FY 2015

Annual Report

(Provisional English Translation)

Nuclear Regulation Authority

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 Efforts in Fiscal Year 2015

(1) Monitoring Efforts to decommission the reactors of the Fukushima Daiichi Nuclear Power Station (from "emergency response stage" to "planned action stage")

In FY 2015, risks greatly affecting the environment were significantly reduced by measures such as removal of heavily-contaminated water from sea-side underground trenches connected to the reactor turbine buildings, and long-term stable management of radioactive wastes became more important. Therefore, we reviewed our monitoring system. We deemed that the situation had changed from the "emergency response stage", which addressed various urgent problems, to the "planned action stage" where we can review, one by one, all measures for the management of radioactive waste or decommissioning of the reactors, and proceed steadily with those measures. We then produced "Measures for Mid-term Risk Reduction at TEPCO's Fukushima Daiichi NPS (as of March 2016) "based on the status of decommissioning work in March 2016.

(For details, see Sections 1 and 2, Chapter 4.)

(2) Implementation of Conformity Review for New Regulatory Requirements

To address the New Regulatory Requirements based on the lessons learned from the accident at the Fukushima Daiichi Nuclear Power Station, we conducted strict and appropriate reviews and inspections for change in reactor installation permit. On July 15, 2015, we approved the change in the reactor installation permit for the Unit 3 of the Ikata Power Station, Shikoku Electric Power Co., Inc. We approved the construction plan for four stations, and issued pre-service inspection certificate for three stations (Unit 1 and 2 of the Sendai Nuclear Power Station, and Unit 3 of the Takahama Power Station).

(For details, see Section 2, Chapter 3.)

(3) Monju

Regarding the prototype fast breeder reactor Monju of the Japan Atomic Energy Agency (JAEA) where various management maintenance deficiencies had been found, the NRA recommended the Minister of Education, Culture, Sports, Sciences and Technology to identify the one having the ability to operate Monju safely instead of the JAEA, in accordance with Article 4, Paragraph 2, of the Act for Establishment of the Nuclear Regulation Authority (Act No. 47, 2012) on November 13, 2015.

(For details, see Section 2, Chapter 3.)

(4) Enhancement of Nuclear Emergency Preparedness and Response

We made efforts to enhance emergency preparedness and response by setting guidelines for TEPCO's Fukushima Daiichi Nuclear Power Station and the medical treatment system in a nuclear emergency, under the Nuclear Emergency Response Guidelines.

(For details, see Section 1, Chapter 7.)

(5) Hosting IRRS

After deciding to request International Atomic Energy Agency (IAEA) to conduct the Integrated Regulatory Review Service (IRRS) in December 2013, the Nuclear Regulation Authority (NRA) prepared a self-assessment report for the IRRS. After discussions and reviews at the NRA Commission Meetings in October 2015, we submitted the self-assessment report to the IRRS mission team. The IRRS then performed the review mission in Japan in January 2016. Without waiting for the final report of the IRRS mission, the NRA began to discuss on solving challenges identified through our self-assessment and issues that we recognized through discussions with the IRRS mission team. On March 16, 2016, we summarized the issues identified through the IRRS process and the action plans to cope with these issues in FY 2016.

(For details, see Section 2, Chapter 2.)

Table of Contents

Chapter 1 Introduction (Organization of the NRA)

The Nuclear Regulation Authority (NRA) was established in September 2012, in response to the March 11, 2011, accident at the Fukushima Daiichi Nuclear Power Station owned by the Tokyo Electric Power Company (hereinafter referred to as "*TEPCO's Fukushima Daiichi NPS*"). Based on the lessons learned from this accident, the NRA unitarily undertook an administrative role related to nuclear regulations and nuclear security, as well as a role related to technical aspect of nuclear emergency preparedness and response that were previously under the jurisdiction of other related administrative agencies. These include the formulation of the Nuclear Emergency Response Guidelines based on both the provisions of the Atomic Energy Basic Act (Act No. 186 of 1955) and the Act on Special Measures Concerning Nuclear Emergency Preparedness (Act No. 156 of 1999). From April 2013, the NRA has also been responsible for administration of safeguards based on international commitments, radiation monitoring, and regulations on the use of radioisotopes. On March 1, 2014, the Incorporated Administrative Agency, the Japan Nuclear Energy Safety Organization (hereinafter referred to as the *"Japan Nuclear Energy Safety Organization"* or *"JNES"*), and all of its activities were integrated into the NRA to enhance the new agency's overall expertise.

Table 1 Major NRA Activities

(1)	Ensuring safety in the use of nuclear energy (Regulations on nuclear energy-related business and facilities, and on the use of nuclear fuel material)
(2)	Regulating the physical protection of nuclear material (nuclear security) and coordination among relevant ministries and agencies on related matters
(3)	Coordination among relevant ministries and agencies concerning radiation monitoring
(4)	Enhancing human resources to ensure nuclear energy safety
(5)	Investigating the causes of nuclear reactor accidents and resultant damage
(6)	Formulation of the Nuclear Emergency Response Guidelines
(7)	Regulating safeguards based on international commitments
(8)	Preventing radiation hazards (regulations on radioisotopes, etc.)
(9)	Implementation of radiation monitoring
	* Affairs mentioned in (7) to (9) have been under the jurisdiction of the NRA since April 2013.

(1) Organizational Philosophy of the NRA

At the 22nd NRA Commission Meeting of FY 2012 (hold on January 9, 2013), the NRA established its core values and principles to fulfill its mission of protecting the public and the environment through rigorous and reliable regulations of nuclear activities. The NRA established five guiding principles for NRA activities, concerning its independence, effectiveness, transparency, expertise, and readiness.

Table 2 NRA's Core Values and Principles

Bearing in mind that:

- The NRA was established to absorb and learn the lessons of the Fukushima Daiichi nuclear accident of March 11, 2011:
- Such 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:

(1) 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 previous 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.

(2) Chairman and Commissioners

The NRA is composed of the Chairman and four Commissioners.

On September 18, 2015, two Commissioners Toyoshi Fuketa and Kayoko Nakamura completed their terms of office. On September 19, 2015, Commissioner Toyoshi Fuketa took office again as a Commissioner, and new Commissioner Nobuhiko Ban was appointed. In addition, we decided the ranking of the Commissioners who represented the duties of the Chairman at the 28th NRA Commission Meeting (September 9, 2015) in FY 2015 (see Table 3).

Table 3 Terms of Office of the Chairman and Commissioners

	From September 19, 2012 to September 18, 2014	From September 19, 2014 to September 18, 2015	From September 19, 2015
Chairman	Shunichi Tanaka	Shunichi Tanaka	Shunichi Tanaka
Commissioner (substitute to the Chairman)	Kunihiko Shimazaki	Toyoshi Fuketa	Toyoshi Fuketa
Commissioner (second substitute for the Chairman)	Toyoshi Fuketa	Satoru Tanaka	Satoru Tanaka
Commissioner (Third substitute for the Chairman)	Kayoko Nakamura	Kayoko Nakamura	Akira Ishiwatari
Commissioner (Fourth substitute for the Chairman)	Kenzo Oshima	Akira Ishiwatari	Nobuhiko Ban

(3) Organization of the Secretariat of the NRA

The Secretariat of the NRA is responsible for the organization's administrative affairs, and the NRA Human Resource Development Center (facilities) is responsible for human resources development and training activities. As of the end of March 2016, the number of staff was 968. The FY 2015 budget (after revision) was 59,413 million yen * (see table 4 and figure 1).

* These amounts include the Reconstruction Agency's special account for reconstruction after the Great East Japan Earthquake.

Table 4 Breakdown of NRA FY 2015 Budget (after Revision)

(in million yen)

	FY 2015 budget (after budget revision)
General account	9,112
Special account for energy measures	46,710
Special account for reconstruction after the Great East Japan Earthquake*	3,591
Total	59,413

* The entire budget is allocated to the Reconstruction Agency.

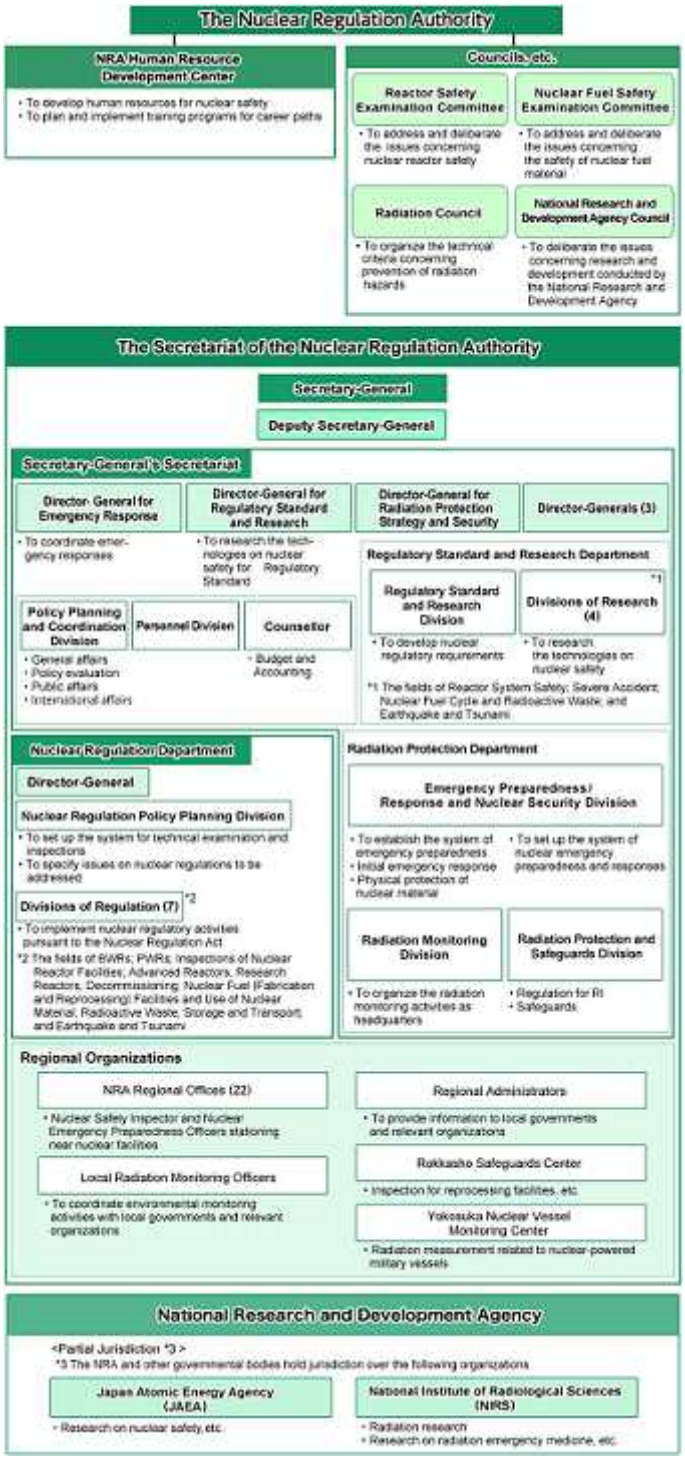

Figure 1. Organizational structure of the NRA (as of March 31, 2016)

Chapter 2 Ensuring Trust in the Nuclear Regulatory Administration

Based on the lessons from the accident at the TEPCO's Fukushima Daiichi NPS, it is essential to make continuous efforts to ensure trust in the nuclear regulatory administration.

To fulfill its mission of protecting the public and the environment through rigorous and reliable regulation of nuclear activities, the NRA continued to address different policy issues. It adheres to its organizational principles: *independent decision-making*, *effective action, transparent and open organization, aspiration for continuous improvement and sense of responsibility*, and *emergency response*.

Section 1 Ensuring Independence, Impartiality, and Transparency of the Nuclear Regulatory Administration

(1) Ensuring Independence

Independent decision-making is vital for effective regulation and is emphasized by many global nuclear regulatory organizations as one of the most significant factors of their own organizational philosophy. The NRA, which was established as a highly independent, so-called Article 3 Authority, states that "we shall make decisions independently, based on the latest scientific and technological information, free from any outside pressure or bias" in "NRA's Core Values and Principles" established in 2012. In line with those principles, we continue to make decisions in an impartial, neutral, and independent manner from scientific and technological viewpoints. (for holding the NRA Commission Meetings, see Tables 1 and 2 in Section 1 of Appendix.)

(2) Ensuring Impartiality

To restore trust in nuclear regulation, it is indispensable to ensure the impartiality of personnel involved in the decision making process. Therefore, the NRA Commission defined the "Code of Conduct related to Ethics for the NRA Chairman and Commissioners" at the 1st NRA Commission Meeting of FY 2012 (September 19, 2012). The Code stipulates that the Chairman and Commissioners must not receive donations from nuclear licensees during their term of office and that they disclose any donations they had received in the three years prior to assuming office. Further, they must disclose any situation involving their students finding jobs with nuclear licensees. Details about Commissioner Ban who was newly appointed in September 19, 2015, were disclosed on his arrival date. Relevant background information about Chairman Tanaka and Commissioner Fuketa, who have been in office since the establishment of the NRA, was disclosed at the time of presenting personnel proposals to the Diet. Information about Commissioner Satoru

Tanaka and Commissioner Ishiwatari, who took office on September 19, 2014, was disclosed on their arrival date.

The 4th NRA Commission Meeting of FY 2012 (October 10, 2012) agreed on the "Requirements for Ensuring Transparency and Neutrality when the NRA Takes Advice from External Experts as a Reference in Making a Decision on Nuclear Safety Regulations, etc. for Electric Utilities." This regulation requires thorough disclosure on the relationship between electric utilities and external experts the experts' views on nuclear regulation and other issues. Furthermore, when reviewing the safety of individual electricity facilities, personnel may be selected as external experts only if they have not served as executives of the relevant electric utilities in the previous three years, if they have not personally received 500,000 yen or more as remuneration during one fiscal year, or if they have not been involved in earlier examinations of said the facilities. The requirements were revised in March 2013, to include nuclear fuel cycle facilities. Similar requirements were established for the appointment of the Reactor Safety Examination Committee members, the Nuclear Fuel Safety Examination Committee members, and the Radiation Council members.

In FY 2015, as in the previous year, self-reported personal data on the members of various study meetings was disclosed on the NRA Website.

(3) Ensuring Transparency in Decision-Making

To restore trust in nuclear regulation, it is essential to ensure transparency in decision-making. To clarify processes and discussions leading to final decisions, the NRA determined a "Policy on Ensuring Operational Transparency of the NRA" at the inaugural NRA Commission Meeting of FY 2012 (September 19, 2012), this outlined the basic policies for (a) building an information release system (not subject to disclosure request requirements), (b) thoroughly adhering to disclosing discussions, and (c) thoroughly adhering to the principle of administration based on written documents. The policy further provides that minutes and reference materials used at the meetings of the NRA Commission, Committees, and Study Teams, should, in principle, be disclosed.

In accordance with this policy, the NRA Commission in in FY 2015, prepared summaries of all meetings on nuclear regulation attended by three or more members and interviews between the NRA Chairman, NRA Commissioners, or officials of the Secretariat of the NRA and regulated parties. The summaries were then announced together with the names of the attendees and the reference materials used. The summaries of significant meetings and interviews were reported to the NRA Commission Meetings. Two or more members attended each of the interviews with the regulated parties regardless of whether or not the

interviews related to regulatory matters, and the schedules of the interviews and the status of their implementation were made public.

As in FY 2014, the NRA held its Commission Meetings and other study meetings in public in accordance with the “Policy on Ensuring Operational Transparency of the NRA” and the “Operational Guidelines for NRA Commission Meetings.” The NRA Commission Meetings and other study meetings were broadcast live on YouTube and niconico Videos and abridged editions of meetings not broadcast live were also released. In addition, reference materials used at Commission Meetings and other study meetings were posted on the NRA website in the same way as in FY 2014, so that the materials would be available as soon as each meeting started. The minutes of Commission Meetings were posted the following day, and those of various other study meetings around one week after the meeting.

As in FY 2014, a regular press conference was held by the NRA Chairman once a week, and regular press briefings by the Secretariat of the NRA were held twice a week. A total of 154 press conferences were held in FY 2015. Press conferences were broadcast live and recorded videos were released in the same manner as for Committee Meetings and other study meetings. The minutes of press conferences by the NRA Chairman were posted on the NRA website on the same day, when possible, and those of the regular press briefings of the Secretariat of the NRA on the following day.

(4) Enhancing External Communications

In order to examine diverse opinions in Japan, we invited external experts to various review meetings and interviewed related business partners. In addition, in order to deepen the understanding of regulatory content between regulators and those regulated and to establish a relationship to respond promptly in emergencies, we interviewed qualified regulated persons to ensure transparency.

Furthermore, in order to hear varied domestic and overseas opinions, we undertook the following actions:

(i) Communication with Nuclear Licensees

Since October 2014, we exchanged opinions with the top managers of nuclear licensees who have major nuclear facilities and the managers of nuclear power departments. The reasons were (1) promoting a countrywide safety culture in Japan, and (2) hearing opinions of licensees of nuclear energy-related activities on basic ideas and activities related to safety improvement, and on proposals to continuously improve the current regulatory system.

As in the previous fiscal year, in FY 2015, we exchanged opinions with 6 nuclear licensees at the NRA Commission Meetings by September 2015 and finished exchanging opinions with a total of 12 nuclear licensees that we originally planned. Exchange focused on the following areas: efforts for safety improvement where nuclear licensees perform voluntarily (i.e. fostering safety culture), hearing ideas from nuclear licensees in order to consider improvement of the regulatory system, and exchange with Japan Nuclear Safety Institute (JANSI) on nuclear licensees' opinions about the system and framework for voluntary safety improvements.

Based on these exchanges, we summarized what we have already accomplished, and discussed the continuing exchange of ideas at the 37th NRA Commission Meeting in FY 2015 (October 28, 2015). We concluded that this activity was meaningful as one of the efforts to raise awareness of nuclear licensees and for the NRA to continue to hear various opinions. However, it was raised as a challenge that there are situations where the exchange of opinions was not enough to deepen the discussions, in cases due to the limitations to the agenda. So, it was decided that top managers would actively and fully present their opinions, and topics proposed by nuclear licensees would be more fully explored in the future.

In accordance with this policy, we have exchanged opinions with two nuclear licensees since February 2016 (see Table 5).

Table 5. Opinion Exchanges with Top Managers for Efforts on Safety Improvement

Nuclear Licensees	Opinion Exchanges in FY 2015	
	1st Round	2nd Round
Kyushu Electric Power Co. , Inc.	—	February 3, 2016
Shikoku Electric Power Co. , Inc.	—	March 16, 2016
The Kansai Electric Power Co. , Inc.	—	—
Hokkaido Electric Power Co. , Inc.	—	—
The Tokyo Electric Power Co. , Inc.	—	—
Chubu Electric Power Co. , Inc.	—	—
Tohoku Electric Power Co. , Inc.	April 22, 2015	—
The Chugoku Electric Power Co. , Inc.	May 27, 2015	—
Hokuriku Electric Power Co.	June 10, 2015	—
The Japan Atomic Power Co.	August 3, 2015	—
Japan Nuclear Fuel Limited (JNFL)	August 26, 2015	—
Japan Atomic Energy Agency (JAEA)	September 30, 2015	—

* The first round of opinion exchanges with Kyushu Electric Power Co., Inc.; Shikoku Electric Power Co., Inc.; Kansai Electric Power Co., Inc.; Hokkaido Electric Power Co., Inc.; Tokyo Electric Power Co., Inc.; and Chubu Electric Power Co., Inc., was conducted from October 2014 to March 2015.

In addition, we exchanged opinions with nuclear licensee top managers who have specific topics to discuss at the NRA (see Table 6).

Table 6. Opinion Exchanges on Specific Issues with Nuclear Licensee Top Managers

Nuclear Licensees	Opinion Exchanges	Main Content of Opinion Exchanges
The Kansai Electric Power Co. , Inc.	October 27, 2015	Progress of conformity review of the Unit 3 of the Mihama Nuclear Power Plant, Kansai Electric Power Co. , Inc.
Japan Atomic Energy Agency (JAEA)	May 26, 2015	Efforts on issues of JAEA
	November 2, 2015	Management issues and measures about Monju

(ii) Communication with Local Governments

The NRA met local governments and the National Governors' Association. The NRA Chairman met the Chairman of the Special Committee for Nuclear Power Generation Measures and the National Governors' Association, on August 20, 2015, and with the Chairman of the Special Committee for Crisis Management and Disaster Preparedness of the National Governors' Association, on August 24, 2015. The NRA Chairman also visited Fukushima Prefecture for 8 days in October 2015 and met the leaders of 14 municipalities. The Chairman explained current efforts to decommission the reactors of TEPCO's Fukushima Daiichi NPS and exchanged opinions with the municipal officials. In addition, the Secretary-General and the Deputy Secretary--General of the NRA Secretariat met the leaders of local governments and the representatives of the National Governors' Association and other officials (see Table 7). Furthermore, the NRA tried to strengthen communication with local governments not only via the NRA Chairman, but also at various other levels. Staff of the NRA Secretariat, for instance, explained the results of conformity reviews to the New Regulatory Requirements and the content of the Nuclear Emergency Response Guidelines to local governments with nuclear power stations and local residents.

Table 7. Meetings with Local Governments in FY 2015

Schedule	Meeting with	Our Representative
May 28	Japan Council of Municipalities with Nuclear Power Stations	Secretary-General
June 2	Governor of Ehime Prefecture	Secretary-General
June 3	Governor of Shimane Prefecture	Secretary-General
June 4	Governor of Tottori Prefecture	Secretary-General
June 12	Association of Chairmen and Vice Chairmen of Municipal Assemblies of 4 Prefectures in Shikoku	Secretary-General
June 18	Mayor of Mihama Town	Deputy Secretary-General
June 18	Governor of Shiga Prefecture	Secretary-General
July 24	Council of Chairmen of Municipal Assemblies Related to Nuclear Power	Secretary-General
September 18	Mayor of Matsue City	Deputy Secretary-General
October 22	Mayor of Mihama Town	Deputy Secretary-General
October 26	Governor of Ehime Prefecture	Secretary-General
October 28	Mayors of 6 cities in the Western part of Toyama Prefecture	Deputy Secretary-General
November 13	Council of Chairmen of Municipal Assemblies Related to Nuclear Power	Secretary-General
November 17	Governor of Shimane Prefecture	Secretary-General
November 24	Governor of Shiga Prefecture	Secretary-General
November 25	Mayor of Tsuruga City	Deputy Secretary-General

(iii) Meetings with External Advisors

The NRA appointed three international experts as advisors with extensive experience leading nuclear regulatory authorities in the United States, the United Kingdom, and France (see Table 8). We exchanged opinions at various meetings and the external advisors described their views on general issues, including recommendations to the NRA and on how to work for regulatory activities. In addition, the NRA explained its responses at appropriate times.

External advisors visited Japan in November, FY 2015, and met the NRA Chairman and individual commissioners. They discussed various issues, including efforts to increase the effectiveness of inspections, an ongoing reviews under the new regulatory system, decommissioning of the reactors at TEPCO's Fukushima Daiichi NPS, ensuring highly competent staff, and issues related to radioactive monitoring in emergencies. We received written advice later (see Table 9).

Table 8 External Advisors[1]

Andre-Claude Lacoste	・ Former Chairman of ASN[2] ・ Led the Integrated Regulatory Review Service (IRRS) of the IAEA[3] to Japan in 2007
Richard A.Meserve	・ Former Chairman of the NRC[4] ・ Chairman of the IAEA International Nuclear Safety Group (INSAG)
Michael Weightman	・ Former Chief Inspector of Nuclear Installations and head of the ONR[5] ・ Led the IAEA Expert Team on Investigation into the Accident at TEPCO'S Fukushima Daiichi NPS in 2011

[1] The titles are as of March 31, 2016
[2] Nuclear Safety Authority
[3] International Atomic Energy Agency
[4] Nuclear Regulatory Commission
[5] Office for Nuclear Regulation

Table 9 Overview of Opinions from External Advisors (Opinions Exchanged in November 2015)

Topics	Opinions
(1) Inspection	The inspection program should provide significant flexibility for the NRA to focus its attention on those matters that are of risk significance as identified by the safety case. We expect this to be a significant and long-term challenge. A first step could be to create a body of high-level inspectors that could set an example for others going forward.
(2) Enforcement	The NRA should have a full arsenal of enforcement tools available to it. The full range of options can include fines, orders of various kinds, sanctions against individuals, and even referrals for criminal enforcement in egregious cases. The determination of the appropriate sanction for a violation might include consideration of the safety significance of the violation, the culpability of licensee, whether the licensee self-reported the matter to the NRA in a timely fashion, whether corrective action was self-initiated and was promptly introduced, the duration and extent of the violation, and other similar matters that bear on the seriousness of the offense.
(3)License Renewal	Adjustment of statute governing license renewal seems appropriate.
(4)Staffing	The fulfillment of the important obligations of the NRA requires the recruitment and retention dedicated, motivated, and highly competent staff. Efforts to demonstrate that employment by the NRA is both satisfying and rewarding are essential.
(5) Fukushima Daiichi Decommissioning	The overall approach to cleanup and decommissioning should give priority to those activities that can most quickly reduce risks and can best advance the decommissioning.

(iv) Other Communication in Japan and overseas

External experts were included as members at various meetings of the NRA and their knowledge were put to practice.

In addition, the NRA sought public opinions on the revision of the Order for Enforcement of the Reactor Regulation Act and the Ordinance of the NRA. In FY 2015, comments were sought in 15 areas, including those covered by the Administrative Procedure Act (Act No. 88 of 1993) and the others not covered by the Act. Summaries of this interaction were published.

In addition, the NRA in FY 2015 continued to operate a website page and call center. The website received about 90 comments per month and the call center about 360 inquiries per month.

Table 10 Major Public Comments in FY 2015

Designated by Law	Optional
・ Cabinet Order of partial revision of the Cabinet Order for the Act on the Regulation of Nuclear Source Material, Nuclear Fuel Material and Reactors ・ Ordinance on partial revision of NRA Ordinance on Standards for the Location, Structure, and Equipment of Commercial Power Reactors and its Auxiliary Facilities ・ Partial revision of Regulatory Guide of NRA Ordinance on Technical Standards for Commercial Power Reactors and its Auxiliary Facilities 10 Public Comments in Total	・ Review report to application for change in reactor installation permit for Unit 3 at the Ikata Power Station, Shikoku Electric Power Co., Inc. ・ Technical evaluation report “Methods of Monitoring Test of Reactor Structure Materials” (JEAC4201-2007) [Supplemented version in 2013] by the Japan Electric Association ・ Technical evaluation reports “Errata of Design and Construction Standards” (JSME S NC1), “Materials Standards” (JSME S NJ1), and “Welding Standards” (JSME S NB1) (as of April 27, 2015) by the Japan Society of Mechanical Engineers, and “Errata of Rules on Leak Rate Test of Reactor Containment” (JEAC4203-2008) (as of April 21, 2015) by the Japan Electric Association ・ Response procedures to promote elimination of discrimination by the reason of disability in the NRA ・ Implementation procedures of open bidding on radioactivity survey and comprehensive evaluation projects in marine environment in FY 2016 5 Public Comments in Total

Section 2 Continuous Improvement of Organizational Structure and Management

1. Full-Scale Operation and Improvement of Management System

After trial operation of the NRA Management System (MS) for a half year, we started full-scale operation of the MS based on the NRA Management Rules (determined on September 3, 2014) from April 2015 (for the management system structure, See Figure 2) in order to maintain and improve the quality of our works and foster our safety culture.

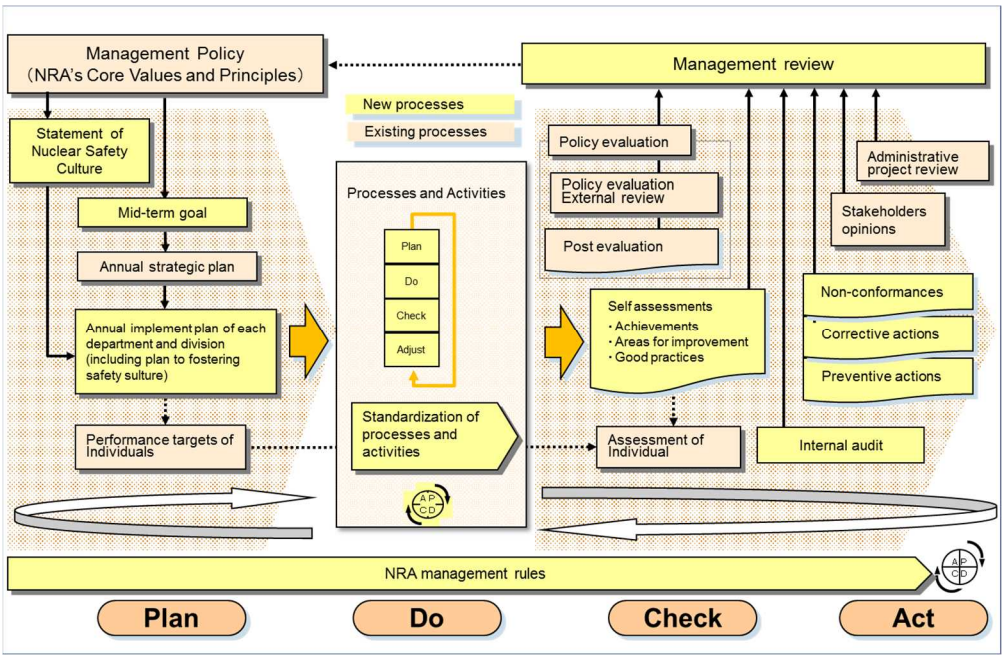

Figure 2. The Management System Structure of the NRA

In addition, the NRA issued the Statement on Nuclear Safety Culture at the 10th NRA Commission Meeting in FY 2015 (May 27, 2015) which clearly presented attitudes inside and outside the NRA to work on fostering a nuclear safety culture.

Table 11. Statement on Nuclear Safety Culture

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 Dai-ichi 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 for raising 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 to safety

In lucid 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

Decision shall be made in an independent and objective manner taking due account of the risks. Anyone who makes a decision is responsible for explaining logically 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 to 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 feedback 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 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 whether there are 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 actions

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 take necessary actions with agility.

8. Harmonization with nuclear security

It is necessary to recognize that nuclear safety and security activities do not exist independently, namely 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.

In FY 2015, based on the MS, we operated in accordance with NRA's Core Values and Principles, as well as the Statement on Nuclear Safety Culture, Code of Conduct on Nuclear Security Culture, NRA Mid-term Goal, and Annual Strategic Plan of the NRA for FY 2015.

We then conducted a management review to assess the results/achievements of the Annual Strategic Plan for FY 2015 at the 58th NRA Commission Meeting in FY 2015 (March 2, 2016). Based on this review, we set Annual Strategic Plan for FY 2016 at the 64th NRA Commission Meeting in FY 2015 (March 30, 2016). In addition, we conducted an internal audit, mainly for the operation of MS in each division in FY 2015. In order to strengthen the internal audit, we requested establishing the Management System Office in FY 2016. As a result, it was accepted as the Budget.[6]

For policy evaluations of the NRA in accordance with the Government Policy Evaluation Act (Act No. 86 of 2001), we conducted post-evaluations of policies implemented in FY 2014 and ante-evaluation of policies implemented in FY 2015. Considering consistency with the MS, we summarized the evaluation reports on August 26, 2015.

[6] After that, we set the Management System Office on the director-general's secretariat on April 1, 2016.

2. Response to the IRRS missions and Issues identified in the mission

The Integrated Regulatory Review Service (IRRS) is carried out by the IAEA at the request of the Member States. The IRRS mission team reviews and evaluates the legal and regulatory infrastructure, organizational arrangements and various themes for nuclear regulation.

Following a decision to invite the IRRS mission in NRA Commission Meeting held in December 2013, the NRA prepared a self-assessment report to submit to the IRRS mission team. The self-assessment report was prepared over two years and submitted to the team after discussions and reviews in the 33rd and 37th NRA Commission Meetings in FY 2015 (October 9 and 28, 2015).

The IRRS mission team visited Japan from the 11th to 22nd January 2016 to conduct their review. The IRRS team conducted interviews with the NRA, the Secretariat of the NRA, relevant authorities, and regulated parties. They also visited nuclear facilities.

In the press release later, the IRRS mission issued their findings and presented the following good practices and recommendations as examples:

Good Practices

- The swift establishment of a legal and governmental framework that supports a new independent and transparent regulatory body with increased powers.
- NRA's prompt and effective incorporation of lessons learnt from the Fukushima Daiichi accident in the areas of natural hazards, severe accident management, emergency preparedness and safety upgrades of existing facilities, into Japan's new regulatory framework.

Recommendations

- The NRA should work to attract competent and experienced staff, and enhance staff skills relevant to nuclear and radiation safety through education, training, research and enhanced international cooperation.
- Japanese authorities should amend relevant legislation to allow NRA to perform more effective inspections of nuclear and radiation facilities.
- The NRA and all entities it regulates should continue to strengthen the promotion of safety culture, including by fostering a question attitude.

Although the final report[7] has not been received, the NRA has already started to address issues highlighted in discussions with the IRRS team and in the self-assessment. At the 60th NRA Commission Meeting in FY 2015 (March 16, 2016), we summarized the issues and the responding policies in FY 2016 (see Table 12).

A special team was planned to lead discussion on three specific issues - inspection and enforcement, radiation source regulations/radiation protection, and human resource development and ensuring, in response to those cross-sectional issues. Other issues were decided to be dealt with by the existing organizations in NRA. It is also concluded that the NRA would check the progress on those issues through its MS in order to assess the contributions and effectiveness of such efforts the achievement of NRA Mid-term Goals. The NRA Commission is to make necessary review on those issues if necessary based on the final IRRS report.

Table 12. Issues Identified in the IRRS process and Policies to Respond in FY 2016

No.	Issues Identified in the IRRS process (Found in Self-assessment for the IRRS, and Discussions with the IRRS Mission Team)	Response to Issues This Fiscal Year
	Human Resource Development and Securing	
1	**Strengthening cooperation with JAEA in safety research area** Strengthening safety research in JAEA Cooperation between the NRA and JAEA in safety research fields that contribute human resource development	● Continuously hold regular information exchange meetings with JAEA Nuclear Safety Research Center. We will also strengthen the framework for mutual human resources exchange by expanding and strengthening temporary staff transfer from NRA to JAEA. ● Establish a cooperation framework within this year in order to efficiently participate in international research projects organized by the IAEA and the OECD/ NEA, etc.
	Management System	
2	**Strengthening safety culture** Implementing specific measures (training, awareness survey) to promote and sustain high level of safety culture in accordance with Statement on Nuclear Safety Culture	● Introduce a safety culture assessment model based on methods found in other industry fields and created by the IAEA (planned in April 2017). ● Develop a new training program to promote and sustain the safety culture (in cooperation with NRA Human Resource Development Center). ● Encourage NRA's staff to reflect findings in discussions to their affairs by performing round table discussions between the Commissioners and staff, and workshops among the staff (focus group discussion).

[7] The final report of the IRRS mission was submitted from the IAEA to the Japanese government on April 22, 2016 (April 23 [JST]).

No.	Issues Identified in the IRRS process (Found in Self-assessment for the IRRS, and Discussions with the IRRS Mission Team)	Response to Issues This Fiscal Year
3	**Implementation of integrated management system** ● Establish document and implement an integrated management system for regulatory and supporting processes ● Taking strategic approach led by the NRA Commissioners aiming for establishment the management system ● Developing a structured management system and description of each process by unified format	● Develop mid-term strategic road map to improve issues identified in practices of the MS and systematizing and documenting MS and processes. Confirm progress of the road map and review effectiveness of the MS continuously. ● Create complementary documents for the NRA Management Rules that contains describing specific methods to implement the requirements prescribed in the rule, a process map and a documents structure. ● Complete manuals in progress of creation, and process map by categorizing processes into two types: those directly connected to nuclear safety (core processes) and administrative processes (support processes). ● Create and implement plans to integrate processes that are presently duplicated in multiple departments and divisions. For each manual, use common flow charts and formats. ● Implement the PDCA cycle based on the NRA Management Rules and improve it continuously.
4	**Strengthening of collection of information from interested parties to develop annual implementation plan** Strengthening of collecting information from interested parties to grasp future work load from the aspect of efficient and effective utilization of resources.	● Identify the information to be acquired from interested parties (ex. licensee's application schedules, desired schedules of academic society's endorsement to private standards) that is needed to develop implementation plan, in the first half of FY 2016. ● Collect the information from interested parties and reflect the information in the annual implementation plan in the next year in the second half of FY 2016. ● In the next fiscal year, perform internal audits in order to improve the implement plan by checking the information of interested parties is used properly.
	Regulatory System	
5	**Communication with the licensees about the outcomes of regulatory review** Review the effectiveness of the mechanism to communicate with the licensees about the outcomes of regulatory reviews and assessment, further expectations and current issues to the regulatory authority	● Promote thorough documentation based on the "Policy on Ensuring Operational Transparency of the NRA". Also, continue to disclose the results of conformity review to the New Regulatory Requirements and findings pointed out in the hearing with licensees on the NRA's website. ● Ask licensees suggestion for the improvement.

No.	Issues Identified in the IRRS process (Found in Self-assessment for the IRRS, and Discussions with the IRRS Mission Team)	Response to Issues This Fiscal Year
6	**Interface between nuclear safety and security** Development of a mechanism allowing regulations on nuclear safety and security to be conducted in a more harmonized manner	● Investigate efforts in the IAEA, the United States, Switzerland, and other countries to grasp advanced efforts. ● Establish mechanisms for licensees to review whether safety or security interferes each other, and for the NRA to confirm whether the interference with reviews and inspections. In addition, establish the system of Trustworthiness Check of the NRA personnel (planned in the end of FY 2016).
7	**Quality assurance from installation permit** Adding requirements for quality assurance from applicants' installation permit of nuclear facilities	● Consider the licensing method for ensuring quality assurance of the applicant from installation permit.
8	**Regulations on dismantling a part of facilities** Regulating activities to dismantle or remove a part of a nuclear facility, that may exceed the dose limit outside the Surrounding Monitoring Area	● For control occupational exposure related to dismantling or removing facilities within power station sites, check the licensees' situation on radiation control during the dismantling or the removal activities. In addition, consider necessity to clarify specific construction activities and to establish its standard review plan.
9	**Consideration of decommissioning during all life stages** Establish regulatory requirements to consider decommissioning of nuclear facilities and radiation facilities during all life stages	● Initiate investigation to incorporate the requirement for licensees to develop and update their decommissioning plan during all life stages, and incorporate it into the guidelines of periodic safety assessment of continuous improvement as soon as possible.

No.	Issues Identified in the IRRS process (Found in Self-assessment for the IRRS, and Discussions with the IRRS Mission Team)	Response to Issues This Fiscal Year
10	**Procedures for approval related to aging facilities** Organizing the relation between three existing procedures related to aging management (aging technical evaluation, periodic safety assessment of continuous improvement, and extension of operation beyond 40 years)	● A technical evaluation of aging facility and development of the maintenance management policy are required for extension of its operation period. Both are also required in aging technical evaluation for 40th years. For the plants of which licensee applied for extension of operation period, consider simplification for application procedure of aging technical evaluation for 40th years so that the documents attached to the application of extension of operation period can be utilized for the aging technical evaluation for 40th years.
11	**Measures for Operating Experience Feedback** Reassessment of current process on feedback regarding operation experience	● Clarify criteria and route of information collection of operating experiences that were previously unclear. In this process, we also consider a comprehensive method of information collection not to lose important safety events. ● Provide licensees with the information on lessons learned through the coordination meeting with Japan Nuclear Safety Institute (JANSI).
	Development and Review of Guidelines	
12	**Regular review of regulatory requirements and guidelines** Development and documentation of a systematic process for evaluating regulations and guidelines regularly	● For ordinances, regulatory guides, and guidelines, create documents clarifying the basic rules, screening method, prioritization method, and system for assessment and review in order to facilitate: ➢ Develop a review plan of guidelines from the former organizations (Nuclear and Industrial Safety Agency, Nuclear Safety Commission), and evaluate them. ➢ Develop and review how to utilize the standards of academic societies and associations, and the evaluate them ➢ Develop the process to reflect the international findings compiled by the IAEA and the OECD/NEA

No.	Issues Identified in the IRRS process (Found in Self-assessment for the IRRS, and Discussions with the IRRS Mission Team)	Response to Issues This Fiscal Year
13	**Regular review of regulatory requirements and guidelines** Enhancing a set of licensing guidelines related to nuclear facilities	● Review guidelines for nuclear facilities: (The guidelines to supplement the standards) ➢ Develop the guidelines to assess toxic gas impact for the habitability of the reactor control room by June 2016 ➢ Perform technical evaluation on maintenance specifications for nuclear power plant components and reflect them to the regulatory guides by September 2016 (The guidelines showing the licensing procedure) ➢ Develop comprehensive manual for process of conformity review to the New Regulatory Requirements by integrating documents we have individually established for ways to proceed the review.
14	**Consideration of human and organizational factors** Requiring systematic consideration of human and organizational factors at design stage	● Incorporate consideration of human and organizational factors at design stage into the regulatory requirements in the process of establishing following guidelines. ➢ The guidelines for the reactor control room ➢ The guidelines on assessing root cause analysis ➢ The guidelines on assessing safety culture fostering activities
15	**Consideration of the decommissioning of nuclear facilities at design stage** Requesting for considering the decommissioning and minimization of radioactive waste at design stage	● Research the latest domestic and overseas situation about plant design to facilitate decommissioning and minimize radioactive waste, and revise regulatory criteria, after 2017, based on a trend of installation of new reactors.
16	**The guidelines for periodic safety assessment of continuous improvement** Improvement of guidelines for periodic safety assessment of continuous improvement ・ Reassessment of all the site characteristics which were prerequisite for licensing of nuclear facilities(currently, only earthquakes and tsunamis are subject to the reassessment) ・ Investigation of sufficient scope of site characteristics needed for assessment of potential impact outside the sites of nuclear facilities, and risk assessment based on the results	● Promptly initiate a study to incorporate followings into the guidelines for periodic safety assessment of continuous improvement: ➢ Reassessment of the site characteristics affecting the risks of nuclear facilities which were subject to be assessed at approval of installation permits ➢ Development of a decommissioning plan during all life stage ● Initiate a study to introduce level 3 probabilistic risk assessment (PRA) as one of the risk assessment methods of outside of the nuclear reactor sites.

No.	Issues Identified in the IRRS process (Found in Self-assessment for the IRRS, and Discussions with the IRRS Mission Team)	Response to Issues This Fiscal Year
17	**The requirements to site release** Development of standards to release a site of nuclear facility under the regulations after its decommissioning	● Develop a draft standards of site release within this year by considering related regulatory standards of the IAEA and other countries.
18	**The requirements for wastes for near surface disposal** Incorporating performance based specifications of waste disposal facilities and waste packages for near surface disposal into regulatory standards	● For pit disposal of category 2 waste, review the relationship among function requirements, performance requirements, and current specification codes of regulatory requirements for waste disposal facilities and waste packages, and establish performance based regulatory standards.
19	**Establishment of regulatory standards for waste disposal of decommissioned reactors** Establishment of regulatory standards for waste disposal of decommissioned reactors	● Coordinate with related government authorities and perform public-comments in order to set concepts of regulatory standards of intermediate depth disposal for radioactive waste of reactor core internals with relatively-high radioactive concentration, ● Study to develop outlines to be reflected in the regulatory standards for requirements which are not affected after expiration of regulation for the licensees (after closer) of intermediate depth disposal facilities.
20	**Establishment of regulatory standards for wastes generated from research laboratories, etc.** Establishment of the regulatory standards for the disposal of radioactive waste generated from research laboratories, etc.	● Establish basic concept to ensure safety and how to confirm waste packages for the following items: wastes generated from research laboratories and uranium processing facilities considering their occurrence, properties and others and concepts to ensure safety at the intermediate depth disposal facilities and other category 2 waste disposal facilities.
21	**Standards for burying of waste disposal facilities** Establishment of the standards for confirmation of burying waste at waste disposal facilities and standard review plan for operational safety program for monitoring and surveillance after closure	● Investigate advanced efforts in other countries, and study requirements to be added for standards for confirmation of burying waste at near-surface disposal facilities, and standard review plan for their monitoring and surveillance after the closure.
22	**Dose limit of eye lens** For the dose limit of eye lens due to occupational exposure, a response is necessary in accordance with IAEA Safety Standards	[Radiation Hazards Prevention Act [8] and Reactor Regulation Act[9]] ● Develop a framework to collect/organize the latest knowledge to prevent radiation hazards (equivalent dose limit of eye lens, etc.), and consider necessary reviews.

[8] Radiation Hazard Prevention Act: The abbreviation of the Act on Prevention of Radiation Hazards due to Radioisotopes (Act No. 167 of 1957 hereinafter referred to as Radiation Hazards Prevention Act).

[9] Reactor Regulation Act: The abbreviation of the Act on the Regulation of Nuclear Source Material, Nuclear Fuel Material and Reactors (Act No. 166 of 1957, hereafter referred to as the Reactor Regulation Act)

No.	Issues Identified in the IRRS process (Found in Self-assessment for the IRRS, and Discussions with the IRRS Mission Team)	Response to Issues This Fiscal Year
		● Establish concepts of the dose limit of eye lens in accordance with the latest IAEA Safety Standards within 2016.
	Preparation and Response to Nuclear Facilities Emergency	
23	**Improvement of EPR[10] for nuclear facilities** ● Development of the EAL[11] for nuclear facilities other than commercial power plants ● Development of guidelines to promptly determine the EAL for nuclear facilities	● Develop the EAL for nuclear facilities other than commercial power reactors, and establish the standards to determine the EAL and reflect them in the Nuclear Disaster Response Guidelines within this year.
	Confirmation that nuclear licensees provide information to the public living in area of disaster prevention plan at the stage of preparation of the licensees' EPR[10]	● Revise the Guide for Nuclear Operator's EPR plan by specifying the information to be provided to the public. Also confirm licensee's activities that the information is provided to the public.
24	**Application of consistent requirements for categories of emergency workers performing similar tasks** Application of consistent requirements for categories of emergency workers performing similar task considering increasing dose limit of emergency workers in nuclear facilities, that is implemented from April 2016,	● Confirm the response of each licensee to the revised ordinates for emergency work through operational safety inspections in FY 2016, ● Confirm the cooperation between licensees (especially, licensees of commercial power reactors) and emergency workers performing similar tasks.
	Radiation Source Regulations/Radiation Protection	
25	**Reflection of inspection results conducted by registered inspection organization in licensing process** Revise the licensing process in order to license permit or approvals after reviewing inspection findings by registered inspection organizations in accordance with Radiation Hazards Prevention Act[8].	● Develop a mechanism as follows: Registered inspection organizations conduct facility inspections and they report the results to the department of regulation of radiation sources. The NRA confirm the results and after that, users of radioisotopes start to use them (planned within FY 2016).
26	**Cooperation with relevant regulatory authorities for inspection, and strengthening of supervision to registered inspection organizations** Perform information exchanges and cooperation with other regulatory authorities that conduct inspections for nuclear or radiation safety, and strengthen supervision to the registered inspection organization in accordance with Radiation Hazard Prevention	● Develop a system that conducts on-site inspections for registered certification organizations in accordance with Article 43-3, Radiation Hazard Prevention Act, and make it in force from FY 2016. ● Share information with registered certification organizations timely and appropriately and coordinate a framework to supervise licensees. ● Communicate with related authorities

[10] EPR: Emergency Preparedness and Response
[11] EAL: Emergency Action Level

No.	Issues Identified in the IRRS process (Found in Self-assessment for the IRRS, and Discussions with the IRRS Mission Team)	Response to Issues This Fiscal Year
	Act to maintain and improve its quality and reliability of reviews.	(Ministry of Health, Labor and Welfare, Ministry of Land, Infrastructure, Transport and Tourism, etc.) to share findings and reach consensus on items to be inspected and required levels at inspections.
27	**Enhancing a set of guidelines related to the regulation of radiation source** Establishment of processes to regularly evaluate and review ordinances and guidelines in accordance with Radiation Hazard Prevention Act , improvements and documentation of the processes, and if necessary, supplementation by documenting necessary guidelines.	● Prepare documents for regulatory procedures in accordance with Radiation Hazards Prevention Act (licensing, inspection, RI security guides), integrate them on the NRA management system, and update them regularly. ● Prepare documents that integrated administrative communication letters from the old department of regulation of radiation source and disclose some of those on NRA's website, which are useful for licensees. In addition, integrate them on the NRA management system and update them regularly.

Table 13 Issues to Respond by Establishing Special Systems

No.	Issues Identified in the IRRS process (Found in Self-assessment for the IRRS, and Discussions with the IRRS Mission Team)
	Inspection and Enforcement
1	○Improvement and simplification of the inspection system by amending legislation ○Improvement of training and retraining of inspectors ○Cooperation with regulatory authorities for inspections (communication for joint inspection etc.) ○Development of an enforcement process to decide the degree of penalty for non-compliance, and a procedure to implement corrective action promptly if a safety significant event is imminent
	Radiation Source Regulations/Radiation Protection
2	○ Harmonize regulatory activities and strengthen cooperation among government regulatory authorities that are responsible for radiation safety ○Strengthening efforts and resource allocation related to radiation protection ○Develop requirements for the licensing system of service providers for occupational exposure, public exposure and environmental monitoring ○Emergency preparedness and response for radiation source ○Incorporation of the latest knowledge pertaining to the IAEA Safety Standards ○Correspondence to the decommissioning
	Human Resource Development and Its Ensuring
3	○Develop and implement the action plan for human resource development ○Assess the organizational system and human resource utilization ○Appropriate and substantial expansion of human resources in inspection and radiation protection areas and ensuring expertise on human and organizational factors

Section 3 Cooperation with the International Community

The NRA undertook measures to enhance nuclear regulation through active collaboration and cooperation with international organizations and overseas nuclear regulatory authorities. In FY 2015, through various opportunities, the NRA forcefully disseminated information on its regulatory activities based on lessons learned from the accident of TEPCO's Fukushima Daiichi NPS and taking into account international safety standards and latest scientific and technological information. The NRA actively incorporated the experiences and knowledge on nuclear regulations in other countries and put them to good use for continuous improvement as a regulatory organization, as well as reflecting them in regulatory requirements in Japan.

(1) Cooperation with International Organizations such as the IAEA and OECD/NEA

The NRA shares domestic activities and information through attendance at conferences organized by international organizations, such as the IAEA and OECD[12]/NEA[13] and through dispatches of experts abroad, and incorporated the results of international activities to improve nuclear regulatory practices at home.

(i) Participation in conferences organized by the IAEA, OECD /NEA and other international organizations

The Commissioners attended a series of international conferences as shown in Table 14 and shared the findings and lessons learned from the accident at TEPCO's Fukushima Daiichi NPS with the international community and exchanged views and information to contribute to nuclear safety improvement on a global scale.

In addition, in OECD/NEA CSNI[14] in December 2015, the Commissioner Fuketa was selected as new Chairman.

Table 14 Participation of the NRA Commissioners in the conferences organized by International Organizations

Schedule	Name (Location) of conferences	Attended by
April 28-29, 2015	IAEA INSAG (Vienna, Austria)	Commissioner Fuketa

[12] Organization for Economic Co-operation and Development
[13] Nuclear Energy Agency
[14] Committee on the Safety of Nuclear Installations

Schedule	Name (Location) of conferences	Attended by
June 3, 2015	NEA Workshop on Challenges and Enhancements to Safety Culture of the Regulatory Body co-held by OECD/NEA CNRA[15]/CSNI/CRPPH[16]	Commissioner Fuketa
June 4-5, 2015	OECD/NEA CSNI (Paris)	Commissioner Fuketa
June 4, 2015	MDEP/PG[17] (Paris)	Commissioner Fuketa
June 15-17, 2015	IAEA SAGNA[18] (Vienna)	Commissioner Nakamura
November 11, 2015	IAEA CSS[19] (Vienna)	Commissioner Fuketa
November 16-20, 2015	IAEA AdSec[20] (Vienna)	Commissioner Tanaka
December 4-5, 2015	OECD/NEA CSNI (Paris)	Commissioner Fuketa

(ii) Exchange of views with the IAEA Director-General and the OECD/NEA Director-General

Chairman of the NRA held discussions with Director-General Amano of the IAEA in April and October 2015. He also exchanged opinions with OECD/NEA Director-General Magwood in October 2015. In these opinion exchanges, the Chairman explained the situation of conformity reviews to the New Regulatory Requirements and discussed ways to continue close cooperation with both of the international organizations in the future, such as request for the IRRS mission and co-working on improving the safety culture.

(iii) Communication on the marine monitoring programs including the program conducted in cooperation with the IAEA

As a part of the international communication efforts, the NRA regularly releases the marine monitoring results from areas surrounding TEPCO's Fukushima Daiichi NPS and other areas (F1 Issues, Sea Area Monitoring).

The NRA and the IAEA have compared the results of sea water radioactivity analysis done by the IAEA's and Japanese laboratories conduct a proficiency test with laboratories under the agreement on cooperation of marine monitoring in Japan (For more details, see chapter 4).

[15] Committee of Nuclear Regulatory Activities
[16] Committee on Radiation Protection and Public Health
[17] Multinational Design Evaluation Programme Policy Group
[18] Standing Advisory Group for Nuclear Applications
[19] Commission on Safety Standards
[20] Advisory Group on Nuclear Security

(2) Implementation of international conventions on nuclear safety

i. Convention on Nuclear Safety

The Convention on Nuclear Safety covers nuclear power stations to achieve and maintain high levels of nuclear safety worldwide. It contains provisions for establishing and maintaining radiation protection in nuclear facilities, preventing accidents leading to radiological consequences, and mitigating the consequences should any accident happen. The NRA is responsible for (a) developing National Reports, (b) conducting peer reviews among the Contracting Parties, and (c) attending meetings of Contracting Parties (Review Meetings) and undertaking other activities (known as “the review process”).

The latest National Reports are the sixth National Reports submitted in August 2013. At the sixth Review Meeting held from March to April 2014, the National Reports of each country, including Japan, were discussed among the Contracting Parties. Japan received good practice from other parties for the establishment of an independent regulatory authority having improving ability, strengthened regulatory standards, and the introduction of back fitting to existing nuclear plants. On the other hand, the following challenges were highlighted: stabilization of the site status of TEPCO’s Fukushima Daiichi NPS, treatment of contaminated water, implementation of back fitting measures, improvement of the safety culture of nuclear licensees through dialogs, improvement for the management system and human resource development, and improvement for inspection systems. The NRA is actively working on to meet those challenges in the next seventh review process (from 2014 to 2017).

At the sixth Review Meeting, the revision of the Convention on Nuclear Safety was also discussed. Particularly, the article on the design and construction of nuclear installation (Article 18) was amended as follows: nuclear installation must be designed and constructed to avoid and mitigate releases of radionuclides causing long-term off-site contamination; and these objectives also apply to existing nuclear installation. If the amendments of the Convention on Nuclear Safety is not unanimous, it will be decided by holding a meeting called the diplomatic conference (Article 32). For this proposed amendments, the diplomatic conference was held in Vienna in February 2015. As a result, the Vienna Declaration was unanimously adopted without amending Article 18 of the Convention on Nuclear Safety. The Vienna Declaration describes that the parties should implement safety improvement as far as achieve reasonably, and describe the situation of their efforts in the seventh National Reports.

ii. The Joint Convention on the Safety of Spent Fuel Management and on the

Safety of Radioactive Waste Management (The Joint Convention)

The Joint Convention covers safety in managing spent fuel and radioactive waste from nuclear power stations and research reactors. The objectives of the Joint Convention are to achieve and maintain a high level of safety worldwide in spent fuel and radioactive waste management, to ensure effective defenses against potential hazards during all stages of management of spent fuel and radioactive waste, to prevent accidents with radiological consequences, and to mitigate consequences should any accident occurred. The NRA is responsible for developing the National Reports as set forth in the Joint Convention, and conducting peer reviews in cooperation with other relevant authorities (Ministry of Foreign Affairs and Ministry of Economy, Trade and Industry).

The latest National Reports are the fifth National Report submitted in October 2014. At the fifth Review Meeting from 11 to 22 May 2015, the National Reports from each country, including Japan, were discussed among the parties (Commissioner, Satoru Tanaka, and the Secretariat of the NRA staff attended from the NRA). Japan received good practice from other parties for various activities of the NRA is working on since its establishment, such as release of radiation monitoring information on the NRA portal site, restructuring of the regulatory system, establishment of a framework for new emergency preparedness response, and radiation sources registration management system for sealed source (specific radioactive isotope). On the other hand, establishment of regulations on the disposal of radioactive waste generated by decommissioning reactors, strengthening human resource development, and actions for issues found through IRRS mission invited in FY 2015 were pointed out as challenges for the next sixth review process (from 2015 to 2018). The NRA is actively working to meet those challenges.

iii. The Convention on Early Notification of a Nuclear Accident and Convention on Assistance in the Case of a Nuclear Accident or Radiological Emergency

The Convention on Early Notification provides the framework for notifying any nuclear accidents with radiological consequences beyond national borders to state party and IAEA which potentially affected state party, while the Convention on Assistance provides the framework for international collaboration of assistance in radiological emergency.

The meeting of the contracting parties (meeting of competent authorities) to the Convention on Early Notification and the Convention on Assistance is held every two years. The latest meeting was held in May 2014, and the Ministry of Foreign Affairs and the Secretariat of the NRA attended. In addition, training (ConvEx[21]) on the notification to international authorities in accordance with the Convention on Early Notification is

[21] Convention Exercises

conducted with the state parties every year, and the Secretariat of the NRA also attended.

iv. The Convention on the Physical Protection of Nuclear Material and Its Revision, and International Convention for the Suppression of Acts of Nuclear Terrorism

The Convention on the Physical Protection of Nuclear Materials requires its Member States to provide protective measures on nuclear material during international transport and protection of nuclear materials against illegal acquisition and use. In July 2005, the Convention was amended, and the protection obligation based on the Convention was extended up to domestic use, storage and transport of nuclear materials to be used for peaceful purposes.

In relation to this convention, the meeting of relevant authorities of the convention parties was held for the first time in the IAEA from 15 to 17 December, 2015, and the Ministry of Foreign Affairs and the Secretariat of the NRA staff attended from Japan. At the same meeting, they discussed how to cooperate among the convention parties by considering operation after the amendment of Convention on the Physical Protection of Nuclear Material will be in force. The NRA led the discussion to manage the Convention in the future, proposing to create a framework for regular exchange of information among the Member States and this proposal by the NRA was adopted.

The International Convention for the Suppression of Acts of Nuclear Terrorism underlines that any acts of nuclear terrorism may result in the gravest consequences and may pose a threat to international peace and security. Its objective is to enhance international cooperation between States in devising and adopting effective and practical measures for the prevention of such acts of terrorism and for the prosecution and punishment of perpetrators. The NRA is engaged in the implementation of the Convention, to which Japan is among the Member States.

(3) Cooperation with Foreign Nuclear Regulatory Authorities

From the viewpoint of improving nuclear safety, the NRA is promoting information exchange with nuclear regulatory authorities in other countries.

i. International Nuclear Regulators Association (INRA[22])

The INRA consists of the chief executives of regulatory authorities in the countries having major nuclear power stations, and it is a framework to exchange opinions twice a year on extensive topics of nuclear safety regulations. At present, its member countries

[22] International Nuclear Regulators Association

include Japan, U.S.A., France, U.K., Germany, Canada, Sweden, Spain, and Republic of Korea.

On May 7 and 8, 2015, the 36th meeting was held in the ASN,[23] the presiding organization of 2015. From the NRA, Chairman Tanaka attended and presented the situation of conformity review to the New Regulatory Requirements, nuclear emergency preparedness, the decommissioning and subsequence waste, and the latest situation of TEPCO's Fukushima Daiichi NPS.

The 37th meeting was hosted by France at the residence of the ambassador of the permanent mission of France to the United Nations and the International Organizations, in Vienna, Austria, during the session of the General Conference of the IAEA in September 2015. From the NRA, the Secretary-General for Technical Affairs participated, on the behalf of the Chairman in discussion on a wide range of topics related to nuclear safety.

ii. Regional cooperation: China-Japan-Korea Top Regulators' Meeting (TRM[24])

The TRM is a regional cooperation on nuclear safety and works as a framework for Japan, China and South Korea to promote regular information exchange on regulatory issues and technical improvement. It holds a meeting once a year since 2008. In 2015, South Korea was the president. The 8th meeting was held in Seoul, Republic of Korea, on October 21, and Commissioner Ban attended from the NRA. In the meeting, the discussion was made on the work plan of the working group on the framework for information exchange at normal times and in an emergency, as well as the past achievements and the work plan of the working group on human resources development. The three parties agreed to create another working group on emergency preparedness and response, which further deepened the cooperation among the three countries.

In addition, the 3rd TRM Plus, which is an expert meeting with participation from countries other than Japan, China, and South Korea also attended, was held at the same occasion. The Secretariat of the NRA also attended the TRM Plus. Nuclear regulatory authorities of the United States, France, Canada, Russia, and Mongolia, and international organizations such as the IAEA also attended the TRM Plus in addition to the three countries of TRM. The discussion was made on cooperation for nuclear safety regulations in the northeast Asia, cooperation for emergency response, cooperation for nuclear safety research, and how to cooperate among nuclear licensees.

[23] Nuclear Safety Authority
[24] Top Regulators' Meeting on Nuclear Safety among China, Japan, and Korea

iii. Bilateral cooperation: Preparation of the cooperation documents

The NRA concluded memorandums of understanding on cooperation with 11 countries (12 nuclear regulatory authorities) as of the end of FY 2014. In FY 2015, it concluded the memorandum of understanding on exchange of regulatory information with CNSC[25] during the General Conference of the IAEA in September. Table 15 shows the results of conclusion as of the end of FY 2015.

The NRA exchanges information and views on nuclear regulation through these bilateral mechanisms.

Table 15 Conclusion of Agreements on Cooperation between the NRA and Other Countries

Name of Country	Name of Authority	Year Concluded
United States	NRC	Concluded in 2010 Renewed in 2015
	DOE[26]	2013
France	ASN	2013
United Kingdom	ONR	2013
Russia	RTN[27]	2013
Sweden	SSM[28]	2013
Germany	BMUB[29]	2014
Spain	CSN	2013
Finland	STUK	2013
Canada	CNSC	2015
Viet Nam	VARANS[30]	2014
Turkey	TAEK[31]	2014
Lithuania	VATESI[32]	2014

[25] Canadian Nuclear Safety Commission
[26] United States Department of Energy
[27] Rostekhnadzor
[28] Swedish Radiation Safety Authority
[29] Federal Ministry for the Environment, Nature Conservation, Building and Nuclear Safety
[30] Vietnam Agency for Radiation and Nuclear Safety
[31] Turkish Atomic Energy Authority
[32] State Nuclear Power Safety Inspectorate of the Republic of Lithuania

iv. Bilateral meetings

In cooperation with the United States, a public workshop on the decommissioning of nuclear power stations was held in Tokyo in April 2015 by the NRA and U.S. NRC (see Section 3-4. (1), Chapter 2). The NRA and NRC also organized, in accordance with the agreement on cooperation, a Japan-US Steering Committee in Tokyo in October 2015. They shared information on the current situation of operation of the inspection system and decommissioning work at TEPCO's Fukushima Daiichi NPS, also discussed on future cooperation. In March 2016, the NRA held a Japan-US Steering Committee in Washington, D.C., USA, in connection with the RIC[33] hosted by the NRC. Commissioner Fuketa attended both meetings.

In cooperation with France, the third Japan-France Regulatory Authorities Meeting (headed by Commissioner Satoru Tanaka and the ASN commissioners in France) was held in Paris, France in September 2015. They discussed on the situation of the followings: conformity review to the New Regulatory Requirements, regulations on radioactive waste, regulations on emergency exposure, and TEPCO's Fukushima Daiichi NPS.

In cooperation with the United Kingdom, the NRA held a meeting for regulatory information exchange in Liverpool, the United Kingdom, in March 2015 in accordance with the agreement on information exchange with the ONR.

In cooperation with Sweden, SSM Director General Person visited the Chairman of the NRA in October 2015, and exchanged opinions on cooperation in the future.

In cooperation with Germany, the NRA held a meeting for regulatory information exchange in Tokyo in July 2015 to exchange opinions.

In addition, in September 2015, the Director General for Technical Affairs, who attended the General Conference of the IAEA held in Vienna as the deputy of Chairman of the NRA, exchanged opinions on cooperation in the future with the Director-General Amano of IAEA, the Chairman of the NRC and the president of the CNSC. Furthermore, the Director-General had conversations with the attendees of the General Conference of the IAEA from ENSI[34], EU, FANR[35].

v. Human Resource Development

The NRA conducted a training course on nuclear regulations in Tokyo for the VARANS staff from October 13 to 30, 2015, in accordance with the memorandum with Vietnam. In addition, the NRA held a seminar in Hanoi, Vietnam, twice in total from June 8 to 11 and from September 7 to 10 of the same year.

---

[33] Regulatory Information Conference
[34] Swiss Federal Nuclear Safety Inspectorate
[35] Federal Authority for Nuclear Regulation

Furthermore, the NRA conducted a basic training course on nuclear regulations in Tokyo for the TAEK staff from November 10 to December 17 in accordance with the memorandum with Turkey. The NRA also held a seminar in Ankara, Turkey for the TAEK staff on September 14 and 15 of the same year.

(4) International Conferences organized by the NRA

In order to collect international knowledge on nuclear safety, the NRA invites domestic and overseas experts in various areas of nuclear safety. It shares knowledge and receive advice leading to improve regulations every year as well as introducing its efforts.

i. A Public Workshop on the Decommissioning of Nuclear Power Stations

As a part of cooperation of nuclear regulatory authorities of Japan and the United States to advance nuclear safety regulations, a workshop on the decommissioning of nuclear power stations was held on April 8, 2015, by the NRA and the NRC in Tokyo. In this workshop, Commissioner Fuketa and Commissioner Satoru Tanaka from the NRA, and Mr. Burns, Chairman and Mr. Moore, Deputy Director, Office of Nuclear Material Safety and Safeguards from the NRC, gave lectures and discussed regulatory efforts on the decommissioning of nuclear power stations.

ii. International Symposium Response to Natural Phenomena for Ensuring Nuclear Safety

The NRA held an international public symposium “Response to Natural Phenomena for Ensuring Nuclear Safety” on May 21, 2015 in Tokyo. This symposium aimed to exchange opinions for natural phenomena, especially earthquakes, active faults, and tsunamis by inviting Professor Macfarlane, former chairman of the NRC in the United States, and Professor Kojiro Irikura, Emeritus Professor, Kyoto University. From the NRA, Commissioner Fuketa and Commissioner Ishiwatari attended the symposium. After a keynote lecture by Professor Macfarlane, a panel discussion was held by attendees, and concepts of regulatory requirements and conformity review to the requirements related to earthquakes and tsunamis were discussed.

Section 4 Steady Response to Litigation Affairs and Legal Support

The NRA responded to the litigation affairs and legal support for its work in cooperation with relevant authorities. Specifically, it responded to 43 pending cases and 3 cases with judgments regarding the affairs of the NRA in cooperation with related government offices in FY 2015. In addition, the NRA properly responded to the objection concerning change in installation permits for commercial power reactors, which is the first case after establishing the NRA.

Section 5 Allegation System Concerning Information on Safety of Nuclear Facilities

In order to detect legal and regulatory violations by nuclear licensees at an early stage and to prevent nuclear disasters, the Act on the Regulation of Nuclear Source Material, Nuclear Fuel Material and Reactors (Act No. 166 of 1957, hereafter referred to as "*the Reactor Regulation Act*") provides for an "allegation system concerning information on safety of nuclear facilities." Under this system the NRA investigates charges made by employees and others concerning potential violations and, if necessary, issues directives to the relevant licensees or takes other corrective measures.

To ensure the impartiality and transparency of investigations conducted by the NRA, the Nuclear Facility Safety Information Allegation Committee consisting of external experts was set up, and under its supervision the NRA will process allegations as promptly as possible, with attention to privacy protection of the informant (whistleblower), and the operational status of the system is disclosed.

At the end of FY 2015, there were no pending case and two cases had been completed.

Chapter 3 Rigorous and Proper Implementation of Regulations on Nuclear Facilities

Section 1 Continuous Improvement of Regulation System concerning Reactor Regulation Act

1. Continuous Improvement of Regulation System and Operation

(1) Review of Inspection System

In the process of preparations in advance of receiving the IRRS, the orientation for reforming the current inspection system was summarized and discussed at the 33rd and 37th NRA Commission Meetings of FY 2015 (October 9 and 28, 2015). In particular, the NRA determined improvement of the inspection system as one of important items of a remedial action plan, and would endeavor for its achievement while also making reference to the inspection systems used in other countries.

After that, based on the results of the IRRS review mission in January 2016, the 60th NRA Commission Meeting of FY 2015 (March 16, 2016) summarized the issues and the proposed measures and decided to establish a special system to study the following issues concerning the reformation of inspection system:

- Improvement and simplification of inspection system by amending legislation
- Improvement of training and retraining of inspectors
- Coordination with regulatory authorities for inspections (Communication for joint inspection etc.)
- Development of an enforcement process to decide the degree of penalty for non-complicance and procedure to implement corrective actions promptly if a safety significant event is imminent

(2) Study of Operational Safety Inspection Method

Having been instructed to study improvements to operational safety inspection methods to comply with operational safety programs at nuclear power facilities (hereafter referred to as "*operational safety inspection*") at the 25th NRA Commission Meeting of FY 2012 (January 30, 2013), the Secretariat of the NRA performed examinations on this matter. The progress of the examinations was intermediately reported by classifying them as short-term issues and mid- and long-term issues at the 5th and the 17th NRA Commission Meeting of FY 2013 (May 8, July 31, 2013), and the 1st NRA Commission Meeting of FY 2014 (April 2, 2014). The specific approaches to short-term issues, including the prioritization of the inspection, have already been begun. As for mid- and long-term issues, examinations have proceeded based on the policy described in Annual Report of FY 2014:

“utilization of unannounced inspections and personnel interview methods”, “utilization of indicators, scale and risk information”. These specific policies concern the improvement measures for the commercial power reactor (excluding those under decommissioning procedures, hereinafter the same applies in this document). The results were reported at the 24th NRA Commission Meeting of FY 2015 (August 19, 2015) as follows:

- Utilization of unannounced inspection and personnel interview

○Establishment of implementation guidance

The examinations were performed based on the opinions of nuclear safety inspectors concerning the present status and issues of unannounced inspections, as well as inspections using the personnel interview method to establish the implementation guidance for both methods.

○Enhancement of training

Basic communication training was established in cooperation with the NRA Human Resource Development Center. Nuclear safety inspectors are required to improve their ability to communicate with regulated parties. In addition, communication training for inspectors was reviewed and enhanced.

○Trial implementation of unannounced inspections and personnel interview method

Based on the implementation guidance, both methods were introduced on a trial basis in the third and fourth operational safety inspections of FY 2014 for some commercial power reactors. Findings were reflected in the implementation guidance for improvement.

- Utilization of indicators, scale, and risk information

○Selection of new indicators

In addition to existing indicators such as the number of unplanned scrams , new indicators, which cohere with the actual conditions of licensees’ activities for safety, were selected by reference to the technical document (IAEA-TECDOC-1141 Operational safety performance indicators for nuclear power plants) created by IAEA.

○Utilization of observations of nuclear safety inspectors

Advice on the status of safety activities was extracted from the observations of nuclear safety inspectors in order to show how operational safety inspection items are selected.

○Establishment of support system

For implementation of an inspection in a particular field, such as safety

culture fostering activities, examinations were performed on the support system for nuclear safety inspectors.

Based on the results, the full operation of unannounced inspections and the personnel interview method was initiated in operational safety inspection of FY 2015.

Concerning the utilization of newly selected indicators and matters noticed by nuclear safety inspectors, the examinations for utilizing them in operational safety inspection were implemented and it was determined that they would be steadily improved.

In addition, we will consider utilization of risk information in operational safety inspections, when determining countermeasures in response to violations of safety regulations.

These examinations have been implemented for commercial power reactors (excluding those under decommissioning procedures) and examinations for other facilities will be implemented taking into account the characteristics of each facility.

2. Review of regulations related to occupational exposure during emergency work

When the accident at TEPCO's Fukushima Daiichi NPS occurred, the radiation dose limit for emergency workers was temporarily raised from 100 mSv to 250 mSv. It is impossible to deny the possibility that an accident that requires a change in the radiation dose limit for emergency work may occur in the future. Since it is necessary to prepare proper measures for such an accident, the NRA decided at the 18th Commission Meeting of FY 2014 (July 30, 2014) to start the study of regulations concerning potential radiation exposure in an emergency.

At the 45th Commission Meeting (December 10, 2014), the NRA discussed the regulation system based on the conditions of relevant domestic and overseas organizations and the regulations of foreign countries.

Following these discussions, the amendment drafts of ordinances and notifications concerning occupational radiation exposure during emergency work were prepared:

○Emergency work at facilities subject to the Act on Special Measures Concerning Nuclear Emergency Preparedness can be engaged in only by radiation workers who show the intention to undertake emergency work after being educated on radiation and who have undergone necessary training.

○Two levels of radiation dose limits are set as follows: (1) Conventional effective dose of 100 mSv and (2) effective dose of 250 mSv where the probability of the emissions of radioactive materials to the off-site is high.

○Measures such as dose management during emergency work and physical checkups to emergency workers must be taken.

Opinions were requested on the amendment draft of relevant regulations based on the Administrative Procedure Act. A total of 161 opinions were received and some corrections, including clarification of the contents of the amendment, were made. In addition, based on Article 6 of the Act on Technical Standards for Prevention of Radiation Hazard (Act No. 162 of 1958), the amendment of technical standard (radiation dose limit) was submitted to the Radiation Council, and the Council reported that the submitted content was reasonable. Based on this report, at the 23rd NRA Commission Meeting of FY 2015 (August 5, 2015), the NRA determined the revision of regulations and promulgated it on August 31, 2015.[36]

[36]After that, the regulations were enforced on April 1, 2016. For the facilities that need to change the operational safety programs due to the revision of regulations, licensees submitted the applications for a change of operational safety programs, and the approval procedures were completed by the date of enforcement.

Section 2 Rigorous and Proper Implementation of Regulations on Reactor Regulation Act and Radiation Hazards Prevention Act

1. Implementation of Review and Inspection of Commercial Power Reactors[37]

(1) Implementation of Conformity Review to New Regulatory Requirements and Inspection of Commercial Power Reactors

i. Progress of the Conformity Review to New Regulatory Requirements

After the NRA enforced the New Regulatory Requirements on July 8, 2013, 11 commercial power reactor licensees submitted applications for change in reactor installation permit concerning conformity to the New Regulatory Requirements of 26 plants at 16 nuclear power stations (Table 16) by FY 2015. These applications are now under review based on the policies approved by the NRA, and in FY2015, 132 review meetings were held. At these meetings, many discussions centered on issues such as design basis ground motion, and design basis tsunami, basis preventive design against tornadoes, internal overflows and internal fires. Accident-prevention procedures and measures to prevent core damage and breakage of containment vessels were evaluated.

As for Unit 3 of the Ikata Power Station, the draft review reports for change in reactor installation permit were prepared on the basis of the discussions in the review meeting. The scientific and technical suggestions concerning the technical abilities of licensees, the construction of reactors, and the facilities were requested. The NRA then sought the opinions of the Minister of Economy, Trade and Industry and the Atomic Energy Commission. As a result of these discussions, based on the invited suggestions from the general public and the verdicts of the Minister of Economy, Trade and Industry and the Atomic Energy Commission, the NRA approved change in reactor installation permit for Unit 3 at the Ikata Power Station in the 19th NRA Commission Meeting of FY 2015 (July 15, 2015).

Concerning the approval of a construction plan, it was agreed that matters which were not crucial were processed exclusively by the Secretariat of the NRA on the basis of the discussions at the 63rd NRA Commission Meeting of FY 2014 (March 18, 2015). As a result, the construction plans for Unit 2 of Sendai NPS, Unit 3 of the Takahama Power Station, Unit 4 of the Takahama Power Station, and Unit 3 of the Ikata Power Station were approved on May 22, 2015, August 4, 2015, October 9, 2015, and March 23, 2016, respectively.

Up until 2015, the applications for change in reactor installation permit related to the Specialized Safety Facilities were submitted by 6 licensees with 10 plants of 6 NPSs (Table

[37] Commercial power reactors refer to nuclear reactors for generating power, excluding those in the research and development phase.

15). These applications are also under review.

ii. Increase in the Efficiency of Conformity Review to New Regulatory Requirements

The summaries of hearings with licensees are prepared, the records of meetings are disclosed and interviews with licensees are carried out to organize the findings and share their perceptions of one another.

In addition, the review report was created, summarizing the result of the conformity review and major points at issue. Matters to be checked in the conformity review were organized based on the results of past reviews, and a 1800-page document (“Perspectives and Points to be Checked in the Conformity Review of Unit 3 of the Ikata Power Station to New Regulatory Requirements”) was published on November 11, 2015.

Efforts have been made to increase the efficiency of reviews by holding review meetings in conjunction with Units 6 and 7 of the Kashiwazaki Kariwa NPS, Unit 2 of the Shimane NPS, Unit 2 of the Onagawa NPS, and Unit 4 of the Hamaoka NPS. In order to perform reviews more efficiently, Units 6 and 7 of the Kashiwazaki Kariwa NPS were selected for intensive review in the review meeting held on August 6, 2015. As a result of the review of seismic design principle of Units 6 and 7, it was found that TEPCO policy was to use methods that were different from those used in the past in the evaluation of earthquake-resistance strength. It was, therefore, anticipated that TEPCO should take quite long time to prepare information materials. On the other hand, excluding some items such as the seismic design principle, the information materials for the review of Units 6 and 7 of the Kashiwazaki Kariwa NPS have been prepared, so that it was possible to use them as examples in the review of other plants. At the 62nd NRA Commission Meeting of FY 2015 (March 23, 2016), it was therefore decided to proceed with the review of other plants while taking into consideration the status of the review on earthquake and tsunami aspects and the preparation of information materials.

iii. Status of Inspection Based on New Regulatory Requirements

In the pre-service inspections of Units 1 and 2 of the Sendai NPS and Units 3 and 4 of the Takahama Power Station, checks were made on whether construction was proceeding according to the approved construction plans. Unit 1 of the Sendai NPS, Unit 2 of the Sendai NPS, and Unit 3 of the Takahama Power Station passed the pre-service inspections on September 10, 2015, November 17, 2015, and February 26, 2016, respectively, and the pre-service inspection certificates were issued.

Table 16 Status of Applications for Review of Commercial Power Reactors

Applicant	Targeted power reactor	Receipt date	Number of review meetings	Number of on-site investigations	Date of approval
Hokkaido Electric Power Co. , Inc.	Tomari NPS (Units 1 and 2)	Installation permit change; Construction plan; Operational safety program change July 8, 2013	9	—	—
	Tomari NPS (Unit 3)	Installation permit change; Construction plan; Operational safety program change July 8, 2013	9	—	—
	◆Tomari NPS (Unit 3)	Installation permit change; December 18, 2015	3	—	—
Tohoku Electric Power Co. , Inc.	Onagawa NPS (Unit 2)	Installation permit change; Construction plan; Operational safety program change December 27, 2013	31	—	—
	Higashidori NPS (Unit 1)	Installation permit change; Construction plan; Operational safety program change June 10, 2014	1	—	—
Tokyo Electric Power Company	Kashiwazaki Kariwa NPS (Units 6, 7)	Installation permit change; Construction plan; Operational safety program change September 27, 2013	66	—	—
	◆ Kashiwazaki Kariwa NPS (Units 1, 6, 7)	Installation permit change; December 15, 2014	8	—	—
Chubu Electric Power Co. , Inc.	Hamaoka NPS (Unit 3)	Installation permit change; June 16, 2015	8	—	—
	Hamaoka NPS (Unit 4)	Installation permit change; Construction plan; Operational safety program change February 14, 2014 January 26, 2015 (*1)	31	1	—
Hokuriku Electric	Shika NPS (Unit 2)	Installation permit change; Construction plan;	0	—	—

Applicant	Targeted power reactor	Receipt date	Number of review meetings	Number of on-site investigations	Date of approval
Power Company		Operational safety program change August 12, 2014			
Kansai Electric Power Co. , Inc.	Ohi Power Station (Units 3, 4)	Installation permit change; Construction plan; Operational safety program change July 8, 2013	11	1	—
	Takahama Power Station (Units 3, 4)	Installation permit change; Construction plan; Operational safety program change July 8, 2013	8	—	Approval of installation permit change February 12, 2015 Approval of construction plan (Unit 3) August 4, 2015 Approval of construction plan (Unit 4) October 9, 2015 Approval of operational safety program change October 9, 2015
	◆Takahama Power Station (Units 3, 4)	Installation permit change; December 25, 2014	15	—	—
	Takahama Power Station (Units 1, 2 (3, 4))	Installation permit change; March 17, 2015 Construction permit plan; July 3, 2015	28	—	—
Kansai Electric Power Co. , Inc.	Mihama Power Station (Unit 3)	Installation permit change; Operational safety program change March 17, 2015 Construction plan; November 26, 2015	40	2	—
Chugoku Electric Power Co. , Inc.	Shimane NPS (Unit 2)	Installation permit change; Construction plan; Operational safety program change December 25, 2013	32	1	—

Applicant	Targeted power reactor	Receipt date	Number of review meetings	Number of on-site investigations	Date of approval
Shikoku Electric Power Co. , Inc.	Ikata Power Station (Unit 3)	Installation permit change; Construction plan; Operational safety program change July 8, 2013	5	—	Approval of installation permit change July 15, 2015 Approval of construction plan March 23, 2016
	◆Ikata Power Station (Unit 3)	Installation permit change; January 14, 2016	2	—	—
Kyushu Electric Power Co. , Inc.	Genkai NPS (Units 3, 4)	Installation permit change; Construction plan; Operational safety program change July 12, 2013	3	1	—
	Sendai NPS (Units 1 and 2)	Installation permit change; Construction plan; Operational safety program change July 8, 2013	1	—	Approval of installation permit change September 10, 2014 Approval of construction plan (Unit 1) March 18, 2015 Approval of construction plan (Unit 2) May 22, 2015 Approval of operational safety program change May 27, 2015
	◆Sendai NPS (Units 1 and 2)	Installation permit change; December 17, 2015	2	—	—
Japan Atomic Power Company	Tokai Daini NPS	Installation permit change; Construction plan; Operational safety program change May 20, 2014	10	—	—
	Tsuruga NPS (Unit 2)	Installation permit change; Operational safety program change November 5, 2015	3	—	—

Applicant	Targeted power reactor	Receipt date	Number of review meetings	Number of on-site investigations	Date of approval
J-Power	Oma NPS (*2)	Installation permit change; Construction plan; December 16, 2014	4	—	—

- The number of review meetings and on-site investigations represent the number of times held in FY 2015.
- The number of review meetings mainly attended by members of the NRA is mentioned as a rule.
- Several applications may be reviewed at one session of the review meeting.
- The number of on-site investigations implemented by the members of the NRA is mentioned, and that implemented only by the staff of the secretariat of the NRA is excluded.

◆: Application concerning Specialized Safety Facility

*1: Application for reactor installation permit change dated February 14, 2014, was withdrawn on January 26, 2015, and submitted again in order to add dry storage facility for spent fuel.

*2: This application includes the contents concerning Specialized Safety Facility.

(2) Implementation of Reviews and Inspections of Commercial Power Reactors

The NRA also performs various reviews and inspections of commercial power reactors in addition to conformity review to New Regulatory Requirements based on the Reactor Regulation Act.

These include operational safety inspection to comply with operational safety programs and inspections for important items ensuring safety, on the performance of nuclear safety inspectors stationed at NRA Regional Offices (22 in total) located near nuclear facilities. They also include daily patrols of nuclear facilities, interviews about operational conditions, and attendance at surveillance tests.

The status of the reviews and inspections of commercial power reactors between April 1, 2015, and March 31, 2016, (including the conformity review to New Regulatory Requirements) is shown in Table 17.

Table 17 Status of the reviews and inspections of commercial power reactors

Facility type		No. of cases
Commercial power reactors (17 facilities) (Under decommissioning procedures: 2 facilities)	Installation permit change	1
	Notification of installation permit change	4
	Approval of construction plan	7
	Approval of change to construction plan	3
	Notification of construction plan and construction plan change	1
	Pass in pre-service inspection	13
	Pass in fuel assembly inspection	4
	Evaluation for the implementation system of the welding licensee Inspection	27
	Completion of periodic facility inspection	3
	Approval of operational safety programs or approval of changes	50
	Operational safety inspection	88
	Approval of change to decommissioning plan	1
	Check of method and implementation system for determining assignment of responsible facility licensee	10
	Approval of the trial use of reactor	6
	Approval of partial use	2
	Instruction for omission of pre-service inspection	2
	Approval of implementation plan change	42
	Approval of partial use of Specified Nuclear Facility	7
	Completion of pre-service inspection on Specified Nuclear Facility	52
	Completion of welding inspection on Specified Nuclear Facility	29
	Completion of welding inspection for imports of Specified Nuclear Facility	26

	Completion of periodic facility inspection on Specified Nuclear Facility	1
	Inspection of implementation status of measures for safety defined in implementation plan	4
Commercial power reactors in the research and development phase (Under construction: One facility) (Under decommissioning procedures: One facility)	Completion of periodic facility inspection	1
	Approval of operational safety programs or approval of changes	2
	Operational safety inspection	8

In addition, in a FY 2014 radiation control status report, the NRA compiled the status of the management of radioactive waste and those of dose management for radiation workers as reported by each nuclear licensee under the provisions of paragraph 1 of Article 67 of the Reactor Regulation Act. They include reports for the first and second halves of FY 2014 published on December 4, 2014, and June 30, 2015, respectively.

Regarding the status of the management of radioactive gaseous and liquid waste in FY 2014, all commercial power reactors showed values lower than the annual release control target values as set out in the operational safety programs for the respective commercial power reactors, excluding TEPCO's Fukushima Daiichi NPS, which is designated as Specified Nuclear Facility requiring special measures. Regarding the status of the management of radioactive solid waste, none of commercial power reactors stored solid waste that exceeded storage capacities.

Exposure doses in all the nuclear facilities received by the individual radiation workers in FY 2014 fell below the dose limits (100 mSv per five years and 50 mSv per year) set forth in the "Notification to Establish Dose Limits in Accordance with the Provisions of the NRA Ordinance Concerning the Installation and Operation of Commercial Power Reactors".

2. Implementation of Conformity Review to New Regulatory Requirements and Inspection of Facilities for Handling Nuclear Fuel Materials

(1) Implementation of Conformity Review to New Regulatory Requirements of Facilities for Handling Nuclear Fuel Materials

After the NRA enforced the New Regulatory Requirements for facilities for handling nuclear fuel materials on December 18, 2013, applications for change in installation permit to 20 facilities (Table 18) were submitted from 9 licensees by FY 2015 including, one application for category 2 waste disposal facilities. These applications are now under review by the NRA. In FY 2015, 55 review meetings, which the Commissioners attended in principle, were held on the reprocessing facilities (Reprocessing facility of Japan Nuclear Fuel Limited, JNFL) and the MOX fuel fabrication facility (Reprocessing facility of JNFL). Meetings were also held on the uranium fuel fabrication facilities (Enrichment and Disposal Facility of JNFL) and the medium-output and high-output reactors of nuclear research and test reactors (JAEA) by the Secretariat of the NRA. When reviewing these applications, the NRA provided administrative counseling for licensees concerning interpretation of laws.

It was confirmed that fuel fabrication facilities handling uranium hexafluoride at positive pressure have no possibility of posing significant risks to the public from radiation exposure or having a significant chemical impact. As a result, the NRA confirmed that operating the equipment of the uranium enrichment facilities of Japan Nuclear Fuel Limited and the uranium fuel fabrication facilities of Mitsubishi Nuclear Fuel Co., Ltd., handling uranium hexafluoride at positive pressure for a certain period do not cause any particular safety problem. The confirmatory results were reported at the 15th NRA Commission Meeting of FY 2015 (June 17, 2015) concerning the uranium enrichment facilities of Japan Nuclear Fuel Limited and at the 62nd NRA Commission Meeting of FY 2015 (March 23, 2016) concerning the uranium fuel fabrication facilities of Mitsubishi Nuclear Fuel Co. , Ltd.

Table 18 Status of Application of Facilities for Handling Nuclear Fuel Materials

Applicant	Facility	Receipt date	Number of review meetings or reviews by the NRA Secretariat	Number of on-site investigations	Date of approval
Japan Nuclear Fuel Limited	Reprocessing facility	License Modifications Operational safety program change January 7, 2014	26*1	1	—
	MOX fuel fabrication facility	License Modifications January 7, 2014	21*1	—	—
	Uranium enrichment facility	License Modifications Operational safety program change January 7, 2014	1*2	—	—
	Waste interim storage facility	License Modifications January 7, 2014	43*3	1	—
Recyclable-Fuel Storage company	Spent fuel interim storage facility	License Modifications January 15, 2014	46*3	—	—
Mitsubishi Nuclear Fuel Co. , Ltd.	Uranium fuel fabrication facility	License Modifications Operational safety program change January 31, 2014	1*2	—	—

Applicant	Facility	Receipt date	Number Review Meetings or reviews by the NRA Secretariat	Number of on-site investigations	Date of approval
Japan Atomic Energy Agency	Waste interim storage facility	License Modifications February 7, 2014	26*3	—	—
	JRR-3	Installation permit change Operational safety program change September 26, 2014	11*2	—	—
	HTTR (High-temperature engineering test reactor)	Installation permit change Operational safety program change November 26, 2014	15*2	—	—
	Waste Treatment Facility of Nuclear Science Research Institute (Auxiliary facility such as JRR-3)	Installation permit change February 6, 2015	5*2	—	—
	JMTR (Materials testing reactor)	Installation permit change Operational safety program change March 27, 2015	1*2	—	—
	NSRR	Installation permit change March 31, 2015	24*3	—	—
	STACY (Static Experiment Critical Facility)	Installation permit change March 31, 2015	32*3	—	—
Nuclear Fuel Industries, Ltd.	Uranium fuel fabrication facility (Tokai Works)	License Modification Operational safety program change February 14, 2014	1*2	—	—
	Uranium fuel fabrication facility (Kumatori Works)	License Modification Operational safety program change April 18, 2014	1*2	—	—
Global Nuclear Fuel Japan	Uranium fuel fabrication facility	License Modification Operational safety program change April 18, 2014	1*2	—	—

Applicant	Facility	Receipt date	Number of Review Meetings or reviews by the NRA Secretariat	Number of on-site investigations	Date of approval
Kyoto University	KUR (Kyoto University Research Reactor)	Installation permit change Operational safety program change September 30, 2014	14*2	1	—
	KUCA (Kyoto University Critical Assembly)	Installation permit change Operational safety program change September 30, 2014	52*3	1	—
Kinki University	Kinki University nuclear reactor	Installation permit change Operational safety program change October 20, 2014	50*3	—	—
Japan Atomic Power Company	Tokai low level waste disposal facility	Business licensing July 16, 2015	4*3	—	

- The number of review meetings and on-site investigations represent the number of times held in FY 2015.
- Several applications may be reviewed at one session of the review meeting.
- It was decided by the NRA that the reviews of nuclear fuel facilities are to be proceeded by classifying the review meeting into the following category considering the magnitude of impact provided by the facility at the occurrence of an accident:

  *1 Review meeting attended by the members of the NRA as a rule

  *2 Review meeting held by the Secretariat of the NRA as a rule.

  *3 Review implemented by the Secretariat of the NRA without holding the review meeting
- The number of on-site investigations implemented by the members of the NRA is mentioned, and that implemented only by the staff of the secretariat of the NRA is excluded.

(2) Implementation of Reviews and Inspection of Facilities for Handling Nuclear Fuel Materials

The NRA also conducts various reviews and inspections of facilities for handling nuclear fuel materials other than conformity review to New Regulatory Requirements based on the Reactor Regulation Act.

These include operational safety inspection to comply with operational safety programs

and inspections for important activities ensuring safety, on the performance of nuclear safety inspectors stationed at NRA Regional Offices (22 in total) located near nuclear facilities. They also include daily patrols of nuclear facilities, interviews about operational conditions, and attendance at surveillance tests based on the forms of facilities.

The status of the reviews and inspections of facilities for handling nuclear fuel materials between April 1, 2015, and March 31, 2016, (including the conformity review to New Regulatory Requirements) is shown in Table 19.

Table 19 Status of reviews and inspections of facilities for Handling Nuclear Fuel Materials

Type of facility		No. of cases
Fabrication facilities (6 facilities) (Under construction: 1 facility)	Approval of changes to design and construction methods	3
	Pass in pre-service inspection	8
	Approval of welding method	1
	Approval of operational safety programs or approval of changes	12
	Operational safety inspection	24
Research and test reactor facilities (6 facilities) (under decommissioning procedure: 8)	Installation permit change	1
	Approval of methods for design and construction	1
	Pass in pre-service inspection	1
	Approval of welding method	1
	Approval of operational safety programs or approval of change	22
	Operational safety inspection	44
	Approval of change to decommissioning plan	3
Spent fuel interim storage facility (under construction: 1)	Pass in welding inspection	6
	Approval of welding method	3
	Type certificate	1
Reprocessing facilities (2 facilities)	Approval of methods for design and construction	7
	Approval of changes to design and construction methods	1
	Pass in pre- service inspection	8
	Approval of welding method	1
	Approval of operational safety program or approval of change	3
	Operational safety inspection	8
Category 2 waste disposal facilities (2)	Conformation of waste disposal facilities	1
	Conformation of waste package	11
	Approval of operational safety programs or approval of change	1
	Operational safety inspection	8
Waste interim storage facilities (2)	Approval of methods for design and construction	2

Type of facility		No. of cases
	Approval of operational safety programs or approval of changes	2
	Operational safety inspection	8
Facilities using nuclear fuel materials (13*1 facilities)	Approval of change of use	9
	Pass in facility inspection	6
	Approval of operational safety program or approval of change	28
	Operational safety inspection	52
	Approval of decommissioning plan	1
	Check of decommissioning measure completion	1
Off-site disposal and transportation of nuclear fuel material, etc.	Confirmation of off-site disposal	5
	Approval of design of nuclear fuel package	14
	Approval of transport container	18
	Confirmation of off-site transportation	17
	Confirmation of radioactive concentration	2

・There is no facility that received designation or approval of business of refining facility or Category 1 waste disposal facility as of March 31, 2016.

*1 The number of such facilities were initially 15 in FY 2015 but decreased to 13 due to the approval of change of use dated April 27, 2015 and June 24, 2015.

In an FY 2014 radiation control status report, the NRA compiled the status of the management of radioactive waste and those of dose management for radiation workers as reported by each nuclear licensee under the provisions of paragraph 1 of Article 67 of the Reactor Regulation Act, etc. They included radiation management reports for the first and second halves of FY 2014 published on December 4, 2014 and June 30, 2015, respectively.

Regarding the status of the management of radioactive gaseous and liquid waste in FY 2014, all facilities for handling nuclear fuel materials showed values lower than the annual release control target values or three-month averaged concentration control target values as set out in the operational safety programs for each facility. Regarding the status of the management of radioactive solid waste, none of facilities stored solid waste that exceeded storage capacities.

In addition, in each facility, the exposure doses received by the individual radiation workers in FY 2014 fell below the dose limits (100 mSv per five years and 50 mSv per year) set forth in the Notification to Establish Dose Limits in Accordance with the Provisions of the NRA Ordinance Concerning the nuclear fuel material fabrication and enrichment activity.

Some measured concentrations of radioactive materials were found in the seawater, seabed soil, marine products, and fishing equipment in the areas around the release

outlets of reprocessing facilities and of other places specified in the operational safety program during FY 2014. The measures exceeded the normal variation, but these slightly high readings are not considered the result of any malfunction or other problem with the reprocessing facility judging from the operation status of facilities and the trends of measured values.

3. Confirmation of the Causes of and Countermeasures for Accidents and Failures in Nuclear Facilities

(1) Incidents Reported Based on the Reactor Regulation Act

Paragraph 3 of Article 62 of the Reactor Regulation Act requires nuclear licensees to report accidents and failures which occurred in nuclear facilities as stipulated in the NRA Ordinance (hereinafter referred to as "*incidents reported based on the Act*" in this section) to the NRA.

The number of incidents reported based on the Act which occurred from April 1, 2015, to March 31, 2016, was 2 for commercial power reactors and 1 each for nuclear reactor at the stage of research and development and reprocessing facilities (for details related to Specified Nuclear Facility, refer to Chapter 3, Section 3, Paragraph 4).

The responses to the incidents reported based on the Act are as follows. Those incidents are evaluated based on INES[38], and the ones for nuclear reactor at the stage of research and development and reprocessing facility were evaluated as level 0 (events with no safety significance).

i. Deformation of the Cylinder Head Indicator Cock of Diesel Generator (B) in Prototype Fast Breeder Reactor Monju of Japan Atomic Energy Agency

On July 17, 2015, the Japan Atomic Energy Agency reported that a deformation of the cylinder head indicator cock of the diesel generator (B) was observed because the cylinder head, lifted during overhaul, was dropped. This incident came under the incident reported based on the Act.

On August 28, 2015 (corrected on September 29 in the same year), the licensee reported the cause of and countermeasure against this event. On November 25, 2015, the NRA evaluated that the preventive measures against this event and the horizontal developments were basically reasonable.

ii. Instrument Failure in the Reprocessing Plant of Japan Nuclear Fuel Limited

On August 2, 2015, Japan Nuclear Fuel Limited reported the failure of two systems of detector of highly active liquid waste feeding vessel cell leaked liquid drip tray as well as of two systems of pressure gauge at inlet of off-gas scrubber tower in facility for tower and vessel's off-gas treatment. These were observed in a separation building module of the reprocessing plant, which fell under the incidents reported based on the Act.

In addition, to the above 4 devices, there was a loss of function of 13 devices important

[38] INES is formulated as an index to simply describe the meaning on safety for individual a: of the nuclear facility by IAEA and the Organization for Economic Co-operation and Development Nuclear Energy Agency (OECD/NEA). The level of evaluation is categorized from level zero (no safety significance) through level seven (major accident).

to safety (including 2 devices of long-term secondary system) and of 14 devices other than the ones important to safety of the multiplexed measurement control system was observed, although it was not subject to be reported based on the Act because the facility was shut down. Among these failed devices, the devices important to safety and the others were replaced with spares for restoration by August 13 and August 28, respectively.

After looking into this event, the licensee submitted a report on the causes and countermeasures (partially corrected on December 7, 2015) on October 15, 2015. After detailed examination of the report, at the 46th NRA Commission Meeting of FY 2015 (December 16, 2015), the NRA evaluated that (1) completion of the restoration of devices that lost functions and identification of probable causes (lightning strike), (2) verification of the influence given if the facility was in operation, and (3) proposing specific preventive measures were reasonable.

Looking to the future, it was decided to check whether the licensee's prevention measures in terms of equipment and operation are implemented appropriately in operational safety inspections and also to examine closely the scale of lightning strikes that should be assumed in terms of design in the conformity review to New Regulatory Requirements. This was necessary as lightning strikes that are more powerful than assumed during the design process will lead to failures.

iii. Automatic reactor shutdown due to the automatic generator trip in Unit 4 of the Takahama Power Station of Kansai Electric Power Co., Inc.

On February 29, 2016, Kansai Electric Power Co., Inc. reported that alarms were activated for an internal failure of the main transformer/power generator and the turbine and nuclear reactor automatically shut down along with the automatic generator trip in Unit 4 at the Takahama Power Station. The facility was in the process of startup when synchronization of the electrical generator was carried out, which fell under the incidents reported based on the Act.

The licensee submitted a report on the cause of and countermeasure against this event (partially corrected on March 16, 2016) on March 9, 2016. This report is under evaluation as of March 31, 2016.

iv. Excessive insertion of the control rod in Unit 5 at TEPCO's Kashiwazaki Kariwa NPS during periodic inspection

On March 8, 2016, TEPCO reported that the control rod drift alarm raised even though the control rod was not operated during the restoration of the control rod drive hydraulic control unit (hereinafter referred to as "*HCU*") in Unit 5 at the Kashiwazaki Kariwa NPS

during a periodic facility inspection. Since the HCU restoration work of this control rod was performed when this alarm raised, TEPCO determined that the control rod was inserted deeper than the total insertion position, which fell under the incident reported based on the Act.

As of March 31, 2016, the licensee was in the process of the investigating the cause of the incident.

v. Responses to accidents and failures in 2014

At 10:20 on September 11, 2014, a pool of water was discovered in the 3rd waste water system storage tank (II) building that was outside of the controlled area in the JMTR (material test reactor) of Oarai research and development center of the Japan Atomic Energy Agency. Although the licensee had confirmed there was a contamination that contained Co-60 following of measurement and analysis, the notification (which is stipulated in the “Ordinance on installation and operation of nuclear reactor used for test and research”, Article 16-14, and the “Ordinance on use of nuclear fuel material”, Article 6-10) was delayed to 21:17, because it was necessary to check the route of the leakage. The licensee presumed the leakage to be from the inspection hole or others due to the rise of water level in the liquid waste storage tank. The total volume of the leak was estimated to be approximately 26 liters.

On September 19, 2014 (1st report), December 25, 2014 (2nd report), March 10, 2015 (3rd report), and April 24, 2015 (4th report, partially corrected on June 2, 2015), the licensee reported on the cause of the matter and the countermeasure. At the 16th NRA Commission Meeting of FY 2015 (June 24, 2015), the NRA determined that the safety and preventive measures (including the violation of the operational safety program) were reasonable. It was decided to check the responses taken by the licensee through operational safety inspections on a continuous basis.

(2) Responses to other major events

i. Seawater inflow event in Unit 5 of the Hamaoka NPS

On March 30, 2012, the former Nuclear and Industrial Safety Agency instructed Chubu Electric Power Co., Inc., to investigate the influence of seawater inflow on the nuclear facilities, concerning the seawater inflow event which occurred in Unit 5 at the Hamaoka NPS on May 14, 2011. The NRA received the reports on this investigation on May 12 and December 15, 2015 and is checking details of the investigation through interview with the licensee.

ii. Improper laying of electric cable

On September 28, 2015, TEPCO reported improper laying of electric cables in Kashiwazaki Kariwa NPS. Instructions to investigate the incident were given to TEPCO at the 39th NRA Commission Meeting of FY 2015 (November 4, 2015) and to licensees (including TEPCO) installing commercial power reactors, etc. at the 48th NRA Commission Meeting of FY 2015 (January 6, 2016).

TEPCO reported concerning the Kashiwazaki Kariwa NPS on November 11, 2015, and January 29, 2016. At the 55th NRA Commission Meeting of FY 2015 (February 10, 2016), the evaluation of these reports was made by the NRA. In addition, the NRA will check the implementation of preventive measures by TEPCO through operational safety inspections and also check the conformity to New Regulatory Requirements for the laying of all safety cables in future review and inspection processes. The licensees, who had been instructed to conduct other inspections, reported on the results of their investigations into cable laying by March 31, 2016, and the contents of the reports are being verified.

4. Implementation of Review Concerning the Extension of Operation Period of Commercial Power Reactors

(1) Status of Review Concerning the Operation Period Extension Approval System

The NRA implements the operational period extension approval system: the operation period during of a commercial power reactor can be extended one time only by up to 20 years as an upper limit, while it can normally be operated for 40 years from the date it was initiated. It must fulfill the requirements also during the extended period. In FY 2015, the applications for extending the operation period of 3 plants of 2 nuclear power stations were submitted by 1 licensee (Table 20). These applications were reviewed based on the policy approved in the NRA and 5 review meetings were held in FY 2015. Discussions were conducted on the evaluation of the degradation status, such as Neutron Irradiation Embrittlement, based on the special inspection of reactor vessels.

Table 20 Application status of operation period extension approval

Applicant	Targeted power reactor	Receipt date	Review meeting (No. of times)	Date of approval	Date at which 40 years elapse after operation started
Kansai Electric Power Co. , Inc.	Takahama Power Station (Unit 1)	April 30, 2015	5	—	July 7, 2016*1
	Takahama Power Station (Unit 2)	April 30, 2015	5	—	July 7, 2016*1
	Mihama Power Station (Unit 3)	November 26, 2015	2	—	November 30, 2016

*1: For commercial power reactors subject to Paragraph 2 of Article 25 Supplementary Provision of the Act for Establishment of the NRA are applied, the application period is from April 8, 2015 to July 8, 2015.

(2) Status of Review Concerning Aging Management

The aging management system requires that licensees should develop a long-term maintenance policy for commercial power reactor that have been operated for over 30 years and also conduct a degradation evaluation of equipment and structures every 10 years. The system is related to the approval of operational safety programs.

During FY 2015, the 2 licensees submitted applications for 2 plants to which only an evaluation on the precondition of maintenance for a cold shutdown was performed, and the 1 licensee submitted applications for 3 plants of 2 NPSs to which an evaluation on the

precondition of continued operation was performed. The NRA approved the applications for operational safety programs change concerning aging management system: the units for only the evaluations on the precondition of maintenance for cold shutdown were performed submitted by Unit 2 at the Takahama NPS (approved on April 8, 2015), Unit 3 of the Fukushima Daini NPS (approved on June 10, 2015), Unit 1 of the Genkai NPS (approved on June 10, 2015), Unit 1 of the Kashiwazaki Kariwa NPS (approved on September 14, 2015), and Unit 1 of the Mihama Power Station (approved on November 17, 2015); the units for an evaluation on the precondition of continued operation was performed by Unit 1 of the Sendai NPS (approved on August 5, 2015), Unit 2 of the Sendai NPS (approved on November 18, 2015), Unit 3 of the Takahama Power Station (approved on November 18, 2015), and Unit 4 of the Takahama Power Station (approved on November 18, 2015). In addition, Units 1 and 2 of the Sendai NPS and Units 3 and 4 of the Takahama Power Station, which had been evaluated on the precondition of continued operation, were reviewed based on the policy approved by the NRA, and 4 review meetings were held in FY 2015. At these meetings, discussions centered on the validity of the long-term maintenance management policy based on aging technology evaluation, such as low-cycle fatigue and Neutron Irradiation Embrittlement. For aging technology evaluation in the 40th year, reviews are performed efficiently, preventing to overlap the review content for the operation period extension approval.

Table 21 Status of Application for Approval of Operational Safety Programs Change concerning Plant Life Management

Applicant	Targeted power reactor	Receipt date	Review Meeting (No. of times)	Date of approval	Date at which 30 years or 40 years elapse after operation started
Tohoku Electric Power Co. , Inc.	Unit 1 of the Onagawa NPS (30 years) (only maintaining cold shutdown)	November 6, 2013	—*4	May 21, 2014	June 1, 2014
Tokyo Electric Power Company	Unit 2 of the Fukushima Daini NPS (30 years) (only maintaining cold shutdown)	July 31, 2013	—*4	January 22, 2014	February 3, 2014
	Unit 3 of the Fukushima Daini NPS (30 years) (only maintaining cold shutdown)	June 20, 2014	—*4	June 10, 2015	June 21, 2015
	Unit 1 of the Kashiwazaki Kariwa NPS (30 years) (only maintaining cold	September 16, 2014	—*4	September 14, 2015	September 18, 2015

Applicant	Targeted power reactor	Receipt date	Review Meeting (No. of times)	Date of approval	Date at which 30 years or 40 years elapse after operation started
	shutdown)				
Kansai Electric Power Co. , Inc.	Unit 1 of the Takahama Power Station (40 years) (only maintaining cold shutdown)	November 12, 2013	—[*4]	November 12, 2014	November 14, 2014
	Unit 3 of the Takahama Power Station (30 years) (operation preconditioned)	January 15, 2014	2	November 18, 2015[*3]	January 17, 2015
	Unit 4 of the Takahama Power Station (30 years) (operation preconditioned)	June 3, 2014	2	November 18, 2015[*3]	June 5, 2015
	Unit 2 of the Takahama Power Station (40 years) (only maintaining cold shutdown)	November 11, 2014	—[*4]	April 8, 2015	November 14, 2015
	Unit 1 of the Takahama Power Station (40 years) (operation preconditioned)	April 30, 2015	4	—	July 7, 2016[*1]
	Unit 2 of the Takahama Power Station (40 years) (operation preconditioned)	April 30, 2015	4	—	July 7, 2016[*1]
	Unit 1 of the Mihama Power Station (only maintaining cold shutdown)	September 29, 2015	—[*4]	November 17, 2015	—[*2]
	Unit 3 of the Mihama Power Station (40 years) (operation preconditioned)	November 26, 2015	1	—	November 30, 2016
Chugoku Electric Power Co. , Inc.	Unit 1 of the Shimane NPS (40 years) (only maintaining cold shutdown)	September 27, 2013	—[*4]	February 26, 2014	March 29, 2014
Kyushu Electric Power Co. , Inc.	Unit 1 of the Sendai NPS (30 years) (operation preconditioned)	December 18, 2013	2	August5, 2015[*3]	July 4, 2014
	Unit 1 of the Genkai NPS (40 years) (only maintaining cold shutdown)	October 10, 2014	—[*4]	June 10, 2015	October 15, 2015
	Unit 2 of the Sendai NPS (30 years)	November 21, 2014	3	November 18, 2015	November 28, 2015

Applicant	Targeted power reactor	Receipt date	Review Meeting (No. of times)	Date of approval	Date at which 30 years or 40 years elapse after operation started
	(operation preconditioned)				
Japan Atomic Power Company	Unit 2 of Tsuruga Power Station (30 years) (only maintaining cold shutdown)	February 15, 2016	—*4	—	February 17, 2017

*1: For commercial power reactors to which Paragraph 2 of Article 25 of Supplementary Provision of the Act for Establishment of the NRA are applied, the application period is from April 8 to July 8, 2015.

*2: The change of the long-term maintenance management policy due to the review of technical evaluation concerning the aging degradation of nuclear facilities.

*3: The review of aging management measures is implemented based on the conformity review to New Regulatory Requirement, on the basis of the policy approved in the NRA.

*4: Based on the policy approved in the NRA, the Secretariat of the NRA performs the review of the plants to which only an evaluation on the precondition of maintenance for a cold shutdown is performed and report the results to the Secretariat of the NRA to seek the approval.

5. Evaluation of the Activity of Faults at Sites

At the 2nd Commission Meeting (September 26, 2012) and the 5th Commission Meeting (October 17) of FY 2012, the NRA decided to conduct site inspections and evaluations for 6 nuclear power stations: Ohi Power Station of Kansai Electric Power Co. , Inc. (hereafter *"Ohi Power Station"*), Tsuruga Power Station of Japan Atomic Power Company (hereafter *"Tsuruga Power Station"*), Higashidori NPS of Tohoku Electric Power Co. , Inc. (hereafter *"Higashidori NPS*), Prototype Fast Breeder Reactor Monju of Japan Atomic Energy Agency (hereafter *"Prototype Fast Breeder Reactor Monju"*), Mihama Power Station of Kansai Electric Power Co. , Inc. (hereafter *"Mihama Power Station"*) and Shika NPS of Hokuriku Electric Power Company (hereafter *"Shika NPS"*). The former Nuclear and Industrial Safety Agency had ordered additional investigations at these 6 power stations to determine whether faults affecting the premises have been active in recent years.

A five-member Expert Meeting was set up for each NPS, including NRA Commissioner Shimazaki (currently, Commissioner Ishiwatari at present) and 4 academic experts. These experts have not been involved in earlier safety assessments (including seismic back checks and secondary assessment) for their respective facilities but were independently recommended by 4 related academic societies, the Japanese Society for Active Fault Studies, the Geological Society of Japan, the Japan Association for Quaternary Research and the Seismological Society of Japan. The Expert Meeting performs on-site investigations, hold regular evaluation meetings and prepares draft evaluation reports. A peer review meeting is then held to examine whether the draft evaluation reports confirmed in the Expert Meeting are based on scientific and technical standpoints from the perspective of neutral outsiders. The objective of a peer review meeting is held to hear the opinions of more specialists in order to improve the document, but not to re-evaluate those faults. Although the evaluation results are referred to as "important knowledge" any decision concerning conformity is made in the conformity review to the New Regulation Requirements.

In FY 2015, the investigations of 3 sites (other than the Ohi Power Station, Tsuruga Power Station, and Higashidori NPS of Tohoku Electric Power Co., Inc., where the evaluation was finished) were implemented:

(1) Mihama Power Station

The Expert Meeting on the Investigation of Fracture Zones in the Site of Mihama Power Station held 2 evaluation meetings and a peer review meeting in FY 2015 and submitted evaluation reports to the 30th NRA Commission Meeting of FY 2015 (September 30, 2015). These stated that the presence of a fault line extending from the Shiraki-Nyu fault to the

site of the Mihama Power Station that was active after the Late Pleistocene was not estimated and that the faults distributed in this site were less likely to have been active after the Late Pleistocene.

(2) Shika NPS

The Expert Meeting on the Investigation of Fracture Zones in the Site of Shika NPS conducted an on-site investigation and held 3 evaluation meetings and a peer review meeting in FY 2015. It is in the process of confirming results of the evaluation.

(3) Prototype Fast Breeder Reactor Monju

The Expert Meeting on the Investigation of Fracture Zones in the Site of Prototype Fast Breeder Reactor Monju implemented an on-site investigation and held an evaluation meeting in FY 2015. It is continuing discussions to prepare a draft evaluation report.

6. Study on Monitoring of Volcanic Activities

On the monitoring of volcanic activities around nuclear power facilities, and especially the possibility of a super explosive eruption, which would require the NRA on appropriate action, such as the shutdown of nuclear reactors, the NRA held 2 meetings of the Study Team on Monitoring of Volcanic Activities around Nuclear Facilities in FY 2015 to consider the monitoring of volcanic activities around nuclear power facilities.

At the 25th NRA Commission Meeting of FY 2015 (August 26, 2015), the summary of suggestions from the Study Team on Monitoring of Volcanic Activities around Nuclear Facilities* was reported. Considering these suggestions, the NRA designated new items to be investigated and discussed in the Reactor Safety Examination Committee at the 46th NRA Commission Meeting of FY 2015 (December 16, 2015), to prepare the evaluation concerning volcanic monitoring in the NRA and the rough standard for making judgments concerning nuclear reactor shutdown. In addition, at the 7th Reactor Safety Examination Committee (March 25, 2016) it was decided to set up the Subcommittee of Volcano Monitoring to conduct such an investigation and review.

* The outline of the summary of suggestions from the Study Team on Monitoring of Volcanic Activities around Nuclear Facilities

The NRA will receive reports from the licensees of nuclear power reactors about the monitoring results. In order to implement the program, it is necessary for the NRA to get professional advice from volcanologists, related research institutions and administrative agencies in the field of volcanology and related academic fields, to share information, and build relationships for cooperation.

7. Actions taken for Monju

Following a maintenance deficiency discovered in 2012 at the Prototype Fast Breeder Reactor Monju, the NRA issued an order for measures for operational safety and an order of operational safety programs change based on the Reactor Regulation Act to the Japan Atomic Energy Agency on May 29, 2013.

The Japan Atomic Energy Agency reported that its actions taken to the NRA order had finished in September and November 2013, but the NRA judged that their measures were insufficient. The Secretariat of the NRA reported to the NRA that it was necessary to reconstruct the maintenance management system, the quality assurance system and strengthen the maintenance plan.

The Japan Atomic Energy Agency submitted to the NRA a report, which was entirely revised, on the status of the actions taken additionally in December 2014 (corrected in February 2015).

However, during the operational safety inspection conducted to check the status described in the report, the cases determined as the violation of the operational safety program were discovered. In November 2015, the violation of the operational safety program was confirmed in cases where important classifications were not properly set for many devices in the maintenance plan.

Under such circumstances, the NRA heard from the Director-General of the Research and Development Bureau, Ministry of Education, Culture, Sports, Science and Technology on October 21, 2015, the opinion about the licensee of the Prototype Fast Breeder Reactor Monju. In addition, it also heard the explanation from President of the Japan Atomic Energy Agency in November 2, 2015, on their response to the lack of maintenance management problem.

After that, the NRA held discussions and determined that the Japan Atomic Energy Agency was not qualified to be the licensee to manage the output operation of the Prototype Fast Breeder Reactor Monju safely, based on the events and problems which had occurred in the past. Therefore, it made the following recommendations to the Minister of Education, Culture, Sports, Science and Technology on November 13, 2015 based on the provision of Article 4, Paragraph 2, of the Act for Establishment of the NRA (Act No. 47 of 2012).

- Recommendations (Notification from NRA No. 1511131 dated November 13, 2015) (Citation)

  Consider the following items and specify the details of the measures taken

for these items within approximately six months:

a. Identify the one who is deemed to have an ability to perform the output operation of Monju safely instead of the Agency.
b. If it is too difficult to identify the one who has an ability to perform the output operation of Monju safely, thoroughly review whole concept of Monju as a commercial power reactor to distinctly reduce the safety risks induced by Monju.

8. Thorough Explanation on Review Results

The results of conformity review to New Regulatory Requirements are explained based on the requests from the local communities where nuclear power stations are located. After the change in installation permit for the Sendai NPS in September 2014, the NRA explained the reason for the approval at the prefectural assembly of Kagoshima where Sendai NPS is located and at 5 local briefing sessions in municipalities in Kagoshima. In addition, after the change in installation permit for Units 3 and 4 at the Takahama Power Station in February 2015, the NRA produced a presentation video which was broadcast, following a request from Takahama town, through the Takahama cable television network and on the NRA's website, and explanations were also given in various councils in Fukui Prefecture.

In FY 2015, as in 2014, the review result for the change in installation permit for Units 3 and 4 at the Takahama Power Station was explained not only at the expert committees established by Fukui Prefecture where the Takahama Power Station is located but also at 7 local briefing sessions in municipalities in Kyoto Prefecture neighboring Fukui. In addition, after the change in installation permit for Unit 3 at the Ikata Power Station on July 15, 2015, the review result was explained in the expert committees established by Ehime Prefecture and Ikata town where the Ikata Power Station is located, as well as in 6 local briefing sessions in Ehime Prefecture.

Information materials were created giving an outline of review results, with illustrations and photos, which help people to understand the outline easily. The materials were also open to public through the NRA's website.

9. Development of Regulatory Systems Pertaining to the Radiation Hazards Prevention Act

(1) Development of Regulatory Systems Pertaining to the Radiation Hazards Prevention Act

i. Development of Regulatory Systems Pertaining to the Radiation Hazards Prevention Act

Domestic and foreign investigations were carried out on the conditions of emergency response systems to study how the emergency preparedness and response required by IAEA can be implemented in domestic facilities handling radioisotopes. It is one of issues highlighted through preparation for hosting the IRRS mission.

The study will be progressed to develop the system pertaining to the Act on Prevention of Radiation Hazards due to Radioisotopes, etc. (Act No. 167 of 1957, hereinafter referred to as *"Radiation Hazards Prevention Act"*) so that the licensees can endeavor to reinforce their emergency preparedness and response with the graded approaches which correspond to the level of risk on management of radioisotopes.

ii. Participation in International Meeting

Based on the international standards stipulated by the IAEA, the NRA developed technical standards for prevention of radiation hazards, such as defining dose limits when handling radioisotopes, as well as implements specific studies on nuclear security related to radioisotopes. The NRA participated in the following meetings organized by the IAEA in order to collect information on the above in the meetings held by international organizations and to reflect Japan's opinions in the discussions.

Table 22 Participation in Meetings held by the IAEA, etc.

Name of conference	Schedule	Major agendas
IAEA Radiation Safety Standards Committee (RASSC[40]) meetings	June 23-25, 2015 (the 38th)	- Radiation protection against medical exposure of ionizing radiation - Radiation protection and safety in veterinary medicine - Preparation of position paper (Estimation of the cause and risk of influence of radiation on health and the possible implications for safety standards) - Management of contaminated daily necessities other than foods

Name of conference	Schedule	Major agendas
		- Sensitivity of an individual to radiation
	November 4-6, 2015 (the 39th)	- Study on the review of the safety guide “Application of the Concepts of Exclusion, Exemption and Clearance” - Management of radioactive residues from uranium production and other NORM activities
Technical meetings concerning the efforts on radiation protection issues (implementation of BSS)	November 2-3, 2015	- An issue of environmental restoration at past Legacy sites - Contaminated goods in international trades - Optimization of protection and safety in the activities related to occupational exposure due to NORM
IAEA Open-Ended Meeting of Legal and Technical Experts to Develop Internationally Harmonized Guidance for Implementing the Recommendations of the Code of Conduct on the Safety and Security of Radioactive Sources in Relation to the Long -Term Management of Disused Radioactive Sources	July 27-31, 2015 (Consultancy meeting)	- Concerning the establishment of guidance on the management of disused radioactive sources
	December 14-17, 2015 (the 2nd)	
OECD/NEA Committee on Radiation Protection and Public	April 15-17, 2015	- Report on activities such as expert group and workshops on science and value

Name of conference	Schedule	Major agendas
Health (CRPPH) annual meeting		- Consideration of future activities and programs
Committee on Radiation Protection and Public Health (CRPPH) bureau meeting	October 27-28, 2015	- Various radiation protection issues in the stage after closure of waste disposal - Concerning the policies of workshops and expert groups on food safety science - Consideration on future projects

(2) Implementation of Reviews and Inspections for Prevention of Radiation Hazards

To prevent radiation hazards due to activities such as the use of radioisotopes, the NRA has regulated the use, dealing, leasing, waste management, and other handling of radioisotopes, use of radiation generating apparatuses, and waste management and other handling of objects contaminated with radioisotopes, based on the Radiation Hazards Prevention Act.

During the period from April 1, 2015, to March 31, 2016, the NRA conducted examinations and inspections shown in the following table:

Table 23 Main Examinations and Inspections (From April 1, 2015 to March 31, 2016)

Licensee	Type of permissions and notifications	No.
Permission users (Number of places: 2,317)	Permission (approval) of use	51
	Permission (approval) of change for permission of use	298
	Approval of merger or split of juridical persons	27
	Notification of termination of use, etc.	91
	On-site inspection	354
Notification users (Number of places: 521)	Notification of use	16
	Notification of change for notification of use	29
	Notification of termination of use, etc.	41
	On-site inspection	0
Notification users of approved devices with certification label (Number places: 4,739)	Notification of approved devices with certification label	1,026
	Notification of change concerning use of approved devices with certification label	883
	Notification of termination of use, etc.	896
	On-site inspection	0
Notification dealers (Number of places: 313)	Notification of selling business	9
	Notification of change for notification of selling business	54
	Notification of termination of business, etc.	6
	On-site inspection	2
Notification lessors (Number of places: 156)	Notification of rental business	4
	Notification of change for notification of rental business	31
	Notification of termination of business, etc.	3
	On-site inspection	0
Permission waste management licensees (Number of places: 7)	Permission of change for waste management business	4
	Notification of termination of business, etc.	0
	On-site inspection	0
Off-site transport of radioisotopes	Approval of containers to be transported	7

(3) Status of Radiation Control

Based on the provision of paragraph 1 of Article 42 of the Radiation Hazards Prevention Act and paragraph 3 of Article 39 of the Ordinance for Enforcement of the Act, the NRA made the radiation control status report of the FY 2014 (from April 1, 2014 to March 31, 2015). It included the status of the storage and disposal of radioisotopes and that of exposure control for radiation workers that were reported by each site under the terms of the Radiation Hazards Prevention Act.

The storage and disposal of radioisotopes at all sites during FY 2014 did not exhibit a particularly large variation, compared with past situations.

The exposure doses received by individual radiation workers at every site in FY 2014 fell below the dose limits prescribed by the Act.

(4) Identification Causes and Countermeasures for Accidents and Failures Occurred in Sites handling Radioisotopes, etc.

Article 39 of the Ordinance for Enforcement of the Radiation Hazards Prevention Act requires licensees handling radioisotopes to report accidents and failures which occurred in their sites (hereinafter referred to as "*incidents reported based on the Act*" in this section) to the NRA.

The number of incidents reported based on the Act from April 1, 2015, to March 31, 2016, was 2.

i. Radioactive material missing in Taisei Corporation

On May 26, 2015, a stainless-steel source rod equipped with radioisotopes (cobalt 60 and californium 252), which is used to measure water content and density of soil by Taisei Corporation for controlling the quality of embankment and tunnel construction, was found to be missing. Despite extensive searches it could not be found. The NRA was informed on June 2, 2015, that a lost or stolen radioisotope item falling under the incidents reported based on the Act had occurred. Thereafter, this matter was disclosed and the search has been continuing, the rod has not yet been found.

Since the loss was attributed to be improper management of the source rod 'due to being accustomed to the use of the moisture and density meter', it was decided to widely disseminate rules for the use, storage and transportation of the meter, to keep them steadily and to check whether these measurements have been surely implemented, in order to prevent any similar failures.

ii. Leakage of Radioactive Materials to Outside of a Controlled Area in the Site of Osaka University handling Radioisotopes

In December 2015, when water (162.7 liters) flowed through the RI drainpipe within the controlled area in Osaka University, it was found that only 71.7% (116.6 liters) of the water went into the receiving tank. An investigation was launched as a leakage was suspected to outside of the controlled area. The pipe was dug up and a breakage was found. After inspection of the soil near the broken pipe, it was reported on March 15, 2016, that contamination was confirmed, falling under the incident reported based on the Act.

The cause was deterioration and breakage of the pipe due to ground subsidence around the building. As a countermeasure, relevant RI underground drainpipes were all replaced with double pipes, and an inspection opening was created near the elbow of the pipe so that water leakage inspection could be performed easily.

(5) Implementation of the Examinations for Supervisor of Radiation Protection

Licensed users of radioisotopes stated on the Radiation Hazards Prevention Act, such as permission users, notification users need to appoint a supervisor of radiation protection from among those who are certified as Classes 1, 2, and 3 supervisors of radiation protection in accordance with the classifications stipulated in this Act for supervising the prevention of radiation hazards.

The NRA issued a Class 1 supervisor certificate to 593 persons and a Class 2 supervisor certificate to 384 persons who passed the examination for a supervisor of radiation protection and completed the training. In addition, it also issued a Class 3 supervisor certificate to 575 persons who completed the training.

10. Implementation of the Examinations for Chief Engineer of Nuclear Fuel and Reactors

The NRA holds national examinations to qualify chief engineer of reactors and chief engineer of nuclear fuel who are responsible for safety and supervision of reactor operation and handling of nuclear fuel materials. In FY 2015, the NRA issued a certificate to 12 chief engineers of reactors and to 23 chief engineers of nuclear fuel.

Section 3 Effective Cooperation for Ensuring the Compatibility of Safety and Nuclear Security

Maintaining the harmony of measures for both safety and nuclear security is outlined in the “Code of Conduct on Nuclear Security Culture” and the “Statement on Nuclear Safety Culture”. It is clearly stated as the responsibility of all NRA’s officials under NRA’s Core Values and Principles. In accordance with this, the NRA has committed to effective collaboration in the management of physical protection information, including how to proceed reviews of applications for change in reactor installation permit and ensuring the compatibility of safety and nuclear security. Both departments share information when needed.

Chapter 4 Oversight of Efforts to Decommission Reactors of TEPCO's Fukushima Daiichi NPS

Section 1 Oversight of Efforts to Decommission Reactors of TEPCO's Fukushima Daiichi NPS

(1) Approval and Inspections of the Implementation Plan

The NRA designated TEPCO's Fukushima Daiichi NPS as Specified Nuclear Facility in November 2012 in order to control it in an appropriate manner. The NRA also showed TEPCO measures required to ensure nuclear security and prevent future potential disasters. In December 2012, the NRA received the Implementation Plan with Regard to Fukushima Daiichi NPS's Specified Nuclear Facilities (hereinafter referred to as the *"Implementation Plan"*) and approved it in August 2013 after indicating the points to be considered. Between April 1, 2015 and March 31, 2016, the NRA approved 42 changes in the Implementation Plan. The major changes are as follows.

i. Removal of heavily-contaminated water from sea-side underground trenches

Immediate action was required to stop leakage from seaside trenches where highly contaminated water is retained. The Implementation Plan to remove the contaminated water from inside the seawater piping trenches, was approved in August 2013. The detailed processes for the transfer of contaminated water and filling the trench with concrete, plus related issues were discussed at the 19th, and 24th to 30th meetings of Commission on Supervision and Evaluation of the Specified Nuclear Facilities (hereinafter referred to as the "*Commission on Supervision and Evaluation*"). The discussions included the progress of work on stopping the water by freezing it at the connections, the building of unit 2 seawater piping trench and the construction method of anti-washout underwater concrete into the tunnel. The discussions also monitored the progress of the closing work for unit 2 and unit 3 seawater piping trenches. The application for changes in the Implementation Plan, including plans to add the water level of the accumulated water in turbine buildings, was received on August 5th 2014, and the NRA approved it on October 29th 2014.

At the Commission on Supervision and Evaluation in FY 2015, the NRA confirmed the completion of the removal of contaminated water in trenches on June 30th for unit 2, on July 30th for unit 3, and on December 11th for unit 4.

ii. Installation Work of frozen soil wall (land-side impermeable wall)

After receiving the application for changes in the Implementation Plan related to the installation work of the frozen soil wall on January 27, 2015, the NRA held various

discussions, including through opportunities such as the Commission on Supervision and Evaluation.

Because of environmental concerns that the initial plan to freeze the whole landside water shielding wall at once might cause the groundwater level to lower and the level of contaminated-water accumulated in the building to rise in reverse, the NRA suggested a gradual freezing method or the earlier implementation of the landside water-shielding wall (sea-side), as examples of plans that do not easily cause the water level to reverse. This was discussed with the Commission on Supervision and Evaluation.

On receiving these suggestions, TEPCO changed the initial plan to the alternative gradual freezing method and submitted the application for changes in the Implementation Plan (with some partial corrections), which has been changed to adopt the earlier implementation to freeze the frozen soil wall and then employ the gradual freezing method on the landside water-shielding wall. Thereafter, based on the discussion held at the 64th NRA Commission Meeting of FY 2015 (March 30, 2016), the NRA approved the applications on the same date.

iii. Managing the additional effective dose to 1mSv/year or less

Since the effective dose (Estimated value) on site boundary with the decommissioning work at TEPCO's Fukushima Daiichi NPS was greatly exceeding the value of less than 1 mSv/year in and after April 2013, the NRA directed, in February 2014, to change the Implementation Plan, including clarification of the time which the effective dose (Estimated value) limit would be attained. Based on this issue, in December 2013, an application for changes in the Implementation Plan, including plans to set the effective dose limit to less than 2 mSv/year by the end of March 2015 and to less than 1 mSv/year until the end of March 2016 then, based on the discussion at the 14th NRA Commission Meeting of FY 2014 (June 25, 2014), it was immediately approved.

On March 2015, the NRA received the application for changes in the Implementation Plan (partially corrected in September 2015) in which the effective dose would be attained to less than 1 mSv/year on site boundary by the end of 2015 by the implementation of processing of the contaminated water in tanks through the multi-nuclide removal equipment, and based on the discussion at the 38th Commission on Supervision and Evaluation. It was approved as of March 31, 2016.

iv. Preventing the Outflow of Contaminated Groundwater into the Sea

The subdrain, which is a facility to prevent inflow of groundwater into buildings, was partly damaged from the earthquake. The NRA received an application for changes in the

Implementation Plan, in order to start the full operation of the subdrain. This included plans to install a purification system and sample-tanks. This was approved in January 2015 and the operation related to the subdrain restarted from September 2015.The closure of the sea-side underground impermeable wall, that had been left partially unclosed, was completed in October 2015, which enhanced the prevention of outflow of contaminated groundwater into the ocean.

v. Review of Protection against External Events such as Earthquake and Tsunami

Earthquake and tsunami measures at TEPCO's Fukushima Daiichi NPS were discussed at the 19th NRA Commission Meeting of FY 2014 (August 6, 2014). These included appropriate and effective measures, which would be immediately conducted, to deal with the situation. Based on discussions of the Commission on Supervision and Evaluation, the NRA directed TEPCO to consider the protection against earthquake and tsunami, and received the reports on the earthquake motion for review and the tsunami for review (900 gal, 26.3 m).

At the 38th Commission on Supervision and Evaluation of December 2015, the Secretariat of the NRA confirmed there was no major problem with both the earthquake motion for review and the tsunami for review that were developed by TEPCO, and at the 40th Commission on Supervision and Evaluation of March 2016, the policy relating to the procedures of future assessment/confirmation was determined.

The activities of the Implementation Plan by TEPCO, during the period from April 1, 2015 to March 31, 2016, were monitored through 4 operational safety inspections, 52 pre-service inspections, and 55 welding inspections in addition to the regular inspections by the on-site nuclear safety inspectors. At the 50th NRA Commission Meeting of FY 2015 (January 20, 2016) among the issues discussed were the unimplemented preventive measures related to the leakage from a transfer pipe for the stored water in 1000-ton notch tanks and a breach of the Implementation Plan (on supervision) related to the unimplemented water-level confirmation at the objective area in the buildings of unit 1 turbine. Among the items discussed at the 64th NRA Commission Meeting of FY 2015 (March 30, 2016), was a breach of the Implementation Plan (on supervision) related to the unimplemented review on the water filling test after the completion of construction for piping penetration parts of the inner dikes of the contaminated-water tank area.

In addition, based on the result of discussions at the 41th NRA Commission Meeting of FY 2014 (November 26, 2014), focusing on the equipment of which performance retention in Specified Nuclear Facility is considered important, the 2nd periodic facility inspection was implemented.

Table 24 Approval of Implementation Plan and inspection status (From April 1, 2015 to March 31, 2016)

Type of approval/inspection	Number
Approval of changes in Implementation Plan	42
Completion of pre-service inspection	52
Approval of test use	0
Approval of partial use	7
Direction of omission of pre-service inspection	0
Completion of welding inspection	29
Completion of welding inspection for imports	26
Completion of periodic facility inspection	1
Operational safety inspection	4

(2) Measures for Mid-term Risk Reduction

The NRA developed Measures for Mid-term Risk Reduction at TEPCO's Fukushima Daiichi NPS (as of February 2015), at the 57th NRA Commission Meeting of FY 2014 (February 18, 2015), for the purpose of setting specific targets.

After about 6 months from the development of this program, based on the progress made, it was revised to Measures for Mid-term Risk Reduction at TEPCO's Fukushima Daiichi NPS (as of August 2015) at the 23rd NRA Commission Meeting of FY 2015 (August 5, 2015). Moreover, as 5 years had passed since the accident, it was considered to shift from the Emergency Response Stage to the Planned Action Stage. This allows us to advance measures steadily through the adequate review on plans one by one, with respect to overall measures for the radioactive waste storage and the decommissioning work. At the 53rd NRA Commission Meeting of FY 2015 (February 3, 2016), the revision of the program was discussed based on the progress from August 2015 or the status of decommissioning work. Then, based on the discussions, at the 58th NRA Commission Meeting of FY 2015 (March 2, 2016), it was revised to Measures for Mid-term Risk Reduction at TEPCO's Fukushima Daiichi NPS (as of March 2016). (See Figure 3)

It was decided that Measures for Mid-term Risk Reduction would be reviewed on a regular basis and the status of target achievements shall be assessed. In order to publicize more widely, an English version of the program was prepared and to the NRA's website.

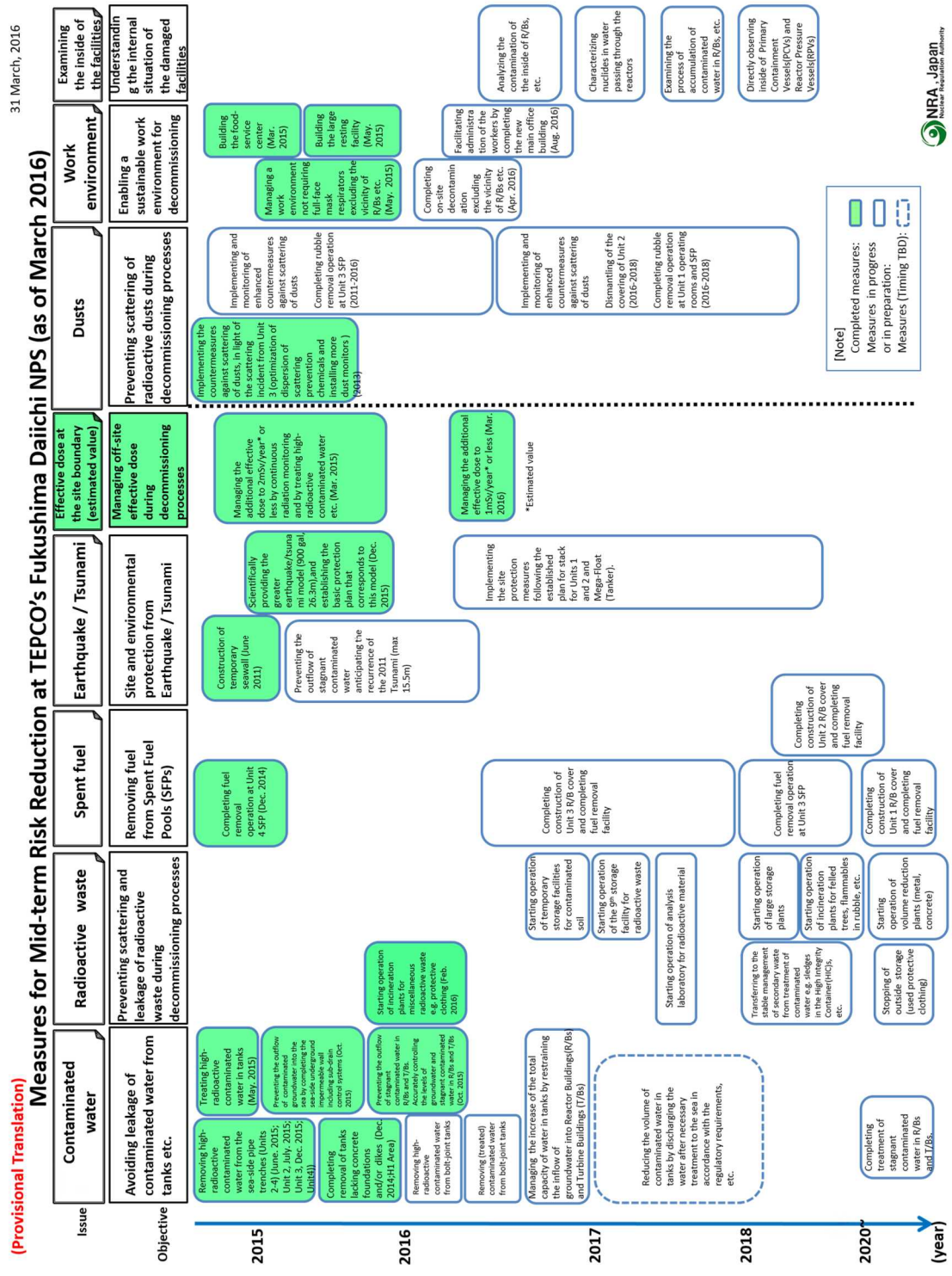

Figure 3 Measures for Mid-term Risk Reduction at TEPCO's Fukushima Daiichi NPS (as of March 2016)

(3) Revision of Review System related to Specified Nuclear Facilities

Some measures have been completed at TEPCO's Fukushima Daiichi NPS, especially the removal of heavily contaminated water in the sea-side underground trench, so that the risk of the environmental pollution largely reduced. However as progress was made in decommissioning work, the more important challenge became the stable and long-term storage of radioactive waste. At the 37th NRA Commission Meeting of FY 2015 (October 28, 2015), the NRA decided to newly establish the Committee on Radioactive Waste Issues of the Specified Nuclear Facilities, while reorganizing the Commission on Supervision and Evaluation System.

(4) Confirmation of the Causes and Countermeasures for Accidents and Failures occurred in TEPCO's Fukushima Daiichi NPS and Confirmation of Recurrence Prevention Measures

Paragraph 3 of Article 62 of the Reactor Regulation Act requires nuclear licensees to report accidents and failures in nuclear facilities as stipulated in the Ordinance of the NRA (hereinafter referred to as "*incidents reported based on the Act*" in this section) .

The number of incidents reported based on the Act which occurred from April 1, 2015 to March 31, 2016, was 2. The responses to the incidents are as follows. Although the incidents reported based on the Act should be usually evaluated based on INES, the evaluation for these incidents were omitted, taking into consideration circumstances of each facility. The NRA, however, reported outline of those events and possible impact on environment voluntarily to IAEA.

i. Leakage from Transfer Pipe for Stored Water in 1000 Ton Notch Tanks to Outside of Controlled Areas

On May 29, 2015, a leakage occurred from a pressure hose transferring stored water in 1000-ton notch tanks to unit 3 turbine building. The water flowed into a drainage channel and some of the leakage flowed into the port. The event was deemed to be a case of contaminated water leaking to outside of the controlled area, and reported as it fell under the incident reported based on the Act. The situation was confirmed by the Fukushima Dai-ichi NRA Regional Office, and the NRA directed TEPCO to strengthen monitoring both inside and outside of the port, to submit a report on the estimated leakage amount and a measurement of radiation concentration, and as also to check on the transfer line, to confirm handling that line checks had been carried out before the transfer started and at the transfer-starting time.

TEPCO, implemented various countermeasures, replacing the hose with a polyethylene pipe, establishing or revising manuals, including the pressure hose operational control guide, and installing continuous monitoring equipment on the drainage channel. The NRA discussed the status of the investigation into the cause of the incident, the response and future preparedness at the 36th meeting of Commission on Supervision and Evaluation.

The NRA received a final report on the incident from TEPCO on August 28, 2015 (partially corrected on December 16, 2015) and reviewed it. Then, at the 50th NRA Commission Meeting of FY 2015 (January 20, 2016), it was concluded that there had been neither environmental contamination nor serious exposure to the workers who conducted patrols, and that preventive measures had been completed, for example, establishing or revising manuals such as the pressure hose operational control guide, the implementation of inspection appropriate to the operating lifetime or the concentration of contaminated radioactivity, the prohibition of installation at a side ditch, and the installation of continuous monitoring equipment to detect leakage of contaminated water into the K drainage channel.

ii. Leakage of Water in the Inner Dike of the Contaminated-Water Tank Area

The NRA received a report from TEPCO that rainfall had caused a leakage of stagnant water in the inner dike (hereinafter referred to as "*rainwater in dike*") at the H4 North Tank area on September 11, 2015, and at the H6 Tank area on September 14, 2015. The Implementation Plan stipulates that radioactive materials shall be removed when water levels exceed the discharge standard provided in the Implementation Plan. The high-level radioactivity concentration was detected from the rainwater in dike at the H4 North Tank area, and that was supposed to be effected by the tank water leakage in the past. TEPCO reported the leakage of rainwater in dike exceeding the discharge standard on September 15, 2015, which fell under the incident reported based on the Act. The Fukushima Dai-ichi NRA Regional Office confirmed the situation, and the NRA directed TEPCO to take actions as follows; urgent inspections and preventive measures in accordance with the dike-structure and the leakage routes; sorting out the leak-check method; sorting out water-level management in dikes.

TEPCO also implemented countermeasures such as polyurea spray coating on joint lines of the raised inner dikes and bolt-inserting parts, and treatments with impermeable material and water filling test for piping penetration parts of the innerdikes. The NRA discussed on the investigation into the leakages, as well as the response and future preparedness at the 37th meeting of Commission on Supervision and Evaluation.

The NRA received a final report on the incident from TEPCO on December 22, 2015 (partially corrected on February 26, 2016), and confirmed the report at the 64th NRA

Commission Meeting of FY 2015 (March 30, 2016). The report concluded with the assessment that neither environmental contamination nor serious exposure to workers was caused, as well as the assessment on the completion of recurrence prevention measures that included the polyurea spray coating on joint lines of the raised inner dikes and bolt-inserting parts, the removal of piping penetration parts of the inner dikes, and so forth.

iii. Responses to incidents which occurred in FY 2014

An incident occurred involving the A5-A6 tank connection valves in G4 South area on September 4, 2014. TEPCO confirmed the implementation of countermeasures, such as the exchange of the valves on which through-cracks occurred, the dissemination of specification in test/construction procedure manuals, and the reflection in the operational guide for measures to prevent freezing, through interviews. The NRA received a final report on the incident from TEPCO on April 28, 2015 (partially corrected on June 5, 2015) and the report was confirmed at the 15th NRA Commission Meeting of FY 2015 (June 17, 2015). It was concluded that neither serious leakage to the outside of the dikes nor serious exposure had been caused, as well as that the countermeasures to prevent recurrence were completed.

A leakage incident of processed water from a transfer pipe of the multi-nuclide removal equipment occurred on December 17, 2014. TEPCO confirmed that the Work Implementation department was sharing the piping system diagram needed to prepare the transfer manuals with the Facility Operation department, through interviews. The NRA received a final report on the causes and measures taken on April 28, 2015 (partially corrected as of June 5, 2015). The NRA confirmed the report and, at the 19th NRA Commission Meeting of FY 2015 (July 15, 2015), concluded the assessment on the implementation of recurrence prevention measures. These included the manual preparation at the completion of tank installations and sharing of the piping system diagram needed to prepare the transfer manuals from the Work Implementation department to the Facility Operation department.

TEPCO confirmed an incident of alarms actuation involving an in-dike side-ditch drainage radiation monitor on February 22, 2015. Countermeasures were implemented including the marking as ‘temporary storage items’ for which contain contaminated water and thorough dissemination of information regarding unnecessary-item disposal to relevant departments. The switching operation of drainage channels’ gates was motorized

and the gates leading to the port facilities were improved to be controllable from the central monitoring room. The NRA received a final report on the causes and measures of the incident, on July 3, 2015 (partially corrected as of August 10, 2015), confirmed the report at the 27th NRA Commission Meeting of FY 2015 (September 2, 2015), and concluded the assessment on the implementation of recurrence prevention measures. These included the marking of items that contain contaminated water are in temporary storage, thorough dissemination of information regarding unnecessary-item disposal to relevant departments and the motorization of gates leading to the port to shorten the time from alert actuation to gate closing.

With regard to cases determined as incidents reported based on the relevant acts, at the 3rd NRA Commission Meeting of FY 2015 (April 15, 2015), the NRA decided to seek opinions on the proposal for a revision to add exception requirements in the case of leakage of liquid radioactive materials and determined the revision at the 10th NRA Commission Meeting of FY 2015 (May 27, 2015). Based on the assessment of causes and countermeasures related to the leakage of water in dikes in the tank areas storing contaminated water in September 2015, at the 64th NRA Commission Meeting of FY 2015 (March 30, 2016), it was decided to seek opinions on the proposal for a revision, based on the Administrative Procedure Act. The survey exercise was started the next day.

Section 2 Analysis of TEPCO's Fukushima Daiichi NPS accidents

Thorough and continual analysis of the accident at TEPCO's Fukushima Daiichi NPS is an important element of the NRA's jurisdictional responsibilities. The NRA has been conducting the validation of all technical issues.

To clarify technical issues, the NRA decided to establish "the Committee on Accident Analysis of Fukushima Daiichi Nuclear Power Station", at the 34th NRA Commission Meeting of FY 2012 (March 27, 2013). Its members included Commissioner Fuketa, external experts, and officials of the NRA Secretariat, officials of JNES (at that time) and officials of the Japan Atomic Energy Agency. It established the Study Committee in May 2013.

The NRA proceeded with discussions by the Committee and on-site investigations of TEPCO's Fukushima Daiichi NPS (5 Committee meetings and 4 on-site investigations in FY 2013 and one Committee meeting and 5 on-site investigations in FY 2014), and finalized an interim report at the 31st NRA Commission Meeting of FY 2014 (October 8, 2014), which was released as the "NRA Report". An English version was prepared and sent to IAEA, OECD/NEA and related international bodies.

The interim report included technical analyses of plant data. On-site investigations were

carried out with regard to seven items, which were defined as the problems to be solved in the National Diet Investigation Commission Report, for which regulatory organizations were required to carry out verifiable investigations. The various challenges and unsolved matters were pointed out by the National Diet of Japan Fukushima Nuclear Accident Independent Investigation Commission (hereinafter referred to as the "*National Diet Investigation Commission"*) and in the reports of the Investigation Committee on the Accident at the Fukushima Daiichi Nuclear Power Stations of Tokyo Electric Power Company. The NRA's opinions for the individual items were finalized.

It was agreed items to be discussed would be based on TEPCO's investigation and the progress of reactor decommissioning work. In FY 2015, the NRA confirmed the progress status of the investigation conducted by Tokyo Electric Power Co., Inc. The NRA also participated in research activities coordinated by OECD/NEA. It was also agreed further investigations would be conducted taking into consideration the results of mid-term and long-term inspections of the inside of reactors.

Section 3 Implementation of Radiation Monitoring

After the transfer of responsibilities for implementation of radiation monitoring from the Ministry of Education, Culture, Sports, Science and Technology in the FY 2013, the NRA implemented monitoring of the general environment in the entire Fukushima Prefecture, monitoring of the sea area around TEPCO's Fukushima Daiichi NPS and Tokyo Bay and monitoring of the air dose rate in Japan. The results of their analysis were published weekly, based on the Comprehensive Radiation Monitoring Plan (determined in the Monitoring Coordination Meeting in August 2, 2011, revised in April 1, 2015).

Also, at the 55th NRA Commission Meeting of FY 2015 (February 10, 2016), the NRA closely examined monitoring results for the previous five years and discussed the direction of the review of future monitoring. In addition, it also discussed a proposal for detailed monitoring of difficult-to-return zones in order to enhance activities to allow future evacuees from such zones to return home.

(1) Identifying long-term distribution of radioactive substances in the entire area of Fukushima Prefecture

The NRA implemented airborne monitoring in the entire Fukushima. In February 2016, it published the air dose rate map as of September 29, 2015 in the 80 km zone from the TEPCO's Fukushima Daiichi NPS, as well as the map as of November 7, 2015, in the Fukushima and neighboring prefectures. It also published the output report on the outsourcing fee for measurement investigation of radioactive materials in FY 2014 (the aggregation of distribution data of radioactive materials and the development of migration models along with accidents in the Fukushima Dai-ichi NPS of Tokyo Electric Power Co., Inc.) in July 2015 and posted the measurement results, including the distribution of air dose rate by vehicle-borne survey and the deposition amount of radioactive cesium in soil.

(2) Measuring the air dose rate in Fukushima and neighboring prefectures with monitoring posts

At the request of local governments, the air dose rate is measured continuously with 708 units of movable monitoring posts and 3,036 units of real-time dose measuring systems installed at public locations, such as schools in Fukushima and neighboring prefectures. The results are announced on the website in real-time. Effective utilization of the equipment and continued measurement is ensured by transferring the real-time dose measuring system as necessary to meet the needs of the area.

(3) Sea Area Monitoring

Continuing from the previous fiscal year, related organizations cooperate to implement the monitoring in accordance with the Implementation Guides on Sea Area Monitoring, which is a part of the Comprehensive Radiation Monitoring Plan. The NRA collected seawater and sediment from the vicinity-coast, offshore, and open ocean of TEPCO's Fukushima Daiichi NPS and from Tokyo Bay, and then conducted radioactivity analysis on those samples.

In addition, experts from IAEA environment laboratories visited Japan in May and November of 2015 and in cooperation with the NRA Secretariat, collected seawater and sediment samples in May and the seawater and fisheries samples in November, in order to provide inter-laboratory comparisons. They verified that the NRA data showed a high level of accuracy as a result of inter-laboratory comparison and proficiency tests.

Chapter 5 Establishing Technical and Human Resource Foundations for Ensuring Nuclear Safety

Section 1 Persistent improvement of regulatory requirements based on the latest scientific and technological knowledge

1. Persistent improvement of regulatory requirements

After the accident at TEPCO's Fukushima Daiichi NPS, the NRA enforced the New Regulatory Requirements with regard to commercial power reactors in July 2013 and with regard to facilities for handling nuclear fuel materials in December 2013, based on the lessons learned from the accident, the latest technical knowledge, and the overseas regulation trends including the regulatory requirements issued by international organizations such as the IAEA. These regulatory requirements (including interpretation and guidelines) are to be continuously studied based on the latest scientific and technological knowledge and the like.

(1) Revision of regulatory requirements in FY 2015

i. Grace period for specialized safety facility

New Regulatory Requirements for Commercial Power Reactors enforced in July 2013 require the installation of facility for dealing with specialized safety facility and permanent plant DC power-supply system (The third system) (hereinafter referred to as "*specialized safety facility*") as backup provisions for reliability improvement of provisions for severe accidents. The New Regulatory Requirements stipulated five-year grace period until July 2018 for all NPS.

This is because specialized safety facilities are required as backup measures for reliability improvement after having necessary measures for severe accidents by other facilities and equipment (hereinafter referred to as "*main facilities*") and the grace period is set up based on the recognition that conformity review, construction and the like need further period of time to newly install facilities.

On the other hand, it is premised that design conditions for main facilities are finalized by conformity review of main facilities in order to proceed with reviewing specialized safety facilities. The start of review for specialized safety facilities is running late because the review process of main facilities took time longer than initially anticipated and the progress of reviewing main facilities vary plant by plant.

Based on these circumstances, the NRA revised "NRA Ordinance for partial revision of NRA Ordinance on Standards for Location, Structure and Equipment of Commercial Power Reactors" on December 22, 2015, and enforced it on January 12, 2016. This revised Ordinance covers that termination of transitional measures period may be after five years

of the date that construction plan of main facilities is approved to ensure appropriate and smooth accomplishment of installing specialized safety facilities.

ii. Ensuring habitability of nuclear reactor control room against toxic gas

For ensuring habitability of nuclear reactor control room, measures against toxic gas generated from toxic chemicals were discussed by the former Nuclear and Industrial Safety Agency, however, the discussion has been ceased since the accident at TEPCO's Fukushima Daiichi NPS.

The brief evaluation by the Secretariat of the NRA based on the data obtained from licensees suggested that the leakage of toxic chemicals might affect the habitability of nuclear reactor control room.

Based on the results of the brief evaluation and regulatory experiences in overseas, the NRA accepted the policy of taking the necessary measures for ensuring habitability of reactor control room against toxic gas by drawing up rules and evaluation guidance for habitability of nuclear reactor control room against toxic gas on November 25, 2015. For drawing up the guideline, the NRA held meetings of "the Meeting on Evaluating the Habitability of a Nuclear Power Plant Control Room During a Postulated Hazardous Chemical Release" twice in FY 2015 and discussed requirements based on opinions of external experts.

(2) Utilization of private standards

The regulatory requirements based on the Reactor Regulation Act have established required performance levels. The NRA is to apply the private standards of the Atomic Energy Society of Japan (AESJ), the Japan Society of Mechanical Engineers (JSME), the Japan Electric Association (JEA), and other organizations (hereinafter referred to as "*SDOs (Standards Developing Organizations*)") as concrete detailed specification that fulfills the performance levels after conducting technical evaluations of the standards.

i. Evaluation of private standards and integration into technical regulatory requirement

- 2013 Addenda to Method of Surveillance Test of Reactor Structure Materials

  In order to conduct the technical evaluation of 2013 Addenda to Method of Surveillance Test of Reactor Structure Materials formulated by the JEA, the Study Team on Technical Evaluation of Methods of Surveillance Tests for Structural Material of Nuclear Reactors held discussions in succession to FY

2014. After the discussion in a total of four team meetings including one meeting held in FY 2015, the technical evaluation document was established on October 7, 2015, and Regulatory Guide of the NRA Ordinance on Technical Standard for Commercial Power Reactor and its Auxiliary Facilities was partially amended (comes into effect as of January 1, 2016) through public comments.

- Fitness-for-Service Standards 2012 edition and Supplement in 2013 edition

In order to conduct the technical evaluation of Codes for Nuclear Power Generation Facilities – Rules on Fitness-for-Service for Nuclear Power Plants 2012 edition and Supplement in 2013 edition formulated by the JSME, the Study Team on Technical Evaluation of Fitness-for-Service Standards was held. The team meetings were held twice in FY 2015.

ii. Responses to partial deletion of private standards in SDOs

The JSME deleted a part of Codes for Construction of Spent Nuclear Fuel Storage Facilities – Rules on Transport/Storage Packaging for Spent Nuclear Fuel 2007 edition due to technical problems about material strength and the like on October 2015. Deleted part of the Codes was cited in the Interpretation of Ministerial Ordinance Concerning Technical Standards for Methods of Design and Construction of Spent Nuclear Fuel Storage Facilities (internal regulations) established by the former Nuclear and Industrial Safety Agency, and so the NRA decided to delete the cited part and newly established Interpretation of Rules on Technical Standards for Methods of Design and Construction of Spent Nuclear Fuel Storage Facilities on February 15, 2016.

2. Review of regulations on radioactive waste from decommissioning

In order to conduct a study for improvement of regulatory requirements concerning radioactive waste of reactor core internals with relatively-high radioactive concentration which is generated by decommissioning and operation of nuclear power plants (hereinafter referred to as "*waste in reactor etc.*"), the NRA carried out a discussion in "the Study Team on the Regulation of Radioactive Waste in Decommissioning" in succession to FY 2014 (The study meetings were held eight times in FY 2015).

The NRA Commissioners received a report on its review status from the Secretariat of the NRA and instructed the Secretariat of the NRA to develop the idea of assuring safety including the necessity of institutional management by the national government on July 22, 2015.

The NRA Commissioners received reports from the NRA Secretariat at the 40th NRA Commission Meeting on November 13, 2015, regarding the management of national regulatory systems and issues beyond the framework of regulatory requirements for licensees to be met in light of the characteristics of waste in reactors (hereinafter referred to as "*disposition system*"). The commissioners also received reports on future directions taking account of the relationship between the disposition system and regulatory requirements, and changed an initial plan that the outline of regulatory requirements will be established within FY2015 and decided to proceed with the future study as stated below.

- As a preliminary stage of preparing the outline of regulatory requirements, the concept of regulatory requirements is to be concluded around the 4th quarter of FY 2015 on the premise of development of the disposition system.
- Regarding the framework of regulatory requirements, regulatory items, which are not affected by disposition system, are to be reviewed in FY 2016 or later. The entire framework of the regulatory requirements is to be reviewed at a time depending on the progress of setting up the disposition system.

Under this new plan of proceeding with study, the NRA pointed out to the Secretariat of the NRA on February 17, 2016, that the Secretariat of the NRA should review standards and characterization of respective radiation protection standards for waste disposal. Following this pointing out, "the Study Team on Radiation Protection Standards of Waste Disposal" consisting of members of the NRA, staff of the Secretariat of the NRA, and external experts, was established on March 30 in 2016 and this study team is supposed to rearrange focusing on radiation protection standards after the end of the regulation period which is specific to waste disposal.

Section 2 Accumulation of latest scientific and technological knowledge by implementation of safety research

1. Promotion of safety research

(1) Implementation of safety research

To carry out its duties appropriately, the NRA must perform safety research to accumulate the latest scientific and technical knowhow and to be able to respond to problems and consistently improve nuclear safety.

Therefore, the NRA indicates basic idea, how to proceed with safety research and intended safety research in “Promotion of Research on Safety by the NRA” (released by the NRA on September 25, 2013), and conducts safety research based on the said indication.

(i) Safety research at the NRA－FY 2015 version－

The NRA decides to identify and release the areas of research in which safety research should be conducted to solve the problems in nuclear safety regulation based on “Promotion of Research on Safety by the NRA”.

The NRA decided to review the areas of research to be conducted in FY 2015 or later based on the past promotion of safety research, and formulated “About Safety Research at the NRA – 2015 version –” at the 4th NRA Commission Meeting of FY 2015 (April 22, 2015).

(ii) Status of performed safety research

The NRA implemented 37 safety research projects in nine areas of research based on “About Safety Research at the NRA – 2015 version –.

(iii) Outcome of safety research

As the outcome of safety research, the NRA released “NRA Technical Reports”, which finalized the technical knowledge and the experimental data to be used for judgment of regulatory requirements, various guidelines, and examinations and inspections. In FY 2015, the NRA released four reports as listed below. In addition, the NRA submitted 13 papers and conducted 33 conference presentations.

Table 25 NRA Technical Reports released in FY 2015

Date of issue	Title
October 2015	Effects of Bore Pressure of Tsunami on Seawall
March 2016	Analyses of important phenomena on evaluation of countermeasures to prevent containment failure(BWR)
March 2016	Analyses of Events for the Evaluation of the Effectiveness Measures Against Severe Core Damage (BWR)
March 2016	Analysis of High Energy Arcing Fault at Nuclear Power Plants

(2) Evaluation of safety research

As to safety research, it is important to evaluate the progress of safety research and the utilization of such research in nuclear safety regulations and to improve it when necessary. The NRA conducts evaluations for all safety research projects based on “About conducting evaluation with regard to safety research at the NRA” (released by the Secretariat of the NRA on April 9, 2014).

i. Interim and posteriori evaluation in FY 2014

The NRA accepted “interim evaluation and posteriori evaluation results of safety research in FY 2014” on July 8, 2015.

The interim evaluation in FY 2014 shows that among projects whose research implementation period is for 5 years or longer, 19 intended projects for which more than 3 years have passed since the start of research basically produce appropriate results. It also shows that the research results of the 4 projects among them were used for improvement of New Regulatory Requirements and related guidance and for conformity reviews to New Regulatory Requirements, and therefore, those 4 projects were especially highly valued.

The posteriori evaluation in FY 2014 shows that 5 intended projects that were terminated in FY 2014 achieved the aim described in the FY 2014 safety research plan. It shows that 1 project, whose research result was used for conformity review to New Regulatory Requirements, was highly valued as having good results. It also shows that as for 4 other projects, the status of use of research results for regulation and other items will be confirmed in the future follow-up evaluations.

ii. Annual evaluation of results in FY 2014 and the creation of the FY 2015 plan

The NRA received a report on evaluation results, including evaluation of whether the FY 2014 safety research was conducted according to FY 2014 safety research plan, and on evaluation form such as matters to be reflected in FY 2015 safety research plan on July 8, 2015.

On FY 2014 annual evaluation, it was confirmed the consistency of all 41 projects with

“About safety research in the NRA” (released by the NRA on September 25, 2013) and year-on-year progress of safety research, and showed that 3 projects were made use of in for conformity review to the New Regulatory Requirements and especially achieved good outcomes. Based on these results, it was decided to especially focus on implementing 10 projects aiming at making use of the projects in confirming the appropriateness of enhanced safety assessments scheduled to be conducted in the near future, improving the technical basis that is essential to continuous and stable reviews based on the latest knowledge.

Safety Research Plan FY 2015, comprising 37 projects reorganized from 36 continuing projects, excluding 5 projects- completed as planned- out of 41 projects in FY 2014, was confirmed whether to consistent with “About Safety Research at the NRA -2015 –“(dated April 22, 2015) and whether to be based on annual evaluation results. As a result, the NRA evaluated that the plan was basically appropriate.

2. Gathering and Analysis of domestic and international trouble information

On May 12, 2014, the NRA instructed the Reactor Safety Examination Committee and the Nuclear Fuel Safety Examination Committee to gather and analyze information concerning accidents and problems both domestically and internationally and the trend of regulation overseas, and to issue advice whether or not the NRA should take action on the basis of the information gathering and analysis.

The Reactor Safety Examination Committee and the Nuclear Fuel Safety Examination Committee held a joint committee meetings. At its 5th meeting, the joint committee examined the issue of “malfunction of automatic starting circuit of auxiliary feed water (AFW) system and emergency feed water (EFW) system at the time of the loss of main feed water pump”, a particular example in the United States, and “appropriateness of distribution system voltage in power plants”, an issue in which a further investigation was needed as technical information for the NRA to take action. Also, in terms of the possibility of enhanced safety of spent fuel pool storage that was terminated in the second screening on the last occasion, the NRA Secretariat released an additional report and discussion was held.

At its 6th meeting, the joint committee deliberated “abolition of standards for aluminum alloy for metal cask basket”, a domestic case, and “critical and chemical safety phenomena associated with unexpected out of use in Items relied on for safety (IROFS)”, a case in the United States.

At its 7th meeting, the joint committee examined the issue of “the inappropriate installation of monitoring capsule for reactor pressure vessel” that is a case in the United States.

Results of deliberation and study in each joint committee meeting were reported to the NRA.

Also, information that is basis of discussion in the Committee on Examination of Reactor Safety and the Committee on Examination of Nuclear Fuel Safety is studied and organized in the Technical Information Committee in advance, and then reported to the Committee on Examination of Reactor Safety and the Committee on Examination of Nuclear Fuel Safety.

Section 3 Securing and establishing development mechanism for personnel for nuclear regulations

1. Securing personnel

To effectively administer nuclear regulations which require the highest professional and technical expertise, it is essential to hire highly skilled personnel. Since its foundation, the NRA has hired experienced personnel with excellent skills and new employees to administer the nuclear regulations.

As to employment of officials with experience from the private and other sectors, the NRA hired 52 persons as of April 1, 2016, in the same way as last fiscal year, who will ensure conformance to the New Regulatory Requirements, inspections corresponding to the on-site facilities, and measures to prevent nuclear disasters through close communication with local governments; research officials who will be responsible for enhancing technical research; and officials responsible for accounting, general affairs and other areas.

Toward FY 2016, 19 persons were hired, to be in charge of the administration for nuclear regulations. To attract students majoring in nuclear engineering and related fields, the NRA carried out its own, unique “employment examination for nuclear engineering officials” and sought research officials to be in charge of technological researches and investigations. The NRA mounted an active public relations campaign, clearly explaining its aims and mandates, in order to attract the most highly qualified personnel from all fields.

However, the actual number of personnel is still 920 though the authorized number of personnel is 968, and therefore securing personnel resources is a serious problem. The NRA will continue to actively recruit officials who have excellent knowledge and/or skills to become immediately effective players.

Table 26 Situation of securing personnel from FY 2013 to FY 2015

	FY 2013	FY 2014	FY 2015	Total
Person with work experience	32	57	52	141
New employee	33	22	19	74
Total	65	79	71	215

2. Improvement of training system

Working for nuclear regulations requires specialized and highly technical decisions including nuclear reactor engineering, earthquake and tsunami resistance evaluation, radiation protection, probabilistic risk assessment and others. It is therefore essential to continuously improve this field of expertise.

The NRA formulated “Basic policy of development of NRA officials” in order to clarify the basic concepts and the framework of its human resource development initiatives at the 14th NRA Commission Meeting of FY 2014 (June 25, 2014), and “About promotion of measures with regard to development of officials” as the method to promote the measures with regard to human resource development defined in the basic policy in the 22nd NRA Commission Meeting of FY 2014 (September 3, 2014). The NRA has promoted the measures with regard to human resource development in accordance with this basic policy centering on the NRA Human Resource Development Center since the previous fiscal year, and received a report on approaches to human resource development in FY 2014 at the 6th NRA Commission Meeting of FY 2015 (April 28, 2015).

In accordance with its basic policy, the NRA developed a scheme in FY 2014 whereby NRA personnel can systematically improve their skills to meet work requirements while the NRA itself introduced a system to efficiently manage officials’ abilities, including their history of attending training courses while clarifying the skills necessary for major tasks. Moreover, in FY 2015, the NRA introduced a management system to efficiently manage officials’ abilities, including their history of attending training courses, and started trials of the aforementioned system mainly for officials who engaged in inspection tasks.

In light of skills to meet work requirement, the NRA reviewed a two-year education training for new employees, covering basic information needed in such areas as the legislative system of nuclear safety regulations, nuclear facilities, radiation protection and safety culture. Furthermore, the NRA started reviewing the specialized training courses for nuclear safety inspectors and developed a scheme to systematically provide on-the-job training.

To promote and strengthen safety measures corresponding to the New Regulatory Requirements, including measures needed to prevent or respond to accidents and plant conditions at the time of any accident, the NRA introduced a training simulator which can reproduce situations which can copy ‘normal’ operations in a power reactor, accidents and ‘major’ accidents. The NRA also developed a training curriculum with the said simulator and started its training. The NRA has also started development and improvement of equipment for more practical drills targeting on responses to severe accidents and advanced boiling-water nuclear reactors.

In addition, with regard to knowledge management to systematically hand down the advanced knowledge from the experienced officials to younger officials (identification, collection and sorting of the knowledge to be transferred), the NRA promoted systematic approaches which were mainly created by a person in charge of knowledge management at each NRA department and office.

In addition to the aforementioned measures and in the same way as last fiscal year, the NRA also implemented training programs for current officials. The NRA provided (1) advanced training courses on nuclear regulations for operational safety inspectors, nuclear emergency preparedness officers and other personnel who are required to obtain legal qualifications, (2) inspection training courses using full-sized equipment and facilities and practical skills training using simulation test devices to understand occurrence mechanisms during abnormal events and to learn the measurement methods (3) practical skills and simulator training for operation control techniques including responses to severe accidents (4) English conversation training courses, short-term postings to overseas regulatory organizations and training courses for improvement of international specialties.

The NRA dispatched officials to related Japanese graduate schools and international organizations including the IAEA. Also the NRA dispatched officials to the US NRC and will continue to send personnel to other overseas nuclear regulatory organizations in the future.

3. Clarification of operating policy of No Return Rule

Paragraph 2, Article 6 of Supplementary Provisions of the Act for Establishment of the NRA stipulates: “Officials of the NRA, including executives and other officials, shall not be permitted to transfer to administrative organizations responsible for promotion of nuclear energy utilization in order to ensure the independence of the regulations to retain the safety in nuclear energy utilization. During a five-year period after enforcement of this Act, however, this may not apply where it is acknowledged that there is an unavoidable reason taking into consideration the official’s ambition, aptitude and so on.”

Based on this, at the 30th NRA Commission Meeting of FY 2015 (September 30, 2015), the NRA determined an operating policy that clarifies administrative organizations responsible for affairs concerning promotion of nuclear energy utilization and decided to appropriately implement personnel transfers based on the policy. The NRA mentioned also personnel transfers to administrative organizations responsible for promotion of nuclear energy utilization via other departments. It suggested that relevant organizations need to conduct subsequent personnel transfers taking into account the purpose of this supplementary provision: for instance, even if an ex-official of the Secretariat of the NRA is assigned to the department that has no relation to the promotion of nuclear energy utilization, that ex-official shall not be assigned to administrative organizations regarding promotion of nuclear energy utilization for a length of time.

Table 27 Administrative organizations to which officials of the Secretariat of the NRA are not permitted to be transferred

(i)	Organizations that implement affairs specified in Item 47, Item 52 (excluding affairs concerning gas and heat) and Item 53 through Item55 of Paragraph 1 of Article 4 of the Act for Establishment of the Ministry of Economy, Trade and Industry. In concrete terms, General Policy Division (excluding Budget and Accounts Office and Administrative Affairs Office), International Affairs Division, Electricity and Gas Industry Department (excluding Gas Market Division) of the current Agency of Natural Resources and Energy, Commissioner and Deputy Commissioner of the Agency of Natural Resources and Energy, Director-General, Electricity and Gas Industry Department, Director-General responsible for such affairs, Natural Resources, Energy and Environment Department of each Bureau of the Ministry of Economy, Trade and Industry (It is limited to departments that implement publication concerning nuclear energy policy regarding energy and conduct business regarding securement of stable and effective supply of power).
(ii)	Organizations that implement affairs specified in Item 64, Item 68 and Item 69 of Paragraph 1 of Article 4 of the Act for Establishment of the Ministry of Education, Culture, Sports, Science and Technology. In concrete terms, current Research and Development Policy Division of Research and Development Bureau, Environment and Energy Division (It is limited to Director of Environment and Energy Division and Office for Fusion Energy), Atomic Energy Division, Director-General, Research and Development Bureau and Director-General responsible for such affairs.
(iii)	Organizations that implement affairs specified in Item 1 through Item 4 of Paragraph 1 of Article 2 of the Act for Establishment of the Nuclear Regulation Authority. In concrete terms, current Office for Nuclear Energy Policy (Secretariat of the Atomic Energy Commission), Director General (for Science, Technology and Innovation) of the Cabinet Office and Director-General responsible for such affairs.

Chapter 6 Enhancement of nuclear security and consistent implementation of safeguards

Section 1 Enhancement of Nuclear Security

1. Response to Challenges regarding Nuclear Security

The Committee on Nuclear Security which the NRA established in FY 2012 is reviewing as a priority concern the introduction of a system to verify the reliability of individual workers in nuclear facilities, security measures for nuclear material during transportation and the security of nuclear material in related facilities. During FY 2015, various working groups established by the committee reviewed individual subjects as part of an overall analysis.

(1) Review on Confirmation System of Trustworthiness

An individual reliability confirmation system in nuclear power stations is one of the methods to assess any internal threat and institute countermeasures such as restricting access of individuals to any critical zone. Such a decision will be based on personal information, such as his/her backgrounds. Such verifications are among the recommendations contained in “Nuclear Security Recommendations on Physical Protection of Nuclear Material and Nuclear Facilities” (INFCIRC/225) (hereinafter referred to as "*Nuclear material physical protection recommendation*).

The NRA has specifically studied on the confirmation system since FY 2013 in the Working Group on the Confirmation System of Trustworthiness, and held the 5th Committee meeting on Nuclear Security on October 19, 2015. Based on discussions, a direction of the confirmation system was determined at the 35th NRA Commission Meeting on October 21, 2015. The NRA, at the 6th working group meeting held on December 15, 2015, asked experts for their feedback on the system design based on the determined direction, and reviewed the guidelines for the system in the 7th working group held on March 8, 2016.

(2) Review of security of nuclear material during transportation

National legislation normally regulates the transportation of nuclear fuel materials outside an operational site. The level of physical protection needed is determined in accordance with the specific nature of the concerned material in question.

Since the current legislation and regulations have had no clarified definition for the level of physical protection regarding the Long Half Lives Low Heat Radioactive Waste (hereinafter referred to as “*TRU waste”*) expected to be returned from France, in accordance with the decision made by Atomic Energy Commission on February 19, 2008, the issue shall be determined in the future based on the review situation regarding the

detailed specification of the transportation packaging. Thereafter, we have reviewed the level of protection of the TRU waste in the Working Group on Security in the transport of Nuclear Material since FY 2013 as specification of the transportation packaging was clarified. We summarized a report regarding “the level of physical protection during transportation of Long Half Lives Low Heat Radioactive Waste (CSD-B & CSD-C)” at the 3rd Committee meeting on Nuclear Security held on August 1, 2014, and reported results of the review and defined the level of physical protection at the 20th NRA Commission Meeting held on August 20, 2014.

Based on this definition, we requested comments on the proposed revision of the Ordinance from November 17, 2014, through December 16, 2014, in order to revise the Ordinance on Arrangement of Transportation of the Specified Nuclear Fuel Material. In addition, we decided to revise the Ordinance on the Transportation of Nuclear Fuel Material, Outside Plants, and Business Offices in order to respond to Nuclear Material Physical Protection Recommendation that was issued in 2011. Thereafter, we requested comments from the public on the proposal for revision of the Ordinances, and the revised Ordinances were promulgated on March 18, 2016.

The NRA reported the results of collected comments on the proposal for revision of the Ordinances as well as the proposal for revision of the Cabinet Order for the Act on the Regulation of Nuclear Source Material, Nuclear Fuel Material, and Nuclear Reactors at the 50th NRA Commission Meeting of FY 2015 (January 20, 2016). The revised Order and Ordinances were promulgated on March 16, 2016.

(3) Review of security of nuclear material on radioisotope.

Since the September 11 terrorist attack in 2001 in the United States, threats not only from nuclear explosive device utilizing nuclear material but also from a diffusion apparatus of radioisotope (so called "dirty bomb") has become a concern. Although degree of impact of the radioisotope diffusion apparatus used in criminal acts may be much smaller than that of the nuclear explosive device, concerns for malevolent usage of terrorists or criminal groups have been raised in the course that nature of terrorism diversifies. Associating this trend, ensuring security of nuclear material, including protection of radioisotope draws increasing attention internationally, and its importance has been heightened.

In light of today’s situation in Japan, the Working Group on Nuclear Security concerning Radioactive Isotopes” was established at the 3rd committee meeting on the nuclear security held on August 1, 2014, in order to further the detailed review on the nuclear security related to radioisotopes including the response to a terrorist attack or a crime.

During FY 2015, we discussed the issues related to the security of radioisotopes at the

Committee Meeting on Nuclear Security held on October 19, 2015. Also, at the 3rd Working Group on Nuclear Security held on January 29, 2016 and the 4th Working Group on Nuclear Security held on March 25, 2016, we asked experts for their comments on a direction of system regarding the security of radioisotopes and the security measures based on the discussions in the committee meetings on the nuclear security.

(4) IAEA International Physical Protection Advisory Service (IPPAS)

IPPAS offers advice for the implementation of measures for physical protection in accordance with the Convention on the Physical Protection of Nuclear Material and Recommendation on the Physical Protection of Nuclear Material. It verifies the details of the physical protective measure of nuclear materials in a facility, hearings with government agencies and licensees and visits by teams of experts from the IAEA and member nations who request such a visit. The IAEA had dispatched 65 missions to 41 nations by December 2014.

In January 2014, Japan requested an IPPAS mission and acceptance was announced by Prime Minister Abe at the third Nuclear Security Summit in Hague, Netherlands in March 2014.

Following preparatory meetings with the IAEA June 30, 2014 and July 1, 2014, an IPPAS mission visited Japan from February 16-27, 2015. A mission statement concluded: "Overall conditions of the nuclear security system and physical protection implementation measures for nuclear facilities and nuclear material in Japan is robust and sustainable. It also has been significantly improved recently."

The NRA will review mission recommendations and suggestions following further discussions with relevant government offices. Measures will be implemented to ensure continuous improvement.

(5) Approaches to foster Nuclear Security Culture

The development of nuclear security culture by licensees was established as a regulatory requirement in FY 2012, and these ongoing development activities were checked through physical protection inspections in FY 2014. The NRA Commissioner held meetings with the applicants and licensees operational management to enhance their participation in development activities.

In addition, the "Code of Conduct on Nuclear Security Culture" was defined at the 50th NRA Commission Meeting of the FY 2014 (January 14, 2015) to develop and maintain nuclear security culture in the NRA, the organization designated to regulate nuclear power based on the "NRA's Core Values and Principles." Following the previous fiscal year, the

NRA is continuously engaged in the activity fostering safety culture of the NRA, through various approaches such as training for the NRA officials.

Table 28 Code of Conduct on Nuclear Security Culture

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 threat exists at all times and constantly bear in mind the importance of nuclear security.

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. Responsibility 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 make a continuous effort to foster the positive culture through setting up concrete goals and measuring the achievement.

4. Capacity Building and Self-improvement

Nurturing competent staff is the responsibility of an organization and the NRA shall provide capacity building programmes 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.

2. Implementation of Nuclear Material Physical Protection Inspection

(1) Approval of the Physical Protection Program and Implementation of the Physical Protection Inspection

The NRA inspects compliance by applicants, licensees and their employees, to the Physical Protection Program for protection of specific nuclear fuel materials based on the Reactor Regulation Act.

In the Nuclear Material Physical Protection Inspection in FY 2015, a focus was placed on the followings: licensees' approaches on physical protective measures reinforced in association with revision of regulatory legislation (such as "the NRA Ordinance Concerning the Installation and Operation of Commercial Power Reactors"), confirmation of situation of approaches on cyber security measures, evaluation of progress in the implementation of a nuclear security culture development outlined in FY 2011. The table 29 shows the number of the Nuclear Material Physical Protection inspections in the FY 2015.

Table 29 Approval of Nuclear Material Physical Protection Programs (from April 1, 2015 to March 1, 2016)

Approvals of changes in the Nuclear Material Physical Protection Program	37 Fuel facility: 1 Research reactor: 7 Commercial power reactor: 17 Research and development stage reactor: 1 Storage facility: 1 Reprocessing facility: 2 Radioactive waste storage facility: 0 Facility using nuclear fuel materials: 8 Specified nuclear facility: 0
Inspection of Compliance with Nuclear Material Protection Programs (Inspection of Physical Protection)	59Fuel facility: 7 Research reactor: 7 Commercial power reactor: 17 Research and development stage reactor: 2 Storage facility: 1 Reprocessing facility: 2 Radioactive waste storage facility: 2 Facility using nuclear fuel materials: 20 Specified nuclear facility: 1

(2) Violation of Physical Protection Programs

On September 9, 2015, a violation of Physical Protection Program was confirmed through the Physical Protection Inspection conducted on Tomari NPS of Hokkaido Electric Power Co., Inc., which had a risk to a serious incident in terms of physical protection.

The NRA judged that this was a possible critical incident which could have affected physical protection measures and functions, though it was not regarded as "organizational misconduct" caused by intentional or malicious will. On March 25, 2016, the NRA therefore alerted Hokkaido Electric Power Co., with a document and requested enforcement of measures to prevent any future similar incident.

Section 2 Safeguards efforts

In order to obtain a confirmation from the IAEA, pursuant to the Safeguards Agreement[39] between Japan and the IAEA and its additional protocol[40], that the nuclear material within the territory of Japan is not diverted to nuclear weapons or other nuclear explosive devices, the NRA consolidates accounting information on all nuclear material held in nuclear facilities, universities and other locations and declares it to the IAEA, and then accommodates in-field inspections to confirm the correctness and completeness of the declarations. Through these activities, the NRA attempts to maintain international confidence in peaceful use of nuclear material in Japan.

The Safeguards activities in line with the progress of the reactor decommissioning work have been implemented also in TEPCO's Fukushima Daiichi NPS. In particular, routine inspections are applied to nuclear material in reactors Unit 4 through Unit 6 and the common pool. Also verifications are carried out to reactors Unit 1 through Unit 3 where regular safeguard measures are difficult to implement due to high radiation levels, with monitoring system installed outside of the reactor buildings, to confirm that no undeclared nuclear material is withdrawn. For Unit 1 through 3, surveillances are conducting also to confirm that the facilities design and its operations are agreeing with the declaration.

The IAEA secretariat issues an annual "Safeguards Statement" which summarizes the findings of safeguards activities implemented the previous year and conclusions from the evaluation of those activities in all signatory countries to safeguards agreement. In the "Safeguards Statement for 2014," published on June 19, 2015, the IAEA secretariat concluded that "all nuclear material (in Japan) remained in peaceful use (broader conclusion) as has been the case since 2004[41].

After receiving this evaluation, Japan introduced the "Integrated safeguards" which aims at optimizing safeguards activity including such things as random inspections[49]. Based on the conclusions, the IAEA introduced "Integrated Safeguards" into Japan with the optimum combination of all safeguards measures including random inspections.

---

[39] Agreement between the Government of Japan and the International Atomic Energy Agency in implementation of Article Ⅲ.1 and 4 of the Treaty on the Non-proliferation on Nuclear Weapons

[40] Protocol additional to the agreement between the Government of Japan and the International Atomic Energy Agency in implementation of Article Ⅲ.1 and 4 of the Treaty on the Non-proliferation on Nuclear Weapons

[41] https://www.nsr.go.jp/data/000115248.pdf
https://www.iaea.org/sites/default/files/sir_2014_statement.pdf

Chapter 7 Enhancement of nuclear emergency measures and radiation monitoring

Related acts/ordinances, such as Atomic Energy Basic Act (Act No. 186 of 1955), and Act on Special Measures Concerning Nuclear Emergency Preparedness (Act no. 156 of 1999. Hereinafter referred as to *"Nuclear Emergency Act"*) were revised and new framework of nuclear emergency measures was developed by the government along with the establishment of the NRA in September 19, 2012. In the FY 2014, Cabinet Office Director-General for Nuclear Disaster Management was newly established, figure 4 shows the government system of current nuclear emergency preparedness.

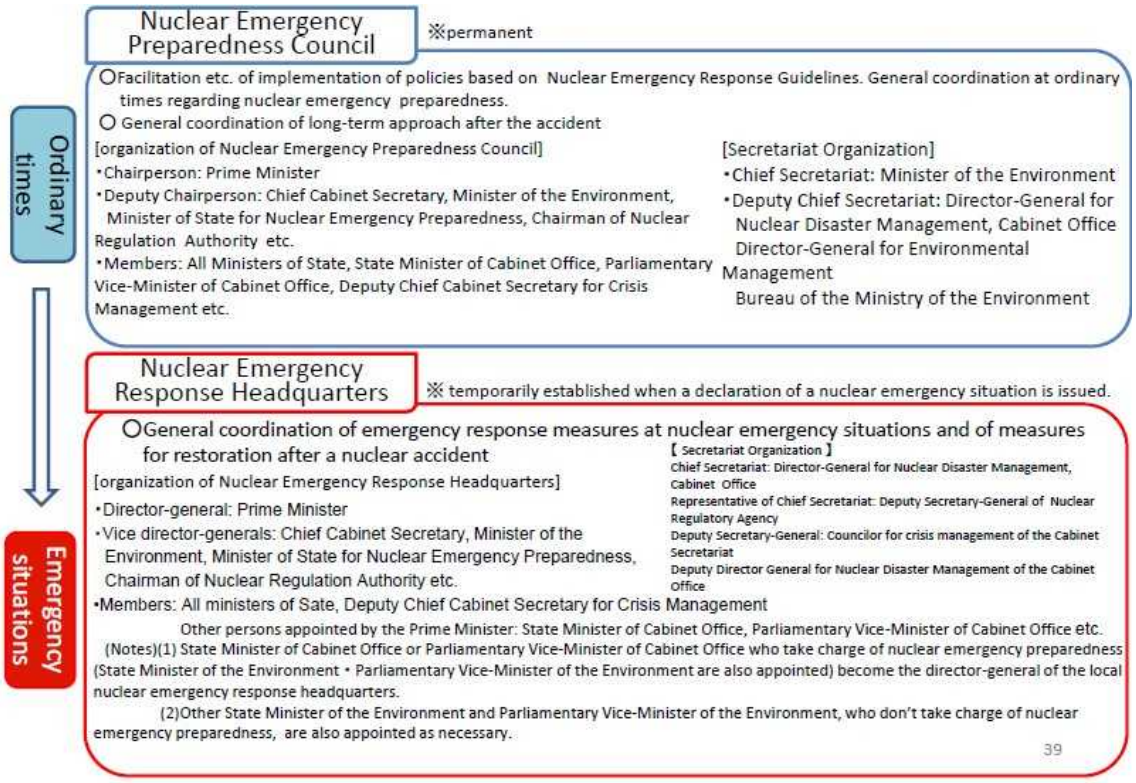

Figure 4 System of Government Nuclear Emergency Preparedness

Section 1 Continuous improvement of Nuclear Emergency Response Guidelines

(1) Enhancement and reinforce of nuclear emergency preparedness

The Nuclear Emergency Act designated the NRA as the competent authority to implement emergency regulations to ensure smooth working of involved entities including national local governments, applicants and licensees. The NRA enacted the Nuclear Emergency Response Guidelines in October 31, 2012, and then revised it once in the FY 2012 and twice in the FY 2013. On April 22, 2015, the Guidelines were revised after reviewing the nuclear emergency preparedness measures related to TEPCO's Fukushima

Daiichi NPS, the scope and criteria of enforcement of protective measures during the passage of plume outside of the Urgent Protective action Planning Zone (UPZ), deleting descriptions concerning the predictive method and instead prepare a mechanism to allow a rapid summary and sharing of results of emergency monitoring. Furthermore, on August 26, 2015, partial revision of the Guidelines was made concerning medical treatment actions in a nuclear emergency (nuclear emergency medicine) to take shape. Also, on March 1, 2016, enacting was conducted for optimization of description concerning enforcement of “Notification on facilities for operation of reactors in which irradiated fuel assemblies were cooled for an enough period” (NRA’s Notification no. 14, 2015) dated of April 1, 2016. In addition, on March 29, 2016, the “Study Team on Nuclear Emergency Preparedness Measures” began reviewing nuclear emergency measures at nuclear fuel facilities.

(2) Establishment of medical treatment system in a nuclear emergency

i. Revising Nuclear Emergency Response Guidelines and designation of Advanced radiation emergency medical support center and Nuclear emergency medical support center

From FY 2013 to FY 2014, the Secretariat of the NRA had progressed its research about specific medical treatment systems in a nuclear emergency with participation of medical experts, based on ideas indicated in the Nuclear Emergency Response Guidelines. The NRA held meetings of the “Study Team on Radiation Emergency Medicine”, aiming for incorporating results of the research to the Guidelines and had progressed studies about the framework of medical treatment systems in a nuclear emergency.

In order to enhance and reinforce the medical treatment system in a nuclear emergency, it was planned to establish the system consists of Advanced radiation emergency medical support center, Nuclear emergency medical support center, Nuclear emergency core hospitals, and Nuclear emergency medical cooperative institutions and the Guidelines were revised on August 26, 2015. The revised Guidelines covers following items: the division of responsibility between medical institutions, national government, local government and licensees in a nuclear emergency, training and exercise for medical treatment in a nuclear emergency, cooperation response for a complex disaster with a nuclear emergency and natural disaster, and radiation survey and decontamination in evacuation areas.

Requirements for facilities of Advanced radiation emergency medical support center, Nuclear emergency medical support center, Nuclear emergency core hospitals and Nuclear emergency medical cooperative institutions were determined and compiled them as the “Facility Requirements to Medical institutions for Nuclear Emergency” in May 15, 2015. Then on August 26, 2015, the NRA designated 5 facilities, National Institute of Radiological Sciences, Hirosaki University, Fukushima Medical University, Hiroshima University and Nagasaki University, as Advanced radiation emergency medical support center and four facilities, Hirosaki University, Fukushima Medical University, Hiroshima University and Nagasaki University, as Nuclear emergency medical support center.

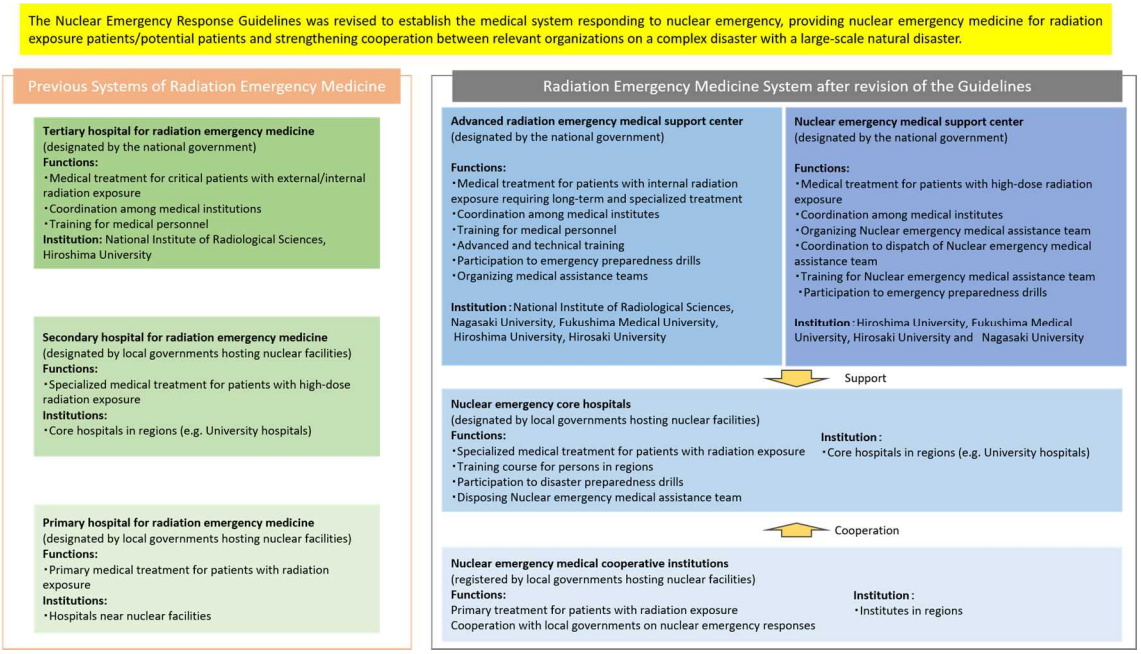

Figure 5 Medical Treatment System in Nuclear Emergency

ii. Preparation of all types of manuals concerning medical treatment actions in a nuclear emergency

A manual titled the “Distribution and Administration of Stable Iodine” was formulated by the NRA on July 19, 2013 and revised on April 22 and August 26, 2015 based on two-time revisions of the Guidelines. This was made for instructing how to manage and use stable iodine. In light of the governmental response policy to proposals from local governments in 2015 (Cabinet Decision dated December 22, 2015), the item of “Q&A about stable iodine” was revised in order to clarify that another explanation about iodine could be omitted when administering additionally or renewing it as long as a person fully understood previous explanation and with doctor’s consent to person’s suitability of taking iodine.

The NRA formulated also the “Radiation Survey and Simple Decontamination Manual for Evacuees in Nuclear Emergency” on March 31, 2015 and revised it on August 26, 2015 based on the revision of the Guidelines. This manual indicates ways of radiation survey for evacuees and temporarily relocated residents to judge whether decontaminations would be required and also methods for a simplified decontamination.

Section 2 Enhancement of radiation monitoring

1. Enhancement and reinforcement of emergency monitoring system

The Nuclear Emergency Response Guidelines stipulates that the level of emergency will be determined in accordance with the situation of the affected facility to implement preventive protective measures, particularly early-stage activities such as evacuation or temporary relocation will be decided and conducted appropriately following the release of radioactive materials based on emergency monitoring data. The NRA is currently making every effort to reinforce the measurement system, such as effective emergency monitoring following this guideline.

Based on a revision of the Nuclear Emergency Response Guidelines in April 22, 2015, the NRA revised “About emergency monitoring (additional reference of the Nuclear Emergency Response Guidelines)” which describes details of emergency monitoring on April 22 and published it on August 26. In addition, the NRA established 8 Local Radiation Monitoring Offices until the FY 2015, Aomori, Fukushima, Ibaraki, Fukui, Ohi and Takahama area in Fukui, Ehime, Saga and Kagoshima, for effective emergency monitoring under close cooperation with the local government within the nuclear facility installation area. In July 2015, Local Radiation Monitoring Officers were increased in Ehime radiation monitoring office to reinforce local emergency monitoring system.

In addition, we began operation of the emergency radiation monitoring information sharing and announcement system from the FY 2015, in order to adequately judge and implement protective measures following release of radioactive materials. This system enables to summarize, share and announce results of emergency monitoring promptly among related personnel.

2. Radiation Monitoring of nation-wide environment[42]

Since the accident at TEPCO's Fukushima Daiichi NPS, the NRA has been undertaking monitoring activities that the Ministry of Education, Culture, Sports, Science and Technology (MEXT) had been assuming, based on the transfer of tasks concerning implementation of radiation monitoring from the MEXT in FY 2013.

(1) Environmental radioactivity level research (conducted since the FY 1957)

In 47 prefectures throughout Japan, we collected environmental samples, such as atmosphere floating dust, fallout and soil for radiation analysis. Measurement results by the FY 2014 were recorded sequentially into database for publication. Air dose rate is continuously measured at 297 monitoring posts throughout Japan and is published in real time on the NRA website.

When nuclear test by Democratic People's Republic of Korea was conducted in January 6, 2016, we reinforced monitoring activities and published the results to seize effects of radiation in Japan. The monitoring was conducted with cooperation of relevant local governments according to the Agreement of radioactivity measure liaison meeting at the same date.

(2) Oceanic environmental radioactivity comprehensive evaluation assessment (conducted since the FY 1983)

Seawater, seabed soil and fisheries samples are collected once a year in 16 offshore areas near nuclear power stations and nuclear fuel reprocessing facilities to research radiation levels. FY 2014 results were entered into database to be published.

(3) Radiation monitoring in near nuclear power generation facilities (issued subsidies since the FY 1974)

Financial assistance was given to prepare radiation monitoring and research facilities implemented by the nuclear power generation facility and 24 adjacent prefectures (budget in the FY 2015, 7.18 billion JPY). Results reported by respective local governments were entered into database to be published.

(4) Training for monitoring workers in local government (implemented since the FY 1990)

The "Environmental radioactivity analysis training", "Monitoring task training" and "Drill

[42] Tasks concerning implementation of monitoring were transferred from the Ministry of Education, Culture, Sports, Science and Technology in April 1, 2013, along with enforcement of the part of the Act for establishment of the NRA.

training concerning emergency monitoring center" were conducted for local governments' personnel to improve radioactivity analysis skill and effectiveness of emergency monitoring in the local government.

3. Implementation of radiation research concerning port call by nuclear powered warships[43]

The NRA periodically analyzes radiation in three ports (Yokosuka, Sasebo and Kinnakagusuku) where the United States nuclear powered warships make port calls. It also measures air dose rate and collects seawater to analyze radiation in cooperation with related organizations such as the Japan Coast Guard, during entry, visit and exit of nuclear powered warships. Results are published on the NRA website daily and since FY 2014 have been transferred to database for publication.

Following revision of nuclear emergency preparedness manual of nuclear powered warships by Senior Staff meeting of Central Disaster Management Council, the NRA formulated “About radioactivity inspection of nuclear powered warships”, in which monitoring activities by relevant organizations of the port call areas were compiled.

[43] Tasks concerning implementation of monitoring were transferred from the Ministry of Education, Culture, Sports, Science and Technology in April 1, 2013, along with enforcement of the part of the Act for establishment of the NRA.

Section 3 Preparation and operation of risk control system in NRA

1. Reinforcement of emergency response

The NRA made efforts to establish and/or reinforce the infrastructure for crisis control, ensuring to conduct smoothly and accurately countermeasures in emergency. The NRA, thus, revised the NRA emergency preparedness action plan, the NRA initial response manual, standard manual of local agencies responses for nuclear emergency and the NRA civil protection plan, taking into account revision of plans for emergency response such as Nuclear Emergency Response Guidelines.

We also endeavored to ensure adequate emergency response of governments. We cooperated with relevant governments to modify the Nuclear Emergency Response Manual, NBC terrorism local coordination model, Basic Disaster Management Plan, the Basic Guidelines for Protection of the People, as well as participated to emergency drills and exercises.

Following the previous fiscal year, we are working to maintain and improve initial responding ability, including the full time response system with a day/night-shift stated by the NRA initial response manual and the initial response manual of Cabinet Office Director-General for Nuclear Disaster Management. We prepared a day/night-shift brief manual for use as assistance and reference guide, to help maintain and improve instruction and judgment ability and information collection and effective communication. The manual summarizes the following: outlines a series of tasks based on the initial response manual; i.e. information collection, judgment of establishing alert headquarters, preparation and distribution of in-office urgent call-out by e-mail, fax to related government offices to which information shall be sent, and procedures for telephone communication.

Nuclear Energy Disaster Prevention Drill in the FY 2015 based on the Nuclear Emergency Act was conducted on November 8-9, 2015 as a joint mission between the national and local governments and nuclear licensees, and was attend by the Prime Minister. The emergency preparedness system by relevant agencies in a complex disaster, including coordination of Cabinet Office and the NRA, was verified and effectiveness of evacuation plan based on the emergency response plans in the Ikata area was validated at the Drill. The NRA participated in the exercise management committee held by Cabinet Office to cooperate also for preparation of the exercise plan. In other nuclear facility locations, nuclear emergency exercises are held by the relevant prefectures. The NRA works also for these exercises. The Secretariat of the NRA personnel, including the Senior Specialists for Nuclear Emergency Preparedness and the radiation monitoring officials at the site assisted in preparing an exercise plan, as well as attended the exercises. We shall endeavor to continuously enhance and reinforce the local system of Nuclear Emergency

Preparedness through the local Nuclear Emergency Preparedness Council set in each areas by Cabinet Office, based on lessons from the exercises.

We will are continuously checking provisions and plans taking occasion to conduct various exercises (i.e. gathering exercises in emergency, launching the Headquarters). We also endeavor to ameliorate the business continuity plans responding to emergency cases, such as Tokyo Inland Earthquake and new strains influenza.

Cabinet Office held meetings, in which the NRA joined, to study safety of personnel engaged in emergency preparedness including licensees conducting emergency response on off-site areas.

As in the previous fiscal year, we participated the disaster prevention drills conducted by licensees to help improve overall emergency response, including reinforcement of information sharing with the NRA Emergency response center (ERC), emergency station and the nuclear facility event quick response center.

Based on the provision of the Basic Plan for Disaster Preparedness, liaison groups were established in central government ministries and agencies and in local governments of nuclear power stations siting areas. They were organized to discuss on emergency responses in local sites and necessary supports, through information sharing among relevant government ministries, local offices and licensees in normal times. 9 communication meetings were held during FY 2015.

2. Reinforcement of licensees' emergency preparedness and response

Debriefing sessions to evaluate disaster prevention drills by licensees based on The Nuclear Emergency Act have been held starting in FY 2013.

In the debriefing session of FY 2015, we exchanged opinions about results of the evaluation for disaster prevention drills of nuclear power stations. This evaluation was a trial, by using an evaluation index (tentative) formulated by the NRA based on issues highlighted at debriefing session in the previous year. We verified the their drill was constantly elaborated because of repeating the drills, and decided to endeavor further improvement in emergency preparedness and response capabilities of licensees to evaluate continuously them with the evaluation index.

Appendix Results of Activities in FY 2015 (Data)

Section 1 Holding NRA Meetings

Under a policy to encourage open Commission Meetings, the NRA held 64 conferences from April 1, 2015, to March 31, 2016 (49 regular meetings and 15 extraordinary meetings), and made 93 NRA Commission decisions (hereinafter referred to as *"Commission decisions"*). The main topics and Commission decisions covered by NRA are listed in tables 30 and 31.

Table 30 Actual record of the NRA Commission Meeting

(From April 1, 2015 to March 31, 2016)

No.	Date	Main topics
FY 2015		
1	4. 1	・Opinion of the NRA to Basic Policy concerning the Final Disposal of Specific Radioactive waste based on Designated Radioactive Waste Final Disposal Act ・Concept of water flowing in drainage channel in TEPCO's Fukushima Daiichi NPS
2	4. 8	・Approval of "Approval Application of Operational Safety Program Change for Takahama Power Station" (Aging technical evaluation of Unit 2 of the Kansai Electric Power Co. , Inc. ・Response related to drills conducted by licensees ・ Configuration and operation of accident information communication and notification system in emergency situation ・The response accompanying the change of situation related to partial revision of the rule concerning the use of international controlled material and the implementation results of requesting opinion ・ Result of administrative subrogation related to the disposal of radioactive contaminants to Iida Luminous Paint Co., Ltd ・Essential points and future approach of Annual Report of the NRA in FY 2014
3	4.15	・Evaluation of the report concerning incidents of leakage from RO concentrated water storage tank (H6 Tank area) of contaminated water storage facility in TEPCO's Fukushima Daiichi NPS and other four matters ・Partial revision of Ordinance concerning the security of nuclear reactor facilities in TEPCO's Fukushima Daiichi NPS and the protection of specific nuclear fuel materials as well as the implementation of requesting opinions ・Establishment of Statement on Nuclear Safety Culture ・Formal objection to change in reactor installation permit for Units 3 and 4 of the Takahama Power Station, Kansai Electric Power Co. , Inc.
4	4.22	・Results of requesting opinions to the Nuclear Emergency Response Guidelines and the revision bill of relevant the NRA ordinances ・Development of "Safety research at the NRA" ・Report of holding the 4th Joint meeting of the Reactor Safety Examination Committee and Nuclear Fuel Safety Examination Committee ・Arbitrary decision processing in the fourth quarter of FY 2014

No.	Date	Main topics
5	4.22	・Approach concerning safety improvement including activities fostering safety culture (Tohoku Electric Power Co. , Inc.)
6	4.28	・Evaluation of the report from TEPCO related to leakage from the 4000 ton steel rectangular tanks of TEPCO's Fukushima Daiichi NPS to the outside of dikes ・Approach concerning the human resource development of the NRA officials
7	5.13	・Examination of approval application of operational period extension for commercial power reactor ・Situation of operational safety inspection implementation in the fourth quarter of FY 2014 ・Policy of operational safety inspection implementation in NRA Regional Office in FY 2015 ・Overview of results of opinion exchange with International Nuclear Safety Advisory Group (INSAG) of International Atomic Energy Agency (IAEA) and Swiss Federal Nuclear Safety Inspectorate (ENSI) ・Overview of results of opinion exchange with International Nuclear Regulators Association (INRA) and Swedish Radiation Safety Authority (SSM)
8	5.20	・Requesting opinions for review report draft of change in reactor installation permit for Reactor Unit 3 in Ikata Power Station of Shikoku Electric Power Co. , Inc. ・Revision of regulation concerning exposure during emergency work and implementation of requesting opinions ・National Research and Development Agency Council to be established in NRA
9	5.26	・Opinion exchange with President of Japan Atomic Energy Agency
10	5.27	・Approval of operational safety program change of the Sendai NPS in Kyushu Electric Power Co. , Inc. (Draft) ・Formal objection to the approval of construction plan for Reactor Unit 1 of the Sendai NPS in Kyushu Electric Power Co. , Inc. ・Partial revision of the Ordinance concerning the security of nuclear reactor facilities in TEPCO's Fukushima Daiichi NPS and the protection of specific nuclear fuel materials as well as the results of requesting opinions for the revision ・Establishment of "Statement on Nuclear Safety Culture" ・Overview of results of the 5th Review Meeting for Joint Convention on the Safety of Spent Fuel Management and on the Safety of Radioactive Waste Management
11	5.27	・Approach concerning safety improvement including activities fostering safety culture (The Chugoku Electric Power Co. , Inc.)
12	6.3	・Annual Report of the NRA in FY 2014 ・Leakage of water stored in 1000 ton notch tank from transfer piping to the outside of controlled area in TEPCO's Fukushima Daiichi NPS
13	6.10	・Approval of TEPCO "Approval Application of Operational Safety Program Change for Fukushima Daini NPS" (Aging technical evaluation of Unit 3) and Kyushu Electric Power Co. , Inc. "Approval Application of Operational Safety Program Change for Genkai NPS" (Aging technical evaluation of Unit 1) ・Overview of results of meeting of Safety of Nuclear Installations (CSNI) in Nuclear Energy Agency of Organization for Economic Co-operation and Development (OECD/NEA)

No.	Date	Main topics
14	6.10	・Approach concerning safety improvement including activities fostering safety culture (Hokuriku Electric Power Co.)
15	6.17	・Evaluation of the report from TEPCO related to trouble of joint valve for A5-A6 tank in G4 South Area of TEPCO's Fukushima Daiichi NPS (Draft) ・Situation of evaluation of effective dose in the site boundary of TEPCO's Fukushima Daiichi NPS at the end of March, 2015 ・Current situation check related to Uranium Enrichment Plant of Enrichment and Disposal Site in Japan Nuclear Fuel Limited ・Report of results of debriefing session to evaluate disaster prevention drills by licensees (Evaluation of training results implemented by nuclear licensees in FY 2014 (Draft))
16	6.24	・Results of implementation of nuclear material physical protection inspection in FY 2014 ・Revision of Nuclear Emergency Response Guidelines and implementation of requesting opinions ・Evaluation of the report related to leakage of radioactive substance from No.3 Water Drainage System Storage Tank (II) in Materials Testing Reactor (JMTR) of Oarai Research and Development Center in Japan Atomic Energy Agency ・Overview of results of Standing Advisory Group for Nuclear Applications (SAGNA) in International Atomic Energy Agency (IAEA)
17	7.1	・Results of Safeguards activity in 2014 in our country and announcement of "Safeguards Statement for 2014" by International Atomic Energy Agency (IAEA) ・Situation of conformity review to New Regulatory Requirements of commercial power reactors and future approach ・Situation of conformity review to New Regulatory Requirements of facilities for handling nuclear fuel materials ・Change of chairman of Peer Review Meeting concerning the investigation of fracture zone in site ・Announcement system for emergency monitoring information
18	7.8	・Results of requesting opinions for revision of regulation concerning exposure during emergency work and consultation to Radiation Council (Draft) ・Evaluation results related to safety research
19	7.15	・Results of requesting opinions for the review report draft of Unit 3 in Ikata Power Station of Shikoku Electric Power Co. , Inc. and its change in reactor installation permit (Draft) ・Situation of inspection of Unit 1 in Sendai Nuclear Power Station of Kyushu Electric Power Co. , Inc. ・Evaluation of the report from TEPCO related to leakage of processed water from a transfer pipe of multi-nuclide removal equipment of TEPCO's Fukushima Daiichi NPS (Draft) ・Results of IRRS (Integrated Regulatory Review Service) Preparation Meeting

No.	Date	Main topics
20	7.22	・Opinion of the NRA for “Change of Designation of Off-Site Center for Emergency Response Measures” based on Act on Special Measures Concerning Nuclear Emergency Preparedness ・Future response based on revision of Basic Disaster Management Plan ・Communication system for trouble information related to Sendai Nuclear Power Station ・Requesting opinions for partial revision (Draft) of Regulatory Guide of NRA Ordinance for Technical Standards for Commercial Power Reactor and its auxiliary facility ・Current status of discussions related to the regulation of radioactive waste in decommissioning ・Consultation to Radiation Council
21	7.29	・Implementation of the joint exercise of Prime Minister’s Official Residence and ERC toward Nuclear Energy Disaster Prevention Drill in FY 2015 ・Arbitrary decision processing in the first quarter of FY 2015 ・Planned schedule of major international conferences
22	8. 3	・Approach concerning safety improvement including activities fostering safety culture (The Japan Atomic Power Company)
23	8. 5	・Approval of “Approval Application of Operational Safety Program Change for Sendai Power Station” (Aging technical evaluation of Unit 1 of Kyushu Electric Power Co. , Inc.) ・Report from Radiation Council ・Revision of regulation concerning exposure during emergency work based on the report from Radiation Council (Draft) ・Progress of Measures for Mid-term Risk Reduction at TEPCO’s Fukushima Daiichi NPS (as of February 2015) ・The situation of implementation of operational safety inspection in the first quarter of FY 2015 ・Overview of results of Program Element Working Group-4 (PEWG-4) in Advisory Group on Nuclear Security(AdSec) of International Atomic Energy Agency (IAEA)
24	8.19	・Type certificate of design of specific container related to Spent Fuel Storage Facility in Mitsubishi Heavy Industries, Ltd. ・Review concerning the approval application of Category 2 Waste Disposal Project (trench disposal) by Tokai Low Level Radioactive Waste Disposal Site of the Japan Atomic Power Company ・Evaluation related to important facility from the viewpoint of safety in facilities using nuclear fuel materials ・Instrument failure in Reprocessing Plant of Japan Nuclear Fuel Limited ・Formal objections to construction plan approval of Unit 2 in Sendai NPS of Kyushu Electric Power Co. , Inc. and approval of its operational safety program ・Direction for operational safety inspection (report of consideration results)

No.	Date	Main topics
25	8.26	・Policy evaluation sheets related to measures to be implemented in FY 2014 and pre-analysis table related to measures to be implemented in FY 2015 ・Results of requesting opinions for revision of Nuclear Emergency Response Guidelines ・Designation of Advanced radiation emergency medical support center and Nuclear emergency medical support center ・Revision of NRA EPR Plan ・“Summary of proposals by the Study Team on Monitoring of Volcanic Activities around Nuclear Facilities” ・Requesting opinions for partial revision (Draft) of Regulatory Guide of NRA Ordinance for Technical Standards for Commercial Power Reactor and its auxiliary facility
26	8.26	・Approach concerning safety improvement including activities fostering safety culture (Japan Nuclear Fuel Limited)
27	9. 2	・Opinion of the NRA for “Nuclear Energy Disaster Prevention Drill Plan in FY 2015” ・Evaluation for work performance of National Research and Development Agency National Institute of Radiological Sciences ・Evaluation for work performance of Japan Nuclear Research and Development Organization (Draft) ・Evaluation of the report from TEPCO related to alarms actuation from radiation monitor for waste water in side-ditch drainage of TEPCO’s Fukushima Daiichi NPS (Draft) ・Discolored section and rust generation in lower plenum of Vitrified Canister Storage Building in Waste Control Facility of Japan Nuclear Fuel Limited ・Priority measures by NRA in FY 2016
28	9. 9	・Situation of conformity review to New Regulatory Requirements of commercial power reactor ・Future procedure related to Reactor Unit 1 in Sendai NPS of Kyushu Electric Power Co. , Inc. ・Safety research on Effects of Bore Pressure of Tsunami on seawall ・Report on the situation of implementation of the 5th Joint meeting of Nuclear Reactor Safety Examination Committee and Nuclear Fuel Safety Examination Committee ・Appointment of the deputy to Chairman of the NRA
29	9.16	・Registration of Radiation Management Institute, Inc. as Registered Inspection Body and Registered Periodic Confirmation Body (Draft) ・Implementation of repetitive site inspection related to the situation of implementation of post measures for nuclear emergency based on restoration plan of TEPCO’s Fukushima Daini NPS (Draft) ・Determination that irradiated fuel assemblies of Fugen are sufficiently cooled for long period to be described in Notification and requesting opinions on this matter ・Leakage from the inside of dikes in tank area of TEPCO’s Fukushima Daiichi NPS ・Overview of results of the third Japan-France Regulatory Authorities Meeting

No.	Date	Main topics
30	9.30	・Approval of Operational Rule for Inspection and Operational Rule for Periodic Confirmation of Radiation Management Institution, Inc. (Draft) ・The situation of implementation and future response for the second Operational Safety Inspection in FY 2015 in the Prototype Fast Breeder Reactor Monju ・Evaluation of fracture zone in the site of Mihama Power Station of Kansai Electric Power Co. , Inc. ・Examination situation related to Reactor Unit 3 in Mihama Power Station of Kansai Electric Power Co. , Inc. ・Review of examination system related to monitoring and evaluation of TEPCO's Fukushima Daiichi NPS ・Operation policy of Article 6 Item 2 of Supplementary Provision of Act for Establishment of the NRA (Draft) ・Overview of results of International Atomic Energy Agency (IAEA) General Assembly, International Nuclear Regulators Association (INRA), various bilateral meetings
31	9.30	・Approach concerning safety improvement including activities fostering safety culture (Japan Atomic Energy Agency)
32	10. 7	・Partial revision of Regulatory Guide of NRA Ordinance on Technical Standards for Commercial Power Reactor and its Auxiliary Facility ・Analysis of High Energy Arcing Fault at Nuclear Power Plants (interim report)
33	10. 9	・Materials to be submitted to IRRS review team in advance
34	10.14	・Environmental arrangement on nuclear business under competitive environment ・Formal objection to change in reactor installation permit for Unit 3 in Ikata Power Station of Shikoku Electric Power Co. , Inc. ・Response to a formal objection related to conformity review to New Regulatory Requirements
35	10.21	・Response of Ministry of Education, Culture, Sports, Science and Technology after imperfect maintenance management of "Monju" was discovered ・Direction for designing of individual reliability verification system ・Concept for categorization of violation of operational safety program ・Partial revision of Regulatory Guide of NRA Ordinance for Technical Standards for Commercial Power Reactor and its auxiliary facility ・Evaluation axis for performance of Japan Atomic Energy Agency during the third period for mid and long term target (Draft)
36	10.27	・Response to conformity review to New Regulatory Requirements (The Kansai Electric Power Co. , Inc.)
37	10.28	・Future response based on explanation from Ministry of Education, Culture, Sports, Science and Technology related to imperfect maintenance management problem of Monju ・Material to be submitted to IRRS Review Team in advance ・Examination system related to evaluation and monitoring of TEPCO's Fukushima Daiichi NPS (Draft) ・Radiation control status report in FY 2014 related to nuclear facility ・Opinion exchange between NRA and nuclear licensees (CEO) (Draft) ・Overview of results of the 8th meeting of Nuclear Safety Top Regulators' Meeting (TRM) among China, Japan and Korea

No.	Date	Main topics
38	11. 2	・Opinion exchange with Japan Atomic Energy Agency (JAEA) on imperfect maintenance management of Monju
39	11. 4	・Future response to imperfect maintenance management problem of Monju ・The situation of implementation of operational safety inspection in the second quarter of FY 2015 ・Imperfect management related to facility work in Kashiwazaki Kariwa NPS ・Reason for increase of released radioactive gaseous waste in FY 2010-2011
40	11.13	・Recommendation to Minister of Education, Culture, Sports, Science and Technology concerning Monju ・Examination on regulation of disposal of waste in reactors ・Basic concept concerning the operation of so-called backfit of New Regulatory Requirements ・Concept related to Specialized Safety Facility ・Overview of results of International Atomic Energy Agency Nuclear Safety Standards Committee (IAEA/CSS)
41	11.18	・Approval of the Kansai Electric Power Co. , Inc. “Approval Application of Operational Safety Program Change for Takahama Power Station” (Aging technical evaluation of Unit 3), (Aging technical evaluation of Unit 4) and Kyushu Electric Power Co. , Inc. “Approval Application of Operational Safety Program Change for Sendai NPS” (Aging technical evaluation of Unit 2) ・Arbitrary decision processing in the second quarter of FY 2015
42	11.25	・Evaluation of the report related to deformation of the cylinder head indicator cock of emergency diesel generator (B) for Monju in Japan Atomic Energy Agency (Draft) ・Establishment of Notification defining that irradiated fuel assemblies of Fugen are sufficiently cooled for sufficiently long period ・Evaluation of influence of toxic gas related to habitability of nuclear reactor control room ・Examination concerning Mitsubishi Heavy Industries, Ltd. “Type Certification Application for Design of Specific Vessel related to Spent Fuel Storage Facility” (for PWR fuel) ・Overview of results of Advisory Group on Nuclear Security (AdSec) in International Atomic Energy Agency (IAEA)
43	12. 2	・Operational safety inspection after the third quarter in FY 2015 in Prototype Fast Breeder Reactor Monju ・Situation on employment of the NRA officials
44	12. 9	・Situation of conformity review to New Regulatory Requirements of commercial power reactor ・Situation of conformity review to New Regulatory Requirements of facilities for handling nuclear fuel materials ・Award of the NRA officials in FY 2015 ・Overview of results of Organization for Economic Cooperation and Development Nuclear Energy Agency (OECD/NEA) Committee on the Safety of Nuclear Installations (CSNI) meeting

No.	Date	Main topics
45 *1	12.11	・Decision on declaration of stay of execution and formal objection related to approval of change in reactor installation permit (for Units 1 and 2) in Sendai NPS of Kyushu Electric Power Co. , Inc.
46	12.16	・Evaluation of the report from Japan Nuclear Fuel Limited concerning fault of important equipment from the viewpoint of safety in the separate building of Rokkasho Reprocessing Plant ・Situation of implementation report on the 6th Joint meeting for Nuclear Reactor Safety Examination Committee and Nuclear Fuel Safety Examination Committee and response to abolition of example standard ・New investigation and examination items in Nuclear Reactor Safety Examination Committee ・Future response related to The Japan Electric Association “Method of Monitoring Test of Reactor Structure Materials”
47	12.22	・Establishment of the Ordinance for partial revision of Regulatory Guide of NRA ordinance on the Standards for the Location, Structure and Equipment of Commercial Power Reactor and its Auxiliary Facilities ・Investigation situation related to generation of discolored section and rust in lower plenum of vitrified canisters Storage Building in Waste Control Facility of Japan Nuclear Fuel Limited (Investigation results of the third Storage Area) ・Supplementary budget in FY 2015 of the NRA (Draft)
48	1. 6	・Evaluation and future response to the report from TEPCO related to improper cable laying in Kashiwazaki Kariwa NPS ・Progress of examination by the Expert Meeting on the Investigations of Fracture Zones in the Site
49	1.13	・Examination of Approval Application of Decommissioning Plan for Reactor Unit 1 of Genkai Nuclear Power Station ・Restart of vitrification treatment of highly radioactive waste liquid in Tokai Reprocessing Facility of Japan Atomic Energy Agency ・Priority measures of the NRA in FY 2016
50	1.20	・Review of system related to reprocessing of spent fuel ・Evaluation of the report from TEPCO related to the leakage from stored water transfer hose from 1000 ton steel rectangular tanks to No.3 Turbine Building in TEPCO’s Fukushima Daiichi NPS (Draft) ・Cabinet Order for partial revision of Cabinet Order of the Act on the Regulation of Nuclear Source Material, Nuclear Fuel Material and Reactors (draft)
51	1.27	・Overview of results of Nuclear Energy Disaster Prevention Drill in FY 2015 (Interim report) ・Imperfect management to information security in Public Interest Incorporated Foundation Nuclear Material Control Center ・IRRS mission ・Safety Oversight Team for Tokai Reprocessing Plant and Other Facilities ・Situation of reevaluation concerning important facility from the viewpoint of safety of facility using nuclear fuel materials
52 *2	1.29	・Situation of review on Specialized Safety Facility

No.	Date	Main topics
53	2. 3	・Summary of examination　Specialized Safety Facility ・The situation of implementation of operational safety inspection in the third quarter of FY 2015 ・Approval of Nuclear Reactor Decommissioning Plan for Units 1 and 2 Nuclear Reactors of the Hamaoka NPS in Chubu Electric Power Co. , Inc. (Report) ・Measures for Mid-term Risk Reduction at TEPCO's Fukushima Daiichi NPS (March 2016 version) (Draft)
54	2. 3	・Approach concerning safety improvement (Kyushu Electric Power Co. , Inc.)
55	2.10	・Report on the bill for partial revision of the law concerning reserving and control for reprocessing of spent fuel in nuclear power generation ・Situation of reviews related to Unit 1 and 2 of the Takahama Power Station and Unit 3 of the Mihama Power Station in The Kansai Electric Power Co. , Inc. ・Evaluation and future response to the report from TEPCO related to improper cable laying in Kashiwazaki Kariwa NPS ・Consultation to Radiation Council and report of Radiation Council ・Review of environmental radiation monitoring
56	2.17	・Change of Order for the NRA Organization by review of supervisor related to state examination (Draft) ・Mid and long term target draft of National Institutes for Quantum and Radiological Science and Technology ・Future approach to conformity review to New Regulatory Requirements of research and test reactors ・Partial revision of examination standards for operation period extension for commercial power reactors ・Concept for regulation related to disposal of waste in reactor (Draft)
57	2.24	・Requesting opinions for review report draft of change in reactor installation permit for Units 1, 2, 3 and 4 of the Takahama Power Station in The Kansai Electric Power Co. , Inc. (Draft) ・Results of site inspection related to the situation of implementation of measures for recovery from nuclear emergency based on restoration plan of TEPCO's Fukushima Daini NPS ・Mitsubishi Heavy Industries, Ltd. "Type Designation Application for Specific Vessel related to Spent Fuel Storage Facility" (for BWR fuel) ・Arbitrary decision processing in the third quarter of FY 2015
58	3. 2	・Measures for Mid-term Risk Reduction at TEPCO's Fukushima Daiichi NPS (March 2016 version) (Draft) ・Finalizing of "Cabinet Order for partial revision of Cabinet Order for Enforcement of the Act on the Regulation of Nuclear Source Material, Nuclear Fuel Material and Reactors (Draft)" ・Operation policy for NRA human resource development project ・Announcement of overview of approach in NRA (report in March 11) and main point and future approach of the NRA Annual Report in FY 2015 (Draft) ・Evaluation of Annual Strategic Plan of the NRA for FY 2015

No.	Date	Main topics
59	3. 9	・Appointment of Radiation Council members ・Progress of conformity review to New Regulatory Requirements of research and test reactors in Kyoto University and Kinki University ・Rearrangement of radiation protection standards concerning waste disposal
60	3.16	・After decision in ministerial meetings related to Nuclear Energy ・Response to issues identified in the IRRS mission process ・Implementation of site inspection for registered certification bodies, etc. based on Act on Prevention of Radiation Hazards due to Radioisotopes (Draft) ・Establishment of procedure provision related to designation and change of off-site center and response of Secretariat of the NRA concerning the provision concerned (Draft) ・Cabinet Order draft for partial revision of Cabinet Order for Organization of the NRA ・Report for visiting the US
61	3.16	・Approach concerning safety improvement (Shikoku Electric Power Co, Inc.)
62	3.23	・Situation of conformity review to New Regulatory Requirements of commercial power reactors ・Results of Nuclear Energy Disaster Prevention Drill in FY 2015 ・Mid and long term plan draft and evaluation axis draft for National Institutes for Quantum and Radiological Science and Technology Research ・Revision of NRA EPR Plan ・Holding of the meeting of the Study Team on Nuclear Emergency Preparedness Measures (Draft) ・Focus policy for inspection to comply with operational safety program in FY 2016 (Draft) ・Current situation check of processing facility (reconversion process) in Mitsubishi Nuclear Fuel Co., Ltd.
63 *3	3.25	・Violation of Physical Protection Program
64	3.30	・Examination related to Approval Application of Implementation Plan Change related to Specified Nuclear Facility in TEPCO's Fukushima Daiichi NPS (Land side water shielding wall closing (land side water shielding wall sea side total closing (first stage))) ・Evaluation of the report from TEPCO related to leakage of rainwater inside tank area dikes in TEPCO's Fukushima Daiichi NPS (Draft) ・Implementation of requesting opinions for partial revision (draft) of NRA Ordinance for the operational safety of nuclear facility and the protection of specific nuclear fuel materials in TEPCO's Fukushima Daiichi NPS ・Direction for rearrangement of radiation protection standards concerning waste disposal (Draft) ・Evaluation from the technical viewpoint of external experts in evaluation of safety research ・Annual Strategic Plan for FY 2016 (Draft) ・The NRA's post evaluation implementation plan in FY 2016 and policy system of the NRA in FY 2016

*1 The 45th meeting in FY 2015 was closed to public because the meeting examines suitability and propriety of disposition implemented by NRA themselves, opening of examination to public disturbs hearing of honest opinions from the persons involved in the disposition, and as a result, there is a possibility that the original function of formal objection that performs fair and neutral decision through simple procedure is obstructed.

*2 The 52nd meeting in FY 2015 was closed to public considering the viewpoint of security as the discussion was related to examination process of Specified Nuclear Facilities.

*3 The 63rd meeting in FY 2015 was closed to public to prevent endangering public safety by disclosing information relating to physical protection to a person(s) who might ultimately attempt a sabotage to the nuclear facility with such information.

Table 31 List of NRA Commission decisions

(From April 1, 2015 to March 31, 2016)

Date	Decision made in council
FY 2015	
4. 1	・Basic policy concerning final disposal of specific radioactive waste based on Designated Radioactive Waste Final Disposal Act(Reply)
4. 8	・Approval of operational safety program change for facilities of the Takahama Power Station of The Kansai Electric Power Co. , Inc.
4.15	・Evaluation of the report concerning incidents of leakage from RO concentrated water storage tank of contaminated water storage facility in TEPCO's Fukushima Daiichi NPS ・Evaluation of the report from TEPCO related to leakage from RO-3 of desalination equipment (reverse osmotic membrane equipment) in contaminated water storage facility of TEPCO's Fukushima Daiichi NPS ・Evaluation of the report from TEPCO related to leakage from double strainer differential pressure indicator for processed water transfer piping in desalination equipment of TEPCO's Fukushima Daiichi NPS ・Evaluation of the report from TEPCO related to leakage from RO concentrated water storage tank (H6 area C1 tank) of contaminated water storage facility in TEPCO's Fukushima Daiichi NPS ・Evaluation of the report from TEPCO related to inflow of stagnant water inside process main building to incineration work building of TEPCO's Fukushima Daiichi NPS
4.22	・Total revision of Nuclear Emergency Response Guidelines ・Partial revision of the NRA Ordinance concerning incident to be reported by the nuclear emergency preparedness manager based on the Act on Special Measures Concerning Nuclear Emergency Preparedness
4.28	・Evaluation of the report from TEPCO related to leakage from 4000 ton steel rectangular tanks of TEPCO's Fukushima Daiichi NPS
5.20	・Hearing of opinion concerning change in reactor installation permit (for Unit 3) in Ikata Power Station of Shikoku Electric Power Co. , Inc.

Date	Decision made in council
5.27	・Approval of operational safety program change of nuclear reactor facility in Sendai NPS of Kyushu Electric Power Co. , Inc.
	・NRA Ordinance for partial revision of the NRA Ordinance concerning security of nuclear reactor facilities and protection of specific nuclear fuel materials in TEPCO's Fukushima Daiichi NPS
	・Partial revision related to the operation of the Ordinance of Article 18 (Instruction) concerning security of nuclear reactor facilities and protection of specific nuclear fuel materials in TEPCO's Fukushima Daiichi NPS
	・Establishment of "Statement on Nuclear Safety Culture"
6. 3	・Annual report of the NRA in FY 2014 (Cabinet petition)
	・Annual report of the NRA in FY 2014
6.10	・Approval of operational safety program change for nuclear reactor facility of TEPCO's Fukushima Daini NPS
	・Approval of operational safety program change for nuclear reactor facility of the Genkai NPS in Kyushu Electric Power Co. , Inc.
6.17	・Evaluation of the report from TEPCO related to trouble of joint valve for G4 South Area A5-A6 tank of TEPCO's Fukushima Daiichi NPS
6.24	・Evaluation of the report related to leakage of radioactive substance inside the third waste water system storage tank (II) building of material test reactor (JMTR) in Oarai Research and Development Center of Japan Atomic Energy Agency (JAEA)
7. 8	・Establishment of technical standards on prevention of radiation hazards based on provision of ordinance on activity of refining nuclear source or nuclear fuel material, etc. (Consultation)
7.15	・Approval of Change in reactor installation permit for the Ikata Power Station (Unit 3)
	・Evaluation related to leakage of processed water from transfer pipe of multi-nuclide removal equipment of TEPCO's Fukushima Daiichi NPS
7.22	・Hearing of opinion related to change of designation of off-site center for emergency response measures (Reply)
8. 5	・Approval of operational safety program change for the Sendai Power Station of Kyushu Electric Power Co. , Inc.
	・Partial revision of NRA Ordinance on the Standards for Test Reactor and its Auxiliary Facilities
	・Establishment of Notification to establish dose limits in accordance with the provisions of NRA Ordinance concerning refining nuclear source material or nuclear fuel material
	・Partial revision of Notification defining details related to technical criteria on off-site transportation of nuclear fuel material, etc.
	・Partial revision of Notification defining necessary items concerning security of nuclear reactor facility and protection of specific nuclear fuel material of TEPCO's Fukushima Daiichi NPS
	・Partial revision of technical standards for radiation dose concerning commercial power reactors
	・Partial revision of the review standards for operational safety program of nuclear reactor facility in nuclear power reactor in the research and development stage and its auxiliary facility

Date	Decision made in council
8.19	・Type certificate of design of specific container related to Spent Fuel Storage Facility in Mitsubishi Heavy Industries, Ltd.
	・Future operation of Plutonium Fuel Third Development Section in Nuclear Fuel Cycle Engineering Institute of Japan Atomic Energy Agency (Instruction)
8.26	・Policy evaluation sheet related to measures implemented in FY 2014
	・Total revision of Nuclear Emergency Response Guidelines
	・Designation of Advanced radiation emergency medical support center and Nuclear emergency medical support center
	・Revision of NRA EPR plan
9. 2	・Hearing of opinion concerning Nuclear Disaster Prevention Drill Plan in FY 2015 (Reply)
	・Evaluation for work performance of National Institute of Radiological Sciences in FY 2014
	・Prospective evaluation related to the third period for med term target (April 2011 to March 2016) of National Institute of Radiological Sciences
	・Review of general task accompanying prospective evaluation of National Institute of Radiological Sciences
	・Evaluation for work performance of National Research and Development Agency Japan Atomic Energy Agency in FY 2014
	・Evaluation for work performance in the second period for med term target of National Research and Development Agency Japan Atomic Energy Agency
	・Evaluation of the report from TEPCO related to alarms actuation from radiation monitor for waste water in side-ditch drainage of TEPCO's Fukushima Daiichi NPS
	・Investigation related to discolored section and rust generation in lower plenum of Vitrified Canister Storage Building in Waste Control Facility of Japan Nuclear Fuel Limited (Instruction)
9. 16	・Registration of Radiation Management Institute, Inc. as Registered Inspection Body and Registered Periodic Confirmation Body
	・Implementation of repetitive site inspection related to the situation of implementation of post measures for nuclear emergency based on restoration plan of TEPCO's Fukushima Daini NPS
9. 30	・Approval of Radiation Management Institute, Inc. as Operational Rule for Inspection and Operational Rule for Periodic Confirmation
	・Collection of report based on the provision of Article 67 Item 1 of the Act of the Regulation of Nuclear Source Material, Nuclear Fuel Material and Reactors
	・Operation policy for Article 6 Item 2 of Supplementary Provision of the Act for Establishment of the NRA
10. 7	・Development of technical evaluation concerning The Japan Electric Association "Method for monitoring test of nuclear reactor structural material (JEAC4201-2007) [Supplement version 2013]"
	・Partial revision of Regulatory Guide of NRA Ordinance on Technical Standards for Commercial Power Reactor and its Auxiliary Facility

Date	Decision made in council
10.21	・Development of technical evaluation concerning Japan Society of Mechanical Engineers “List of Errata for Design and Construction Standard (JSME S NC1), Material Standard (JSME S NJ1) and Welding Standard (JSME S NB1)” (dated April 27, 2015) as well as The Japan Electric Association “List of Errata for Provision of Leak Rate Test of Nuclear Reactor Container Vessel (JEAC4203-2008)” (dated April 21, 2015)
	・Partial revision of Regulatory Guide of NRA Ordinance on Technical Standards for Commercial Power Reactor and its Auxiliary Facility
	・Evaluation axis for performance during the third period for mid and long term target of Japan Atomic Energy Agency
11. 4	・Response to inadequate cable laying in Reactor Unit 6 of TEPCO’s Kashiwazaki Kariha NPS (Instruction)
11.13	・Recommendation to Minister of Education, Culture, Sports, Science and Technology concerning Prototype Fast Breeder Reactor Monju
	・Basic concept concerning the operation of so-called backfit of New Regulatory Requirements
11.18	・Approval of the Kansai Electric Power Co. , Inc. “Approval Application of Operational Safety Program Change for Takahama Power Station” (Aging technical evaluation of Unit 3)
	・Approval of the Kansai Electric Power Co. , Inc. “Approval Application of Operational Safety Program Change for Takahama Power Station” (Aging technical evaluation of Unit 4)
	・Approval of Kyushu Electric Power Co. , Inc. “Approval Application of Operational Safety Program Change for Sendai NPS” (Aging technical evaluation of Reactor Unit 2)
11.25	・Evaluation of the report related to deformation of the cylinder head cock of emergency diesel generator (B) for Monju in Japan Atomic Energy Agency
	・Establishment for Notification defining the facility for operation of nuclear reactor in which irradiated fuel assemblies are sufficiently cooled for long period
12.11	・Declaration of stay of execution for approval of change in reactor installation permit (Change for Units 1 and 2) in Sendai NPS
	・Formal objection related to approval of change in reactor installation permit (Change for Units 1 and 2) in Sendai NPS
12.16	・Evaluation of report from Japan Nuclear Fuel Limited concerning fault of important equipment from the viewpoint of safety in the separate building of Rokkasho Reprocessing Plant
	・Issuance of specific instruction document related to “Abolition of Standard for Aluminium Alloy Example for Metal Cask Basket”
	・New investigation and examination items in Nuclear Reactor Safety Examination Meeting
12.22	・Establishment of NRA Ordinance for partial revision of Regulatory Guide of NRA Ordinance on the Standards for Location, Structure and Equipment of Commercial Power Reactor and its Auxiliary Facilities
1. 6	・Response to improper cable laying found in TEPCO’s Kashiwazaki Kariwa NPS (Instruction)
1. 20	・Evaluation of the report from TEPCO related to the leakage from stored water transfer hose from 1000 ton steel rectangular tanks to No.3 Turbine Building in TEPCO’s Fukushima Daiichi NPS
1.27	・Ensuring information security (Caution)
	・Safety Oversight Team for Tokai Reprocessing Plant and Other Facilities

Date	Decision made in council
2.17	・Ordinance for partial revision of NRA Organization Ordinance
	・Partial revision of the Policy on NRA Administrative Document Control
	・Target of task operation to be achieved by National Institutes for Quantum Science Technology Research and Development Organization (Mid and long term target)
2.24	・Hearing of opinion concerning change in reactor installation permit for Takahama Power Station in The Kansai Electric Power Co. , Inc. (Units 1, 2, 3 and 4)
3. 2	・Cabinet Order draft for partial revision of Cabinet Order for enforcement of the Act on the Regulation of Nuclear Source Material, Nuclear Fuel Material and Reactors (Cabinet petition)
3. 9	・Appointment of Radiation Council members
3.16	・New investigation and examination items in Nuclear Reactor Safety Examination Committee and Nuclear Fuel Safety Examination Committee
	・Implementation of site inspection for registered certification bodies, etc. based on the Act concerning Prevention of Radiation Hazards due to Radioisotopes, etc. (Draft)
	・Partial revision of the Policy on NRA Administrative Document Control
	・NRA Ordinance for partial revision of NRA Ordinance for the NRA Organization
	・Cabinet Order for partial revision of Cabinet Order for the NRA Organization
3.23	・Plan for achieving the target of National Institutes for Quantum Science Technology Research and Development Organization (Mid and long term plan)
	・Evaluation axis for National Institutes for Quantum Science Technology Research and Development Organization (Establishment)
	・Revision of NRA EPR Plan
3.25	・Compliance with Physical Protection Program (Caution)
3.30	・Evaluation of the report from TEPCO related to leakage of rainwater inside tank area dikes in TEPCO’s Fukushima Daiichi NPS
	・Annual Strategic Plan for FY 2016 (Draft)
	・The NRA’s post evaluation implementation plan in FY 2016
	・Policy system of the NRA in FY 2016

Section 2 Activities of Study Meetings

Councils and others
- Reactor Safety Examination Committee
- Nuclear Fuel Safety Examination Committee
- Radiation Council
- The National Research and Development Agency Council

Review meeting
- The Review meeting on conformity to the New Regulatory Requirements (for Nuclear Power Plants/Nuclear Fuel Facilities/Plant Life Management)

Study Teams
- The Study Team on the Regulation of Radioactive Waste in Decommissioning
- The Study Team on Nuclear Emergency Preparedness Measures
- The Study Team on Radiation Emergency Medicine
- The Study Team on Technical Evaluation of Fitness-for-Service Standard
- The Study Team on Technical Evaluation of Methods of Surveillance Tests for Structural Materials of Nuclear Reactors
- The Study Team on Monitoring of Volcanic Activities around Nuclear Facilities
- Safety Oversight Team for Tokai Reprocessing Plant and Other Facilities

Expert Meeting on the Investigation of Fracture Zones in Nuclear Power plants
- The Expert Meeting on the Investigation of Fracture Zones in the Site of Shika NPS
- The Expert Meeting on the Investigation of Fracture Zones in the Site of Mihama Power Station
- The Expert Meeting on the Investigation of Fracture Zones in the Site of the Prototype Fast Breeder Reactor “Monju”

Committees with specific themes
- The Committee on Nuclear Security
- The Committee on Supervision and Evaluation of the Specified Nuclear Facilities
- The Committee on Radioactive Waste Issues of the Specified Nuclear Facilities
- The Technical Information Committee
- The Meeting on Evaluating the Habitability of a Nuclear Power Plant Control Room During a Postulated Hazardous Chemical Release
- The Technical Evaluation Committee on Safety Research

Others
- Debriefing Session of Emergency Drills by Nuclear Operators
- NRA Policy Review Meeting
- Expert Meeting on NRA’s Administrative Review -FY 2015-

(1) Reactor Safety Examination Committee

The requirements for ensuring transparency and impartiality when the NRA selected items to be investigated and discussed, and the methods to be applied in appointing appropriate members were specified at the NRA Commission Meeting held on February 5, 2014. On the basis of those requirements, the appointment of members was approved at

the NRA Commission Meeting held on April 16, 2014, after which the first joint review meeting of the Reactor Safety Examination Committee and the Nuclear Fuel Safety Examination Committee was held on May 12. The committee had convened since then, and three joint review meetings were held in FY 2015. In addition, the 7th joint review meeting reported NRC additionally instructed “Evaluations of volcano monitoring” and “Evaluations to IRRS review actions” as new investigation and review items. Furthermore, in accordance to that, Reactor Safety Examination Committee decided establishment of “The subcommittee of Volcano Monitoring”.

Table 32 Members of Reactor Safety Examination Committee

Examination commissioners	Makiko Okamoto	Associate Professor, Management & Information Systems Engineering Department of Graduate School, Nagaoka University of Technology
	Michiaki Kai	Professor, Department of Health Sciences, Oita University of Nursing and Health Sciences
	Tadahiro Katsuta	Associate Professor, School of Law, Meiji University
	Seiji Shiroya	Emeritus Professor, School of Engineering, the University of Tokyo
	Tetsuo Kobayashi	Professor emeritus, Kagoshima University
	Naoto Sekimura	Professor, School of Engineering, the University of Tokyo
	Tsuyoshi Takada	Professor, School of Engineering, the University of Tokyo
	Toshiko Nakagawa	Professor, Faculty of Engineering, Tokyo City University
	Ken Nakajima	Professor, Kyoto University Research Reactor Institute
	Akiko Matsuo	Professor, Faculty of Science and Technology, Keio University
	Makoto Murakami	Director of Institute of Seismology and Volcanology of Hokkaido University and Professor, Department of Volcanic Activity Research
	Ken Muramatsu	Affiliate Professor, Faculty of Engineering, Tokyo City University
	Yuko Yoneoka	Technical Operation Manager, Lloyd's Register Quality Assurance Limited
Temporary commissioner	Takahiro Okura	Professor, Aso Volcanological Laboratory, Institute for Geothermal Sciences, Kyoto University
	Hiroki Miyamachi	Professor, Department of Earth and Environmental Science, Faculty of Science, Kagoshima University
Expert commissioners	Hiroshi Shinohara	Executive chief engineer, Research Institute of Earthquake and Volcano Geology, Geological Survey of Japan, National Institute of Advanced Industrial Science and Technology
	Takakazu Tanada	General and Chief Researcher, Department of Monitoring and Forecasting Research, National Research Institute for Earth Science and Disaster Resilience

*As of March 31, 2016

(2) Nuclear Fuel Safety Examination Committee

The requirements for ensuring transparency and impartiality when the NRA selected items to be investigated and discussed, and the methods to be applied in appointing appropriate persons as members were specified at the NRA Commission Meeting held on February 5, 2014. On the basis of those requirements, the appointment of members was approved at the NRA Commission Meeting held on April 16, 2014, after which the first joint review meeting of the Reactor Safety Examination Committee and the Nuclear Fuel Safety Examination Committee was held on May 12. The committee had convened since then, and three joint review meetings were held in FY 2015. In addition, the 7th joint review meeting reported NRC additionally instructed “Evaluations to IRRS review actions” as new investigation and review items.

Table 33 Members of Nuclear Fuel Safety Examination Committee

Examination commissioners	Noriko Asanuma	Associate Professor, School of Engineering, Tokai University
	Toshiaki Ohe	Professor, School of Engineering, Tokai University
	Makiko Okamoto	Associate Professor, Management & Information Systems Engineering Department of Graduate School, Nagaoka University of Technology
	Michiaki Kai	Professor, Department of Health Sciences, Oita University of Nursing and Health Sciences
	Tadahiro Katsuta	Associate Professor, School of Law, Meiji University
	Tsuyoshi Takada	Professor, School of Engineering, the University of Tokyo
	Akiko Matsuo	Professor, Faculty of Science and Technology, Keio
	Hirotake Moriyama	Professor, School of Engineering, the University of Tokyo
	Shinsuke Yamanaka	Professor, Graduate School of Engineering, Osaka University
	Yuko Yoneoka	Technical Operation Manager, Lloyd’s Register Quality Assurance Limited

*As of March 31, 2016

Table 34 Latest activities of joint meetings of Reactor Safety Examination Committee and Nuclear Fuel Safety Examination Committee

(April 1, 2015 to March 31, 2016)

Number	Date	Agenda
FY 2015		
5	7. 27	・Situation of screening and actions needed technical information ・Situation of actions needed technical information ・Others (report about the previous item)
6	12. 4	・Situation of screening and actions needed technical information ・Actions needed technical information and response measures (investigation and review item) ・Others
7	3.25	・New instruction matters against Reactor Safety Examination Committee and Nuclear Fuel Safety Examination Committee ・Situation of screening and actions needed technical information ・Situation of actions needed technical information ・Others

(3) Radiation Council

Radiation Council deliberated at 130th general meeting (held in July 23, 2015) about the consultation on the exposure dose limits of emergency worker by the Chairman of NRA, the Minister of Health, Labor and Welfare and the president of National Personnel Authority based on Act on Technical standards for Prevention of Radiation Hazards and decided its report and opinion. The NRA determined the proposal for revision of relevant Ordinances in August 5, 2015 and promulgated revised ordinances on August 31.

Radiation Council determined at 132th general meeting (held in February 4, 2016) its report and opinion about the consultation concerning revision of technical standard about prevention of radiation hazards pertaining to Ordinances and Notifications for manufacturing and handling radiopharmaceuticals in Radiation Council based on Act on Technical Standards for Prevention of Radiation Hazards.

Table 35 Members of Radiation Council

Commissioners	Yoshitomo Uwamino	Director, Safety Management Group, RIKEN Nishina Center for Accelerator-Based Science
	Kenji Kamiya	Vice President (Reconstruction Support/Radiation Medicine), Hiroshima University and Vice President, Fukushima Medical University
	Reiko Kanda	Sub-leader, Regulatory Science Research Program, Research Center for Radiation Protection, National Institute of Radiological Sciences
	Kazuro Sugimura	Executive Vice President of Kobe University and Professor, Kobe University Graduate School of Medicine
	Kaori Togashi	Professor, Graduate School of Medicine, Kyoto University
	Yoko Fujikawa	Associate Professor, Kyoto University Research Reactor Institute
	Shoji Futatsugawa	Dedicated Director, Japan Radioisotope Association
	Yasuhiro Yamaguchi	Deputy Director, Nuclear Science Research Institute, , Japan Atomic Energy Agency

*As of March 31, 2016

(4) The National Research and Development Agency Council

NRA needs to implement instruction of mid and long term targets and performance evaluation after hearing opinion by the Council about research and development about a part of work by National Institutes for Radiological Science and Japan Atomic Energy Agency as a competent minister based on Act on General Rules for Incorporated Administrative Agencies (Act no. 103 of 1999). Because of that, NRC established the National Research and development Agency Council as the council about research and development in April 10, 2015.

In the FY 2015, the National Research and development Agency Council was held once to appoint the chief of the council and decide needed provision including establishing subcommittees.

In addition, subcommittee of National Institute of Radiological Sciences was held 6 times to hear opinion including performance evaluation and medium and long term targets of National Institutes for Radiological Sciences.

In addition, subcommittee of Japan Atomic Energy Agency was held 2 times to hear opinion including performance evaluation of Japan Atomic Energy Agency.

Table 36 Members of the National Research and Development Agency Council

Commissioners	Michiaki Kai	Professor, Environmental Health Science, Department of Health Sciences, Oita University of Nursing and Health Science
	Kenji Kamiya	Deputy Commandant, Hiroshima University Director of Radiation Emergency Medicine Promotion Center Professor, Research Institute for Radiation Biology and Medicine
	Seiichi Koshizuka	Professor, School of Engineering, The University of Tokyo
	Tetsuo Matsumoto	Professor, Nuclear Safety Engineering, Tokyo City University, Gotoh Educational Corporation
	Akio Yamamoto	Professor, Graduate School of Engineering, Nagoya University
	Yuko Yoneoka	Technical operation manager, Lloyd's Register Quality Assurance Limited

Subcommittee of National Institute of Radiological Sciences

Commissioners	Michiaki Kai	Professor, Environmental Health Science, Department of Health Sciences, Oita University of Nursing and Health Sciences
	Kenji Kamiya	Vice President, Hiroshima University Director of Radiation Emergency Medicine Promotion Center Professor, Research Institute for Radiation Biology and Medicine
	Tetsuo Matumoto	Professor, Nuclear Safety Engineering, Tokyo City University, Goto Educational Corporation

Subcommittee of Japan Atomic Energy Agency

Commissioners	Seiichi Koshizuka	Professor, School of Engineering, The University of Tokyo
	Akio Yamamoto	Professor, Graduate School of Engineering, Nagoya University
	Yuko Yoneoka	Technical operation manager, Lloyd's Register Quality Assurance Limited

*As of March 31, 2016

(5) Review Meeting on Conformity to the New Regulatory Requirements

Applications for changes in reactor installation and other applications received from licensees were reviewed on the basis of the New Regulatory Requirements for Nuclear Power Plants, which came into force on July 8, 2013, and the New Regulatory Requirements for Nuclear Fuel Facilities, which came into force on December 18, 2013. A study team was assembled by Secretariat of the NRA in addition to the commissioner of NRA. The team held 132 review meetings on the NPS, and 40 meetings on the nuclear fuel cycle facilities in FY 2015. They also held 4 review meetings in FY 2015 on applications from licensees for operational safety program changes concerning plant life management.

Table 37 Members of Review Meeting on Conformity to the New Regulatory Requirements for Nuclear Power Stations

NRA	Akira Ishiwatari	Commissioner of the Nuclear Regulation Authority
	Toyoshi Fuketa	Commissioner of the Nuclear Regulation Authority
Secretariat of the NRA	Michio Sakurada	Director, Nuclear Regulation Department
	Tomoho Yamada	Director-General (Attended by the 136th meeting as Director, Regulatory Standard and Research Division)
	Hiroshi Yamagata	Director General for commercial power reactor regulation (Participated as “Director for Nuclear Regulation of PWR” by the 326th)
	Kazuya Aoki	Director, Division of Regulation for BWR (Attended by the 182nd meeting as Director for Regulation of Nuclear Facilities)
	Shin Morita	Director, Division of Regulation against Earthquake and Tsunami
	Yuji Ono	Nuclear Regulation Liaison Officer
	Souichi Urano	Nuclear Regulation Liaison Officer
	Hisashi Miyamoto	Nuclear Regulation Liaison Officer
	Kaoru Oasada	Nuclear Regulation Liaison Officer
	Hiroyuki Naito	Director for Nuclear Safety Review (Attended from the 226th meeting)
	Atsuhiko Kosaka	Nuclear Regulation Liaison Officer (Attended from the 221th meeting)

Table 38 Members of Conformity Review to the New Regulatory Requirements for Nuclear Fuel Facilities

NRA	Satoru Tanaka	Commissioner of the Nuclear Regulation Authority (Attended from the 30th meeting)
	Akira Ishiwatari	Commissioner of the Nuclear Regulation Authority
	Toyoshi Fuketa	Commissioner of the Nuclear Regulation Authority (Attended by the 27th meeting)
Secretariat of the NRA	Michio Sakurada	Director, Nuclear Regulation Department
	Tetsuo Ohmura	Director General for Emergency Response
	Shinzo Kuromura	Director, Division of Regulation for (in charge of new reactor, test research reactor, decommissioning)
	Yasuhiko Ishii	Director, Division of Regulation for Nuclear Fuel (Fabrication and Reprocessing) Facilities and Use of Nuclear Material (Attended by the 54th meeting)
	Hiroshi Kataoka	Director, Division of Regulation for Nuclear Fuel (Fabrication and Reprocessing) Facilities and Use of Nuclear Material (Attended from the 60th meeting)
	Shin Morita	Director, Division of Regulation against Earthquake and Tsunami
	Kazuyuki Sugiyama	Director for Nuclear Safety Review (Attended by the 75th meeting)
	Shigekatsu Ohomuko	Nuclear Regulation Liaison Officer (Attended from the 83th meeting)
	Akihiko Ogawa	Nuclear Regulation Liaison Officer
	Kiyomitu Hasegawa	Nuclear Regulation Liaison Officer
	Kaoru Oasada	Nuclear Regulation Liaison Officer
	Hiroyuki Naito	Director for Nuclear Safety Review (Attended from the 56th meeting)

Table 39 Members of Review Meeting on Conformity to the New Regulatory Requirements for Plant Life Management

Secretariat of the NRA	Tomoho Yamada	Director-General (Attended from the 10th meeting)
	Tetsuo Ohmura	Director-General (Attended by the 9th meeting)
	Hidefumi Kawauchi	Chief Officer for Technical Research and Investigation
	Masahiro Otaka	Senior Officer for Technical Research and Investigation
	Toshihiro Bannai	Nuclear Regulation Liaison Officer

(6) The Study Team on the Regulation of Radioactive Waste in Decommissioning

The study team consisting of the commissioner Satoru Tanaka and external experts in the FY 2014 was established for review of preparation of regulation and standards concerning radioactive waste generated during decommissioning of reactor8 meetings were held in FY 2015.

Table 40 Members of the Study Team on the Regulation of Radioactive Waste in decommissioning

NRA	Satoru Tanaka	Commissioner of the Nuclear Regulation Authority
External experts	Takeshi Iimoto	Assistant Professor, Division for Environment, Health and Safety, Tokyo University Environmental Safety Headquarter
	Tetsuo Iguchi	Professor, Graduate School of Engineering, Nagoya
	Toshiaki Ohe	Professor, Tokai University School of Engineering Department of Nuclear Engineering
	Tadahiro Katsuta	Associate Professor, School of Law, Meiji University
	Takahiro Yamamoto	National Institute of Advanced Industrial Science and Technology Research Institute of Earthquake and Volcano Geology Principal Staff, Regulatory Research
National Institute of Radiological Sciences	Isao Kawaguchi	Research Center of Radiation Protection Regulatory Science Research Program Researcher
Japan Atomic Energy Agency	Tadao Tanaka	Director, Safety Research Center Environment Safety Research Divison
	Seiji Takeda	Director, Safety Research Center Environment Safety Research Unit Environmental Impact Evaluation Research Division
Secretariat of the NRA	Tetsuo Ohmura	Director General for Emergency Response (Participated as “Director-General for Nuclear Regulation Policy” by the 7th)
	Masahiro Aoki	Director-General (Participated as “Director, Regulatory Standard and Research Division” by the 7th)
	Masashi Hirano	Former Director-General for Regulatory Standard and Research (Attended by the 7th meeting)
	Takaaki Kurasaki	Director, Regulatory Standard and Research Division (Attended from the 8th meeting)
	Yukinori Maekawa	Director for Nuclear Regulation of Waste, Storage and Transport
	Masahiro Uchida	Director, Division of Research for Nuclear Fuel Cycle and Radioactive waste
	Tomoki Shibutani	Director for Policy Planning and Conditioning, Regulatory Standard and Research Division
	Norikazu Yamada	Principal Researcher, Research for Nuclear Fuel Cycle and Radioactive waste

(7) The Study Team on Nuclear Emergency Preparedness Measures

NRA determines Nuclear Emergency Response Guidelines to ensure their smooth implementation by nuclear licensees, the national government and the local governments. The 12th meeting on Nuclear Emergency Preparedness Measures was held on March 29, 2016, to review protective measures concerning nuclear facilities other than commercial power reactor.

Table 41 Members of the Study Team on Nuclear Emergency Preparedness Measures

NRA	Nobuhiko Ban	Commissioner of the Nuclear Regulation Authority
	Satoru Tanaka	Commissioner of the Nuclear Regulation Authority
External experts	Toshimitsu Honma	Director of Nuclear Safety Research Center, Japan Atomic Energy Agency
	Hitoshi Abe	Nuclear Safety Research Center, Japan Atomic Energy Agency
	Youichi Enokida	Professor, Graduate School of Engineering, Nagoya University
Cabinet Office	Tetsuya Yamamoto	Director-General for Nuclear Regulation Policy of Nuclear Emergency Preparedness
	Yasushi Morishita	Director for Economic, Fiscal and Social Structure to Director General for Nuclear Emergency Preparedness
Secretariat of the NRA	Hiromu Katayama	Director-General for Radiation Protection Strategy Security
	Tetsuo Ohmura	Director General for Emergency Response
	Shinichi Araki	Director for Emergency Preparedness/Response and Nuclear Security Division
	Shinichi Murata	Counsellor for Disaster Prevention and Drill of Licensee of Nuclear Energy Related Activity
	Rikio Minamiyama	Director for Radiation Monitoring Division
	Ryouzou Nishida	Director for Radiation Measure and Safeguards Division
	Hiroshi Kataoka	Director for Nuclear Regulation of Department of Nuclear Power Regulation
	Shinzo Kuromura	Director for Nuclear Regulation of Department of Nuclear Power Regulation
	Yukinori Maekawa	Director for Nuclear Regulation of Department of Nuclear Power Regulation
	Mitsuhiro Kajimoto	Director, Division of Regulation for Research Reactors, Nuclear Fuel (in charge of severe accident)
	Kazumi Miyaki	Counseling Expert to Director for Safety Technology
	Kenzou Fujimoto	Counseling Expert for Emergency Preparedness/Response and Nuclear Security Division
	Minoru Saito	Counseling Expert for Emergency Preparedness/Response and Nuclear Security Division

(8) The Study Team on Radiation Emergency Medicine

Total four times of Study teams was held in the FY 2015 by external experts consisting of the commissioner Kayoko Nakamura and external experts to study issues about medical treatment system in nuclear emergency and embodiment ofsurvey and decontaminate in evacuation returned area and confirm facility requirement of Advanced radiation emergency medical support center and Nuclear emergency medical support center.

Table 42 Members of the Study Team Radiation Emergency Medicine

NRA	Kayoko Nakamura	Commissioner of the Nuclear Regulation Authority (Attended by the 4th meeting)
External experts	Makoto Akashi	Vice-President, National Institute of Radiological Sciences
	Yasushi Asari	Professor, Emergency and Critical Medicine, Kitasato University School of Medicine
	Shouzou Ishii	Executive Director, Japan Medical Association
	Gen Suzuki	The Director and Professor of International University of Health and Welfare
	Yoshio Hosoi	Professor, Laboratory for Radiation Biology, Tohoku University Graduate School of Medicine
	Yoshihiro Yamaguchi	Professor, Emergency Medicine, Major in Surgery, Kyorin University Graduate School of Medicine
	Kunihiko Yokoyama	Deputy director, Public Central Hospital of Matto Ishikawa and Director of PET center
Cabinet Office	Tetsuya Yamamoto	Director-General for Nuclear Regulation Policy of Nuclear Emergency Preparedness
	Yasushi Morishita	Director for Economic, Fiscal and Social Structure to Director General for Nuclear Emergency Preparedness
Secretariat of the NRA	Hiromu Katayama	Director-General for Radiation Protection Strategy Security
	Shinichi Araki	Director for Emergency Preparedness/Response and Nuclear Security Division
	Takehiko Suzuki	Director for Policy Planning, Emergency Preparedness/Response and Nuclear Security Division (Attended by the 2nd meeting)
	Kaname Yamamoto	Director for Policy Planning, Emergency Preparedness/Response and Nuclear Security Division (Attended from the 3rd meeting)

(9) The Study Team on Technical Evaluation of Fitness-for-Service Standards

The study team consisting of the commissioner Satoru Tanaka and external experts was organized for the technical evaluation of Codes for Nuclear Power Generation Facilities – Rules on Fitness-for-Service for Nuclear Power Plants 2012 edition and Supplement in 2013 edition formulated by the Japan Society of Mechanical Engineers, and the team meeting was held for a total of 2 times in the FY 2015.

Table 43 Members of the Study Team on Technical Evaluation of Fitness-for-Service Standards

NRA	Satoru Tanaka	Commissioner of the Nuclear Regulation Authority
External experts	Yoshio Arai	Professor, Graduate School of Science and Engineering, Saitama University
	Masahide Suzuki	Professor, Graduate school of Nuclear Power Safety System, Nagaoka University of Technology
	Toshiyuki Takagi	Professor, Institute of Fluid Science, Tohoku University
	Hirokazu Tsuji	Professor, Mechanical Engineering, Tokyo Denki University school of Engineering
	Takashi Furukawa	Deputy Director, Nondestructive Evaluation Center, Japan Power Engineering and Inspection Corporation
Japan Atomic Energy Agency	Hirotaka Nishiyama	Director for Materials and Structural Integrity Research Division, Nuclear Safety Research Center
	Jinya Katsuyama	Materials and Structural Integrity Research Division, Nuclear Safety Research Center Assistant Principal Staff, Structural Integrity Research Group
Secretariat of the NRA	Masashi Hirano	Former Director-General for Regulatory Standard and Research (Attended by the 1st meeting)
	Masahiro Aoki	Director-General (Attended by the 1st meeting as director, regulatory standard and research division)
	Takaaki Kurasaki	Director, Regulatory Standard and Research Division (Attended from the 2nd meeting)
	Kazuyuki Sugiyama	Director for Policy Planning and Conditioning, Regulatory Standard and Research Division (Attended from the 2nd meeting)
	Yasuhiro Masuhara	Former Director for Policy Planning, Regulatory Standard and Research Division (Attended by the 1st meeting)

(10) The Study Team on Technical Evaluation of Methods of Surveillance Tests for Structural Materials of Nuclear Reactors

A study team consisting of the commissioner Satoru Tanaka and external experts was organized for the technical evaluation of the Methods of Surveillance Tests for Structure Materials of Nuclear Reactors Supplement in 2013 edition formulated by the Japan Electric Association, and the team meeting was held once in FY 2015.

Table 44 Members of the Study Team about Technical Evaluation of Testing Methods for Reactor Structural Materials

NRA	Satoru Tanaka	Commissioner of the Nuclear Regulation Authority
External experts	Ryuta Kasada	Associate professor, Institute of Advanced Energy, Kyoto University
	Yasuhiro Kanto	Professor, Mechanical Engineering, College of Engineering, Ibaraki University
	Kazunori Morishita	Associate professor, Institute of Advanced Energy, Kyoto University
Japan Atomic Energy Agency	Yutaka Nishiyama	Director for Materials and Structural Integrity Research Division, Nuclear Safety Research Center
Secretariat of the NRA	Masashi Hirano	Former Director-General for Technical Affairs
	Masahiro Aoki	Former Director, Regulatory Standard and Research Division
	Yasuhiro Masuhara	Former Director for Policy Planning, Regulatory Standard and Research Division

(11) The Study Team on Monitoring of Volcanic Activities around Nuclear Facilities

A study team meeting consisting of commissioners of NRC, external experts and officials of the Secretariat of the NRA was held for a total of 2 times in the FY 2015 for organizing volcanological knowledge relating to the huge eruptions.

Table 45 Members of the Study Team on Monitoring of Volcanic Activities around Nuclear Facilities

NRA	Akira Ishiwatari	Commissioner of the Nuclear Regulation Authority
External experts	Masato Iguchi	Director of Volcanic Activity Research Center, Disaster Prevention Research Institute, Professor, Kyoto University
	Kazuhiro Ishihara	Professor Emeritus, Kyoto University
	Hiroshi Shinohara	Chief Researcher, Research Institute of Earthquake and Volcano Geology, National Institute of Advanced Industrial Science and Technology
	Kunihiko Shimazaki	Professor Emeritus, The University of Tokyo
	Hiroshi Shimizu	Director of Institute of Seismology and Volcanology, and Professor, Kyushu University
	Toshikazu Tanada	General and Chief Researcher, Department of Monitoring and Forecasting Research, National Research Institute for Earth Science and Disaster Resilience
	Setsuya Nakada	Professor, Earthquake Research Institute, The University of Tokyo
	Toshitsugu Fujii	Professor Emeritus, The University of Tokyo
Observer	Tadashi Ishikawa	Director for Volcano Research, Technology Planning and International Affairs Division, Hydrographic and Oceanographic Department, Japan Coast Guard
	Sadayuki Kitagawa	Director, Volcanology Division, Seismological and Volcanology Department, Japanese Meteorological Agency
	Mikio Tobita	Director of Geography and Crustal Dynamics Research Center, Geospatial Information Authority of Japan
Secretariat of the NRA	Masashi Hirano	Director-General for Regulatory Standard and Research
	Michio Sakurada	Director-General, Nuclear Regulation Department
	Shin Morita	Director, Division of Regulation against Earthquake and Tsunami
	Yoshiyuki Yasuike	Senior Expert to Director for Safety Technology of Earthquake and Tsunami

(12) Safety Oversight Team for Tokai Reprocessing Plant and Other Facilities

The Meeting of Monitoring Team consisting of the NRA commissioners, the officials of the Secretariat of the NRA was held once in FY2015, for continuous confirmation of the status of Safety Assurance for vitrifying treatment, etc. of radioactive liquid waste at Tokai Reprocessing Facilities of Japan Atomic Energy Agency, the approach to Safety Assurance toward decommissioning, the status of a response to issues regarding aging or management/disposal of radioactive waste, and so forth.

Table46 Members of Safety Oversight Team for Tokai Reprocessing Plant and Other Facilities

NRA	Satoru Tanaka	Commissioner of the Nuclear Regulation Authority
Secretariat of the NRA	Tetsuo Ohmura	Director General for Emergency Response
	Hiroshi Kataoka	Director, Division of Regulation for Nuclear Fuel (Fabrication and Reprocessing) Facilities and Use of Nuclear Material
	Kiyomitu Hasegawa	Nuclear Regulation Liaison Officer(Reprocessing)

(13) The Expert Meeting on the Investigation of Fracture Zones in the Site of Shika Nuclear Power Station

The on-site research was conducted, and also the research evaluation and the peer review meeting were held for a total of 2 times in FY 2015. Participants included the NRA commissioners and external experts who held on-site research and evaluation of faults at the Shika NPS.

Table 47 Members of the Expert Meeting on the Investigation of Fracture Zones in the site of Shika Nuclear Power Station

NRA	Akira Ishiwatari	Commissioner of the Nuclear Regulation Authority
External experts	Norio Shigematsu	Senior Researcher, Seismotectonics Research Group, Research Institute of Earthquake and Volcano Geology, National Institute of Advanced Industrial Science and Technology
	Daisuke Hirouchi	Professor, Department of Education, Shinshu University
	Kouichiro Fujimoto	Associate Professor, Department of Education, Tokyo Gakugei University
	Toshikazu Yoshioka	Chief Senior Researcher, Fault Evaluation Research Group, Research Institute of Earthquake and Volcano Geology, National Institute of Advanced Industrial Science and Technology

(14) The Expert Meeting on the Investigation of Fracture Zones in the Site of Mihama Power Station

The research evaluation meeting and the peer review meeting were held for a total of 2 times in FY 2015, participants including the NRA commissioners and external experts for conducting on-site research and evaluation of fracture zones at the Mihama NPS. In addition, an evaluation report was submitted to the NRA Commission Meeting on September 30, 2015.

Table48 Members of the Expert Meeting on Research of Fracture Zones in the site of Mihama Power Station

NRA	Akira Ishiwatari	Commissioner of the Nuclear Regulation Authority
External experts	Tomoyuki Otani	Associate Professor, Civil Engineering Division, Department of Engineering, Gifu University
	Akira Takeuchi	Professor, Graduate School of Science and Engineering for Research, University of Toyama
	Hiroyuki Tsutsumi	Associate Professor, Department of Geophysics, Graduate School of Science, Kyoto University
	Kiyohide Mizuno	Chief Senior Researcher, Quaternary Basin Research Group, Research Institute of Geology and Geoinformation, National Institute of Advanced Industrial Science and Technology

(15) The Expert Meeting on the Investigation of Fracture Zones in the Site of the Prototype Fast Breeder Reactor "Monju"

The on-site research was conducted, and also the research evaluation meeting was held once in FY 2015. Participants include the NRA commissioners and external experts for on-site research and evaluation of faults at the site of the fast breeder prototype reactor Monju.

Table49 Members of the Expert Meeting on Research of Fracture Zones in the site of the Fast Breeder Prototype Reactor Monju

NRA	Akira Ishiwatari	Commissioner of the Nuclear Regulation Authority
External experts	Tomoyuki Otani	Associate Professor, Program of Civil Engineering, Department of Engineering, Gifu University
	Akira Takeuchi	Professor, Graduate School of Science and Engineering, Toyama University
	Kiyohide Mizuno	Chief Senior Researcher, Quaternary Basin Research Group, Research Institute of Geology and Geoinformation, National Institute of Advanced Industrial Science and Technology
	Takahiro Miyauchi	Professor, Graduate School of Science, Chiba University

(16) The Committee on Nuclear Security

The Committee on Nuclear Security consisting of the NRA commissioners and external experts was established in FY2014 for pursuing enhancement of nuclear security of Japan as well as for addressing international contribution to nuclear security. The Committee meeting was held for a total of 2 times in FY2015. The meeting of Working Group on the Confirmation System of Trustworthiness was held for a total of 2 times in FY 2015. The meeting of Working Group on Nuclear Security concerning Radioactive Isotopes was held for a total of 2 times in FY2015.

Table 50 Members of the Committee on Nuclear Security

NRA	Satoru Tanaka	Commissioner of the Nuclear Regulation Authority (Attended by the 4th meeting)
External experts	Nobumasa Akiyama	Professor, School of International and Public Policy, Hitotsubashi University
	Isao Itabashi	Chief, Center for Analysis and Studies, Council for Public Policy
	Sukeyuki Ichimasa	Senior Researcher, National Institute for Defense Studies, Ministry of Defense
	Osamu Iwahashi	Executive of Public Interest Incorporated Foundation Japan Police Support Association (Attended by the 3rd meeting)
	Naomitsu Onoda	Senior Director for Research, National Maritime Research Institute
	Akira Saka	Executive Director, Japan Cybercrime Control Center (Attended from the 4th meeting)
	Keiko Sakurai	Professor, Faculty of Law, Gakushuin University
	Kaoru Naito	Former Director of Nuclear Material Control Center
	Hiroshi Mashima	Corporate Adviser, Japan Marine Science Inc.
	Ichiro Yamaguchi	Senior Research Fellow, Department of Environmental Health, National Institute of Public Health
Secretariat of the NRA	Hiromu Katayama	Director-General for Radiation Protection Strategy and Security (Attended from the 4th meeting)
	Shinichi Araki	Director, Emergency Preparedness/ Response and Nuclear Security Division (Attended from the 4th meeting)
	Hiromine Yamaguchi	Head of Nuclear Security Office, Emergency Preparedness/Response and Nuclear Security Division

*Members at the time that the 5th Committee meeting (October 19, 2015) was held

Table 51 Members of Working Group on the Confirmation System of Trustworthiness

NRA	Satoru Tanaka	Commissioner of the Nuclear Regulation Authority (Attended from the 4th meeting)
External experts	Nobumasa Akiyama	Professor, School of International and Public Policy, Hitotsubashi University
	Isao Itabashi	Chief, Center for Analysis and Studies, Council for Public Policy
	Sukeyuki Ichimasa	Senior Researcher, National Institute for Defense Studies, Ministry of Defense
	Osamu Iwahashi	Executive of Public Interest Incorporated Foundation Japan Police Support Association
	Naomitsu Odano	Senior Director for Research, National Maritime Research Institute
	Akira Saka	Executive Director, Japan Cybercrime Control Center (Attended from the 4th meeting)
	Keiko Sakurai	Professor, Faculty of Law, Gakushuin University
	Kaoru Naito	Former Director of Nuclear Material Control Center
	Hiroshi Mashima	Corporate Adviser, Japan Marine Science Inc.
	Ichiro Yamaguchi	Senior Research Fellow, Department of Environmental Health, National Institute of Public Health
Secretariat of the NRA	Hiromu Katayama	Director-General for Radiation Protection Strategy and Security (Attended from the 4th meeting)
	Shinichi Araki	Director, Emergency Preparedness/ Response and Nuclear Security Division (Attended from the 4th meeting)
	Hiromine Yamaguchi	Head of Nuclear Security Office, Emergency Preparedness/Response and Nuclear Security Division (Attended from the 3rd meeting)

Table 52 Members of Working Group on Nuclear Security concerning Radioactive Isotopes

NRA	Satoru Tanaka	Commissioner of the Nuclear Regulation Authority
External experts	Nobumasa Akiyama	Professor, School of International and Public Policy, Hitotsubashi University
	Isao Itabashi	Chief, Center for Analysis and Studies, Council for Public Policy
	Sukeyuki Ichimasa	Senior Researcher, National Institute for Defense Studies, Ministry of Defense
	Akira Saka	Japan Cybercrime Control Center
	Naomitsu Odano	Senior Director for Research, National Maritime Research Institute
	Keiko Sakurai	Professor, Faculty of Law, Gakushuin University
	Kaoru Naito	Former Director of Nuclear Material Control Center
	Hiroshi Mashima	Corporate Adviser, Japan Marine Science Inc.
	Ichiro Yamaguchi	Senior Research Fellow, Department of Environmental Health, National Institute of Public Health
Secretariat of the NRA	Hiromu Katayama	Director-General for Radiation Protection Strategy and Security (Attended from the 2nd meeting)
	Ryozo Nishida	Director, Radiation Protection and Safeguards Division
	Hisanao Morioka	Policy Planning Director for Radiation Protection and Safeguards Division

(17) The Commission on Supervision and Evaluation of the Specified Nuclear Facilities

The Committee on Supervision and Evaluation of the Specified Nuclear Facilities consisting of the NRA commissioners, the officials of the Secretariat of the NRA and external experts was established and the Committee meeting was held for a total of 8 times in FY 2015 to discuss the implementation plan for specified nuclear facilities, the risk assessment of TEPCO's Fukushima Daiichi Power Station, and the seismic adequacy of the nuclear reactor buildings of the Unit 1 through 4.

Also, at the 37th NRA Commission Meeting of FY 2015 (October 28, 2015), we examined the review system concerning supervision and evaluation of TEPCO's Fukushima Daiichi NPS, changed members of external experts of the Committee on Supervision and Evaluation of the Specified Nuclear Facilities, and dismissed the Working Group on Contaminated Water Countermeasures. The concept on the review system is as follows:

- Build a system to promote intensive and efficient discussions and reviews
- Offer more positions to younger or mid-career intellectuals for the long-term review, and female intellectuals
- Provide locals with the accurate information, and so forth.

Table 53 Members of the Committee on Supervision and Evaluation of the Specified Nuclear Facilities

NRA	Toyoshi Fuketa	Commissioner of the Nuclear Regulation Authority
	Satoru Tanaka	Commissioner of the Nuclear Regulation Authority (Attended by the 37th meeting)
External experts	Hiroaki Abe	Professor, Institute for Materials Research, Tohoku University (Attended by the 37th meeting)
	Tetsuo Iguchi	Professor, Graduate School of Engineering, Nagoya (Attended by the 37th meeting)
	Akira Ohtsuru	Professor, Fukushima Medical University (Attended by the 37th meeting)
	Yoshinori Kittaka	Professor, Graduate School of Urban Environmental Sciences, Tokyo Metropolitan University
	Ikuji Takagi	Professor, Graduate School of Engineering, Kyoto University (Attended by the 37th meeting)
	Shigeaki Tsunoyama	Education and Research Special Advisor, University of Aizu (Attended by the 37th meeting)
	Tomochika Tokunaga	Professor, Department of Environment Systems, Graduate School of Frontier Sciences, The University of Tokyo (Attended from the 38th meeting)
	Reiko Hachisuka	Society President of Okuma Town Society of Commerce and Industry (Attended from the 38th meeting)
	Yasuhiro Hayashi	Professor. Graduate School of Engineering, Kyoto University (Attended by the 37th meeting)
	Yukihiro Higashi	Professor, Graduate School of Science Technology, Iwaki Meisei University (Attended by the 37th meeting)
	Akio Yamamoto	Professor, Graduate School of Engineering, Nagoya
	Akira Watanabe	Specially Appointed Professor, Graduate School of Symbolic Systems Science and Technology, Fukushima University (Attended by the 37th meeting)
Secretariat of the NRA	Masashi Hirano	Director-General for Regulatory Standard and Research (Attended by the 36th meeting)
	Masaya Yasui	Director-General for Regulatory Standard and Research (Attended as “Director-General for Emergency Response” until the 37th meeting)
	Tomoho Yamada	Director-General
	Gyo Sato	Regional Administrator for the Response to the Incident at TEPCO’s Fukushima Daiichi NPS
	Shinji Kinjo	Director for the Response to the Incident at TEPCO’s Fukushima Daiichi NPS (Attended by the 39th meeting)
	Toshihiro Imai	Director for the Response to the Incident at TEPCO’s Fukushima Daiichi NPS (Attended from the 40th meeting)
	Kyoji Adachi	Director for Nuclear Safety Review, Deputy Director-General for Divisions of Regulation (in charge of BWR)

(18) The Committee on Radioactive Waste Issues of the Specified Nuclear Facilities

As work toward reactor-decommissioning progresses, the stable and long-term management of waste, etc. becomes the more important issue at TEPCO's Fukushima Daiichi NPS. Along with the current status of the progress of such reactor-decommissioning work, It was decided at the 37th NRA Commission Meeting of FY 2015 (October 28, 2015) that the Committee on Radioactive Waste Regulation of the Specified Nuclear Facilities would be newly convened , and the Committee meeting was held for a total of 3 times in FY 2015. The concept on the review system is as follows:

- Build a system to promote intensive and efficient discussions and reviews
- Expand the pool of experts for radioactive waste or radiation measurement
- Offer more positions to younger or mid-career intellectuals for the long-term review, and female intellectuals
- Provide locals with the accurate information, and so forth.

Table54 Members of the Committee on Radioactive Waste Issues of the Specified Nuclear Facilities

NRA	Satoru Tanaka	Commissioner of the Nuclear Regulation Authority
External experts	Noriko Asanuma	Associate Professor, Department of Nuclear Engineering, Faculty of Engineering, Tokai University
	Tetsuo Iguchi	Professor, Graduate School of Engineering, Nagoya
	Yaohiro Inagaki	Associate Professor, Department of Applied Quantum Physics and Nuclear Engineering, Graduate School of Engineering, Kyushu University
	Seichi Sato	Specially Appointed Professor, National Institute of Technology, Fukushima College
Secretariat of the NRA	Masaya Yasui	Director-General for Regulatory Standard and Research
	Tomoho Yamada	Director-General
	Gyo Sato	Regional Administrator for the Response to the Incident at TEPCO's Fukushima Daiichi NPS
	Shinji Kinjo	Director for the Response to the Incident at TEPCO's Fukushima Daiichi NPS (Attended by the 1st meeting)
	Toshihiro Imai	Director for the Response to the Incident at TEPCO's Fukushima Daiichi NPS (Attended from the 2nd meeting)
	Tsutomu Baba	Senior Officer for Technical Research (in charge of storage facilities and transport), Deputy Director-General for Divisions of Regulation (in charge of nuclear fuel cycle and radioactive waste)

(19) The Technical Information Committee

The Technical Information Committee held 5 meetings in FY 2015 under the leadership of Commissioner Fuketa to collect and evaluate the information on nuclear safety. The collected information is incorporated into the regulations at appropriate times.

Table55 Members of Technical Information Committee

NRA	Toyoshi Fuketa	Commissioner of the Nuclear Regulation Authority (Attended from the 15th meeting)
Secretariat of the NRA	Masaya Yasui	Director-General for Regulatory Standard and Research (Attended from the 16th meeting)
	Michio Sakurada	Director, Nuclear Regulation Department
	Tetsuo Ohmura	Director General for Emergency Response (Attended as “Director-General” until the 14th meeting, Attended from the 16th meeting)
	Tomoho Yamada	Director-General (Attended the 14th, 15th ,17th and 18th meeting)
	Masahiro Aoki	Director-General (Attended by the 15th meeting as Director, Regulatory Standard and Research Division)
	Takaaki Kurasaki	Director, Regulatory Standard and Research Division (Attended from the 16th meeting)
	Kunio Onisawa	Director, Divisions of Research(in charge of System Safety)
	Mitsuhiro Kajimoto	Director, Division of Regulation for Research Reactors, Nuclear Fuel (in charge of severe accident)
	Masahiro Uchida	Director, Division of Regulation for Research Reactors, Nuclear Fuel (in charge of nuclear fuel waste)
	Naotaka Takamatsu	Director, Divisions of Research(in charge of Earthquake and Tsunami)
	Gyo Sato	Director, Nuclear Regulation Policy Planning Division
	Kazuya Aoki	Director, Division of Regulation for BWR
	Hiroshi Yamagata	Director for Nuclear Regulation（in charge of PWR） (Attended from the 15th meeting)
	Atsuo Sawada	Director for Nuclear Regulation（in charge of Inspections of Nuclear Reactor Facilities）
	Shinzo Kuromura	Director, Division of Regulation for (in charge of new reactor, test research reactor, decommissioning) (Attended from the 15th meeting)
	Hiroshi Kataoka	Director, Division of Regulation for Nuclear Fuel (Fabrication and Reprocessing) Facilities and Use of Nuclear Material (Attended from the 15th meeting)
	Yukinori Maekawa	Director for Nuclear Regulation（in charge of radioactive waste, storage, and transport）(Attended the 14th, 16th through 18th meeting)
	Shin Morita	Director, Division of Regulation against Earthquake and (Attended 15th through 17th meeting)
	Youichi Ishii	Director for Policy Planning
	Yuji Ono	Nuclear Regulation Liaison Officer (Attended only the 14th meeting)
	Kiyomitu Hasegawa	Nuclear Regulation Liaison Officer (Attended only the 16th meeting)
	Koji Ninimiya	Senior Specialist for Quality Control (Attended the 14th, 16th through 18th meeting)
Japan Atomic Energy Agency	Norio Watanabe	Head of Office for Analysis of Event and Regulatory Information, Nuclear Safety Research Center (Attended by the 14th meeting)

(20) The Meeting on Evaluating the Habitability of a Nuclear Power Plant Control Room During a Postulated Hazardous Chemical Release

The meeting consisting of external experts, etc. was organized to conduct the effect evaluation of toxic gas generated by causes other than fire as to the habitability of reactor-control rooms, and in FY 2015, the meeting was held for a total of 2 times.

Table56 Members of the Meeting on Evaluating the Habitability of a Nuclear Power Plant Control Room During a Postulated Hazardous Chemical Release

External experts	Kiyotaka Tsunemi	Leader of Emission and Exposure Analysis Group, Research Institute of Science and Sustainability, National Institute of Advanced Industrial Science and Technology
	Atsumi Miyake	Professor, Graduate School of Environment and Information Sciences, Yokohama National University
	Yoshihiro Yamaguchi	Professor, Trauma and Critical Care Center, Faculty of Medicine, Kyorin University
Secretariat of the NRA	Masahiro Aoki	Director-General
	Takaaki Kurasaki	Director, Regulatory Standard and Research Division
	Mitsuhiro Kajimoto	Director, Division of Regulation for Research Reactors, Nuclear Fuel (in charge of severe accident)
	Kazuyuki Sugiyama	Director for Policy Planning and Coordination, Regulatory Standard and Research Division
	Kyoko Funayama	Chief Officer for Technical Research and Investigation, Deputy-Director for Nuclear Safety Technology (in charge of severe accident)

(21) The Technical Evaluation Committee on Safety Research

The Technical Evaluation Committee on Safety Research held 10 meetings in FY 2015 to examine interim and post-assessment research by external experts on safety research in the NRA.

Table57 Members of the Technical Committee on Plant Safety

External experts	Tadaaki Kunugi	Professor, Graduate School, Kyoto University
	Nobuatsu Tanaka	Professor, Ibaragi University
	Takashi Tsuruda	Professor, Akita Prefectural University

Table58 Members of the Technical Committee on Nuclear Fuel and Material

External experts	Tatsumi Arima	Associate Professor, Graduate School of Kyushu University
	Manabu Kanematsu	Associate Professor, Tokyo University of Science
	Ken Kurosaki	Associate Professor, Graduate School of Osaka University
	Masato Mochizuki	Professor, Graduate School of Osaka University
	Hideo Watanabe	Associate Professor, Graduate School of Kyushu University

Table59 Members of the Technical Committee on Severe Accident

External experts	Takeshi Iimoto	Associate Professor, the University of Tokyo
	Naoto Kasahara	Professor, Graduate School of the University of Tokyo
	Ken Muramatsu	Affiliate Professor, Tokyo City University
	Koji Morita	Professor, Graduate School of Kyushu University

Table60 Members of the Technical Committee on Nuclear Fuel Cycle and Radioactive Waste

External experts	Noriko Asanuma	Associate Professor, Tokai University
	Youichi Enokida	Professor, Graduate School of Nagoya University
	Hiroshige Kikura	Associate Professor, Tokyo Institute of Technology
	Ikuji Takagi	Professor, Graduate School, Kyoto University
	Shunji Honma	Associate Professor, Graduate School of Saitama University
	Ken Muramatsu	Affiliate Professor, Tokyo City University
	Masato Mochizuki	Professor, Graduate School of Osaka University

Table61 Members of the Technical Committee on Earthquake and Tsunami

External experts	Tomotaka Iwata	Professor, Kyoto University
	Naoki Sakai	Chief Researcher, National Research Institute for Earth Science and Disaster Prevention
	Manabu Shoji	Associate Professor, Graduate School of Tsukuba University
	Osamu Furuya	Associate Professor, Tokyo City University
	Hiroaki Yamanaka	Professor, Graduate School of Tokyo Institute of Technology

(22) Debriefing Session of Emergency Drills by Nuclear Operators

As to the emergency drills conducted at their respective sites, the Debriefing Session was held once in FY 2015 under the leadership of Commissioner Fuketa to provide nuclear licensees with opportunities to promote information sharing with the Secretariat of the NRA and improve emergency response ability.

Table 62 Members of the Emergency-Drill Debriefing Session for Nuclear Operators

NRA	Toyoshi Fuketa	Commissioner of the Nuclear Regulation Authority
Secretariat of the NRA	Masaya Yasui	Director General for Emergency Response
	Michio Sakurada	Director, Nuclear Regulation Department
	Tetsuo Ohmura	Director-General
	Hiromu Katayama	General-Director for Radiation Protection Strategy and Security
	Tomoho Yamada	Director-General
	Yuya Okuyama	Director for Public Affairs, Policy Planning and Coordination Division, Director-General's Secretariat
	Mitsuhiro Kajimoto	Director for Divisions of Research (in charge of severe accident), Regulatory Standard and Research Department, Director-General's Secretariat
	Shinichi Araki	Unit Manager for Emergency Preparedness/Response and Nuclear Security Division, Radiation Protection Department, Director-General's Secretariat
	Toshihiro Imai	Promotion Team Leader of License Holders' Disaster Preparedness and Disaster Prevention Drill, Radiation Protection Department, Director-General's Secretariat
	Hiromitsu Yoneyama	Head of Accident Response Office, Emergency Preparedness/ Response and Nuclear Security Division, Radiation Protection Department, Director-General's Secretariat
	Kazuya Aoki	Director for Nuclear Regulation (in charge of BWR), Nuclear Regulation Department
	Hiroshi Yamagata	Director for Nuclear Regulation (in charge of PWR), Nuclear Regulation Department
Cabinet Office	Tetsuya Yamamoto	Deputy Director-General, Nuclear Emergency Preparedness Division
Japan Atomic Energy Agency	Norio Watanabe	Head of Office for Analysis of Event and Regulatory Information, Nuclear Safety Research Center

(23) NRA Policy Review Meeting

The NRA Policy Review Meeting for learning the opinions of external experts was held once in FY 2015 as part of the policy assessment (ex post facto assessment) conducted by the NRA, wherein the opinions on the policy assessment were expressed.

Table63 Members of the NRA Policy Review Meeting

External experts	Yoshinori Iizuka	Senior Researcher, School of Engineering, the University of Tokyo
	Hideaki Shiroyama	Director, Policy Alternatives Research Institute, the University of Tokyo; Professor, Graduate Schools for Law and Politics, the University of Tokyo
	Motoyuki Suzuki	Professor Emeritus, the University of Tokyo; Auditor, Tokyo Institute of Technology
	Kenjiro Tao	Previous Member of National Public Safety Commission; Former President of Hiroshima Supreme Court
	Asei Machi	Freelance journalist

(24) Expert Meeting on the NRA's Administrative Review – FY 2015-

In the administrative project review, all offices and ministries are required to clarify the status of the implementation of all their projects, and review by utilizing the external opinion. Furthermore, as part of the review, the expert meeting shall be held for some of the projects with external experts for hearing the opinions of problems and improvement. The expert meeting was held three times in FY 2015.

Table64 Members of the Meeting on the NRA's Administrative Review of FY 2015

External experts	Takashi Asaba	Professor, Faculty of Law, Hakuoh University
	Naoshi Ogasawara	President, Avantia GP
	Yukiko Tabuchi	Administration and Management Consultant

Section 3 Status of Inspection in Major Nuclear Power Facilities

The status of inspection of major nuclear facilities from April 1, 2015 to March 31, 2016 is shown in table 65.

Table 65 Status of Inspections of Major Nuclear Facilities

(April 1, 2015 - March 31, 2016)

Tomari NPS, Hokkaido Electric Power

All reactor operations were shut down during the following periods.

		Implementation period	Result / Remarks
Periodic facility inspection	Unit 1	From April 22 , 2011 (under implementation)	
	Unit 2	From August 26, 2011 (under implementation)	
	Unit 3	From May 5, 2012 (under implementation)	
Operational safety inspection	1st time	May 25 – June 5, 2015	No particular safety concerns.
	2nd time	August 31 - September 11, 2015	No particular safety concerns.
	3rd time	November 24 - December 4, 2015	No particular safety concerns.
	4th time	February 22 - March 4, 2016	Inspection results being summarized.

Higashidori NPS, Tohoku-Electric Power Co. , Inc.

All reactor operations were shut down during the following periods.

		Implementation period	Result / Remarks
Periodic facility inspection	Unit 1	From February 6, 2011 (under implementation)	
Operational safety inspection	1st time	June 8 - June 19, 2015	No particular safety concerns.
	2nd time	August 31 - September 11, 2015	No particular safety concerns.
	3rd time	November 30 - December 11, 2015	No particular safety concerns.
	4th time	February 22 - March 4, 2016	Inspection results being summarized.

Onagawa NPS, Tohoku-Electric Power Co. , Inc.

All reactor operations were shut down during the following periods.

		Implementation period	Result / Remarks
Periodic facility inspection	Unit 1	From September 10, 2011 (under implementation)	
	Unit 2	From November 6, 2010 (under implementation)	
	Unit 3	From September 10, 2011 (under implementation)	
Operational safety inspection	1st time	June 1 - June 12, 2015	No particular safety concerns.
	2nd time	August 31 - September 11, 2015	No particular safety concerns.
	3rd time	November 30 - December 11, 2015	No particular safety concerns.

	4th time	February 29 - March 11, 2016	Inspection results being summarized.

Fukushima Daiichi NPS, Tokyo Electric Power Company

All reactor operations were shut down during the following periods. Based on the Electricity Business Act, Units 1 through 4 and Units 5 and 6 were decommissioned on April 19, 2012 and January 31, 2014, respectively. On November 7, 2012, they were designated as “Specified Nuclear Facilities.” On December 7 of the same year, they received “Implementation Plan.” On August 14, 2013, “Implementation Plan with Regards to Fukushima Daiichi NPS’s Specified Nuclear Facilities” was approved.

		Implementation period	Result / Remarks
Periodic facility inspection	Unit 5	From January 3, 2011 (under implementation)	
	Unit 6	From August 14, 2010 (under implementation)	

		Implementation period	Result / Remarks
Inspection that is conducted once within one year after starting use of nuclear power reactor facility defined by implementation plan and periodically conducted to investigate capabilities of the nuclear power reactor facility concerned	Facility periodic inspection		
		August 10 - November 27, 2015	Inspection result: Good
Inspection of the status of implementation of actions for safety defined by implementation plan	Operational safety inspection for important actions for safety (Unit 4)		
		April 16 - June 8, 2015	No particular safety concerns.
	1st time	June 3 - June 16, 2015	Breach of implementation plan (monitoring) is confirmed.
	2nd time	August 27 - September 16, 2015	Breach of implementation plan (monitoring) is confirmed.
	3rd time	November 26 - December 9, 2015	No particular safety concerns.
	4th time	March 2 - March 17, 2016	Inspection results being summarized.

Accident and malfunction	− Details are described at Chapter 4 Section 1 “Monitoring of Efforts to Decommission Reactors of TEPCO’s Fukushima Daiichi NPS” − Breach of implementation plan (monitoring) was confirmed also outside the period of operational safety inspection.

Fukushima Daini NPS, Tokyo Electric Power Company

All reactor operations were shut down during the following periods.

		Implementation period	Result / Remarks
Periodic facility inspection	Unit 1	(Shut-down)	Inspection start schedule of Units 1 through 4 is not yet determined because implementation of inspection is difficult due to impact of Great East Japan Earthquake. (Implementation schedule change of periodic inspection based on the act was approved.)
	Unit 2	(Shut-down)	
	Unit 3	(Shut-down)	
	Unit 4	(Shut-down)	
Operational safety inspection	1st time	June 8 - June 26, 2015	Violation of operational safety program (monitoring) is confirmed.
	2nd time	September 7 - September 18, 2015	Violation of operational safety program (monitoring) is confirmed.
	3rd time	November 30 - December 11, 2015	Violation of operational safety program (monitoring) is confirmed.
	4th time	February 29 - March 16, 2016	Inspection results being summarized.

Kashiwazaki Kariwa NPS, Tokyo Electric Power Company

All reactor operations were shut down during the following periods.

		Implementation period	Result / Remarks
Periodic facility inspection	Unit 1	From August 6, 2011 (under implementation)	
	Unit 2	From February 19, 2007 (under implementation)	Evaluation of integrity of Units 2 through 4 against impact of the Niigataken Chuetsu-oki Earthquake in 2007 is under implementation.
	Unit 3	From September 19, 2007 (under implementation)	
	Unit 4	From February 11, 2008 (under implementation)	
	Unit 5	From January 25, 2012 (under implementation)	
	Unit 6	From March 26, 2012 (under implementation)	
	Unit 7	From August 23, 2011 (under implementation)	
Operational safety inspection	1st time	June 1 - June 12, 2015	No particular safety concerns.
	2nd time	August 31 - September 11, 2015	Violation of operational safety program (monitoring) is confirmed.
	3rd time	November 24 - December 7, 2015	No particular safety concerns.
	4th time	February 22 - March 11, 2016	Inspection results being summarized.

Others	・On September 28 that is outside the period of operational safety inspection, many cables laid down in a state where design requirements were not satisfied were found in the central control room of Units 6 and the soundness of safety function was not secured, and as a result, this case was judged to be violation of operational safety program (violation 2).

Tokai Power Station, The Japan Atomic Power Company

Under decommissioning procedures (Areas other than the Reactor Area under removal procedure)

		Implementation period	Result / Remarks
Operational safety inspection	1st time	May 11 - May 15, 2015	No particular safety concerns.
	2nd time	August 3 - August 7, 2015	No particular safety concerns.
	3rd time	November 9 - November 13, 2015	No particular safety concerns.
	4th time	February 1 - February 5, 2016	Inspection results being summarized.

Tokai Daini Power Station, The Japan Atomic Power Company

All reactor operations were shut down during the following periods.

		Implementation period	Result / Remarks
Periodic facility inspection		From May 21, 2011 (under implementation)	
Operational safety inspection	1st time	June 1 - June 12, 2015	No particular safety concerns.
	2nd time	August 31 - September 11, 2015	No particular safety concerns.
	3rd time	November 30 - December 11, 2015	No particular safety concerns.
	4th time	February 22 - March 4, 2016	Inspection results being summarized.

Hamaoka NPS, Chubu Electric Power Co. , Inc.

Units 1 and 2 are under decommissioning procedures (during the period of demolition work of facilities around nuclear reactor area). Units 3 through 5 are shut down during the period covered.

(Units 1 and 2 (under decommissioning procedures))

		Implementation period	Result / Remarks
Operational safety inspection	1st time	August 26 - September 11, 2015	No particular safety concerns.
	2nd time	February 22 - March 9, 2016	Inspection results being summarized.

(Units 3 through 5)

		Implementation period	Result / Remarks
Periodic facility inspection	Unit 3	From November 29, 2010 (under implementation)	
	Unit 4	From January 25, 2012 (under implementation)	
	Unit 5	From March 22, 2012 (under implementation)	
Operational safety inspection	1st time	June 10 – June 26, 2015	No particular safety concerns.
	2nd time	August 26 - September 11, 2015	No particular safety concerns.
	3rd time	November 24 - December 10, 2015	No particular safety concerns.
	4th time	February 22 - March 9, 2016	Inspection results being summarized.

Others	On June 17, 2015, at Units 4, deviancy from operational restriction occurred and restituted on the same day (It was confirmed in the first safety inspection)

Shika NPS, Hokuriku Electric Power Company

All reactor operations were shut down during the following periods.

		Implementation period	Result / Remarks
Periodic facility inspection	Unit 1	From October 8, 2011 (under implementation)	
	Unit 2	From March 11, 2011 (under implementation)	
Operational safety inspection	1st time	June 1 - June 12, 2015	No particular safety concerns.
	2nd time	August 31 - September 11, 2015	No particular safety concerns.
	3rd time	November 30 - December 11, 2015	No particular safety concerns.
	4th time	February 29 - March 11, 2016	Inspection results being summarized.
Others			

Tsuruga Power Station, The Japan Atomic Power Company

All reactor operations were shut down during the following periods.

		Implementation period	Result / Remarks
Periodic facility inspection	Unit 1	From January 26, 2011 (under implementation)	
	Unit 2	From August 29, 2011 (under implementation)	
Operational safety inspection	1st time	June 1 - June 12, 2015	No particular safety concerns.
	2nd time	August 31 - September 11, 2015	No particular safety concerns.
	3rd time	November 30 - December 11, 2015	No particular safety concerns.
	4th time	February 29 - March 11, 2016	Inspection results being summarized.

Mihama Power Station, Kansai Electric Power Co. Inc.

All reactor operations were shut down during the following periods.

		Implementation period	Result / Remarks
Periodic facility inspection	Unit 1	From November 24, 2010 (under implementation)	
	Unit 2	From December 18, 2011 (under implementation)	
	Unit 3	From May 14, 2011 (under implementation)	
Operational safety inspection	1st time	June 1 - June 12, 2015	No particular safety concerns.
	2nd time	August 31 - September 11, 2015	No particular safety concerns.
	3rd time	November 30 - December 11, 2015	Violation of operational safety program (monitoring) is confirmed.
	4th time	February 29 - March 16, 2016	Inspection results being summarized.

Ohi Power Station, Kansai Electric Power Co. Inc.

All reactor operations were shut down during the following periods.

		Implementation period	Result / Remarks
Periodic facility inspection	Unit 1	From December 10, 2010 (under implementation)	
	Unit 2	From December 16, 2011 (under implementation)	
	Unit 3	From September 2, 2013 (under implementation)	
	Unit 4	September 15, 2013 (under implementation)	
Operational safety inspection	1st time	June 1 - June 12, 2015	No particular safety concerns.
	2nd time	August 31 - September 11, 2015	No particular safety concerns.
	3rd time	November 30 - December 11, 2015	Violation of operational safety program (monitoring) is confirmed.
	4th time	February 29 - March 11, 2016	Inspection results being summarized.

Takahama Power Station, Kansai Electric Power Co. Inc.

For Units 3, nuclear reactor was started up on January 29, 2016 and has been shut down since March 10, 2016.

For Units 4, nuclear reactor was started up on February 26, 2016 and has been shut down since February 29, 2016.

		Implementation period	Result / Remarks
Periodic facility inspection	Unit 1	From January 10, 2011 (under implementation)	
	Unit 2	From November 25, 2011 (under implementation)	
	Unit 3	February 20, 2012 - February 26, 2016	Inspection result: Good
	Unit 4	From July 21, 2011 (under implementation)	
Pre-service inspection	Unit 3	August 17, 2015 - February 26, 2016	Inspection result: Pass
	Unit 4	From October 21, 2015 (under implementation)	
Operational safety inspection	1st time	June 1 - June 12, 2015	No particular safety concerns.
	2nd time	August 31 - September 11, 2015	No particular safety concerns.
	3rd time	October 26 - November 13, 2015	4 cases of violation of operational safety program (monitoring) are confirmed.
	Safety inspection of important actions for security (Units 3)		
		December 24 - December 30, 2015	No particular safety concerns.
		December 30 - January 5, 2015	No particular safety concerns.
	4th time	February 29 - March 11, 2016	Inspection results being summarized.
	Safety inspection of important actions for security (Units 3)		
		January 7 - January 21, 2016	Inspection results being summarized.
		January 22 - February 5, 2016	Inspection results being summarized.
		February 24 - March 24, 2016	Inspection results being summarized.
	Safety inspection of important actions for security (Units 4)		
		January 7 - January 21, 2016	Inspection results being summarized.

		January 29 - February 5, 2016	Inspection results being summarized.
		February 4 - February 15, 2016	Inspection results being summarized.
		February 24 - March 24, 2016	Inspection results being summarized.
		From February 19, 2016 (under implementation)	

Shimane NPS, The Chugoku Electric Power Co. Inc.

All reactor operations were shut down during the following periods.

		Implementation period	Result / Remarks
Periodic facility inspection	Unit 1	From November 8, 2010 (under implementation)	
	Unit 2	From January 27, 2012 (under implementation)	
Pre-service inspection	Unit 3	Pre-service inspection in the construction stage under implementation.	Construction processes up to 3 in the table of Article 17 of the Ordinance on Safety of Nuclear Power Workpieces have already been implemented.
Operational safety inspection	1st time	May 25 - June 5, 2015	No particular safety concerns.
	2nd time	August 31 - September 11, 2015	No particular safety concerns.
	3rd time	November 30 - December 11, 2015	No particular safety concerns.
	4th time	February 22 - March 4, 2016	Inspection results being summarized.
Others	On June 26 that is outside the period of operational safety inspection, it was found that inspection of mortar additive water electromagnetic flow meter installed in the mortar solidification equipment that generates low-level radioactive waste was not conducted, and as a result, this case was judged to be violation of safety regulations (monitoring).		

Ikata Power Station, Shikoku Electric Power Co. Inc.

All reactor operations were shut down during the following periods.

		Implementation period	Result / Remarks
Periodic facility inspection	Unit 1	From September 4, 2011 (under implementation)	
	Unit 2	From January 13, 2012 (under implementation)	
	Unit 3	From April 29, 2011 (under implementation)	
Operational safety inspection	1st time	May 25 - June 5, 2015	No particular safety concerns.
	2nd time	August 31 - September 11, 2015	No particular safety concerns.
	3rd time	November 30 - December 11, 2015	No particular safety concerns.
	4th time	February 22 - March 4, 2016	Inspection results being summarized.

Genkai NPS, Kyushu Electric Power Co. Inc.

All reactor operations were shut down during the following periods.

		Implementation period	Result / Remarks
Periodic facility inspection	Unit 1	From December 1, 2011 (under implementation)	
	Unit 2	From January 29, 2011 (under implementation)	
	Unit 3	From December 11, 2010 (under implementation)	

Operational safety inspection	Unit 4	From December 25, 2011 (under implementation)	
	1st time	June 1 - June 12, 2015	No particular safety concerns.
	2nd time	August 24 - September 4, 2015	No particular safety concerns.
	3rd time	November 30 - December 11, 2015	No particular safety concerns.
	4th time	February 29 - March 11, 2016	Inspection results being summarized.

Sendai NPS, Kyushu Electric Power Co. Inc.

Units 1 and 2 were started up on August 11, 2015 and October 15, 2015, respectively.

		Implementation period	Result / Remarks
Periodic facility inspection	Unit 1	May 10, 2011 - September 10, 2015	Inspection result: Good
	Unit 2	September 1, 2011 - November 17, 2015	Inspection result: Good
Pre-service inspection	Unit 1	March 30 - September 10, 2015	Inspection result: Pass
	Unit 2	June 10 - November 17, 2015	Inspection result: Pass
Operational safety inspection	1st time	June 8 - June 26, 2015	2 cases of violation of operational safety program (monitoring) are confirmed.
	Safety inspection of important actions for security (Units 1)		
		July 6 - July 14, 2015	No particular safety concerns.
		July 12 - July 22, 2015	No particular safety concerns.
		July 23 - August 3, 2015	No particular safety concerns.
		July 31 - September 28, 2015	No particular safety concerns.
		August 3 - September 1, 2015	No particular safety concerns.
	Safety inspection of important actions for security (Units 2)		
			No particular safety concerns.
	2nd time	2nd time	No particular safety concerns.
	Safety inspection of important actions for security (Units 1)		
			No particular safety concerns.
	Safety inspection of important actions for security (Units 2)		
		September 10 - September 16, 2015	No particular safety concerns.
		September 16 - September 28, 2015	No particular safety concerns.
		September 29 - October 8, 2015	No particular safety concerns.
		October 8 - November 2, 2015	No particular safety concerns.
		October 30 - December 28, 2015	No particular safety concerns.
	3rd time	November 30 - December 11, 2015	Violation of operational safety program (monitoring) is confirmed.
	4th time	February 22 - March 4, 2016	Inspection results being summarized.
	Safety inspection of important actions for security (Units 1)		
		March 16 - March 23, 2016	Inspection results being summarized.
		January 28 - March 30, 2016	Inspection results being summarized.
	Safety inspection of important actions for security (Units 2)		
		March 16 - March 23, 2016	Inspection results being

			summarized.
		January 28 - March 30, 2016	Inspection results being summarized.

Prototype Fast Breeder Reactor Monju, Japan Atomic Energy Agency

Nuclear reactor is being shut down during the period covered (under construction)

		Implementation period	Result / Remarks
Pre-service inspection		・Pre-service inspection (performance inspection) at the stage of construction is being suspended ・Pre-service inspection concerning emergency diesel generator (B) (repair due to falling of cylinder head) and measuring device (replacement aimed at maintenance of function of equipment) were conducted.	
Operational safety inspection	1st time	June 4 - June 24, 2015	Violation of operational safety program (violation case is 1, monitoring case is 1) is confirmed.
	2nd time	September 3 - September 16, 2015	Fact situation was not determined and results of operational safety inspection could not be judged during the period of safety inspection.
	3rd time	December 3 - December 16, 2015	Violation of operational safety program (monitoring) is confirmed.
	4th time	March 3 - March 24, 2016	Inspection results being summarized.

Others

- On July 17, 2015, a deformation of the cylinder head (No.7) indicator cock of the diesel generator (B) was observed because the cylinder head, lifted during overhaul, was dropped. The NRA received a report on the cause of and countermeasures against the event from the licensee on August 28, 2015 (revised on September 29, 2015), and evaluated that preventive measures and horizontal development were basically reasonable on November 25, 2015.
- The NRA conducted collection of reports based on the Reactor Regulation Act in order to determine a fact situation of the case where important classifications were not properly set after the second operational safety inspection, and received a report from the Japan Atomic Energy Agency on October 21, 2015.
- On November 4, 2015, as to these 2 events (deformation of the cylinder head and inappropriate classification), the NRA judged them as violation of operational safety program (2 cases of violation) in terms of quality assurance.
- On November 13, 2015, the NRA determined that the Japan Atomic Energy Agency was not qualified to be the licensee to manage output operation of the Monju safely, based on the series of events and problem which had occurred in the past. The NRA recommended the Minister of Education, Culture, Sports, Science and Technology to identify the organization who has an ability to perform output operation of the Monju instead of JAEA, under Paragraph 2, Article 4 of the Act for Establishment of the NRA (Act No.47 of 2012).

Reactor Decommissioning R&D Center Fugen, Japan Atomic Energy Agency

Under decommissioning procedures (during the period of spent fuel removal)

		Implementation period	Result / Remarks
Periodic facility inspection		November 25 - December 25, 2015	Inspection result: Good
Operational safety inspection	1st time	May 25 – 29, 2015	No particular safety concerns.
	2nd time	August 24- 28, 2015	No particular safety concerns.
	3rd time	November 24 - 27, 2015	No particular safety concerns.
	4th time	February 15 - 19, 2016	Inspection results being summarized.

* The Reactor Regulation Act stipulates to conduct the operational safety inspection four times per year. However, for the nuclear power reactor facilities that get the authorization of decommissioning plan, the operational safety inspection shall be conducted 4 times or less per year.
For example, “3rd time” in the table means the third operational safety inspection in FY 2015.
* Information as of March 10, 2016 is described.