NRA presentation

NRA's updates from the Mission in October 2023

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Contents

1. Optimization of the protection

Technical topics under Regulatory control and authorization:

- NRA's approach to encourage optimization of protection and safety during future reviews of the authorization.
- NRA's approach to reviewing and potentially revising discharge limits in response to TEPCO's ongoing optimisation of protection and safety.

- Periodic review of the authorization of discharge is conducted in the process of revising the document *"Measures for Mid-term Risk Reduction for decommissioning TEPCO's Fukushima Daiichi NPS"*, typically once a year. This document is decided by the NRA after discussion with TEPCO and the other stakeholders at *the Oversight and Review Meeting for Fukushima Daiichi*.
- The NRA's perspectives of the review of the authorization are:
  - Whether ALPS treated water discharge in the approved way and amount continues to contribute to the progress of decommissioning
  - Whether there are any substantial changes in the assumptions or conditions made in the reviewed REIA
  - Whether there are any indications in source or environmental monitoring that might affect the reviewed REIA

1. Optimization of the protection

- After the start of discharge in August 2023, the progress of the discharge, including the results of source and environmental monitoring, were reported and discussed at each Oversight and Review Meeting for Fukushima Daiichi, i.e., the meeting on 5 October 2023, 18 December 2023, and 19 February 2024.

- Especially at the meeting on 19 February, TEPCO explained the ***2024 annual plan for discharge*** which was established in consideration of the anticipated amount of the contaminated water to be generated per day as well as the ALPS treated water tank removal plan to allocate land to the new facilities, such as for debris removal, in order to bring decommissioning forward.

  ***2024 annual plan for discharge*:** Tritium about 14 TBq, about 54,600m^3, 7 times

- In the course of those discussions, the NRA confirmed the following for each perspective:
  - Whether ALPS treated water discharge in the approved way and amount continues to contribute to the progress of decommissioning > ***tank removal planned, confirmed***
  - Whether there are any substantial changes in the assumptions or conditions made in the reviewed REIA > ***substantial changes not reported by TEPCO nor recognized by the NRA***
  - Whether there are any indications in source or environmental monitoring that might affect the reviewed REIA > ***indications not reported by TEPCO nor recognized by the NRA***

1. Optimization of the protection

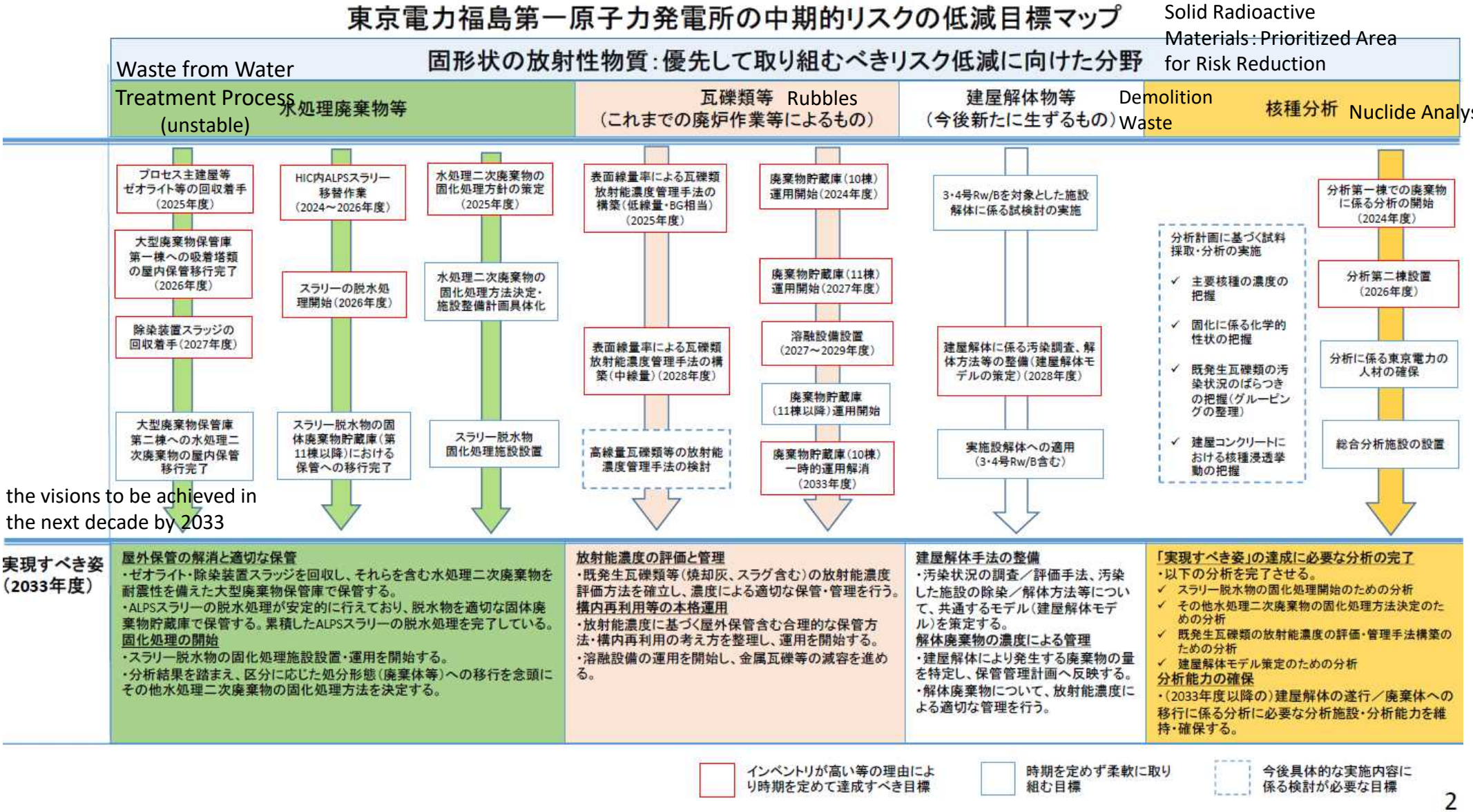
- At the meeting on 19 February, the revision of the document *"Measures for Mid-term Risk Reduction for decommissioning TEPCO's Fukushima Daiichi NPS*" was proposed by the NRA and discussed with TEPCO and the other stakeholders.

- This time, considering the current situation where urgent risks have been reduced during the first decade after the accident and the risks currently recognized are to be tackled rather in the mid to long-term, the NRA decided to show ***the visions to be achieved in the next decade by 2033*** for each category, such as solid waste treatment and stable storage, nuclide analysis for solid waste, prevention of contaminated water generation, optimal management of reactor core (cooling and air), and then set specific targets toward the visions.

- The revised document (2024 March version) was approved by the NRA Committee on 28 February. The NRA will continuously oversee the TEPCO's decommissioning activities and progress in light of this document.

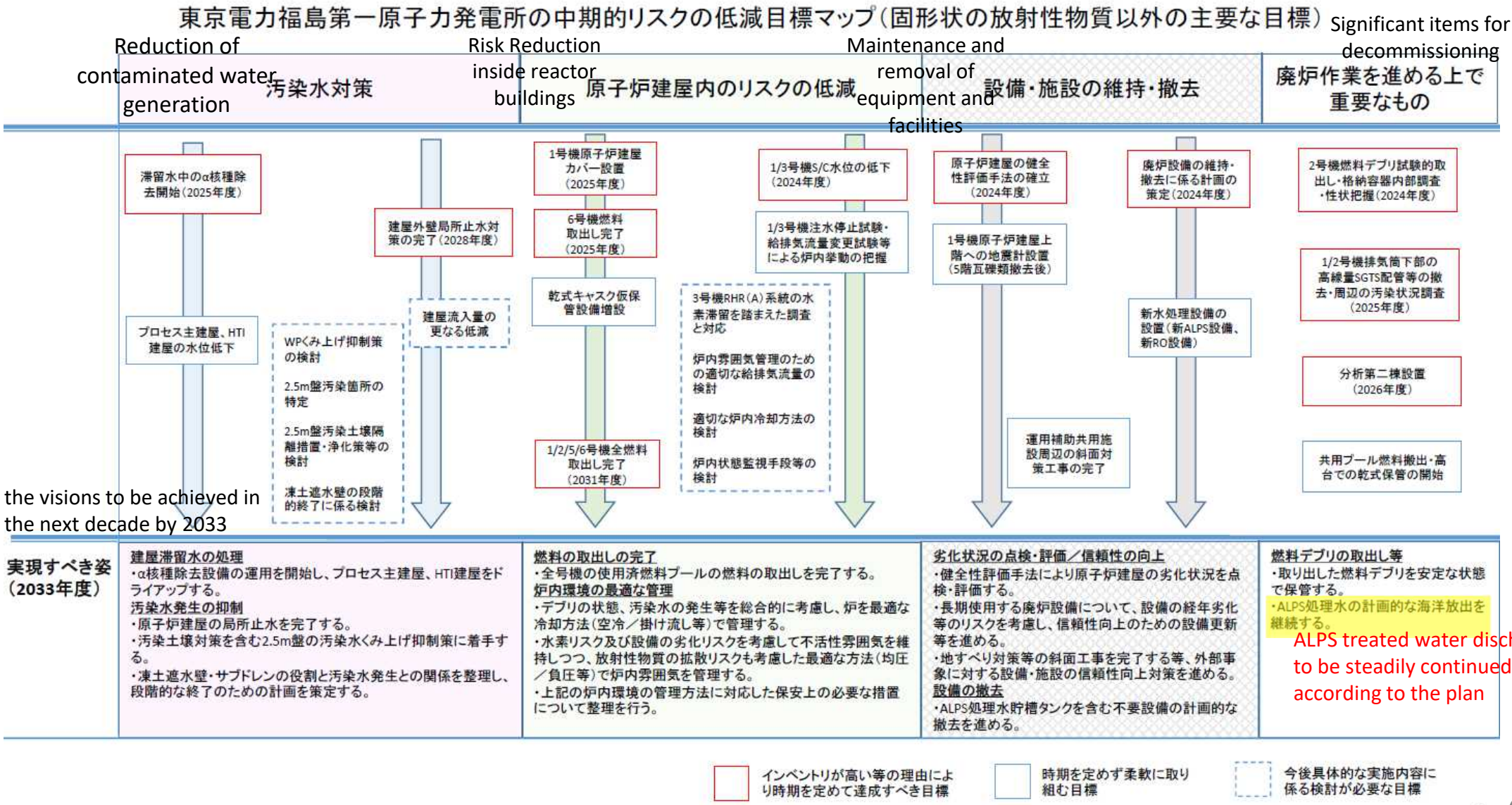
1. Optimization of the protection

"Measures for Mid-term Risk Reduction for decommissioning TEPCO's Fukushima Daiichi NPS" (2024 March version)



1. Optimization of the protection

"Measures for Mid-term Risk Reduction for decommissioning TEPCO's Fukushima Daiichi NPS" (2024 March version)



1. Optimization of the protection

Some of the examples of the discussions at the Oversight and Review Meeting, which involves external experts and local stakeholders in addition to NRA Commissioners, NRA staff and TEPCO

At the meeting on 5 October,

- One representative of the local community (provisional translation)
  - *The period of the ALPS treated water discharge indirectly has influence on the feeling of the local people whether they want to come back and live in Futaba town. After a long time and difficulties, the ALPS treated water discharge was started in August. We have a slight hope that discharge could be completed not in 30 years but in 15 years, and then the land could be cleared up with the tanks being removed. ・・・・Doesn't TEPCO have a plan to speed up the activities related to the discharge?*
- Another representative of the local community
  - *For a while at the beginning, I hope the discharge is implemented slowly confirming safety and reducing everyone's worry and anxiety. After for example 5 years, if there have been no negative influence and more could be discharged, I think the discharge could be speeded up.*

第109回特定原子力施設監視・評価検討会(2023年10月05日)

第109回特定原子力施設監視・評価検討会(2023年10月05日)

Status of Operational Safety Inspection and Periodic Safety Inspection

Operational Safety Inspection (continued during operation)

- ✓ Resident inspectors verify, as necessary, whether the operation is adequately conducted according to the approved IP, including the check points below.
- ✓ So far, no safety issue has been confirmed through operational safety inspection.

1. ***Operation management (approx. once/week)***
   - ✓ Operation status at each step (1. receiving, 2. measurement/confirmation, 3. discharge), decisions made by a responsible person at the holding points
   - ✓ Maintenance status based on the plan
   - ✓ Status of education and training
2. ***Quality assurance (approx. once/month)***
   - ✓ Quality assurance activities on analysis of ALPS treated water, tritium analysis during discharging operation
3. ***Project management (approx. twice/week)***
   - ✓ Hearing of the status of project management
   - ✓ Observing the operator's relevant meetings (e.g., safety risk management meeting, ALPS treated water program team meeting)
   - ✓ Status of establishing the annual discharge plan
4. ***Trouble management (each time)***
   - ✓ Status of discharge suspension by usual or emergency process in response to unusual events
   - ✓ Status of countermeasures and corrective actions to troubles such as equipment failure or leakage

2. Inspection

In the case of the incident on 24 April, interruption of power supply, the resident inspectors confirmed:

- *Discharge was immediately shut down by the emergency isolation valves as designed.*
- *After operator's check on the status of the facility, discharge was restarted according to the operator's manual established in advance.*

Periodic Safety Inspection (19 Dec 2023, 28 Feb 2023)

✓ Periodic safety inspection was conducted on measurement/confirmation facility:

- Circulation performance
- Agitation performance
- Operation Status

3. Independent monitoring

✓ NRA's independent source monitoring to complement operational safety inspection on TEPCO's organizational framework for analyzing "nuclides to be measured and evaluated" and their quality assurance activities

Before the start of discharge

Analytical Institute: JAEA Nuclear Safety Research Center/ TSO of the NRA

Radionuclides measured:

Major 7 nuclides (Co-60, Sr-90, Ru-106, Sb-125, I-129, Cs-134, Cs-137),
H-3, C-14, Tc-99,
Cl-36, Fe-55, Se-79

Results *TEPCO's analysis for the first batch was valid.*

After the start of discharge

Analytical Institute: JAEA Nuclear Safety Research Center / TSO of the NRA

Radionuclides to be measured:

C-14 and I-129 (the main contributors in REIA), Major γ-emitter nuclides (Co-60, Ru-106, Sb-125, Cs-134, Cs-137)

Frequency of analysis: Once a year (for the first year, the second batch of discharge)

Result *TEPCO's analysis for the second batch was valid*

The next analysis in the same manner as the second analysis is being planned for 2024.

Thank you for your attention.