	–	–	–	February 26, 2020 December 23, 2021 February 15, 2023
	◆Onagawa NPS※1 (Unit 2)	Change in basic design Change in design and construction	January 6, 2022 December 14, 2023	3	–	1	October 4, 2023 –
	Higashidori NPS (Unit 1)	Change in basic design Change in design and construction Change in operational safety	June 10, 2014	6	–	–	–
Tokyo Electric Power Company Holdings, Inc.	Kashiwazaki - Kariwa NPS (Units 6, 7)	Change in basic design Change in design and construction Change in operational safety	September 27, 2013	2	–	–	December 27, 2017 October 14, 2020 (Unit 7) October 30, 2022 (Unit 7)
	◆ Kashiwazaki-	Change in basic design	December 15, 2014	6	–	–	August 17, 2022

Applicant	Targeted Power Reactor	Application type	Application date	Review Meeting (times)	Documentary review (times)	On-site investigation (times)	Date of permission or approval
	Kariwa NPS※1 (Units 6, 7)	Change in design and construction	January 30, 2023 (Unit 7) July 6, 2023 (Unit 7) January 16, 2024 (Unit 7)				—
Chubu Electric Power Co., Inc.	Hamaoka NPS (Unit 3)	Change in basic design	June 16, 2015	8	—	1	—
	Hamaoka NPS (Unit 4)	Change in basic design Change in design and construction Change in operational safety	February 14, 2014 January 26, 2015※2	8	—	1	—
Hokuriku Electric Power Company	Shika NPS (Unit 2)	Change in basic design Change in design and construction Change in operational safety	August 12, 2014	4	—	—	—
Kansai Electric Power Co., Inc.	Ohi PS (Unit 3, 4)	Change in basic design Change in design and construction Change in operational safety	July 8, 2013	—	—	—	May 24, 2017 August 25, 2017 September 1, 2017
	◆Ohi PS※1 (Units 3, 4)	Change in basic design Change in design and construction Change in operational safety	March 8, 2019 March 6, 2020 August 26, 2020 September 17, 2021	—	—	—	February 26, 2020 December 22, 2020 August 24, 2021 March 24, 2022
	Takahama PS (Units 3, 4)	Change in basic design Change in design and construction Change in operational safety	July 8, 2013	—	—	—	December 12, 2015 August 4, 2015 (Unit 3) October 9, 2015 (Unit 4) October 9, 2015
	◆ Takahama PS	Change in basic design	December 25, 2014	—	—	—	September 21, 2016

Applicant	Targeted Power Reactor	Application type	Application date	Review Meeting (times)	Documentary review (times)	On-site investigation (times)	Date of permission or approval
	(Units 3, 4)	Change in design and construction	April 26, 2017				August 7, 2019
		Change in operational safety	April 17, 2020				October 7, 2020
	Takahama PS (Units 1, 2)	Change in basic design	March 17, 2015	–	–	–	April 20, 2016
		Change in design and construction	July 3, 2015				June 10, 2016 (Units 1, 2)
		Change in operational safety	July 31, 2019				February 15, 2021
Kansai Electric Power Co., Inc.	◆ Takahama PS (Units 1, 2)	Change in basic design	December 22, 2016	–	–	–	March 7, 2018
		Change in design and construction※1	March 8, 2018 November 16, 2018 March 15, 2019 May 31, 2019				April 25, 2019 September 13, 2019 October 24, 2019 February 20, 2020
		Change in operational safety	May 23, 2022	–	–	–	January 13, 2023
	Mihama PS (Unit 3)	Change in basic design	March 17, 2015	–	–	–	October 5, 2016
		Change in design and construction	November 26, 2015				October 26, 2016
		Change in operational safety	March 17, 2015				February 27, 2020
	◆Mihama PS (Unit 3)	Change in basic design	April 20, 2018	–	–	–	July 8, 2020
		Change in design and construction	July 10, 2020				April 6, 2021
		Change in operational safety	September 17, 2021				March 25, 2022
Chugoku Electric Power Company	Shimane NPS (Unit 2)	Change in basic design	December 25, 2013	4	–	–	September 15, 2021
		Change in design and construction					August 30, 2023
		Change in operational safety					–
	◆Shimane NPS (Unit 2)	Change in basic design	July 4, 2016	9	–	1	–

Applicant	Targeted Power Reactor	Application type	Application date	Review Meeting (times)	Documentary review (times)	On-site investigation (times)	Date of permission or approval
	Shimane NPS (Unit 3)	Change in basic design	August 10, 2018	2	–	–	–
Shikoku Electric Power Company	Ikata PS (Unit 3)	Change in basic design	July 8, 2013	–	–	–	July 15, 2015
		Change in design and construction					March 23, 2016
		Change in operational safety					April 19, 2016
	◆Ikata PS※1 (Unit 3)	Change in basic design	January 14, 2016	–	–	–	October 4, 2017
		Change in design and construction	December 7, 2017 March 16, 2018 May 11, 2018 August 13, 2018 July 11, 2019				March 25, 2019 December 24, 2019 March 27, 2020 October 10, 2019 March 27, 2020
		Change in operational safety	November 27, 2020				April 28, 2021
Kyushu Electric Power Company	Genkai NPS (Units 3, 4)	Change in basic design	July 12, 2013	–	–	–	January 18, 2017
		Change in design and construction					August 25, 2017 (Unit 3) September 14, 2017 (Unit 4)
		Change in operational safety					September 14, 2017
	Sendai NPS (Units 1,2)	Change in basic design	July 8, 2013	–	–	–	September 10, 2014
		Change in design and construction					March 18, 2015 (Unit 1) May 22, 2015 (Unit 2)
		Change in operational safety					May 27, 2015
	◆Genkai NPS※1 (Units 3, 4)	Change in basic design	December 20, 2017	–	–	–	April 3, 2019
		Change in design and construction (Unit 3)	May 16, 2019 September 19, 2019 January 17, 2020				November 28, 2019 March 4, 2020 August 26, 2020

Applicant	Targeted Power Reactor	Application type	Application date	Review Meeting (times)	Documentary review (times)	On-site investigation (times)	Date of permission or approval
		Change in design and construction (Unit 4)	June 18, 2019 September 19, 2019 January 17, 2020				November 28, 2019 March 4, 2020 August 26, 2020
		Change in operational safety	August 10, 2021				March 24, 2022
	◆Sendai NPS※1 (Units 1,2)	Change in basic design	December 17, 2015	–	–	–	April 5, 2017
		Change in design and construction※1 (Unit 1)	May 24, 2017 August 8, 2017 March 9, 2018				May 15, 2018 July 26, 2018 February 18, 2019
		Change in design and construction (Unit 2)	July 10, 2017 August 8, 2017 March 9, 2018				August 10, 2018 August 31, 2018 April 12, 2019
		Change in operational safety	August 2, 2019				March 25, 2020
Japan Atomic Power Company	Tokai Daini PS	Change in basic design	May 20, 2014	–	–	–	September 26, 2018
		Change in design and construction					October 18, 2018
		Change in operational safety					–
	◆Tokai Daini PS※1	Change in basic design	September 24, 2019	6	–	–	December 22, 2021
		Change in design and construction	February 28, 2022 April 28, 2022 October 19, 2022 May 31, 2023				November 16, 2022 May 31, 2023 October 2, 2023 –
	Tsuruga PS (Unit 2)	Change in basic design	November 5, 2015	5	–	1	–
		Change in operational safety					
Electric Power Development Co., Ltd	Oma NPS※3	Change in basic design	December 16, 2014	5	–	–	–
		Change in design and construction					

・Several applications may be reviewed at one session of the review meeting
・The number of review meetings mainly attended by Commissioners of the NRA is mentioned as a rule.
・The number of on-site investigations implemented by the Commissioners of the NRA is mentioned, and that implemented only by the staff of the secretariat of the NRA is excluded.
・The numbers of reviews, meetings and on-site investigations represent the number of times held in FY2023.

◆：Application for Special Facility for Severe Accident Management
※1： The design and construction plan is divided into several phases and separate applications are submitted/
※2： 2014, was withdrawn on January 26, 2015, and submitted again in order to add a dry storage facility for spent fuel.
※3：This application includes contents regarding Special Facility for Severe Accident Management.

(2) Others

① Review for Incorporation of Standard Response Spectra into Regulation

Applicants	Targeted Power Reactor	Application type	Application date	Date of approval
Shikoku Electric Power Company	Ikata PS (Unit 3)	Change in basic design	July 15, 2021	December 20, 2023
Kyushu Electric Power Company	Sendai NPS (Unit 1)	Change in basic design	April 26, 2020	February 7, 2024
	Sendai NPS (Unit 2)	Change in basic design		
	Genkai NPS (Unit 3)	Change in basic design	August 23, 2021	February 7, 2024
	Genkai NPS (Unit 4)	Change in basic design		
Japan Atomic Power Company	Tokai Daini PS	Change in basic design	June 25, 2021	May 24, 2023

・Plant not requiring application：Kashiwazaki-Kariwa NPS Units 6 and 7 of TEPCO, Ohi PS Units 3 and 4 of Kansai Electric Power Co., Inc., Takahama PS Units 1-4 and Mihama PS Unit 3 of Kansai Electric Power Co., Inc., Onagawa NPS Unit 2 of Tohoku Electric Power Co., Inc. and Shimane NPS Unit 2 of Chugoku Electric Power Company

・The plants applied for in conjunction with the main facility have been reviewed together with the said applications.

②Review for Clarification of Installation Requirements of Fire Detector (Approval of Design and Construction Plan）

Applicants	Targeted power reactor	Application date	Date of approval
Kansai Electric Power Company, Inc.	Ohi PS (Units 3, 4)	June 26, 2020 July 18, 2023※1	November 2, 2022 September 28, 2023※1
	◆Ohi PS (Units 3, 4)	December 9, 2022	June 29, 2023
	Takahama PS (Units 1-4)	April 28, 2022 July 18, 2023※1	June 22, 2023 September 28, 2023※1
	◆Takahama PS (Units 1-4)	December 9, 2022	June 29, 2023
	Mihama PS (Unit 3)	April 28, 2022 July 18, 2023※1	June 22, 2023 September 28, 2023※1
	◆Mihama PS (Unit 3)	December 9, 2022	June 29, 2023
Shikoku Electric Power Company	Ikata PS (Unit 3)	June 30, 2022※2 June 30, 2022※3	August 4, 2023※2 August 4, 2023※3
Kyushu Electric Power Company	Genkai NPS (Units 3, 4)	February 10. 2022 August 31, 2023※4	June 29, 2023 December 27, 2023※4
	Sendai NPS (Units 1, 2)	February 10. 2022 December 21, 2023※5	June 29, 2023 March 27, 2024※5

Applicants	Targeted power reactor	Application date	Date of approval
	◆Genkai NPS (Units 3, 4)	January 24, 2023	July 28, 2023
	◆Sendai NPS (Units 1, 2)	January 24, 2023	July 28, 2023
Japan Atomic Power Company	Tokai Daini PS	April 7, 2023	March 22, 2024

◆：Application for Special Facility for Severe Accident Management

※1: Those pertaining to an application for design and construction plan concerning permanent DC power supply (3rd system) in the station and cable run thereof.

※2：Those for main facility and special facility for severe accident management are submitted together.

※3：Those pertaining to an application for design and construction plan to establish dry storage facility for spent fuel

※4：Those pertaining to an application for design and construction plan to establish new station for emergency measures

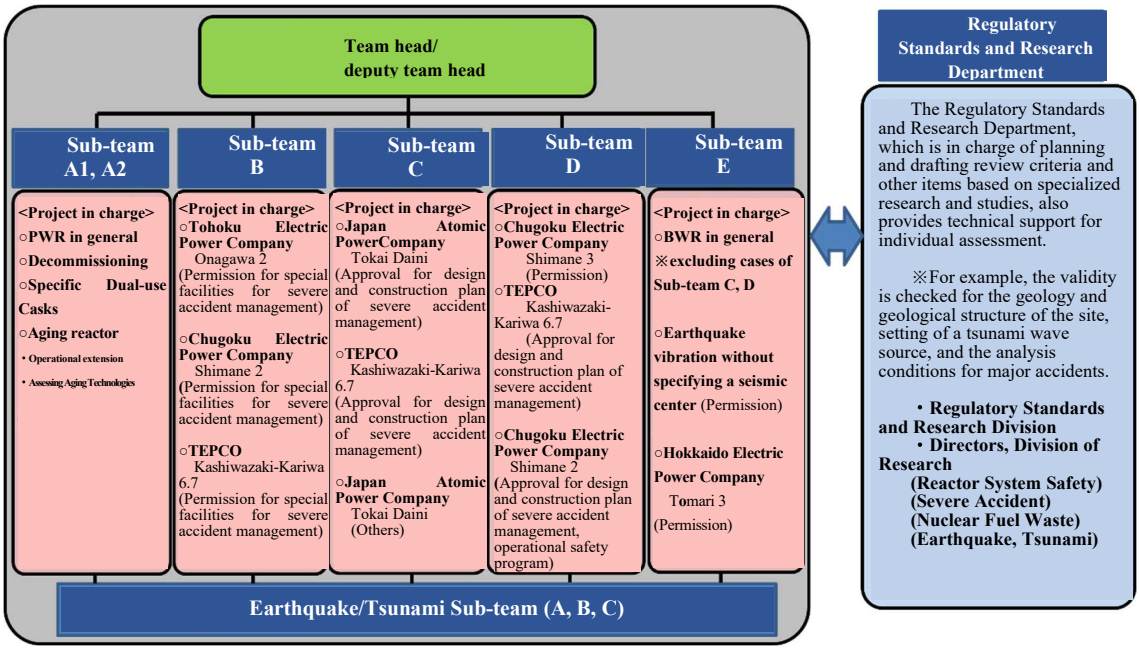
※5：Those pertaining to an application for design and construction plan to establish a waste carrying-out facility of Unit 1.

③Review to clarify the positioning of primary containment vessel venting as a hydrogen protection measure for reactor buildings in BWRs (permission for change in operational safety program)

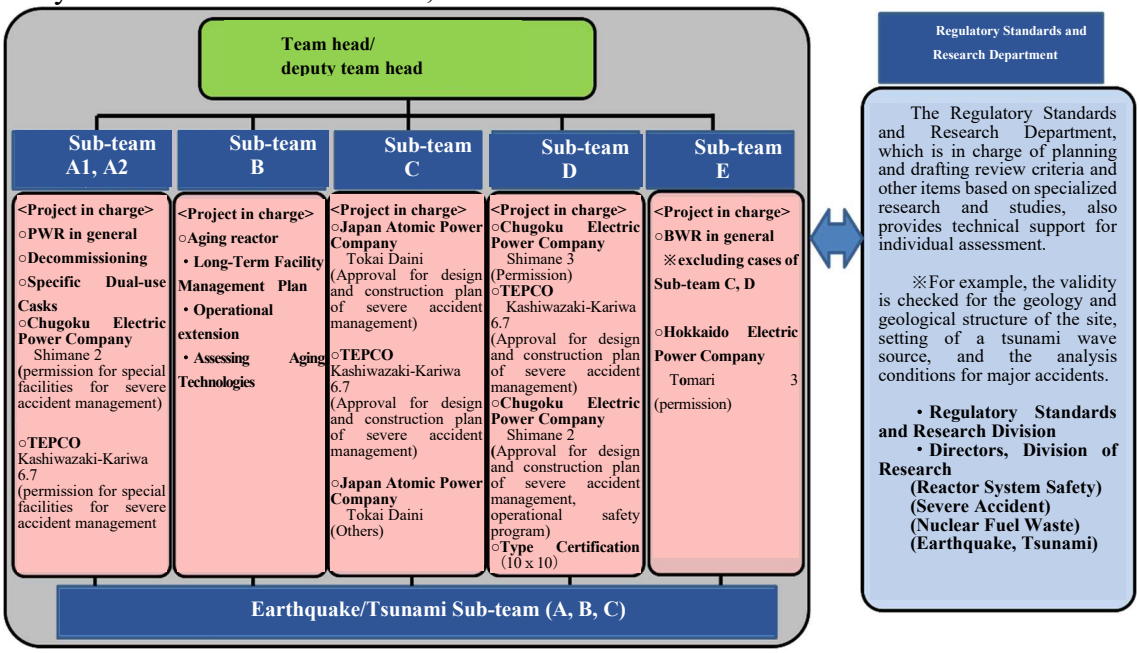
Applicants	Targeted Power Reactor	Application date	Date of approval
Tohoku Electric Power Co., Inc.	Onagawa NPS (Unit 2)	March 8, 2023	September 20, 2023
Tokyo Electric Power Company Holdings, Inc.	Kashiwazaki- Kariwa NPS (Units 6, 7)	March 8, 2023	September 20, 2023

2. Review System of Conformity of Nuclear Power Stations to New Regulatory Requirements

・System on and before September 30, 2023



・System on and after October 1, 2023



3. Status of Inspection of Major Nuclear Facilities

(1) Inspection Findings in the 4th Quarter of FY2022

（Nuclear Facility Safety and Radiation Safety）

		Subject	Overview	Significance and Severity Levels
The 4th Quarter	1	Unit 3 of Mihama PS : Inappropriate implementation of confirmation training of the feasibility in severe accidents	On December 9, 2022, in “supply to condensate tank by using seawater” as confirmation training of the feasibility in severe accidents (confirmation of the feasibility of technical capabilities), the nuclear inspector confirmed that a person not subject to the training provided advice on installation of connection tools and that the hose was not connected to the downstream flange of seawater supplementary valve of condensate tank as a part of the procedures in the confirmation training of the feasibility of operators.	Green SL IV
	2	Unit 3 of Mihama PS : Insufficient isolate distance between portable facilities (outdoor vehicle-type facilities) to cope with severe accidents	On December 21, 2022, at Unit 3 of Mihama PS, during plant walkdown, the nuclear inspector confirmed that the isolation distance between No.1 power supply vehicle (for portable alternative low pressure water supply pump) and NO.1 portable alternative low pressure water supply pump is insufficient and did not meet “Attachment 3: “Manual on Seismic Resistance of Portable Facility to Cope with Severe Accidents” of “Attached Document 13: Manual on Seismic Resistance” as an attached material of an application for permission for construction plan concerning conformity with new regulatory requirements.	Green SL IV
	3	Unit 4 of Takahama PS: Automatic reactor shutdown after an activating alarm for “PR neutron high negative rate trip” due to inappropriate construction of the cable connection inside the reactor containment vessel penetration area	At Unit 4 of Takahama PS an alarm of “CRDM serious fault” was sent at 0:12 of January 30, 2024 while operating at constant rated thermal power, and the operator confirmed lower current value of movable gripping coil (hereinafter referred to as “MG Coil”.) than usual. Therefore, when the main power supply of the said MG Coil of 2BD power cabinet was opened in order to measure resistance value of MG Coil, the alert of “PR neutron high negative rate trip was sent at 15:21, having caused the turbine and power generator as well as the reactor to automatically shut down.	Green SL IV
	4	Ikata NPS Unit 3: Self-assessment of inappropriate training that indication based on the bylaws to respond to toxic gases in a large-scale damage drill	In a large-scale damage drill of October 5, 2022, implemented at Ikata NPS Unit 3, the leader of the Emergency Response Center did not provide the stuff of the facilities to cope with severe accidents etc. with instruction based on the bylaws to respond to toxic gases. The nuclear inspector confirmed that the operator failed to specify the fact that the leader did not provide the instruction based on the bylaws to respond to toxic gases in the process of self-assessment after implementation of drill as a problem, assessed that there was no problem in the response by the leader and terminated the self-assessment process without extracting the matters to be improved.	Green SL IV

		Subject	Overview	Significance and Severity Levels
	5	Sendai NPS Units 1, 2: Inappropriate assessment in radiation working environment measurement within radiation-controlled area	In radiation exposure assessment and team inspection of individual monitoring at Units 1 and 2 of the Sendai NPS implemented from December 12, 2022, when the nuclear inspector confirmed the constant applied for the calculation formula specified in the radiation management guideline for the Sendai NPS regarding calculation method of radioactive dust concentration excluding natural radioactive nuclides within the air of radiation-controlled area that are used for working environment assessment of the work that is likely to cause contamination by radioactive substances within radiation-controlled area, it was found that the said constant value was an erroneous one.	Green SL IV

(Physical Protection of Nuclear Material)

		Subject	Overview	Significance and Severity Levels
The 4th Quarter	1	Case of physical protection of nuclear material at Ohi NPS of Kansai Electric Power Company, Inc (management of in and out of zones)	An intrusion detector is not installed at the door of the boundary of the protected areas.	Green SL IV
	2	Case of physical protection of nuclear material at Sendai NPS of Kyushu Electric Power Company (approval of entry, management of in and out of zones)	Necessary measures, such as inspection of goods, were not taken at entrances and exits of the protected areas.	Green SL IV
	3	Case of physical protection of nuclear material at Tokai Daini NPS of Japan Atomic Power Co. (approval of entry)	Having allowed a person whose validated period of checking trustworthiness of individuals expired to enter into the protected areas.	Green SL IV
	4	Case of physical protection of nuclear material at Tokai NPS of Japan Atomic Power Co. (management of in and out of zones)	The door of the boundary of the protected areas was temporarily in an unlocked state.	No additional action SL IV

(Evaluation of Severity Level Only)

* No evaluation for severity level solely in the 4th quarter of FY2022.

(2) Results of FY20
(Routine Inspection (Power Reactor))

No.	Guide No.	Inspection guide name	Sendai	Genkai	Ikata	Takahama	Ohi	Mihama
			Units 1,2:In operation	Units1,2: Decommissioning A Units3,4:In operation	Unit1: Decommissioning B Unit2: Decommissioning A Unit3:In operation	Units1,2:Long-term shutdown Units3.4:In operation	Units1,2: Decommissioning A Units3,4:In operation	Units1,2: Decommissioning A Unit3:In operation
1	BM0020	Oversight of operator's periodic inspection	20	17	12	21	27	9
2	BM1040	Heat sink performance	2	3	2	7	5	2
3	BM0060	Maintenance effectiveness assessments	5	6	6	6	6	5
4	BM0100	Design control	6	6	7	8	6	6
5	BM0110	Work control	8	5	5	30	4	11
6	BO0010	Surveillance tasting	23	24	32	22	35	23
7	BO1020	Systemconfiguration of equipment	19	22	19	21	22	18
8	BO1030	Reactor start-up and shutdown	1	3	1	3	2	1
9	BO1040	Operability determination and functionality assessments	23	27	29	24	26	19
10	BO0060	Nuclear fuel control (Transportation and storage)	3	4	4	3	4	3
11	BO1070	Capability of operating personnel	5	5	24	8	5	5
12	BE0010	Protection against natural disaster	6	4	5	6	4	4
13	BE0020	Fire protection	15	13	18	10	14	13
14	BE0030	Internal flood protection	3	4	3	4	4	5
15	BE0040	Maintaining of emergency response organization	4	0	9	1	2	1
16	BE0050	Emergency preparedness and maintenance	6	1	1	0	4	1
17	BE0060	Maintaining personal capacity to respond to severe accidents, etc.	17	15	15	7	13	12
18	BE0090	Seismic protection	4	4	4	5	4	4
19	BE0100	Tsunami protection	4	4	4	6	4	4
20	BR0010	Radiation exposure control	6	6	8	6	6	6
21	BR0070	Radioactive solid waste management	4	3	7	6	3	4
22	BR0010	Operation of Quality Management System (Routine)	1	1	1	1	1	1
23		Operation of Quality Management System (Semiannual)	2	2	2	2	3	2
24	BQ0040	Performance Indicator Verification	1	1	1	2	1	1
25	BQ0050	Initial response to occurrence of an event	1	0	0	9	3	3
		Total	189	180	219	218	208	163

【Explanatory notes】
(1) "Operation" : In service in compliance with new completing response to new regulatory requirements.
(2) "Long-term shutdown" : Long-term shutdown, in preparation in compliance with new regulatory requirements.
(3) Decommissioning A": Decommissioning approved with spent fuel SFP. The same inspection is performed as in the long-term shutdown.
(4) "Decommissioning B" : Decommissioning approved with no spent fuel SFP.
(5) "Decommissioning review" : Under review for decommissioning. The same inspection is performed as in the long-term shutdown.
(6) "Decommissioning planned : Planned for apply for decommissioning. The same inspection is performed as in the long-term shutdown.
(7) "Construction A" : In the construction phase with no new fuel delivered.
(8) "Construction B" : In the construction phase with new fuel delivered. In the construction phase with no new fuel delivered.

No.	Guide No.	Inspection guide name	Tomari	Higashidori	Onagawa	Kashiwazaki	Fukushima Daini	Tokai
			Units1-3:Long-term shutdown	Unit1:Long-term shutdown	Unit1: Decommissioning A Units2,3:Long-term shutdown	Units1-7:Long-term shutdown	Units1-4: Decommissioning A	Unit1: Decommissioning B Unit2:Long-term shutdown
1	BM0020	Oversight of operator's periodic inspection	0	1	3	6	6	4
2	BM1040	Heat sink performance	1	1	3	2	1	1
3	BM0060	Maintenance effectiveness assessments	1	1	1	1	1	2
4	BM0100	Design control	2	3	2	2	1	2
5	BM0110	Work control	5	5	4	6	4	5
6	BO0010	Surveillance tasting	7	3	6	8	6	4
7	BO1020	Systemconfiguration of equipment	5	3	6	8	6	4
8	BO1030	Reactor start-up and shutdown	0	0	0	0	0	0
9	BO1040	Operability determination and functionality assessments	5	3	7	11	7	4
10	BO0060	Nuclear fuel control (Transportation and storage)	1	1	3	1	1	1
11	BO1070	Capability of operating personnel	2	1	1	2	4	1
12	BE0010	Protection against natural disaster	2	2	2	2	3	2
13	BE0020	Fire protection	7	7	7	7	9	7
14	BE0030	Internal flood protection	1	1	2	2	2	1
15	BE0040	Maintaining of emergency response organization	1	1	1	1	1	2
16	BE0050	Emergency preparedness and maintenance	3	2	2	2	5	1
17	BE0060	Maintaining personal capacity to respond to severe accidents, etc.	0	0	0	0	0	0
18	BE0090	Seismic protection	1	2	1	2	1	1
19	BE0100	Tsunami protection	1	2	1	1	1	1
20	BR0010	Radiation exposure control	2	2	4	2	5	3
21	BR0070	Radioactive solid waste management	4	3	4	3	4	3
22	BR0010	Operation of Quality Management System (Routine)	1	1	1	1	1	1
23		Operation of Quality Management System (Semiannual)	2	2	2	2	2	2
24	BQ0040	Performance Indicator Verification	1	1	1	1	1	1
25	BQ0050	Initial response to occurrence of an event	0	0	0	0	1	1
		Total	55	48	64	73	73	54

【Explanatory notes】
(1) “Operation”：In service in compliance with new completing response to new regulatory requirements.
(2) “Long-term shutdown”：Long-term shutdown, in preparation in compliance with new regulatory requirements.
(3) Decommissioning A”: Decommissioning approved with spent fuel SFP. The same inspection is performed as in the long-term shutdown.
(4) “Decommissioning B”：Decommissioning approved with no spent fuel SFP.
(5) “Decommissioning review”：Under review for decommissioning. The same inspection is performed as in the long-term shutdown.
(6) “Decommissioning planned：Planned for apply for decommissioning. The same inspection is performed as in the long-term shutdown.
(7) “Construction A”：In the construction phase with no new fuel delivered.
(8) “Construction B”： In the construction phase with new fuel delivered. In the construction phase with no new fuel delivered.

No.	Guide No.	Inspection guide name	Hamaoka	Shika	Tsuruga	Shimane	Ohma	(TEPCO) Higashidori
			Units:1,2: Decommissioning B Units3-5:Long-term shutdown	Units1,2:Long-term shutdown	Unit1: Decommissioning A Unit2:Long-term shutdown	Unit1: Decommissioning A Unit2:Long-term shutdown Unit3:Construction B	Unit1:Construction A	Unit1:Construction A
1	BM0020	Oversight of operator's periodic inspection	5	0	3	8		
2	BM1040	Heat sink performance	1	1	1	1		
3	BM0060	Maintenance effectiveness assessments	4	1	2	1		
4	BM0100	Design control	6	2	4	4		
5	BM0110	Work control	10	7	14	10		
6	BO0010	Surveillance tasting	6	4	4	7		
7	BO1020	Systemconfiguration of equipment	7	6	5	5		
8	BO1030	Reactor start-up and shutdown	0	0	0	0		
9	BO1040	Operability determination and finctionality assessments	7	6	8	5		
10	BO0060	Nuclear fuel control (Transportation and storage)	1	1	1	1		
11	BO1070	Capability of operating personnel	1	2	2	2		
12	BE0010	Protection against natural disaster	2	2	2	2		
13	BE0020	Fire protection	7	11	7	8		
14	BE0030	Internal flood protection	1	1	1	1		
15	BE0040	Maintaining of emergency response organization	3	1	0	1		
16	BE0050	Emergency preparedness and maintenance	1	1	0	4		
17	BE0060	Maintaining personal capacity to respond to severe accidents, etc.	0	0	0	0		
18	BE0090	Seismic protection	1	1	1	1		
19	BE0100	Tsunami protection	1	1	1	1		
20	BR0010	Radiation exposure control	2	3	5	2		
21	BR0070	Radioactive solid waste management	4	4	3	3		
22	BR0010	Operation of Quality Management System (Routine)	1	1	1	1		
23		Operation of Quality Management System (Semiannual)	2	2	5	2		
24	BQ0040	Performance Indicator Verification	1	1	1	1		
25	BQ0050	Initial response to occurrence of an event	0	0	0	0		
		Total	74	59	71	71	0	0

【Explanatory notes】
(1) “Operation”：In service in compliance with new completing response to new regulatory requirements.
(2) “Long-term shutdown”：Long-term shutdown, in preparation in compliance with new regulatory requirements.
(3) Decommissioning A”: Decommissioning approved with spent fuel SFP. The same inspection is performed as in the long-term shutdown.
(4) “Decommissioning B”：Decommissioning approved with no spent fuel SFP.
(5) “Decommissioning review”：Under review for decommissioning. The same inspection is performed as in the long-term shutdown.
(6) “Decommissioning planned：Planned for apply for decommissioning. The same inspection is performed as in the long-term shutdown.
(7) “Construction A”：In the construction phase with no new fuel delivered.
(8) “Construction B”： In the construction phase with new fuel delivered. In the construction phase with no new fuel delivered.

No.	Guide No.	Inspection guide name	Hamaoka	Shika	Tsuruga	Shimane	Ohma	(TEPCO) Higashidori
			Units:1,2: Decommissioning B Units3-5:Long-term shutdown	Units1,2:Long-term shutdown	Unit1: Decommissioning A Unit2:Long-term shutdown	Unit1: Decommissioning A Unit2:Long-term shutdown Unit3:Construction B	Unit1:Construction A	Unit1:Construction A
1	BM0020	Oversight of operator's periodic inspection	5	0	3	8		
2	BM1040	Heat sink performance	1	1	1	1		
3	BM0060	Maintenance effectiveness assessments	4	1	2	1		
4	BM0100	Design control	6	2	4	4		
5	BM0110	Work control	10	7	14	10		
6	BO0010	Surveillance tasting	6	4	4	7		
7	BO1020	Systemconfiguration of equipment	7	6	5	5		
8	BO1030	Reactor start-up and shutdown	0	0	0	0		
9	BO1040	Operability determination and functionality assessments	7	6	8	5		
10	BO0060	Nuclear fuel control (Transportation and storage)	1	1	1	1		
11	BO1070	Capability of operating personnel	1	2	2	2		
12	BE0010	Protection against natural disaster	2	2	2	2		
13	BE0020	Fire protection	7	11	7	8		
14	BE0030	Internal flood protection	1	1	1	1		
15	BE0040	Maintaining of emergency response organization	3	1	0	1		
16	BE0050	Emergency preparedness and maintenance	1	1	0	4		
17	BE0060	Maintaining personal capacity to respond to severe accidents, etc.	0	0	0	0		
18	BE0090	Seismic protection	1	1	1	1		
19	BE0100	Tsunami protection	1	1	1	1		
20	BR0010	Radiation exposure control	2	3	5	2		
21	BR0070	Radioactive solid waste management	4	4	3	3		
22	BR0010	Operation of Quality Management System (Routine)	1	1	1	1		
23		Operation of Quality Management System (Semiannual)	2	2	5	2		
24	BQ0040	Performance Indicator Verification	1	1	1	1		
25	BQ0050	Initial response to occurrence of an event	0	0	0	0		
		Total	74	59	71	71	0	0

No.	Guide No.	Inspection guide name	Hamaoka	Shika	Tsuruga	Shimane	Ohma	(TEPCO) Higashidori
			Units:1,2: Decommissioning B Units3-5:Long-term shutdown	Units1,2:Long-term shutdown	Unit1: Decommissioning A Unit2:Long-term shutdown	Unit1: Decommissioning A Unit2:Long-term shutdown Unit3:Construction B	Unit1:Construction A	Unit1:Construction A
1	BM0020	Oversight of operator's periodic inspection	5	0	3	8		
2	BM1040	Heat sink performance	1	1	1	1		
3	BM0060	Maintenance effectiveness assessments	4	1	2	1		
4	BM0100	Design control	6	2	4	4		

5	BM0110	Work control	10	7	14	10		
6	BO0010	Surveillance tasting	6	4	4	7		
7	BO1020	Systemconfiguration of equipment	7	6	5	5		
8	BO1030	Reactor start-up and shutdown	0	0	0	0		
9	BO1040	Operability determination and functionality assessments	7	6	8	5		
10	BO0060	Nuclear fuel control (Transportation and storage)	1	1	1	1		
11	BO1070	Capability of operating personnel	1	2	2	2		
12	BE0010	Protection against natural disaster	2	2	2	2		
13	BE0020	Fire protection	7	11	7	8		
14	BE0030	Internal flood protection	1	1	1	1		
15	BE0040	Maintaining of emergency response organization	3	1	0	1		
16	BE0050	Emergency preparedness and maintenance	1	1	0	4		
17	BE0060	Maintaining personal capacity to respond to severe accidents, etc.	0	0	0	0		
18	BE0090	Seismic protection	1	1	1	1		
19	BE0100	Tsunami protection	1	1	1	1		
20	BR0010	Radiation exposure control	2	3	5	2		
21	BR0070	Radioactive solid waste management	4	4	3	3		
22	BR0010	Operation of Quality Management System (Routine)	1	1	1	1		
23		Operation of Quality Management System (Semiannual)	2	2	5	2		
24	BQ0040	Performance Indicator Verification	1	1	1	1		
25	BQ0050	Initial response to occurrence of an event	0	0	0	0		
Total			74	59	71	71	0	0

【Explanatory notes】
(1) "Operation" : In service in compliance with new completing response to new regulatory requirements.
(2) "Long-term shutdown" : Long-term shutdown, in preparation in compliance with new regulatory requirements.
(3) Decommissioning A": Decommissioning approved with spent fuel SFP. The same inspection is performed as in the long-term shutdown.
(4) "Decommissioning B" : Decommissioning approved with no spent fuel SFP.
(5) "Decommissioning review" : Under review for decommissioning. The same inspection is performed as in the long-term shutdown.
(6) "Decommissioning planned : Planned for apply for decommissioning. The same inspection is performed as in the long-term shutdown.
(7) "Construction A" : In the construction phase with no new fuel delivered.
(8) "Construction B" : In the construction phase with new fuel delivered. In the construction phase with no new fuel delivered.

(Routine Inspection (Nuclear Fuel Cycle Facilities, etc.))

No.	Guide No.	Inspection guide name	JNFL					Rokkasho Safeguards Center	【Decommissioning】	Recyclable-Fuel Storage Center
			Reprocessing Facility	MOX Fuel Fabrication Facility	Fabrication Facility	Waste storage Facility	Waste burial Facility		First Nuclear Powered Ship Reactor Facilities (no nuclear fuel materials in the plants, etc.)	
1	BM0020	Oversight of operator's periodic inspection	7		4	3			1	
2	BM1040	Heat sink performance								
3	BM0060	Maintenance effectiveness assessments	5		3	3	2	1	-	
4	BM0100	Design control	9		2	1	1	1		
5	BM0110	Work control	4		7	1	14	1	1	
6	BO0010	Surveillance testing	15		4	2		1	-	
7	BO1020	System configuration of equipment								
8	BO1030	Reactor start-up and shutdown								
9	BO1040	Operability determinations and functionality								
10	BO0060	Nuclear fuel control (Transportation and storage)	2							
11	BO1070	Capability of operating personnel								
12	BO2010	Operation management	22		4	4	3	2		
13	BO2020	Critical safety management	11		2			1		
14	BO2030	Experiment								
15	BE0010	Protection against natural disaster	4		2	1	1	1	1	
16	BE0020	Fire protection	15		5	4	2	1	1	
17	BE0030	Internal flood protection	3		1	2	1	1	-	
18	BE0040	Maintaining of emergency response organization	1		-	1	1	1		
19	BE0050	Emergency preparedness and maintenance	2		1	2	1	1		
20	BE0060	Maintaining personal capacity to respond to severe accidents, etc.	5		2					
21	BE0090	Seismic protection	4		2	1	1	1	-	
22	BE0100	Tsunami protection								
23	BR0010	Radiation exposure control	10		4	3	1	2	1	
24	BR0070	Radioactive solid waste management	4		2	1	2	1	1	
25	BQ0010	Operation of Quality Management System (Routine)	1	1	1	1	1	1	1	1
26		Operation of Quality Management System (Semiannual)	2	1	2	1	2	1	1	1
27	BQ0040	Performance Indicator Verification	1	-	1	1	1	1	1	-
28	BQ0050	Initial response to occurrence of an event	-	-	-	-	-	-	-	-
		Total	127	2	49	32	34	19	9	2

☆5

(Note 1): "/" means that there is no inspection target.

No.	Guide No.	Inspection guide name	Mitsubishi Nuclear Fuel	Tokai Works, Nuclear Fuel Industries	JAEA Nuclear Science Research Institute					
					Nuclear Science Research Institute	Waste burial facility	JRR-3 (including radioactive waste processing site)	Static Experiment Critical Facility (STACY)	Nuclear Safety Research Reactor (NSRR)	【Decommissioning】 Fast Critical Assembly (FCA)
1	BM0020	Oversight of operator's periodic inspection	4	4			6	4	4	1
2	BM1040	Heat sink performance								
3	BM0060	Maintenance effectiveness assessments	4	3	1	-	2	1	1	1
4	BM0100	Design control	-	-	1	-	1	1	-	-
5	BM0110	Work control	5	4	1	4	6	2	2	-
6	BO0010	Surveillance testing	4	4	1		4	1	1	-
7	BO1020	System configuration of equipment								
8	BO1030	Reactor start-up and shutdown								
9	BO1040	Operability determinations and functionality								
10	BO0060	Nuclear fuel control (Transportation and storage)	-	-	1		1	1	1	1
11	BO1070	Capability of operating personnel								
12	BO2010	Operation management	6	4	2	-	7	-	2	
13	BO2020	Critical safety management	2	2	1					
14	BO2030	Experiment					2	-	2	
15	BE0010	Protection against natural disaster	2	2	1	-	1	1	1	
16	BE0020	Fire protection	4	4	1	-	3	1	1	
17	BE0030	Internal flood protection	1	1	1	-	1	1	1	
18	BE0040	Maintaining of emergency response organization	1	1	1	-	1	1	1	
19	BE0050	Emergency preparedness and maintenance	1	1	1	-	1	1	-	
20	BE0060	Maintaining personal capacity to respond to severe accidents, etc.	2	2						
21	BE0090	Seismic protection	2	2	1	-	2	1	1	
22	BE0100	Tsunami protection			-					
23	BR0010	Radiation exposure control	4	4	2		5	2	2	1
24	BR0070	Radioactive solid waste management	4	2	1	-	2	1	1	1
25	BQ0010	Operation of Quality Management System (Routine)	1	1	1	-	1	1	1	1
26		Operation of Quality Management System (Semiannual)	4	2	1	-	2	1	1	-
27	BQ0040	Performance Indicator Verification	1	1	1	-	1	1	1	1
28	BQ0050	Initial response to occurrence of an event	-	-	-	-	-	-	-	-
		Total	52	44	20	4	49	22	24	7

☆6

(Note 1): "/" means that there is no inspection target.

No.	Guide No.	Inspection guide name	JAEA Nuclear Science Research Institute 【Decommissioning】				JAEA Oarai Research and Deveiopment Institute			
			Transient Experiment Critical Facility (TRACY) (no nuclear fuel materials in the plants,etc.)	JRR-2 (no nuclear fuel materials in the plants,etc.)	Tank-type Critical Assembly (TCA) (Contains nuclear fuel materials in the plants,etc.)	JRR-4 (no nuclear fuel materials in the core)	High Temperature engineering Test Reactor (HTTR)	Experimental Fast Reactor (Joyo)	【Decommissioning】 Deuterium Critical Assembly (DCA) (no nuclear fuel material in the core)	【Decommissioning】 Japan Materials Testing Reactor (JMTR) (no nuclear fuel materials in the core)
1	BM0020	Oversight of operator's periodic inspection	1	1	1	1	4	4	1	1
2	BM1040	Heat sink performance	/	/	/	/	/	/	/	/
3	BM0060	Maintenance effectiveness assessments	1	1	1	1	1	1	1	1
4	BM0100	Design control	-	-	-	-	1	1	-	-
5	BM0110	Work control	/	/	/	/	1	1	-	-
6	BO0010	Surveillance testing	/	/	/	/	4	4	1	1
7	BO1020	System configuration of equipment	/	/	/	/	/	/	/	/
8	BO1030	Reactor start-up and shutdown	/	/	/	/	/	/	/	/
9	BO1040	Operability determinations and functionality	/	/	/	/	/	/	/	/
10	BO0060	Nuclear fuel control (Transportation and storage)	/	/	1	/	1	1	1	1
11	BO1070	Capability of operating personnel	/	/	/	/	/	/	/	/
12	BO2010	Operation management	/	/	/	/	5	5	/	/
13	BO2020	Critical safety management	/	/	/	/	/	/	/	/
14	BO2030	Experiment	/	/	/	/	/	/	/	/
15	BE0010	Protection against natural disaster	/	/	/	/	1	1	/	/
16	BE0020	Fire protection	/	/	/	/	3	3	1	1
17	BE0030	Internal flood protection	/	/	/	/	1	1	/	/
18	BE0040	Maintaining of emergency response organization	/	/	/	/	1	1	/	/
19	BE0050	Emergency preparedness and maintenance	/	/	/	/	1	1	/	/
20	BE0060	Maintaining personal capacity to respond to severe accidents, etc.	/	/	/	/	/	/	/	/
21	BE0090	Seismic protection	/	/	/	/	1	1	/	/
22	BE0100	Tsunami protection	/	/	/	/	/	/	/	/
23	BR0010	Radiation exposure control	1	1	1	1	5	5	1	2
24	BR0070	Radioactive solid waste management	1	1	1	1	2	2	1	2
25	BQ0010	Operation of Quality Management System (Routine)	1	1	1	1	1	1	1	1
26		Operation of Quality Management System (Semiannual)	/	/	/	/	1	1	/	/
27	BQ0040	Performance Indicator Verification	1	1	1	1	1	1	1	1
28	BQ0050	Initial response to occurrence of an event	/	/	/	/	/	/	/	/
		Total	6	6	7	6	35	35	9	11

☆7

(Note 1): "/" means that there is no inspection target.

No.	Guide No.	Inspection guide name	JAEA Oarai Research and Deveiopment Institute			JAEA Nuclear Fuel Cycle Engineering Laboratories		【Decommissioning】	MHI Nuclear Development Corporation	Nippon Nuclear Fuel Development (NFD)
			Oarai Research and Development Institute,JAEA (north)	Oarai Research and Development Institute,JAEA (south)	Specified Radioactive Waste Interim Storage Facility	【Decommissioning】 Tokai Reprocessing Facility	Nuclear Fuel Cycle Engineering Laboratories	University Tokyo Nuclear Reactor "Yayoi" (no nuclear fuel materials in the core)		
1	BM0020	Oversight of operator's periodic inspection			3	5		1		
2	BM1040	Heat sink performance								
3	BM0060	Maintenance effectiveness assessments	1	1	1	5	1	1	1	1
4	BM0100	Design control	1	1	1	4	0	-	1	1
5	BM0110	Work control	2	1	1	6	3	1	4	1
6	BO0010	Surveillance testing	1	1	1	8	1	1	1	1
7	BO1020	System configuration of equipment								
8	BO1030	Reactor start-up and shutdown								
9	BO1040	Operability determinations and functionality								
10	BO0060	Nuclear fuel control (Transportation and storage)	1	1		1	1	-	1	1
11	BO1070	Capability of operating personnel								
12	BO2010	Operation management	2	2	3	5	3		2	2
13	BO2020	Critical safety management	1	1	1	5	1		1	1
14	BO2030	Experiment								
15	BE0010	Protection against natural disaster	1	1	1	4	1		1	1
16	BE0020	Fire protection	2	1	1	7	1	1	1	1
17	BE0030	Internal flood protection	1	1	1	2	1		1	1
18	BE0040	Maintaining of emergency response organization	2	2	1	1	1		1	1
19	BE0050	Emergency preparedness and maintenance	2	2	1	1	1		1	1
20	BE0060	Maintaining personal capacity to respond to severe accidents, etc.				3				
21	BE0090	Seismic protection	2	2	1	4	1		1	1
22	BE0100	Tsunami protection				4	-			
23	BR0010	Radiation exposure control	2	3	2	6	2	2	2	2
24	BR0070	Radioactive solid waste management	1	1	1	4	1	2	1	1
25	BQ0010	Operation of Quality Management System (Routine)	1	1	1	1	1	1	1	1
26		Operation of Quality Management System (Semiannual)	1	1	1	2	1	1	1	1
27	BQ0040	Performance Indicator Verification	1	1	1	1	1	1	1	1
28	BQ0050	Initial response to occurrence of an event	-	-	-	-	-	-	-	-
		Total	25	24	23	79	22	12	23	20

☆8

(Note 1): "/" means that there is no inspection target.

No.	Guide No.	Inspection guide name	Tokai Safeguards Center	Toshiba Nuclear Engineering Laboratory	【Decommissioning】					Global Nuclear Fuel-Japan
					Toshiba Nuclear Critical Assembly (NCA)	Toshiba (TTR-1) (no nuclear fuel materials in the plants,etc.)	Atomic Energy Research Laboratory,Tokyo City University (no nuclear fuel materials in the plants,etc.)	Hitachi Training Reactor at Ozenji Center (HTR) (no nuclear fuel materials in the plants,etc.)	Institute for Atomic Energy,Rikkyo University (no nuclear fuel materials in the plants,etc.)	
1	BM0020	Oversight of operator's periodic inspection	/	/	3	3	1	1	2	6
2	BM1040	Heat sink performance	/	/	/	/	/	/	/	/
3	BM0060	Maintenance effectiveness assessments	1	1	1	1	2	2	-	6
4	BM0100	Design control	1	/	1	2	/	/	/	/
5	BM0110	Work control	1	1	1	1	/	/	/	4
6	BO0010	Surveillance testing	1	1	/	/	/	/	/	4
7	BO1020	System configuration of equipment	/	/	/	/	/	/	/	/
8	BO1030	Reactor start-up and shutdown	/	/	/	/	/	/	/	/
9	BO1040	Operability determinations and functionality	/	/	/	/	/	/	/	/
10	BO0060	Nuclear fuel control (Transportation and storage)	/	1	1	/	/	/	/	1
11	BO1070	Capability of operating personnel	/	/	/	/	/	/	/	/
12	BO2010	Operation management	2	1	/	/	/	/	/	4
13	BO2020	Critical safety management	1	1	/	/	/	/	/	2
14	BO2030	Experiment	/	/	/	/	/	/	/	/
15	BE0010	Protection against natural disaster	1	1	1	1	/	/	/	2
16	BE0020	Fire protection	1	1	1	1	/	/	1	4
17	BE0030	Internal flood protection	1	1	1	/	/	/	/	1
18	BE0040	Maintaining of emergency response organization	1	1	1	1	/	/	/	1
19	BE0050	Emergency preparedness and maintenance	3	2	2	2	/	/	/	1
20	BE0060	Maintaining personal capacity to respond to severe accidents, etc.	/	/	/	/	/	/	/	2
21	BE0090	Seismic protection	1	1	1	1	/	/	/	1
22	BE0100	Tsunami protection	/	/	/	/	/	/	/	/
23	BR0010	Radiation exposure control	3	2	2	2	2	2	/	4
24	BR0070	Radioactive solid waste management	1	1	1	1	2	2	1	2
25	BQ0010	Operation of Quality Management System (Routine)	1	2	2	2	1	2	1	1
26		Operation of Quality Management System (Semiannual)	1	1	1	1	1	1	/	2
27	BQ0040	Performance Indicator Verification	1	1	1	1	1	1	1	1
28	BQ0050	Initial response to occurrence of an event	-	-	-	-	-	-	-	-
		Total	22	20	21	20	10	11	6	49

☆ 9

(Note 1): "/" means that there is no inspection target.

No.	Guide No.	Inspection guide name	【Decommissioning】		Kumatori Works,Nuclear Fuel Industries	Kyoto University			Atomic Energy Research Institute,Kindai University (UTR)	Ningyo-toge Environmental Engineering Center,JAEA	【Decommissioning】
			Prototype Advanced Thermal Reactor (Fugen) (no nuclear fuel materials in the core)	Prototype Fast Breeder Reactor (Mojyu) (Contains nuclear fuel materials in the core)		Kyoto University Critical Assembly (KUCA),Institute for Integrated Radiation and Nuclear Science	Institute for Integrated Radiation and Nuclear Science (KUR)	Special Nuclear Fuel Storage Room,Institute for Integrated Radiation and Nuclear Science			Ningyo-toge Environmental Engineering Center,JAEA (Contains nuclear fuel materials in the plant,etc.)
1	BM0020	Oversight of operator's periodic inspection	4	10	4	4	4		4		2
2	BM1040	Heat sink performance		1							
3	BM0060	Maintenance effectiveness assessments	2	5	3	1	2		1	1	
4	BM0100	Design control	1	2	-	0	1		1	-	-
5	BM0110	Work control	6	6	4	1	8	0	1	2	
6	BO0010	Surveillance testing	1	13	4	1	4	-	1	2	
7	BO1020	System configuration of equipment	2	2							
8	BO1030	Reactor start-up and shutdown									
9	BO1040	Operability determinations and functionality	1	1							
10	BO0060	Nuclear fuel control (Transportation and storage)	1	9	-	-	2	-	1	1	1
11	BO1070	Capability of operating personnel		1							
12	BO2010	Operation management			4	-	8		2	1	
13	BO2020	Critical safety management			2			-		1	
14	BO2030	Experiment				-	2		2		
15	BE0010	Protection against natural disaster	1	2	2	1	1		1	1	
16	BE0020	Fire protection	2	9	4	2	2		1	1	
17	BE0030	Internal flood protection	1	1	1	1	1		-	1	
18	BE0040	Maintaining of emergency response organization	1	1	1	1	1		1	1	
19	BE0050	Emergency preparedness and maintenance	1	1	1	1	1		1	1	
20	BE0060	Maintaining personal capacity to respond to severe accidents, etc.		4	2						
21	BE0090	Seismic protection	1	2	2	1	1	0	1	1	
22	BE0100	Tsunami protection		-							
23	BR0010	Radiation exposure control	4	6	4	2	4	-	2	1	
24	BR0070	Radioactive solid waste management	2	3	2	1	2	-	1	1	
25	BQ0010	Operation of Quality Management System (Routine)	1	1	1	1	1		1	1	
26		Operation of Quality Management System (Semiannual)	3	2	2	1	2		1	1	
27	BQ0040	Performance Indicator Verification	1	3	1	1	1	0	1	1	1
28	BQ0050	Initial response to occurrence of an event	-	-	-	-	-	-	-	-	-
		Total	36	85	44	20	48	0	24	19	21

(Note 1): "/" means that there is no inspection target.

No.	Guide No.	Inspection guide name	FY2022							
			Results in the 1st quarter	case	Results in the 2nd quarter	case	Results in the 3rd quarter	case	Results in the 4th quarter	case
1	BM0010	Oversight of pre-service operator inspection	(Kashiwazaki-Kariwa) Mihama Ohi (Takahama) (Ikata) Genkai Sendai (Mitsubishi Nuclear Fuel) (Kumatori Office,NFI) (JAEA STACY) (JAEA processing site) (RFS) JAEA Waste management Facility JAEA Nuclear Fuel Cycle Engineering Laboratories (Pu3)	6	Onagawa (Kashiwazaki-Kariwa) Mihama Ohi Takahama (Ikata) Genkai Sendai Mitsubishi Nuclear Fuel (Kumatori Office,NFI) (JNFL concentration and burial) JAEA Waste management Facility	7	(Onagawa) Kashiwazaki-Kariwa Ohi Takahama (Ikata) Genkai (Sendai) Nippon Nuclear Fuel Development (JNFL concentration and burial) (JNFL MOX) (Kumatori Office,NFI) (RFS) (JAEA STACY) (JAEA processing site) (JAEA Waste management Facility)	5	(Onagawa) Tokai Daini (Kashiwazaki-Kariwa) Takahama (Ikata) Genkai Sendai (JNFL concentration and burial) (JNFL MOX) (Kumatori Office,NFI) (JAEA STACY) (RFS) (JNFL Reprocessing) (JAEA Waste management Facility) JAEA Oarai Facilitise Used) Nippon Nuclear Fuel Development (NDC)	6
2	BM1050	Oversight of in-service inspection	Ohi (Takahama) Genkai Sendai	3	Mihama Ohi (Takahama) Genkai	3	Ohi Takahama (Genkai)	2	Genkai (Sendai)	1
3	BM0100	Design control	Mihama	1	-	0	-	0	-	0
4	BO1050	Safety of replaced core	Ohi Unit4 Takahama Unit3 Genkai Unit4 Sendai Unit2	4	Mihama Unit3 Takahama Unit4	2	Ohi Unit3 Genkai Unit3	2	Sendai Unit1 Genkai Unit4	2
5	BO1070	Capability of operating personnel※1	-	0	-	0	All NPP except for Decommissioning measure plant	15	-	0
6	BE0021	Fire protection (Triennial)	Mihama	1	(Ohi)	0	Ohi	1	-	0
7	BE0070	Evaluation of training for personnel to respond to severe accidents,etc.	Mihama	1	Mihama Ohi Takahama (Sendai)	3	Ohi Genkai Sendai (Ikata)	3	Takahama Ikata Genkai Sendai	4
8	BE0080	Evaluation of scenario for drills for severe accidents,etc.	Mihama (Ohi)	1	Ohi Takahama Sendai (Ikata)	3	Ohi Ikata Genkai Sendai (Takahama)	4	Takahama Genkai	2
9	BR0020	Radiation exposure evaluation and personal monitoring	Tokai/Tokai Daini (JAEA Reprocessing)	1	Fukushima Daini JAEA Reprocessing	2	Sendai	1	Shimane Genkai Sendai	3
10	BR0030	Radiation exposure ALARA activity	Tokai/Tokai Daini (JAEA Reprocessing)	1	Fukushima Daini JAEA Reprocessing	2	Sendai	1	Shimane Genkai	2
11	BR0040	Management and reduction of radioactive material in air	Tokai/Tokai Daini	1	Fukushima Daini JAEA Reprocessing	2	Sendai	1	Shimane Genkai	2
12	BR0050	Radioactive gas/liquid waste manegement	Ikata Takahama	2	Mihama Fukushima Daini JAEA Reprocessing	3	Onagawa Ohi	2	Tokai/Tokai Daini	1
13	BR0080	Radiation environment monitoring program	Ikata Takahama (JAEA Reprocessing)	2	Mihama Fukushima Daini JAEA Reprocessing	3	Onagawa Ohi	2	Tokai/Tokai Daini	1
14	BR0090	Radiation monitoring equipment	Ikata Takahama	2	Mihama Fukushima Daini JAEA Reprocessing	3	Onagawa Ohi	2	Tokai/Tokai Daini	1
15	BQ0010	Operation of quality management system※2	Ohi	1	Takahama (Ikata) (Sendai)	1	(Ikata) Genkai Sendai	2	Mihama Ikata	2
16	Physical protection of nuclear material		Tomari Higashidori JNFL Reprocessing JNFL Waste JNFL MOX JNFL concentration and burial Fukushima Daini Kashiwazaki-Kariwa JAEA Reprocessing Mitsubishi Nuclear Fuel Oarai Waste Tokai Office,Nuclear Tsuruga Ohi Takahama Hamaoka Shika Kumatori Office,NFI Shimane Rokkasho,NMCC Toshiba NDC Nuclear Fuel Cycle Engineering Laboratories	23	Tomari Higashidori Oma RFS JNFL Reprocessing Onagawa Fukushima Daini Kashiwazaki-Kariwa Oarai Waste Shika Ohi Mihama Fugen Monju Kumatori Office,NFI Ningyo-toge Shimane Ikata Tokai of NMCC Nuclear Science Research Institute NFD Mitsubishi Electric Kyoto University Kindai University	24	Tomari Higashidori Oma RFS JNFL Reprocessing JNFL MOX JNFL Waste JNFL concentration and burial Kashiwazaki-Kariwa Tokai Daini JAEA Reprocessing Tokai Office,Nuclear GNF-J Tsuruga Mihama Takahama Ohi Fugen hamaoka Shimane Ikata Genkai Sendai Oarai north Oarai south Tokai,NMCC University of Tokyo Nuclear Fuel Cycle Engineering Laboratories	28	Onagawa Fukushima Daini Kashiwazaki-Kariwa Shika Tokai Daini Mitsubishi Nuclear Fuel GNF-J Tsuruga Mihama Ohi Hamaoka Tokai Office,Nuclear Kumatori Office,NFI Shimane Ikata Genkai Sendai Nuclear Science Research Institute	18
			Total	50	Total	58	Total	71	Total	45

※1 Among the inspection items, “Appropriateness for operation personnel test” is implemented in team inspection.
※2 Among the inspection items, “annual inspection” is implemented in team inspection.

Legend
・The number of cases：The number of facilities with one or more inspections completed in the said quarter.
・ ([Name]) ：The facilities where inspections are implemented although no inspections are completed in the said quarter (excluded from the number of cases)/

（
(Team Inspection based on Legal Requirements) Excluding Pre-use Inspection）

[Results in the first quarter]: 4 cases
➢ Confirmation of off-site transportation (inspection of nuclear fuel control(transportation and storage))
・Ikata NPS, Shikoku Electric Power Company, Inc.
➢Confirmation of waste package (inspections of work control)
・Japan Nuclear Fuel Limited Waste Burial Facility (implemented at Genkai NPS, Kyushu Electric Power Company, Inc.)
➢ Confirmation of radioactivity concentration (inspections of radioactive solid waste management.)
・Ningyo-toge Environmental Engineering Center, JAEA
➢ Confirmation of decommissioning measure completion (inspections of non-applicable users, etc.)
・Head factory of Radia Industry Co., Ltd. (non-applicable facility)

[Results in the second quarter]: 4 cases
➢Confirmation of off-site transportation (inspection of fuel body management (transportation and storage))
・Global Nuclear Fuel - Japan Co, Ltd.
➢ Confirmation of waste package (inspections of work control)
・Japan Nuclear Fuel Limited, Waste Burial Facility (implemented at Onagawa NPS, Tohoku Electric Power Company, Inc.)
➢ Confirmation of radioactivity concentration (inspections of radioactive solid waste management
・Hamaoka NPSof Chubu Electric Power Co., Inc.
・Ohi NPS, The Kansai Electric Power Co., Inc.

[Results of the third quarter]: 2 cases
➢ Confirmation of waste package (inspections ofwork control)
・Japan Nuclear Fuel Limited, Waste Burial Facility (implemented at Mihama NPS, The Kansai Electric Power Co., Inc.)
・Japan Nuclear Fuel Limited, Waste Burial Facility (implemented at Kashiwazaki-Kariwa NPS, TEPCO)

[Results of the fourth quarter]: 4 cases
➢ Confirmation of off-site transportation (inspections of nuclear fuel control (transportation and storage))
・Mitsubishi Nuclear Fuel Co., Ltd.
➢ Confirmation of decommissioning measure completion (inspections of non-applicable users, etc.)
・AGC Inc. Technology Division, AGC Research Institute (non-applicable facility)
・Kyoto University Hospital (non-applicable facility)

・Storage facility of Matsumoto Masao Shoten in Ikuno Co. (non-applicable facility)

(Facilities, etc. Not Subject to Article 41 of the Cabinet Order of the Reactor Regulation Act)

Site			Implementation period
No.	Location	Name	
1	Aomori	Aomori Prefectural Nuclear Power Safety Center in Rokkasyo Village	Third quarter
2	Aomori	Institute for Environmental Sciences	Third quarter
3	Iwate	Hanawa Mining Co. Ltd	Second quarter
4	Miyagi	Sendai Municipal Institute of Public Health	Second quarter
5	Miyagi	Graduate School of Engineering, Tohoku University	First quarter
6	Akita	Radioisotope Center, Akita University	Second quarter
7	Ibaraki	Central 7th Office of AIST, National Institute of Advanced Industrial Science and Technology (nuclear source materials)	First quarter
8	Ibaraki	Institute for Agro-Environmental Sciences, National Agriculture and Food Research Organization	First quarter
9	Ibaraki	Hitachi Ltd., Hitachi Research Laboratory, Center for Technology Innovation-Energy (Hitachi Branch)	First quarter
10	Ibaraki	Mitsubishi Nuclear Fuel Co. Ltd	Fourth quarter
11	Ibaraki	Kagami Crystal Co., Ltd., Tsukuba factory	Second quarter
12	Saitama	MHI Nuclear Development Corporation, Safety Control Department, Omiya Control Office	Third quarter
13	Chiba	PDRadiophama Inc., Chiba Factory	Second quarter
14	Tokyo	Ministry of Defence, Acquisition, Technology and Logistics Agency, Ground Systems Research Center	Second quarter
15	Tokyo	Rigaku Holdings Corporation, Tokyo Factory	First quarter
16	Tokyo	Japan Coast Guard, Hydrographic and Oceanographic Department	Third quarter
17	Kanagawa	Japan Fisheries Research and Education Agency, Fisheries Resources Institute, Yokohama Field Station	Second quarter
18	Kanagawa	Toshiba Materials Co., Ltd.	First quarter
19	Kanagawa	Japan Tobacco Inc., Central Institute	Fourth quarter
20	Kanagawa	Nippon Yakin Kogyo Co.Ltd, Kawasaki Plant	Second quarter
21	Kanagawa	Fujifilm Corporation Material Manufacturing Headquarter, Kanagawa Office	Fourth quarter
22	Kanagawa	Mitsubishi Electric Corporation., Information Technology R&D Center	Second quarter
23	Kanagawa	Atomic Energy Research Laboratory, Tokyo City University of Gotoh Educational Corporation	Third quarter
24	Niigata	Niigata Prefectural Education Center	Fourth quarter
25※1	Niigata	Individual (nuclear source material)	Fourth quarter
26	Fukui	Fukui Prefectural Environmental Radiation Research and Monitoring Center	Third quarter
27	Fukui	Taiyo Koko Co., Ltd.,Fukui Plant	Third quarter
28	Nagano	Cosina Co., Ltd, Obuse Plant	Second quarter
29	Nagano	Shinshu University, Research Center for Advanced Science and Technology	Second quarter
30	Shizuoka	Nippon Light Metal Company., Ltd. Shimizu Plant	First quarter
31	Shizuoka	University of Shizuoka	First quarter
32	Aichi	AIST Chubu National Institute of Advanced Industrial Science and Technology	Fourth quarter
33※1	Osaka	Ministry of Education, Culture, Sports, Science and Technology, burial site of time capsules	Third quarter

*1 Inspections have been postponed since FY2021 to prevent the spread of COVID-19, in response to the declaration of a state of emergency.

(The total number of users of facilities, etc. not subject to Article 41 of the Enforcement Order of the Nuclear Reactor Regulation Law was 191 and the one of nuclear material users 18. (as of March 1, 2023)).

(3) Comprehensive Assessment in FY2022 and Inspection in FY2023

(a) Comprehensive Assessment in FY2022

Nuclear Facility			Comprehensive Assessment※
Hokkaido Electric Power Co., Inc.	Tomari PS	Unit 1	(a)
		Unit 2	(a)
		Unit 3	(a)
Tohoku Electric Power Co., Inc.	Higashidori NPS	Unit 1	(a)
	Onagawa NPS	Unit 1	(a)
		Unit 2	(a)
		Unit 3	(a)
Tokyo Electric Power Company Holdings, Inc.	Fukushima Daini NPS	Unit 1	(a)
		Unit 2	(a)
		Unit 3	(a)
		Unit 4	(a)
	Kashiwazaki-Kariwa NPS	Unit 1	(b)
		Unit 2	(b)
		Unit 3	(b)
		Unit 4	(b)
		Unit 5	(b)
		Unit 6	(b)
		Unit 7	(b)
Japan Atomic Power Company	Tokai PS	—	(a)
	Tokai Daini PS	—	(a)
Chubu Electric Power Co., Inc.	Hamaoka NPS	Unit 1	(a)
		Unit 2	(a)
		Unit 3	(a)
		Unit 4	(a)
		Unit 5	(a)
Hokuriku Electric Power Company	Shika NPS	Unit 1	(a)
		Unit 2	(a)
Japan Atomic Power Company	Tsuruga PS	Unit 1	(a)
		Unit 2	(a)
Kansai Electric Power Company, Inc	Mihama PS	Unit 1	(a)
		Unit 2	(a)
		Unit 3	(a)
	Ohi PS	Unit 1	(a)
		Unit 2	(a)
		Unit 3	(a)
		Unit 4	(a)
	Takahama PS	Unit 1	(a)
		Unit 2	(a)
		Unit 3	(a)
		Unit 4	(a)
Chugoku Electric Power Co., Inc.	Shimane NPS	Unit 1	(a)
		Unit 2	(a)
		Unit 3	(a)
Shikoku Electric Power Co., Inc.	Ikata PS	Unit 1	(a)
		Unit 2	(a)
		Unit 3	(a)

Nuclear Facility			Comprehensive Assessment※
Kyushu Electric Power Company, Inc.	Genkai NPS	Unit 1	(a)
		Unit 2	(a)
		Unit 3	(a)
		Unit 4	(a)
Kyushu Electric Power Company, Inc.	Sendai NPS	Unit 1	(a)
		Unit 2	(a)
Electric Power Development Co., Ltd	Oma NPS	—	(a)
Japan Nuclear Fuel Ltd.	Reprocessing facility of the reprocessing plant		(a)
	Waste storage facility of the reprocessing plant		(a)
	Fabrication facility of the enrichment and disposal plant		(a)
	Waste burial facility of the enrichment and disposal plant		(a)
	MOX Fuel Fabrication Facility, Reprocessing Plant		(a)
Nuclear Material Control Center (NMCC)	Nuclear fuel material usage facilities, Rokkasho Safeguards Center		(a)
	Nuclear fuel material usage facilities, Tokai Safeguards Center		(a)
Japan Atomic Energy Agency	Nuclear fuel material usage facility, Oarai Research and Development Institute (South Area)		(a)
	Waste treatment facility, Oarai Research and Development Institute		(a)
	Nuclear fuel material usage facility, Nuclear Fuel Cycle Engineering Laboratories		(a)
	Waste burial facility, Nuclear Science Research Institute		(a)
	Nuclear fuel material usage facility, Nuclear Science Research Institute		(a)
	Nuclear fuel material usage facility, Oarai Research and Development Institute (North Area)		(a)
	NSRR (Nuclear Safety Research Reactor), Nuclear Science Research Institute		(a)
	Experimental Fast Reactor (Joyo), Oarai Research and Development Institute (South Area)		(a)
	HTTR (High Temperature Engineering Test Reactor), Oarai Research and Development Institute (North Area)		(a)
	TRACY (Transient Experiment Critical Facility), Nuclear Science Research Institute		(a)
	TCA (Tank-type Critical Assembly), Nuclear Science Research Institute		(a)
	JRR-3, Nuclear Science Research Institute		(a)
	FCA (Fast Critical Assembly), Nuclear Science Research Institute		(a)
	Reprocessing facility, Nuclear Fuel Cycle Engineering Laboratories		(a)
	STACY (Static Experiment Critical Facility), Nuclear Science Research Institute		(a)
	JMTR (Japan Materials Testing Reactor), Oarai Research and Development Institute (North Area)		(a)
	JRR-2, Nuclear Science Research Institute		(a)
	JRR-4, Nuclear Science Research Institute		(a)
	DCA (Deuterium Critical Assembly), Oarai Research and Development Institute (South Area)		(a)
	Prototype Advanced Thermal Reactor Fugen		(a)
	Prototype Fast Breeder Reactor Monju		(a)
	Nuclear fuel material usage facility, Ningyo-toge Environmental Engineering Center		(a)
	Uranium fuel fabrication facility, Ningyo-toge Environmental Engineering Center		(a)
	The First Nuclear Powered Ship Reactor Facilities, Aomori Research and Development Center		(a)
Nuclear fuel material usage facility, Nippon Nuclear Fuel Development Co. Ltd.			(a)
Fabrication facility, Mitsubishi Nuclear Fuel Co., Ltd.			(a)

Nuclear Facility		Comprehensive Assessment※
Nuclear fuel material usage facility, MHI Nuclear Development Corporation		(a)
University of Tokyo Nuclear Reactor (Yayoi), Nuclear Professional School, The University of Tokyo		(a)
Atomic Energy Research Laboratory, Tokyo City University of Gotoh Educational Corporation		(a)
Ozenji Center HTR (Hitachi Training Reactor), Hitachi, Ltd.		(a)
Toshiba Energy Systems & Solutions Corporation	TTR-1	(a)
	Nuclear fuel material usage facility of N28-2, Nuclear Engineering Laboratory	(a)
	NCA (Toshiba Nuclear Critical Assembly), Nuclear Engineering Laboratory	(a)
Fabrication facility, Global Nuclear Fuel-Japan Co., Ltd.		(a)
Institute for Atomic Energy , Rikkyo University		(a)
UTR (University Teaching and Research Reactor), Kindai University Atomic Energy Research Institute		(a)
Kyoto University	KUCA(Kyoto University Critical Assembly), Institute for Integrated Radiation and Nuclear Science	(a)
	Nuclear fuel material usage facility, Institute for Integrated Radiation and Nuclear Science	(a)
	KUR(Kyoto University Research Reactor), Institute for Integrated Radiation and Nuclear Science	(a)
Nuclear Fuel Industries, Ltd.	Fabrication facility, Tokai Works	(a)
	Fabrication facility, Kumatori Works	(a)
Spent fuel storage facility of Recyclable Fuel Storage Center, Recyclable-Fuel Storage Company		(a)
Aomori Prefectural Nuclear Power Safety Center in Rokkasyo Village (nuclear fuel material usage facility)		(a)
Institute for Environmental Sciences		(a)
Hanawa Mining Co., Ltd		(a)
Sendai Municipal Institute of Public Hearth		(a)
Graduate School of Engineering, Tohoku University		(a)
Radioisotope Center, Akita University		(a)
Central 7th Office of AIST, National Institute of Advanced Industrial Science and Technology (nuclear source materials)		(a)
National Institute for Agro-Environmental Sciences Department, National Agriculture and Food Research Organization		(a)
Hitachi Ltd., Hitachi Research Laboratory, Energy Innovation Center (Hitachi Branch)		(a)
Mitsubishi Nuclear Fuel Co., Ltd		(a)
Kagami Crystal Co., Ltd., Tsukuba factory		(a)
MHI Nuclear Development Corporation, Safety Control Department, Omiya Control Office		(a)
PDRadiophama Inc., Chiba Factory		(a)
Ministry of Defense, Acquisition, Technology and Logistics Agency, Global Systems Research Center		(a)
Rigaku Holdings Corporation and its Global Subsidiaries, Tokyo Factory		(a)
Japan Coast Guard, Hydrographic and Oceanographic Department		(a)
Japan Fisheries Research and Education Agency, Fisheries Resources Institute , Yokohama Field Station		(a)
Toshiba Materials Co., Ltd.		(a)
Japan Tobacco Inc., Central Institute		(a)
Nippon Yakin Kogyo Co., Kawasaki Plant		(a)
Fujifilm Corporation Material Manufacturing Headquarter, Kanagawa Office		(a)
Mitsubishi Electric Corporation, Information Technology R&D Center		(a)
Atomic Energy Research Laboratory, Tokyo City University of Gotoh Educational Corporation		(a)
Niigata Prefectural Education Center		(a)
Individual (nuclear source material)		(a)
Fukui Prefectural Environmental Radiation Research and Monitoring Center		(a)
Taiyo Koko Co., Ltd., Fukui Plant		(a)

Nuclear Facility	Comprehensive Assessment※
Cosina Co., Ltd, Obuse Plant	(a)
Shinshu University, Research Center for Advanced Science and Technology	(a)
Nippon Light Metal Company, Ltd. Shimizu Plant	(a)
University of Shizuoka	(a)
National Institute of Advanced Industrial Science and Technology, Chubu Center	(a)
Ministry of Education, Culture, Sports, Science and Technology, burial site of time capsules	(a)

*: **Classification of (a) and (b) is as follows:**

(a)Facilities whose action matrix is Category 1

No inspection findings were confirmed or confirmed but the significance level was “green” or less with the safety performance indicator of “green” throughout FY2022.

In addition, no particular problems were found in improvement activities aimed at achieving the activity target in each monitoring area, including corrective activities for inspection findings.

Since the action matrix for this classification was Category 1 throughout the year and the purpose of the activity in each monitoring area was satisfied, it is assessed that autonomous improvement can be expected even if performance deteriorates.

In addition, in the Tsuruga PS Unit 2 of the Japan Atomic Power Company, there was one case that does not fall under inspection findings and where only assessment of the severity level was confirmed and its severity level was “SL III”. As for this case, it was confirmed that the process to secure reliability of review materials was established.

Later, as the review was restarted and new errors were found in the review materials, the instruction documents were issued and an amendment to the application of permission for changes in basic design of nuclear power reactor (change in Unit 2 of nuclear power reactor) has been required.

(b)Facilities whose action matrix is Category 4

The Kashiwazaki-Kariwa NPS of TEPCO was classified as a Category 4 in FY2020, and supplemental inspections has been continued in FY2021 and FY2022, which are to be continued in FY2023 as well.

In the basic inspection implemented in FY2022, the inspection findings were confirmed, indicating the significance level of “green” with the safety performance indicator of “green” throughout the year.

Therefore, in FY2021, the action matrix for this classification remained unchanged as Category 4 throughout the year, and although the targets of the activities in each monitoring area are satisfied, it is assessed that there is a long-term or significant deterioration in the safety activities conducted by the operator.

(b) Inspection Plans in 2023

(Routine Inspection (Power Reactor))

No.	Guide No.	Inspection guide name	Sendai	Genkai	Ikata	Takahama	Ohi	Mihama
			Units 1,2:In operation	Units1,2: Decommissioning A Units3,4:In operation	Unit1: Decommissioning A Unit2: Decommissioning A Unit3:In operation	Units1,2:Long-term shutdown Units3.4:In operation	Units1,2: Decommissioning A Units3.4:In operation	Units1,2: Decommissioning A Unit3:In operation
1	BM0020	Oversight of operator's periodic inspection*2	10	12	11	12	11	7
2	BM1040	Heat sink performance	2	3	2	3	3	2
3	BM0060	Maintenance effectiveness assessmen	5	5	5	5	5	5
4	BM0100	Design control	6	6	6	6	6	6
5	BM0110	Work control	4	4	4	4	4	4
6	BO0010	Surveillance tasting	18	22	17	22	22	18
7	BO1020	System configuration of equipment	18	22	18	22	22	18
8	BO1030	Reactor start-up and shutdown	2	2	1	2	2	1
9	BO1040	Operability determination and functionality assessments	20	24	19	24	24	19
10	BO0060	Nuclear fuel control (Transportation and storage)*3	3	4	3	4	4	3
11	BO1070	Capability of operating personnel	5	5	5	5	5	5
12	BE0010	Protection against natural disaster	4	4	4	4	4	4
13	BE0020	Fire protection	13	13	13	13	13	13
14	BE0030	Internal flood protection	3	4	3	4	4	3
15	BE0040	Maintaining of emergency response organization	1	1	1	1	1	1
16	BE0050	Emergency preparedness and maintenance	1	1	1	1	1	1
17	BE0060	Maintaining personal capacity to respond to severe accidents, etc.	10	10	10	10	10	10
18	BE0090	Seismic protection	4	4	4	4	4	4
19	BE0100	Tsunami protection	4	4	4	4	4	4
20	BR0010	Radiation exposure control	6	6	6	6	6	6
21	BR0070	Radioactive solid waste management*3	3	3	3	3	3	3
22	BR0010	Operation of Quality Management System (Routine)	1	1	1	1	1	1
23		Operation of Quality Management System (Semiannual)	2	2	2	2	2	2
24	BQ0040	Performance Indicator Verification	1	1	1	1	1	1
25	BQ0050	Initial response to occurrence of an event	*3	*3	*3	*3	*3	*3
		Total	146	163	140	163	163	141

regulatory office or the head of the team, in coordination with the overseeing department in charge, according to the condition of the facility or the application from the operator concerning the statutory verification action.

No.	Guide No.	Inspection guide name	Tomari	Higashidori	Onagawa	Kashiwazaki	Fukushima Daini	Tokai
			Units1-3:Long-term shutdown	Unit1:Long-term shutdown	Unit1: Decommissioning A Units2,3:Long-term shutdown	Units1-7:Long-term shutdown	Units1-4: Decommissioning A	Unit1: Decommissioning B Unit2:Long-term shutdown
1	BM0020	Oversight of operator's periodic inspection*2	*3	*3	1	*3	4	1
2	BM0030	Hardware performance	1	1	1	2	1	1
3	BM0060	Maintenance effectiveness assessments	1	1	1	1	1	1
4	BM0100	Design controls	2	2	2	2	*3	2
5	BM0110	Work control	7	5	6	11	4	5
6	BO0010	Surveillance tasting	4	3	4	7	5	3
7	BO1020	System configuration of equipment	4	3	4	7	5	4
8	BO1030	Reactor start-up and shutdown	0	0	0	0	0	0
9	BO1040	Operability determination and functionality assessments	4	3	4	7	5	4
10	BO0060	Nuclear fuel control (Transportation and storage)*3	1	1	1	2	1	1
11	BO1070	Capability of operating personnel	*3	*3	*3	*3	*3	*3
12	BE0010	Protection against natural disaster	2	2	2	2	2	2
13	BE0020	Fire protection	7	7	7	7	7	7
14	BE0030	Internal flood protection	1	1	1	2	2	1
15	BE0040	Maintaining of emergency response organization	1	1	1	1	1	1
16	BE0050	Emergency preparedness and maintenance	1	1	1	1	1	1
17	BE0060	Maintaining personal capacity to respond to severe accidents, etc.	0	0	0	0	0	0
18	BE0090	Seismic protection	1	1	1	1	1	1
19	BE0100	Tsunami protection	1	1	1	1	1	1
20	BR0010	Radiation exposure control	3	3	3	3	3	3
21	BR0070	Radioactive solid waste management*3	3	3	3	3	3	3
22	BR0010	Operation of Quality Management System (Routine)	1	1	1	1	1	1
23		Operation of Quality Management System (Semiannual)	2	2	2	2	2	2
24	BQ0040	Performance Indicator Verification	1	1	1	1	1	1
25	BQ0050	Initial response to occurrence of an event	*3	*3	*3	*3	*3	*3
		Total	48	43	48	64	51	46

【Explanatory notes】

(1) "Operation" : In service in compliance with new completing response to new regulatory requirements.

(2) "Long-term shutdown" : Long-term shutdown, in preparation in compliance with new regulatory requirements.

(3) Decommissioning A": Decommissioning approved with spent fuel SFP. The same inspection is performed as in the long-term shutdown.

(4) "Decommissioning B" : Decommissioning approved with no spent fuel SFP.

(5) "Decommissioning review" : Under review for decommissioning. The same inspection is performed as in the long-term shutdown.

(6) "Decommissioning planned : Planned for apply for decommissioning. The same inspection is performed as in the long-term shutdown.

(7) "Construction A" : In the construction phase with no new fuel delivered.

(8) "Construction B" : In the construction phase with new fuel delivered.

※1 Set based on the status of reactors as of the end of FY2022.

※2. The number of inspection samples for long-term shutdown and decommissioning A/B in No.1 "Supervision for Periodic Operator's Inspection" is 1/reactor. In the voluntary inspection based on the special maintenance plan during long-term shutdown, the number of samples of No.5 "Work management" is added by 1/reactor.

※3 The number of samples may be increased or decreased at the discretion of the head of the regulatory office or the head of the team, in coordination with the overseeing department in charge, according to the condition of the facility or the application from the operator concerning the statutory verification action.

No.	Guide No.	Inspection guide name	Hamaoka	Shika	Tsuruga	Shimane	Ohma	(TEPCO) Higashidori
			Units:1,2: Decommissioning B Units3-5:Long-term shutdown	Units1,2:Long-term shutdown	Unit1: Decommissioning A Unit2:Long-term shutdown	Unit1: Decommissioning A Unit2:Long-term shutdown Unit3:Construction B	Unit1:Construction A	Unit1:Construction A
1	BM0020	Oversight of operator's periodic inspection*2	2	*3	1	1		
2	BM1040	Heat sink performance	1	1	1	1		
3	BM0060	Maintenance effectiveness assessmen	1	1	1	1		
4	BM0100	Design control	2	2	2	2		
5	BM0110	Work control	7	6	5	5		
6	BO0010	Surveillance tasting	5	4	4	4		
7	BO1020	System configuration of equipment	5	4	4	4		
8	BO1030	Reactor start-up and shutdown	0	0	0	0		
9	BO1040	Operability determination and functionality assessments	5	4	4	4		
10	BO0060	Nuclear fuel control (Transportation and storage)*3	1	1	1	1		
11	BO1070	Capability of operating personnel	*3	*3	*3	*3		
12	BE0010	Protection against natural disaster	2	2	2	2		
13	BE0020	Fire protection	7	7	7	7		
14	BE0030	Internal flood protection	1	1	1	1		
15	BE0040	Maintaining of emergency response organization	1	1	1	1		
16	BE0050	Emergency preparedness and maintenance	1	1	1	1		
17	BE0060	Maintaining personal capacity to respond to severe accidents, etc.	0	0	0	0		
18	BE0090	Seismic protection	1	1	1	1		
19	BE0100	Tsunami protection	1	1	1	1		
20	BR0010	Radiation exposure control	3	3	3	3		
21	BR0070	Radioactive solid waste management*3	3	3	3	3		
22	BR0010	Operation of Quality Management System (Routine)	1	1	1	1		
23		Operation of Quality Management System (Semiannual)	2	2	2	2		
24	BQ0040	Performance Indicator Verification	1	1	1	1		
25	BQ0050	Initial response to occurrence of an event	*3	*3	*3	*3		
		Total	53	47	47	47	0	0

【Explanatory notes】

(1) “Operation”：In service in compliance with new completing response to new regulatory requirements.

(2) “Long-term shutdown”：Long-term shutdown, in preparation in compliance with new regulatory requirements.

(3) Decommissioning A”: Decommissioning approved with spent fuel SFP. The same inspection is performed as in the long-term shutdown.

(4) “Decommissioning B”：Decommissioning approved with no spent fuel SFP.

(5) “Decommissioning review”：Under review for decommissioning. The same inspection is performed as in the long-term shutdown.

(6) “Decommissioning planned：Planned for apply for decommissioning. The same inspection is performed as in the long-term shutdown.

(7) “Construction A”：In the construction phase with no new fuel delivered.

(8) “Construction B”： In the construction phase with new fuel delivered.

※1 Set based on the status of reactors as of the end of FY2022.

※2. The number of inspection samples for long-term shutdown and decommissioning A/B in No.1 “Supervision for Periodic Operator’s Inspection” is 1/reactor. In the voluntary inspection based on the special maintenance plan during long-term shutdown, the number of samples of No.5 “Work management” is added by 1/reactor.

※3 The number of samples may be increased or decreased at the discretion of the head of the regulatory office or the head of the team, in coordination with the overseeing department in charge, according to the condition of the facility or the application from the operator concerning the statutory verification action.

(Routine Inspection (Nuclear Fuel Cycle Facilities, etc.)☆１４

No.	Guide No.	Inspection guide name	JNFL					Rokkasho Safeguards Center	First Nuclear Powered Ship Reactor Facilities (no nuclear fuel materials in the plants, etc.)	Recyclable-Fuel Storage Center
			Reprocessing Facility	MOX Fuel Fabrication Facility	Fabrication Facility	Waste storage Facility	Waste burial Facility			
1	BM0020	Oversight of operator's periodic inspection	5		4	3			1	
2	BM1040	Heat sink performance								
3	BM0060	Maintenance effectiveness assessments	5		3	1	1	1	-	
4	BM0100	Design control	6		2	1	1	1		
5	BM0110	Work control	4		3	1	1	1	1	
6	BO0010	Surveillance testing	14		4	1		1	-	
7	BO1020	System configuration of equipment								
8	BO1030	Reactor start-up and shutdown								
9	BO1040	Operability determinations and functionality								
10	BO0060	Nuclear fuel control (Transportation and storage)	2							
11	BO1070	Capability of operating personnel								
12	BO2010	Operation management	10		4	4	3	2		
13	BO2020	Critical safety management	10		2			1		
14	BO2030	Experiment								
15	BE0010	Protection against natural disaster	4		2	1	1	1	1	
16	BE0020	Fire protection	13		4	1	1	1	1	
17	BE0030	Internal flood protection	2		1	1	1	1	-	
18	BE0040	Maintaining of emergency response organization	1		1	1	1	1		
19	BE0050	Emergency preparedness and maintenance	1		1	1	1	1		
20	BE0060	Maintaining personal capacity to respond to severe accidents, etc.	5		2					
21	BE0090	Seismic protection	4		2	1	1	1	-	
22	BE0100	Tsunami protection								
23	BR0010	Radiation exposure control	6		4	2	1	2	1	
24	BR0070	Radioactive solid waste management	3		2	1	1	1	1	
25	BQ0010	Operation of Quality Management System (Routine)	1	1	1	1	1	1	1	1
26		Operation of Quality Management System (Semiannual)	2	1	2	1	1	1	1	1
27	BQ0040	Performance Indicator Verification	1	-	1	1	1	1	1	-
28	BQ0050	Initial response to occurrence of an event	-	-	-	-	-	-	-	-
		Total	99	2	45	23	17	19	9	2

(Note 1) "-" in the table means that the inspection is conducted as necessary.

(Note 2) "/" in the table means that there is no inspection target.

(Note 3) The number of samples may be increased or decreased at the discretion of the head of the regulatory office or the head of the team, in coordination with the overseeing department in charge, according to the condition of the facility or the application from the operator concerning the statutory verification action.

(Note 4) There is no schedule for operation of Experimental Fast Reactor Facility (Joyo) in FY2023.

No.	Guide No.	Inspection guide name	Mitsubishi Nuclear Fuel	Tokai Works,Nuclear Fuel Industries	JAEA Nuclear Science Research Institute					
					Nuclear Science Research Institute	Waste burial facility	JRR-3 (including radioactive waste processing site)	Static Experiment Critical Facility (STACY)	Nuclear Safety Research Reactor (NSRR)	【Decommissioning】 Fast Critical Assembly (FCA)
1	BM0020	Oversight of operator's periodic inspection	4	4			6	4	4	1
2	BM1040	Heat sink performance								
3	BM0060	Maintenance effectiveness assessments	2	3	1	-	2	1	1	1
4	BM0100	Design control	3	-	1	-	1	1	-	-
5	BM0110	Work control	2	4	1	2	6	2	2	-
6	BO0010	Surveillance testing	6	4	1		4	1	1	-
7	BO1020	System configuration of equipment								
8	BO1030	Reactor start-up and shutdown								
9	BO1040	Operability determinations and functionality								
10	BO0060	Nuclear fuel control (Transportation and storage)	1	-	1		1	1	1	1
11	BO1070	Capability of operating personnel								
12	BO2010	Operation management	8	4	2	-	7	-	2	
13	BO2020	Critical safety management	4	2	1					
14	BO2030	Experiment					2	-	2	-
15	BE0010	Protection against natural disaster	2	1	1	-	1	1	1	-
16	BE0020	Fire protection	3	2	1	-	4	1	1	-
17	BE0030	Internal flood protection	1	1	1	-	1	1	1	
18	BE0040	Maintaining of emergency response organization	1	1	1	-	1	1	1	
19	BE0050	Emergency preparedness and maintenance	1	1	1	-	1	-	-	
20	BE0060	Maintaining personal capacity to respond to severe accidents, etc.	2	2						
21	BE0090	Seismic protection	2	2	1	-	2	1	1	-
22	BE0100	Tsunami protection			-					
23	BR0010	Radiation exposure control	10	4	2		5	2	2	1
24	BR0070	Radioactive solid waste management	2	2	1	-	2	1	1	1
25	BQ0010	Operation of Quality Management System (Routine)	1	1	1	1	1	1	1	1
26		Operation of Quality Management System (Semiannual)	2	2	1	-	2	1	1	-
27	BQ0040	Performance Indicator Verification	1	1	1	-	1	1	1	1
28	BQ0050	Initial response to occurrence of an event	-	-	-	-	-	-	-	-
		Total	58	41	20	3	50	21	24	7

(Note 1) "-" in the table means that the inspection is conducted as necessary.

(Note 2) "/" in the table means that there is no inspection target.

(Note 3) The number of samples may be increased or decreased at the discretion of the head of the regulatory office or the head of the team, in coordination with the overseeing department in charge, according to the condition of the facility or the application from the operator concerning the statutory verification action.

(Note 4) There is no schedule for operation of Experimental Fast Reactor Facility (Joyo) in FY2023.

No.	Guide No.	Inspection guide name	JAEA Nuclear Science Research Institute 【Decommissioning】				JAEA Oarai Research and Deveiopment Institute			
			Transient Experiment Critical Facility (TRACY) (no nuclear fuel materials in the plants,etc.)	JRR-2 (no nuclear fuel materials in the plants,etc.)	Tank-type Critical Assembly (TCA) (Contains nuclear fuel materials in the plants,etc.)	JRR-4 (no nuclear fuel materials in the core)	High Temperature engineering Test Reactor (HTTR)	Experimental Fast Reactor (Joyo)	【Decommissioning】 Deuterium Critical Assembly (DCA) (no nuclear fuel material in the core)	【Decommissioning】 Japan Materials Testing Reactor (JMTR) (no nuclear fuel materials in the core)
1	BM0020	Oversight of operator's periodic inspection	1	1	1	1	4	4	1	1
2	BM1040	Heat sink performance	/	/	/	/	/	/	/	/
3	BM0060	Maintenance effectiveness assessments	1	1	1	1	1	1	1	1
4	BM0100	Design control	-	-	-	-	1	1	-	-
5	BM0110	Work control	-	-	-	-	1	1	-	-
6	BO0010	Surveillance testing	-	-	-	-	4	4	1	1
7	BO1020	System configuration of equipment	/	/	/	/	/	/	/	/
8	BO1030	Reactor start-up and shutdown	/	/	/	/	/	/	/	/
9	BO1040	Operability determinations and functionality	/	/	/	/	/	/	/	/
10	BO0060	Nuclear fuel control (Transportation and storage)	/	/	1	/	1	1	1	1
11	BO1070	Capability of operating personnel	/	/	/	/	/	/	/	/
12	BO2010	Operation management	/	/	/	/	5	5	/	/
13	BO2020	Critical safety management	/	/	/	/	/	/	/	/
14	BO2030	Experiment	/	/	/	/	-	-	/	/
15	BE0010	Protection against natural disaster	-	-	-	-	1	1	/	/
16	BE0020	Fire protection	-	-	-	-	3	3	1	1
17	BE0030	Internal flood protection	/	/	/	/	1	1	/	/
18	BE0040	Maintaining of emergency response organization	/	/	/	/	1	1	/	/
19	BE0050	Emergency preparedness and maintenance	/	/	/	/	1	1	/	/
20	BE0060	Maintaining personal capacity to respond to severe accidents, etc.	/	/	/	/	/	/	/	/
21	BE0090	Seismic protection	-	-	-	-	1	1	/	/
22	BE0100	Tsunami protection	/	/	/	/	/	/	/	/
23	BR0010	Radiation exposure control	1	1	1	1	5	5	1	2
24	BR0070	Radioactive solid waste management	1	1	1	1	2	2	1	2
25	BQ0010	Operation of Quality Management System (Routine)	1	1	1	1	1	1	1	1
26		Operation of Quality Management System (Semiannual)	-	-	-	-	1	1	-	-
27	BQ0040	Performance Indicator Verification	1	1	1	1	1	1	1	1
28	BQ0050	Initial response to occurrence of an event	-	-	-	-	-	-	-	-
		Total	6	6	7	6	35	35	9	11

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(Note 4) There is no schedule for operation of Experimental Fast Reactor Facility (Joyo) in FY2023.

No.	Guide No.	Inspection guide name	JAEA Oarai Research and Deveiopment Institute			JAEA Nuclear Fuel Cycle Engineering Laboratories		【Decommissioning】		
			Oarai Research and Development Institute,JAEA (north)	Oarai Research and Development Institute,JAEA (south)	Specified Radioactive Waste Interim Storage Facility)	【Decommissioning】 Tokai Reprocessing Facility	Nuclear Fuel Cycle Engineering Laboratories	University Tokyo Nuclear Reactor"Yayoi" (no nuclear fuel materials in the core)	MHI Nuclear Development Corporation	Nippon Nuclear Fuel Development (NFD)
1	BM0020	Oversight of operator's periodic inspection	/	/	3	5	/	1	/	/
2	BM1040	Heat sink performance	/	/	/	/	/	/	/	/
3	BM0060	Maintenance effectiveness assessments	1	1	1	5	1	1	1	1
4	BM0100	Design control	1	1	1	4	1	-	1	1
5	BM0110	Work control	1	1	1	6	1	-	1	1
6	BO0010	Surveillance testing	1	1	1	8	1	1	1	1
7	BO1020	System configuration of equipment	/	/	/	/	/	/	/	/
8	BO1030	Reactor start-up and shutdown	/	/	/	/	/	/	/	/
9	BO1040	Operability determinations and functionality	/	/	/	/	/	/	/	/
10	BO0060	Nuclear fuel control (Transportation and storage)	1	1	/	1	1	-	1	1
11	BO1070	Capability of operating personnel	/	/	/	/	/	/	/	/
12	BO2010	Operation management	2	2	3	5	2	/	2	2
13	BO2020	Critical safety management	1	1	1	5	1	/	1	1
14	BO2030	Experiment	/	/	/	/	/	/	/	/
15	BE0010	Protection against natural disaster	1	1	1	4	1	/	1	1
16	BE0020	Fire protection	1	1	1	7	1	1	1	1
17	BE0030	Internal flood protection	1	1	1	2	1	/	1	1
18	BE0040	Maintaining of emergency response organization	1	1	1	1	1	/	1	1
19	BE0050	Emergency preparedness and maintenance	1	1	1	1	1	/	1	1
20	BE0060	Maintaining personal capacity to respond to severe accidents, etc.	/	/	/	3	/	/	/	/
21	BE0090	Seismic protection	1	1	1	4	1	/	1	1
22	BE0100	Tsunami protection	/	/	/	4	-	/	/	/
23	BR0010	Radiation exposure control	2	2	2	6	2	2	2	2
24	BR0070	Radioactive solid waste management	1	1	1	3	1	1	1	1
25	BQ0010	Operation of Quality Management System (Routine)	1	1	1	1	1	1	1	1
26		Operation of Quality Management System (Semiannual)	1	1	1	2	1	1	1	1
27	BQ0040	Performance Indicator Verification	1	1	1	1	1	1	1	1
28	BQ0050	Initial response to occurrence of an event	-	-	-	-	-	-	-	-
		Total	20	20	23	78	20	10	20	20

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(Note 4) There is no schedule for operation of Experimental Fast Reactor Facility (Joyo) in FY2023.

No.	Guide No.	Inspection guide name	Tokai Safeguards Center	Toshiba Nuclear Engineering Laboratory	【Decommissioning】					Global Nuclear Fuel-Japan
					Toshiba Nuclear Critical Assembly (NCA)	Toshiba (TTR-1) (no nuclear fuel materials in the plants,etc.)	Atomic Energy Research Laboratory,Tokyo City University (no nuclear fuel materials in the plants,etc.)	Hitachi Training Reactor at Ozenji Center (HTR) (no nuclear fuel materials in the plants,etc.)	Institute for Atomic Energy,Rikkyo University (no nuclear fuel materials in the plants,etc.)	
1	BM0020	Oversight of operator's periodic inspection			3	1	1	1	2	6
2	BM1040	Heat sink performance								
3	BM0060	Maintenance effectiveness assessments	1	1	1	1	1	1	-	2
4	BM0100	Design control	1	-	1	-			-	-
5	BM0110	Work control	1	1	1	-	-	-		4
6	BO0010	Surveillance testing	1	1	-					4
7	BO1020	System configuration of equipment								
8	BO1030	Reactor start-up and shutdown								
9	BO1040	Operability determinations and functionality								
10	BO0060	Nuclear fuel control (Transportation and storage)		1	1					-
11	BO1070	Capability of operating personnel								
12	BO2010	Operation management	2	1						4
13	BO2020	Critical safety management	1	1						2
14	BO2030	Experiment								
15	BE0010	Protection against natural disaster	1	-	-	-				2
16	BE0020	Fire protection	1	1	1	1			1	4
17	BE0030	Internal flood protection	1	1	-					1
18	BE0040	Maintaining of emergency response organization	1	1	1					1
19	BE0050	Emergency preparedness and maintenance	1	1	1					1
20	BE0060	Maintaining personal capacity to respond to severe accidents, etc.								2
21	BE0090	Seismic protection	1	-	-	-				1
22	BE0100	Tsunami protection								
23	BR0010	Radiation exposure control	2	1	1	1	1	1	-	4
24	BR0070	Radioactive solid waste management	1	1	1	1	1	1	1	2
25	BQ0010	Operation of Quality Management System (Routine)	1	1	1	1	1	1	1	1
26		Operation of Quality Management System (Semiannual)	1	1	1	1	1	1		2
27	BQ0040	Performance Indicator Verification	1	1	1	1	1	1	1	1
28	BQ0050	Initial response to occurrence of an event	-	-	-	-	-	-	-	-
		Total	19	15	15	8	7	7	6	44

(Note 1) "-" in the table means that the inspection is conducted as necessary.

(Note 2) "/" in the table means that there is no inspection target.

(Note 3) The number of samples may be increased or decreased at the discretion of the head of the regulatory office or the head of the team, in coordination with the overseeing department in charge, according to the condition of the facility or the application from the operator concerning the statutory verification action.

(Note 4) There is no schedule for operation of Experimental Fast Reactor Facility (Joyo) in FY2023.

No.	Guide No.	Inspection guide name	【Decommissioning】		Kumatori Works,Nuclear Fuel Industries	Kyoto University		Atomic Energy Research Institute,Kindai University (UTR)	Ningyo-toge Environmental Engineering Center,JAEA	【Decommissioning】
			Prototype Advanced Thermal Reactor (Fugen) (no nuclear fuel materials in the core)	Prototype Fast Breeder Reactor (Mojyu) (Contains nuclear fuel materials in the core)		Kyoto University Critical Assembly (KUCA),Institute for Integrated Radiation and Nuclear Science	Institute for Integrated Radiation and Nuclear Science (KUR)			Ningyo-toge Environmental Engineering Center,JAEA (Contains nuclear fuel materials in the plants,etc.)
1	BM0020	Oversight of operator's periodic inspection	4	5	4	4	4	4		2
2	BM1040	Heat sink performance		1						
3	BM0060	Maintenance effectiveness assessments	2	2	3	2	3	1	1	
4	BM0100	Design control	1	1	-	-	1	-	-	-
5	BM0110	Work control	4	4	4	1	4	1	2	
6	BO0010	Surveillance testing	-	-	4	1	4	1	2	
7	BO1020	System configuration of equipment	1	1						
8	BO1030	Reactor start-up and shutdown								
9	BO1040	Operability determinations and functionality	1	1						
10	BO0060	Nuclear fuel control (Transportation and storage)	1	1	-	-	1	1	1	1
11	BO1070	Capability of operating personnel		1						
12	BO2010	Operation management			4	-	5	2	1	
13	BO2020	Critical safety management			2				1	
14	BO2030	Experiment				-	2	2		
15	BE0010	Protection against natural disaster	1	1	1	1	2	1	1	
16	BE0020	Fire protection	2	5	2	2	3	1	1	
17	BE0030	Internal flood protection	1	1	1	1	1	-	1	
18	BE0040	Maintaining of emergency response organization	1	1	1	1	1	1	1	
19	BE0050	Emergency preparedness and maintenance	1	1	1	1	1	1	1	
20	BE0060	Maintaining personal capacity to respond to severe accidents, etc.		2	2					
21	BE0090	Seismic protection	1	1	2	1	1	1	1	
22	BE0100	Tsunami protection		-						
23	BR0010	Radiation exposure control	4	3	4	2	4	2	1	
24	BR0070	Radioactive solid waste management	2	9	2	1	4	1	1	
25	BQ0010	Operation of Quality Management System (Routine)	1	1	1	1	1	1	1	
26		Operation of Quality Management System (Semiannual)	2	2	2	1	2	1	1	
27	BQ0040	Performance Indicator Verification	1	1	1	1	1	1	1	1
28	BQ0050	Initial response to occurrence of an event	-	-	-	-	-	-	-	-
		Total	31	45	41	21	45	23	19	21

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(Note 3) The number of samples may be increased or decreased at the discretion of the head of the regulatory office or the head of the team, in coordination with the overseeing department in charge, according to the condition of the facility or the application from the operator concerning the statutory verification action.

(Note 4) There is no schedule for operation of Experimental Fast Reactor Facility (Joyo) in FY2023.

(Team Inspection)

No.	Guide No.	Inspection guide name	FY2023				FY2024		Remark
			The 1st quarter	The 2nd quarter	The 3rd quarter	The 4th quarter	The 1st quarter	The 2nd quarter	
1	BM0010	Oversight of pre-service operator inspection	(Inspection is carried out according to the pre-service operator inspection plan.)						
2	BM1050	Oversight of in-service inspection	(Inspection is carries out according to the regular operator inspection plan.)						
3	BM0100	Design control		Sendai, JNFL Reprocessin	Ikata	Genkai		Takahama	
4	BO1050	Safety of replaced core	(Inspection is carried out according to the regular operator inspection plan.)						
5	BO1070	Capability of operating personnel	(Inspection is carried out according to the operator training plan.)						
6	BE0021	Fire protection (Triennial)		Sendai	Ikata	Genkai		Takahama	
7	BE0070	Evaluation of training for personnel to respond to severe accidents,etc.	(Inspection is carried out according to the operator training plan.)						
8	BE0080	Evaluation of scenario for drills for severe accidents,etc.	(Inspection is carried out according to the operator training plan.)						
9	BR0020	Radiation exposure evaluation and personal monitoring	JNFL Reprocessin, Tsuruga, Ikata, Onagawa	Tohoku Higashidori, Takahama, Ohi, Tomari	Hamaoka, Mihama, shika	Kashiwazaki-Kariwa	Tokai/Tokai Daini	Fukushima Daini, Genkai, JAEA Reprocessing	
10	BR0030	Radiation exposure ALARA activity	JNFL Reprocessin, Tsuruga, Ikata, Onagawa	Tohoku Higashidori, Takahama, Ohi, Tomari	Hamaoka, Mihama, shika	Kashiwazaki-Kariwa	Tokai/Tokai Daini	Fukushima Daini, Genkai, JAEA Reprocessing	
11	BR0040	Management and reduction of radioactive material in air	JNFL Reprocessin, Tsuruga, Ikata, Onagawa	Tohoku Higashidori, Takahama, Ohi, Tomari	Hamaoka, Mihama, shika	Kashiwazaki-Kariwa	Tokai/Tokai Daini	Fukushima Daini, Genkai, JAEA Reprocessing	
12	BR0050	Radioactive gas/liquid waste manegement	JNFL Reprocessin, Tsuruga	Tohoku Higashidori, Tomari	Hamaoka, Mihama, shika	Kashiwazaki-Kariwa, Sendai, Shimane	Ikata, Takahama	Fukushima Daini, Mihama, JAEA Reprocessing	
13	BR0080	Radiation environment monitoring program	JNFL Reprocessin, Tsuruga	Tohoku Higashidori, Tomari	Hamaoka, Mihama, shika	Kashiwazaki-Kariwa, Sendai, Shimane	Ikata, Takahama	Fukushima Daini, Mihama, JAEA Reprocessing	
14	BR0090	Radiation monitoring equipment	JNFL Reprocessin, Tsuruga	Tohoku Higashidori, Tomari	Hamaoka, Mihama, shika	Kashiwazaki-Kariwa, Sendai, Shimane	Ikata, Takahama	Fukushima Daini, Mihama, JAEA Reprocessing	
15	BQ0010	Operation of quality management system※	Ohi, (Ikata)	Sendai, Ikata, Takahama, (Onagawa), (Shimane)	Onagawa, Shimane, Tsuruga, Mihama	Genkai, JAEA Reprocessing	Ohi, Ikata	Sendai, Tomari	
16	Physical protection of nuclear material		JNFL Reprocessing, JNFL Waste, JNFL MOX, RFS, Onagawa, Tokai Daini, Mitsubishi Nuclear Fuel, JAEA Oarai, JAEA Reprocessing, JAEA Nuclear Science Research Institute, Tokai Office,Nuclear, Tokyo University, Kashiwazaki-Kariwa, Shika, Hamaoka, Mihama, Monjyu, Ningyo-toge, Shimane, Ikata, Genkai, Sendai	Tomari, Tohoku Higashidori, JNFL concentration and burial, Ohma, Rokkasho of NMCC, Fukushima Daini, Tokai Daini, JAEA Oarai, JAEA Nuclear Fuel Cycle Engineering Laboratories, JAEA Nuclear Science Research Institute, NDC, GNF-J, Toshiba, Kashiwazaki-Kariwa, Hamaoka, Tsuruga, Mihama, Takahama, Ohi, Monjyu, Fugen, Kindai University, Kumatori Office,NFI, Kyoto University, Mitsubishi Electric, Shimane, Genkai, Sendai	Tomari, Tohoku Higashidori, JNFL Reprocessing, JNFL Waste, JNFL MOX, JNFL concentration and burial, Ohma, RFS, Onagawa, Fukushima Daini, Tokai Daini, JAEA Oarai, JAEA Reprocessing, JAEA Nuclear Science Research Institute, NFD, Tokai of NMCC, GNF-J, Kashiwazaki-Kariwa, Shika, Hamaoka, Mihama, Takahama, Ohi, Fugen, Ningyo-toge, Shimane, Ikata, Genkai, Sendai	JAEA Oarai, JAEA Nuclear Fuel Cycle Engineering Laboratories, JAEA Nuclear Science Research Institute, Mitsubishi Nuclear Fuel, Tokai Office,Nuclear, Kashiwazaki-Kariwa, Tsuruga, Kumatori Office,NFI			

※ Among inspection items, “annual inspection” shall be implemented by team inspection.

(Facilities, etc. Not Subject to Article 41 of the Cabinet Order of the Reactor Regulation Act)

Site			Type of approval/notification			On-site inspection (usage survey) FY	Implementation period (scheduled)	Date of approval (nuclear fuel)/ notification (nuclear source material) Date
No.	Location	Name	Use	Storage	Disposal			
1	Hokkaido	Storage facility of nuclear fuel materials, Hokkaido University	—	○	○	FY2009	The first quarter	March 31, 1967
2	Hokkaido	Research and Development Department, Hokkaido Electric Power Co., Inc.	—	○	—	FY2009	The first quarter	February 25, 1998
3	Hokkaido	Tomari PS, Hokkaido Electric Power Co., Inc.	○	○	○	FY2006	The third quarter	April 5, 1988
4	Aomori	Environmental Radioactivity Monitoring Center, Japan Nuclear Fuel Ltd.	○	○	○	FY2001	The second quarter	October 17, 1994
5	Aomori	Higashidori NPS, Tohoku Electric Power Co., Inc.	○	○	○	FY2007	The second quarter	June 17, 2004
6	Miyagi	Onagawa NPS, Tohoku Electric Power Co., Inc.	○	○	○	FY2006	The third quarter	May 23, 1983
7	Fukushima	Fukushima Daini PS, TEPCO	○	○	○	FY2010	The third quarter	January 13, 1981
8	Ibaraki	Naka Institute for Fusion Science and Technology, National Institutes for Quantum Science and Technology	○	○	—	FY2013	The second quarter	December 5, 1989
9	Ibaraki	Tokai PS, The Japan Atomic Power Co.	—	—	○	FY2006	The second quarter	December 20, 1963
10	Ibaraki	Tokai Daini PS, The Japan Atomic Power Co.	○	○	○	FY2006	The second quarter	February 6, 1973
11	Ibaraki	Material Research and Development Department, The Technology Division, Furukawa Co., Ltd.	○	○	—	FY2013	The third quarter	October 15, 2008
12	Ibaraki	Tsukuba Plant, Furuuchi Chemical Co.	—	○	—	—	The fourth quarter	June 2, 2022
13	Gunma	R&D Center, Taiyo Yuden Co., Ltd.	—	○	—	FY2010	The first quarter	December 22, 2000
14	Saitama	Faculty of Science andEngineering, Toyo University	—	○	—	FY2013	The first quarter	April 21, 2006
15	Chiba	Ichihara Factory, JNC petro chemical Co., Ltd,	—	○	—	FY2011	The second quarter	August 2, 2005
16	Chiba	Abiko Operation and Service Center, Central Research Institute of Electric Power Industry	—	○	—	FY2013	The third quarter	October 5, 2005
17	Tokyo	Tokyo Factory, Fuji Electric Co., Ltd.	—	○	—	FY2010	The third quarter	September 1, 1971
18	Kanagawa	Atsugi Laboratories, Fujitsu	—	○	—	FY2013	The fourth quarter	October 26, 2005
19	Kanagawa	Tsurumi Research Center, Mitsubishi Chemical Corporation . (the name at the time of planning)	—	○	○	FY2013	The third quarter	April 26, 2006
20	Kanagawa	Fujisawa Plant, Kanto Aircraft Instrument Co., Ltd.	—	○	—	FY2013	The second quarter	March 29, 2013
21	Kanagawa	AGC Yokohama Technical Center, AGC Inc.	—	○	○	—	The first quarter	December 17, 2021
22	Niigata	Kashiwazaki-Kariwa NPS, TEPCO	○	○	○	FY2006	The first quarter	March 16, 1984
23	Fukui	Prototype Fast Breeder Reactor Monju, JAEA	○	○	○	FY2007	The second quarter	November 2, 1990
24	Fukui	Ohi PS, The Kansai Electric Power Co., Inc.	○	○	○	FY2007	The second quarter	August 12, 1976
25	Shizuoka	HamaokaNPS, Chubu Electric Power Co., Inc.	○	○	○	FY2006	The second quarter	May 29, 1973
26	Aichi	School of Engineering/Graduate School of Engineering, Nagoya University	○	○	○	FY2013	The third quarter	April 13, 1960
27	Aichi	Nagoya Institute of Technology	—	○	—	FY2013	The third quarter	March 6, 2002
28	Aichi	Kinuura Works, Production Division, NIPPON STEEL Stainless Steel Corporation	—	—	○	FY2013	The fourth quarter	December 22, 2005
29	Kyoto	Shofu Inc., Kyoto Headquarter Office,	—	○	—	—	The first quarter	August 18, 2021
30	Osaka	Graduate School of Engineering, Osaka University	○	○	○	FY2011	The second quarter	July 23, 1968

31	Osaka	Sugimoto District Office, Osaka Metropolitan University	—	○	○	FY2013	The third quarter	May 25, 2005
32	Osaka	Institute for Integrated Radiation and Nuclear Science, Kyoto University	○	○	○	—	The fourth quarter	August 23, 2022
33	Hyogo	Harima SR-RadioisotopeLaboratory, JAEA	○	○	—	—	The second quarter	September 27, 2022
34	Shimane	Shimane NPS, The Chugoku Electric Power Co., Inc.	○	○	○	FY2009	The first quarter	August 6, 1970
35	Ehime	Ikata PS, Shikoku Electric Power Co., Inc.	○	○	○	FY2006	The second quarter	Februa ry 4, 1976
36	Fukuoka	Iizuka Factory, Nippon Tungsten Co., Ltd. 【Nuclear fuel materials, nuclear source materials】	○	—	○	FY2012	The third quarter	July 29, 1973
37	Nagasaki	Faculty of Fisheries, Nagasaki University	—	○	—	FY2013	The fourth quarter	December 22, 2005

(4) Inspection Findings in FY2023 (up to the 3rd Quarter)

(Nuclear Facility Safety and Radiation Safety)

		Subject	Overview	Significance and Severity Levels
The 1st Quarter	1	Units 3 and 4 of Takahama PS: inadequate measures for fire separation of cables due to inappropriate design management	On January 26, 2023, at Units 3 and 4 of Takahama PS, when the nuclear inspectors confirmed the status of response to a preventative measure for "Mihama PS Unit 3: Inadequate fire protection measures related to the auxiliary feedwater function due to inadequacy of evaluation and construction in accordance with the approved construction plan" as the inspection findings at the first quarter of FY2022, it was found that measures for fire separation was not constructed for fire separation of cable.	Green SL IV
	2	Units 3 and 4 of Genkai NSP: inadequate measures for fire separation of cables due to inappropriate design management	On January 24, 2024, at Units 3 and 4 of Genkai NPS, when the nuclear inspectors confirmed the status of response to a preventative measure for "Mihama PS Unit 3: Inadequate fire protection measures related to the auxiliary feedwater function due to inadequacy of evaluation and construction in accordance with the approved construction plan" as the inspection findings at the first quarter of FY2022, it was found that measures for fire separation was not constructed for fire separation of cable.	Green SL IV
	3	Units 1 and 2 of Sendai NPS: inadequate measures for fire separation of cables due to inappropriate design management	On January 16, 2023, at Units 1 and 2 of Sendai NPS, when the nuclear inspector confirmed the status of response to a preventative measure for "Mihama PS Unit 3: Inadequate fire protection measures related to the auxiliary feedwater function due to inadequacy of evaluation and construction in accordance with the approved construction plan" as the inspection findings at the first quarter of FY2022, it was found that measures for fire separation was not constructed for fire separation of cable.	Green SL IV
	4	Units 3 and 4 of Ohi PS: inadequate measures for fire separation of cables due to inappropriate design management	On September 12, at Units 3 and 4 of Ohi PS, when the nuclear inspectors confirmed the status of response to a preventative measure for "Mihama PS Unit 3: Inadequate fire protection measures related to the auxiliary feedwater function due to inadequacy of evaluation and construction in accordance with the approved construction plan" as the inspection findings at the first quarter of FY2022, it was found that measures for fire separation was not constructed for fire separation of cable. Additionally, in the survey for preventative measures of the inspection finding by operators, it was found the control panels were not properly selected upon selecting the cables subject to fire protection and there are some control panels for which the measures for fire separation were not constructed.	Green SL IV

		Subject	Overview	Significance and Severity Levels
	5	Unit 3 of Mihama PS: inadequate measures for fire separation of cables due to inappropriate design management	On January 12, 2023, at Unit 3 of Mihama PS, when the nuclear inspectors confirmed the status of response to a corrective action for "Mihama PS Unit 3: Inadequate fire protection measures related to the auxiliary feedwater function due to inadequacy of evaluation and construction in accordance with the approved construction plan" as the inspection findings at the first quarter of FY2022, it was found that measures for fire separation were not constructed for fire separation of cable.	Green SL IV
The 1st Quarter	6	Unit 3 of Mihama PS: incompletion of the fire impact evaluation for oil leakage from charging/safety injection pump due to incorrect setting of evaluation condition.	On June 1, 2023, at Unit 3 of Mihama PS, when the nuclear inspectors confirmed the status of response to a corrective action for "Mihama PS Unit 3: Inadequate fire protection measures related to the auxiliary feedwater function due to inadequacy of evaluation and construction in accordance with the approved construction plan" as the inspection findings at the 1st quarter of FY2022, it was found that the evaluation for the impact for oil collecting pan of a charging/safety injection pump was inappropriate.	Green SL IV
	7	Unit 3 of Takahama PS: leakage at heat transfer pipe of cooler due to failure to manage continuous operation periods of component cooling water system	On March 15, 2023, the operator determined the deviation from limit conditions for operation due to the isolation of the C-cooler in the component cooling water system at Unit 3 of Takahama PS. That's because the operator found the possibility of cooling water leaking. According to the results of the inspection by the operator, it was found that the continuous operation periods were 8 months due to inadequate management, although the said continuous operation periods should have been approximately six month.	Green SL IV
The 2nd Quarter	8	Units 1, 3 and 4 of Takahama PS: Failure to refueling to the Facility for Severe Accident Management etc. in the on-site sequence training due to selection of personnel without capabilities to respond to severe accidents etc.	On June 14, 2023, in the on-site sequence training for response to the severe accidents etc. implemented at Unit 1 of Takahama PS of Kansai Electric Power Co., Inc., when the nuclear inspectors confirmed the procedures for refueling to water supply vehicle by using a tank lorry, it was found that 2 persons for emergency safety measures of Unit 1, 3 and 4 did not implemented simulated operation to feed to fuel filler of water supply pump. When the nuclear inspectors asked the 2 persons about the position of fuel filler of water supply pump as refueling destination, neither of them knew the said position. The operator had assigned the 2 persons as the personnel by assessing that they had competence at least for 2 years.	Green SL IV

		Subject	Overview	Significance and Severity Levels
	9	Units 3 and 4 of Genkai NPS: Improper installation of fire detectors in the rooms for motor-driven auxiliary feedwater pump and other rooms	In response to improper installation of fire detectors at Unit 3 of Ikata NPS, when the inspection on the fire detectors installed at Units 3 and 4 of Genkai NPS was implemented, on August 10, 2023, it was found that 244 fire detectors out of approximately 4850 ones in total in the fire section where critical equipment of the nuclear facility for safety was installed did not satisfy "the design of the fire detectors shall be the one to be installed in the fire zones and sections as a basis that the fire detectors shall detect the fires at an early stage by combining different kinds of fire detectors [partially omitted] based on installation requirements of Fire Service Act" specified in 5.1.2 (1)b.(a)"the written explanation on fire protection of nuclear power reactor facilities (attached document 7 to application for permission for construction plan of Units 3 and 4 of Genkai NPS").	Green SL IV
The 2nd Quarter	10	Units 3 and 4 of Genkai NPS: inadequate measures for fire separation of equipment due to wrong evaluation for the fire impacts upon selecting the equipment subject to fire protection to take measures for fire separation	On January 24, at Units 3 and 4 of Genkai NPS, when the nuclear inspectors confirmed the status of response to a preventative measure for "Mihama PS Unit 3: Inadequate fire protection measures related to the auxiliary feedwater function due to inadequacy of evaluation and construction in accordance with the approved construction plan" as the inspection findings at the first quarter of FY2022, it was found that some equipment for fire protection measures was not selected due to wrong evaluation for the fire impact upon selecting the equipment subject to fire protection to take measures for fire separation and measures required for fire separation were not taken for the equipment subject to fire protection.	Green SL IV
	11	Units 1 and 2 of Sendai NPS: inadequate measures for fire separation of equipment due to wrong evaluation for the impacts by the fire upon selecting the equipment subject to fire protection to take measures for fire separation	On January 16, 2023, at Units 1 and 2 of Sendai NPS, when the nuclear inspectors confirmed the status of response to a preventative measure for "Mihama PS Unit 3: Inadequate fire protection measures related to the auxiliary feedwater function due to inadequacy of evaluation and construction in according with the approved construction plan" as the inspection findings at the first quarter of FY2022, it was found that some equipment for fire protection measures was not selected due to wrong evaluation for the fire impact upon selecting the equipment subject to fire protection to take measures for fire separation and measures required for fire separation were not taken for the equipment subject to fire protection.	Green SL IV
	12	KumatoriWorks of Nuclear Fuel Industries: a large amount of accumulated uranium powder in the exhaust duct upon renovation construction of duct	On June 6, 2023, at KumatoriWorks of Nuclear Fuel Industries under construction to respond to new regulatory requirements, the nuclear inspector confirmed on the record that approximately 100kg of accumulated uranium powder had been collected while renovation construction of 2-2 mixing room duct in the routine inspection. Additionally, when the nuclear operator confirmed the structure nearby, it was found that powder input device and others were installed	No additional action SL IV

		Subject	Overview	Significance and Severity Levels
			in the hood box and the hood box was evacuated through the exhaust duct in order to maintain the negative pressure thereof. Due to the above-mentioned structure, it became clear that it has the structure where uranium power floating within the hood box was gradually sucked and accumulated into the said duct when being input into powder input device. Although the said company grasped the situation, it had not conducted inspection approximately 26 years since its installation, having resulted in 170kg of accumulated uranium powder.	
The 3rd quarter	13	Unit 3 of Mihama PS: Improper installation of fire detectors at boric acid tank room due to inadequate corrective action	While the operator conducted improvement actions for the inspection findings of the 3rd quarter of FY2021 "Improper installation of smoke detectors in the containment vessel penetration area" in response to the observation in the pre-service inspection "improper installation of fire detectors" of Unit 1 of Takahama PS in May of 2023, it was found that there were 135 fire detectors that did not satisfy the requirement of "the written explanation on fire protection of nuclear power reactor facilities (attached document 7 to application for permission for construction plan of Units 3 of Mihama PS)" when inspection for installation of fire detector was conducted again.	Green SL IV
	14	Unit 2 of Sendai NPS: Installation of temporary scaffold interfering with countermeasures against severe accidents etc.	On September 21, 2023, during the walkdown inspection around the sea water pump area, the nuclear inspector found that a temporary scaffold was installed around and immediately above the upper lid etc. of a seawater strainer as the material and equipment for measures for severe accidents etc. and interfered with replacement work of the upper lid etc. of a seawater strainer at the time of taking measures for severe accidents etc.	Green SL IV

(Physical Protection of Nuclear Material)

		Subject	Overview	Significance and Severity Levels
The 1st Quarter	15	Case of physical protection of nuclear material at Ikata NPS of Shikoku Electric Power Co., Inc. (management of in and out of zones)	Necessary measures, such as inspection of goods, were not taken at entrances and exits of the protected areas	Green SL IV
The 2nd Quater	16	Case of physical protection of nuclear material at Kashiwazaki-Kariwa of TEPCO (physical protection)	The lighting system for monitoring of the door of the boundary of the protected areas did not operate temporarily.	Green SL IV

The 3rd Quarter	17	Case of physical protection of nuclear material at Kashiwazaki-Kariwa of TEPCO (approval of entry)	Having allowed a person who gives a positive reaction to temporarily enter into the protected areas due to an erroneous judgement of results of drug check at any time for checking trustworthiness of individuals.	Green SL IV

(Evaluation of Severity Level Only)

		Subject	Severity Level
The 1st Quarter	1	Unit 3 of Genkai NPS: Excess of implementation periods of regular inspection by operators for cooling system units of B safety auxiliary machine room managed by improper inspection roadmap and an erroneous report to NRA.	SL IV

(5) Inspection Findings in the 4th Quarter of FY2023 (Inspection Findings Reported at NRA during FY2023)

(Nuclear Facility Safety and Radiation Safety)

		Subject	Overview	Significance and Severity Levels
The 4th Quarter	1	Unit 3 of Ikata PS: inadequate measures for fire separation of cables due to inappropriate design management and improper response to nuclear regulatory inspection	From October 23 to 26 and November 27 to December 1 of 2023, at Unit 3 of Ikata PS, when the nuclear inspectors conducted on-sire walkdown, it was found that there are some positions for which the measures for fire separation were not constructed to the conduit to store the cables subject to fire protection and successful paths have not been secured to shut down the nuclear reactor manually. Additionally, in the nuclear regulatory inspection implemented in January of 2023, it was found that Shikoku Electric Power Co., Inc. prepared an erroneous record to explain conformity which was different from the facts and presented it to the nuclear inspectors and failed to provide accurate information for the nuclear inspectors without conducting detailed examination even after the similar inspection findings concerning the measures for fire protection at other nuclear power plants were indicated.	Green SL IV (with notification)

4. Status of Application and Approval/Permission for Review of Nuclear Fuel Cycle Facilities, etc.

(April 1, 2023 to March 31, 2024)

Applicant	Facility	Application Date	Review Meeting (times)	On-site Investigation (times)	Date of Permission or Approval
Japan Nuclear Fuel Ltd.	Reprocessing plant	Change in operation (the standard response spectrum) January 12, 2022 Design and construction plan December 26, 2022※1 Change in design and construction plan December 26, 2022※2 December 26, 2022※3 December 26, 2022※4	9	–	Permission of change in operation October 27, 2023
	MOX fuel fabrication plant	Change in operation (the standard response spectrum) January 12, 2022 Design and construction plan (The 1st/3 times in total) February 28, 2023 Change in design and construction plan (The 2nd/4 time in total) February 28, 2023	7	–	Permission of change in operation October 27, 2023
	Uranium enrichment plant	Change in operational safety program (Change in regulations concerning SA material and equipment etc.) August 9, 2023	1	1	Approval of change in operational safety program September 20, 2023
	Vitrified waste storage center	Change in operation (the standard response spectrum) January 12, 2022 Design and construction plan December 26, 2022	9	–	Permission of change in operation October 27, 2023
	Waste disposal facility	Change in operational safety program (new establishment of scaling factor concerning radioactive concentration etc.) June 26, 2023 (Change in management of radioactivity amount of 6 group of No.1 Disposal Facility) June 26, 2023	2	–	Approval of change in operational safety program November 17, 2023 November 17, 2023
Recyclable-Fuel Storage Co.	Spent fuel storage facility	Change in operation (additional acceptance of cask that received type certification) September 21, 2023 Change in design and	3	–	Permission of change in operation February 21, 2024

		construction plan (the standard response spectrum) March 28, 2023 Change in operational safety program December 21, 2022			Approval of change in design and construction plan June 22, 2023 Approval of change in operational safety program August 28, 2023
Mitsubishi Nuclear Fuel Co., Ltd.	Uranium fuel fabrication facility	Change in operational safety program (change in organizational reform etc.) January 22, 2024	1	–	Approval of change in operational safety program February 28, 2024
Japan Atomic Energy Agency	Waste disposal facility	Change in operation April 28, 2022 Design and construction plan (The 5th /5 times in total) April 28, 2022 Change in operational safety program March 14, 2014	3	–	Approval of design and construction May 2, 2023
	HTTR (High Temperature Engineering Test Reactor)	Change in basic design (the standard response spectrum) November 15, 2021 Design and construction plan (Update of rotation controller for primary helium gas circulator) October 31, 2023	1	–	Approval of change in basic design November 28, 2023
	Radioactive waste treatment facility of Nuclear Science Research Institute	Design and construction plan (suspension of use of asphalt solidification device etc.) November 17, 2022 (The 9th/9 times in total) March 24, 2023 Change in operational safety program (change due to suspension of use of asphalt solidification device etc.) December 12, 2023	5	–	Approval of design and construction plan May 1, 2023
	Waste disposal facility of Nuclear Science Research Institute	Change in operational safety program (change due to review of designated person for commissioners etc. of the Committee on Examination of Reactor Safety of Nuclear Reactor Facilities etc.) December 12, 2023	1	–	
	STACY (Static Experiment Critical Facility)	Design and construction plan (new establishment of insert pipes etc. of loaded package for experiment) November 8, 2022 (change in description of measuring range of nuclear instrumentation equipment) May 31, 2023 Change in design and construction plan (change in the number of fuel assembly etc.) November 2, 2023	4	–	Approval of design and construction plan January 26, 2024 November 20, 2023 March 11, 2024 Approval of change in operational safety program

		Change in operational safety program (addition of policy for Long-Term Facility Management) April 28, 2023			August 22, 2023
	Experimental Fast Reactor Facility	Change in basic design March 30, 2017 (addition of purpose of use and experimental device for RI production) February 7, 2024 Design and construction plan (The 1st/2 times in total) July 27, 2023 (partial remodel of primary argon gas system piping) November 22, 2023 Change in operational safety program March 30, 2017	5	–	Approval of change in basic design July 26, 2023 Design and construction plan January 19, 2024
	FCA (Fast Critical Assembly)	Change in basic design (Change in method for disposal of spent fuel) March 4, 2024	–	–	–
Nuclear Fuel Industries, Ltd.	Uranium fuel fabrication facility (Tokai Works)	–	–	–	–
	Uranium fuel fabrication facility (Kumatori Works)	Change in operational safety program February 15, 2023	2	–	Approval of change in operational safety program June 19, 2023
Global Nuclear Fuel Japan Co., Ltd.	Uranium fuel fabrication facility	Design and construction plan (The 4th/7 times in total) June 27, 2023	1	–	Approval of design and construction plan December 22, 2023
Kyoto University	KUR (Kyoto University Research Reactor)	Change in basic design (the standard response spectrum) December 14, 2021 Change in operational safety program (addition of policy for Long-Term Facility Management) August 8, 2023 (addition of quantitative restrictions of fuel elements of KUCA low enriched uranium etc.) December 8, 2023	2	–	Approval of change in basic design June 22, 2023 Approval of operational safety program November 28, 2023
	KUCA (Kyoto University Critical Assembly)	Design and construction plan (manufacturing fuel for light water reactor core) April 28, 2022 (manufacturing fuel for solid reactor core) May 23, 2022 (upgrading of fuel storage	4	–	Approval of design and construction plan August 1, 2023 August 1, 2023

		shelves and manufacturing thorium storage shed) November 29, 2023 Change in safety operational program (addition of policy for Long-Term Facility Management) August 8, 2023 (addition of quantitative restrictions of fuel elements of KUCA low enriched uranium etc.) December 8, 2023			Approval of operational safety program November 28, 2023
Kindai University	Nuclear reactor of Kindai University	Design and construction plan (partial amendment to measurement control system facilities) July 26, 2023	–	–	–
Japan Atomic Power Company	Tokai storage facility for low level waste	Permission of operation July 16, 2015	1	–	–
Mitsubishi Heavy Industries, Ltd.		Change in type designation of type design specific containers (2 cases) April 3, 2023	2	–	Approval of change in type designation September 1, 2023

・Excluding the facilities whose decommissioning plan was approved and the ones for which their operators publicized their decommission.
・There is no facility that received designation or approval of operation of refining facility or Category 1 waste disposal facility as of March 31, 2024.
・The numbers of review meetings and on-site investigations represent the number held in FY2023.
・Several applications may be reviewed at one session of the review meeting.
・The number of on-site investigations implemented by the Commissioners of the NRA is written, and those implemented only by the staff of the NRA Secretariat are excluded.

※1The application for design and construction plan based on the enforcement of the new regulatory requirements. This is under the current status of the in-service phase when it is after the design and construction plan has been approved prior to the enforcement of the new regulatory requirements.

※2The application for change in design and construction plan based on the enforcement of the new regulatory requirements. This is under the current status of the inspection phase, when it is after design and construction plan have been approved prior to the enforcement of the new regulatory requirements (*except for facilities related to the safety cooling water; B cooling tower, utility building No. 2, and construction to separate the offshore discharge pipes).

※3The application for change in design and construction plan based on the enforcement of the new regulatory requirements. This is under the current status of the inspection phase, when it is after the design and construction plan has been approved prior to the enforcement of the new regulatory requirements (facilities related to the utility building No. 2).

※4The application for change in design and construction plan based on the enforcement of the new regulatory requirements. This is under the current status of the inspection phase, when it is after the design and construction plan has been approved prior to the enforcement of the new regulatory requirements (construction to separate the offshore discharge pipes).

5. Numbers of Reviews and Checks of Nuclear Facilities

(April 1, 2023 – March 31, 2024)

(1) Status of Reviews and Checks of Commercial Power Reactor

Type of Facility		No. of Cases
Commercial Power Reactor (60 plants) (Under decommissioning procedures: 18 plants) (Specified nuclear facility: 6 plants)	Permission of change in basic design	6
	Notification of change in basic design	22
	Approval of design and construction plan	39
	Approval of change in design and construction plan	19
	Notification of design and construction plan	4
	Notification of minor change in design and construction plan	1
	Extension of review period concerning the notification of design and construction plan	0
	Pass in pre-service inspection	11
	Approval of operational safety program or approval of their change	26
	Pre-service check	27
	Notification of evaluation, etc. for safety improvement	6
	Approval of extension of the operation period	2
	Approval of Long-Term Facility Management Plan	0
	Approval of change in decommissioning plan	4
	Notification of minor change in decommissioning plan	3
	Check of method and implementation system for determining assignment of responsible facility operator	10
	Approval of trial use of reactor	3
	Approval of partial use	7
	Instruction of omission of pre-service inspection	0
	Approval of type certification or change of specific dual-use casks	5
	Approval of designation or change of type of specific dual-use casks	1
Commercial power reactors in the research and development phase (Under decommissioning procedures: 2 facilities)	Permission of change in basic design	1
	Notification of change in basic design	0
	Approval of operational safety program or approval of their change	0
	Approval of change in decommissioning plan	0
	Notification of minor change in decommissioning plan	2

(2) Status of Reviews and Checks of Nuclear Fuel Cycle Facilities, etc

Type of Facility		No. of Cases
Processing facility (7 facilities) (Under construction: 1 facility) (Under decommissioning procedures: 1 facility)	Permission of change in operation	1
	Approval of design and construction plan or approval of their change	1
	Pass in pre-service inspection	2
	Issuance of pre-use confirmation certificate	2
	Permission of partial use	0
	Approval of change in operational safety program	4
	Approval of decommissioning plan	0
Research reactorfacility (22 facilities) (Under decommissioning procedures: 14 facilities)	Permission of change in operation (approval)	3
	Permission (approval) of design and construction plan or permission (approval) of their change	7
	Pass in pre-service inspection	1
	Issuance of pre-use confirmation certificate	4
	Permission of partial use	0
	Permission (approval) of operational safety program or permission (approval) of their change	2
	Approval of decommissioning plan	0
	Approval of change in decommissioning plan	0
Spent Fuel Storage Facilities (1 facility) (Under construction: 1 facility)	Permission of change in operation	1
	Approval of design and construction plan or approval of their change	1
	Approval of change in operational safety program	1
	Approval of type certification or change	0
	Approval of type designation or change	2
Reprocessing plant (2 plants) (Under construction: 1 plant)	Permission of change in operation	1
	Approval of design and construction plan or approval of their change	0
	Pass in pre-service inspection	0
	Approval of change in decommissioning plan	1
	Approval of change in operational safety program	1
Category 2 waste disposal facility (2 facilities)	Permission of change in operation	0
	Confirmation of waste disposal facilities	0
	Confirmation of waste package	31
	Approval of change in operational safety program	2
Waste management facility (2 facilities)	Permission of change in operation	2
	Approval of design and construction plan or approval of their change	0
	Approval of change in operational safety program	0
Nuclear material utilization facility(10 facilities)	Approval of change in use	6
	Pass in facility inspection	0
	Issuance of pre-use confirmation certificate	12
	Approval of operational safety program or approval of their change	6
	Approval of decommissioning plan	0
	Confirmation of completion with decommissioning measures	3
Off-site disposal and transportation of nuclear fuel material, etc.	Confirmation of off-site disposal	0
	Approval of nuclear fuel deliveries' design	6
	Approval of transportation containers	5
	Renewal of period to approve design	0
	Renewal of period to approve containers	0
	Confirmation of off-site transportation	15
	Confirmation of radioactive concentration	2

· There is no facility that received designation or approval of the business of refining facility or Category 1 waste disposal facility as of March 31, 2024.

6. Status of Application and Approval of Operation Period Extension

Applicant	Targeted Power Reactor	Date of Application	Date of Approval	Date at which 40 Years Have Elapsed after Operation Started
Kansai Electric Power Co., Inc.	Takahama PS Unit 1	April 30, 2015	June 20, 2016	November 13, 2014
	Takahama PS Unit 2	April 30, 2015	June 20, 2016	November 13, 2015
	Takahama PS Unit 3	April 25, 2023	—	January 16, 2025
	Takahama PS Unit 4	April 25, 2023	—	June 4, 2025
	Mihama PS Unit 3	November 26, 2015	November 16, 2016	November 30, 2016
Japan Atomic Power Company	Tokai Daini PS	November 24, 2017	November 7, 2018	November 27, 2018
Kyushu Electric Power Company, Inc.	Sendai NPS Unit 1	October 12, 2022	November 1, 2023	July 3, 2024
	Sendai NPS Unit 2	October 12, 2022	November 1, 2023	November 27, 2025

7. Status of Application and Approval of Change in Operational Safety Program concerning Aging Management

7-1. Plants Which Are Evaluated on Assumption That They Will Be Operated

Applicant	Targeted Power Reactor	Date of Application	Date of Approval	Date at which 30 Years, 40 Years or 50 Years Elapse after Operation Started
Kansai Electric Power Co., Inc.	Takahama PS Unit 3 (30 years)	January 15, 2014	November 18, 2015	January 16, 2015
	Takahama PS Unit 4 (30 years)	June 3, 2014	November 18, 2015	June 4, 2015
	Takahama PS Unit 1 (40 years)	April 30, 2015	June 20, 2016	November 13, 2014※1
	Takahama PS Unit 2 (40 years)	April 30, 2015	June 20, 2016	November 13, 2015※1
	Takahama PS Unit 3 (40 years)	April 25, 2023	–	January 16, 2025
	Takahama PS Unit 4 (40 years)	April 25, 2023	–	June 4, 2025
	Takahama PS Unit 1 (50 years)	November 2, 2023	–	November 13, 2024
	Mihama PS Unit 3 (40 years)	November 16, 2015	November 16, 2016	November 30, 2016
	Ohi PS Unit 3 (30 years)	December 2, 2020	November 24, 2021	December 17, 2021
	Ohi PS Unit 4 (30 years)	December 3, 2021	August 24, 2022	February 1, 2023
Chugoku Electric Power Co., Inc.	Shimane NPS Unit 2 (30 years)	February 7, 2018	–	February 9, 2019
Shikoku Electric Power Co., Inc.	Ikata PS Unit 3 (30 years)	November 1, 2023	–	December 14, 2024
Kyushu Electric Power Company, Inc.	Genkai NPS Unit 3 (30 years)	March 13, 2023	March 13, 2024	March 17, 2024
	Sendai NPS Unit 1 (30 years)	December 18, 2013	August 5, 2015	July 3, 2014
	Sendai NPS Unit 2 (30 years)	November 21, 2014	November 18, 2015	November 17, 2015
	Sendai NPS Unit 1 (40 years	October 12, 2022	November 1, 2023	July 3, 2024
	Sendai NPS Unit 2 (40 years	October 12, 2022	November 1, 2023	November 27, 2025
Japan Atomic Power Company	Tokai Daini PS (40 years)	November 24, 2017	November 7, 2018	November 27, 2018

*1: The change of the long-term maintenance management policy due to the review of technical assessment concerning the aging degradation of reactor facilities.

7-2. Plants Which are Evaluated on Assumption That Cooling Shutdown Condition Will Be Maintained

Applicant	Targeted Power Reactor	Date of Application	Date of Approval	Date at Which 30 Years or 40 Years Elapse after Operation Started
Hokkaido Electric Power Co., Inc.	Tomari PS Unit 1 (30 years)	June 18, 2018	May 27, 2019	June 21, 2019
	Tomari PS Unit 2 (30 years)	May 19, 2020	December 8, 2020	April 11, 2021
Tohoku Electric Power Co., Inc	Onagawa NPS Unit 1 (30 years)	November 6, 2013	May 21, 2014	May 31, 2014
Tokyo Electric Power Company Holdings, Inc	Fukushima Daini NPS Unit 2 (30 years)	July 31, 2013	January 22, 2014	February 2, 2014
	Fukushima Daini NPS Unit 2 (30 years)	October 31, 2018	January 30, 2019	― ※1
	Fukushima Daini NPS Unit 3 (30 years)	June 20, 2014	June 10, 2015	June 20, 2015
	Fukushima Daini NPS Unit 4 (30 years)	August 23, 2016	August 16, 2017	August 24, 2017
	Kashiwazaki-Kariwa NPS Unit 1 (30 years)	September 16, 2014	September 14, 2015	September 17, 2015
	Kashiwazaki-Kariwa NPS Unit 2 (30 years)	September 26, 2019	August 28, 2020	September 27, 2020
	Kashiwazaki-Kariwa NPS Unit 3 (30 years)	August 9, 2022	August 1, 2023	August 10, 2023
	Kashiwazaki-Kariwa NPS Unit 4 (30 years)	August 8, 2023	December 20, 2023	August 10, 2024
	Kashiwazaki-Kariwa NPS Unit 5 (30 years)	April 5, 2019	February 27, 2020	April 9, 2020
Chubu Electric Power Co., Inc.	Hamaoka NPS Unit 3 (30 years)	August 25, 2016	August 16, 2017	August 27, 2017
	Hamaoka NPS Unit 4 (30 years)	July 29, 2022	August 28, 2023	September 2, 2023
Hokuriku Electric Power Company	Shika NPS Unit 1 (30 years)	July 25, 2022	July 24, 2023	July 29, 2023
Kansai Electric Power Co., Inc	Takahama PS Unit 1 (40 years)	November 12, 2013	November 12, 2014	November 13, 2014
	Takahama PS Unit 2 (40 years)	November 11, 2014	April 8, 2015	November 13, 2015
	Mihama PS Unit 1 (40 years)	September 19, 2015	November 17, 2015	― ※1
Chugoku Electric Power Co., Inc.	Shimane NPS Unit 1 (40 years)	September 27, 2013	February 26, 2014	March 28, 2014
Kyushu Electric Power Company, Inc.	Genkai NPS Unit 1 (40 years)	October 10, 2014	June 10, 2015	October 14, 2015
Japan Atomic Power Company	Tsuruga PS Unit 2 (30 years)	February 15, 2016	February 2, 2017	February 16, 2017

*1: The change of the long-term maintenance management policy due to the review of technical assessment concerning the aging degradation of reactor facilities.

8. Status of Application for Approval of Long-Term Facility Management Plan

Applicant	Targeted Power Reactor	Period	Date of Application	Date of Approval
Kansai Electric Power Co., Inc,	Ohi PS Unit 3 (30 years)	Over 30 years	December 21, 2023	—
	Ohi PS Unit 4 (30 years)	Over 30 years	December 21, 2023	—

9. Status of Application and Approval of Decommissioning Plan

Type of Facility	Applicant	Facility	Date of Application	Date of Approval
Commercial power reactors (Under decommissioning procedures: 18 facilities)	Japan Atomic Power Company	Tokai NPS	March 10, 2006	June 30, 2006
		Tsuruga PS Unit	February 12, 2016	April 19, 2017
	Tohoku Electric Power Co., Inc.	Onagawa NPS Unit 1	July 29, 2019	March 18, 2020
	Tokyo Electric Power Holdings, Inc.	Fukushima Daini NPS Units 1-4	May 29, 2020	April 28, 2021
	Chubu Electric Power Co., Inc.	Hamaoka NPS Units 1-2	June 1, 2009	November 18, 2009
	Kansai Electric Power Co., Inc.	Mihama PS Units 1-2	February 12, 2016	April 19, 2017
		Ohi PS Units 1-2	November 22, 2018	December 11, 2019
	Chugoku Electric Power Co., Inc.	Shimane NPS Unit 1	July 4, 2016	April 19, 2017
	Shikoku Electric Power Co., Inc.	Ikata PS Unit 1	December 26, 2016	June 28, 2017
		Ikata PS Unit 2	October 10, 2018	October 7, 2020
	Kyushu Electric Power Company, Inc.	Genkai NPS Unit 1	December 22, 2015	April 19, 2017
		Genkai NPS Unit 2	September 3, 2019	March 18, 2020
Processing facility (1 facility)	Japan Atomic Energy Agency	Ningyo-toge Environmental Engineering Center	September 28, 2018	January 20, 2021
Research reactor facility (Under decommissioning procedures: 14 facilities)	Japan Atomic Energy Agency	Nuclear Science Research Institute JRR-2	May 12, 2006	November 6, 2006
		Nuclear Science Research Institute JRR-4	December 25, 2015	June 7, 2017
		Transient Experiment Critical Facility (TRACY), Nuclear Science Research Institute	March 31, 2015	June 7, 2017
		Tank-type Critical Assembly (TCA), Nuclear Science Research Institute	April 26, 2019	March 17, 2021
		Fast Critical Assembly (FCA), Nuclear Science Research Institute	March 31, 2021	September 29, 2021
		Deuterium Critical Assembly (DCA), Oarai Research & Development Institute	May 12, 2006	October 20, 2006

Type of Facility	Applicant	Facility	Date of Application	Date of Approval
Research reactor facility (Under decommissioning procedures: 14 facilities)		Japan Material Testing Reactor (JMTR), Oarai Research & Development Institute	September 18, 2019	March 17, 2021
		First Nuclear Ship “Mutsu, ”Aomori Research and Development Center	March 31, 2006	October 20, 2006
	University of Tokyo	University of Tokyo Reactor (Yayoi), Nuclear Professional School, The Graduate School of Engineering, The University of Tokyo	June 29, 2012	August 24, 2012
	Rikkyo University	Rikkyo University Reactor, Institute for Atomic Energy, Rikkyo University	May 30, 2006	June 1, 2007
	Gotoh Educational Corporation	TCU Reactor, Atomic Energy Research Laboratory, Tokyo City University	May 30, 2006	June 5, 2007
	Hitachi Ozenji Center	Hitachi Training Reactor (HTR)	May 31, 2006	April 20, 2007
	Toshiba Nuclear Engineering Laboratory	Toshiba Nuclear Critical Assembly (NCA)	December 23, 2019	April 28, 2021
		Toshiba Training Reactor (TTR-1)	March 31, 2006	May 22, 2007
Commercial power reactors in the research and development phase (Under decommissioning procedures: 2 facilities)	Japan Atomic Energy Agency	Prototype Advanced Converter Reactor Fugen	November 7, 2006	February 12, 2008
		Prototype Fast Breeder Reactor Monju	December 6, 2017	March 28, 2018
Reprocessing facility	Japan Atomic Energy Agency	Reprocessing Facility, Nuclear Fuel Cycle Engineering Laboratories	June 30, 2017	June 13, 2018

Reference 4 Materials related to Promotion of Safety Research and Continuous Improvement of Regulatory Requirements (related to Section 3 in Chapter 2)

1. FY2023 Safety Research

No.	Research Area	Project Name	Period
1	External Events	Study on the advancement of seismic hazard assessment methods near the epicenter	FY2020-FY2023
2		Research on tsunami evaluation methods and source estimation of past tsunamis	FY2021-Y2024
3		Study on evaluating the activity of faults	FY2020-FY2023
4		Research on Investigation of a large-scale eruption process	FY2019-FY2023
5		Research on sophistication of fragility evaluation methods for facilities and equipment related to external events	FY2021-FY2024
6	Fire Protection	Research on impact assessment for fire protection (Phase 2)	FY2021-FY2024
7	Risk Assessment	Research on Level 1 PRA for Nuclear Regulatory Inspection	FY2022-FY2026
8	Severe Accident	Research on hydrogen behavior considering severe accident progression	FY2023-FY2026
9		Experiment concerning reduction of physical and chemical phenomena including large uncertainties under severe accident	FY2020-FY2025
10	Reactor Physics	Research on Optimal Evaluation Method and Uncertainty Evaluation Method in Nuclear Characteristic Analysis	FY2021-FY2024
11	Nuclear Fuel	Research on evaluation of fuel failure effects on core cool-ability during accidents	FY2019-FY2023
12	Materials and Structures	Research on evaluation and verification of ageing degradation using actual materials	FY2020-FY2024
13	Specified Nuclear Facility	Development of criticality evaluation methods for fuel debris of Fukushima Daiichi Nuclear Power Plant	FY2014-FY2024
14	Nuclear Fuel Cycle Facility	Research on the development of events such as major accidents in reprocessing facilities and MOX fuel fabrication facilities	FY2021-FY2025
15		Research on evaluation methods for the latest analytical methods in the field of transportation and storage of spent fuel	FY2020-FY2023
16	Radioactive waste disposal facilities	Research on long-term performance assessment for radioactive waste disposal	FY2021-FY2024
17	Decommissioning and Clearance	Research on quantitative evaluation techniques for activity concentration of radioactive waste	FY2021-FY2024
18	Nuclear Disaster Preparedness	Research on the revision of Emergency Action Levels (EAL) considering special facility for severe accident management	FY2021-FY2025
19	Radiation Protection	Research on improving the accuracy of dose and health risk assessment for radiation protection	FY2022-FY2026

2. Publication in Journals and List of Publication

No.	Category	Paper Titles, etc.
1	Publication in journals	Shiba, S., Iwahashi, D., Okawa, T., “Criticality Evaluation During Fuel Debris Particle Sedimentation Using Coupled DEM-MPS Code”, Nuclear Technology, Vol. 209, No. 8, pp. 1154-1163, 2023. doi:10.1080/00295450.2023.2191588
2		Shiba, S., Sakai, T., “Criticality evaluation considering nonuniformity effect using Monte Carlo perturbation method”, Journal of Nuclear Science and Technology, Vol. 60, No. 8, pp. 943-954, 2023. doi:10.1080/00223131.2022.2159895
3		Fujita, T., “A comparative study on k-infinity uncertainty due to cross-section covariance data in nuclear data libraries”, Journal of Nuclear Science and Technology, Vol. 60, No. 9, pp. 1143-1153, 2023. doi:10.1080/00223131.2023.2169380
4		Fujita, T., “Applicability of the kernel method for macroscopic cross section tabulation to planar MOC-based core transient analysis code”, Journal of Nuclear Science and Technology, 2023. doi:10.1080/00223131.2023.2252432
5		Hibiki, T., Tsukamoto, N., “Drift-flux model for upward dispersed two-phase flows in a vertical rod bundle”, Applied Thermal Engineering, Vol. 226, Issue 25, 120323, 2023. doi:10.1016/j.applthermaleng.2023.120323
6		Fujita, T., “Influence of manufacturing uncertainty treatment on neutronics uncertainty analysis for lattice physics parameters in PWR-UO_2 fuel assembly”, Journal of Nuclear Science and Technology, Vol. 60, No. 12, pp. 1526-1537, 2023. doi:10.1080/00223131.2023.2224332
7		Murota, K., Aoyagi, N., Mei, H., Saito, T., “Hydration states of europium(III) adsorbed on silicas with nano-sized pores”, Applied Geochemistry, Vol. 152, 105620, 2023. doi:10.1016/j.apgeochem.2023.105620
8		TERAGAKI Toshio, HIRANO Masashi, MORI Kenji, ”Evaluation of Seismic-Response-Correlation Effect on Seismic Risk by the Initiating Event Matrix Method”, Transactions of the Atomic Energy Society of Japan, Vol. 22, Issue 4, pp.140-155, 2023 doi:10.3327/taesj.J22.013
9		Yoshii, T., Sakai, H., Kawarabayashi, J., “Influence of conversion factors on the radioactivity evaluation of clearance objects consisting of several materials, Applied Radiation and Isotopes, Vol. 200, 110984, 2023. doi:10.1016/j.apradiso.2023.110984
10		Fujita, T., “Uncertainty analysis for fission product inventories based on covariance data of fission product yields in JENDL-4.0 and ENDF/B-VIII.0”, Journal of Nuclear Science and Technology, Vol. 61, No. 3, pp. 417-427, 2024. doi:10.1080/00223131.2023.2224331
11		Sonoda, H., Fujita, S., Inoue, M., Okawa, T., “Preliminary analysis focusing on in-vessel thermal hydraulics in loss-of-heat removal systems in a sodium-cooled fast reactor”, Annals of Nuclear Energy, Vol. 192, 109992, 2023. doi:10.1016/j.anucene.2023.109992
12		Matsu'ura, T., Komatsubara, J., Ikehara, M., “Improving tephrostratigraphy and cryptotephrostratigraphy since 1 Ma of Hole U1437B in the Izu-Bonin arc, NW Pacific: Differentiation of widespread tephras with similar shard chemistries”, Quaternary Science Reviews, Vol. 319, 108305, 2023. doi:10.1016/j.quascirev.2023.108305
13		NAKAMURA Hitoshi, ARAI Kensaku, KIKUCHI Masaaki, ”Limit conditions on local failure of nuclear containment steels (Notched round-bar tensile tests for base metals and weld joint materials”, Transaction of the JSME (in Japanese), Vol. 89, Issue 925, p. 23-00046, 2023 doi:10.1299/transjsme.23-00046
14		Hibiki, T., Tsukamoto, N., “Drift-flux model for upward dispersed two-phase

No.	Category	Paper Titles, etc.
	Publication in journals	flows in vertical medium-to-large round tubes", Progress in Nuclear Energy, Vol. 158, 104611, 2023. doi:10.1016/j.pnucene.2023.104611
15		NAKAMURA Hitoshi, ARAI Kensaku, KIKUCHI Masaaki, "Limit conditions on local failure of nuclear containment steels (Tensile tests for notched plate and notched thick plate specimens", Transaction of the JSME (in Japanese), Vol. 89, Issue 924, p. 23-00070, 2023 doi:10.1299/transjsme.23-00070
16		Murota, K., Takahashi, Y., Saito, T., "Adsorption of cesium and strontium on mesoporous silicas", Physical Chemistry Chemical Physics, Vol. 25, pp. 16135-16147, 2023. doi:10.1039/D3CP01442H
17		Matsu'ura, T., Komatsubara, J., "Ontake-Katamachi tephra: marine-terrestrial correlation of a time marker of marine isotopic stage 5b in NE Japan, the Japan Sea, and the NW Pacific", Journal of Asian Earth Sciences, Vol. 259, 105876, 2024. doi:10.1016/j.jseaes.2023.105876
18		Kikuchi, W., Hotta, A., Adachi, N., Ito, K., Yugo, H., "Analysis of ex-vessel debris bed formation of multi-material and multiphase composition based on coupled system of MELCOR2 and THERMOS–JBREAK/MSPREAD", Nuclear Engineering and Design, Vol. 414, 112569, 2023. doi:10.1016/j.nucengdes.2023.112569
19		AOKI Hiroomi, YAMADA Norikazu, KIJIMA Tatsuya, MAEDA Toshikatsu~~us~~, HIRANO Masashi, "Measures for Inadvertent Human Intrusion at Radioactive Waste Disposal Facility Based on Defence-in-Depth Approach", Transaction of the AESJ (in Japanese), Vol. 23, Issue 1, pp.18-32, 2024 doi:10.3327/taesj.J23.003
20		Kitano, K., Ozawa, M., "The effect of spacer grids on the stress applied to a post-LOCA cladding tube under horizontal vibrations", Journal of Nuclear Science and Tecgnology, Vol. 61, No. 4, pp. 498-508, 2023. doi:10.1080/00223131.2023.2243935
21		Wadayama, K., Kojo, R., Niisoe, T., "The effect of using Filtered Containment Venting System on variation in dose with distance in the prompt accident consequence assessment", Journal of Nuclear Science and Technology, 2024. doi:10.1080/00223131.2024.2313551
22		Motegi, K., Sibamoto, Y., Hibiki, T., Tsukamoto, N., Kaneko, J., "Opposing Mixed Convection Heat Transfer for Turbulent Single-Phase Flows", International Journal of Energy Research, Vol. 2024, 6029412, 2024. doi:10.1155/2024/6029412
23		Barati, H., Hibiki, T., Schlegel, J. P., Tsukamoto, N., "Two-group drift-flux model for dispersed gas-liquid flow in large-diamaeter pipes", International Journal of Heat and Mass Transfer, Vol. 218, 124766, 2024. doi:10.1016/j.ijheatmasstransfer.2023.124766
24		Yu, M., Hibiki, T., Tsukamoto, N., Miwa, S., "Flow characteristics of dispersed two-phase flows in an 8 × 8 rod bundle", Experimental Thermal and Fluid Science, Vol. 153, 111146, 2024. doi:10.1016/j.expthermflusci.2024.111146
1	Publication of papers at international conference	Shiba, S., Iwahashi, D., Okawa, T., Gunji, S., Izawa, K., Suyama, K., "PRELIMINARY EVALUATION OF SIMILARITY BETWEEN THE MODIFIED STACY CORE CONFIGURATIONS AND THE PSEUDO-FUEL DEBRIS MODELS", Proceedings of ICONE30, 2023. doi:10.1299/jsmeicone.2023.30.1097
2		Goto, K., Tsukamoto, N., "VALIDITY OF RELAP5 ANALYSIS OF VENT

No.	Category	Paper Titles, etc.
		GAS IN UNIT 1/2 SGTS PIPING DURING THE FUKUSHIMA DAIICHI NUCLEAR POWER PLANT ACCIDENT", Proceedings of ICONE30, 2023. doi:10.1299/jsmeicone.2023.30.1589
3		Azuma, K., Fujiwara, K., Kai, S., Otani, A., Furuya, O., "Uncertain factors in elastic-plastic finite element analysis for elbows and tees", Proceedings of the ASME Pressure Vessels & Piping Conference 2023, PVP2023-106166, 2023. doi:10.1115/PVP2023-106166
4		Bentaib, A., Bleyer, A., Studer, E., Kudriakov, S., Nishimura, T., Motegi, K., Dolganov, K.S., "OECD/NEA-ARC-F project: Unit1 and Unit3 Hydrogen explosion analysis -- Lessons learned and perspectives", 20th International Topical Meeting on Nuclear Reactor Thermal Hydraulics, 2023.
5		Shiba, S., Iwahashi, D., Okawa, T., Gunji, S., Izawa, K., Suyama, K., "PRELIMINARY ANALYSIS OF RANDOMIZED CONFIGURATION PATTERNS IN MODIFIED STACY CORE", The 12th International Conference on Nuclear Criticality Safety (ICNC2023), 2023.
6		Kawaguchi, M., Shiba, S., Iwahashi, D., Okawa, T., Gunji, S., Izawa, K., Suyama, K., "PRELIMINARY ANALYSES OF MODIFIED STACY CORE CONFIGURATION USING SERPENT WITH JENDL-5", The 12th International Conference on Nuclear Criticality Safety (ICNC2023), 2023.
7		ASAHINA Daisuke, ICHIKI Takahiko, AOJI Yu, TAKEMURA Takato, IRIE Masaaki, "STUDY OF TENSILE BEHAVIOR OF ROCKS USING A DIRECT TENSILE TEST APPARATUS", Proceedings of the 50th JSCE Symposium on Rock Mechanics, pp. 153-157, 2024
8		ICHIKI Takahiko, ASAHINA Daisuke, HIGASHIHARA Tomohiro, IRIE Masaaki, "STUDY OF TENSILE PROPERTIES IN THE EVALUATION OF EXCAVATION" DISTURBED ZONE", Proceedings of the 50th JSCE Symposium on Rock Mechanics, pp. 158-162, 2024
9		OTA Yoshimi, MATSUZAWA Ryo, "A STUDY ON THEORETICAL PENETRARTION EVALUATION OF OGIVE-NOSE PROJECTILES INTO ROCK MATERUALS", Proceedings of the 50th JSCE Symposium on Rock Mechanics, pp. 74-79、2024
10		Sekine, M., Furuya, M., "A novel method for measuring temperature and velocity fields with metal-coated optical fiber", ISMTMF 2023, 2023.
11		SONODA, H., INOUE, M., ISHIZU, T., "DEVELOPMENT OF IN-VESSEL SOURCE TERM EVALUATION METHOD FOR ULOF EVENT IN SODIUM-COOLED FAST REACTORS", International Conference on Fast Reactors and Related Fuel Cycles FR22, 2023.

3. Matters That Should Be Considered for Safety Assurance in Case of Selecting an Outline Inspection Area and Other Sites for the Final Disposal of Specified Radioactive Wast

Enacted: August 24, 2022, No. 2208241, Decision of the Nuclear Regulation Authority)

August 24, 2022
Nuclear Regulation Authority

In response to the Basic Policy on the Final Disposal of Specific Radioactive Waste (decided by the Cabinet on May 22, 2015), the NRA has deliberated seven times since January, 2022 on "matters that should be considered for safety assurance in case of selecting an outline inspection area and other sites[※1] (hereinafter referred to as "matters to be considered"). Amidst the deliberations, the NRA conducted interviews with volcano experts from the viewpoint of confirming the latest scientific knowledge on the mechanism of volcanic eruptions in Japan.

As a result of the deliberations, the NRA determined the following items from 1. to 4. as "matters to be considered" in order to address matters by avoiding the establishment of a final disposal facility because of difficulties in designing it in case of selecting a site for its establishment.

The "matters to be considered" should be appropriately taken into account based on the information available at each phase in case of selecting the outline inspection area and other sites.

In addition, borings and other surveys conducted at each stage are activities to collect important geological information, such as the presence or absence of faults and groundwater flow, while at the same time involving disturbance of natural barriers, and are expected to affect the geological environment, such as the formation of fields that promote the movement of radioactive materials and changes in groundwater flow characteristics. Therefore, both aspects should be taken into account when conducting borings and other surveys. Furthermore, the information obtained from the borings and other surveys conducted at each stage for the final disposal facility's construction site should be preserved for the duration of burial projects over a long time period.

1. Faults etc.

Avoid the following faults, etc.

(1) Active faults that are considered the epicenter among faults and other features whose activity after the Late Pleistocene (about 120,000 to 130,000 years ago or later) cannot be denied.

(2) Areas damaged by the activity of the active faults in (1) as above.

(3) Landslide surfaces with displacement as well as faults where permanent displacement occurs in association with seismic activity among faults that cannot be denied to have been active since the Late Pleistocene (about 120,000 to 130,000 years ago or later).

(4) Major faults other than those listed in (1) and (3) as above.
In case where activity after the Late Pleistocene (about 120,000 to 130,000 years ago or later) cannot be clearly determined due to lack of topography surfaces or strata at the Late Pleistocene (about 120,000 to 130,000 years ago), the activity should be evaluated after

※1 Covering the outline inspection areas, the precise inspection areas, and the final disposal facility's construction sites.

comprehensively examining topography, geology, geological structure, stress field and other factors dating back to the Middle Pleistocene (about 400,000 years ago or later). If it is difficult to confirm the activity at the installation surface※2 the evaluation should be made along with a broad standard based on the properties of the fault and other factors which are confirmed in the extended area of the faults.

2. Volcanic phenomena

Avoid the following places.

(1) Places where there is a history of volcanic activity such as volcanic passages and veins during the Quaternary period (from the present to about 2.58 million years ago) that may result in the destruction of man-made barriers due to magma intrusion.

(2) Places within about 15 kilometers from the active center of volcanoes active during the Quaternary period.

(3) Places where no active volcanoes existed during the Quaternary period but where new volcanoes may occur. Here, the possibility of new volcanoes should be considered in light of the fact that it is difficult to assume that the trend of magma generation, which is closely related to plate characteristics and movement, will change significantly in the next 100,000 years or so.

3. Erosion

Ensure deeper depths than medium depth disposal※3. In this case, the reduction in depth due to erosion should be taken into account, which reflects changes in sea level to be generated by uplift, subsidence, and changes in the volume of continental ice sheets due to climatic changes.

4. Mining of mineral resources, etc.

Ensure (1) that there are no records indicating the presence of mineral deposits of mineral resources※4 whose quantity and grade are sufficient to permit drilling for resource utilization, and (2) that the geothermal gradient is not significantly high.

※2 In this consideration, "installation surface" refers to the location where the artificial barrier is to be installed.

※3 Radioactive waste (i.e., relatively highly radioactive waste generated from decommissioning, etc.) shall be finally disposed of by means of burial in waste burial sites located at depth of 70 meters or more below the surface of the earth. The term is defined in Article 1-2, Paragraph 2, Item 3 of the Regulations Concerning the Business of Burying Category 2 Waste of Nuclear Fuel Material or Material Contaminated by Nuclear Fuel Material (Prime Minister's Office Ordinance No. 1, 1988).

※4 The term is defined in Article 3, Paragraph 1 of the Mining Act (Act No. 289 of 1950).

Reference 5 Materials related to Promotion of Nuclear Security (related to Section 1 in Chapter 3)

4. Numbers of Approvals and Inspection of Regulations for the Security Plan

（April 1, 2023~~2022~~-March 31,2024~~2023~~）

Approvals of changes in regulations for the Security Plan	52 (breakdown) Fuel fabrication facility: 6 Research and test reactor: 3 Commercial power reactor: 31 Power reactor in research and development phase: 4 Spent fuel storage facility:1 Reprocessing facility:2 Waste storage facility: 1 Nuclear material utilization facility: 4
Approval of change in implementation plan	Specified nuclear facility: 3
Inspection of compliance with regulations for the Security Plan (Nuclear regulatory inspection (physical protection of nuclear material))	135 (breakdown) Processing facility: 15 Research and test reactor: 13 Commercial power reactor: 65 Power reactor in research and development phase: 4 Spent fuel storage facility: 2 Reprocessing facility: 9 Waste storage facility: 2 Nuclear material utilization facility: 25
Inspection of compliance with the implementation plan	Specified nuclear facility: 5

Reference 6 Materials related to Oversight of Efforts toward the Decommissioning of Reactors at TEPCO's Fukushima Daiichi NPS (related to Section 1 in Chapter 4)

1. Approval and Inspection of the Implementation Plan for Specified Nuclear Facilities (TEPCO Fukushima Daiichi NPS)

(April 1, 2023– March 31, 2024)

Type of Approval/ Inspection	No. of cases
Approval of changes in implementation plans	14
Completion with pre-service inspection	9
Approval of test use	0
Approval of partial use	1
Instruction of omission of pre-service inspection	0
Completion with welding inspection	4
Completion with welding inspection for imports	0
Completion with periodic facility inspection	1
Operational safety inspection	4

Reference 7 Materials related to Implementation and Continuous Improvement of Regulations relating to the Radioisotope Regulation Act (related to Section 2 in Chapter 5)

1. Status of Reviews and Inspections under the Radioisotope Regulation Act

(April 1, 2023– March 31, 2024)

(1) Review

Operator	Type of Applications and Notifications	No. of Cases
Permitted users (Number of offices: 2057)	Application for permission (approval) of use	19
	Application for permission (approval) of changes in permitted use	261
	Notification of discontinuation	50
Notified users (Number of offices: 393)	Notification of use	5
	Notification of changes in notification of use	29
	Notification of discontinuation	23
Notified users of approved devices with certification label (Number of offices: 5109)	Notification of use of approved devices with certification label	669
	Notification of changes in use of approved devices with certification label	756
	Notification of discontinuation	669
Notified sellers (Number of offices: 335)	Notification of selling business	16
	Notification of changes in notification of selling business	42
	Notification of discontinuation	12
Notified lessors (Number of offices:169)	Notification of leasing business	6
	Notification of changes in notification of leasing business	28
	Notification of discontinuation	3
Permitted disposal operators (Number of offices:7)	Application for permission (approval) of disposal business	0
	Application for permission of changes in disposal business	1
	Notification of discontinuation	0
Transportation of radioisotopes and other materials outside of factory or place of business	Application for approval of containers to be transported	11
Registered organizations (Number of registered organizations: 19)	Application for registration	0
	Application for renewal of registrations	0
	Application for approval and notification of operational rules	0
	Application for approval and notification of changes in operational rules	8

(2) Inspection

Authorized operators	On-site inspection for safety	158
	On-site inspection for security of specified radioisotopes	43
Registered organizations	On-site inspection relating to implementation status of registered organization's operation	9

Reference 8 Activities of Committees, Councils, Review Meetings, Study Teams, etc.

* Meeting records as of the end of FY2023

1. Committees and Councils

(1) Reactor Safety Examination Committee
(2) Nuclear Fuel Safety Examination Committee
(3) Joint Review Meetings of the Reactor Safety Examination Committee and the Nuclear Fuel Safety Examination Committee, etc.
(4) Radiation Council
(5) National Research and Development Agency Council

2. Review Meeting

(1) Review Meeting on Conformity to the New Regulatory Requirements
(2) Review Meeting on Decommissioning of Nuclear Facilities
(3) Review Meeting on Clearance
(4) Review Meeting on Container for Transportation and Specified Container for Spent Fuel Storage Facilities
(5) Review Meeting on Assessing Aging Technologies of Nuclear Power Reactors
(6) Review Meeting on Long-Term Facility Management Plan of Commercial Power Reactors
(7) Review Meeting on Type Certification, etc. of Specific Dual-Use Cask Design

3. Study Teams

(1) Technical Study Team on Environmental Radiation Monitoring
(2) Safety Oversight Team for the Tokai Reprocessing Plant
(3) Safety Oversight Team for Prototype Fast Breeder Reactor Monju Decommission
(4) JAEA Back-End Measures Monitoring Team
(5) Study Team for Countermeasures against Common Cause Failures of Digital Safety Protection Systems in Power Reactor Facilities
(6) Study Team on Technical Evaluation of JSME (the Japan Society of Mechanical Engineers) Standards for Design and Construction, Materials and Welding

4. Committees for Specific Research and Study

(1) Committee on Oversight and Evaluation of Specified Nuclear Facilities
(2) Technical Meeting for Review of Implementation Plans for Specific Nuclear Facilities
(3) Committee on Accident Analysis of the Fukushima Daiichi Nuclear Power Station
(4) Fukushima Daiichi NPS Decommissioning and Accident Investigation Liaison and Coordination Meeting
(5) Technical Information Committee
(6) Technical Evaluation Committees

5. Others

(1) NRA Policy Evaluation Meeting
(2) Meeting on NRA's Administrative Project Review
(3) Meeting on Hearing Opinions of Operators regarding New Regulatory Requirements
(4) Debriefing Session of Emergency Drills by Nuclear Operators
(5) Exchange of Opinions on the Way of Training and Regulatory Involvement in Emergency Response by Nuclear Operators
(6) Meetings on Responses to the Review of Emergency Action Levels

(7) Information Exchange Meeting on the Inspection Program
(8) Public Meeting on Improvement of Legal Reports based on the Reactor Regulation Act

1. Committees and Council

(1) Reactor Safety Examination Committee

Overview

The Reactor Safety Examination Committee (RSEC) was established to investigate and deliberate matters related to reactor safety based upon instructions of the NRA in accordance with the Act for Establishment of the Nuclear Regulation Authority. Taking into account the House of Councilors' resolution added to the Act for Establishment of the Nuclear Regulation Authority, the RSEC's investigations are intended to provide objective advice for the NRA's decisions, but without substitutions for such decisions. The RSEC is also expected to check the effectiveness of the regulatory activities by the NRA and advise on the activities from a scientific and technical point of view while maintaining independence from the NRA.

At the 41st FY2013 NRA Commission Meeting (February 5, 2014), the NRA adopted RSEC establishment policies based on the Act for Establishment of NRA. Based on the policy, RSEC held its first examination meeting on May 12, 2014. It has been holding RSEC meetings regularly since then.

In FY2023, the Subcommittee on Earthquake and Tsunami Hazards was held once, the Subcommittee on Volcanic Hazards once and the Subcommittee on Reactor Safety four times~~twice~~. Additionally, the NRA received reports on the deliberations status from the 13th Subcommittee on Reactor Safety Meeting (April 26, 2023) at the 15th FY2023 NRA Commission Meeting (June 14, 2023), from the 14th Subcommittee on Reactor Safety Meeting (August 25, 2023) at the 33rd FY2023 NRA Commission Meeting (September 20, 2023), and from the 12th Subcommittee on Volcanic Hazards Meeting (November 10, 2023) and the 15th Subcommittee on Reactor Safety Meeting (December 21, 2023) at the 62nd FY2023 NRA Commission Meeting (January 31, 2024).

Members of the Committee

Review Commissioners	UCHIYAMA Mayuki	Professor, Department of Radiology, Jikei University School of Medicine
	OHIGAWA Hiroyuki	Director, Japan Atomic Energy Agency Director, Nuclear Science Research Division and Director of Safety Research and Disaster Prevention Support Division
	OGAWA Yasuo	Professor, Director of the Center, Volcanic Fluid Research Center, Tokyo Institute of Technology
	KATSUTA Tadahiro	Professor, School of Law, Meiji University
	KANDA Reiko	Director-General, Institute of Radiological Sciences, Quantum Life and Medicine, National Institutes for Quantum Science and Technology
	KUMASAKI Mieko	Associate Professor, Faculty of Environment and Information Sciences, Yokohama National University
	KOSUGA Atsuko	Associate Professor, Osaka Prefecture University Graduate School of Science
	SEKIMURA Naoto◎	Vice-President, The University of Tokyo Professor, Nuclear Engineering and Management, Graduate School of Engineering, The University of Tokyo
	TAKADA Tsuyoshi	Professor Emeritus, The University of Tokyo, Head, Office for Promotion of Risk-informed Applications, Sector of Nuclear Safety Research and Emergency Preparedness Japan Atomic Energy Agency

	TAKAHASHI Hiroaki	Professor, Institute of Seismology and Volcanology, Faculty of Science, Hokkaido University
	TAKAHASHI Makoto	Professor, Technology and Social Systems, Graduate School of Engineering, Tohoku University
	NAGAI Yasuyoshi	Professor, Institute for Materials Research, Tohoku University Director of the affiliated International Research Center for Nuclear Materials Science
	NAKAGAWA Toshiko	Professor Emeritus, Tokyo City University
	Nagasaki Shinya	McMaster University, Department of Engineering Physics, Professor
	NAKAJIMA Ken	Professor Emeritus, Kyoto University
	NAKAMURA Izumi	Professor, Department of Nuclear Safety Engineering, Faculty of Science and Engineering, Tokyo City University
	NISHIYAMA Yutaka	Director, Nuclear Research Safety Center, Sector of Nuclear Safety Research and Emergency Preparedness, Japan Atomic Energy Agency
	HISADA Yoshiaki	Professor, Department of Urban Design and Planning, School of Architecture, Kogakuin University
	HOUHARA Shinya	Associate Professor, Atomic Energy Research Institute, Kindai University
	MATSUO Akiko	Professor, Faculty of Science and Technology, Keio University
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	MOGI Toshio	Associate Professor, School of Engineering, The University of Tokyo
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	YAMAJI Akifumi	Professor, School of Advanced Science and Engineering, Faculty of Science and Engineering, Waseda University
	YOSHIDA Hiroko	Professor, Cyclotron and Radioisotope Center (CYRIC), Tohoku University
	YOSHIHASHI Sachiko	Professor, Facility for Nuclear Materials, Nagoya University, Tokai National Higher Education and Research System
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Temporary Commissioners	OHBA Tsukasa	Professor, Graduate School of International Resource Sciences, Akita University
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	TAKAHASHI Tomoyuki	Vice President, Kansai University, Professor, Faculty of Societal Safety Sciences, Kansai University
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	HASEGAWA Takeshi	Associate Professor, Graduate School of Science and Engineering, Ibaraki University
	BAN Masao	Professor in charge of Graduate School of Science as Academic Research Center, Yamagata University
	MIURA Satoshi	Professor, Research Center for Prediction of Earthquakes and Volcanic Eruptions, Graduate School of Science, Tohoku University
Expert Commissioners	AZUMA Takashi	Senior Researcher, Active Fault Research Group, Research Institute of Earthquake and Volcano Geology, Geological Survey of Japan, National Institute of Advanced Industrial Science and Technology
	UEDA Hideki	Senior Researcher, National Research Institute for Earth Science and Disaster Resilience Head, Volcano Observation Network Laboratory, Network Center for Earthquake, Tsunami and Volcano, National Research Institute for Earth Science and Disaster Resilience
	TANAKA Akiko	Director, Magmatic Activity Research Group, Research Institute of

		Earthquake and Volcano Geology, Geological Survey of Japan, National Institute of Advanced Industrial Science and Technology

* Double circle (◎) indicates a chairperson.

Members of the Subcommittee on Earthquake and Tsunami Hazards

Review Commissioners	HISADA Yoshiaki	Professor, Department of Urban Design and Planning, School, of Architecture, Kogakuin University
	MIYAKE Hiroe	Associate Professor, Earthquake Research Institute, The University of Tokyo
	YAMAOKA Koshun◎	Professor, Graduate School of Environmental Studies, Nagoya University, Tokai National Higher Education and Research System
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	TANIOKA Yuichiro	Professor, Institute of Seismology and Volcanology, Faculty of Science, Hokkaido University
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* Double circle (◎) indicates a chairperson.

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	OKUNO Mitsuru	Professor, Graduate School of Science, Osaka Metropolitan University
	NAKAMICHI Haruhisa	Associate Professor, Disaster Prevention Research Institute, Kyoto University
	HASEGAWA Takeshi	Associate Professor, Graduate School of Science and Engineering, Ibaraki University
	BAN Masao	Professor in charge of Graduate School of Science as Academic Research Center, Yamagata University
	MIURA Satoshi	Professor, Research Center for Prediction of Earthquakes and Volcanic Eruptions, Graduate School of Science, Tohoku University
Expert Commissioners	UEDA Hideki	Senior Researcher, National Research Institute for Earth Science and Disaster Resilience Head, Volcano Observation Network Laboratory, Network Center for Earthquake, Tsunami and Volcano, National Research Institute for Earth Science and Disaster Resilience
	TANAKA Akiko	Director, Magmatic Activity Research Group, Research Institute of Earthquake and Volcano Geology, Geological Survey of Japan, National Institute of Advanced Industrial Science and Technology

* Double circle (◎) indicates a chairperson.

Members of the Subcommittee on Reactor Safety

Review Commissioners	UCHIYAMA Mayuki	Professor, Department of Radiology, Jikei University School of Medicine
	OHIKAWA Hiroyuki	Director, Japan Atomic Energy Agency, Director, Nuclear Science Research Division and Director of Safety Research and Disaster Prevention Support Division
	KATSUTA Tadahiro	Professor, School of Law, Meiji University
	KANDA Reiko	Director-General, Institute of Radiological Sciences, Quantum Life and Medicine, National Institutes for Quantum Science and Technology
	KUMASAKI Mieko	Associate Professor, Faculty of Environment and Information Sciences, Yokohama National University

	KOSUGA Atsuko	Associate Professor, Osaka Prefecture University Graduate School of Science
	SEKIMURA Naoto◎	Vice-President, The University of Tokyo Professor, Nuclear Engineering and Management, Graduate School of Engineering, The University of Tokyo
	TAKADA Tsuyoshi	Professor Emeritus, The University of Tokyo Head, Office for Promotion of Risk-informed Applications, Sector of Nuclear Safety Research and Emergency Preparedness Japan Atomic Energy Agency
	TAKAHASHI Makoto	Professor, Technology and Social Systems, Graduate School of Engineering, Tohoku University
	NAGAI Yasuyoshi	Professor, Institute for Materials Research, Tohoku University Director of the affiliated International Research Center for Nuclear Materials Science
	NAKAGAWA Toshiko	Professor Emeritus, Tokyo City University
	NAGASAKI Shinya	McMaster University, Department of Engineering Physics, Professor
	NAKAJIMA Ken	Professor Emeritus, Kyoto University
	NAKAMURA Izumi	Professor, Department of Nuclear Safety Engineering, Faculty of Science and Engineering, Tokyo City University
	NISHIYAMA Yutaka	Director, Nuclear Research Safety Center, Sector of Nuclear Safety Research and Emergency Preparedness, Japan Atomic Energy Agency
	HISADA Yoshiaki	Professor, Department of Urban Design and Planning, School of Architecture, Kogakuin University
	HOUHARA Shinya	Associate Professor, Atomic Energy Research Institute, Kindai University
	MATSUO Akiko	Professor, Faculty of Science and Technology, Keio University
	MARUYAMA Yu	JAEA Fellow, Japan Atomic Energy Agency
	MUTA Hitoshi	Associate Professor, Graduate School of Science and Engineering, Tokyo City University
	MOGI Toshio	Associate Professor, School of Engineering, The University of Tokyo
	YAMAJI Akifumi	Professor, School of Advanced Science and Engineering, Faculty of Science and Engineering, Waseda University
	YOSHIDA Hiroko	Professor, Cyclotron and Radioisotope Center (CYRIC), Tohoku University
	YOSHIHASHI Sachiko	Associate Professor, Facility for Nuclear Materials, Nagoya University, Tokai National Higher Education and Research System
	YONEOKA Yuko	Director, Japan Center for Engagement and Remedy on Business and Human Rights

* Double circle (◎) indicates a chairperson.

Nuclear Fuel Safety Examination Committee

Overview

The Nuclear Fuel Safety Examination Committee (NFSEC) was established to investigate and deliberate matters related to nuclear fuel safety based upon instructions of the NRA in accordance with the Act for Establishment of the Nuclear Regulation Authority. Taking into account the House of Councilors' resolution added to the Act for Establishment of the Nuclear Regulation Authority, the NFSEC's investigations and deliberations are intended to provide objective advice for the NRA's decisions, but without substitutions for such decisions. The NFSEC is also expected to check the effectiveness of the regulatory activities by the NRA and advise on the activities from a scientific and technical point of view while maintaining independence from the NRA.

At the 41st FY2013 NRA Commission Meeting on February 5, 2014, the NRA adopted NFSEC establishment policies based on the Act for Establishment of NRA. Based on the

policy, NFSEC held its first examination meeting on May 12, 2014, and has been holding its meetings regularly since then.

In FY2023, the Subcommittee on Earthquake and Tsunami Hazards was held once, the Subcommittee on Volcanic Hazards once and the Nuclear Fuel Safety Examination Committee four times. In addition, the NRA received reports on the deliberations status from the 7th Subcommittee on Nuclear Fuel Safety Meeting (April 26, 2023) at the 15th FY2023 NRA Commission Meeting (June 14, 2023), from the 8th Subcommittee on Nuclear Fuel Safety Meeting (August 25, 2023) at the 33rd FY2023 NRA Commission Meeting (September 20, 2023), and from the 12th Subcommittee on Volcanic Hazards Meeting (November 10, 2023) and the 9th Subcommittee on Nuclear Fuel Safety Meeting (December 21, 2023) at the 62nd NY2023 NRA Commission Meeting (January 31, 2024).

Members of the Committee

Review Commissioners	UNESAKI Hironobu	Professor, Institute for Integrated Radiation and Nuclear Science, Kyoto University Professor, Socio-Environmental Energy Science Dept., Graduate School of Energy Science, Kyoto University
	OGAWA Yasuo	Professor and Center Director, Volcanic Fluid Research Center, Tokyo Institute of Technology
	KATSUTA Tadahiro	Professor, School of Law, Meiji University
	KIRISHIMA Akira	Professor, Institute of Multidisciplinary Research for Advanced Materials, Tohoku University
	KUROSAKI Ken	Professor, Institute for Integrated Radiation and Nuclear Science, Kyoto University
	KOSUGA Atsuko	Associate Professor, Osaka Prefecture University Graduate School of Science
	SAITO Takumi	Professor, Nuclear Professional School, The University of Tokyo
	SUMI Minako	Head, Radiation Oncology Department, Tokyo Metropolitan Geriatric Medical Center
	TAKAGI Ikuji	Professor, Graduate School of Engineering, Kyoto University
	TAKADA Tsuyoshi	Professor Emeritus, The University of Tokyo Head, Office for Promotion of Risk-informed Applications, Sector of Nuclear Safety Research and Emergency Preparedness, Japan Atomic Energy Agency
	TAKAHASHI Hiroaki	Professor, Institute of Seismology and Volcanology Faculty of Science, Hokkaido University
	NAKAMURA Takehiko	Vice Division Director, Nuclear Research Safety Center, Sector of Nuclear Safety Research and Emergency Preparedness, Japan Atomic Energy Agency
	HISADA Yoshiaki	Professor, Department of Urban Design and Planning, School of Architecture, Kogakuin University
	MATSUO Akiko	Professor, Faculty of Science and Technology, Keio University
	MIYAKE Hiroe	Associate Professor, Earthquake Research Institute, The University of Tokyo
	YAMAOKA Koshun	Professor, Graduate School of Environmental Studies, Nagoya University, Tokai National Higher Education and Research System
	YAMAMOTO Akio◎	Professor, Graduate School of Engineering, Nagoya University, Tokai National Higher Education and Research System
	YOSHIDA Hiroko	Professor, Cyclotron and Radioisotope Center (CYRIC), Tohoku University
	YOSHIHASHI Sachiko	Associate Professor, Facility for Nuclear Materials, Nagoya University, Tokai National Higher Education and Research System
Temporary Commissioners	OHBA Tsukasa	Professor, Graduate School of International Resource Sciences, Akita University
	OKUNO Mitsuru	Professor, Graduate School of Science, Osaka Metropolitan University

	TAKAHASHI Tomoyuki	Vice President, Kansai University Professor, Faculty of Societal Safety Sciences, Kansai University
	TANIOKA Yuichiro	Professor, Institute of Seismology and Volcanology, Faculty of Science, Hokkaido University
	TOHDA Shinji	Professor, International Research Institute of Disaster Science, Tohoku University
	NAKAMICHI Haruhisa	Associate Professor, Disaster Prevention Research Institute Kyoto University
	HASEGAWA Takeshi	Associate Professor, Graduate School of Science and Engineering, Ibaraki University
	BAN Masao	Professor in charge of Graduate School of Science as Academic Research Center, Yamagata University
	MIURA Satoshi	Professor, Research Center for Prediction of Earthquakes and Volcanic Eruptions, Graduate School of Science, Tohoku University
Expert Commissioners	AZUMA Takashi	Senior Researcher, Active Fault Research Group, Research Institute of Earthquake and Volcano Geology, Geological Survey of Japan, National Institute of Advanced Industrial Science and Technology
	UEDA Hideki	Senior Researcher, National Research Institute for Earth Science and Disaster Resilience Head, Volcano Observation Network Laboratory, Network Center for Earthquake, Tsunami and Volcano, National Research Institute for Earth Science and Disaster Resilience
	TANAKA Akiko	Director, Magmatic Activity Research Group, Research Institute of Earthquake and Volcano Geology, Geological Survey of Japan, National Institute of Advanced Industrial Science and Technology

* Double circle (◎) indicates a chairperson.

Members of the Subcommittee on Earthquake and Tsunami Hazards

Review Commissioners	HISADA Yoshiaki	Professor, Department of Urban Design and Planning, School of Architecture, Kogakuin University
	MIYAKE Hiroe	Associate Professor, Earthquake Research Institute, The University of Tokyo
	YAMAOKA Koshun◎	Professor, Graduate School of Environmental Studies, Nagoya University, Tokai National Higher Education and Research System
Temporary Commissioners	TAKAHASHI Tomoyuki	Vice President, Kansai University Professor, Faculty of Societal Safety Sciences, Kansai University
	TANIOKA Yuichiro	Professor, Institute of Seismology and Volcanology, Faculty of Science, Hokkaido University
	TOHDA Shinji	Professor, International Research Institute of Disaster Science, Tohoku University
Expert Commissioners	AZUMA Takashi	Senior Researcher, Active Fault Research Group, Research Institute of Earthquake and Volcano Geology, Geological Survey of Japan, National Institute of Advanced Industrial Science and Technology

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Members of the Subcommittee on Volcanic Hazards

Review Commissioners	OGAWA Yasuo ◎	Professor and Center Director, Volcanic Fluid Research Center, Tokyo Institute of Technology,
	TAKAHASHI Hiroaki	Professor, Institute of Seismology and Volcanology, Faculty of Science, Hokkaido University
Temporary Commissioners	OHBA Tsukasa	Professor, Graduate School of International Resource Sciences, Akita University
	OKUNO Mitsuru	Professor, Graduate School of Science, Osaka Metropolitan University
	NAKAMICHI Haruhisa	Associate Professor, Disaster Prevention Research Institute, Kyoto University
	HASEGAWA Takeshi	Associate Professor, Graduate School of Science and Engineering, Ibaraki University
	BAN Masao	Professor in charge of Graduate School of Science as Academic Research Center, Yamagata University

	MIURA Satoshi	Professor, Research Center for Prediction of Earthquakes and Volcanic Eruptions, Graduate School of Science, Tohoku University
Expert Commissioners	UEDA Hideki	Senior Researcher, National Research Institute for Earth Science and Disaster Resilience Head, Volcano Observation Network Laboratory, Network Center for Earthquake, Tsunami and Volcano, National Research Institute for Earth Science and Disaster Resilience
	TANAKA Akiko	Director, Magmatic Activity Research Group, Research Institute of Earthquake and Volcano Geology, Geological Survey of Japan, National Institute of Advanced Industrial Science and Technology

* Double circle (◎) indicates a chairperson.

Members of the Subcommittee on Nuclear Fuel Safety

Review Commissioners	UNESAKI Hironobu	Professor, Institute for Integrated Radiation and Nuclear Science, Kyoto University Professor, Socio-Environmental Energy Science Dept., Graduate School of Energy Science, Kyoto University
	KATSUTA Tadahiro	Professor, School of Law, Meiji University
	KIRISHIMA Akira	Professor, Institute of Multidisciplinary Research for Advanced Materials, Tohoku University
	KUROSAKI Ken	Professor, Institute for Integrated Radiation and Nuclear Science, Kyoto University
	KOSUGA Atsuko	Associate Professor, Osaka Prefecture University Graduate School of Science
	SAITO Takumi	Professor, Nuclear Professional School, The University of Tokyo
	SUMI Minako	Head, Radiation Oncology Department, Tokyo Metropolitan Geriatric Medical Center
	TAKAGI Ikuji	Professor, Graduate School of Engineering, Kyoto University
	TAKADA Tsuyoshi	Professor Emeritus, The University of Tokyo Head, Office for Promotion of Risk-informed Applications, Sector of Nuclear Safety Research and Emergency Preparedness, Japan Atomic Energy Agency
	NAKAMURA Takehiko	Vice Division Director, Nuclear Research Safety Center, Sector of Nuclear Safety Research and Emergency Preparedness, Japan Atomic Energy Agency
	HISADA Yoshiaki	Professor, Department of Urban Design and Planning, School of Architecture, Kogakuin University
	MATSUO Akiko	Professor, Faculty of Science and Technology, Keio University
	YAMAMOTO Akio◎	Professor, Graduate School of Engineering, Nagoya University, Tokai National University Corporation
	YOSHIDA Hiroko	Professor, Cyclotron and Radioisotope Center (CYRIC), Tohoku University
	YOSHIHASHI Sachiko	Professor, Graduate School of Environmental Studies, Nagoya University, Tokai National Higher Education and Research System

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(3) Joint Review Meetings of the Reactor Safety Examination Committee and the Nuclear Fuel Safety Examination Committee, etc.

Achievements to Hold the Reactor Safety Examination Committee and the Nuclear Fuel Safety Examination Committee

RSEC Times	NFSEC Times	Date	Agenda
13 Joint	7 Joint	Apr. 26	・Appointment and other matters concerning the selection of the Chairperson of the SRS ・Appointment and other matters concerning the selection of the Chairperson of the SNF ・Matters for deliberations at the RSEC and the NFSEC ・Assessment of safety improvements for power reactor facilities ・About nuclear regulatory inspections ・Response based on the collection and analysis of information related to accidents and troubles that have occurred in Japan and abroad and to regulatory trends in other countries ・Others
14 Joint	8 Joint	Aug. 25	・Assessment of safety improvements for power reactor facilities ・About nuclear regulatory inspections ・Response based on the collection and analysis of information related to accidents and troubles that have occurred in Japan and abroad and to regulatory trends in other countries ・Others
15 Joint	9 Joint	Dec. 21	・Response based on the collection and analysis of information related to accidents and troubles that have occurred in Japan and abroad and to regulatory trends in other countries ・About nuclear regulatory inspections ・Assessment of safety improvements for power reactor facilities ・Others
16 Joint	10 Joint	Mar. 8	・Response based on the collection and analysis of information related to accidents and troubles that have occurred in Japan and abroad and to regulatory trends in other countries ・About nuclear regulatory inspections ・Assessment of safety improvements for power reactor facilities ・Others

Achievements to Hold the Subcommittee on Earthquake and Tsunami Hazards

Times	Date	Agenda
3	Jun. 19	・Results of analysis of findings on earthquakes, tsunamis and other disasters collected by the NRA Secretariat ・Others

Achievements to Hold the Subcommittee on Volcanic Hazards

Times	Date	Agenda
12	Nov. 10	・Evaluation by the NRA on the results of volcano monitoring by power reactor installers and nuclear fuel facility operators ・Results of collection and analysis of information related to findings on volcanic events ・Others

Investigation and Deliberations Delegated by the NRA to the Reactor Safety Examination Committee (RSEC) and the Nuclear Fuel Safety Examination Committee (NFSEC)

Items for Investigation and Deliberation	Subcommittee Assigned
1. Collect and analyze worldwide information on accidents, problems and regulatory trends, deliberate on the necessity of the NRA's actions in response to such information, and provide advice. [Instruction to the RSEC/NFSEC in November, 2021]	Subcommittee on Reactor Safety of RSEC Subcommittee on Nuclear Fuel Safety of NFSEC
2. Evaluate and advise on the status of NRA's response to the conclusions of the follow-up mission of the IRRS (IAEA's Integrated Regulatory Review Service) conducted in January, 2020. [Instruction to the RSEC/NFSEC in November, 2021]	Subcommittee on Reactor Safety of RSEC Subcommittee on Nuclear Fuel Safety of NFSEC
3. Study and deliberate on the implementation status of the new nuclear regulatory inspection system, which came into effect in April 2020, by regulatory bodies and operators, and provide advice. [Instruction to the RSEC/NFSEC in November, 2021]	Subcommittee on Reactor Safety of RSEC Subcommittee on Nuclear Fuel Safety of NFSEC
4. Provide advice on how the system should work and how to review the operation regarding evaluations for improving the safety of reactor facilities for power generation conducted by the establishers of reactors for power generation under Article 43-3-29 of the Act on Regulation of Nuclear Source Materials, Nuclear Fuel Materials and Reactors. First, report on the operational improvements based on the framework of the current system. [Instruction to the RSEC/NFSEC in November, 2021]	Subcommittee on Reactor Safety of RSEC Subcommittee on Nuclear Fuel Safety of NFSEC
5. Study and deliberate on NRA evaluation of commercial power reactor establishers' volcano monitoring results, and provide advice [Instruction to the RSEC in November, 2021]	Subcommittee on Volcanic Hazards of RSEC
6. Study and deliberate on NRA evaluation of nuclear fuel cycle facility operators' volcano monitoring results, and provide advice. [Instruction to the NFSEC in November, 2021]	Subcommittee on Volcanic Hazards of RSEC
7. Study and deliberate on the necessity of regulatory responses based on the results of collecting and analyzing information related to disasters that have occurred in Japan and abroad and findings announced by government agencies, etc., concerning events such as earthquakes and tsunamis, and provide advice. [Instruction to the RSEC/NFSEC in November, 2021]	Subcommittee on Earthquake and Tsunami Hazards of RSEC Subcommittee on Earthquake and Tsunami Hazards of NFSEC
8. Study and deliberate on the necessity of regulatory responses based on the results of collecting and analyzing information related to disasters that have occurred in Japan and abroad and findings announced by government agencies, etc., concerning events such as volcanoes, and provide advice. [Instruction to the RSEC/NFSEC in November, 2021]	Subcommittee on Volcanic Hazards of RSEC Subcommittee on Volcanic Hazards of NFSEC

(4) Radiation Council

Overview

The NRA has established the Radiation Council, based on the law (Law No. 162 of 1958) related to technical standards for prevention of radiation hazards. The purpose of the Radiation Council is to ensure uniformity in technical standards for prevention of radiation hazards.

The Radiation Council held two meetings, addressing issues highlighted in the report related to the review of the equivalent dose limit for the lens of the eye. It conducted follow-up discussions on the operation after amendments to regulations such as the Regulation on Prevention of Ionizing Radiation Hazards. The Council also received reports from the Secretariat of the NRA on international developments in radiation protection.

Additionally, regarding the adoption of the ICRP 2007 recommendation into domestic regulations, the Council received report on future response strategies etc. after comparing and summarizing effective dose coefficients etc. between ICRP 1990 recommendation and ICPR 2007 recommendation, and on new definition of operational quantity from external experts, and the challenges that are assumed to be considered upon such adoption were deliberated.

In addition, the Council received report with the contents of the past large-scale surveys in Japan on indoor radon from the NRA Secretariat and deliberate how to proceed with the evaluation on radiation protection against indoor radon of Japan.

Members of the Committee

Commissioners	ISHII Tetsuro	Senior Scientist, J-PARC Center, JAEA
	OHNO Kazuko	Professor Department of Radiological Technology, Faculty of Medical Science, Kyoto College of Medical Science
	ODA Keiji○	Director, Electron Science Institute Professor Emeritus, Kobe University
	KAI Michiaki ◎	Professor, Department of Health and Medical Sciences, Nippon Bunri University
	KANDA Reiko	Director-General, National Institute of Radiological Sciences, National Institutes for Quantum Science and Technology
	KISHIMOTO Atsuo	Professor, Osaka University Institute for Datability Science Director, Research Center on Ethical, Legal and Social Issues
	TAKATA Ayako	Professor, Department of Preventive Medicine, St. Marianna University School of Medicine
	TAKADA Chie	Director-General, Radiation Dosimetry and Instrumentation Section, Nuclear Fuel Cycle Engineering Laboratories, Sector of Nuclear Fuel, Decommissioning and Waste Management Technology Development, JAEA
	TAKAHASHI Fumiaki	Head of Nuclear Emergency Preparedness Research and Development Division, Nuclear Emergency Assistance and Training Center (NEAT), Nuclear Safety Research/Disaster Prevention Assistance Department, JAEA
	TANIKAWA Koichi	Director of Futaba Medical Center, Fukushima Prefecture and Director of Affiliated Hospital Specially Appointed Professor, Fukushima Medical University, Professor Emeritus, Hiroshima University
	NAKAMURA Nobutaka	Senior Councilor, Radiopharmaceuticals Division, Japan Radioisotope Association

	HOSONO Makoto	Professor, Department of Radiology, Kindai University Faculty of Medicine
	MATSUDA Naoki	Professor Emeritus, Nagasaki University
	YOKOYAMA Sumi	Professor, Atom Bomb Disease Institute, Nagasaki University
	YOSHIDA Hiroko	Professor, Cyclotron and Radioisotope Center (CYRIC), Tohoku University

*Double circle (◎) indicates a chairperson, and circle (○) indicates the deputy to the chairperson.

Meetings of the Radiation Council

No.	Date	Agenda
159	Jul. 28	・Selection of chairperson and nomination of deputy chairperson ・Way to respond to on indoor radon based on the surveys on indoor radon in Japan ・Status of incorporation of the ICRP 2007 Recommendations into domestic systems (effective dose coefficients etc.) ・International trend of technical standards for prevention of radiation hazards ・Others
160	Dec. 7	・Follow-up on the revision of equivalent dose limit for the lens of the eye -measures toward reduction of radiation exposure of medical workers and status of radiation exposure dose- ・Overview of new definition of operational quantity and the challenges that are assumed to be considered upon such adoption ・The way forward for evaluation of indoor radon ・Report on the 7th ICRP International Symposium ・Others

(5) National Research and Development Agency Council

Overview

Based on the Act on General Rules for Incorporated Administrative Agencies (Act No. 103, 1999), the NRA, a competent administrator is required to hear R&D-related council's opinions regarding part of work by the National Institutes for Quantum Science and Technology (QST) and the Japan Atomic Energy Agency (JAEA) before providing them with instructions regarding their medium to long-term goals and evaluate their performance. Therefore, the NRA established the National Research and Development Agency Council on April 10, 2015 as the council for R&D.

In FY2023, subcommittee meetings of the QST were held two times to hear and compile opinions including performance evaluation of the QST in FY2022 and during the 1st medium to long-term goal period (from FY2016 to FY2022).

Furthermore, the Japan Atomic Energy Agency (JAEA) subcommittee meeting was held twice in total to hear and compile opinions on the evaluation of the operational performance in FY2022 by the JAEA.

Members of the Committee

Commissioners	OHTOMO Yasuhiro	Director, NHO Disaster Medical Center
	KOSHIZUKA Seiichi◎	Professor, School of Engineering, The University of Tokyo
	HOSOYA Noriko	Associate professor, The Center for Disease Biology and Integrative Medicine (CDBIM), Graduate School of Medicine, The University of Tokyo
	YAMAMOTO Akio	Professor, Graduate School of Engineering, Nagoya University, Tokai National University Corporation
	YOKOTA Eri	Professor, Faculty of Business and Commerce, Keio University
	YOKOYAMA Sumi○	Professor, Atomic Bomb Disease Institute, Nagasaki University

* Double circle (◎) indicates a chairperson, and circle (○) indicates the deputy to the chairperson.

Members of the Subcommittee of the National Institutes for Quantum Science and Technology

Commissioners	OTOMO Yasuhiro	Director, NHO Disaster Medical Center
	HOSOYA Noriko	Associate professor, The Center for Disease Biology and Integrative Medicine (CDBIM), Graduate School of Medicine, The University of Tokyo
	YOKOYAMA Sumi◎	Professor, Atomic Bomb Disease Institute, Nagasaki University

* Double circle (◎) indicates a chairperson.

Members of the Subcommittee of the Japan Atomic Energy Agency

Commissioners	KOSHIZUKA Seiichi◎	Professor, School of Engineering, The University of Tokyo
	YAMAMOTO Akio	Professor, Graduate School of Engineering, Nagoya University, Tokai National University Corporation
	YOKOTA Eri	Professor, Faculty of Business and Commerce, Keio University

* Double circle (◎) indicates a chairperson.

Meetings of the Subcommittee of the National Institutes for Quantum

Science and Technology

No.	Date	Agenda
17	Jul. 5	・Selection of chairperson and nomination of deputy chairperson of Subcommittee of the National Institutes for Quantum Science and Technology ・Evaluation of the operational performance in FY2022 and the operational performance of the 1st period of the medium to long-term goals by the National Institutes for Quantum Science and Technology (the hearings from the National Institute of Quantum Science and Technology) ・Others
18	Aug. 1	・Compilation of opinions on the evaluation (draft) of operational performance by the National Institutes for Quantum Science and Technology in FY2022 (co-jurisdictional part of the NRA) ・Compilation of opinions on the evaluation (draft) of operational performance by the National Institutes for Quantum Science and Technology of the 1st period of the medium to long-term goals (co-jurisdictional part of the NRA) ・Others

Meetings of the Subcommittee of the Japan Atomic Energy Agency

No.	Date	Agenda
20	Jul. 24	・Selection of chairperson and nomination of deputy chairperson of Subcommittee of the Japan Atomic Energy Agency ・Evaluation of the operational performance in FY2022 ・Technical support for nuclear safety regulatory administration along with budget, personnel and other items for safety research thereof ・Others
21	Aug. 1-2	・Compilation of opinions on the operational performance in FY2022 (documentary review)

2. Review Meetings

(1) Review Meeting on Conformity to the New Regulatory Requirements

Overview

Based on the new regulatory requirements for nuclear power plants that took effect on July 8, 2013 and the new regulatory requirements for nuclear fuel cycle facilities, etc. that took effect on December 18, 2013, applications for permission for change in basic design submitted by the nuclear operators were reviewed. The reviews were conducted by NRA Commissioners and a study team organized by the Secretariat of the NRA. In FY2023, 111 review meetings were held for nuclear power plants including a document review and 38 meetings were held for nuclear fuel cycle facilities, etc.

Review Meeting on Conformity to the New Regulatory Requirements for Nuclear Power Plants

NRA	SUGIYAMA Tomoyuki	NRA Commissioner
	ISHIWATARI Akira	NRA Commissioner
Secretariat of the NRA	OHSHIMA Toshiyuki	Director-General, Nuclear Regulation Department
	ONO Yuji	Director-General for Nuclear Regulation, Director-General's Secretariats (attended until the 1161st meeting)
	KINJYO Shinji	Director-General for Nuclear Regulation, Director-General's Secretariats (attending since the 1164th meeting)
	WATANABE Keiichi	Director for Nuclear Regulation (in charge of reviewing commercial power reactors)
	NAITO Hiroyuki	Director for Nuclear Regulation (in charge of reviewing measures against earthquake and tsunami)
	TOGASAKI Kou	Director for Regulation of Nuclear Facilities (attended until the 1154th meeting)
	TSUKABE Nobuyuki	Director for Regulation of Nuclear Facilities (attending since the 1169th meeting)
	OKU Hirotaka	Director for Regulation of Nuclear Facilities
	IWASAWA Masaru	Director for Regulation of Nuclear Facilities
	SAITO Tetsuya	Director for Regulation of Nuclear Facilities
	NAGURA Shigeki	Director for Regulation of Nuclear Facilities
	TADAUCHI Itsuo	Director for Regulation of Nuclear Facilities
	SHINO Tomohiro	Nuclear Regulation Research Officer
	AMANO Naoki	Nuclear Regulation Research Officer
	IWATA Junichi	Nuclear Regulation Research Officer
	MITSUI Katsuhito	Nuclear Regulation Research Officer
	NODA Tomoki	Planning and Research Officer
	EZAKI Junichi	Planning and Research Officer

Review Meeting on Conformity to New Regulatory Requirements for

Nuclear Fuel Cycle Facilities, etc.

NRA	TANAKA Satoru	NRA Commissioner
	SUGIYAMA Tomoyuki	NRA Commissioner
	ISHIWATARI Akira	NRA Commissioner
Secretariat of the NRA	ONO Yuji	Director-General for Nuclear Regulation, Director-General's Secretariats (attended until the 486th Meeting)
	KINJYO Shinji	Director-General for Nuclear Regulation, Director-General's Secretariats (attending since the 487th Meeting)
	OHSHIMA Toshiyuki	Director-General, Nuclear Regulation Department
	SHIMA Masakazu	Director for Nuclear Regulation (in charge of reviewing research reactors, use of nuclear materials)
	HASEGAWA Kiyomitsu	Director for Nuclear Regulation (in charge of reviewing nuclear fuel facilities)
	NAITO Hiroyuki	Director for Nuclear Regulation (in charge of examining measures against earthquake and tsunami)
	KANEKO Masayuki	Director for Regulation of Nuclear Facilities (attended until the 488th Meeting)
	ARAKAWA Ichiro	Nuclear Regulation Research Officer
	KURISAKI Hiroshi	Planning and Research Officer (attending since the 490th Meeting)
	OZAWA Takahiro	Nuclear Regulation Research Officer (attended until the 489th Meeting)
	INOMATA Katsumi	Nuclear Regulation Research Office (attending since the 511th Meeting)
	IWATA Jyunichi	Nuclear Regulation Research Officer
	MITSUI Katsuhito	Nuclear Regulation Research Officer
	KOSAKU Yasuo	Planning and Research Officer
	MATSUMOTO Hisashi	Planning and Research Officer
	EZAKI Junichi	Planning and Research Officer

(2) Review Meeting on Decommissioning of Nuclear Facilities

Overview

Review Meetings on Decommissioning of Nuclear Facilities are held with the attendance of NRA Commissioners and NRA Secretariat staff to review the decommissioning plans of the nuclear facilities. In FY2023, the Review Meetings were held 3 times on nuclear power plants.

Review Meeting on Decommissioning Plan for Nuclear Power Reactor Facilities

NRA	TANAKA Satoru	NRA Commissioner
Secretariat of the NRA	ONO Yuji	Director-General for Nuclear Regulation, Director-General's Secretariats (attended until the 32nd Meeting)
	KINJYO Shinji	Director-General for Nuclear Regulation, Director-General's Secretariats (attending since the 33rd Meeting)
	WATANABE Keiichi	Director for Nuclear Regulation (in charge of reviewing commercial power reactors)
	TOGASAKI Kou	Director for Regulation of Nuclear Facilities (attended until the 32nd Meeting)

	TSUKABE Nobuyuki	Director for Regulation of Nuclear Facilities (attending since the 33rd Meeting)
	IWASAWA Masaru	Director for Regulation of Nuclear Facilities (attending since the 34th Meeting)

Review Meeting on Clearance

Overview

Review Meeting on the methods of measuring and evaluating radioactivity concentration of the radioactive material contained in materials used in nuclear facilities is held with the attendance of a study team consisting of the NRA Secretariat staff. Five review meetings for clearance were held in FY2023.

Members of the Review Meeting on Clearance

Secretariat of the NRA	ONO Yuji	Director-General for Nuclear Regulation, Director-General's Secretariats (attended until the 8th Meeting)
	KINJYO Shinji	Director-General for Nuclear Regulation, Director-General's Secretariats (attending since the 9th Meeting)
	SHIMA Masakazu	Director for Nuclear Regulation (in charge of reviewing research reactors, use of nuclear materials)
	KURISAKI Hiroshi	Planning and Research Officer (attending since the 9th Meeting)

(4) Review Meeting on Container for Transportation and Specified Container for Spent Fuel Facilities

Overview

Review Meeting on Container for Transportation and Specified Container for Spent Fuel Facilities are held with the attendance of a study team consisting of the NRA Secretariat staff. In FY2023, 2 review meetings were held.

Members of the Review Meeting on Container for Transportation and Specified Container for Spent Fuel Facilities

Secretariat of the NRA	ONO Yuji	Director-General for Nuclear Regulation, Director-General's Secretariats
	HASEGAWA Kiyomitsu	Director for Nuclear Regulation (in charge of reviewing nuclear fuel facilities)
	MATSUMOTO Hisashi	Planning and Research Officer

(5) Review Meeting on Assessing Aging Technologies of Nuclear Power Reactor

Overview

A system consisting of the NRA Secretariat staff is established and is holding a review meeting on application for approval of change in operational safety program concerning measures for aging nuclear power plants submitted by operators. In FY2023, 6 review meetings were held.

Members of the Review Meeting on Assessing Aging Technologies of Nucelar Power Reactor

Secretariat of the NRA	ONO Yuji	Director-General for Nuclear Regulation, Director-General's Secretariats (attended until the 30th Meeting)
	KINJYO	Director-General for Nuclear Regulation, Director-General's

	Shinji	Secretariats (attending since the 31st Meeting)
	WATANABE Keiichi	Director for Nuclear Regulation (in charge of reviewing commercial power reactors)
	TOGASAKI Kou	Director for Regulation of Nuclear Facilities (attended until the 30th Meeting)
	TSUKABE Nobuyuki	Director for Regulation of Nuclear Facilities (attending since the 31st Meeting)

(6) Review Meeting on Long-Term Facility Management Plan of Commercial Power Reactors

Overview

A system consisting of the NRA Secretariat staff is established and is holding a review meeting on application for approval of Long-Term Facility Management Plan submitted by operators. In FY2023, 4 meetings were held.

Members of Review Meeting on Long-Term Facility Management Plan of Commercial Power Reactors

Secretariat of the NRA	KINJYO Shinji	Director-General for Nuclear Regulation, Director-General's Secretariats
	WATANABE Keiichi	Director for Nuclear Regulation (in charge of reviewing commercial power reactors)
	TSUKABE Nobuyuki	Director for Regulation of Nuclear Facilities

(7) Review Meeting on Type Certification, etc. of Specific Dual-Use Cask Design

Overview

A system consisting of staff from NRA has been established and is holding a Review Meeting on Type Certification, etc. of Specific Dual-Use Cask Design. In FY2023, 6 review meetings and 3 documentary reviews were held.

Members of the Review Meeting on Type Certification, etc. of Specific Dual-Use Cask Design

Secretariat of the NRA	ONO Yuji	Director-General for Nuclear Regulation, Director-General's Secretariats (attended until the 26th Meeting)
	KINJYO Shinji	Director-General for Nuclear Regulation, Director-General's Secretariat (attending since the 28th Meeting)
	WATANABE Keiichi	Director for Nuclear Regulation (in charge of reviewing commercial power reactors)
	TOGASAKI Kou	Director for Regulation of Nuclear Facilities (attended until the 26th Meeting)
	TSUKABE Nobuyuki	Director for Regulation of Nuclear Facilities (attending on the 27th Meeting)
	IWASAWA Masaru	Director for Regulation of Nuclear Facilities (attending since the 28th Meeting)

3. Study Teams

(1) Technical Study Team on Environmental Radiation Monitoring

Overview

In order to conduct appropriate radiation monitoring during emergencies as well as during normal times, it is important to establish a technological base for monitoring, reviewing monitoring methods, and maintaining monitoring skills. In order to continuously study monitoring technology, the Technical Study Team on Environmental Radiation Monitoring consisting of Commissioner BAN Nobuhiko and external experts was formed, under which two meetings were held in FY2023 (for more details, see Chapter 5, Section 5).

Members of the Technical Study Team on Environmental Radiation Monitoring

NRA	BAN Nobuhiko	NRA Commissioner
External experts	IIMOTO Takeshi	Professor, Environment, Health and Safety, The University of Tokyo
	INOMATA Yayoi	Associate Professor, Institute of Nature and Environmental Technology, Kanazawa University
	UEDA Shinji	Director, Department of Radioecology, Institute for Environmental Sciences
	OKUNO Naoko	Director, Aomori Prefecture Nuclear Power Safety Center
	SHIMADA Asako	Senior Chief Researcher, Waste and Environmental Safety Research Group, Fuel Cycle Safety Research Division, Nuclear Safety Research Center, Sector of Safety Research and Emergency Preparedness, Japan Atomic Energy Agency
	TAKADA Hyoue	Associate Professor, Institute of Environmental Radioactivity, Fukushima University
	TAKEISHI Minoru	Technical Advisor, Emergency Assistance and Training Division, Nuclear Emergency Assistance and Training Center, Sector of Safety Research and Emergency Preparedness, Japan Atomic Energy Agency
	YAMAZAWA Hiromi	Professor, Graduate School of Engineering and School of Engineering Nagoya University
	YAMADA Takahiro	Professor, Kindai University Atomic Energy Research Institute
Secretariat of the NRA	KOJIMA Youhei	Deputy Director-General
	IMAI Toshihiro	Director, Radiation Monitoring Division
	NITTA Akira	Director, Radiation Protection Policy Planning Division
	KUBO Yoshiya	Director, Radioactive Environmental Office
	SASAKI Jun	Planning Officer, Radiation Monitoring Division
	TAKAHASHI Tomoyuki	Chief Officer of Technical Research and Investigation, Division of Research for Radiation Protection and Radioactive Waste Management

(2) Safety Oversight Team for the Tokai Reprocessing Plant

Overview

Four meetings of this Oversight Team, which consists of an NRA Commissioner, the NRA Secretariat staff and others, were held in FY2023 to continuously check the state of implementing measures for risk reduction such as vitrification, safety measures and decommissioning at the Tokai Reprocessing Plant, Nuclear Fuel Cycle Engineering Laboratories, Japan Atomic Energy Agency.

Members of the Study Team

NRA	TANAKA Satoru	NRA Commissioner
Secretariat of the NRA	OHSHIMA Toshiyuki	Director-General, Nuclear Regulation Department
	MORISHITA Yasushi	Director-General for Nuclear Regulation, Director-General's Secretariats (attended until the 71st Meeting)
	SHIMA Masakazu	Director for Nuclear Regulation (in charge of reviewing research reactors, use of nuclear materials)
	KURISAKI Hiroshi	Planning and Research Officer (attending since the 72nd Meeting)

(3) Safety Oversight Team for Prototype Fast Breeder Reactor Monju Decommission

Overview

The Safety Oversight Team, which consists of NRA Commissioners, the NRA Secretariat staff and others, was formed in January 2017 in order to continuously check the state of decommissioning of the JAEA's Prototype Fast Breeder Reactor Monju and its activities. In FY2023, one meeting was held under the team.

Members of the Study Team

NRA	TANAKA Satoru	NRA Commissioner
Secretariat of the NRA	OHSHIMA Toshiyuki	Director-General, Nuclear Regulation Department
	SHIMA Masakazu	Director for Nuclear Regulation (in charge of reviewing research reactors, use of nuclear materials)
	OHMUKAI Shigekatsu	Director for Nuclear Regulation (in charge of nuclear fuel facility oversight)
	KURISAKI Hiroshi	Planning and Research Officer

(4) JAEA Back-End Measures Monitoring Team

Overview

Monitoring team consisting of the NRA commissioners and the NRA Secretariat staff was established on May, 2019 in order to handle comprehensive problems concerning back-end measures throughout JAEA, including decommissioning of aging nuclear facilities and management of radioactive waste etc. of JAEA. In FY2023, three meetings were held.

Members of Team

NRA	TANAKA Satoru	NRA Commissioner
Secretariat of the NRA	OHSHIMA Toshiyuki	Director-General, Nuclear Regulation Department
	SHIMA Masakazu	Director for Nuclear Regulation (in charge of reviewing research reactors, use of nuclear materials)
	KANEKO Masayuki	Director for Regulation of Nuclear Facilities(attending until the 6th Meeting)
	ARAKAWA Ichiro	Nuclear Regulation Research Officer (attending since the 7th Meeting)

(5) Study Team on Countermeasures for Common Cause Failures in Digital Safety Protection Systems of Power Reactor Facilities

Overview

The Study Team, which consists of NRA Commissioners, the NRA Secretariat staff and, was held twice in FY2023 in order to promote specific studies on countermeasures for common cause failures in digital safety protection systems of power reactor facilities.

Members of the Study Team

NRA	SUGIYAMA Tomoyuki	NRA Commissioner
Secretariat of the NRA	KOGANEYA Toshiyuki	Director-General for Emergency Response
	OHSHIMA Toshiyuki	Director-General, Nuclear Regulation Department
	TOHYAMA Makoto	Director, Regulatory Standard and Research Division
	SASAKI Haruko	Planning and Coordinating Officer, Regulatory Standard and Research Division
	SAKAI Hirotaka	Nuclear Regulation Specialist, Regulatory Standard and Research Division
	IMASE Masahiro	Nuclear Regulation Specialist, Regulatory Standard and Research Division
	TSUKAMOTO Naofumi	Senior Researcher, Division of Research for Severe Accident, Regulatory Standard and Research Department
	SEKINE Masashi	Deputy Chief Researcher, Division of Research for Severe Accident, Regulatory Standard and Research Department
	MURAKAMI Tsuneo	Deputy Director, Oversight Planning and Coordination Division
	KIKUKAWA Akihiro	Deputy Director, Division of Oversight for Nuclear Power Plants

(6) Study Team on Technical Evaluation of JSME (the Japan Society of Mechanical Engineers) Code for Design and Construction, Materials and Welding

Overview

The Study Team, which consists of the NRA Commissioner, the NRA Secretariat staff, external experts and others, held its meetings four times in FY2023 for the technical evaluation of JSME Standards for design and construction, materials and welding.

Members of the Study Team

NRA	TANAKA Satoru	NRA Commissioner
External experts	OHTSUKA Yuichi	Associate Professor, Graduate School of Technology, Nagaoka University of Technology
	FUKAZAWA Tsuyoshi	Professor, Department of Mechanical Engineering, Graduate School of Engineering, Tokyo Denki University
	FURUKAWA Takashi	Director, Nondestructive Evaluation Center, Japan Power Engineering and Inspection Corporation
Safety Research Center, JAEA	CHIMI Yasuhiro	Leader of Aging and Deterioration Research Group
	YAMAGUCHI Yoshihito	Deputy Director of Research, Seismic and Structural Integrity Evaluation Research Group
Secretariat of the NRA	SATO Gyou	Director, General for Regulatory Standard and Research Department
	TOHYAMA Makoto	Director, Regulatory Standard and Research Division
	SASAKI Haruko	Planning and Coordinating Officer, Regulatory Standard and Research Division
	KOJIMA	Senior Executive Officer of Technical Research and

	Masayoshi	Investigation, Division of Research for Reactor System Safety, Regulatory Standard and Research Department
	TAGUCHI Kiyotaka	Chief Researcher, Division of Research for Reactor System Safety, Regulatory Standard and Research Department
	MIZUTA Kouhei	Safety Technology Expert, Division of Research for g4Reactor System Safety, Regulatory Standard and Research Department
	AZUMA Kisaburou	Technical Research and Investigation Officer, Division of Research for Earthquake and Tsunami
	MIYAZAKI Tsuyoshi	Planning and Research Officer, Division of Specified Oversight
	MINAMIKAWA Satoshi	Senior Executive Specialist for Nuclear Inspection, Division of Specified Oversight
	KIKUCHI Masaaki	Technical Consultant
	TAKAKURA Kenichi	Technical Consultant
	FUJISAWA Hiromi	Technical Consultant

4. Committees for Specific Research and Study

(1) Committee on Oversight and Evaluation of Specified Nuclear Facilities

Overview

Meetings of the Committee on Oversight and Evaluation of the Specified Nuclear Facilities, consisting of NRA Commissioners, the NRA Secretariat staff, and external experts, were held to evaluate the schedule management and safety measures for decommissioning work of TEPCO's Fukushima Daiichi NPS and to give necessary advice. In FY2023, 5 meetings were held.

Members of the Committee

NRA	BAN Nobuhiko	NRA Commissioner
	TANAKA Satoru	NRA Commissioner
External experts	IGUCHI Tetsuo	Professor Emeritus, Nagoya University
	KITTAKA Yoshinori	Professor, Department of Architecture, Faculty of Urban Environmental Sciences, Tokyo Metropolitan University
	TANAKA Seiichiro	President, Futaba Town Reconstruction Promotion Council
	TOKUNAGA Tomochika	Professor, Department of Environment Systems, Graduate School of Frontier Sciences, The University of Tokyo
	HACHISUKA Reiko	Society President of Okuma Town Society of Commerce and Industry
	YAMAMOTO Akio	Professor, Department of Applied Energy Science, Graduate School of Engineering, Nagoya University
Secretariat of the NRA	ICHIMURA Tomoya	Deputy Secretary-General for Technical Affairs
	SATO Gyou	Director-General for Radiation Protection Strategy and Security (attending since the 108th Meeting)
	MORISHITA Yasushi	Director-General for Nuclear Regulation, Director-General's Secretariats (attended until the 107th meeting)
	MINAMIYAMA Rikio	Regional Administrator (in charge of Fukushima)
	TAKEUCHI Jun	Director, Office for Accident Measures of Fukushima Daiichi Nuclear Power Station (attended until the 107th meeting)
	IWANAGA Kohei	Planning and Research Officer, Office for Accident Measures of Fukushima Daiichi Nuclear Power Station (attended until the 107th meeting) Director, Office for Accident Measures of Fukushima Daiichi Nuclear Power Station (attended since the 108th meeting)
	SHIBUTANI Tomoki	Planning and Research Officer, Office for Accident Measures of Fukushima Daiichi Nuclear Power Station
	MASAOKA Hideaki	Planning and Research Officer, Office for Accident Measures of Fukushima Daiichi Nuclear Power Station
	OHTSUJI Ayako	Deputy Director, Office for Accident Measures of Fukushima Daiichi Nuclear Power Station
	KOBAYASHI Ryusuke	Director, NRA Regional Office for Fukushima Daiichi Nuclear Power Station
	AOKI Hiroomi	Chief Researcher, Division of Research for Radiation Protection and Radioactive Waste Management

(2) Technical Meeting for Review of Implementation Plans for Specific Nuclear Facilities

Overview

The Technical Meeting for Review of Implementation Plans for Specific Nuclear

Facilities, which consists of the NRA Secretariat staff, is held to discuss major technical issues, and to exchange opinions on other technical regulatory issues since prompt reviews are necessary to ensure the steady and immediate progress with decommissioning work and other tasks with regard to the examination of the Implementation Plan with Regards to Fukushima Daiichi NPS's Specified Nuclear Facilities. In FY2023, the meeting was held 9 times.

Members of the Committee

Secretariat of the NRA	SATO Gyou	Director-General for Radiation Protection Strategy and Security (attending since the 12th meeting)
	MORISHITA Yasushi	Director-General for Nuclear Regulation, Director-General's Secretariats (attended until the 11th meeting)
	TAKEUCHI Jun	Director, Office for Accident Measures of Fukushima Daiichi Nuclear Power Station (attended until the 11th meeting)
	IWANAGA Kohei	Planning and Research Officer, Office for Accident Measures of Fukushima Daiichi Nuclear Power Station (attended until the 11th meeting) Director, Office for Accident Measures of Fukushima Daiichi Nuclear Power Station (attended since the 12th meeting)
	SHIBUTANI Tomoki	Planning and Research Officer, Office for Accident Measures of Fukushima Daiichi Nuclear Power Station
	MASAOKA Hideaki	Planning and Research Officer, Office for Accident Measures of Fukushima Daiichi Nuclear Power Station
	OHTSUJI Ayako	Deputy Director, Office for Accident Measures of Fukushima Daiichi Nuclear Power Station

(3) Committee on Accident Analysis of the Fukushima Daiichi Nuclear Power Station

Overview

Meetings of the Committee on Accident Analysis of the Fukushima Daiichi Nuclear Power Station, which consists of NRA Commissioners, the NRA Secretariat staff, and external experts and researchers of Japan Atomic Energy Agency were held to examine TEPCO's Fukushima Daiichi NPS accident analysis issues from a technical aspect based on the information obtained from on-site investigation. In FY2023, 8 meetings were held.

Members of the Meeting

NRA	YAMANAKA Shinsuke	NRA Chairman
	TANAKA Satoru	NRA Commissioner (attending since the 37th meeting)
	SUGIYAMA Tomoyuki	NRA Commissioner
External experts	ICHINO Hiroyoshi	Associate Professor, National Defense Academy of Japan
	OHISHI Yuji	Associate Professor, Graduate School, Osaka University
	URATA Shigeru	General Manager, Mitsubishi Heavy Industries, Ltd
	KADOWAKI Satoshi	Professor, Nagaoka University of Technology
	SATO Fuminobu	Professor, Graduate School, Osaka University
	NINOKATA Hisashi	Professor Emeritus, Tokyo Institute of Technology
	MAEKAWA Osamu	Senior Technical Advisor, Nuclear Damage Compensation and Decommissioning Facilitation Corporation (attending until

		the 38th meeting) Senior expert, Toshima Energy Systems and Solutions Corporation (attending since the 39th meeting)
	MIYATA Koichi	Director-General, Atomic Energy Association
	MUTA Hitoshi	Associate Professor, Tokyo City University
	MUTA Hiroaki	Professor, Graduate School, Osaka University
	MURATA Isao	Professor, Graduate School, Osaka University
	YAMAJI Akifumi	Professor, School of Advanced Science and Engineering, Faculty of Science and Engineering, Waseda University
	YAMANAKA Yasunori	Executive Director, the Nuclear Damage Compensation Facilitation Corporation (NDF) (attending since the 39th meeting)
Secretariat of the NRA	SATO Gyou	Director-General for Radiation Protection Strategy and Security (attending since the 39th meeting)
	MORISHITA Yasushi	Director-General for Nuclear Regulation, Director-General's Secretariats (attended until the 38th meeting)
	TOHYAMA Makoto	Director, Regulatory Standard and Research Division
	HIRANO Masashi	Technical Consultant, Regulatory Standard and Research Division, Regulatory Standard and Research Department
	ABE Yutaka	General Technical Researcher, Division of Research for Severe Accident (attended until the 37th meeting)
	TOCHIO Daisuke	Chief General Technical Researcher, Division of Research for Severe Accident (attending since the 37th meeting)
	IRIE Masaaki	Technical Research and Investigation Officer, Division of Research for Radiation Protection and Radioactive Waste Management (attending since the 37th meeting)
	TAKEUCHI Jun	Director, Office for Accident Measures of Fukushima Daiichi Nuclear Power Station (attended until the 38th meeting)
	IWANAGA Kohei	Planning and Research Officer, Office for Accident Measures of Fukushima Daiichi Nuclear Power Station (attended until the 38th meeting) Director, Office for Accident Measures of Fukushima Daiichi Nuclear Power Station (attended since the 39th meeting)
	YASUI Masaya	Planning and Research Officer, Office for Accident Measures of Fukushima Daiichi Nuclear Power Station
	HOSHI Harutaka	Chief Officer for Technical Research and Examination, Office for Accident Measures of Fukushima Daiichi Nuclear Power Station (attended until the 38th meeting) Chief Officer for Technical Research and Examination, Division of Research for Severe Accident (attending since the 39th meeting)
	TATEBE Yasumasa	Chief Safety Examiner, Division of Licensing for Nuclear Power Plants
	KAMINOUCHI Hisamitsu	Lecturer, Reactor Technology Training Division, NRA Human Resource Development Center
JAEA	MARUYAMA Yu	Fellow, JAEA Nuclear Safety Research Center
	AMAYA Masaki	Vice Director, Nuclear Safety Research Center

(4) Fukushima Daiichi NPS Decommissioning and Accident Investigation Liaison and Coordination Meeting

Overview

Meetings of the Fukushima Daiichi NPS Decommissioning and Accident Investigation Liaison and Coordination Meeting consists of the Secretariat of the NRA, which has been conducting related technical research and analysis, as well as the Agency for Natural Resources and Energy, the Nuclear Damage Compensation and Decommissioning

Facilitation Corporation and TEPCO, which are responsible for the decommissioning work. The Meetings were held to coordinate the works relating to accident analysis and decommissioning work. In FY2023, a total of two Meetings were held.

Members of the Meeting

Agency for Natural Resources and Energy	YUMOTO Keiichi	Director-General for Nuclear Accident Disaster Response
	FUKUDA Mitsunori	Director, Nuclear Accident Response Office (attended until 11th meeting)
	YAMAGUCHI Yuzo	Director, Nuclear Accident Response Office (attending since the 12th meeting)
	TSUTSUMI Masahito	Planning Officer, Director, Nuclear Accident Response Office
	MINAGAWA Shigeharu	Director, Office for Nuclear Safety Improvement, Nuclear Energy Policy Planning Division (attended until the 11th meeting)
	TADA Katsuyuki	Director, Office for Nuclear Safety Improvement, Nuclear Energy Policy Planning Division (attending since the
Secretariat of the NRA	SATO Gyou	Director-General for Radiation Protection Strategy and Security (attending since the 12th meeting)
	MORISHITA Yasushi	Director-General for Nuclear Regulation, Director-General's Secretariats (attended until the 11th meeting)
	TAKEUCHI Jun	Director, Office for Accident Measures of Fukushima Daiichi Nuclear Power Station (attended until the 11th meeting)
	IWANAGA Kohei	Planning and Research Officer, Office for Accident Measures of Fukushima Daiichi Nuclear Power Station (attended until the 11th meeting) Director, Office for Accident Measures of Fukushima Daiichi Nuclear Power Station (attended since the 12th meeting)
	OHTSUJI Ayako	Deputy Director, Office for Accident Measures of Fukushima Daiichi Nuclear Power Station
	KIHARA Shoji	Deputy Director, Office for Accident Measures of Fukushima Daiichi Nuclear Power Station (attended until the 11th meeting)
	SATO Yuichi	Chief Special Analyst, Office for Accident Measures of Fukushima Daiichi Nuclear Power Station (attending since the 12th meeting)
Nuclear Damage Compensation and Decommissioning Facilitation Corporation	IKENOUE Sanroku	Executive Director
	NAKAMURA Noriyoshi	Executive Director
	YAMANAKA Yasunori	Executive Director
Tokyo Electric Power Company Holdings, Inc.	OHNO Kosuke	Managing Director, Vice President, Fukushima Daiichi Decontamination and Decommissioning Engineering Company
	IIDUKA Naoto	In charge of Reactor Decommissioning Technology, Fukushima Daiichi Decontamination and Decommissioning Engineering Company
	MIZOKAMI Shinya	Director, Fuel Debris Removal Program Division, Fukushima Daiichi NPS, Fukushima Daiichi Decontamination and Decommissioning Engineering Company

(5) Technical Information Committee

Overview

A meeting of the Technical Information Committee, consisting of an NRA Commissioner,

NRA Secretariat division directors and others, is held approximately every two months with the purpose of organizing and sharing information on accidents and failures that occurred at nuclear power plants in Japan and abroad as well as the latest scientific and technological knowledge and judging the necessity of reflecting them in the regulations. 6 meetings of the Committee were held in FY2023.

Members of the Meeting

NRA	NRA Commissioner
Secretariat of the NRA	Deputy Secretary-General for Technical Affairs
Director-General's Secretariat	Director-General for Emergency Response
	Director, Regulatory Standard and Research Department
	Director-General for Nuclear Regulation (two)
	Director, Office for International Affairs
	Director of Emergency Preparedness and Response Office
Regulatory Standard and Research Department	Director General for Regulatory Standard and Research Division
	Director, Division of Research (in charge of Reactor System Safety)
	Director, Division of Research (in charge of Severe Accidents)
	Director, Division of Research (in charge of Radiation Protection and Radioactive Waste Management)
	Director, Division of Research (in charge of Earthquake and Tsunami)
Radiation Protection Department	Director, Radiation Protection Policy Planning Division
Nuclear Regulation Department	Director-General, Nuclear Regulation Department
	Director, Nuclear Regulation Policy Planning Division
	Director, Office for Accident Measures of the Fukushima-Daiichi NPS
Divisions of Licensing	Director, Division of Licensing for Nuclear Power Plants
	Director, Division of Licensing for Research Reactors, Use of Nuclear Material
	Director, Division of Licensing for Nuclear Fuel Facilities
	Director, Division of Licensing for Earthquake and Tsunami Measure
Division of Oversight	Director, Oversight Planning and Coordination Division
	Director, Division of Oversight of Nuclear Power Plants
	Director, Division of Specified Oversight
	Director, Division of Oversight of Nuclear Fuel Related Facilities and Research Reactors
Japan Atomic Energy Agency	Center Director, Nuclear Safety Research Center
	Director, Regulatory and International Information Analysis Division

(6) Technical Evaluation Committees

Overview

In order to obtain technical opinions from external experts well versed in technological fields for the NRA's prior assessments, interim assessments and post assessments, 5 meetings of the following 5 Technical Evaluation Committees were held in FY2023.

Technical Evaluation Committee on Plant Safety

External experts	KITADA Takanori	Professor, Division of Sustainable Energy and Environment Engineering, School of Engineering, Osaka University
	GOFUKU Akio	Director, Okayama Prefectural University (serving concurrently as vice president (in charge of education/academic research))
	YAMAJI Akifumi	Professor, School of Advanced Science and Engineering, Faculty of Science and Engineering, Waseda University
Professional Engineer	ARAI Kenji	General Manager, Nuclear Safety System Design Department, Isogo Engineering Center, Toshiba Energy Systems Solutions Corporation
	UMEZAWA Shigemitsu	Technical Expert, Reactor Control and Safety Engineering Department, MHI NS Engineering Co., Ltd.
	MIZOKAMI Shinya	Research Director, Fuel Debris Retrieval Program Department, Fukushima Daiichi NPS, Fukushima Daiichi D&D Engineering Company, Tokyo Electric Power Company Holdings, Inc.

Technical Evaluation Committee on Nuclear Fuel

External experts	ARIMA Tatsumi	Associate Professor, Department of Applied Quantum Physics and Nuclear Engineering, Graduate School of Engineering, Kyushu University
	Kurosaki Ken	Professor, Director, Research Center for Safe Nuclear System, Institute for Integrated Radiation and Nuclear Science, Kyoto University
Professional engineers	OTSUKA Kousuke	General Manager, Decommissioning Office (Risk Offiser), Tokyo Erectric Power Company Holdings.
	SAKAMOTO Hiroshi	Chief Researcher, Research Department, Nippon Nuclear Fuel Development Co., Ltd.
	TAKABATAKE Hayato	Executive Vice President / Deputy Chief Nuclear Officer, Kansai Electric Power, Co., Inc.

Technical Evaluation Committee on Severe Accident

External experts	ITOI Tatsuya	Associate Professor, Graduate School of Engineering, The University of Tokyo
	MUTA Hitoshi	Associate Professor, School of Integrative Science and Engineering, Tokyo City University
	MORITA Koji	Professor, Department of Applied Quantum Physics & Nuclear Engineering Faculty of Engineering, Kyushu University
Professional engineers	KURAMOTO Takahiro	Deputy General Manager, Analysis Service Division, Nuclear Engineering, Ltd.
	TAKAHASHI Hiromichi	General Manager in charge of Risk Assessment, Core & Safety Engineering Department, Nuclear Energy Segment, Mitsubishi Heavy Industries, Ltd.
	TAHARA Mika	Fellow, Safety Systems Engineering Group 2, Nuclear Safety System Design Department, Isogo Engineering Center, Toshiba Energy Systems & Solutions Corporation

Technical Evaluation Committee on Nuclear Fuel Cycle

External experts	ASNUMA Noriko	Associate Professor, Department of Nuclear Engineering, School of Engineering, Tokai University
	ENOKIDA Yoichi	Professor, Graduate School of Engineering, Nagoya University

	HONMA Shunji	Associate Professor, Department of Applied Chemistry, Faculty of Engineering, Saitama University
	Matsumura Ken	Executive Director, Public Interest Incorporated Foundation Nuclear Safety Technology Center (NUSTEC)
Professional engineers	NAKABAYASHI Hiroki	Deputy Director, Decommissioning Project Management Office, TRP Decommissioning Center, Nuclear Fuel Cycle Engineering Laboratories, Japan Atomic Energy Agency

Technical Committee on Earthquake and Tsunami

External experts	ITOI Tatsuya	Associate Professor, Graduate School of Engineering, The University of Tokyo
	KAMATAKI Takanobu	Professor, Department of Applied Science, Faculty of Science, Okayama University of Science, Kake Educational Institution
	SAKAI Naoki	Deputy Director-General, Storm, Flood and Landslide Research Division, National Research Institute for Earth science and Disaster resilience
Professional engineers	UMEKI Yoshito	Manager of Civil & Architectural Engineering Department, Nuclear Power Division, Chubu Erectric Power,Co,Inc.
	TOSHIDA Kiyoshi	R&D Manager, External Natural Event Research Team, Nuclear Risk Research Center, Central Research Institute of Electric Power Industry
	MATSUYAMA Masafumi	Head, External Natural Events Research Team, Nuclear Risk Research Center, Central Research Institute of Electric Power Industry

5. Others

(1) NRA Policy Evaluation Meeting

Overview

It is a requirement to conduct hearing of opinions from external experts regarding policy evaluation (ex-post assessment) conducted by the NRA. The meeting was held once in FY2023 to hear opinions on policy evaluation.

Members **of the Meeting**

External experts	IIZUKA Yoshinori	President, Japan Accreditation Board, Professor emeritus, The University of Tokyo
	OHYA Takehiro	Professor, Faculty of Law, Keio University
	KAMEI Zentaro	Professor, Graduate School of Public Policy, The University of Tokyo Professor, Graduate Schools for Law and Politics, The University of Tokyo
	SHIROYAMA Hideaki	Professor, Graduate School of Public Policy, The University of Tokyo Professor, Graduate Schools for Law and Politics, The University of Tokyo
	FUJITA Yukiko	Professor, Faculty of Law, Gakushuin University
	MACHI Asei	Freelance journalist

(2) Meeting on NRA's Administrative Project Review

Overview

In the administrative project review, all ministries and government offices are required to clarify the status of implementation of all their projects, taking into account external opinions. Furthermore, as part of the review, an expert meeting shall be held for some of the projects

for hearing external experts' opinions on problems and improvement. In FY2023, a total of 3 expert meetings were held.

Members **of the Meeting**

External Experts	IIJIMA Hirokuni	Professor, Faculty of Economics, Chuo University
	NAJIMA Kazuhisa	Professor, Faculty of Policy Science, Ryukoku University
	YOSHIDA Takeshi	Certified Public Accountant, Partner, Avantia GP

(3) Meeting on Hearing Opinions of Operators regarding New Regulatory Requirement

Overview

This meeting is held on an irregular basis whenever a necessity arises to publicly hear operators' opinions on the new regulatory requirements. In FY2023, the meeting was held once to discuss the priority of technical evaluation, once to discuss intergranular cracking of stainless-steel piping in the primary system of PWR, and once to discuss endurance test for 24 hours of EDG.

Members **of the Meetings**

・Priority of technical evaluation (August 22, 2023)

Secretariat of the NRA	TOHYAMA Makoto	Director, Regulatory Standard and Research Division
	SASAKI Haruko	Director for Policy Planning and Coordination, Regulatory Standard and Research Division
	KOJIMA Masayoshi	Chief Officer for Technical Research and Investigation, Division of Research for Reactor System Safety, Regulatory Standard and Research Department
	HOJO Tomohiro	Chief Researcher for Technical Research and Investigation, Division of Research for Reactor System Safety, Regulatory Standard and Research Department
	WATANABE Aiki	Researcher for Technical Research and Investigation, Division of Research for Reactor System Safety, Regulatory Standard and Research Department
	TSUKABE Nobuyuki	Director for Regulation of Nuclear Facilities for Nuclear Power Plants
	FUJISAWA Hiromi	Technical Consultant

Intergranular cracking of stainless-steel piping in the primary system of PWR (September 5, 2023)

Secretariat of the NRA	KOGANEYA Toshiyuki	Director-General for Emergency Response
	TOHYAMA Makoto	Director, Regulatory Standard and Research Division
	SASAKI Haruko	Director for Policy Planning and Coordination, Regulatory Standard and Research Division
	KOJIMA Masayoshi	Chief Officer for Technical Research and Investigation, Division of Research for Reactor System Safety, Regulatory Standard and Research Department
	MORITA Kenji	Senior Nuclear Professional Inspector, Division of Specified Oversight
	KOUNO Katsumi	Technical Consultant

	FUJISAWA Hiromi	Technical Consultant
Safety Research Center, JAEA	CHIMI Yasuhiro	Leader of Aging and Deterioration Research Group
	HATA Kuniki	Deputy Chief Researcher, Material and Structural Safety Research Division, Aging and Deterioration Research Group

・Endurance test for 24 hours of EDG (November 6, 2023)

Secretariat of the NRA	TOHYAMA Makoto	Director, Regulatory Standard and Research Division
	SASAKI Haruko	Director for Policy Planning and Coordination, Regulatory Standard and Research Division
	MURAKAMI GEN	Planning and Research Officer for Oversight Planning and Coordination Division
	YONEBAYASHI Kenji	Senior Executive Officer of Inspection Monitoring, Oversight Planning and Coordination Division
	HIRATA Masaki	Head of the Kawasaki Nuclear Regulation Office
	ONO Tatsuya	Senior Reactor Analysis Examiner, Division of Oversight of Nuclear Power Plants
	SAKAI Hirotaka	Chief Senior Researcher, Division of Research for Radiation Protection and Radioactive Waste Management

(4) Debriefing Session of Emergency Drills by Nuclear Operators

Overview

Regarding nuclear emergency drills conducted by nuclear operators, the Debriefing Session was held once in FY2022, led by the Commissioners TANAKA and SUGIYAMA with the aim of strengthening information sharing between the NRA Secretariat and the operators and improving the emergency response capabilities. In addition, one working group was held under the Debriefing Session to discuss scenarios related to training for enhancing on-site response ability in addition to improving the judging ability of the commanders of nuclear power plants' emergency response centers and central control rooms.

Members of the Debriefing Session

NRA	TANAKA Satoru	NRA Commissioner
	SUGIYAMA Tomoyuki	NRA Commissioner
Secretariat of the NRA	KOGANEYA Toshiyuki	Director-General for Emergency Response
	OHSHIMA Toshiyuki	Director-General, Nuclear Regulation Department
	SUGIMOTO Takanobu	Director, Emergency Preparedness and Response Office
	SHIMA Masakazu	Director for Nuclear Regulation (in charge of reviewing research reactors)
	TAKEUCHI Jun	Director for Evidence-based Policymaking
	YAMAGUCHI Michio	Director, Accidents Response Office
	KOSAKU Yasuo	Planning and Research Officer, Division of Licensing for Nuclear Fuel Facilities
	TAKASU Yoji	Director, Division of Specified Oversight
	IWANAGA Kohei	Director, Office for Accident Measures of the Fukushima Daiichi NPS

	MURAKAMI Gen	Planning and Research Officer for Policy Planning and Coordination Division
	AMANO Naoki	Nuclear Regulation Officer, Division of Licensing for Nuclear Power Plants
	IWATA Junichi	Nuclear Regulation Research Officer, Division of Licensing for Earthquake and Tsunami Measures
	KAWASAKI Kenji	Director for Policy Planning and Coordination, Emergency Preparedness and Response Office

(5) Exchange of Opinions on the Way of Training and Regulatory Involvement in Emergency Response by Nuclear Operators

Overview

The Exchange of Opinions is being held to discuss with nuclear operators how to improve the effectiveness of the entire measures taken by the nuclear operators for emergency response, including nuclear operators' emergency drills based on the Act on Special Measures Concerning Nuclear Emergency Preparedness and education and drills based on the requirements under the Nuclear Reactor Regulation Law, and how to evaluate such measures in cooperation with the nuclear operators. In FY2023, the Exchange was held twice in total.

Members **of the Meeting**

Secretariat of the NRA	KOGANEYA Toshiyuki	Director-General for Emergency Response
	SUGIMOTO Takanobu	Director, Emergency Preparedness and Response Office, Division of Specified Oversight
	TAKASU Yoji	Director, Division of Specified Oversight
	NAKAMURA Shinichiro	Director for Nuclear Regulation, Division of Nuclear Security (the 9th meeting only)
	TSURUSAWA Yoji	Director for Nuclear Regulation, Division of Nuclear Security (the 10th meeting only)
	YAMAGUCHI Michio	Director, Accidents Response Office
	KAWASAKI Kenji	Planning and Coordinating Officer, Emergency Preparedness and Response Office
	SEKI Masayuki	Planning and Research Officer, Division of Specified Oversight

(6)Meetings on Responses to the Review of Emergency Action Levels

Overview

In FY2023, the Meeting was held once to exchange opinions on the revision of Emergency Action Levels (EAL) by taking into account the Special Facility for Severe Accident Management with nuclear operators who actually operate such facilities in consideration of the EAL at commercial power reactor facilities.

Members **of the Meeting**

NRA	SUGIYAMA Tomoyuki	NRA Commissioner
Secretariat of the NRA	KOGANEYA Toshiyuki	Director-General for Emergency Response
	SUGIMOTO Takanobu	Director, Emergency Preparedness and Response Office
	FUNAYAMA	Director, Division of Research (in charge of Severe

	Kyoko	Accidents), Division of Research for Severe Accident, Regulatory Standard and Research Department
	WATANABE Kenichi	Director for Nuclear Regulation (in charge of reviewing commercial power reactors), Nuclear Regulation Department (Licensing) Nuclear Regulation Department.
	KAWASAKI Kenji	Planning and Coordinating Officer, Emergency Preparedness and Response Office
	KATO Takayuki	Planning and Research Officer, Regulatory Standard and Research Division, Regulatory Standard and Research Department
	IWASAWA Masaru	Deputy-Director for Nuclear Regulation , Division of Licensing for Nuclear Power Plants, Nuclear Regulation Department (Licensing), Nuclear Regulation Department

(7)Information Exchange Meeting on the Inspection Program

Overview

The meeting was started in April 2020 to exchange information with external experts and nuclear operators for continuous improvement of nuclear regulatory inspections, and three meetings were held in FY2023.

Members **of the Meeting**

NRA	TANAKA Satoru	NRA Commissioner (The 13th, 14th)
	SUGIYAMA Tomoyuki	NRA Commissioner
Secretariat of the NRA	KOGANEYA Toshiyuki	Director-General for Emergency Response
	TAKEYAMA Shouji	Director, Division of Oversight of Nuclear Power Plant (The 12th , 14th)
	SUGIMOTO Takanobu	Director for Nuclear Regulation (in charge of commercial power reactor oversight)
	OHMUKAI Shigekatsu	Director for Nuclear Regulation (in charge of nuclear fuel facility oversight)
	TAKASU Youji	Director for Nuclear Regulation (in charge of special inspections)

(8)Public Meeting on Improvement of Legal Reports based on the Reactor Regulation Act

Overview

The meeting was held twice in FY2023 to discuss continuous improvements including the consolidation of nuclear regulatory inspections that started operating in FY2020 as to the reports of accidents and troubles based on the Nuclear Reactor Regulation Act.

Members **of the Meeting**

Secretariat of the NRA	KOGANEYA Toshiyuki	Director-General for Nuclear Emergency Response
	SUGIMOTO Takanobu	Director for Nuclear Regulation, Division of Oversight of Nuclear Power Plant (Concurrent position: Director, Emergency Preparedness and Response Office)
	MURATA Shinichi	Supervisory Monitoring Coaching Officer, Division of Oversight of Nuclear Power Plant