FY 2018

Annual Report

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 Activities in Fiscal Year 2018

(1) Rigorous and Proper Implementation of Regulations on Nuclear Facilities

With regard to the review of conformity to the new regulatory requirements established based on the lessons learned from the accident at TEPCO's Fukushima Daiichi Nuclear Power Station, 11 licensees have filed applications for conformity review for 27 power reactors, and 9 licensees have filed applications for 21 nuclear fuel processing and fabrication facilities.

In FY2018, the NRA continued to carry out safety review and inspection activities for nuclear facilities. The NRA issued permission for change in reactor installation as well as approval for construction plan and operation period extension for Tokai Daini Power Station of the Japan Atomic Power Company. The NRA also granted permission for reactor installation permit change for the research reactor JRR-3 and for the radioactive waste disposal facility of the Japan Atomic Energy Agency. In addition, the NRA approved the decommissioning plan for the reprocessing plant of the Japan Atomic Energy Agency.

(For details, see Section 2 of Chapter 2)

(2) Oversight of Efforts to Decommission Reactors of TEPCO's Fukushima Daiichi NPS

As a regulatory authority, the NRA is actively conducting oversight and providing guidance on implementing early and safe decommissioning of the plants and disposition of the contaminated water at TEPCO's Fukushima Daiichi NPS.

In FY2018, the NRA confirmed that the treatment of untreated water (Sr-treated water) stored in the flanged tanks was completed.

(For details, see Section 1 of Chapter 3)

(3) Enhancement of Nuclear Emergency Preparedness

The NRA revised the Nuclear Emergency Preparedness Guideline to include the newly designated Core Advanced Exposure Medical Support Center. In addition, the Nuclear Regulatory Commission's opinion was formulated on the reference doses that should be referenced in preparing prior nuclear disaster measures.

(For details, see Section 1 of Chapter 6)

(4) Revision of the System to Further Strengthen Safety Measures in Nuclear Use

The new inspection system was put into trial operation in October 2018 for the enforcement in FY2020. The NRA made the information on the status of the legally mandated publication of the licensees' decommissioning implementation policy accessible on its website (related rules became effective in October 2017). In addition, regarding the introduction of security measures for specified radioisotopes, related government ordinances, regulations, and notices were promulgated in November 2018 (to be enforced in September 2019).

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

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Chapter 1 Ensuring Trust in Nuclear Regulatory Administration

Summary of Chapter 1

(Ensuring Independence, Impartiality, and Transparency of the Nuclear Regulatory Administration)

Based on its organizational philosophy, the NRA has continued to strive to ensure transparency, including thorough public discussions, and made its decisions in an impartial, neutral and independent manner from the scientific and technological viewpoints.

In order to further improve transparency, public examination meetings were used more than ever, and hearings at the secretariat were limited. In addition, the NRA examined a method to disclose more detailed contents of meetings, interviews, etc. between NRA staff and nuclear operators, and decided on the trial implementation of the method from April 2019.

Commissioners have undertaken initiatives, such as visits of nuclear facilities by NRA Commissioners and exchanges of opinions with local stakeholders and exchanges of opinions with the chief executive officers (CEOs) and the chief nuclear officers (CNOs) of major nuclear facilities, mainly on activities and further improvements related to the safety of their facilities.

Considering the importance of the Technical Information Committee, which the NRA holds to review experiences of trouble in Japan and overseas in order to examine the necessity of regulatory responses, the NRA decided to make the meetings open to the public, in principle, from June 2018, in addition to the existing release of the meeting materials.

In addition, the NRA decided to hold public meetings as needed to share information and hold discussions with nuclear operators in order to improve the transparency of the process for responding to accidents and trouble.

(Continuous Improvement of Organizational Structure and Management)

The NRA continues to improve the management system of the Nuclear Regulatory Authority, including the systematic reorganization of management-related documents, in response to the findings from the Integrated Regulatory Review Service (IRRS) conducted by the International Atomic Energy Agency (IAEA) in FY2016.

In accepting the FY2019 follow-up mission for the FY2016 IRRS, the NRA requested the IAEA to conduct a new evaluation of regulation of radioactive material transport, in cooperation with the relevant ministries and agencies that are willing to participate. The IAEA accepted the request in April 2018. In addition, efforts were made to promote the digital government initiatives in common to all ministries and agencies, and to ensure appropriate management of official documents.

(Collaborating with the International Community)

The NRA has continued to share the findings and lessons learned from the accident at TEPCO's Fukushima Daiichi NPS with the international community, and collaborated with international organizations and nuclear regulatory bodies in other countries through collecting information and exchanging opinions for international safety improvement.

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

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

(1) Ensuring Independence

Independent decision-making is vital for effective regulation and is also 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." While attempting to ensure transparency by thoroughly implementing public discussions and so on, the NRA is continuing to make decisions in an impartial, neutral, and independent manner from scientific and technological viewpoints.

(2) Ensuring Impartiality

The NRA defined the "Code of Conduct related to Ethics for NRA Chairman and Commissioners" at the first NRA Commission Meeting of FY2012 (September 19, 2012). The Code stipulates that the Chairman and the Commissioners must not receive donations from nuclear operators during their term of office and that they must disclose information on any donations which they received in the 3 years prior to assuming office. Further, they must disclose any situation involving their students finding jobs with nuclear operators. Information on 5 members appointed as of the end FY2018 has also been fully disclosed on the NRA website.

At the 4th FY2012 NRA Commission Meeting (October 10, 2012) 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" were defined. This regulation requires thorough disclosure on the relationship between the relevant external experts and electric utilities in hearing the views from external experts regarding nuclear regulation on electric utilities and other issues. Furthermore, when reviewing the safety of individual facilities or when re-reviewing earlier assessments of individual facilities, personnel may be selected as external experts only if they have not served as executives of the relevant electric utilities in the previous 3 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 facilities. The same requirements were established for the appointment of members of the Reactor Safety Examination Committee (RSEC), the Nuclear Fuel Safety Examination Committee (NFSEC), and the Radiation Council.

In FY2018, continuously, based on the Requirements, self-reported personal data on the members of various study meetings were disclosed on the NRA website.

(3) Ensuring the Transparency in Decision-Making

In accordance with the "Policy on Ensuring Operational Transparency of the NRA" established at the first NRA Commission Meeting held in FY2012 (September 19, 2012), and with (i) building of an information disclosure system eliminating the need for disclosure requests, (ii) thorough public discussions, and (iii) thorough document-based administrative actions as basic principles, the NRA decided to make the Commission Meetings, Councils, and Study Team meetings open to the public, to publicly disclose the minutes and materials for those meetings, and to broadcast the meetings live via internet video sites.[1]

In accordance with the above Policy, the NRA has to prepare summaries of all meetings which are attended by three or more Commissioners or interviews between the nuclear operators and the NRA Chairman, Commissioners, or officials of the Secretariat of the NRA, and make public the summaries together with the names of the attendees and the reference materials used. In addition, for important meetings, the NRA has to make briefings at the NRA Commission Meetings. In FY2018, the NRA steadily implemented these efforts to ensure transparency, and made the materials used for the Commission Meetings, Review Meetings, etc. available on its website simultaneously with the start of live broadcasting of those meetings on internet video sites, for the convenience of viewers of those meetings.

Photo 1-1 Chairman Fuketa visiting Fukushima Daiichi NPS

As in the previous fiscal year, the regular press conferences by the NRA Chairman were held once a week as a rule, and the regular briefings by the Secretariat of the NRA twice a week. (A total of 144 press conferences were held in FY2018.) Press conferences were also broadcast live and recorded videos were released in the same manner as for the NRA Commission Meetings and other study meetings. The minutes of the press conferences were posted on the NRA website within the next day whenever possible. The Chairman and committee members also conduct interviews when conducting field surveys, field inspections, and field visits. In FY2018, 34 cases were handled.

In FY2018, the NRA also worked to improve the transparency of examinations. At the 13th FY2018 NRA Commission Meeting (June 6, 2018), measures for improving the transparency of the examination process were discussed, the process of licensing examination was re-organized, and a decision was made to improve the transparency of interviews with nuclear operators conducted prior to public meetings. The NRA decided on improvements to limit interviews with nuclear operators before official review meetings to the minimum necessary, in the case of reviews for permission, and

[1] "YouTube" and "Niconico Channel"

to hold public examination meetings at regular intervals to have nuclear operators report the latest status, in the case of reviews for approval. At the 38th FY2018 NRA Commission Meeting (October 31, 2018) and the 45th FY2018 NRA Commission Meeting (December 5, 2018) , the NRA discussed and decided the basic policy for publicizing the meetings and interviews with nuclear operators, and discussed the rules for disclosing more detailed contents of interviews with nuclear operators. The rules will be put into trial implementation from April 2019.

The NRA has held the Technical Information Committee, with the participation of Commissioners, to examine the necessity of regulatory responses to accident/trouble information in Japan and overseas, findings from safety reviews, and knowledge obtained from academic research. The meetings of this Committee themselves had been closed to the public, since in many cases discussions were made using materials obtained from regulatory organizations of foreign countries on the premise of non-disclosure, and the materials and summary of the minutes had been disclosed to the extent possible for ensuring transparency. However, considering the importance of the meeting itself and of ensuring further transparency, it has been decided to make the meeting open to the public in principle and closed to the public only when confidential information is handled, or it is otherwise judged appropriate to do so. This policy was reported to the 10th FY2018 NRA Commission Meeting (May 23, 2018), and the Committee meetings have been held publicly since June 2018.

The NRA started to hold Meetings for Dealing with Accidents and Failures at Nuclear Facilities which are open to the public to share information and hold discussions among nuclear operators in order to improve the transparency in the process of dealing with accidents and failures, and five meetings were held in 2018. (For details, see Section 2-5 of Chapter 2.)

Photo 1-2 Technical information review meeting open to the public

2. Enhancing External Communication

(1) Enhancing Efforts on Diverse Communication Both in Japan and Overseas

The NRA has held visits of nuclear facilities by NRA Commissioners and exchanges of opinions with local parties in accordance with the "Policy on Commissioners' Visits of Nuclear Facilities and Exchanges of Opinions with Local Parties" decided at the 49th FY2017 NRA Commission Meeting (November 15, 2017). As part of this initiative, the Chairman and a Commissioner visited the fast breeder prototype reactor Monju of the Japan Atomic Energy Agency (JAEA) in June 2018, and exchanged opinions with local parties including the Mayors of Mihama Town, Wakasa Town, Obama City, and Minamiechizen Town at the Tsuruga Offsite Center in Fukui Prefecture. In October 2018, two Commissioners visited Sendai Power Station of Kyushu Electric Power Co., Inc. and exchanged opinions with local parties including the Governor of Kagoshima Prefecture and Mayors of Satsuma-Sendai, Akune, and Hioki Cities at the Sendai Offsite Center in Kagoshima Prefecture. The Secretary-General and Deputy Secretary-General of the Secretariat of the NRA also met with the heads of local governments. NRA staff members explained the results of the review of the modifications of the reactor establishment permit for Kashiwazaki-Kariwa Nuclear Power Station Units 6 and 7 of Tokyo Electric Power Company Holdings at the briefing sessions for residents in Kashiwazaki City and Kariwa Village in Niigata Prefecture. An explanation was made also at the Niigata Technical Committee meeting and the Niigata Municipalities Liaison Meeting. The staff members gave explanations about the results of the review for the change in reactor installation permit, construction plan approval, and operational period extension approval for Tokai Daini Power Station of the Japan Atomic Power Company at briefing sessions for residents held in six municipalities in Ibaraki Prefecture.

In addition, the NRA was engaged in activities to enhance communication at various levels, as well as the Chairman and Commissioner level.

Photo 1-3 Opinion exchange with local stakeholders in Kagoshima Prefecture

For example, the NRA held resident briefing sessions in 15 municipalities to respond to local governments' requests for explanation on the "Review of Real-time Dosimetry System Deployment" adopted at the 74th FY2017 NRA Commission Meeting (March 20, 2018).

In addition to the public comment procedures based on the Administrative Procedures Act (Act No. 88 of 1993) (public comments designated by law), the NRA used similar but not legally designated procedures to collect public comments at the NRA's own discretion (optional public comments). The NRA used this optional procedure 16 times in FY2018 to proactively call for public opinions, and responded to the received comments with respect.

In addition, the NRA established a system for accepting public opinions and questions on a daily basis by having a page to receive opinions on the NRA website and by operating a call center. In FY2018, the NRA received about 30 opinions and questions on the website and about 180 opinions and questions through the call center (average values per month).

Table 1 Major Public Comments Asked for in FY2018

Designated by Law	Optional
・ Amendment of relevant laws and regulations pertaining to introducing the security measures of specified radioisotopes and the Cabinet Order to partially amend the Enforcement Order concerning the Act on the Prevention of Radiation Hazards due to Radioisotopes (hereinafter referred to as "Radiation Hazards Prevention Act"). ・ Revision of the Enforcement Ordinance of the Nuclear Reactor Regulation Act due to revision of the classification of the waste burial business and creation of regulations on waste burial areas, and enactment and revision of relevant regulations, etc. (Number of public comment requests: 10) (Number of public notices of the results: 8)	・ Partial revision of Evaluation Guide for the Impact of Tornados on Nuclear Power Plants (draft) ・ Draft review document regarding application documents for change in reactor installation permit for Tokai Daini Power Station of the Japan Atomic Power Company, etc. (Number of public comment requests: 6) (Number of public notices of the results: 6)

* Both the number of public comment requests and number of public notices of the results were counted for FY2018, although only the number of public notices was counted until FY2017.

(2) Efforts to Develop Information Management System

For the purpose of archiving important information over the next few decades and widely publicizing it for Japanese people, the information management system records the publicly available information on the website, such as the record of the meetings held at the NRA, the processes of

examinations carried out with the nuclear operators, and the record of discussions relating to the regulation.

In FY2018, the NRA reviewed the IMS requirement in accordance with the change of environment around the NRA and the latest technology trends, etc., and decided on the draft of the procurement specification concerning the common background of information management, and revised the annual plan for system development such as the classification of content on the website to be archived.

(3) Reinforcing the Transmission of Information on Activities of the NRA

Efforts were made to reinforce the prompt and careful transmission of information to the public in accordance with the high levels of societal interest in this issue.

Specifically, since last year, the NRA has used Twitter to distribute summaries of discussions at the NRA Commission Meeting that could be of high social interest. In addition, in FY2018 the NRA started posting a summary result for each agenda item on the NRA website, in order to improve convenience in searching the minutes and meeting materials.

Section 2 Continuous Improvement of Organizational Structure and Management

1. Full-Scale Operation and Improvement of Management System

The NRA is continuously improving its own management system, as a nuclear regulatory body, in line with the "Roadmap for Improvement of the NRA Management System" (adopted at the 45th FY2016 NRA Commission Meeting on November 22, 2016) formulated on the basis of the recommendations of the IRRS[2] conducted by the IAEA[3] in 2016. In FY2018, the NRA is systematically organizing management-related documents such as job manuals. In addition, the NRA is continuously considering effective implementation of a PDCA cycle, which combines the management review under the NRA Management Rules (established on September 3, 2014) and policy evaluations under the Government Policy Evaluations Act (Act No. 86 of 2001), taking into account the perspective of EBPM (Evidence-Based Policy Making).

The NRA carried out its tasks based on the "NRA Management Rules," the "Statement on Nuclear Safety Culture," and the "Regulatory Guides for Activity on Nuclear Security Culture," and in line with the "NRA Goals for the First Term of the NRA," the "Annual Strategic Plan for FY2018," etc. At the 61st NRA Commission Meeting (February 20, 2019), the NRA also conducted a management review to assess the evaluation of the progress of the actions listed in the Annual Strategic Plan for FY2018 and the direction for the next fiscal year. Following this management review, at the 68th NRA Commission Meeting (March 27, 2019), the NRA decided on the "Annual Strategic Plan for FY2019" on the basis of the evaluation of the Annual Strategic Plan for FY2018 and identified issues and the direction for the next fiscal year.

The NRA internal audit is conducted by the Management System Office, which was established in

[2] Integrated Regulatory Review Service
[3] International Atomic Energy Agency

April 2016 within the Secretariat of the NRA. The FY2018 internal audit was conducted for four sections and one theme, and the Office provided recommendations and instructions to promote the establishment of the organization and rules for the use and management of the information-sharing space. In addition, the NRA decided to organize the "Expert Meeting on the Notification from the NRA Staff, etc." composed of third-party experts in order to contribute to strengthening the internal audit function (the preparation meeting was held on August 24, 2018).

2. Addressing Issues Identified through the IRRS Mission

The IAEA offers the IRRS in response to requirements of Member States. The IRRS provides a peer review by experts invited from Member States' regulatory bodies to help the host State strengthen and enhance the effectiveness of their infrastructure for nuclear, radiation, radioactive waste and transport safety. The NRA was reviewed by the IRRS mission in January 2016, and received and disclosed the mission report in April 2016.

Based on the findings described in the mission report, the NRA has set a goal to continually improve the organizational structure and operational and regulatory systems. At the same time, the NRA organized a total of 31 issues from the recommendations and suggestions pointed out in the report as well as from the self-assessment conducted as a preparation for the IRRS mission (hereinafter referred to as "issues identified through the IRRS mission"). The actions to address individual issues are in progress, and as part of this effort, the "Act on Partial Revision of the Act on the Regulation of Nuclear Source Material, Nuclear Fuel Material and Reactors for Strengthening Safety Measures in the Use of Nuclear Power" (hereinafter referred to as the "Amendment Act") was promulgated in April 2017. In FY2018, continuing from FY2017, the NRA continued to revise the relevant government ordinances and regulations in line with the gradual enforcement of the Amendment Act, and continued necessary work for the enforcement of the Amendment Act.

The NRA Commissioners designated the RSEC and the NFSEC to assess and advise the NRA's responses to the issues identified through the IRRS mission and provide advice. In FY2018, the RSEC and the NFSEC discussed the responses based on the report by the Secretariat of the NRA.

In August 2017, the NRA informed the IAEA of its intention to accept an IRRS follow-up mission to the initial mission implemented in January 2016, preferably at an appropriate time after the summer in 2019, and this request was accepted by the IAEA. In addition, the NRA, together with other relevant ministries and agencies having same intention, requested the IAEA to additionally conduct a review of the regulation for the safe transport of radioactive materials in the follow-up mission. This request was also accepted by the IAEA in April 2018. In FY2018, the NRA made necessary coordination with the IAEA secretariat for the acceptance of the follow-up mission. As part of the ongoing preparation, the NRA accepted a workshop on radioactive material transport organized by the IAEA, and performed self-assessment of the status of responses to the recommendations and suggestions as well as new evaluation items.

3. Other Improvements of Organizational Structure and Management

In addition to the activities described above, the NRA carried out the following initiatives as cross-ministerial efforts: (i) development of the Digital Government Medium-to-Long Term Plan in the Ministry of the Environment (decided by the Ministry of the Environment Information Management Committee on June 18, 2018) in accordance with the "Digital Government" Implementation Plan (decided by e-Government Ministerial Conference on January 18, 2018); (ii) optimization of budget request/execution by implementing new administrative project review with an EBPM[4] perspective, in accordance with the "Viewpoint for Reviewing Projects in the Administrative Project Review" (Decision of Administrative Reform Promotion Council on August 6, 2013, partial revision on April 5, 2018, Cabinet Secretariat Administrative Office); (iii) promotion of work-life balance in accordance with the "The Action Plan for the Realization of Work Style Reform" (decided by the meeting of the Council for the Realization of Work Style Reform on March 28, 2017); and (iv) document management under the "Approach for Ensuring Appropriate Management of Official Documents" (decision by Ministerial Conference in July 2018).

Section 3 Collaborating with the International Community

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

(1) Cooperation with International Organizations

In collaborating with international organizations, the NRA has shared findings and lessons learned from the accident at TEPCO's Fukushima Daiichi NPS with the international community, and gathered information and exchanged opinions in order to improve global nuclear safety through its participation in and dispatching of experts to various meetings held by the IAEA, OECD/NEA,[5] and other organizations.

Major cases of participation by NRA Commissioners are summarized in Table 2.

Table 2 Participation of the Chairman and NRA Commissioners in the Conferences Organized by International Organizations

Schedule	Name (Location) of Conferences	Attended by
April 16 – 20, 2018	IAEA AdSec[6] (IAEA/Vienna)	Commissioner Tanaka
April 25 – 26, 2018	INSAG[7] (IAEA/Vienna)	Commissioner Yamanaka

[4] Evidence Based Policy Making
[5] Organization for Economic Co-operation and Development / Nuclear Energy Agency
[6] Advisory Group on Nuclear Security
[7] International Nuclear Safety Group

September 17 – 18, 2018	62nd IAEA General Conference (IAEA/Vienna)	Chairman Fuketa
October 2 – 3, 2018	WGSC[8] of CNRA[9] (OECD/NEA/Paris)	Commissioner Ban
November 8 – 11, 2018	4th Committee of ICRP[10] (ICRP/Abu Dhabi)	Commissioner Ban
November 26 – 30, 2018	IAEA AdSec (IAEA/Vienna)	Commissioner Tanaka

As a part of its international communication efforts, the NRA regularly releases the sea area monitoring results[11] in the surrounding areas of TEPCO's Fukushima Daiichi NPS and other areas. The NRA and the IAEA conducted results comparison of sea samples radioactivity analysis done by the IAEA's and Japanese laboratories as well as a proficiency test with laboratories under the agreement on cooperation of sea area monitoring in Japan.

(2) Participation in efforts under various international conventions on nuclear safety

Together with the relevant ministries and agencies, the NRA is participating in various international initiatives under the frameworks of the Convention on Nuclear Safety, Joint Convention on the Safety of Spent Fuel Management and on the Safety of Radioactive Waste Management, Convention on Early Notification of a Nuclear Accident, Convention on Assistance in the Case of a Nuclear Accident or Radiological Emergency, Convention on Physical Protection of Nuclear Material and Nuclear Facilities, and International Convention for the Suppression of Acts of Nuclear Terrorism.

The 6th Review Meeting of the Joint Convention on the Safety of Spent Fuel Management and on the Safety of Radioactive Waste Management was held in May 2018. Sixteen staff members of the NRA, including Commissioner Tanaka, participated in the meeting and discussed the implementation status of the Convention in the Contracting Parties.

[8] Working Group on Safety Culture
[9] Committee on Nuclear Regulatory Activities
[10] International Commission on Radiological Protection
[11] http://www.nsr.go.jp/english/f1issues/index.html

(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.

The INRA[12] consists of the persons responsible for regulatory authorities in the major countries having nuclear power stations, and it is a framework to exchange opinions twice a year on a wide range of issues of nuclear safety regulations. Nine countries are participating: Japan, the U.S.A., France, the U.K., Germany, Canada, Sweden, Spain, and the Republic of Korea.

In May 2018, the 42nd INRA meeting was hosted by the NSSC[13] of the Republic of Korea. Secretary-General Yasui of the Secretariat of the NRA attended the meeting on behalf of the Chairman and reported on the state of reviews conducted according to the new regulatory requirements, the activities for introducing the new inspection system, and the current status of TEPCO's Fukushima Daiichi NPS. The 43rd INRA meeting was held in September 2018 in Vienna (Austria) during the IAEA General Conference, also hosted by the NSSC, and the NRA Chairman Fuketa attended the meeting and participated in a wide range of discussions on nuclear regulation.

As an important activity, the NRA organized an information exchange meeting and visit to TEPCO's Fukushima Daiichi NPS in November 2018, with the purpose of information provision on the regulatory activities for TEPCO's Fukushima Daiichi NPS and the current status of the nuclear power station and surrounding areas. Twelve senior regulatory officers from four countries participated in the event.

WENRA[14] is a framework comprising the heads of nuclear regulatory bodies of mainly European countries and holds plenary meeting twice a year. The NRA as an observer member attended the plenary meetings which were held in Gent (Belgium) in April 2018 and in Schaffhausen (Switzerland) in November 2018.

The TRM[15] was set up as a framework between Japan, China, and the Republic of Korea to promote information exchange on regulatory issues and technical improvement, and its meetings have been held once a year since 2008.

In November 2018, Japan hosted a joint emergency exercise under the framework of the TRM. In this exercise, the procedures necessary to send prompt and appropriate information to the home country in the event of a nuclear facility emergency were confirmed through a tabletop exercise in Tokyo and a visit to the Hamaoka Nuclear Power Station of Chubu Electric Power.

The 11th meeting was held in Gyeongju (Korea) in November 2018. Commissioner Yamanaka attended the meeting where the activities of each regulatory body, the achievements of three working groups (Working Group on Online Information Sharing System, Working Group on Human Resources Development, and Working Group on Emergency Preparedness and Responses) and the results of the

[12] International Nuclear Regulators Association
[13] Nuclear Safety and Security Commission
[14] Western European Nuclear Regulators Association
[15] Top Regulators' Meeting on Nuclear Safety among China, Japan, and Korea

joint emergency exercise conducted in Japan were reported. In addition, taking the opportunity of the 10th anniversary of the TRM activities, the 10 years of cooperative activities were reviewed, and discussions were made on the way forward for the TRM and future activities of the working groups.

In addition, at the 6th TRM Plus[16] meeting held in conjunction with the TRM, more technical information exchange at the working level was conducted on topics such as challenges and responses relating to the Joint Convention on the Safety of Spent Fuel Management and on the Safety of Radioactive Waste Management, approaches to cyber security at nuclear facilities, and aging management of nuclear power plants.

The NRA has cooperation arrangements with 12 countries (13 organizations) as of the end of FY2018 as shown in Table 3.

The NRA has exchanged information and views on nuclear regulation with foreign nuclear regulatory bodies through these bilateral cooperation frameworks.

Table 3 Conclusion of Agreements on Cooperation between the NRA and Other Countries

Name of Country	Name of Authority
United States of America	Nuclear Regulatory Commission (NRC)
	Department of Energy (DOE)
France	Nuclear Safety Authority (ASN)
United Kingdom	Office for Nuclear Regulation (ONR)
Russia	Federal Service for Ecological, Technological, and Nuclear Supervision (RTN)
Sweden	Swedish Radiation Safety Authority (SSM)
Germany	Federal Ministry for the Environment, Nature Conservation, Building, and Nuclear Safety (BMUB)
Spain	Nuclear Safety Council (CSN)
Finland	Radiation and Nuclear Safety Authority (STUK)
Canada	Canadian Nuclear Safety Commission (CNSC)
Vietnam	Vietnam Agency for Radiation and Nuclear Safety (VARANS)
Turkey	Turkish Atomic Energy Authority (TAEK)
Lithuania	State Nuclear Power Safety Inspectorate of the Republic of Lithuania (VATESI)

[16] TRM Plus was established in 2013 as a technical expert meeting which can invite experts from other than the three organizations.

The Japan–US Steering Committee meeting was held in Rockville (Maryland) in October 2018 under the cooperation implementation arrangement with the US NRC. Opinions were exchanged at the meeting on future technical cooperation activities through training in preparation for the revision of the inspections system under the Act on the Regulation of Nuclear Source Material, Nuclear Fuel Material and Reactors (Act No. 166 of 1957; hereinafter referred to as the "Reactor Regulation Act"), training on protection measures for specified radioisotopes, and practical training and workshops by NRA senior nuclear analysts. Secretary-General Yasui of the Secretariat of the NRA attended the NRC's Regulatory Information Conference held in Rockville in March 2018. The Secretary-General made a presentation on independence, impartiality, and transparency as essential attributes of nuclear regulatory administrative actions, and exchanged views with the meeting participants.

Photo 1-4 Regulatory Information Conference (RIC) held by United States Nuclear Regulatory Commission (NRC)

In cooperation with France, the sixth Japan–France Regulatory Authority Meeting was held in Tokyo in September 2018, with the attendance of Chairman Fuketa and other Commissioners and officials from the NRA, and the Chairman and Commissioners of the ASN, France. At this meeting, discussions were held on the current state of regulations in both countries.

In addition, bilateral meetings were held with the regulatory organizations of the U.K., Sweden, and Spain to deepen the relationship with those organizations.

The NRA gave TAEK staff a seminar on anti-tsunami design in Ankara (Turkey) in September 2018, through the Secretariat of the NRA and the Nuclear Safety Human Resource Development Center, as a cooperative activity under the cooperative arrangement with Turkey.

(4) Opinion Exchange with International Nuclear Regulation Advisors

The NRA, with the aim of proactively incorporating the latest overseas knowledge related to the safety of the use of nuclear energy, commissions experts with abundant experience and advanced knowledge in nuclear regulation as International Nuclear Regulation Advisors in order to exchange opinions with them on issues such as expectations for nuclear regulatory systems and the organization of the NRA. In FY2018, the NRA commissioned Dr. Richard A. Meserve, Dr. Dana Drábová, and Dr. Andy Hall as International Nuclear Regulation Advisors and held an opinion exchange meeting with them in October 2018. In addition, the NRA commissioned Mr. Philippe Jamet as an International Nuclear Regulation Advisor in January 2019.

Table 4 International Nuclear Regulation Advisors and Their Careers

Richard A. Meserve	Former Chairman of U.S. NRC Chairman of IAEA INSAG
Dana Drábová	President of SUJB[17] Chairperson of IAEA CSS[18]
Andy Hall	Former Chief Nuclear Inspector of ONR Former Chair of ENSREG[19]
Philippe Jamet	Former Commissioner of ASN Former Director of the Division of Nuclear Installation Safety of IAEA

2. Efforts Concerning Development and Securing of Global Human Resources

The NRA is grappling with the acquisition of experienced staff; improving staff competence for international activities through education, training, research, and international cooperation; building up young staff members' experience in international activities; improving the working environment to encourage participation in international activities; and improving the contents of staff training. In FY2018, the NRA dispatched 10 staff members to international organizations such as IAEA and OECD/NEA, and dispatched five staff members to the US NRC for about one year from July 2017 in preparation for the introduction of a new highly effective inspection system in response to the IRRS recommendation as well as two staff members from April 2018 for research on the actual situation of the inspection system for protective measures for specified radioisotopes. At the same time, the NRA accepted trainees from IRSN of France and ENSI[20] of Switzerland. Through these exchanges, the NRA promoted cooperation with international organizations and with various foreign regulatory bodies. The NRA provided its staff with opportunities to work internationally on a long-term continuous basis by increasing the international experience of mid-level and young staff members through, for example, having its staff participate in the Review Meeting of the Nuclear Safety Convention as meeting officers.

Section 4 Steady Response to Litigation Affairs and Legal Support

1. Steady Response to Litigation Affairs and Legal Support

(1) Steady Response to Litigation Affairs and Administrative Appeal

[17] State Office for Nuclear Safety
[18] Commission on Safety Standards
[19] European Nuclear Safety Regulators Group
[20] Swiss Federal Nuclear Safety Inspectorate

The NRA responded to the litigation affairs and provided legal support for the affairs under its jurisdiction in cooperation with relevant authorities. Specifically, the NRA has rapidly and appropriately taken actions, preparing briefs and responding to examinations of witnesses in collaboration with the Ministry of Justice and Legal Affairs Bureaus with respect to 45 pending cases and 3 cases for which a judgement was made in FY 2018 regarding the affairs under the jurisdiction of the NRA.

With respect to formal appeals of the dispositions of changes in reactor installation permit, 2 cases were dismissed.

(2) Continuous Review and Improvement of Laws and Regulations

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

The NRA steadily revised the government ordinance for the enhancement of the regulation of disposal business and the ordinance for the introduction of protection against radioisotopes, in order to implement the rules of the Reactor Regulation Act amended in accordance with the Act on Partial Revision of the Act on the Regulation of Nuclear Source Material, Nuclear Fuel Material, and Reactors for Strengthening Safety Measures in the Use of Nuclear Power (Act No. 15 of 2017). (For details, see Section 1 of Chapter 2.)

Section 5 Allegation System Concerning Information on Safety of Nuclear Facilities

In order to detect legal and regulatory violations by nuclear operators at an early stage and prevent nuclear disasters, the Reactor Regulation Act provides for the “allegation system concerning safety information of nuclear facilities.” Under this system, the NRA investigates allegation cases responding to information provided by employees and others on potential violations committed by nuclear operators and, if necessary, issues directives to the relevant nuclear operators or takes other corrective measures.

To ensure the impartiality and transparency of investigations by the NRA, the Nuclear Facility Safety Information Allegation Committee consisting of external experts was set up. Under supervision of the Committee, the NRA will process allegations as promptly as possible, with attention to privacy protection of the informant (whistleblower), and the operational status of the allegation system is disclosed. In FY2018, three cases were completed while one case was pending.

Chapter 2 Rigorous and Proper Implementation of Regulations on Nuclear Facilities

Summary of Chapter 2

(Continuous Improvement of Regulatory Systems Concerning the Reactor Regulation Act)

The Bill for Partial Revision of the Act on the Regulation of Nuclear Source Material, Nuclear Fuel Material, and Reactors for Strengthening Safety Measures in the Use of Nuclear Power was passed by the 193rd ordinary Diet session and promulgated on April 14, 2017.

In FY2018, in response to the enactment of the Act, the NRA formulated a decommissioning implementation policy and commenced its operation. Considering the revision of the regulation system for waste disposal, the NRA prepared for the revised inspection system, and developed related documents.

(Rigorous and Proper Implementation of Regulation on Reactor Regulation Act)

The NRA is conducting scientifically and technically rigorous review and inspection of nuclear operators' applications for permission for change in reactor installation in light of the new regulatory requirements established based on the lessons learned from the accident at TEPCO's Fukushima Daiichi NPS.

As for power reactors, in FY2018, the NRA granted permission for change in reactor installation, approval of construction plans, and approval for extension of operational period for Tokai Daini Power Station of the Japan Nuclear Power Company. Approval of the construction plan for constructing the Specialized Safety Facilities for Sendai Power Station Unit 1 of Kyushu Electric Power Co., Inc. was also granted. In addition, regarding authorization to change the safety regulations related to volcanic ash countermeasures, the change in the safety regulations was approved for all nuclear power stations. For research reactors and nuclear fuel facilities, approval of the change in reactor installation permit for the research reactor JRR-3 and the radioactive waste disposal facility of the Japan Atomic Energy Agency (JAEA) was granted. The decommissioning plan for the reprocessing facility of JAEA's Nuclear Fuel Cycle Engineering Laboratories was permitted. In addition, permission was granted for a change in facility operations of the waste management facility of JAEA's Oarai Research and Development Institute. The numbers of incidents reported based on the Act were four for power reactors and one for a nuclear fuel facility.

The NRA steadily carried out regulatory activities in addition to those listed above, such as pre-service inspections, periodic facility inspections, operational safety inspections, confirmation of the causes of accidents and failures experienced at nuclear facilities and the recurrence prevention measures for those accidents and failures, review of volcanic activity monitoring, studies on the evaluation of ground motion without specifying seismic centers, actions in response to re-evaluation of the eruptive volume of Daisen-Namatake tephra from Daisen Volcano, countermeasures for tsunamis that may not be accompanied by tsunami warnings, actions related to decommissioning of the prototype fast breeder reactor Monju, actions related to decommissioning of the Tokai Reprocessing Plant, meticulous explanation of review results, and actions to better evaluate safety improvements.

(Continuous Improvement of the Regulation System Pertaining to the Radiation Hazards Prevention Act)

In relation to Article 5 (strengthening of protection against specified radioisotopes) of the Act on Partial Revision of the Act on the Regulation of Nuclear Source Material, Nuclear Fuel Material, and Reactors for Strengthening Safety Measures in the Use of Nuclear Power (enacted and promulgated in April 2017), the NRA promulgated government ordinances relevant to the Radiation Hazards Prevention Act on November 21, 2018 and the relevant regulations and notifications on November 26, 2018 (to be enforced in September 2019).

(Strict and Appropriate Implementation of Regulations Pertaining to the Prevention of Radiation Hazards)

The NRA conducts reviews of applications for permission and utilization notifications from any person planning to use radioisotopes and radiation-generating devices, and conducts on-site inspections at the facilities of users who hold utilization permits or who have submitted utilization notifications, NRA-registered certification organizations, etc. in accordance with the Radiation Hazards Prevention Act. According to the FY2017 Radiation Control Status Report, for all users having been granted permission or who have given utilization notifications, the radiation doses for radiation workers were lower than the annual dose limit specified by laws and regulations. There was a total of seven events under obligation to report in FY2019 as of March 31, 2019.

Section 1 Continuous Improvement of Regulatory Systems Concerning the Reactor Regulation Act

1. Continuous Improvement of Regulatory Systems and Their Operation

(1) Consideration of Implementation of Regulatory Systems Including Revision of Regulations Due to Revision of the Act

The Draft Bill for Partial Revision of the Act on the Regulation of Nuclear Source Material, Nuclear Fuel Material, and Reactors for Strengthening Safety Measures in the Use of Nuclear Power was approved at the 59th FY2017 NRA Commission Meeting (February 1, 2017), decided by the Cabinet on February 7, 2017, and deliberated on at the 193rd session of the Diet. The Bill for Partial Revision of the Act on the Regulation of Nuclear Source Material, Nuclear Fuel Material, and Reactors for Strengthening Safety Measures in the Use of Nuclear Power was promulgated and partially enforced on April 14, 2017.

Following the establishment of the revised Act, the NRA continued to prepare related cabinet orders, develop regulatory requirements, and conduct operations in accordance with the "Establishment of the revised Act and future response" reported at the 2nd FY2017 NRA Commission Meeting (April 12, 2017). The details for FY2018 are shown below.

(a) Enforcement of Forward Planning of the Decommissioning Policy

Following the enforcement, on October 1, 2018, of the related regulations, ordinances, and operational guides about Forward Planning of the Decommissioning Policy promulgated in December 2017, which is in order to invite nuclear operators' consideration for decommissioning measures from the early stage, nuclear operators prepared and announced their own plans. The NRA website provides links to those plans.

(b) Activities Relating to Review of Regulatory System for Waste Disposal

At the 11th FY2018 NRA Commission Meeting (May 30, 2018), the NRA accepted the Secretariat of the NRA's idea to prepare a document that clarifies the intention of applying the performance standard based on the ALARA[20] concept to the regulatory requirements for mid-depth disposal. At the 22nd FY2018 NRA Commission Meeting (August 1, 2018), the NRA accepted the plan to conduct exchanges of opinions with nuclear operators on the outline of the regulatory requirements for category 2 waste disposal, which was prepared by the Secretariat of the NRA. Following this, the NRA Commissioner and staff of the Secretariat of the NRA conducted an exchange of opinions with nuclear operators on August 31, 2018 (exchange of opinions with nuclear operators on the regulation of radioactive waste from decommissioning). The NRA plans to revise the regulatory requirements and develop relevant review guidelines on the basis of this outline.

In addition, the NRA established regulations concerning land excavation in specified waste disposal areas for the business of category 1 waste disposal and for the business of the mid-depth disposal of

[20] As Low as Reasonably Achievable

category 2 waste disposal.

(c) Consideration of Revision of Inspection System

Meetings of the Study Team on Oversight Program, which consists of NRA Commissioners, officials of the Secretariat of the NRA, and experts, have been held continually since May 2016. The Team has discussed the related matters at the meetings opened to the public with nuclear operators' participation. The Team set up working groups in order to make detailed discussions on the specific operation of the new inspection system as well as necessary documents including regulations. As a result, the Team developed the trial operation versions of those documents. On the basis of such activities, the NRA started phase 1 of the trial operation of the new inspection system from October 2018 (October 2018 to March 2019) in preparation for the enforcement of the new inspection system scheduled in FY2020. This trial operation is intended (i) to closely examine the methods and documents necessary for implementing inspections and operating the entire system, (ii) to improve accuracy in assessing inspection results, and (iii) to develop the processes of various procedures and meetings. In the meantime, the NRA received advice from the Reactor Safety Examination Committee and the Nuclear Fuel Safety Examination Committee and made a wide range of exchanges of opinions including dialogues with academic societies and institutions. In proceeding with the studies and preparation, the NRA is making efforts to ensure effective and efficient inspection practice, such as by dispatching its staff to the NRC for training and inviting NRC experts with extensive experience in inspection work for their advice on issues identified based on the current status of the review of the inspection system and on-site inspections.

In addition, the NRA held briefing sessions for nuclear operators prior to the start of trial operation of the new inspection system so that nuclear operators can proactively carry out activities in line with the new inspection system. From April 2019, while continuing phase 1 activities, the NRA will expand the scope of the trial operation mainly for representative plants, and will go into phase 2 of the trial operation of the new inspection system to confirm the operation of the entire system. During that time, the NRA will demonstrate assessment of the significance of the inspection findings and comprehensive plant assessment, and share the risk-oriented concept with nuclear operators.

Photo 2-1　Confirmation of trial operation of new inspection system (Ikata Power Station, January 31 and February 1, 2019)

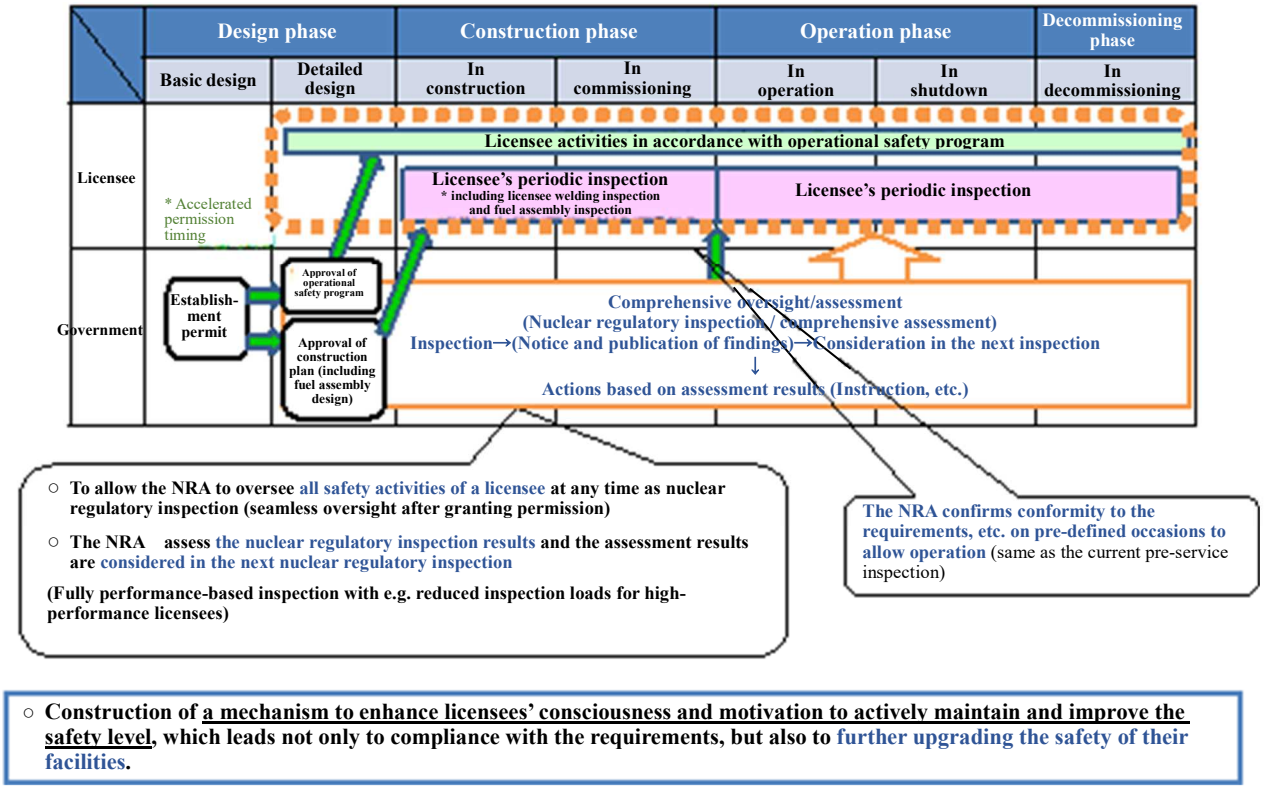

Figure 2-1 Outline of New Inspection System

(2) Study on Method of Operational Safety Inspection

According to the instruction concerning inspections to check conformity to the operational safety programs of nuclear facilities (hereinafter referred to as "operational safety inspection") given at the 25th NRA Commission Meeting of FY2012 (January 30, 2013), the NRA continued to study improvement measures. In June 2018, it received reports for FY2017 from licensees that have installed commercial power reactors concerning the collection of data for 30 indicators, which was given as an instruction to the nuclear operators by an instruction document as of April 13, 2016. The reports contained analysis of the data and the results.

As operational safety inspections are to be integrated into nuclear regulatory inspections upon enforcement of the revised Act in 2020, the NRA is conducting a trial of the details of the operation of nuclear regulatory inspections as a new method implemented based on indicators and risk information. At the 58th FY2017 NRA Commission Meeting (January 10, 2018), the NRA decided to gradually incorporate the mechanisms of the new inspection system under the framework of the current operational safety inspections. In FY2018, the NRA carried out site-oriented situation assessment by applying a free access approach and performed focused inspections based on the safety impacts.

(3) Enhancement of Exchanges of Views and Communication on Safety Improvements

Since October 2014, the NRA has been holding exchanges of opinions with chief executive officers

(CEOs) of major nuclear facilities to promote efforts fostering safety culture and enhancing safety and to hear nuclear operators' basic policy for safety improvement activities and perspectives on the current regulatory system.

In FY2018, the NRA Commission exchanged opinions with five nuclear operators mainly on the activities and further improvements related to the safety of their facilities.

In addition, the NRA has been holding exchanges of opinions with chief nuclear officers (CNOs) of major nuclear facilities since January 2017, to contribute to the smooth introduction of regulation and improvement and clarification of regulatory requirements and reviews for the purpose of enhancement of its predictability. In FY2018, the exchange of opinions meetings were held twice, and commissioners discussed the issues which the nuclear industry faced, including the current status of nuclear operators' responses to the new inspection system. Furthermore, in response to the needs of both the regulatory body and nuclear operators in exchanges of opinions with CNOs, the NRA decided to hold a dialog to exchange specific technical matters at the level of persons in charge between nuclear operators and the regulatory body at the first FY2018 NRA Commission Meeting (April 4, 2018). The issue of loss of residual heat removal (RHR) pump functions due to steam voids was selected as the first technical issue and NRA started to comprehend the status of nuclear operators' considerations. The NRA is striving to enhance communication with nuclear operators through such activities.

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

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

As for commercial power reactors, after the NRA enforced the New Regulatory Requirements on July 8, 2013, 11 nuclear operators submitted applications for permission for change in reactor installation concerning conformity to the New Regulatory Requirements of 27 plants of 16 nuclear power stations by the end of FY2018. These applications are now reviewed strictly based on the policies approved by the NRA. In FY2018, review meetings were held 137 times. Many discussions centered on issues such as design basis ground motion and design basis tsunami, basis preventive design against tornadoes, internal overflows and internal fire, the evaluation of effectiveness of measures for severe accidents such as preventing core damage and preventing breakage of containment vessels, and the preparation of procedures for serious accidents.

The NRA reviewed the application for change in the reactor installation permit for Tokai Daini Power Station of the Japan Atomic Power Company (JAPC). On that basis, the NRA collected scientific and technical comments on the draft review report on the technical capabilities of the nuclear operators and the structures and equipment of the reactor facility, and heard the opinion of the Japan Atomic Energy Commission on the peaceful use of nuclear power, and the opinion of the Minister of Economy, Trade and Industry on the appropriateness of permission. Considering those comments and opinions, at the 32nd FY2018 NRA Commission Meeting (September 26, 2018), the NRA granted permission for the change in the reactor installation for Tokai Daini Power Station.

In consideration of the fact that the bank requested a guarantee of the debt by the power purchasing power companies as a financing condition when JAPC borrowed funds in the past, the NRA asked JAPC to submit a document that gives assurance of the prospects for raising funds from borrowing. In response, JAPC submitted a document that shows the intentions of Tohoku Electric and TEPCO to make financial support. The NRA consulted with the Minister of Economy, Trade and Industry on TEPCO's financial support to JAPC and the response was that there was no problem with TEPCO's management decisions.

The construction plan for Tokai Daini Power Station was approved on October 18, 2018.

By the end of FY2018, applications for change in reactor installation permit related to Specialized Safety Facilities were submitted by 7 nuclear operators for 18 plants of 10 nuclear power stations. In the review of these applications, the NRA has checked whether measures have been taken to ensure that necessary functions are not impaired in the event of large-scale incidents such as intentional large-aircraft crashes and other acts of terrorism.

Applications for approval of construction plans for Specialized Safety Facilities were filed for 7 plants at 3 nuclear power stations of 3 nuclear operators by the end of FY2018. The construction plan was approved on March 25, 2019 for the first application filed for Ikata Power Station Unit 3 of Shikoku Electric Power Company. The construction plans were also approved for the first, second, and third applications filed for Sendai Power Station Unit 1 of Kyushu Electric Power Co., Inc. on May 15, 2018, on July 26, 2018, and on February 18, 2019, respectively. The construction plans for the first and second applications filed for Sendai Power Station Unit 2 were approved on August 10, 2018 and on August 31, 2018, respectively.

The NRA received applications for approval of modifications of operational safety programs to incorporate measures against volcanic ash for 5 nuclear power stations of 3 nuclear operators between February 16, 2018 and June 29, 2018. During the review process, it became necessary to clarify the requirements for volcanic ash measures. Therefore, at the 40th FY2018 NRA Commission Meeting (November 7, 2018), the concept of volcanic ash measures was reconsidered. After that, the modifications of the operational safety programs were approved on December 17, 2018 for all power stations (Ohi Power Station and Takahama Power Station of Kansai Electric Power Co., Inc., Ikata Power Station of Shikoku Electric Power Co., Inc., and Genkai NPS and Sendai NPS of Kyushu Electric Power Co., Inc.) that had filed applications.

The NRA received applications for permission for changes in reactor installation to incorporate measures against noxious gases for 6 nuclear power stations of 3 nuclear operators between February 7, 2019 and February 8, 2019. Applications for permission for changes in reactor installation relating to the confinement function of fuel cladding under seismic conditions were received for 8 nuclear power stations of 5 nuclear operators between January 26, 2018 and January 18, 2019. The permissions were granted to 4 nuclear power stations of 2 nuclear operators out of these 8 applications. Applications for permission for changes in reactor installation, in response to incorporation of the findings from the review of TEPCO's Kashiwazaki-Kariwa NPS Units 6 and 7 into the regulations, were received for 6

nuclear power stations of 3 nuclear operators between May 16, 2018 and November 1, 2019. All of these modifications were permitted. Applications for permission for changes in reactor installation relating to prevention measures for leakages to the outside of controlled areas due to internal flooding were received for 7 nuclear power stations of 4 nuclear operators between May 16, 2018 and December 12, 2018, and permissions were granted to 6 nuclear power stations of 3 nuclear operators.

(1) Increase in the Efficiency of Conformity Review to New Regulatory Requirements

The NRA continued efforts aiming at efficient advancement of all review processes. The summaries of records of review meetings were disclosed. After the review meeting, interviews with nuclear operators were held to organize the findings and share perceptions.

(2) Status of Inspection Based on New Regulatory Requirements

The NRA issued pre-service inspection acceptance certificates and periodic facility inspection completion certificates to Units 3 and 4 of Ohi NPS on April 10, 2018 and on June 5, 2018, respectively, and to Units 3 and 4 of Genkai NPS on May 16, 2018 and on July 19, 2018, respectively, after confirming that construction had been undertaken according to authorized construction plans and that they conformed with the technical standards for commercial power reactors and their affiliated facilities and that they have passed the pre-service inspections.

The pre-service inspections are in progress for the Specialized Safety Facilities of Unit 3 of Mihama Power Station, Units 1 and 2 of Takahama Power Station, and Units 1 and 2 of Sendai Nuclear Power Station.

○ Commercial power reactors

No.	Applicant	Targeted power reactor			New Regulatory Requirements Conformity Review			Pre-service inspection, etc.
					Permission for change in reactor installation	Approval of construction plan	Approval of operational safety program	
1	Japan Atomic Power Company	Tokai Daini NPS		BWR	**Completed**	**Completed**	Under review	
2		Tsuruga NPS	Unit 2	PWR	Under review	Not applied	Under review	
3	Electric Power Development Co., Ltd.	Ohma NPS		Under construction	Under review	Under review	Not applied	
4	Hokkaido Electric Power Co., Inc.	Tomari NPS	Unit 1	PWR	Under review	Under review	Under review	
5			Unit 2	PWR	Under review	Under review	Under review	
6			Unit 3	PWR	Under review	Under review	Under review	
7	Tohoku Electric Power Co., Inc.	Higashidori NPS		BWR	Under review	Under review	Under review	
8		Onagawa NPS	Unit 2	BWR	Under review	Under review	Under review	
9			Unit 3	BWR	Not applied	Not applied	Not applied	
10	TEPCO Holdings	Higashidori NPS		Under construction	Not applied	Not applied	Not applied	
11		Fukushima Daini NPS	Unit 1	BWR	Not applied	Not applied	Not applied	
12			Unit 2	BWR	Not applied	Not applied	Not applied	
13			Unit 3	BWR	Not applied	Not applied	Not applied	
14			Unit 4	BWR	Not applied	Not applied	Not applied	
15		Kashiwazaki-Kariwa NPS	Unit 1	BWR	Not applied	Not applied	Not applied	
16			Unit 2	BWR	Not applied	Not applied	Not applied	
17			Unit 3	BWR	Not applied	Not applied	Not applied	
18			Unit 4	BWR	Not applied	Not applied	Not applied	
19			Unit 5	BWR	Not applied	Not applied	Not applied	
20			Unit 6	BWR	**Completed**	Under review	Under review	
21			Unit 7	BWR	**Completed**	Under review	Under review	
22	Chubu Electric Power Co., Inc.	Hamaoka NPS	Unit 3	BWR	Under review	Not applied	Not applied	
23			Unit 4	BWR	Under review	Under review	Under review	
24			Unit 5	BWR	Not applied	Not applied	Not applied	
25	Hokuriku Electric Power Company	Sika NPS	Unit 1	BWR	Not applied	Not applied	Not applied	
26			Unit 2	BWR	Under review	Under review	Under review	
27	Kansai Electric Power Co., Inc.	Mihama NPS	Unit 3	PWR	**Completed**	**Completed**	Under review	Under inspection
28		Ohi NPS	Unit 3	PWR	**Completed**	**Completed**	**Completed**	**Completed**
29			Unit 4	PWR	**Completed**	**Completed**	**Completed**	**Completed**
30		Takahama NPS	Unit 1	PWR	**Completed**	**Completed**	Not applied	Under inspection
31			Unit 2	PWR	**Completed**	**Completed**	Not applied	Under inspection
32			Unit 3	PWR	**Completed**	**Completed**	**Completed**	**Completed**
33			Unit 4	PWR	**Completed**	**Completed**	**Completed**	**Completed**
34	Chugoku Electric Power Co., Inc.	Shimane NPS	Unit 2	BWR	Under review	Under review	Under review	
35			Unit 3	Under construction	**Under review**	Not applied	Not applied	
36	Shikoku Electric Power Co., Inc.	Ikata NPS	Unit 3	PWR	**Completed**	**Completed**	**Completed**	**Completed**
37	Kyushu Electric Power Co., Inc.	Genkai NPS	Unit 3	PWR	**Completed**	**Completed**	**Completed**	**Completed**
38			Unit 4	PWR	**Completed**	**Completed**	**Completed**	**Completed**
39		Sendai NPS	Unit 1	PWR	**Completed**	**Completed**	**Completed**	**Completed**
40			Unit 2	PWR	**Completed**	**Completed**	**Completed**	**Completed**

(Notes)

- Power reactors, whose decommissioning plans have been approved or whose decommissioning has been announced by the nuclear operator, are excluded.
- In FY2018, Tohoku Electric and Kyushu Electric announced decommissioning of Onagawa NPS Unit 1 and Genkai NPS Unit 2, respectively.
- Nuclear power stations whose status changed in FY2018.

Figure 2-2-1 Status of the Reviews and Inspections of Commercial Power Reactors Concerning Conformity to New Regulatory Requirements

○ Commercial power reactors (Specialized Safety Facilities)

No.	Applicant	Targeted power reactor			New Regulatory Requirements Conformity Review			Pre-service inspection, etc.
					Permission for change in reactor installation	Approval of construction plan	Approval of operational safety program	
1	Electric Power Development Co., Ltd.	Ohma NPS		Specialized Safety Facilities	Under review			
2	Hokkaido Electric Power Co., Inc.	Tomari NPS	Unit 3	Specialized Safety Facilities	Under review			
3	TEPCO Holdings	Kashiwazaki-Kariwa NPS	Unit 1	Specialized Safety Facilities	Under review			
4			Unit 6	Specialized Safety Facilities	Under review			
5			Unit 7	Specialized Safety Facilities	Under review			
6	Kansai Electric Power Co., Inc.	Mihama NPS	Unit 3	Specialized Safety Facilities	Under review			
7		Ohi NPS	Unit 3	Specialized Safety Facilities	Under review			
8			Unit 4	Specialized Safety Facilities	Under review			
9		Takahama NPS	Unit 1	Specialized Safety Facilities	**Completed**	Under review		
10			Unit 2	Specialized Safety Facilities	**Completed**	Under review		
11			Unit 3	Specialized Safety Facilities	**Completed**	Under review		
12			Unit 4	Specialized Safety Facilities	**Completed**	Under review		
13	Chugoku Electric Power Co., Inc.	Shimane NPS	Unit 2	Specialized Safety Facilities	Under review			
14	Shikoku Electric Power Co., Inc.	Ikata NPS	Unit 3	Specialized Safety Facilities	**Completed**	**1st: completed 2nd: under review 3rd: under review 4th: under review**		
15	Kyushu Electric Power Co., Inc.	Genkai NPS	Unit 3	Specialized Safety Facilities	Under review			
16			Unit 4	Specialized Safety Facilities	Under review			
17		Sendai NPS	Unit 1	Specialized Safety Facilities	**Completed**	**Completed**		**Under inspection**
18			Unit 2	Specialized Safety Facilities	**Completed**	**1st: completed 2nd: completed 3rd: under review**		**Under inspection**

(Notes)

- Power reactors, whose decommissioning plans have been approved or whose decommissioning has been announced by the nuclear operator, are excluded.
- Nuclear power stations whose status changed in FY2018.

Figure 2-2-2 Status of the Reviews and Inspections of Commercial Power Reactors Concerning Conformity to New Regulatory Requirements (Specialized Safety Facilities)

2. Implementation of Operational Safety Inspection, etc. of Commercial Power Reactors, etc.

In order to ensure the safety of commercial power reactors, the NRA conducted quarterly operational safety inspections, primarily through nuclear safety inspectors stationed at NRA Regional Offices located near nuclear facilities. Considering the plant state, these inspectors made daily patrols, interviewed about maintenance activity, and witnessed periodic tests.

In addition, the inspection of safety-significant activities was conducted under plant operation.

In operational safety inspections of commercial power reactors conducted in FY2018, 5 violations of operational safety programs have been identified (one of which is ongoing). (Excluding those for which the inspection results are under compilation as of the end of FY2018.)

Regarding other inspections relating to commercial power reactors (other than those based on the New Regulatory Requirements), pre-service inspections were conducted following renewal of equipment, and periodic facility inspections, etc. were also conducted with an interval determined by regulations concerning installation and operation of commercial power reactors. In FY2018, 46 cases were found to have passed pre-service inspections and 15 cases were recognized as having completed periodic facility inspections.

As in the previous fiscal year, cases of dishonest quality management, etc. by manufacturers closely relating to nuclear facilities were disclosed to the public. The NRA continues to pay close attention to new findings from investigation by nuclear operators, including receiving them from nuclear operators.

3. Implementation of Conformity Review to New Regulatory Requirements and Inspections of Nuclear Fuel Facilities

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

As for nuclear fuel facilities, since the enactment of New Regulatory Requirements in December 2013, applications for permission of change in facility operations at 21 facilities were submitted by 9 nuclear operators by the end of FY2018. In FY2018, the NRA received an application for permission of change in facility operations, on August 1, 2018, for the alteration of the waste disposal activity at the Rokkasho Low Level Radioactive Waste Disposal Center of the Japan Nuclear Fuel Ltd. Reviews were conducted based on “Conducting conformity reviews of facilities for handling nuclear fuel materials after the enactment of New Regulatory Requirements” (adopted on December 25, 2013, amended on June 1, 2016, and amended on April 25, 2018). In FY2018, a total of 35 review meetings attended in principle by the NRA Commissioners were held.

In FY2018, the NRA granted permission for change in reactor installation for JRR-3 of the Nuclear Science Research Institute of the JAEA on November 7, 2018, and for the radioactive waste disposal facility of the same institute on October 17, 2018.

As for the experimental fast reactor “Joyo” at the Oarai Research and Development Institute of the JAEA, the review had been suspended since a mismatch between thermal power (a prerequisite for the review) and plant equipment was pointed out at the review meeting held on April 25, 2017. However,

a corrective application was submitted on October 26, 2018 and the review was resumed at the review meeting on November 20, 2018. Design and construction method approval for the Nuclear Safety Research Reactor (NSRR) at the Nuclear Science Research Institute of JAEA except seismic requirements for facilities of seismic class C was completed by April 20, 2018 on the basis of the permission for change in reactor installation granted in FY2017. Pre-service inspections were conducted for requirements except seismic requirements for facilities of seismic class C and pre-service inspection acceptance certificates were issued on April 16 and 18, 2018, after confirming that the construction was undertaken according to the approved design and construction method and that the facilities are in compliance with the regulations on the technical standards for the performance of research reactors. Considering this, the Secretariat of the NRA reported, at the 5th NRA Commission Meeting (April 25, 2018), that the conditions to apply the interim measure[21] were met. Accordingly, JAEA resumed the operation of NSRR on June 28, 2018.

The 23rd FY2018 NRA Commission Meeting (August 22, 2018) granted permission of change in facility operations for the waste management facility at the Oarai Research and Development Institute of JAEA.

The decommissioning plan for the reprocessing facility of JAEA's Nuclear Fuel Cycle Engineering Laboratories was approved on June 13, 2018.

At the 43rd FY2017 NRA Commission Meeting (October 11, 2017), Japan Nuclear Fuel Ltd. (JNFL) announced its intention to suspend review-related work until its new maintenance management system is established in response to the violation of the operational safety program found at its reprocessing plant, etc. At the first FY2018 NRA Commission Meeting (April 4, 2018), JNFL reported that it had obtained good prospects and announced the resumption of the review-related work. In FY2018, 15 review meetings were held for JNFL projects, including the application filed on August 1, 2018 for the waste disposal facility.

[21] In the "General Ideas for Applying the New Regulatory Requirements to Nuclear Fuel Facilities, etc." (amended on November 6, 2013, amended on December 21, 2016, amended on April 25, 2018, and amended on December 12, 2018), the NRA proposed that the "interim measure" not to hinder the operation of a research reactor without a facility of seismic class S can be applied for up to two years in the event that compliance with the new regulatory requirements (compliance with the non-seismic requirements of the new regulatory requirements, for facilities of seismic class C) is confirmed in the course of construction plan approval and pre-service inspection.

○ Nuclear fuel facilities, etc.

No.	Applicant	Targeted facility	New Regulatory Requirements Conformity Review (*1)			Pre-service inspection, etc.
			Permission for installation change or permission for facility operation change	Approval of construction plan	Approval of operational safety program	
1	Japan Nuclear Fuel Ltd.	Reprocessing facility	Under review	**Under review**	Under review	
2		MOX fuel fabrication facility	Under review	**Under review**	Not applied	
3		Uranium enrichment facility	**Completed**	**Under review**	Under review	
4		Waste management facility	Under review	Under review	Under review	
5		Waste disposal facility	**Under review**		Not applied	
6	Recyclable-Fuel Storage Company	Spent fuel storage facility	Under review	Under review	Under review	
7	Mitsubishi Nuclear Fuel	Uranium fuel fabrication facility	**Completed**	Under review	Under review	**Under inspection**
8	Japan Atomic Energy Agency	Waste management facility	**Completed**	Under review	Under review	
9		Research reactor facility (JRR-3)	**Completed**	**Under review**	Under review	
10		Research reactor facility (HTTR)	Under review	Under review	Under review	
11		Research reactor facility (Common radioactive waste disposal facility)	**Completed**	Under review	Not applied	
12		Research reactor facility (NSRR)	**Completed**	**Partially completed (*3)**	**Completed**	**Partially completed (*3)**
13		Research reactor facility (STACY)	**Completed**	Under review	**Partially completed (*2)**	**Under inspection**
14		Research reactor facility (Joyo)	Under review	Not applied	Under review	
15	Nuclear Fuel Industries. Ltd.	Uranium fuel fabrication facility (Tokai Works)	**Completed**	Under review	**Completed**	**Under inspection**
16		Uranium fuel fabrication facility (Kumatori Works)	**Completed**	**Under review**	Under review	
17	Global Nuclear Fuel Japan	Uranium fuel fabrication facility	**Completed**	Under review	Under review	
18	Kyoto University	Research reactor facility (KUR)	**Completed**	**Completed**	**Completed**	**Completed**
19		Research reactor facility (KUCA)	**Completed**	**Completed**	**Completed**	**Completed**
20	Kinki University	Research reactor facility (Kinki University Reactor)	**Completed**	**Completed**	**Completed**	**Completed**
21	Japan Atomic Power Company	Category 2 waste disposal facility (trench disposal)	Under review		Not applied	

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

(*1) This shall not preclude implementation of activities other than “those that greatly increase facility risk or that reduce facility risk” only for 5 five years. (Refer to “Policies on the Application of New Regulatory Requirements to Nuclear Fuel Facilities” enacted by the Secretariat of the NRA on November 6, 2013.)

(*2) Approved except for the part of the Operational Safety Program related to facility operation (application to be filed later for portions related to facility operation).

(*3) Approved as a research reactor without a facility of seismic class S (and passed inspections), after confirmation of compliance with all requirements for facilities of seismic class B and non-seismic requirements for facilities of seismic class C, according to the “Policies on the Application of New Regulatory Requirements to Nuclear Fuel Facilities” (as amended on December 21, 2016). Therefore, the interim measure not to preclude operation of the reactor is applied (for up to two years after permission for change in reactor installation is granted).

Facilities whose status changed in FY2018.

Figure 2-3 Status of Reviews and Inspections Concerning Conformity to New Regulatory Requirements (Nuclear fuel facilities, etc.)

(2) Implementation of Other Inspections of Nuclear Fuel Facilities, etc.

As for nuclear fuel facilities, etc. regardless of the approval of conformity to New Regulatory Requirements in the review, periodic facility inspections were conducted annually, and pre-service inspections and facility inspections were conducted following renewal of equipment. In FY2018, 11 facilities passed the pre-service inspections and 12 facilities completed the facility inspections.

4. Implementation of Operational Safety and Other Inspections of Nuclear Fuel Facilities

(1) Implementation of Operational Safety and Other Inspections of Nuclear Fuel Facilities

In order to ensure the safety of nuclear fuel facilities, the NRA periodically conducted quarterly operational safety inspections, primarily through nuclear safety inspectors stationed at NRA Regional Offices located near nuclear facilities. In accordance with the configuration of each facility, these inspectors made daily patrols of nuclear facilities, conducted interviews to ascertain the state of operations, and also witnessed periodic tests. The operational safety inspections of nuclear fuel facilities, etc. conducted in FY2018 revealed one violation of the operational safety program: inadequate management of the container containing a contaminated pump at the reprocessing plant of the Japan Nuclear Fuel Ltd.

As in the previous fiscal year, misconduct relating to quality control, etc. by manufacturers with track records of delivery to nuclear facilities was disclosed to the public. The NRA continues to keep an eye on the status of investigations by nuclear operators, including hearing from nuclear operators.

(2) Implementation of On-Site Inspections of Nuclear Fuel Facilities and Others

In FY2018, the systematic on-site inspections of the users of nuclear fuel materials not subject to Article 41 of the Enforcement Ordinance of the Reactor Regulation Act[22] were conducted at 12 facilities.

5. Determining the Causes of and Countermeasures for Accidents and Failures in Nuclear Facilities

Article 62-3 of the Reactor Regulation Act requires nuclear operators to report accidents and failures which occurred in nuclear facilities as stipulated in the NRA Ordinance (hereinafter referred to as "events reported based on the Act" in this item and in Section 1(10) of Chapter 3 hereof).

Concerning events reported based on the Act, a total of 5 events occurred in FY2018: 4 events at commercial power reactors and 1 event at a nuclear fuel facility. The NRA received reports on these events from nuclear operators and has been strictly checking on efforts being undertaken by nuclear operators to ascertain causes and implement recurrence-prevention measures. (Events reported based on the Act related to Specified Nuclear Facility are listed in Section 1(10) of Chapter 3 hereof.)

Events reported based on the Act are subject to evaluations conducted according to the International

[22] Users of nuclear fuel materials and/or nuclear source materials, who have facilities not subject to any item of Article 41 of the Enforcement Ordinance of the Act on the Regulation of Nuclear Source Material, Nuclear Fuel Material, and Reactors.

Nuclear and Radiological Event Scale (hereinafter referred to as "INES"). Of the 5 events that occurred in FY2018, 2 events at Takahama Power Station of the Kansai Electric Power Co., Inc. and 1 event at Hamaoka Nuclear Power Station (hereinafter referred to as "Hamaoka NPS") of Chubu Electric Power Co. Inc were under evaluation as level zero (event with no safety significance). The other 2 events are under evaluation as of the end of FY2018. Of the 2 events that occurred in commercial power reactors and were under evaluation in FY2017, the event at Hamaoka NPS was evaluated as level zero (event with no safety significance).

At the 5th FY2018 NRA Commission Meeting (April 25, 2018), the NRA instructed the Secretariat of the NRA to improve the transparency of the processes of situation checks upon receiving nuclear operators' reports and discussion of response actions. In response to this instruction, the Secretariat of the NRA reported, at the 10th FY2018 NRA Commission Meeting (May 23, 2018), its plan to adequately implement progress management to ensure the transparency of accident/failure response actions by holding public meetings as appropriate for discussing and sharing event information with nuclear operators. This plan was accepted and five Meetings for Dealing with Accidents and Failures at Nuclear Facilities (hereinafter referred to as "public meetings" in this clause) were held in FY2018.

(1) Failure of Emergency Diesel Generator at Unit 5 of Hamaoka NPS of Chubu Electric Power Co., Inc.

On June 5, 2018, Chubu Electric Power Co., Inc. reported a deviation from the limiting condition for operation of Hamaoka Unit 5, which was under periodic inspection, because it could not satisfy the requirements of the operational safety program for an emergency diesel generator (emergency D/G). After that, it was reported to the NRA that this corresponds to an event that the nuclear operator should report based on the Act since the subsequent investigation revealed that the D/G could not be restored in a short time by replacing consumable parts or adjusting the equipment.

The NRA listened to the nuclear operator's explanation about the progress of cause analysis on August 6, 2018, received the nuclear operator's report about the causes of the incident and the countermeasures on September 20, 2018, received a supplement to the report on November 28, 2018, discussed the adequacy of the nuclear operator's recurrence prevention measures at public meetings held on October 3, 2018 and December 12, 2018, and prepared a draft evaluation report. At the 53rd FY2018 NRA Commission Meeting (January 16, 2019), the NRA valuated that the recurrence prevention measures reported by the nuclear operator could have a certain effect, and decided to confirm, during future operational safety inspections, the implementation status of the recurrence prevention measures and preventive measures to be implemented by the nuclear operator. However, the NRA expressed its opinion that the occurrence mechanism of the incident has not yet been well clarified and therefore the clarification work should be continued, and that the findings therefrom should be shared widely among other nuclear operators.

(2) Shaft Sticking of Emergency Diesel Generator (B) Supercharger at Unit 1 of Kashiwazaki-

Kariwa NPS of TEPCO Holdings

On September 6, 2018, TEPCO reported a shaft seizure of the emergency D/G (B) supercharger at Kashiwazaki-Kariwa NPS Unit 1, which was under periodic inspection, and that this corresponds to an event that the nuclear operator should report based on the Act since the D/G could not fulfill the required safety function because it had to be transported to the manufacturer's shop for adjustment and could not be restored in a short time.

The NRA listened to the nuclear operator's explanation about the progress of cause analysis at public meetings held on October 29 and December 12, 2018, received the nuclear operator's report about the causes of the incident and the countermeasures on March 5, 2019, and requested additional explanation from the nuclear operator at a public meeting on March 18, 2019. The nuclear operator is preparing for an additional explanation as of the end of FY2018.

(3) Steam Generator Tube Failure Found at Takahama Power Station of Kansai Electric Power Co., Inc.

(a) Takahama Power Station Unit 4 of Kansai Electric Power Co., Inc.

On June 22, 2018, Kansai Electric Power Co., Inc. reported that possible flaws were confirmed in two of 3,247 heating tubes (excluding plugged tubes) of steam generator A, during Eddy Current Testing (ECT) for checking the integrity of the heating tubes (9,754 tubes in total excluding plugged tubes) of three steam generators of Takahama Power Station Unit 4, which was in shutdown state for periodic inspection, and that this corresponds to an event that the nuclear operator should report based on the Act.

A report on the causes of and countermeasures to the event was submitted by the nuclear operator on June 25, 2018. At the 17th FY2018 NRA Commission Meeting (June 27, 2018), the NRA evaluated that the cause analysis and countermeasures implemented by the nuclear operator were proper.

(b) Takahama Power Station Unit 3 of Kansai Electric Power Co., Inc.

On September 12, 2018, Kansai Electric Power Co., Inc. reported that possible flaws were confirmed in one of 3,263 heating tubes (excluding plugged tubes) of the steam generator C, during ECT testing for checking the integrity of the heating tubes (9,784 tubes in total excluding plugged tubes) of three steam generators of Takahama Power Station Unit 3, which was in shutdown state for periodic inspection, and that this corresponds to an event that the nuclear operator should report based on the Act.

A report on the causes of and countermeasures to the event was submitted by the nuclear operator on June 25, 2018. At the 31st FY2018 NRA Commission Meeting (September 19, 2018), the NRA evaluated that the cause analysis and countermeasures implemented by nuclear operator were proper.

(4) Designation of Access Control Area due to Leakage of Nuclear Material at Nuclear Fuel Cycle Engineering Laboratories of JAEA

On January 30, 2019, the NRA was informed by JAEA of an incident vent to be considered to be an incident reported based on the Act that involved designation of an access control area in the Plutonium Fuel Development Section 2 of JAEA's Nuclear Fuel Cycle Engineering Laboratories due to activation of an alarm indicating nuclear material leakage within a controlled area.

The NRA received the nuclear operator's report on the causes and countermeasures on March 13, 2019, and received a revised report on the causes and countermeasures on March 27, 2019. The Safety Oversight Team for Tokai Reprocessing Plant and Other Facilities discussed the adequacy of the recurrence prevention measures, etc. on March 14, 2019 and March 28, 2019. The evaluation of the adequacy of the cause investigation and recurrence prevention measures is in progress as of the end of FY2018.

(5) Response Actions to Accidents/Failures Experienced in FY2017

Establishing Entry-Restricted Zones Associated with Leaks of Liquids in a Building for the Volume Reduction Processing Device of Radioactive Waste at Hamaoka NPS of Chubu Electric Power Co., Inc.

On May 2, 2017, Chubu Electric Power Co., Inc. reported that an entry-restricted zone had been set up in accordance with Operational Safety Programs after finding powdery deposits on the second basement floor of the building for the volume reduction processing device of radioactive waste at Hamaoka Nuclear Power Station of Chubu Electric Power Co., Inc. (hereinafter referred to as "Hamaoka NPS") and that this fell under an event to be reported based on the Act. On November 2017, the nuclear operator reported on the causes of and measures taken for this event. In response, the NRA was examining details of the report as of the end of FY2017. The NRA received a supplement to the report on April 13, 2018. At the 5th NRA Commission Meeting (April 25, 2018), the NRA confirmed the adequacy on the nuclear operator's cause investigation and recurrence prevention measures.

Furthermore, on January 18, 2018, Chubu Electric Power Co., Inc. reported that an entry-restricted zone had been set up in accordance with Operational Safety Programs after finding granular deposits on the second floor of the building for the volume reduction processing device of radioactive waste at Hamaoka NPS and that this fell under an event reported based on the Act. As of the end of FY2017, the nuclear operator is investigating the analysis of this event and its correlation with the event of finding deposits on the second basement floor of the same building that occurred on May 2 of the previous year.

6. Implementation of Review Concerning the Extension of Operational Period of Commercial Power Reactors

(1) Implementation of Review Concerning the Extension of Operational Period of Commercial Power Reactors

The operational period extension approval system approves the extension period during which a commercial power reactor can be operated only one time by up to 20 years as the upper limit, while a

commercial power reactor can normally be operated for 40 years from the date when the operation was initiated. At the 40th FY2018 NRA Commission Meeting (November 7, 2018), the NRA approved the operational life extension for Tokai Daini Power Station.

(2) Implementation of Review Concerning Aging Management System for Commercial Power Reactors

The aging management system requires an assessment of degradation of equipment and structures and development of a long-term maintenance policy for commercial power reactor facilities that have been operated for more than 30 years. This takes place every 10 years and is reflected to the operational safety programs.

In FY2018, Hokkaido Electric Power Co., Inc. filed an application for review of Tomari Power Station Unit 1 for which the nuclear operator made evaluation under the assumption that the plant is maintained only in a state of cold shutdown. At the 40th FY2018 NRA Commission Meeting (November 7, 2018), the Commission approved the changes to the operational safety program concerning the aging management system for Tokai Daini Power Station for which evaluation was performed on the assumption of power operation.

7. Study on Monitoring of Volcanic Activities

The Subcommittee of Volcano Monitoring established on March 25, 2016 under the Reactor Safety Examination Committee (RSEC) held three meetings on April 13, 2018, August 10, 2018, and March 22, 2019, and discussions were held on the following matters. The subcommittee reported on its deliberation status at RSEC meeting held on March 30, 2018.

(1) Discussion on the Rough Standard for Making Judgments Concerning Reactor Shutdown

The Subcommittee of Volcano Monitoring discussed the judging guidance to stop reactor operation, collected related knowledge, and consolidated the opinions of the expert members on the basic approach.

(2) Evaluation of Monitoring Results by Nuclear Operators

The Subcommittee of Volcano Monitoring deliberated the results of the Secretariat of the NRA's evaluation of the volcanic monitoring that Kyushu Electric Power Co., Inc. conducted at Sendai and Genkai Power Stations, and summarized the deliberation results.

8. Study on Ground Motions without Identification of Seismic Sources

Ground motions without identification of seismic sources (ground motions of Mw below 6.5) are considered design basis ground motions of particular importance for nuclear power stations throughout Japan on the basis of seismological investigation. Accordingly, at the 52nd FY2017 NRA Commission Meeting (November 29, 2017) , the NRA set up the Study Team on Evaluation for Ground Motions

without Identification of Seismic Sources to clearly show a method of determining such ground motions for common use.

In FY2018, the Study Team on Evaluation for Ground Motions without Identification of Seismic Sources had 5 meetings (the "Team Meetings") on June 14, 2018, October 4, 2018, November 8, 2018, March 4, 2019, and March 29, 2019.

The Team Meeting on June 14, 2018 discussed studies with 9 earthquakes, for which observation records to be studied exist, out of 14 earthquakes listed in the guide, and showed the study results. The 5th Team Meeting on October 4, 2018 heard the progress of the nuclear operators' studies on "ground motions without identification of seismic sources" and discussed a method for preparing time history waveforms to be studied by nuclear operators. The 6th Team Meeting on November 8, 2018 discussed the approach to the study on the method for correcting the response spectra for 89 earthquakes, the specific features on ground motions to be statistically processed, etc. The 7th Team Meeting on March 4, 2019 discussed, based on the findings at the previous meeting, the standard response spectra (draft) determined on the basis of the studies on the response spectra for multiple non-exceedance probabilities, and the results of the validation of those spectra. The 8th Team Meeting on March 29, 2018 heard nuclear operators' opinions on the contents of the studies performed by the Study Team including the standard response spectra (draft) shown at the previous Team Meeting.

The progress in the discussions at the Team Meetings was reported to the NRA Commission at the 31st FY2018 NRA Commission Meeting (September 19, 2018).

9. Actions in Response to Re-evaluation of Eruptive Volume of Daisen-Namatake Tephra from Daisen Volcano

At the 42nd FY2018 NRA Commission Meeting (November 21, 2018), the NRA Commission recognized, based on the document "Results of the Opinion Exchange with Kansai Electric Power on the Distribution of Volcanic Ash from Daisen Volcano and the Related Field Survey," the new findings that the thickness of the ash fall layer of the Daisen-Namatake Tephra (DNP) at Koshihata, Kyoto City is about 25 cm and the eruptive volume of DNP is more than 10 km^3, exceeding the volume assumed in past studies.

The NRA judged that these new findings could influence the maximum thickness of falling pyroclastic materials in the sites of nuclear power stations of Kansai Electric Power Co., Inc. (Takahama Power Station, Ohi Power Station, and Mihama Power Station) and could result in significant changes in the prerequisites used in the evaluation for the permission for change in reactor installation. Therefore, at the 47th FY2018 NRA Commission Meeting (December 12, 2018), the NRA ordered Kansai Electric Power to report the maximum thickness of falling pyroclastic materials in each nuclear power station based on the evaluation of the eruptive volume of DNP by March 31, 2019, in accordance with Article 67, paragraph 1 of the Reactor Regulation Act. The NRA received a report on March 29, 2019.

10. Countermeasures for Tsunamis That may not be Accompanied by Tsunami Warning

In light of the tsunami that was induced by a volcanic eruption on December 22, 2018 in Indonesia, at the 53rd FY2018 NRA Commission Meeting (January 16, 2019), the NRA discussed the handling of tsunamis induced by non-seismic causes in the New Regulatory Requirements and the responses to tsunamis that may not be accompanied by a tsunami warning.

At Takahama Power Station of Kansai Electric Power Co., Inc., runup and inflow of tsunami waves into the site are prevented by closing the normally-open tide gate of the water intake canal after receiving tsunami warning in the case of a design basis tsunami. Such a tsunami would be generated by a wave source which is a combination of the Wakasa Kaikyuretsu-Fukin fault and an offshore landslide in the Oki Trough and takes sufficient time to arrive at the site. Although tsunami waves could arrive at the site without a tsunami warning in the event that an offshore landslide in the Oki Trough takes place independently, no evaluation has been performed of the runup areas and tsunami protection measures when the tide gate of the water intake canal is not closed. Therefore, it was decided to hear from Kansai Electric Power Co., Inc. about the tsunami runup evaluation under the condition of an open tide gate of the water intake canal and the impacts on important equipment such as seawater pumps at a public meeting mainly attended by the NRA Commissioners and the staff of the Nuclear Regulation Department.

11. Actions Taken for Decommissioning of the Prototype Fast Breeder Reactor Monju

In January 2017, the NRA set up the Safety Oversight Team for Prototype Fast Breeder Reactor Monju Decommissioning to check continuously the state of Monju and the actions carried out by the JAEA (hereafter referred to as “the Oversight Team”). Nineteen meetings of the Oversight Team were held and four site investigations were conducted by the end of March 2019.

At the meetings of the Oversight Team, interviews were conducted to ascertain the state of study on problems to be solved for decommissioning of Monju, and the application for approval of the decommissioning plan, which was submitted by JAEA on December 6, 2017, was reviewed. At the 75th FY2017 NRA Commission Meeting (March 28, 2018), the decommissioning plan was approved. As the fuel removing work from the core, etc. as described in the approved decommissioning plan was started in August 2018, interviews were conducted by the Oversight Team regarding progress in the fuel removing work.

12. Actions taken for Decommissioning of Tokai Reprocessing Plant

In a period from January 2016 to March 2019, the NRA held a total of 28 meetings of the Safety Oversight Team for Tokai Reprocessing Plant and Other Facilities and 8 meetings in FY2018 in order to check continuously the status of implementation of vitrification for risk reduction within JAEA’s Nuclear Fuel Cycle Engineering Laboratories’ Reprocessing Plant (hereinafter referred to as “Tokai Reprocessing Plant”), safety of the facility, and the manners for ensuring safety in the decommissioning process.

The NRA reviewed JAEA's application for approval of the decommissioning plan filed on June 30, 2017, in accordance with the "Guidance on the Review for Operational Safety Program at the Decommissioning Stage of JAEA's Nuclear Fuel Cycle Engineering Laboratories (Reprocessing Facility)" and the "Guidance on the Review for Operational Safety Program" (decision by the NRA Commission dated April 19, 2017), and prepared the review report. The decommissioning plan was approved at the 14th FY2018 NRA Commission Meeting (June 13, 2018).

The Safety Oversight Team for Tokai Reprocessing Plant and Other Facilities is reviewing the approach to ensuring the safety of the Tokai Reprocessing Plant, as well as checking the application for change of decommissioning plan, etc.

13. Thorough Explanation on Review Results

The results of the Conformity Review to New Regulatory Requirements are explained based on the requests from the local communities where nuclear power stations are located. In FY2018, the NRA made explanations on the review results for the applications for reactor installation permit change for Kashiwazaki-Kariwa NPS Units 6 and 7 at resident briefing sessions held in Kashiwazaki City and Kariwa Village as well as at the Niigata Technical Committee meeting and the Niigata Municipalities Liaison Meeting. The NRA gave explanations on the results of the review for reactor installation permit changes, construction plan approval, and operational period extension approval for Tokai Daini Power Station at resident briefing sessions held in six municipalities in Ibaraki Prefecture.

14. Development of Guidelines Concerning Evaluations for Safety Improvement and Appropriate System Operation

In FY 2018, the NRA received safety improvement evaluation reports for Kyushu Electric Power's Sendai NPS Unit 1 (January 7, 2019) and Unit 2 (March 28, 2019) and Kansai Electric Power's Takahama NPS Unit 4 (March 29, 2019).

In March 2019, the NRA established the "Operational Guide for Safety Improvement Evaluation of Uranium Fuel Fabrication Facilities" to supplement the uranium fuel fabrication portion of the "Operational Guide for Safety Improvement Evaluation of Fuel Fabrication and Reprocessing Facilities" and revised the related supplementary provisions.

Section 3 Harmonization among Nuclear Safety, Nuclear Security, and Safeguards

In order to develop harmonization among nuclear safety, nuclear security, and safeguards to a higher level, the NRA clarified and discussed the related issues at the 5th FY2018 NRA Commission Meeting (April 25, 2018).

Based on this discussion, the Secretariat of the NRA reported the following approaches for harmonization at the 27th FY2018 NRA Commission Meeting (September 5, 2018).

- The NRA issued the "Directives on Validation of Reliability of NRA Staff" in April 2018 as a new mechanism to validate the qualifications of staff who handle nuclear security-related secrets. This

mechanism is aimed at ensuring adequate access to nuclear security-related documents by staff members, including those engaged in review and inspection for nuclear safety. The trustworthiness check program is in progress.

- In July 2018, the NRA started full implementation of information sharing procedures. For example, when receiving an application with respect to safety, the safety department shares the information about the application and the result that the applicant examined whether the safety measures, etc. related to the application have any adverse effects on security measures or implementation of safeguards with the security department and the safeguards office. Regarding inspections, when they notice matters related to nuclear security or safeguards, inspectors are to share relevant information with the headquarters staff in charge.
- In addition, the NRA interviewed 27 licensees that are all nuclear operators required to establish a physical protection program, and pushed for meeting the requirements concerning nuclear safety, nuclear security and safeguards, eliminating mutual adverse effects as much as possible, and taking appropriate measures for those purposes.

Section 4 Continuous Improvement of the Regulation System pertaining to the Radiation Hazards Prevention Act

1. Promotion of Development of Regulatory Systems for Radiation Hazards Prevention and Protection of Specified Radioisotopes

Following the recommendation described in the IRRS report, the Amendment Act, which passed the Diet on April 7, 2017 and was promulgated on April 14, 2018, provides that the Act is enforced in two stages, within one year after promulgation (Article 4 of the Amendment Act) and within three years after promulgation (Article 5 of the Amendment Act), taking into consideration the preparation period for nuclear operators subject to New Regulatory Requirements.

The revision of the Radiation Hazards Prevention Act pursuant to Article 4 of the Amendment Act includes the obligation of reporting to the NRA, etc. in case of an accident, etc. and the addition of a special case pertaining to waste management of radioactively contaminated objects, the waste management of which has been entrusted to a licensed waste management operator prescribed in the Radiation Hazards Prevention Act by users having been granted permission or who have given utilization notification and licensed waste management operators, where these objects are deemed to be objects contaminated by nuclear fuel material, etc. This revision has come into effect as of April 1, 2018. Furthermore, the NRA, taking into account the amendment of the Radiation Hazards Prevention Act in April 2017, held briefings in Fukuoka, Hokkaido, Okayama, and Tokyo after June 2018, continuing from the briefings in FY2017.

The amendment of the Radiation Hazards Prevention Act based on Article 5 of the Amendment Act includes the demand that operators who handle highly hazardous radioisotopes (specified radioisotopes) shall take security measures for preventing their theft. The NRA solicited public comments from July 12 to August 10, 2018 concerning laws and regulations relevant to Article 5 of

the Amendment Act. Taking into account the results of the public comments, at the 38th FY2018 NRA Commission Meeting (October 31, 2018), the NRA decided on a Cabinet Order, main regulations, and public notices (promulgation of the Cabinet Order was on November 21, 2018 and that of the regulations and public notices was on November 26, 2018). The NRA continues to provide regulations and public notices, and set up a public comment procedure at the 67th FY2018 NRA Commission Meeting (March 20, 2019).

At the 43rd FY2018 NRA Commission Meeting (November 22, 2018), the NRA decided on the creation of regulations pertaining to the introduction of the security measures for specified radioisotopes. Furthermore, as Article 5 of the Amendment Act comes into effect as of September 1, 2019, the NRA conducted an education program for specified radioisotope security managers from December 2018 to the end of February 2019, and ensured the full awareness of target entities for the smooth introduction of the security measures for specified radioisotopes that the new regulations demand. The NRA actively responded to requests for lectures, etc. from relevant societies, etc., dispatched 25 instructors in FY2018, and made the amendment of the Enforcement Regulation of the Radiation Hazards Prevention Act, etc. well known.

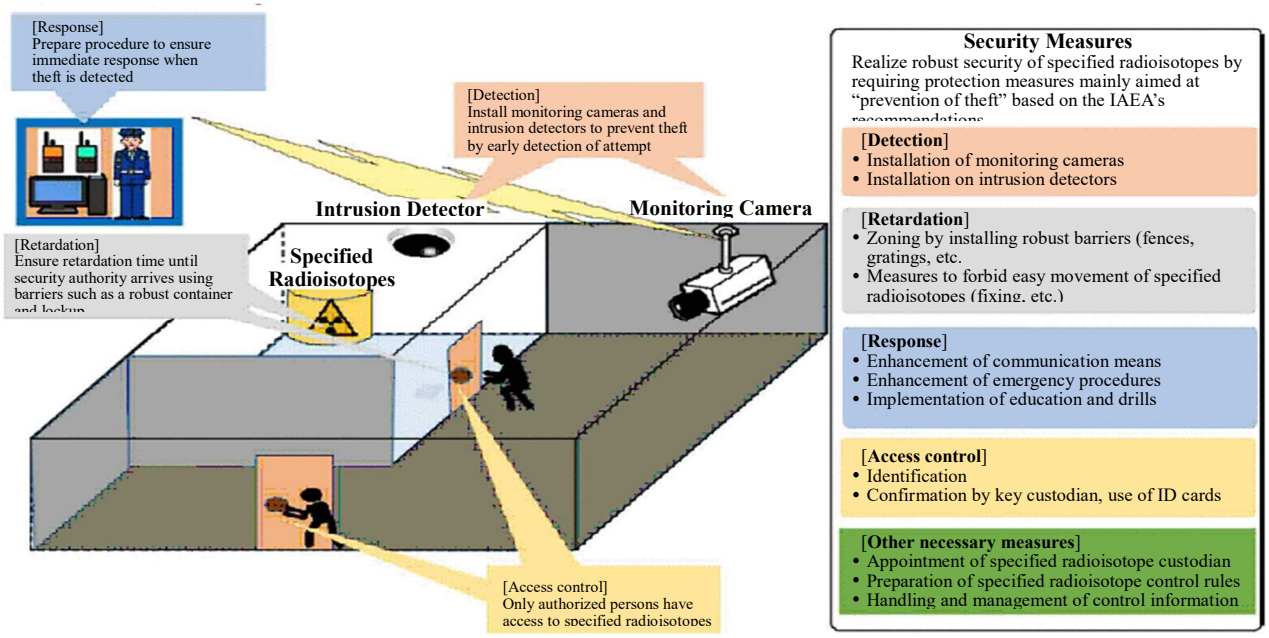

Figure 2-4 Protection Measures for Specified Radioisotopes

Section 5 Rigorous and Proper Implementation of Regulations on Radiation Hazards Prevention Act

1. Implementation of Reviews and On-Site Inspections Pertaining to the Radiation Hazards Prevention Act

To prevent radiation hazards due to the use of radioisotopes and other sources of radiation, the NRA conducts regulation of the use, sale, lease, waste management, and other handling of radioisotopes, use of radiation generators, waste management, and other handling of radioactively contaminated objects, based on the Radiation Hazards Prevention Act.

Based on the matters pointed out in the IRRS report, the NRA has strengthened the supervision of NRA-registered certification organizations that act for the NRA pursuant to the Radiation Hazards Prevention Act. In addition, on-site inspections of registered certification organizations have been conducted since FY2016 in order to maintain and enhance their quality of operations and reliability of examinations. The NRA conducted 9 inspections in FY2018.

(1) Radiation Control Status

Pursuant to the provisions of Article 42, paragraph (1), etc. of the Radiation Hazards Prevention Act, the NRA obliges operators to submit reports concerning the condition of storage for waste management of radioisotopes and that of exposure management for radiation workers within 3 months from the end of the reporting period. The radiation control status report in FY2017 (reporting period: from April 1, 2017 to March 31, 2018) indicates that the condition of storage for waste management of radioisotopes, etc. in all places of business in FY2017 had no significant difference compared with past records, and the dose received by individual radiation workers at each place of business in FY2017 was lower than the annual dose limits prescribed by the relevant laws and regulations.

(2) Confirmation of the Causes and Countermeasures for Accidents and Failures Occurred in Sites Handling Radioisotopes, etc.

If an event falling under items of Article 39, paragraph (1) of the Enforcement Regulation of the Radiation Hazards Prevention Act (hereinafter referred to as an “event under obligation to report”) has occurred, reporting to the NRA is obligatory.

In FY2018, 7 incidents were reported. However, there were none likely to cause radiation hazards to any employees or the general public.

The INES evaluation is performed on an annual basis for events with no risk to cause effects on employees or the general public at places of business handling radioisotopes, etc. Two events that occurred in FY2017 have each been evaluated as level 0 (an event with no safety significance).

(a) Disappearance of Radioisotopes at Nohmi Bosai Ltd.

On April 27, 2018, Nohmi Bosai Ltd. reported to the NRA that the company confirmed that it had shipped 141 smoke detectors, which were manufactured in its Menuma factory and had been stored in

the company's warehouse, to an industrial waste disposal facility by mistake.

Each detector was equipped with two sealed radiation sources (2 Am-241). It was confirmed with the operator of the industrial waste disposal facility that 34 out of 141 detectors were recovered before pulverization treatment at an intermediate treatment facility, but the remaining 107 detectors had already been pulverized on April 2, 2018 and buried at a final disposal facility on April 3, 2018. On April 27, 2018, the NRA received a report stating that this disappearance of radioisotopes corresponds to an event under obligation to report. Since this disappearance was caused by a lack of knowledge of staff in charge of separation and an inadequate management system, the NRA is to provide education of concerned persons and review the management system as measures to prevent recurrence.

(b) Disappearance of Radioisotopes at Nagano Prefecture Fire and Disaster Prevention Aviation Center

On March 5, 2017, a disaster prevention helicopter of the Nagano Prefecture Fire and Disaster Prevention Aviation Center crashed in a mountain area of Nagano Prefecture. Seven of eight on-board emergency indicators containing sealed sources (Tritium) were recovered during an investigation, but the remaining one was not discovered. Therefore, on May 14, 2018, the NRA received a report stating that this disappearance of radioisotopes corresponds to an event under obligation to report.

The missing panel has not been discovered or recovered to date. Periodic searches are continuing as of the end of FY2018. The NRA will make a close investigation within the recovered airframe after the helicopter is released from control by the police.

(c) Leakage of Radioisotopes at JAL Engineering Co., Ltd.

On July 2, 2018, during a functional test of an aircraft auxiliary power unit ignition device at the Narita Area Works of JAL Engineering Co., Ltd., it was confirmed that the electrode of a spark gap containing a radioisotope (Kr85) became detached, and sealing performance was damaged.

Therefore, on the same day, the NRA received a report stating that this leakage of radioisotopes corresponds to an event under obligation to report. The cause of the electrode detachment was a defect in the production process of the US manufacturing company. Therefore, JAL Engineering Co., Ltd. is to cooperate with the US manufacturing company to investigate the causes and to review the handling procedure in order to prevent recurrence of a similar event. The recurrence prevention measures include the transfer of the work using the (defective) spark gap to the US manufacturing company.

(d) Leakage of Radioisotopes at Fukuoka Prefectural Police Facility

On September 5, 2018, at the Fukuoka Prefectural Police Riot Task Force General Training Yard, when a member of the riot police was adjusting the gun sight of a handgun containing a sealed radiation source, a tool collided with the sight and the aluminum frame that covered the sealed radiation source was damaged, resulting in breakage of the built-in glass tube and release of gaseous radioisotopes (Tritium) sealed in the glass tube.

Therefore, on September 7, 2018, the NRA received a report stating that this leakage of radioisotopes corresponds to an event under obligation to report. The direct cause of the incident was the procedure for adjusting the gun sight. It was also found that the police officer had adjusted the sight following longtime practice, lacked awareness of dealing with such an important object as a radiation source for a gun sight, and had not specifically examined the adjustment method. The Prefectural Police are considering recurrence prevention measures so that inspection and maintenance will be performed under the specific guidance of a specialized department when any defect is found in a gun sight and adjustment work using tools will be carried out by the specialized department. Replacement of gun sights with articles that do not contain radioisotopes is also under discussion.

(e) Disappearance of Radioisotopes in Gunma Prefecture

On August 10, 2018, a disaster prevention helicopter of the Gunma Prefecture Disaster Prevention Aviation Center crashed in a mountain area of Gunma Prefecture. Five of eight on-board emergency indicators containing sealed sources (Tritium) were recovered during a search in the crash area, but the remaining three were not discovered and the search is still continuing. Therefore, on September 20, 2018, the NRA received a report stating that this disappearance of radioisotopes corresponds to an event under obligation to report.

Two more sealed sources were discovered during a subsequent search, but the remaining one had not yet been recovered as of the end of FY2018. The NRA is continuing to consider a method to discover and recover the missing sealed source, including a close re-investigation within the airframe at the stage where a detailed search becomes possible.

(f) Disappearance of Radioisotopes at Yokohama City Service Ltd.

On November 27, 2018, at Yokohama City Service Ltd., an employee noticed that a portable level meter (containing Cs-137), that was supposed to be stored and locked in a dedicated aluminum case in an outdoor warehouse, was not in place. The staff of the company searched for the level meter in the place where it was last used, the parking lot area, and the head office area, but could not find it. The NRA received a report that this disappearance of radioisotopes corresponds to an event under obligation to report on December 5, 2018.

The cause of this event was still under investigation as of the end of FY2018. The radiation dose under the condition that the level meter is enclosed in the dedicated aluminum case is equivalent to the background level, so it seems that there is no risk of radiation impact to the general public or the environment.

(g) Leakage of Radioisotopes to the Outside of a Controlled Area at Shionogi & Co., Ltd.

On December 7, 2018, at the Pharmaceutical Research Center of Shionogi & Co., Ltd., an alarm sounded indicating water leakage from a drainage pipe conveying drainage water generated in a controlled area to an attenuation tank. The use of the drainage pipe was immediately stopped, and a

search for the location of the leakage was performed. Water leakage from a drainage pipe placed in the pipe shaft was confirmed. All of the leaked water was collected in receiving saucers (outside the controlled area), and analysis of the leaked water confirmed that radioisotopes (Tritium, C-14, and I-125) were contained in the water. The NRA received a report on December 11, 2018 that this leakage of radioisotopes to the outside of a controlled area corresponds to an event under obligation to report.

Based on the results of investigations performed thus far, the cause of the leakage will be investigated more precisely and appropriate countermeasures will be considered.

(3) Application of Event Reporting System for Cases of Disappearance of Radioisotopes

If the theft or disappearance of radioisotopes has occurred in the facilities of a user who has been granted permission or who has given utilization notification, the user is obliged to immediately make a report to the NRA, pursuant to laws and regulations. However, although administrative contact has been performed immediately, the concrete period of time for the formal report pursuant to laws and regulations has not been provided, and it has sometimes taken a relatively long time before an event is determined to be an event under obligation to report.

Therefore, the 7th FY2018 NRA Commission Meeting (May 9, 2018) discussed the operation of the legal reporting system and decided on the “Application of Event Reporting System for Cases of Disappearance of Radioisotopes.” According to this discussion, future disappearances of radioisotopes will be judged to be events under obligation to report within about one week if the missing radioisotopes have not been recovered in that time period, even if the location of the missing radioisotopes is definable to some extent, such as with a register.

Chapter 3　Oversight of Efforts to Decommission Reactors of TEPCO's Fukushima Daiichi NPS

Summary of Chapter 3

(Oversight of Efforts to Decommission Reactors of TEPCO's Fukushima Daiichi NPS)

In FY2018, the NRA rigorously reviewed TEPCO's applications for the "Implementation Plan Pertaining to Specified Nuclear Facilities at the Fukushima Daiichi NPS" (hereinafter referred to as the "Implementation Plan") changes and approved 31 changes.

TEPCO's activities to comply with the approved Implementation Plan are being supervised through daily inspection patrols by regional safety inspectors, operational safety inspections, pre-service inspections, welding inspections, and periodic facility inspections.

Regarding the treatment of contaminated water retained in buildings (hereinafter referred to as stagnant water), as the treatment of untreated water retained in flanged tanks (Sr-treated water) was completed in November 2018, the NRA demanded that TEPCO move up the schedule for treating stagnant water. The Commission on Supervision and Evaluation of the Specified Nuclear Facilities (hereinafter referred to as the "Supervision and Evaluation Commission") supervised the causes and countermeasures for the problems repeated since May 2018 in the Unit 3 fuel handling machine and the implementation status of the countermeasures through pre-service inspections and operational safety inspections.

(Measures for Mid-term Risk Reduction)

The NRA developed the "Measures for Mid-term Risk Reduction at TEPCO's Fukushima Daiichi NPS," (hereinafter referred to as the "Risk Map") in February 2015 and has regularly revised it. In March 2019, the NRA revised the Risk Map, taking account of the installation of large component decontamination equipment, completion of the treatment of untreated water (Sr-treated water) retained in flanged tanks, and implementation of measures to restrain groundwater inflow into reactor buildings, such as by restoring the existing sub-drain pits.

(Analysis of TEPCO's Fukushima Daiichi NPS Accidents)

The ongoing analysis of the accidents at TEPCO's Fukushima Daiichi NPS is a priority matter under the jurisdiction of the NRA, and it is carrying out in-depth investigation from technical viewpoints. The NRA Commission Meeting held in March 2013 decided to set up the "Committee on Analysis of TEPCO's Fukushima Daiichi NPS Accidents" to examine the issues to be technically elucidated. Meetings of the Study Committee have been held since May 2013. In particular, the NRA picked up seven items that were pointed out by the National Diet of Japan Fukushima Nuclear Accident Independent Investigation Committee as unclear items that entailed evidence-based investigations by regulatory bodies, and in October 2014, set out the NRA's views in a report titled "Analysis of TEPCO's Fukushima Daiichi NPS Accidents Interim Report," based on the analyses from technical viewpoints on the basis of the plant data, analyses, and on-site investigation results so far obtained.

In FY2018, the NRA played a leading role in establishing an OECD/NEA/CSNI research project (ARC-F), which started its activities in January 2019 with the participation of 12 member countries (22 organizations).

(Monitoring after TEPCO's Fukushima Daiichi NPS Accidents)

According to the agenda of the "Comprehensive Radiation Monitoring Plan" (formulated at the Monitoring Coordination Meeting on August 2, 2011 and most recently revised on February 1, 2019), the NRA engaged in post-accident radiation monitoring of TEPCO's Fukushima Daiichi NPS, including general environmental monitoring throughout Fukushima Prefecture and monitoring of the waters near TEPCO's Fukushima Daiichi NPS and of Tokyo Bay. The monitoring results until August 2018 were made public on a monthly basis. Because the radiation levels became stabilized at low values, the measurement results have been published on a quarterly basis since September 2018.

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

1. Approval and Inspections of the Implementation Plan Pertaining to Specified Nuclear Facilities at the Fukushima Daiichi NPS

In order to employ appropriate management methods in accordance with the state of the facility, the NRA designated the Fukushima Daiichi NPS a "Specified Nuclear Facility" in November 2012, and indicated to TEPCO measures which should be taken in order to secure the nuclear power reactor facilities and protect specified nuclear fuel material. An application for the approval of the Implementation Plan was received, and approval was granted in August 2013 with indicating some points of concern.

In FY2018, 31 changes to the Implementation Plan were approved. The state of compliance with the approved Implementation Plan of TEPCO has been supervised in daily inspections conducted by regional safety inspectors, 4 operational safety inspections, 27 pre-service inspections, and 16 welding inspections. Moreover, the NRA also supervised TEPCO's activities by conducting periodic facility inspections, focusing on significant equipment for maintaining the performance of the facility.

2. Treatment of Contaminated Water in Buildings

The NRA considers that stagnant water should be treated promptly in order to reduce the risk of leakage of stagnant water. From the standpoint of protection against tsunamis, the NRA has indicated that it is more important to eliminate risks posed by stagnant water itself rather than to prevent the intrusion of tsunami water into the site.

Accordingly, as the schedule for measures to reduce stagnant water was presented by TEPCO at a meeting of the Supervision and Evaluation Commission, requests have been made for an acceleration of the targeted date for the completion of the treatment of stagnant water (2020), the implementation of measures to control radioactive dust (hereinafter simply referred to as dust) for the performance of work, and the early elimination of contaminated water in condensers.

Regarding the treatment of stagnant water, as the treatment of the untreated water retained in flanged tanks where the risk of leakage remains (Sr-treated water[23]) has been completed, at the 65th meeting of the Supervision and Evaluation Commission (November 19, 2018), the NRA demanded that TEPCO preferentially allocate its resources to the treatment of stagnant water and to move up the treatment schedule.

3. Measures to Restrain the Inflow of Groundwater into Buildings

The NRA considers sub-drains, which pump up groundwater around buildings, one of the main measures to restrain the inflow of groundwater into reactor buildings. The NRA has discussed increasing the sub-drain pump capacity at meetings with TEPCO and the Supervision and Evaluation Commission meetings.

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[23] Water whose cesium and strontium concentrations were reduced to some extent with the cesium and strontium removal unit (SARRY) prior to purification with the Advanced Liquid Processing System (ALPS).

On February 28, 2018, the NRA received an application for approval of changes to the Implementation Plan for the restoration of the existing sub-drain pits and approved it on October 19, 2018. The sub-drain pits were restored and passed pre-service inspections on December 17, 2018, and were put in service on January 10, 2019.

4. Treatment of Untreated Water (Sr-treated Water) Retained in Flanged Tanks

The NRA has demanded that TEPCO treat the untreated water (Sr-treated water) retained in flange tanks as early as possible, considering the risk of leakage.

The untreated water (Sr-treated water) had been treated with existing and additionally installed ALPSs. To prevent delays of the schedule due to trouble with the systems, TEPCO submitted an application for approval of changes in the Implementation Plan to additionally install transfer piping for ALPS-treated water[24] to enable treatment of the untreated water (Sr-treated water) with the "high-performance" ALPS on August 1, 2018. The NRA approved it on August 21, 2018.

The NRA confirmed completion of treatment of the untreated water (Sr-treated water) retained in the flanged tanks on November 17, 2018.

Figure 3-1 Dismantling of Flanged Tank (Image)
(Source: TEPCO Holdings)

5. Start of Operation of Large Equipment Decontamination Facility

On December 8, 2017, the NRA received TEPCO's application for approval of changes in the Implementation Plan related to the modifications of the safety measures due to the installation of the large equipment decontamination facility and approved it on March 26, 2018.

It was confirmed that the facility was successfully installed and started its operation on May 14, 2018.

[24] Water whose radioactive material has been reduced with ALPS.

6. Installing Fuel Handling Machine to Remove Fuel from the Unit 3 Spent-fuel Pool

With respect to the installation of the fuel handling machine to remove fuel from the Unit 3 spent-fuel pool, the Supervision and Evaluation Commission supervised the cause investigation and countermeasures implemented by TEPCO to address problems with the crane (May 11, 2018 and August 15, 2018) and the fuel handling machine (August 8, 2018), which occurred during the preparatory work for fuel removal. The NRA demanded that TEPCO and Toshiba Energy Systems, contractor of the fuel handling machine, develop measures to improve their quality management for supply, which was inferred to be a common cause of the problems. The NRA confirmed the causes of the problems and countermeasures in the Supervision and Evaluation Commission, and is supervising the implementation status of the countermeasures through pre-service inspection and operational safety inspection.

7. Dismantling of Upper Part of the Exhaust Stack for Units 1 and 2

On July 5, 2018, the NRA received TEPCO's application for approval of changes to the Implementation Plan to dismantle the upper part of the Exhaust Stack for Units 1 and 2 (hereinafter simply referred to as "the stack") to increase its seismic safety margin . The NRA has emphasized, at meetings with TEPCO and the Supervision and Evaluation Commission meetings, the importance of measures against dust scattering and control of the exposure dose during the work. The NRA approved the changes on February 27, 2019, after ensuring that the scattering of dust would be prevented by appropriate measures such as the use of dust monitors and dispersal of anti-scattering agents, and the exposure dose received by workers be reduced as much as possible, such as by remotely operating the equipment from a relatively low dose area.

8. Revision of the Measures for Mid-term Risk Reduction

The NRA developed the Risk Map in February 2015, for the purpose of setting a target related to measures at TEPCO's Fukushima Daiichi NPS.

This Risk Map has been revised subsequently in response to the progress of the decommissioning work.

In FY2018, at the 65th NRA Commission Meeting (March 6, 2019) the Risk Map was revised, taking account of the installation of the large equipment decontamination facility, completion of the treatment of untreated water (Sr-treated water) retained in flanged tanks, and implementation of measures to restrain groundwater inflow into reactor buildings, such as by restoring the existing sub-drain pits.

From a standpoint of international public relations, an English version of the Risk Map was also prepared, and published on the NRA website.

9. Review of Organization to Supervise Specified Nuclear Facilities

At TEPCO's Fukushima Daiichi NPS, several waste management-related actions have been completed up to now. Among them, the NRA has paid special attention to progress in activities related to the storage, management, and disposal of solid radioactive waste, including the start of operation of the miscellaneous solid waste incineration facility, installation of the 9th solid waste storage facility, and installation of the large equipment decontamination facility.

Taking account of such progress in the decommissioning activities as well as the recent activities of the Committee on Radioactive Waste Issues for the Specified Nuclear Facilities (hereinafter referred to as the "Waste Regulation Committee"), at the 63rd NRA Commission Meeting (February 27, 2019), the NRA reviewed the organization to supervise the Specified Nuclear Facilities, and decided to transfer the issues of waste management that had been supervised thus far in the Waste Regulation Committee to the Supervision and Evaluation Commission and to close the Waste Regulation Committee, in order to implement more comprehensive and rational supervision and evaluation.

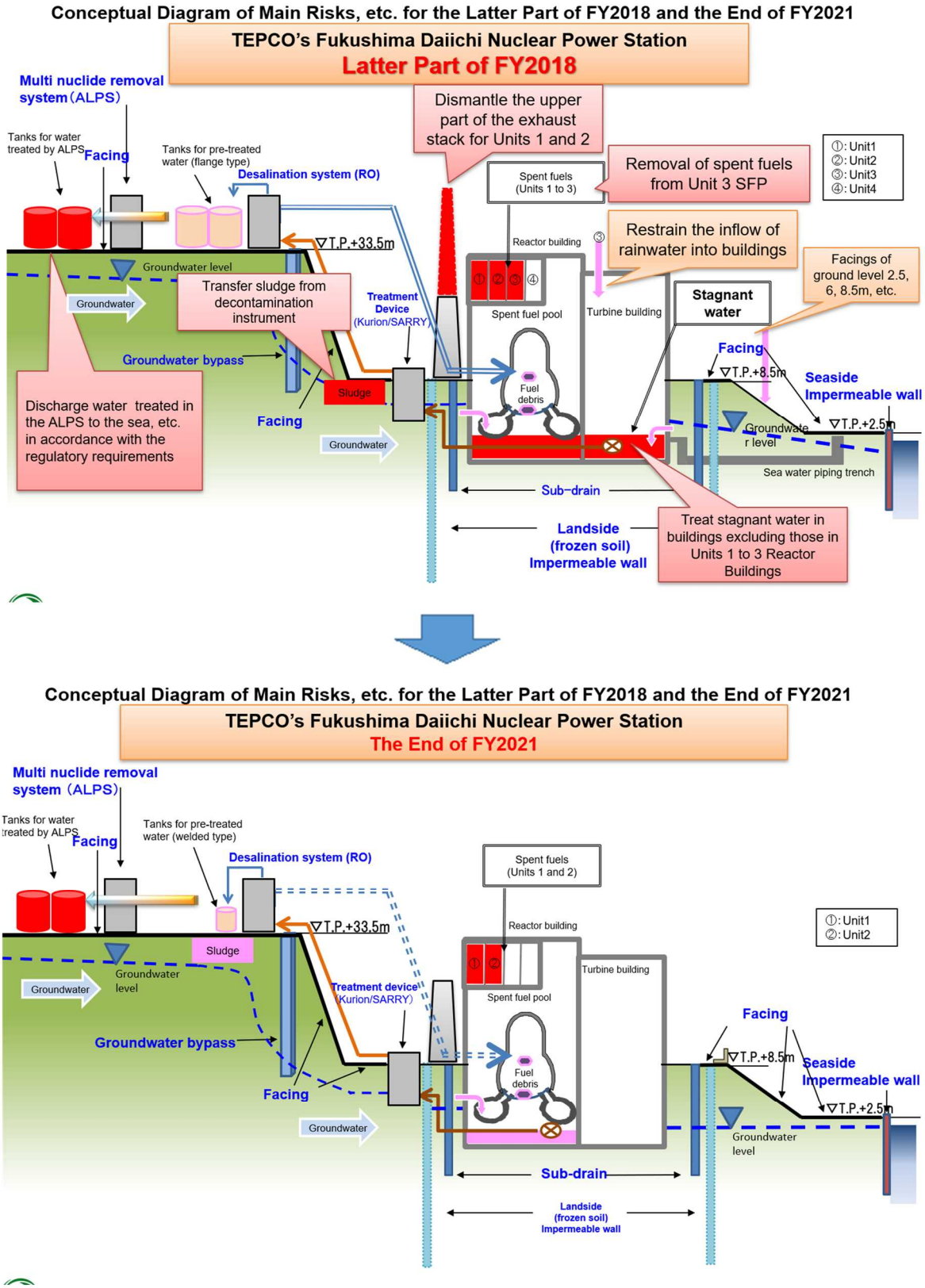


Figure 3-2 Image of major risks at the beginning of FY 2018 and the end of FY 2020

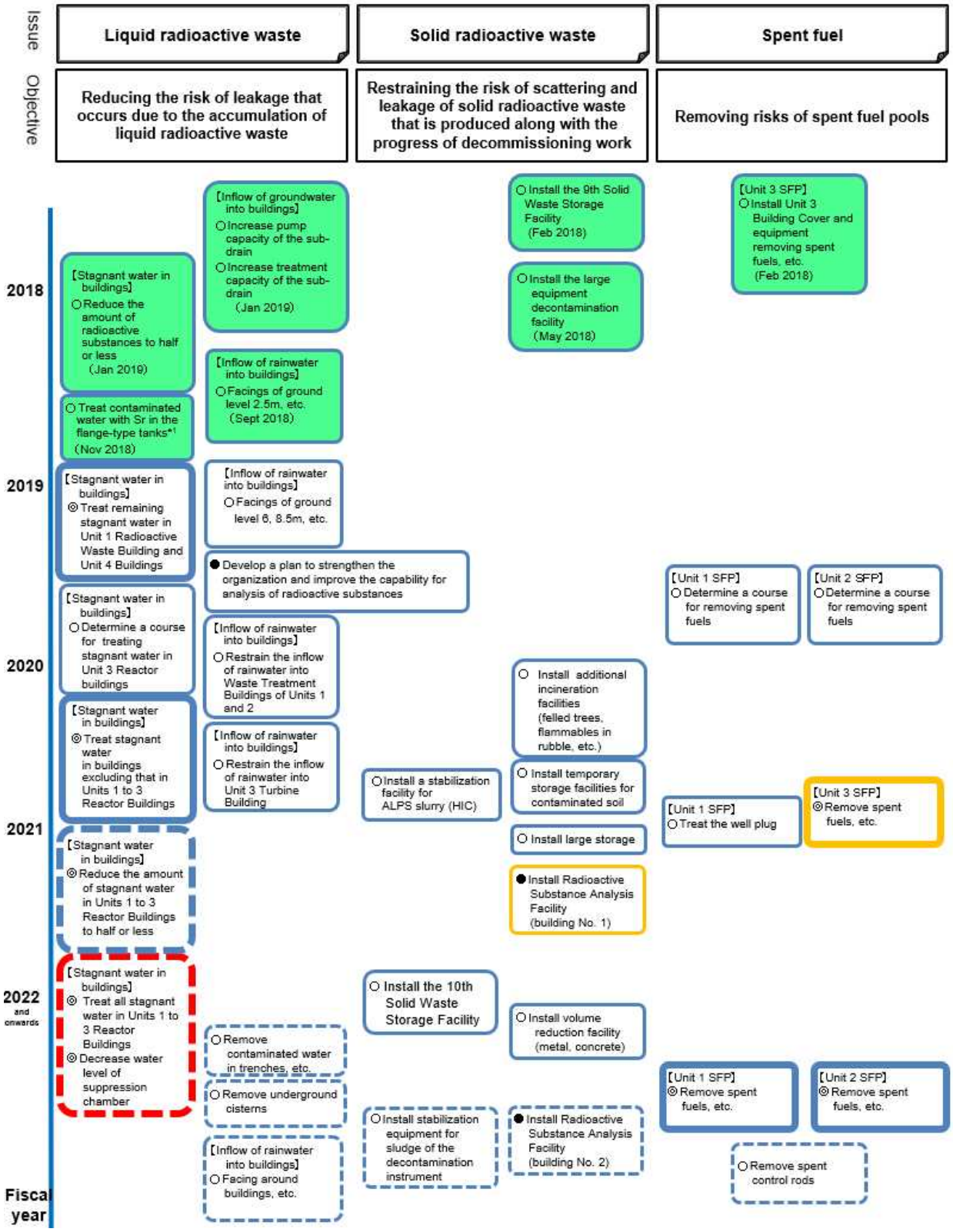
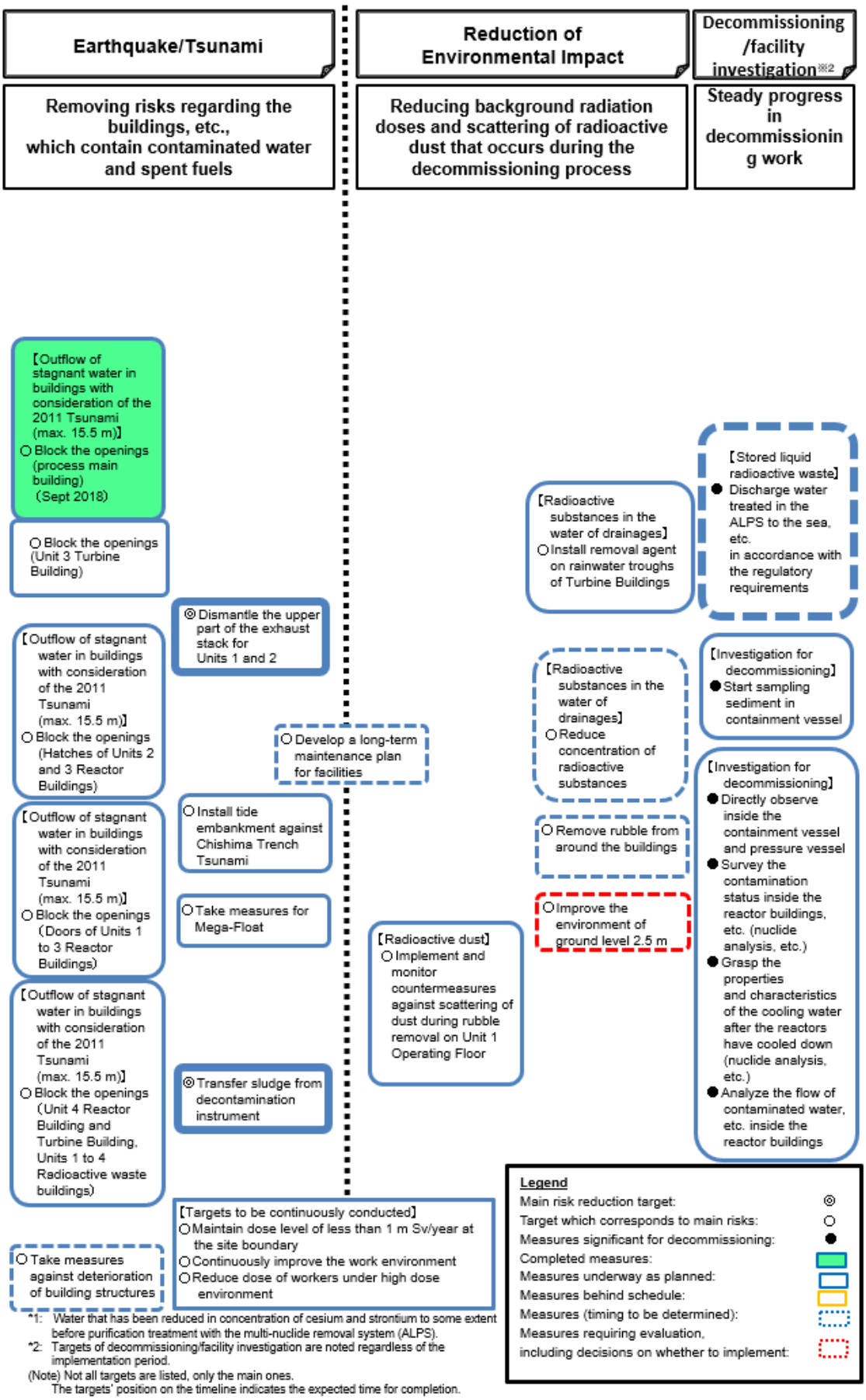


Figure 3-3 Measures for Mid-term Risk Reduction at TEPCO's Fukushima Daiichi NPS (March 2019 version)



*1: Water that has been reduced in concentration of cesium and strontium to some extent before purification treatment with the multi-nuclide removal system (ALPS).
*2: Targets of decommissioning/facility investigation are noted regardless of the implementation period.
(Note) Not all targets are listed, only the main ones.
The targets' position on the timeline indicates the expected time for completion.

10. Confirmation of the Causes and Countermeasures for Accidents and Failures That Occurred in TEPCO's Fukushima Daiichi NPS and Confirmation of Recurrence Prevention Measures

Nuclear operators are obliged, under Article 62, paragraph 3 of the Reactor Regulation Act, to report to the NRA when any accident or failure defined in the NRA Ordinance ("incidents reported based on the Act") has occurred in their nuclear facilities.

In FY2018, no incidents reported based on the Act occurred at TEPCO's Fukushima Daiichi NPS.

In this fiscal year, the NRA received 2 reports from TEPCO pertaining to a declaration of deviation from limiting condition of operation (LCO), which is established in Volume 1 of Chapter III of the Implementation Plan (see Table 5). Upon receiving these reports, the NRA conducted inspections according to the provisions of paragraph 1 of Article 68 of the Reactor Regulation Act and confirmed that necessary measures had been taken.

Table 4 Report on Declarations of Deviation from LCO in FY2018

Date of Report Receipt	Description
July 25	Continuous water level monitoring function was lost at the sub-drain systems in the process main building and near the HTI building.
January 8	During switchover operation of the reactor injection pumps from the condensate water storage tank of Unit 2, discharge pressure of the two operating pumps increased and both pumps were automatically stopped, resulting in loss of injection flow necessary for reactor cooling.

Section 2 Analysis of TEPCO's Fukushima Daiichi NPS Accident

1. Continuous Accident Analysis

The ongoing analysis of the accidents at TEPCO's Fukushima Daiichi NPS is a priority matter under the jurisdiction of the NRA, and it is carrying out in-depth investigation from technical viewpoints.

At the 34th NRA Commission Meeting of FY2012 (March 27, 2013), the NRA decided to set up the "Committee on Analysis of TEPCO's Fukushima Daiichi NPS Accident" to examine the issues to be technically elucidated. The Committee consisted of Commissioner Fuketa (at that time), external experts, officials of the Secretariat of the NRA, officials of the Japan Nuclear Energy Safety Organization (at that time), and officials of the JAEA. Meetings of the Committee have been held since May 2013.

2. Efforts to Publish Information about Analysis of Accident

The NRA proceeded with analysis by means of discussions by the Committee and on-site investigations of TEPCO's Fukushima Daiichi NPS. This included 5 Committee meetings and 4 on-site investigations in FY 2013 and one Committee meeting and 5 on-site investigations in FY 2014. The "Analysis of TEPCO's Fukushima Daiichi NPS Accidents Interim Report" was presented at the 31st NRA Commission Meeting of FY 2014 (October 8, 2014), and released as the "NRA Report." An

English version of this report was prepared and sent to IAEA, OECD/NEA and other international organizations.

Regarding the accidents at TEPCO's Fukushima Daiichi NPS, various issues and unclear items were pointed out in the reports by the National Diet of Japan Fukushima Nuclear Accident Independent Investigation Committee (hereinafter referred to as the "National Diet Accident Investigation Committee") and the Investigation Committee on the Accident at the Fukushima Nuclear Power Stations. This Interim Report first picked up seven items that were pointed out by the report of the National Diet Accident Investigation Committee as unclear items that entailed evidence-based investigations by regulatory bodies, and showed the NRA's views on each of the items based on the analyses from technical viewpoints on the basis of the plant data, analyses, and on-site investigation results so far obtained.

In FY2018, the NRA participated in various international research activities for accident analyses. Especially, the NRA played a leading role in establishing a new OECD/NEA/CSNI research project (ARC-F), which started its activities in January 2019 with the participation of 12 member countries (22 organizations). In addition, the NRA investigated the radiation dose distributions on the operation floor of the Unit 3 reactor building and in the plant site of Fukushima Daiichi NPS, and reported the results at a conference of the Atomic Energy Society of Japan. Furthermore, the NRA presented the dose reduction measure based on the above results in the Supervision and Evaluation Commission, and held a discussion about it.

Section 3 Implementation of Radiation Monitoring

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

The NRA engaged in post-accident radiation monitoring of TEPCO's Fukushima Daiichi NPS based on the "Comprehensive Radiation Monitoring Plan" (established at the Monitoring Coordination Meeting on August 2, 2011 and most recently revised on February 1, 2019) by carrying out general environmental monitoring throughout Fukushima Prefecture and monitoring of the waters around TEPCO's Fukushima Daiichi NPS and of Tokyo Bay, and released the analysis results of the monitoring each month until August 2018. Because the radiation levels became stabilized at low values, the measurement results have been released on a quarterly basis since September 2018.

In FY2018, the NRA continued the detailed monitoring in the difficult-to-return zones and made public the results.

(1) Identifying Long-term Distribution of Radioactive Materials in Fukushima and Its Neighboring Prefectures

The NRA implemented airborne monitoring in Fukushima and neighboring prefectures. In March 2019, the NRA published the air dose rate map as of October 16, 2018 in the 80 km zone from TEPCO's Fukushima Daiichi NPS, as well as the map as of November 15, 2018, in Fukushima and its

neighboring prefectures. The NRA also published the output report of the "Project of the Outsourcing Fee for the Measurement Investigation of Radioactive Materials in FY2017 (The Aggregation of Distribution Data of Radioactive Materials along with TEPCO's Fukushima Daiichi NPS Accident)" in December 2018 and posted the measurement results, such as the distribution of air dose rate by vehicle-borne survey and the deposition amount of radioactive cesium in soil in this report.

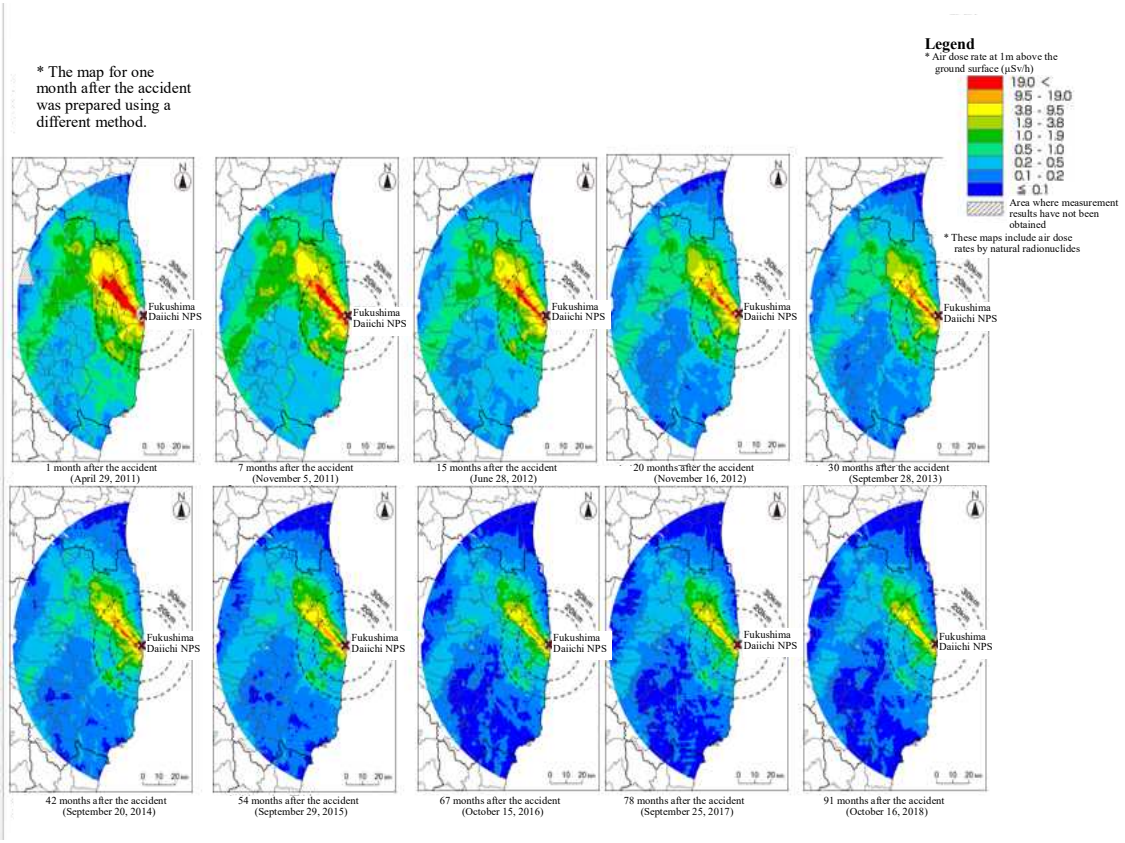


Figure 3-4. Changes in the Air Dose Rate Map within the 80 km Zone

(2) Measuring the Air Dose Rates in Fukushima and Its Neighboring Prefectures by Monitoring Posts

At the request of local governments, the air dose rates are measured continuously with about 700 units of portable monitoring posts and about 3,000 units of real-time dose measuring systems installed at public locations, such as schools in Fukushima and its neighboring prefectures. The results are announced on the NRA website in real time. The NRA held explanation sessions for local residents in 15 requesting municipalities on the "Review of the Deployment of Real-time Dose Measuring System" decided on at the 74th FY2017 NRA Commission Meeting (March 20, 2018).

(3) Sea Area Monitoring

Continuing from FY2017, relevant organizations cooperated to implement the monitoring based on the "Implementation Guides on Sea Area Monitoring," which was a part of the Comprehensive

Radiation Monitoring Plan. The NRA collected seawater and sediment from near, coast, offshore, and open ocean of TEPCO's Fukushima Daiichi NPS and from Tokyo Bay, analyzed the radioactivity in those samples, and announced the results on the NRA website.

In addition, experts from the IAEA Environment Laboratories visited Japan in October 2018, and in cooperation with the Secretariat of the NRA, collected seawater and sediment in the sea near TEPCO's Fukushima Daiichi NPS, in order to carry out inter-laboratory comparisons of the analysis results.

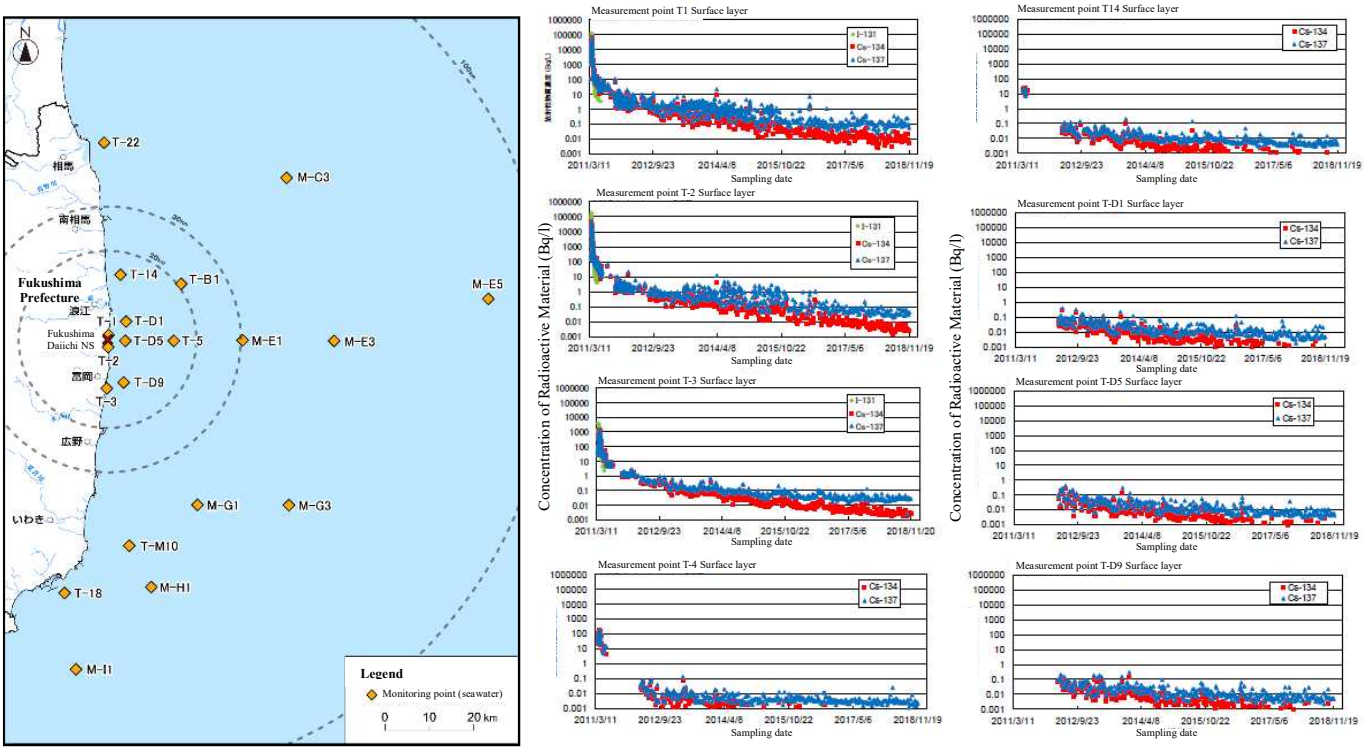


Figure 3-5 Changes in the Radioactive Concentration at Monitoring Survey Sites

Chapter 4 Establishing Technical and Human Resource Foundations to Ensure Nuclear Safety

Summary of Chapter 4

(Continuous Improvement of Regulatory Requirements Based on the Latest Scientific and Technological Knowledge)

For streamlining the regulatory requirements for on-site spent fuel storage using casks for storage and transportation, public comments were solicited for one month from December 2018 on a draft of the revised version of the regulation, which was drawn up on the basis of the discussion at the meeting of the "Study Team on Dry Casks for Storage and Transportation" held in 2017. At the NRA Commission Meeting held in March 2019, the NRA decided on the revision taking account of public comments. The Guideline for Assessments of Impacts of Tornadoes to Nuclear Power Stations was revised in November 2018 to incorporate the updated tornado evaluation metric used by the Japan Meteorological Agency.

The NRA has been continuing discussion on regulatory requirements for ILW from the previous year, in parallel, formulated an outline of regulatory requirements for intermediate depth disposal by employing the concept of ALARA in August 2018, and had a meeting to exchange opinions concerning the outline with nuclear operators in the same month.

(Accumulation of the Latest Scientific and Technological Information from the Safety Research, etc.)

The NRA accumulates the latest scientific and technological knowledge through the planning, implementation and evaluation of safety research projects based on the "Basic Policy on Safety Research by the NRA," personnel exchange with JAEA's Nuclear Safety Research Center, participation in international joint research projects of the OECD/NEA and IAEA, and collection and analysis of domestic and international trouble information. The accumulated knowledge was publicly disseminated via academic journals, proceedings of international conferences, presentations at academic conferences, etc.

(Securing and Establishing Development Mechanism for Human Resources for Nuclear Regulation)

The NRA has conducted open recruitment for experienced persons mainly in the areas of safety review/inspection and nuclear emergency preparedness, and employed 15 persons in FY2018. In addition, the Secretariat of the NRA carried out an active recruitment campaign to secure personnel who will play a key role for future nuclear regulatory administration, and employed 25 graduates.

The human resource development for officials of the NRA has been strengthened and enhanced. Various training programs including practical training using plant simulators to improve the ability to respond to severe accidents, etc. have continued to be developed in the NRA Human Resource Development Center. These training programs were then implemented in a systematic way.

In April 2018, the NRA started education and training courses for acquiring job qualification (basic qualification), which were introduced to adequately respond to the new inspection system under the revised Reactor Regulation Act.

Section 1 Continuous Improvement of Regulatory Requirements Based on the Latest Scientific and Technological Knowledge

1. Continuous Improvement of Regulatory Requirements

(1) Reviewing 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. These were based on the lessons learned from the accident, the latest technological knowledge, and overseas regulation trends, including safety requirements issued by international organizations such as the IAEA. These requirements (including interpretation and guidelines) are to be continuously reviewed based on the latest scientific and technological information.

(a) Examining the Revision of the Guideline for Assessments of Impacts of Tornadoes to Nuclear Power Stations

The Japan Meteorological Agency upgraded the old Fujita Scale for estimating the wind speed of tornadoes and other turbulent winds based on the damage to structures and formulated the Japan Enhanced Fujita (JEF) Scale. Assessments of tornadoes and other turbulent winds based on this scale began in April 2016. Based on the discussions at the 21st and the 30th Technical Information Committee Meetings (October 19, 2016 and February 21, 2018, respectively), the Secretariat of the NRA decided on and enforced the revised JEF Scale on November 28, 2018, after deliberation and clarification of the application of the JEF Scale at the 34th NRA Commission Meeting (October 10, 2018) and the procedure for public comments.

(b) Investigation in Connection with Regulatory Requirements Applicable to Dry Casks for Storage and Transportation

With respect to spent fuel storage in a nuclear power station, the NRA had decided to review regulatory requirements for earthquake resistance to encourage the use of casks for storage and transportation which satisfy strict requirements. After the review by the "Study Team on Dry Casks for Storage and Transportation" in FY2017, the Study Team explained its opinion at the 43rd FY2017 NRA Commission Meeting (October 11, 2017) and the 22nd FY2018 NRA Commission Meeting (August 1, 2018).

The draft of the revised requirements was deliberated at the 45th NRA Commission Meeting (December 5, 2018), and public comments were solicited. After those procedures, at the 66th NRA Commission Meeting (March 13, 2019) the NRA decided on the revision taking account of public comments.

(c) Review of Regulatory Requirements Based on Review Experience

The Secretariat of the NRA formulated a process "Flow for the Review of Regulatory Requirements

Based on Review Experience" on the basis of the conformity review experiences with the New Regulatory Requirements including the reviewers' comments, and reported it to the 10th FY2018 NRA Commission Meeting (May 23, 2018). The items to be reviewed picked up according to this process were also reported at the Meeting.

Regarding the items related to the standards for fire protection review, drafts of the partially revised standards were submitted to the 47th NRA Commission Meeting (December 12, 2018) for its deliberation. After soliciting public comments, the revised standards were approved at the 59th NRA Commission Meeting (February 13, 2019) and duly enforced.

(d) Study on Formulation of Guidelines on Human and Organizational Factors

Based on the Suggestion on "Consideration of human and organizational factors" by the IRRS mission, the Secretariat of the NRA has decided to develop guidelines on assessing human and organizational factors in the design of reactor control rooms, etc., guidelines on safety culture, and guidelines on cause analysis. At the 15th FY2017 NRA Commission Meeting (June 14, 2017), the establishment of the "Study Team on Consideration of Human and Organizational Factors for the Regulation" was agreed upon, and the Study Team held 5 meetings in FY2017 and 2 meetings in FY2018 to discuss the contents of the guidelines on safety culture, and guidelines on cause analysis. The trial operation versions of these two guidelines were proposed at the 32nd NRA Commission Meeting (September 26, 2018) and at an interview with nuclear operators (October 3, 2018), and discussion is now underway on how to incorporate the results of trial operation.

(2) Utilization of Codes and Standards

The regulatory requirements based on the Reactor Regulation Act have established required performance levels. After conducting technical evaluations, the NRA is to apply the codes and standards of the Atomic Energy Society of Japan (AESJ), the Japan Society of Mechanical Engineers (JSME), the Japan Electric Association (JEA), and other organizations as concrete detailed specifications that fulfill the performance levels ("codes and standards of the three institutions"). The current "Application of Industry Codes and Standards by the NRA" (the NRA Commission decision on November 12, 2014) was reviewed at the NRA Commission Meeting on June 6, 2018.

(a) Conducting Technical Evaluations of Codes and Standards

Continuing from FY2017, the NRA continued studies to address the issues picked up by the "Study Team on Technical Evaluation of Fitness-for-Service," including a survey of the responses to similar issues in foreign countries, in order to conduct technical evaluation of the 2012 version of JSME's "Codes of Nuclear Facilities for Power Generation: Rules on Fitness-for-Service for Nuclear Power Plants" and 2013 and 2014 supplements to the JSME Codes and other codes and standards relevant to the JSME Codes (three meetings of the Study Team were held in FY2018). Based on these studies, the NRA prepared a draft technical evaluation report on fitness-for-service rules and solicited public

comments. In light of the "Application of Industry Codes and Standards by the NRA," the NRA will have a meeting to hear from nuclear operators about the codes and standards of the three institutions (AESJ, JSME, and JEA), in response to nuclear operators' requests. This meeting will invite the three institutions and hear their opinions regarding the process and schedule for application.

2. Development of Regulations on Disposal of Radioactive Waste in Decommissioning

In order to develop regulatory requirements for disposal of radioactive wastes with relatively high radioactive concentration like core-internals ("ILW"), which are generated by decommissioning and operation of nuclear facilities, the NRA has been continuing discussion and conducting "The Study Team on the Regulation of Radioactive Waste in Decommissioning" from the previous year (3 meetings were held in FY2018). At the 11th NRA Commission Meeting (May 30, 2018), a proposal for employing the performance standards based on the concept of ALARA for regulatory requirements for intermediate depth disposal was agreed upon. At the 22nd NRA Commission Meeting (August 1, 2018) the plan to conduct an exchange of opinions with nuclear operators concerning the regulatory requirements for the burial of category 2 waste disposal which was compiled by the Secretariat of the NRA was agreed upon. Following this, the NRA Commissioners and the Secretariat of the NRA had a meeting to exchange opinions with nuclear operators on August 31, 2018.

Section 2 Accumulation of the Latest Scientific and Technological Information from the Safety Research

1. Promotion of Safety Research

(1) Proactive Implementation of Safety Research

The NRA has been implementing safety research projects based on the "Basic Policy on Safety Research by the NRA" (the NRA Meeting decision on July 6, 2016) and the "Fields of and Policy on the Implementation of Safety Research to be Promoted (for safety research to be conducted for and after FY2018)" (the NRA Meeting decision on July 5, 2017). In addition, the outcome of safety research has been released through the "NRA Technical Reports," which summarize the technological knowledge and the experimental data for judgment of regulatory requirements, various regulatory guides, and reviews and inspections.

In FY2018, 26 safety research projects in 14 research fields were conducted. As a result of these safety research projects, 15 papers have been posted in journals, 12 proceedings for international conferences have been published, and 25 academic conference presentations have been made by NRA staff in FY2018.

(2) Safety Research Policy

The NRA reviewed its safety research program in and after FY2019 in light of the "Basic Policy for Safety Research by the NRA" and formulated the "Fields of and Policy on the Implementation of Safety Research to be Promoted (for safety research to be conducted for and after FY2019)" at the

20th NRA Commission Meeting (July 18, 2018).

(3) Evaluation of Safety Research and Steady Improvements

At the 23rd NRA Commission Meeting (August 22, 2018), the NRA approved the results of the ex-post evaluation of 3 safety research projects that concluded in FY2017. At the 54th NRA Commission Meeting (January 23, 2019), the NRA approved the interim evaluation result for one safety research project, whose research period is at least 5 years and for which a certain period has passed since the previous intermediate evaluation. The results of the ex-ante evaluations of 4 new safety projects to be started in FY2019 were also approved at this Meeting.

The Secretariat of the NRA reported on the results of the annual evaluation of safety research projects at the 61st NRA Commission Meeting (February 20, 2019).

(4) Improvement in Research Environment for Research Staff

The NRA is promoting joint research projects, personnel exchanges, and dispatches of research staff in cooperation with external research organizations and departments such as universities and JAEA's Nuclear Safety Research Center, in order to improve the research environment for its research staff. The NRA requested a new budget to develop its own test facilities, which are expected to be widely used, in order to enhance its research capabilities by conducting safety research that responds flexibly to regulatory requirements for review and inspection and by accumulating research staff's know-how. In addition, efforts are being made to improve the back-office environment so that research staff can concentrate on research and can efficiently produce outcomes such as papers and NRA Technical Reports.

(5) Participation in International Joint Research Project Activities

The Secretariat of the NRA has participated in international joint research projects in collaboration with JAEA Nuclear Safety Research Center, and has been carrying out mutual personnel exchange with JAEA Nuclear Safety Research Center in order to develop personnel with high levels of expertise.

In FY2018, the Secretariat of the NRA participated in 17 international joint research projects of OECD/NEA, and 11 working groups and senior expert meetings which fall under the umbrella of OECD/NEA CSNI, to collect technological knowledge, including the latest trends in each research field.

In addition, as a personnel exchange in FY2018, the Secretariat of the NRA dispatched 8 personnel to the JAEA Nuclear Safety Research Center, from which it has accepted 3 personnel. At the same time, 2 joint research projects are in progress in FY2018, continuing from FY2017, in collaboration with the JAEA Nuclear Safety Research Center in accordance with the Joint Research Implementation Rules established in April 2017, to promote exchanges of personnel through joint research.

2. Utilization of Scientific and Technological Information Obtained from Safety Research

The Divisions of Research of the NRA provide information (technical support) to the Nuclear Regulation Department to use the latest scientific and technological information obtained from the latest domestic and international scientific safety research in its regulatory activities such as reviews and inspections. In FY2018, technical support was provided for 38 items, including "Collection of Technical Knowledge for the Development and Evaluation of Design Basis Ground Motion" and "Support for the Review of Applications for Life Extension Permits and Review of Applications for Operational Safety Program Change Approval for the Technical Evaluation of Aging Management"

3. Collecting and Analysis of Domestic and International Trouble Information and Regulatory Use of the Information

In order to incorporate the latest useful knowledge into the regulatory requirements, the NRA continues to collect and screen domestic and international nuclear trouble information.

(1) Collecting and Analysis of Domestic and International Trouble Information

Information has been collected from the international organizations and foreign nuclear safety authorities through the cooperation channels with them, as well as from public information. Primary screening (173 cases) and secondary screening (3 cases) have been conducted in FY2018.

(2) Incorporating Collected and Analyzed Information into Regulatory System

The Secretariat of the NRA held 5 Technical Information Committee meetings (April 16, June 20, September 12, November 21, 2018, and February 4, 2019) to discuss whether events extracted by the secondary screening need regulatory actions. It was confirmed that none of those events discussed at the meetings during FY2018 required regulatory actions. As for the issue of possible loss of residual heat removal (RHR) pump functions due to steam voids, which was determined to require regulatory actions in or before FY2017, two working-level technical opinion exchange meetings were held in FY2018 between nuclear operators and NRA to discuss specific actions and to hear nuclear operators' action plans for this event. Following the opinion exchange meetings, at the 20th NRA Commission Meeting (July 18, 2018), the NRA approved the NRA's action to monitor the nuclear operators' implementation of the plans through inspections by the Divisions of Oversight.

The Secretariat of the NRA reports the screening results mentioned above to the NRA, immediately for matters to be considered in regulation, and after receiving advice from the discussions in the RSEC and NFSEC meetings composed of external experts. If the NRA has decided to incorporate those reported matters into the regulatory requirements, the Secretariat of the NRA drafts the additional regulatory requirements. In FY2018, the Secretariat of the NRA reported the screening result to the NRA on May 23. The RSEC and NFSEC meetings were held on July 3 and November 1.

(3) Review of Regulatory Requirements Based on Review Experience

The Secretariat of the NRA formulated a process "Flow for the Review of Regulatory Requirements Based on Review Experience" on the basis of the conformity review experiences with the new regulatory requirements including the reviewers' comments, and reported it to the 10th FY2018 NRA Commission Meeting (May 23, 2018). The items picked up according to this process were also reported at the Meeting.

Regarding the items related to the standards for fire protection review, the drafts of the partially revised standards were submitted to the 47th NRA Commission Meeting (December 12, 2018) for its deliberation. After soliciting public comments, the revised standards were approved at the 59th NRA Commission Meeting (February 13, 2019) and duly enforced.

Section 3 Securing and Establishing Development Mechanism for Human Resources for Nuclear Regulation

1. Securing Personnel Resources

(1) Securing Human Resources with Experience

The NRA conducted open recruitment for experienced persons (who have worked in other sectors including the private sector) mainly in the areas of reviews/inspections for safety regulations, nuclear emergency preparedness, and radiation hazard prevention, and employed 15 people in FY2018.

(2) Securing New Graduates

In order to attract large numbers of promising qualified personnel, the NRA actively carried out a campaign for recruitment such as presentations on the activities/missions of the Secretariat of the NRA emphasizing the importance of regulations for nuclear safety. Open recruitment of new graduates was conducted, as in the previous fiscal year, for research staff in charge of technical research and investigation. Through such efforts, the NRA secured 29 young personnel for FY 2019 (6 for career positions, 16 for general positions, and 7 through research staff selection and recruitment examination) who are expected to play important roles in future administrations for nuclear regulations.

The NRA conducted the "Nuclear Engineering Examination" (corresponding to the examination for non-career positions), which is the NRA original examination to proactively employ graduates majoring in nuclear engineering, but no one was employed through this route.

Consequently, there were 988 employees as of April 1, 2019 and the ratio of employees to the prescribed number of personnel at the Secretariat of the NRA attained 93.6%.

Table 5. Situation of securing human resources from FY2013 to FY2018

(Unit: persons)

	FY2013	FY2014	FY2015	FY2016	FY2017	FY2018	Total
Experienced personnel*[1]	32	57	52	44	34	15	234
New graduates*[2]	—	33	22	19	19	25	118
Total	32	90	74	63	53	40	352

*[1]: Number of personnel hired during the period from April 2, 2018 to April 1, 2019

*[2]: Number of personnel hired from the date of job offer in previous fiscal year to April 1, 2019

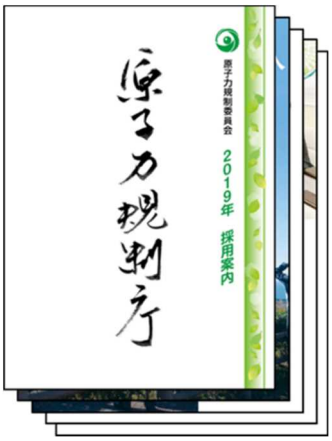


Figure 4-1 2019 NRA Recruitment Guide

(3) Efforts concerning the Program of NRA Human Resource Development

In order to broadly secure personnel and develop human resources engaged in nuclear safety and regulations aiming at steadily improving nuclear regulations, the NRA launched the subsidy program for human resource development for nuclear regulations. This program has been carried out in collaboration with universities and other institutions since FY2016. A total of 18 projects, with 5 newly adopted projects and 13 continuing projects adopted in FY2016, some of which would be conducted by universities, were adopted in FY2018. For the human resource development project for nuclear regulation, which had been implemented by the Institute for Integrated Radiation and Nuclear Science of Kyoto University under a 5-year plan from FY2017 as part of the subsidy program, the subsidization was canceled on March 29, 2019, mainly because staff assignment was not adequately arranged. In addition, the NRA held an opinion exchange meeting in December to assist nuclear operators in the effective implementation of their projects.

2. Development of Training System

(1) Developing Qualifications, and Education and Training Systems Coping with the New Inspection System

To adequately implement enhancing inspector training identified as issues through the IRRS mission, and the "Basic Policy of Development of NRA Officials" (NRA commission decision on June 25, 2014), the NRA started education and training courses for acquiring basic qualification, within job qualifications which consist of the five job fields "nuclear inspection," "nuclear safety review," "safeguards inspection," "emergency preparedness," and "regulation for radiation," in FY2018. In April 2018, the NRA started an "intensive course" with 5 participants who were required to concentrate on the course without involving their daily jobs. In October, the NRA started a "distributed course" in which another 6 people were trained while working.

In FY2018, job qualifications were granted to 53 people in the five job fields.

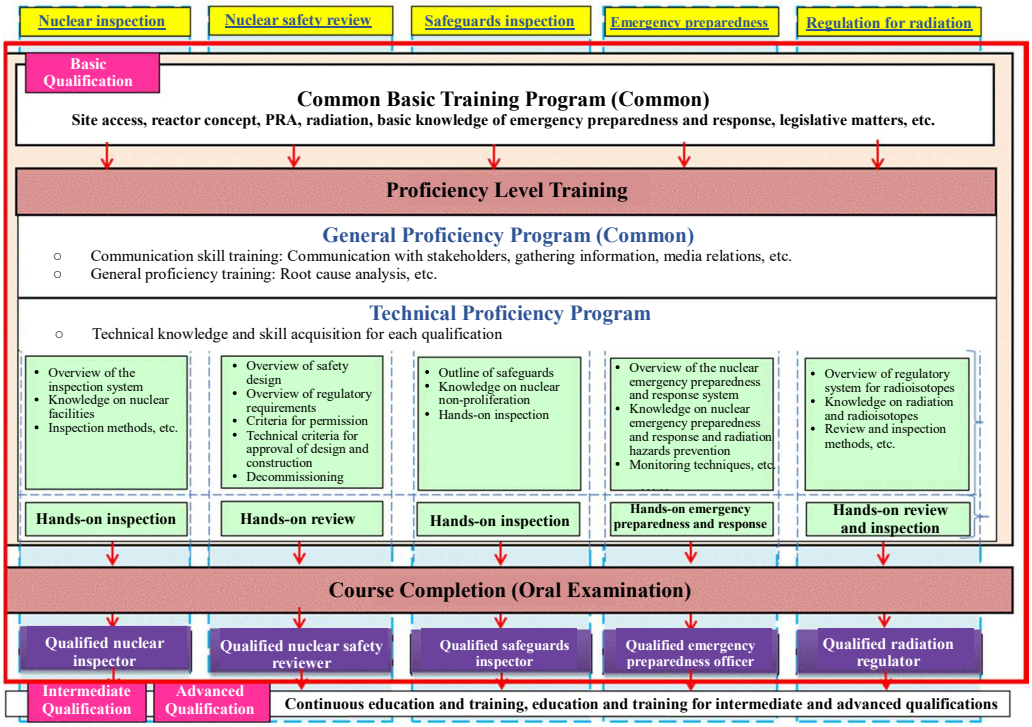


Figure 4-2 Image of education and training courses

Figure 4-3 Training Scene

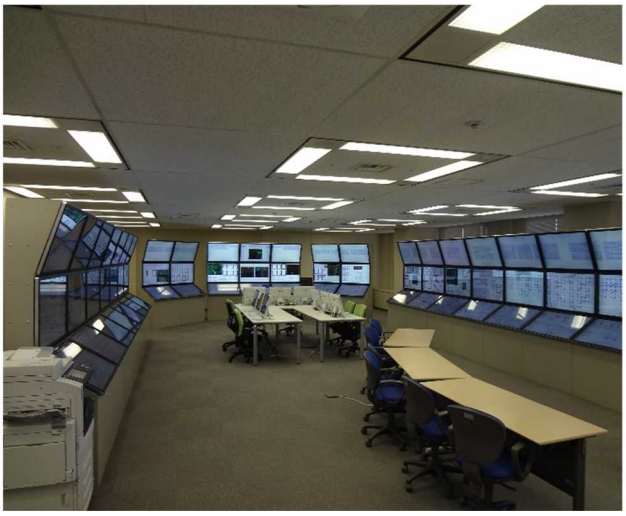


Figure 4-4 Plant Simulator for Inspector Training

3. Competence Management

(1) Operating the Competence Management System and Enhancing Training Contents

A mechanism to manage the competence of the NRA staff was established for the above-mentioned five fields because of the introduction of the job qualification system in FY2017. In parallel, the NRA introduced a mechanism that links job qualifications (fields/levels) with job posts and reflects the qualifications in the staffing and treatment of staff, and started operation of this mechanism in FY2018.

With the start of the education and training courses, the NRA developed a common basic training program, a general proficiency program, and a technical proficiency program, to enhance the training to acquire basic knowledge of general regulatory work.

4. Knowledge Management

(1) Promoting Knowledge Transfer and Knowledge Management

Knowledge management activities that systematically transfer and share advanced technical knowledge are being promoted throughout the NRA, and progress is being confirmed by the knowledge management promotion manager. In addition, E-learning related to knowledge management was provided to personnel to further promote knowledge transfer and knowledge management in the NRA.

In FY2018, the NRA held a total of 21 seminars and workshops as an instrument to pass on experience working at a government office, including seminars to transfer valuable and administratively important experience and knowledge to young staff such as knowledge on revisions of legislation and past severe accidents, as well as seminars on different cultures and fields and workshops.

Chapter 5　Enhancement of Nuclear Security Measures and Steady Implementation of Safeguards

Summary of Chapter 5

(Enhancement of Nuclear Security Measures)

The NRA accepted the International Physical Protection Advisory Service (IPPAS) Follow-up Mission for about two weeks from November 26 to review the status of Japan's responses to the recommendations and suggestions provided through the IPPAS Mission conducted in FY2014. On the final day of the Follow-up Mission, the Mission team presented a draft report which said "the team saw significant enhancements since the previous mission, observing that the nuclear security regime in Japan is robust and well-established, and incorporates the fundamental principles of the Amendment to the Convention on the Physical Protection of Nuclear Material."

Nuclear operators of commercial power reactors, spent fuel reprocessing operations, power reactors in a research and development phase and specified nuclear facility started operation of the Confirmation System of Trustworthiness in November 2017. The NRA revised relevant regulations in March 2019 to introduce the Confirmation System of Trustworthiness to facilities other than the above facilities (research reactor facilities and usage facilities).

As for cyber security, the NRA determined possible threats (such as sabotage) to information systems of nuclear facilities in October 2018 and presented them to nuclear operators. The NRA confirmed nuclear operators' protection measures including cyber security measures and operation of trustworthiness checks in FY2018 physical protection inspections.

(Steady Implementation of Safeguards)

The IAEA report on 2017 safeguards activities in Japan concluded that all nuclear materials remained in peaceful activities.

For Fukushima Daiichi NPS Units 1 to 3, where normal on-site verification activities could not be carried out, necessary steps were taken based on continuous discussion with the IAEA. For instance, in addition to the additional steps taken so far, a new monitoring device was installed in the trailer area of Unit 3 for which spent fuel removal from the spent fuel pool is planned.

Following the IAEA's efforts to maintain efficient and effective safeguards activities with limited resources, the NRA had discussions with the IAEA on the necessary steps to apply the facility-specific safeguards approach to each nuclear facility in Japan. The NRA facilitated the international community's understanding of Japan's safeguards activities and contributed to strengthening and improving the efficiency of international safeguards through participating in international safeguards-related conferences and support for education of safeguards personnel and development of safeguards technologies.

The NRA conducted necessary guidance and supervision for the designated organization for information processing and implementing safeguards inspection, which is an essential part of the domestic safeguards system, to ensure proper performance of its duties.

Section 1 Enhancement of Nuclear Security Measures

1. Response to Challenges Regarding Nuclear Security

(1) Responding to the Recommendations and Suggestions Provided through the IAEA's IPPAS Mission

The NRA accepted the International Physical Protection Advisory Service (IPPAS) Follow-up Mission for about two weeks from November 26 to confirm the status of Japan's responses to the recommendations and suggestions provided through the IPPAS Mission conducted in FY2014. The Secretariat of the NRA gave explanations on the nuclear security-related regulatory system in Japan and the status of Japan's responses to the recommendations and suggestions to the Mission team, which was composed of seven experts from six countries and the IAEA. The Mission team visited Kashiwazaki-Kariwa NPS of TEPCO Holdings to review the implementation status of the security measures there. On the final day of the Follow-up Mission, the Mission team presented a draft report which said "the team saw significant enhancements since the previous mission, observing that the nuclear security regime in Japan is robust and well-established, and incorporates the fundamental principles of the Amendment to the Convention on the Physical Protection of Nuclear Material."

(2) Sustainable Effort to Foster Nuclear Security Culture of NRA Officials

In FY2018, the NRA continued (from FY2017) the effort to foster nuclear security culture in the NRA through training courses and workshops for the NRA staff, based on the "NRA's Core Values and Principles," and the "Code of Conduct on Nuclear Security Culture," which was defined by the NRA Commission in FY2014 (January 14, 2015) as a guide for fostering and maintaining nuclear security culture in the NRA as a regulator.

(3) Review of the Security Plan in Line With the Introduction of Insider Threat Countermeasures

The Confirmation System of Trustworthiness, which is recommended by the IAEA Nuclear Security Recommendations on Physical Protection of Nuclear Material and Nuclear Facilities (INFCIRC/225/Revision 5), is one of the countermeasures against insider threats at nuclear facilities. The Confirmation System of Trustworthiness is to review individuals' personal history and other information, and based on the results of the review, to restrict the access to critical zones to those whose trustworthiness is determined.

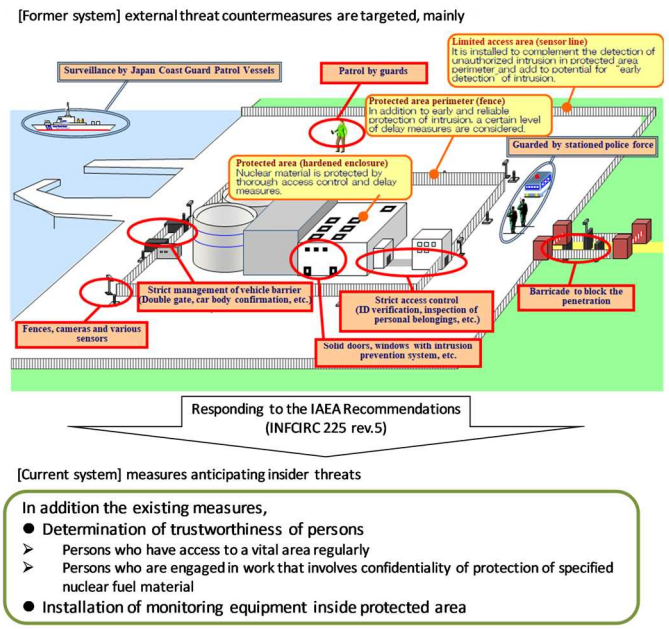


Figure 5-1 Overview of Strengthening Countermeasures against Internal Threats

In line with this IAEA recommendation, the NRA introduced the trustworthiness check system to certain types of nuclear facilities such as commercial power reactor facilities by revising the ordinances and issuing the notification and operational guidelines in September 2016. The operators of those facilities started operation of the system in November 2017 after receiving approval to the change on their respective security plans.

In FY2018, the NRA revised relevant regulations in March 2019 to introduce the trustworthiness check system to facilities other than the above facilities (research reactor facilities and usage facilities).

(4) Enhancement of Cyber Security Measures

The NRA conducted physical protection inspections including cyber security aspects according to the "Guidelines for Security Measures for Nuclear Facility Information System" drawn up in March 2018, deliberated the current status and challenges of cyber security of information systems at nuclear facilities, and determined the possible threats (such as sabotage) to information systems of nuclear facilities in October 2018 and presented them to nuclear operators. In FY2018, the Cyber Security Support Team, which was established in February 2017 to provide support for further reinforcing computer security measures in the NRA and nuclear operators, contributed to further strengthening computer security measures by providing nuclear operators with support such as giving technical advice and information at the occasions of physical protection exercises and others. In addition, the Team gathered and analyzed the latest information on cyber security threats on a daily basis to support computer security efforts in the NRA.

(5) Review of Nuclear Security during Transportation

The “Ordinance on the Shipment of Nuclear Fuel Material Outside of Factory or the Power Reactor Facilities” defines the requirement for measures of locking up and sealing of l shipping containers in which specified nuclear fuel material is stored. The “Ordinance on Arrangement of Shipment of the Specified Nuclear Fuel Material” requires that a person responsible for the transport of such nuclear fuel material shall be clarified before transport begins. It also requires that an agreement shall be reached among concerned parties before being examined by the NRA. Continuing on from the previous fiscal year, in FY2018, the NRA examined such arrangements based on these Ordinances. In addition, the NRA participated in the meeting of the Japan-U.S. Nuclear Security Working Group (NSWG) established after the Nuclear Security Summit and exchanged views with relevant U.S. ministries and agencies on the nuclear security measures during transport.

2. Implementation of Physical Protection Inspections of Nuclear Material

(1) Strict Implementation of Physical Protection Inspections of Nuclear Material

In accordance with the Reactor Regulation Act, the NRA approves the security plan with which nuclear operators and their employees must comply for the protection of specified nuclear fuel material and conducts inspections (hereinafter referred to as “physical protection inspections”) to evaluate the compliance status of the nuclear operators with the approved security plan.

In FY2018, 91 changes to the security plan were approved, 56 physical protection inspections were conducted, and the operation of the trustworthiness check system as well as computer security measures and other protective measures were strictly and appropriately evaluated.

(2) Efforts to Upgrade Physical Protection Exercises

In FY2018, in addition to ensuring the system effectiveness concerning detection and delay of, and response to, intruders in events related to the physical protection, physical protection exercises were further upgraded by grasping the impact on the safety of nuclear facilities and incorporating the collaboration between the NRA and nuclear operators into the exercises.

Section 2 Safeguards Efforts

1. Steady Implementation of Safeguards in Japan

In Japan, limiting the use of nuclear power to peaceful purposes is a fundamental policy that is manifested in the Atomic Energy Basic Act. Japan has accordingly signed on to the Treaty on the Non-Proliferation of Nuclear Weapons and concluded a safeguards agreement (Japan-IAEA Safeguards Agreement)[25] and the Additional Protocol with the IAEA based on this treaty. Bilateral nuclear agreements to promote cooperation concerning the peaceful use of nuclear power have also been concluded. By complying with these international commitments in good faith, Japan is demonstrating to the international community that it is limiting its use of nuclear power to peaceful purposes.

[25] An agreement concluded between the Japanese government and the IAEA to implement the provisions of Article 3(1) and (4) of the Treaty on the Non-Proliferation of Nuclear Weapons.

The NRA will implement the prescribed regulatory controls in Japan and coordinate on operations with the IAEA and other organizations in Japan and overseas in order that Japan can fulfill its obligations under these international commitments and maintain the trust to Japan by the international community as pertains to the peaceful use of nuclear power.

(1) Fulfilling the Japan-IAEA Safeguards Agreement

(a) Permission for the Use of Safeguarded Materials and Approval of Provisions for Accounting and Control

As a general rule under the Japan-IAEA Safeguards Agreement, all nuclear materials possessed in Japan are subject to this agreement. Thus, even if nuclear fuel materials not subject to safety controls are used, they will be subject to permission (approval) to use as safeguarded materials. In FY2018, there were 30 cases in which permission (approval) to use a safeguarded material was granted and 321 cases in which a notification of change was submitted. In order to ensure proper accounting for and controlling of safeguarded materials in Japan, users of these materials and nuclear operators are obligated to prescribe their provisions of accounting and safeguarded materials. In FY2018, authorization (approvals) was granted to the provisions in 31 cases and changes were authorized (approved) in 172 cases.

(b) Accounting Reports, Providing Design Information of Facilities, and Other Reporting, and Applications Based on the Additional Protocol

Accounting for nuclear materials is an important basic step in Safeguards. The users of safeguarded materials and nuclear operators are obligated to report inventory and inventory changes of nuclear materials to the NRA in accordance with the Reactor Regulation Act. The NRA shall compile submitted data into an accounting report after having the data processed by the Nuclear Material Control Center, which has been designated as a registered information processing organization under the Reactor Regulation Act, and submit this report to the IAEA on a timely basis through the Ministry of Foreign Affairs. In FY2018, 2,087 parties were subject to this accounting report. The number of each accounting report is shown in Table 6.

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

Table 6 Number of Accounting Reports for FY2018

(From April 1, 2017 to March 31, 2018)

Type	No. of cases
Inventory change reports	782
Material balance reports	392
Physical Inventory Listings	4120
Nuclear fuel material management reports	3,490

(c) **Verification activities**

The IAEA conducts on-site verification activities, including inspections of facilities, based on information submitted by Japan. Of these on-site verification activities, inspections are carried out at the same time as Japan's safeguards inspections, in the presence of officials of an organization, which is designated by the national government or the NRA, after going through communications and adjustments by the NRA. Most of the safeguards inspections are conducted by the Nuclear Material Control Center, which has been designated as a organization for implementing safeguards inspection under the Reactor Regulation Act, according to instructions issued by the NRA. Design information of facilities is verified together with the on-site inspections conducted by the NRA itself, in the presence of the NRA. The complementary access under the Additional Protocol is carried out by the NRA and the Ministry of Foreign Affairs. Table 7 shows a record of on-site verification activities in FY2018.

Table 7 Record of On-site Verification Activities Carried Out in FY2018

(From April 1, 2018 to March 31, 2019)

Type	Nuclear Regulation Authority	Nuclear Material Control Center	Ministry of Foreign Affairs
Safeguards inspections	15 person-days	1,680 person-days	
Design Information Verification	94 person-days		
Complementary access	22 person-days	1 person-days	21 person-days

(d) Coordination for Facilitating Implementation of Safeguards

The NRA has been holding meetings with the IAEA with the attendance of relevant domestic organizations for the purpose of sharing information on the state of facilities, investigating issues that arise when safeguards are implemented and making adjustments, in order to facilitate the implementation of safeguards. In FY2018, 20 task force meetings in total, focusing on specified facility groups, were held to carry out necessary investigations and adjustments. A general conference of task forces was then held on November 30, 2018, to summarize the activities. In accordance with the results of this process, reports and discussions were made at Japan-IAEA safeguards Joint Committee Meeting

held by the Ministry of Foreign Affairs and the IAEA on March 26, 2019, which was attended by the Deputy Secretary-General in Charge of the IAEA Department of Safeguards.

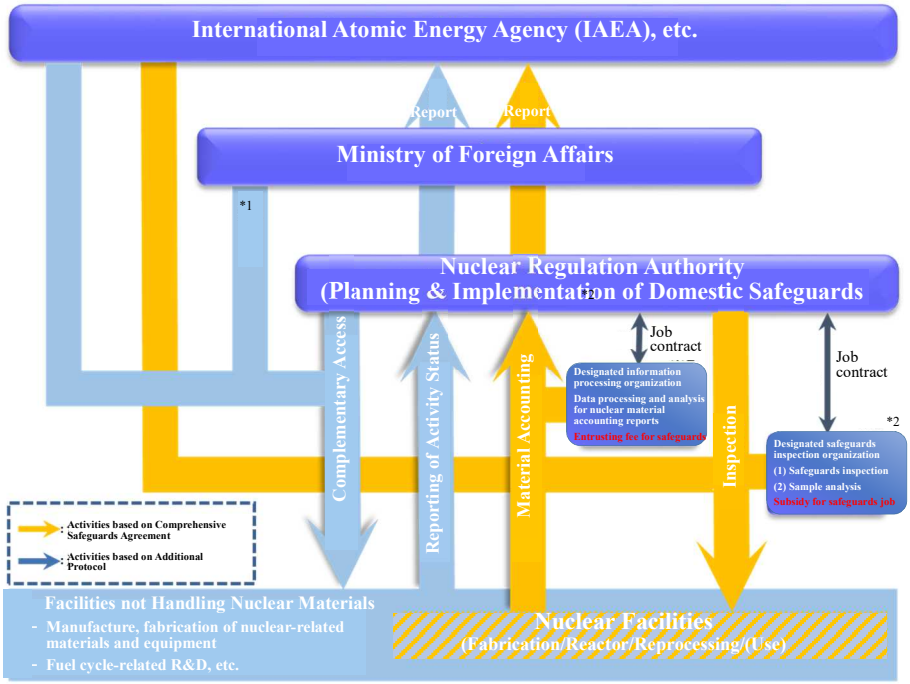
(e) Treatment of Safeguards Equipment in Terms of Safety Regulations

In order to prevent occurrence of safety problems due to safeguards equipment installed in nuclear power facilities in line with the implementation of the Japan-IAEA Safeguards Agreement, adjustments were made concerning the management responsibility and the treatment of said equipment to facilitate a close collaboration among the IAEA, nuclear operators, and relevant departments.

(f) **IAEA's Safeguards Conclusions**

The NRA reported the results of safeguards activities in 2017 to the NRA Commission on May 16, 2018 and sent the information to the IAEA to support its evaluation of the safeguards activities in Japan. The IAEA draws a conclusion on safeguards based on the evaluation of all information obtained through safeguards activities carried out every year by States to the Safeguards Agreement and reports this conclusion at a meeting of the IAEA's Board of Governors in June of the following year. For Japan, the IAEA found no indication of the diversion of declared nuclear material from peaceful nuclear activities and no indication of undeclared nuclear material or activities. On this basis, the IAEA also concluded in 2017 that all nuclear material remained in peaceful activities (Broader Conclusion). Accordingly, this Broader Conclusion has been adopted continuously for 15 years since the results of the implementation of safeguards in 2003 were obtained[26].

[26] https://www.nsr.go.jp/data/000230451.pdf
https://www.iaea.org/sites/default/files/18/06/statement-sir-2017.pdf



*1 Complementary access during normal inspection is excluded.
*2 Nuclear Material Control Center (NMCC) is designated under the Reactor Regulation Act.

Figure 5-2 Safeguards Implementation Arrangement

Inspection activity　　Seal　　Maintenance of monitor

Figure 5-3　Safeguards-related Activities

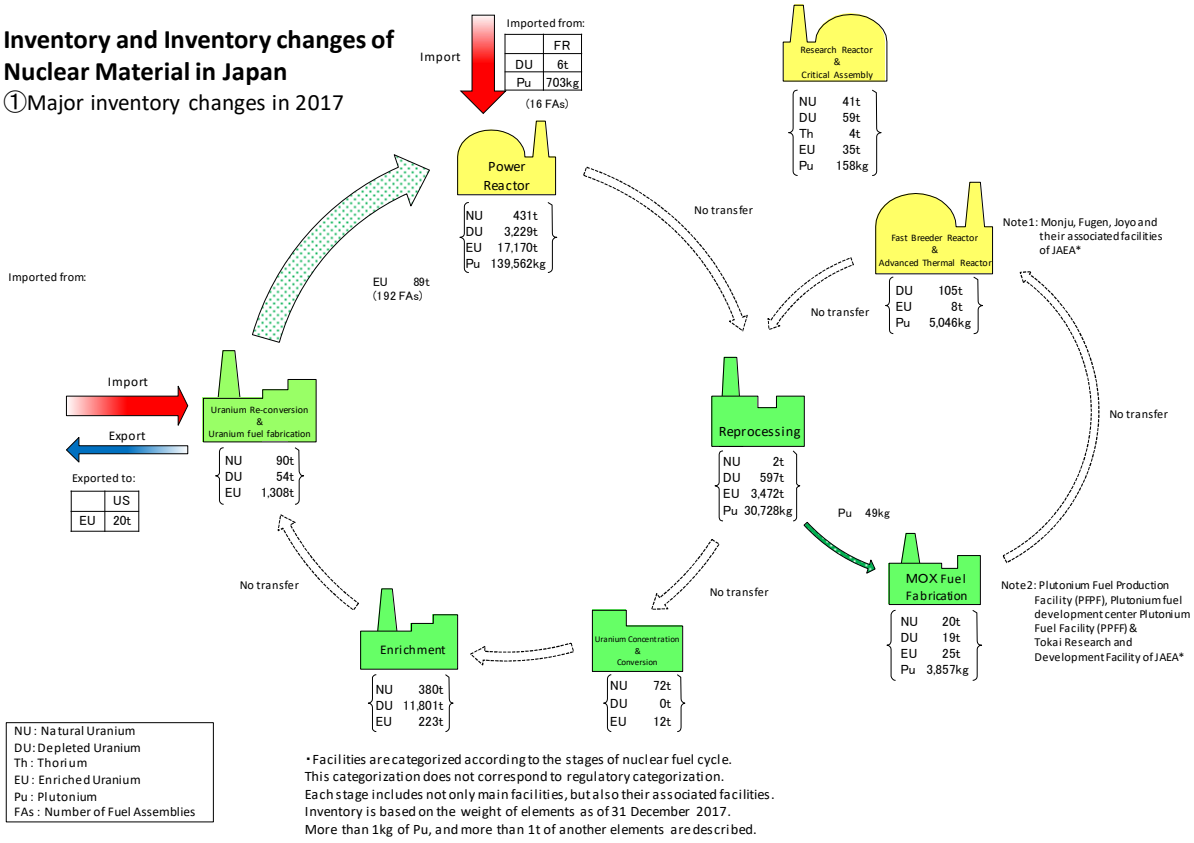


Figure 5-4 Amount of Nuclear Materials in Japan

(2) Fulfilling Bilateral Nuclear Agreements (Procedures Related to Internationally Controlled Materials)

Japan has concluded bilateral nuclear agreements with 14 countries and one international organization and has undertaken commitments to use nuclear source material, nuclear fuel material, and moderator material which have been transferred under these agreements, and nuclear fuel material produced as a result of using these transferred materials, for only peaceful purposes mutually and to carry out procedures applicable to items subject to these agreements. In FY2018, in accordance with these agreements, the NRA processed 14 cases of verification pertaining to the management of the nationality of nuclear materials transferred from other contracting parties and 7 cases to other contracting parties. In addition, with the support of the Nuclear Material Control Center, the NRA reported 13 inventory listings to the IAEA.

2. Safeguards at Fukushima Daiichi NPS (TEPCO)

Normal on-site verification activities have been carried out for all nuclear materials in reactors other than Units 1 to 3 at Fukushima Daiichi NPS. Normal inspections cannot be carried out for Units 1 to 3 reactors, due to the difficulty of entering these reactors. Therefore, through consultations with the IAEA and relevant domestic organizations, the NRA has introduced a full-time monitoring system based on the use of surveillance cameras and radiation monitors and special additional verification

activities which are to be applied only within this NPS site. Thus, the NRA established a framework to allow the IAEA to verify that no undeclared nuclear material has been moved within Units 1 to 3. In FY2018, cameras were installed in the trailer area of Unit 3 in September 2018 to continuously monitor that no fuel was removed. Verification activities were carried out when loading spent fuel assemblies that had been stored in the common pool into transport containers to move them to a temporary dry cask spent fuel storage facility.

At the Fukushima Task Force meeting with the IAEA in September 2018, technical discussions were made on the safeguards measures applicable to molten fuel in the reactor cores of Units 1 to 3. Technical discussions were also made on material accounting at the meetings of the Core Damage Subgroup held in June 2018 and February 2019.

3. Consideration on New Safeguards Inspection Items

In order to maintain efficient and effective safeguards with limited resources while utilizing the experience of safeguards implementation and new techniques, the IAEA has decided to formulate a "State Level Safeguards Approach" for each country taking into account the state of nuclear activities and technical capacities of member states. Following the establishment of this approach for Japan, the Working Groups of Joint Committee Meeting under the Japan-IAEA Safeguards Agreement continued the discussion on the inspection procedures for the facility-specific safeguards approach to be applied to each nuclear facility in Japan.

4. Information Transmission and Human Resource Development concerning Safeguards Activities in Japan

(1) Information Transmission through Asia-Pacific Safeguards Network (APSN) and International Safeguards Symposiums

The Annual Conference of the Asia-Pacific Safeguards Network (APSN) was held on November 1 and 2, 2018 in Vienna, Austria, with participation of 13 member countries, 1 observer agency, the IAEA, and the European Safeguards Research and Development Association (ESARDA). The NRA made a presentation on the experience of the qualification and training of inspectors to help enhance the safeguards arrangements in the Asia-Pacific region.

An international symposium was held in Vienna, Austria on November 5 to 8, 2018 with more than 700 participants from 90 contracting states, including nuclear experts. The NRA made a presentation on the expected cooperation between the IAEA and contracting states and on the approach to safeguards measures for post-accident facilities in the decommissioning phase based on the safeguards experience in TEPCO’s Fukushima Daiichi NPS.

In FY2018, the NRA directly transmitted to the international community the steady implementation of safeguards in Japan through close and continuous cooperation with the IAEA by, for example, updating the English version of the explanation of Japan’s safeguards activities posted on the NRA website, especially augmenting the latest information about safeguards activities in TEPCO’s

Fukushima Daiichi NPS.

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

The technical development required for the implementation of safeguards by the IAEA has been conducted by the key IAEA member states. Japan has proactively contributed to the reinforcement of international safeguards. Specifically, Japan has helped reinforce the technical capacity of the IAEA and other member states to implement safeguards through a framework that includes Japan Support Programme for Agency Safeguards (JASPAS). The program covers a lot of ground, including participation in the IAEA Network Laboratories for Safeguards Analysis, which analyzes environmental samples obtained by IAEA inspectors, and providing training opportunities to IAEA inspectors and officials of member states. The NRA has made overall coordination of the support program and provided the necessary funds. In FY2019, 24 tasks are being carried out. The NRA provided Iran with the knowledge and experience in Japan in a safeguards training course for the safeguards division of the Atomic Energy Organization of Iran.

5. Guidance and Supervision of the Designated Organization for Information Processing and for Implementing Safeguards Inspection under the Reactor Regulation Act

As the designated organization for information processing and for implementing safeguards inspections and associated activities under the Reactor Regulation Act (hereinafter referred to as the “designated organization”), the Nuclear Material Control Center is required to carry out its operation in an appropriate manner. The NRA conducts periodic on-site inspections based on the Reactor Regulation Act, in order to ensure the proper performance of the work by the designated organization.

Chapter 6 Enhancement and Reinforcement of Radiation Protection Measures and Crisis Control System

Summary of Chapter 6

(Enhancement of Radiation Protection Measures)

In FY2018, the Radiation Council formulated the "The report on the lessons about the technical standards for prevention of radiation hazards in emergency exposure situations and existing exposure situations after the TEPCO Fukushima Daiichi Nuclear Power Plant accident"

On July 25, 2018, the NRA revised the Nuclear Emergency Response Guidelines for objectives of the nuclear emergency response for consistency with the international views and decided to newly designate a "Core Advanced Radiation Emergency Medical Support Center." In October 2018, the NRA shaped its view on the reference dose to be used in preparing a proactive nuclear emergency response program. The NRA held 3 meetings of the Study Team on Administration of Stable Iodine in preparation for the revision of the document "Distribution and Administration of Stable Iodine."

The NRA has been steadily carrying out the "Strategic Radiation Safety Research Promotion Project" implemented since FY2017. Part of the results of this Project were contributed to discussions on the incorporation of the 2007 Recommendations of ICRP into domestic regulations by reporting to the Radiation Council meeting.

As for radiation monitoring, the NRA conducted training for the Emergency Monitoring Centers and reinforced measurement system of the emergency monitoring including arrangements for effective emergency monitoring system.

(Enhancement and Reinforcement of Crisis Control System)

On October 1, 2018, the Secretariat of the NRA clarified the duties of emergency response staff at normal times and in emergencies and nominated staff members to carry out clearly defined emergency response duties, in order to facilitate smooth implementation of emergency response operations. The NRA revised the "Manual for Initial Responses in the Event of a Nuclear Disaster due to a Nuclear Powered Warship" on July 20, 2018. The NRA endeavored to develop crisis management manuals, to implement and evaluate drills and exercises by the NRA, to identify issues through emergency drills for further improvement, and to reinforce communication network systems and equipment. In addition, the NRA enhanced the implementation and evaluation of the Emergency Drills by Nuclear Operators to improve emergency response capabilities of nuclear operators, including the start of full application of the performance indicators to the drills at nuclear fuel facilities. In the event of an accident or failure at a nuclear facility, the NRA took all possible steps to ensure initial responses, such as provision of information, and consistently sought for causes and recurrence prevention measures through collaboration of all offices and sections involved.

Section 1 Enhancement of Radiation Protection Measures

1. Investigation and Deliberation by Radiation Council

The Radiation Council, which is charged with incorporating uniform technical standards applicable to the prevention of radiation hazards into relevant statutes and regulations, has been established under the NRA.

In FY2018, the general meetings of Radiation Council were held 4 times to discuss the following issues, and the Radiation Council formulated the "Report on the lessons about the technical standards for prevention of radiation hazards in emergency exposure situations and existing exposure situations after the TEPCO Fukushima Daiichi Nuclear Power Plant accident."

- Follow up on the radiation protection standards established in relation to the TEPCO Fukushima Daiichi NPS accident
- Procedures to incorporate the 2007 Recommendation of ICRP into domestic regulations

In addition, the Radiation Council followed up (at the 142nd general meeting on September 28, 2018) the progress in the work conducted by relevant administrative agencies in response to the "Approach to Radiation Protection of the Lens of the Eye" (recommended view in March 2018).

2. Continuous Improvement of Nuclear Emergency Response Guidelines

Under the Act on Special Measures Concerning Nuclear Emergency Preparedness (Act No. 156 of 1999; hereinafter referred to as "Nuclear Emergency Act"), the NRA shall prescribe Nuclear Emergency Response Guidelines in order to ensure smooth implementation of measures to deal with nuclear disasters by nuclear operators, the national government, and local governments. The NRA endeavors to strengthen the guidelines to have the latest international knowledge proactively incorporated and also have determination criteria used in the formulation of EPR plans maintained in an optimal state at all times. On July 25, 2018, the NRA revised the Nuclear Emergency Response Guidelines for objectives of the nuclear emergency response for consistency with the international views, and to add a statement about newly designated "Core Advanced Radiation Emergency Medical Support Center."

In October 2018, the NRA shaped its view on the reference dose to be referred to in formulating a proactive nuclear emergency response program.

In order to develop medical treatment systems in a nuclear emergency — consisting of the Advanced Radiation Emergency Medical Support Center, Nuclear Emergency Medical Support Center, Nuclear Emergency Core Hospitals, Nuclear Emergency Medical Cooperative Institutions, and other such entities — efforts to collaborate closely with the Secretariat of the NRA and a total of five facilities are promoted: the National Institutes for Quantum and Radiological Science and Technology, which have been collectively designated an Advanced Radiation Emergency Medical Support Center by the

NRA; and Hirosaki University, Fukushima Medical University, Hiroshima University, and Nagasaki University, each of which has been designated an Advanced Radiation Emergency Medical Support Center and Nuclear Emergency Medical Support Center by the NRA. These organizations have pursued the establishment of a nuclear emergency medical network for medical treatment systems in a nuclear emergency through collaboration among national and regional conferences on promoting medical treatment and have worked to develop and reinforce an environment for the provision of education and training. In addition, the Secretariat of the NRA requested the necessary budget to support the upgrading of facilities/equipment for enhancing the education and training environment.

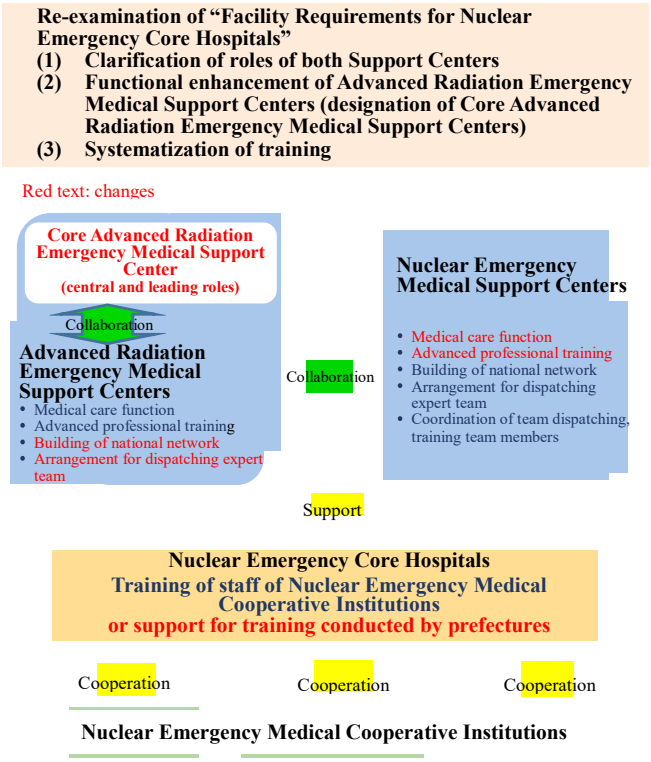


Figure 6-1 Review and Change of "Facility Requirements to Medical Institutions for Nuclear Emergency"

The NRA revised the "Facility Requirements to Medical Institutions for Nuclear Emergency" of the Nuclear Emergency Response Guidelines in July 2018 in consideration of the issues identified based on the confirmation of the current status of the facilities and exchanges of views with parties concerned by the NRA Commissioners and the discussion among the heads of secretariats of Support Centers. In FY2018, the NRA confirmed the conformity of each Support Center with the facility requirements in preparation for the start of operation in FY2019. The National Institutes for Quantum and Radiological Science and Technology were newly designated a "Core Advanced Radiation Emergency Medical Support Center."

At the 42nd NRA Commission Meeting (November 21, 2018), the NRA decided to establish and initiate a study team discussion to revise the "Distribution and Administration of Stable Iodine," which addresses specific procedures for using stable iodine as an operational guideline mentioned in the Nuclear Emergency Response Preparedness Guidelines. The study team held three meetings to discuss the matter in FY2018.

3. Promotion of Safety Research on Radiation Protection

The NRA has been carrying out the "Radiation Safety Research Promotion Project" since FY2017, aiming at systematically and effectively promote investigations and research for ensuring safety through regulation of radiation sources and radiation protection measures.

This project is composed of the "Radiation Safety Research Program" and the "Radiation Protection

Research Network Program." For the "Radiation Safety Research Program" in FY2018, research applications were invited for 2 priority areas set up by the NRA: "Practical radiation management on a scientific basis" and "Practical skills for protection of the public in nuclear and radiation emergencies." Also, 5 research themes including 4 on priority areas were newly adopted and 12 themes were continued.

The Research Promotion Committee including external experts deliberated and confirmed the selection of themes and results of progress management. The results of FY2018 research were evaluated by the external experts at the Research Evaluation Committee meeting in February 2019.

The results of this Project were reported to the 144th general meeting of the Radiation Council on March 15, 2019. The results of the FY2017 priority research area (Application of the new dose limit for the lens of the eye) were reported as useful information for discussions on revisions of related laws and regulations by relevant administrative agencies. Part of the results of the study project on comprehensive discussion of medical examinations for radiation workers was also contributed to discussions on incorporation of the 2007 Recommendations of ICRP into domestic regulations.

In addition, as preparation for FY2019, 3 priority areas "Technical issues on the first response to a large number of victims in a nuclear or radiation emergency," "Rationalization and systematization of radiation safety management based on the actual conditions of use of RI and radiation" and "Common issues for practical radiation safety regulations" were set up and research applications and selections were conducted.

4. Enhancement of Radiation Monitoring

(1) Enhancement of Emergency Monitoring Systems in Areas where Nuclear Facilities are Located

The Nuclear Emergency Response Guidelines stipulate that the level of emergency will be determined in accordance with the situation of the affected nuclear facility to implement preventive protective measures. In particular, emergency measures or measures at an early stage following the release of radioactive materials, for instance, evacuation or temporary relocation, will be decided and conducted appropriately based on the actual measurement values of the emergency monitoring. Based on this guideline, the NRA made every effort to enhance and reinforce an effective emergency monitoring and measurement system, such as having Senior Specialists for Radiation Monitoring stationed on Regional Offices to take control of the monitoring of the vicinity of nuclear facilities in an emergency.

Efforts have been made to improve the operations of the "Emergency radiation monitoring information sharing and announcement system," which facilitates the integration, prompt sharing among concerned parties, and public disclosure of the results of emergency monitoring. This system was used in various training activities, including the FY2018 Nuclear Energy Disaster Prevention Drill.

Following the 2018 Hokkaido Eastern Iburi Earthquake, there were disruptions to the operation of monitoring posts and signal transmission, which were necessary for emergency protective measures

against nuclear disasters. These disruptions were caused by a power outage. Therefore, the NRA conducted inspections on the power sources of prefecture-owned monitoring posts, the composition of the communication equipment system, and the status of installation of alternative monitoring posts that can be used in the case of a long-term power outage. The NRA decided to improve monitoring posts with problems, using measures for securing multiple power sources and communication means, such as installing emergency power generators or portable monitoring posts and introducing various communication means, in order to maintain the monitoring function in the event of a disaster (Three-Year Emergency Response Plan for Disaster Prevention, Disaster Mitigation, and Building National Resilience [Cabinet decision on December 14, 2018]).

(2) Reinforcement of Emergency Monitoring System at Ports of Call of Nuclear Powered Warships

To cope with the aging of the control shade for radiation monitoring, the NRA completed renewal work for one monitoring station and completed design of two additional monitoring stations, one of which started construction, for Yokosuka. For Sasebo, renewal work for one monitoring station was started.

(3) Reinforcement of Emergency Response through Training Activities

In FY2018, “Monitoring practical training” was conducted 25 times and “Drill training concerning emergency monitoring center” was conducted 10 times for local government staff to improve effectiveness of emergency monitoring by local governments.

(4) Radiation Monitoring of Nationwide Environment

(a) Environmental Radioactivity Level Research (Conducted since FY1957)

Continuing on from last fiscal year, in the 47 prefectures throughout Japan, the NRA collected environmental samples, such as atmospheric suspended dust, fallout, and soil for radioactivity analysis. The results of measurement by FY2017 were put into a database to be published. Furthermore, dose rate is continuously measured at 297 monitoring posts throughout Japan to open the measured data on the NRA website.

(b) Oceanic Environmental Radioactivity Comprehensive Evaluation (Conducted since FY1983)

Continuing on from the last fiscal year, in order to investigate the impact of radiation on areas in the vicinity of nuclear power plants and nuclear fuel reprocessing facilities and the level of environmental radiation in Japan, the NRA continued provision of support for the analysis of radioactivity in seawater of the surrounding sea (16 sea areas around nuclear facilities) and for radioactivity measurement conducted by prefectures where nuclear facilities are located or neighboring prefectures (24 prefectures). The measurement results for FY2017 were put into a database to be opened on the NRA website.

(c) Radiation Monitoring in the Vicinity of Nuclear Power Plants (Subsidies Issued since FY 1974)

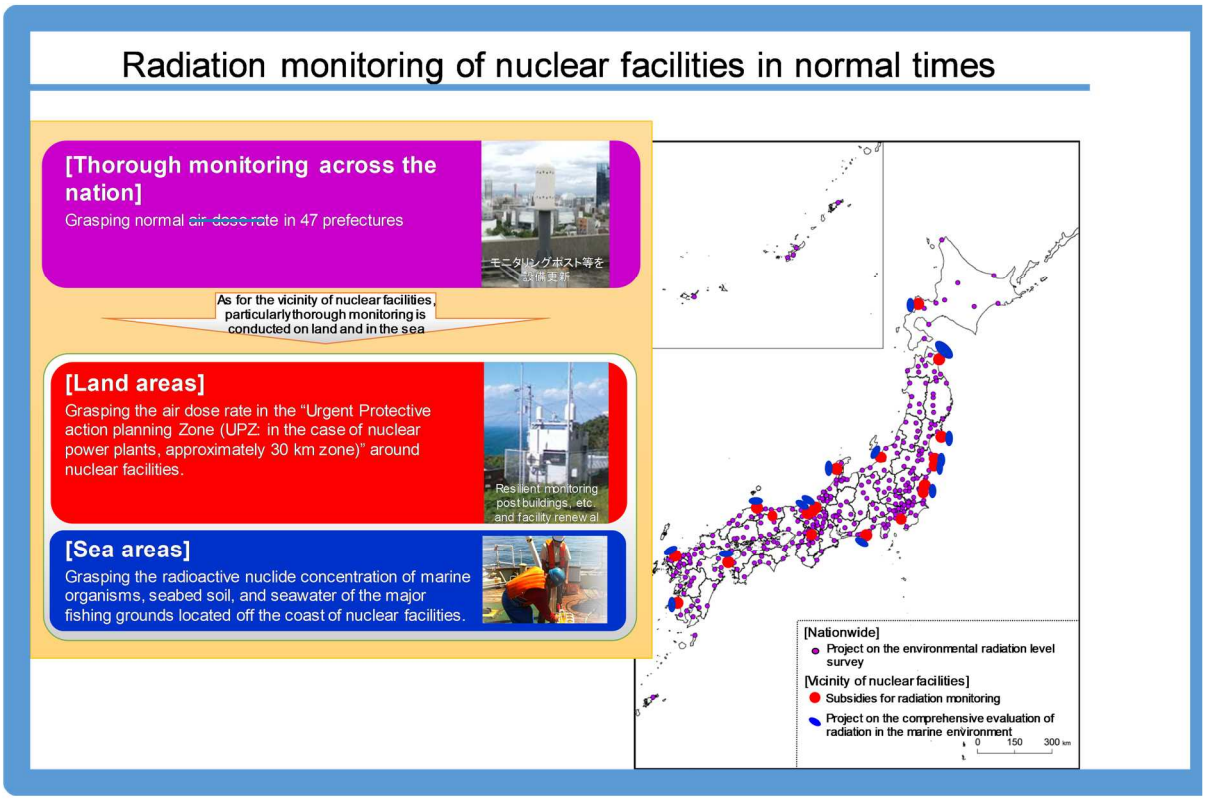
As in the previous fiscal year, financial support by the NRA was provided for the development of facilities necessary for radiation monitoring and radioactivity measurement implemented by prefectures where nuclear facilities are located or neighboring prefectures (24 prefectures). In addition, the measured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

(d) Monitoring of the Impact of Nuclear Events Overseas

With regard to the impact of radioactive substances on Japan when nuclear power related events occur abroad, the NRA installed a monitoring posts in Tsushima and on Yonaguni Island so that the state of dose rate can be grasped more precisely. Its operation started in February 2018, and in FY2018, the NRA continued to publish the data on its website.

(e) Training for the Monitoring Personnel of Local Governments (Implemented since FY1990)

"Environmental radioactivity analysis training" was conducted for local government staff to improve radioactivity analysis skills of local governments (held 29 times in FY2018).



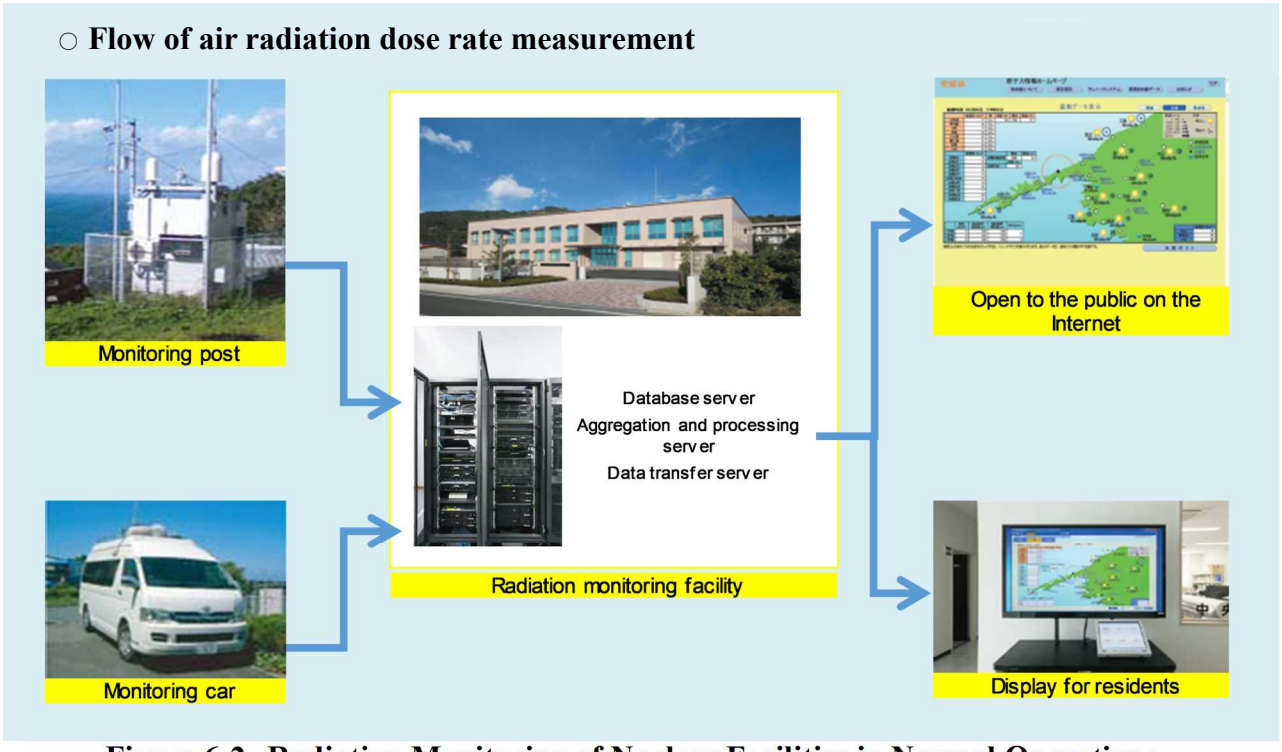


Figure 6-2 Radiation Monitoring of Nuclear Facilities in Normal Operations

(5) Radiation Survey concerning Ports of Call of Nuclear Powered Warships

Continuing on from the last fiscal year, the NRA periodically analyzed radiation in three ports, Yokosuka, Sasebo, and Kinnakagusuku Ports, where the United States nuclear powered warships make

port calls. The NRA also measures 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. While publishing results on the NRA website daily, the results for FY2017 were transferred to a database for publication.

(6) Investigation on Technical Matters Relating to Monitoring

The NRA held meetings of the "Technical Study Team on Environmental Radiation Monitoring" ("Technical Study Team"), which is engaged in continual studies on technical matters relating to monitoring, in September 2018, January and March 2019 to discuss a supplementary document to the Nuclear Emergency Response Guidelines, The series of environmental radioactivity measuring methods, and quality assurance for monitoring.

Regarding the supplementary document to the Nuclear Emergency Response Guidelines, the Technical Study Team reviewed the "Environmental Radiation Monitoring Guidelines" which were compiled by the former Nuclear Safety Commission, considering the experience of TEPCO's Fukushima Daiichi NPS accident and the latest knowledge, and the NRA newly developed the "Ordinary Monitoring (Supplementary reference material for Nuclear Emergency Response Guidelines)" in April 2018. The Team also reviewed the contents of emergency-related chapters of the interpretation part of the "Environmental Radiation Monitoring Guidelines" for future revision.

As for the series of environmental radioactivity measuring methods, the Technical Study Team discussed a draft revision of No. 24 "Pre- treatment Method for Samples for Gamma Ray Spectroscopy in an Emergency." The Secretariat of the NRA revised the method in March 2019 based on the discussion by the Technical Study Team. The Team also discussed a path forward to revise No. 7 "Gamma Ray Spectroscopy with Germanium Detector."

As for quality assurance of radiation monitoring, JAB (Japan Accreditation Board) finished development of an accreditation system for personal dosimetry services and started accepting applications for dosimetry service accreditation in July 2018. JAB accepted accreditation applications from three service providers. The Technical Study Team heard JAB's report on the status of operation.

5. Radiation Protection Measures for Specified Reconstruction and Rehabilitation Base Areas (Involvement and Contribution of NRA)

At the 23rd FY2018 NRA Commission Meeting (August 22, 2018), the Cabinet Office Nuclear Disaster Victims Life Support Team requested evaluation and comment on radiation protection measures in the Specified Reconstruction and Rehabilitation Base Areas and the NRA accepted the request. In response, an outline of the radiation protection measures and draft measures were presented at the 44th NRA Commission Meeting (November 28, 2018) and the 47th NRA Commission Meeting (December 12, 2018), respectively, and the contents within the scope of the NRA's responsibility were approved. The measures as a whole were also confirmed by the NRA to be in line with the "Basic Concept of Safety and Security Measures for Return" formulated by the NRA on November 20, 2013.

Based on this, the Secretariat of the NRA provided the Cabinet Office Nuclear Disaster Victims Life Support Team with the detailed monitoring results in the Specified Reconstruction and Rehabilitation Base Areas of Futaba Town, Okuma Town, Namie Town, Tomioka Town, Iitate Village, and Katsurao Village on March 29, 2019.

The document "Toward Cancellation of Evacuation Order and Return/Residence in the Specified Reconstruction and Rehabilitation Base Areas" including the proposed measures was decided on at the 47th Nuclear Emergency Response Headquarters meeting (December 21, 2018).

6. Participation in International Meetings

Policies of protection against radiation and nuclear emergency preparedness have been discussed at the ICRP, the IAEA, and other international forums based on the results of the latest investigations and research. The outcomes of such discussions are being incorporated into statutes and regulations by countries.

In addition to collecting information on the latest knowledge concerning radiation protection at meetings organized by international organizations, the NRA has participated in the following meetings held by the IAEA and others in order to ensure that Japanese opinions are heard in discussions.

Table 8 Participation in Meetings Held by the IAEA, etc.

Name of conference	Date	Major agendas
IAEA Radiation Safety Standards Committee (RASSC) meetings	June 6–8, 2018 (44th)	• Safety Guide "Radiation Safety at Radioisotope Production Facilities Using Accelerators" • Safety Guide "Radiation Protection and Safety for Well Logging" • Safety Guide "Radiation Protection and Safety for Measurement Equipment using Radiation"
	November 21–23, 2018 (45th)	・ Safety Guide "Management of Residues Containing Naturally Occurring Radioactive Materials from Uranium Production and Other Activities" ・ Review of Safety Fundamentals (SF-1) and other related safety standards in view of UNSCEAR 2012 report
IAEA Emergency Preparedness and Response Standards Committee (EPReSC) meetings	June 12–14, 2018 (6th)	• Safety Guide "Emergency Preparedness and Response during Transportation of Radioactive Materials"
	October 30 – November 1, 2018 (7th)	• Safety Guide "Efforts for Communication with the Public in Nuclear or Radiation Emergency Preparedness and Response"

		• Review of Safety Fundamentals (SF-1) and other related safety standards in view of UNSCEAR 2012 report

Section 2 Enhancement and Reinforcement of Crisis Control System

1. Reinforcement of Emergency Response Capabilities of NRA

(1) Clarification and Systematization of Emergency Management System under Normal Conditions

The NRA established the "Rules on Nomination of Staff to be Engaged in Emergency Response Operations" on October 1, 2018 in order to facilitate smooth implementation of emergency response operations based on nuclear emergency response manuals. With that, the NRA clarified the duties of emergency response staff at normal times and in emergencies and nominated staff members to carry out clearly defined emergency response duties. The NRA introduced a PDCA cycle system for capacity improvement of staff engaged in emergency response. Under this system, staff performance is evaluated against set targets (to use more than 5% of their working hours for participating in training and drills [about once a month]) every fiscal year and new targets are set for the next year considering the evaluation results.

(2) Maintenance of Crisis Management and Response Manuals

The NRA endeavored to develop and improve systems for the smooth and adequate implementation of emergency response by the NRA as an approach to crisis management. As part of this effort, the NRA participated in the FY2018 Nuclear Emergency Disaster Prevention Drill conducted at Ohi and Takahama Power Stations on August 25 and 26, 2018, and made reviews on the NRA initial response manual taking account of the issues and lessons obtained from the Drill and contributed to the revision of the nuclear emergency preparedness manuals.

The NRA has prepared manuals relating to crisis management in order to respond to a variety of events including not only nuclear disasters but also large-scale natural disasters. In FY2018, the NRA reviewed the response arrangements to cope with a nuclear disaster due to a nuclear powered warship and revised the "Manual for Initial Responses in the Event of a Nuclear Disaster due to a Nuclear Powered Warship" on July 20, 2018. In addition, the NRA cooperated in revising the Basic Disaster Management Plan established under the Disaster Countermeasures Basic Act and participated in emergency drills and exercises hosted by the relevant ministries and agencies to contribute to the smooth and precise implementation of emergency responses by the whole government.

In addition, the NRA reviewed and examined plans taking occasions of various exercises (such as gathering exercises in emergency, setting-up exercise of the Emergency Response Headquarters) and endeavored to ameliorate services continuity plans responding to emergency cases, such as a Tokyo Inland Earthquake and new strains of influenza.

In response to the occurrence of large-scale natural disasters in FY2018, the Secretariat of the NRA

gave personnel mobilization directions (four times) with augmented information collection and communication activities, promptly checked for abnormalities in nuclear facilities, and publicly announced the relevant information. During these mobilizations, the Secretariat of the NRA reported the impact on nuclear facilities at the meeting of emergency team which is to be assembled by the government as an initial response system for emergency situations.

(3) Function Enhancement of Disaster Prevention Drills

In order to improve emergency preparedness and response, the NRA extracted issues relating to decision making based on lessons learned through Nuclear Energy Disaster Prevention Drills. Tabletop emergency response exercises were carried out, in light of the identified issues, mainly by the NRA Commissioners and top officials of the Secretariat who are responsible for decision-making during emergencies. In FY2018, seven tabletop exercises were carried out, including those relating to off-site and on-site responses.

The NRA also participated in Emergency Drills by Nuclear Operators as in FY2017, seeking further improvement of emergency preparedness and response such as a smoother approach to sharing information with the plant team of the NRA's Emergency Response Center (hereinafter referred to as "ERC") and immediate situational response centers for nuclear facilities. Other functional teams of the ERC have also conducted exercises in coordination with nuclear operators' emergency drills since FY2017. In addition, the NRA started emergency communication exercises with the local governments in the areas where nuclear facilities are located. Through such drills and exercises, the NRA improved the abilities of the functional team members, identified issues to be addressed, and made necessary improvements.

2. Reinforcement of Nuclear Operators' Emergency Preparedness and Response

(1) Enhancement of Evaluation of Emergency Drills by Nuclear Operators

The NRA has been holding the Debriefing Session of Emergency Drills by Nuclear Operators (hereinafter referred to as "briefing sessions") and evaluating drills conducted by nuclear operators since FY2013.

The NRA held a briefing session on July 25, 2018 and reported the evaluation results for Emergency Drills by Nuclear Operators in commercial power reactor facilities. The NRA pointed out that some power stations still needed further improvements for one of the performance indicators "information sharing between immediate response centers and ERC plant team," but showed an evaluation result that other indicators were generally in the acceptable range.

Particularly, since TEPCO's Kashiwazaki-Kariwa NPS was rated as C for "information sharing between immediate response centers and ERC plant team," the NRA instructed TEPCO Holdings to review the internal training program and submit an improvement plan. The progress in improvement was strictly checked through element training conducted in collaboration with the NRA and the Emergency Drill by the nuclear operator conducted on October 2, 2018.

For nuclear fuel facilities, the NRA decided to apply similar evaluation as that for commercial power reactors on a trial basis, to develop performance indicators for nuclear fuel facilities taking into account the results of the trial operation, and to start full implementation when FY2018 Emergency Drills by Nuclear Operators are conducted.

The Training Scenario Development Working Group set up under the briefing sessions in FY2017 has been conducting a training course for improving judging ability of commanders in the emergency response stations and the main control rooms of power plants and a training course for improving response capabilities of field crews. On the basis of the results of the trial implementation of these courses in FY2017, the Working Group examined the implementation plan for FY2018 and developed scenarios, conducted training courses, and evaluated results based on the plan. Up to now, the Working Group has conducted courses for commander judging ability for 3 nuclear operators and courses for response capabilities for 2 nuclear operators.

Record of Emergency Drills by Nuclear Operators at Commercial Power Reactors in FY2018

No	Date	Nuclear Facility	
1	Sep 11, 2018	Chubu Electric	Hamaoka NPS
2	Oct 2, 2018	TEPCO Holdings	Kashiwazaki-Kariwa NPS
3	Oct 23 2018	Kyushu Electric	Sendai NPS
4	Oct 30 2018	Tohoku Electric	Onagawa NPS
5	Nov 6, 2018	Chugoku Electric	Shimane NPS
6	Nov 20, 2018	Hokkaido Electric	Tomari PS
7	Dec 4, 2018	TEPCO Holdings	Fukushima Daiichi NPS
8	Dec 6, 2018	Chubu Electric	Hamaoka NPS
9	Dec 11, 2018	Kansai Electric	Ohi PS, Takahama PS
10	Dec 18, 2018	Kyushu Electric	Genkai NPS
11	Dec 25, 2018	JAPC	Tsuruga PS
12	Feb 5, 2019	TEPCO Holdings	Fukushima Daini NPS
13	Feb 18, 2019	Kansai Electric	Mihama PS
14	Feb 25, 2019	Shikoku Electric	Ikata PS
15	Mar 8, 2019	Tohoku Electric	Higashidori NPS
16	Mar 12, 2019	JAPC	Tokai PS, Tokai Daini PS
17	Mar 20, 2019	Hokuriku Electric	Shika NPS

Evaluation Indicators of Emergency Drills by Nuclear Operators at Commercial Power Reactors in FY2018

Category	No	Indicator
Information sharing and notification	1	Information flow for information sharing
	2	Information sharing with ERC plant team (1) Conditions of accident and plant, (2) Strategy to bring accident to end, (3) Progress of strategy
	3	Use of tools for information sharing (1) Operation of communication equipment (operation of communication equipment to connect ERC plant team and immediate response center), (2) Use of plant information display system (Training using ERSS or SPDS), (3) Activities of liaison personnel
	4	Reliable notification and communication (1) Notification with facsimile, etc. within 15 minutes, (2) Accurate notification messages, (3) Explanation on EAL judgment bases, (4) Actions such as Article 10 confirmation meeting, (5) Reporting according to Article 25
Efforts to improve Emergency Drills by Nuclear Operators	5	Development of improved drill implementation plan addressing the challenges from preceding drills
	6	Variety and complexity of scenarios
	7	Public relations activities (1) Press response in coordination with public relations group, (2) Participation of outsiders such as reporters, (3) Participation of outsiders such as public relations personnel of other nuclear operators, (4) Simulated press briefing, (5) External communications using communication tools
	8	Logistics support activities (1) Support activities between nuclear operators, (2) Coordination with logistics support bases, (3) Coordination with nuclear emergency support organizations
	9	Observation of drills (1) Observation of drills by other nuclear operators, (2) Acceptance of drill observers, (3) Acceptance of peer review, etc.
	10	Self-evaluation/analysis of drill results (1) Identification of problems and challenges, (2) Cause analysis, (3) Improvements based on the cause analysis results

Figure 6-3 Record of Emergency Drills by Nuclear Operators at Commercial Power Reactors in FY2018

Record of Emergency Drills by Nuclear Operators at Nuclear Fuel Facilities (JAEA and JNFL) in FY2018

No	Date	Nuclear Facility	
1	Sep 25, 2018	JAEA	Nuclear Science Research Institute
2	Oct 16, 2018	JAEA	Nuclear Fuel Cycle Engineering Laboratories
3	Oct 26 2018	JNFL	Enrichment and Disposal Plant, Enrichment Department
4	Nov 8, 2018	JNFL	Enrichment and Disposal Plant, Disposal Department
5	Nov 22, 2018	JAEA	Ningyo-toge Environmental Engineering Center
6	Jan 15, 2019	JAEA	Oarai Research and Development Center
7	Jan 29, 2019	JNFL	Reprocessing Plant
8	Feb 19, 2019	JAEA	Prototype Fast Breeder Reactor Monju
9	Mar 5, 2019	JAEA	Advanced Converter Reactor Fugen

Evaluation Indicators of Emergency Drills by Nuclear Operators at Nuclear Fuel Facilities (JAEA and JNFL) in FY2018

Category	No	Indicator
Information sharing and notification	1	Information flow for information sharing
	2	Information sharing with ERC plant team (1) Conditions of accident and plant, (2) Strategy to bring accident to end, (3) Progress of strategy
	3	Reliable notification and communication (1) Notification with facsimile, etc. within 15 minutes, (2) Accurate notification messages, (3) Explanation on EAL judgment bases, (4) Actions such as Article 10 confirmation meeting, (5) Reporting according to Article 25
	4	Operation of communication equipment (operation of communication equipment to connect immediate response center or emergency response center (when immediate response center is not established) and ERC plant team)
Efforts to improve Emergency Drills by Nuclear Operators	5	Use of plant information display system (Implementation of training using ERSS)
	6	Development of mid-term plan
	7	Implementation status of drills without pre-announced scenario
	8	Development of improved drill implementation plan addressing the challenges from preceding drills
	9	Variety and complexity of scenarios
	10	Public relations activities (1) Press response in coordination with public relations group, (2) Participation of outsiders such as reporters, (3) Simulated press briefing, (4) External communications using communication tools
	11	Logistics support activities (1) Support activities between nuclear operators, (2) Coordination with nuclear operations emergency response support bases, (3) Coordination with nuclear emergency support organizations
	12	Observation of drills (1) Observation of drills by other nuclear operators, (2) Acceptance of drill observers, (3) Acceptance of peer review, etc.
	13	Self-evaluation/analysis of drill results (1) Identification of problems and challenges, (2) Cause analysis, (3) Improvements based on the cause analysis results
Nuclear operator's performance in emergency drill	14	Participation rate of emergency response personnel in drills (plant)
	15	Participation rate of emergency response personnel in drills (immediate response center)

Figure 6-4 Record of Emergency Drills by Nuclear Operators (Japan Atomic Energy Agency and Japan Nuclear Fuel Ltd.) in FY2018

Record of Emergency Drills by Nuclear Operators at Nuclear Fuel Facilities (other than JAEA and JNFL) in FY2018

No	Date	Nuclear Facility
1	Oct 5, 2018	Institute for Integrated Radiation and Nuclear Science, Kyoto University
2	Oct 12, 2018	Nuclear Development Corporation
3	Nov 16, 2018	Tokyo University Graduate School of Engineering, Nuclear Professional School
4	Dec 7, 2018	Nippon Nuclear Fuel Development Co. Ltd.
5	Dec 14, 2018	Nuclear Engineering Laboratory, Toshiba Corporation
6	Jan 18, 2019	Rokkasho Safeguards Center, Nuclear Material Control Center
7	Jan 25, 2019	Kumatori Works, Nuclear Fuel Industries, Ltd.
8	Feb 1, 2019	Mitsubishi Nuclear Fuel
9	Feb 8, 2019	Tokai Safeguards Center, Nuclear Material Control Center
10	Feb 15, 2019	Tokai Works, Nuclear Fuel Industries, Ltd.
11	Feb 22, 2019	Global Nuclear Fuel Japan
12	Mar 18, 2019	Kinki University

Evaluation Indicators of Emergency Drills by Nuclear Operators at Nuclear Fuel Facilities (other than JAEA and JNFL) in FY2018

Category	No	Indicator
Information sharing and notification	1	Information sharing between emergency room center and ERC plant team
	2	Reliable notification and communication (1) Notification with facsimile, etc. within 15 minutes, (2) Accurate notification messages, (3) Explanation on EAL judgment bases, (4) Reporting according to Article 25
	3	Operation of communication equipment (operation of communication equipment to connect emergency response room and ERC plant team)
	4	Development of mid-term plan
Efforts to improve Emergency Drills by Nuclear Operators	5	Development of improved drill implementation plan addressing the challenges from preceding drills
	6	Implementation status of drills without pre-announced scenario
	7	Variety and complexity of scenarios
	8	Public relations activities (1) Press response in coordination with public relations group, (2) Participation of outsiders such as reporters (including public relations staff of other nuclear operators), (3) Simulated press briefing, (4) External communications using communication tools
	9	Logistics support activities (1) Support activities between nuclear operators, (2) Coordination with nuclear operations emergency response support bases
	10	Observation of drills (1) Observation of drills by other nuclear operators, (2) Acceptance of drill observers, (3) Acceptance of peer review, etc., (4) Visit to ERC for training
	11	Self-evaluation/analysis of drill results (1) Identification of problems and challenges, (2) Cause analysis, (3) Improvements based on the cause analysis results
Nuclear operator's performance in emergency drill	12	Participation rate of emergency response personnel in drills (plant)

* Personnel of the NRA Secretariat participate in various drills as members of the ERC plant team, staff dispatched from the ERC to an immediate situational response center, or staff dispatched to an emergency response room; some personnel evaluate the state of Emergency Drills by Nuclear Operators.
(In addition to members of the ERC plant team, members of other function teams also participate in drills at Onagawa, Tomari, Ohi, and Takahama NPSs)

Figure 6-5 Record of Emergency Drills by Nuclear Operators (Nuclear Fuel Facilities other than JAEA and JNFL) in FY2018

(2) Collaboration with Relevant Ministries and Agencies Pertaining to Nuclear Emergency Preparedness

Based on the provisions of the Basic Disaster Management Plan, the NRA holds meetings of the Central Liaison Council for Nuclear Disasters, which consists of relevant ministries and agencies, nuclear operators, and the Federation of Electric Power Companies of Japan, in order to discuss cooperation in emergency responses and necessary support at local sites. In FY2018, discussions were held on the way to run the Council for constructing effective cooperation. Even in locations where nuclear power plants are located, the NRA holds meetings of the Local Liaison Councils for Nuclear Disasters, which consist of local branch bureaus and departments of the member ministries and agencies of the Central Liaison Council located in a given area, the prefectural police headquarters responsible for the area (if necessary, prefectural police headquarters of an area which becomes a wide-area evacuation site for the given area), the fire department, the Regional Coast Guard Headquarters (Coast Guard Office responsible for the given area, as necessary), the SDF, and nuclear operators. In FY2018, a total of 10 meetings were held to strengthen cooperation among related organizations.

3. Reinforcement of Communication Network Equipment and Systems

Considering the expiration of the lease contract for the integrated nuclear emergency preparedness network system at the end of FY2018, the NRA prepared for the contract renewal to complete the system in FY2019. This covered convenience improvement such as the addition of video conference consoles taking account of user comments. The NRA defined the requirements and started procurement procedures in preparation for the update of the Emergency Response Support System scheduled for FY2019. The functions of the ERSS will be reinforced with a focus on reactor facilities that meet the new regulatory requirements. With respect to “Emergency Radiation Monitoring Information Sharing and Announcement System,” functional improvements were made to enrich the master data and to realize unified information linkage among systems. The NRA defined the requirements and started procurement procedures in preparation for the development and operation of the next system scheduled for FY2020.

References

Reference 1: Ensuring Trust in Nuclear Regulatory Administration (Chapter 1)

1. 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 to September 21, 2017	From September 22, 2017
Chairman	Shunichi Tanaka	Shunichi Tanaka	Shunichi Tanaka	Toyoshi Fuketa
Commissioner (Substitute for the Chairman)	Kunihiko Shimazaki	Toyoshi Fuketa	Toyoshi Fuketa	Satoru Tanaka
Commissioner (Second substitute for the Chairman)	Toyoshi Fuketa	Satoru Tanaka	Satoru Tanaka	Shinsuke Yamanaka
Commissioner (Third substitute for the Chairman)	Kayoko Nakamura	Kayoko Nakamura	Akira Ishiwatari	Nobuhiko Ban
Commissioner (Fourth substitute for the Chairman)	Kenzo Oshima	Akira Ishiwatari	Nobuhiko Ban	Akira Ishiwatari

(As of March 31, 2019)

2. Establishment of the NRA and Organizational Changes

- September 19, 2012: The NRA was established
- March 1, 2014: Japan Nuclear Energy Safety Organization (JNES) was abolished and integrated into the NRA
- October 14, 2014: Director General for Nuclear Disaster Management was placed in the Cabinet Office

  Officials belonging to the NRA were primarily appointed as concurrent officials of the Office for the Nuclear Emergency Preparedness, Cabinet Office. To reinforce the nuclear emergency response system, changing the appointment scheme, full-time officials were assigned to the Cabinet Office.

3. Breakdown of FY2018 Budget of the NRA (after revision)

	Budget section	FY2018 budget amount (after budget revision) (million yen)
General account	Shared NRA costs	4,225
	Costs of ensuring nuclear safety	4,609
	Radioactivity investigation and research costs	1,500
Special account for energy measures	Costs of power-usage measures	428
	Costs of nuclear safety regulatory measures	21,719
	Administrative handling costs	22,966
	Disbursements	0.27
	Reserve funds	100
Special account for reconstruction after the Great East Japan Earthquake	Costs of policies for environmental conservation and restoration	3,262
Total		58,809

4. Organization of the NRA

The Secretariat of the NRA is responsible for the organization's administrative affairs, and the NRA Human Resource Development Center is responsible for human resources development and training activities.

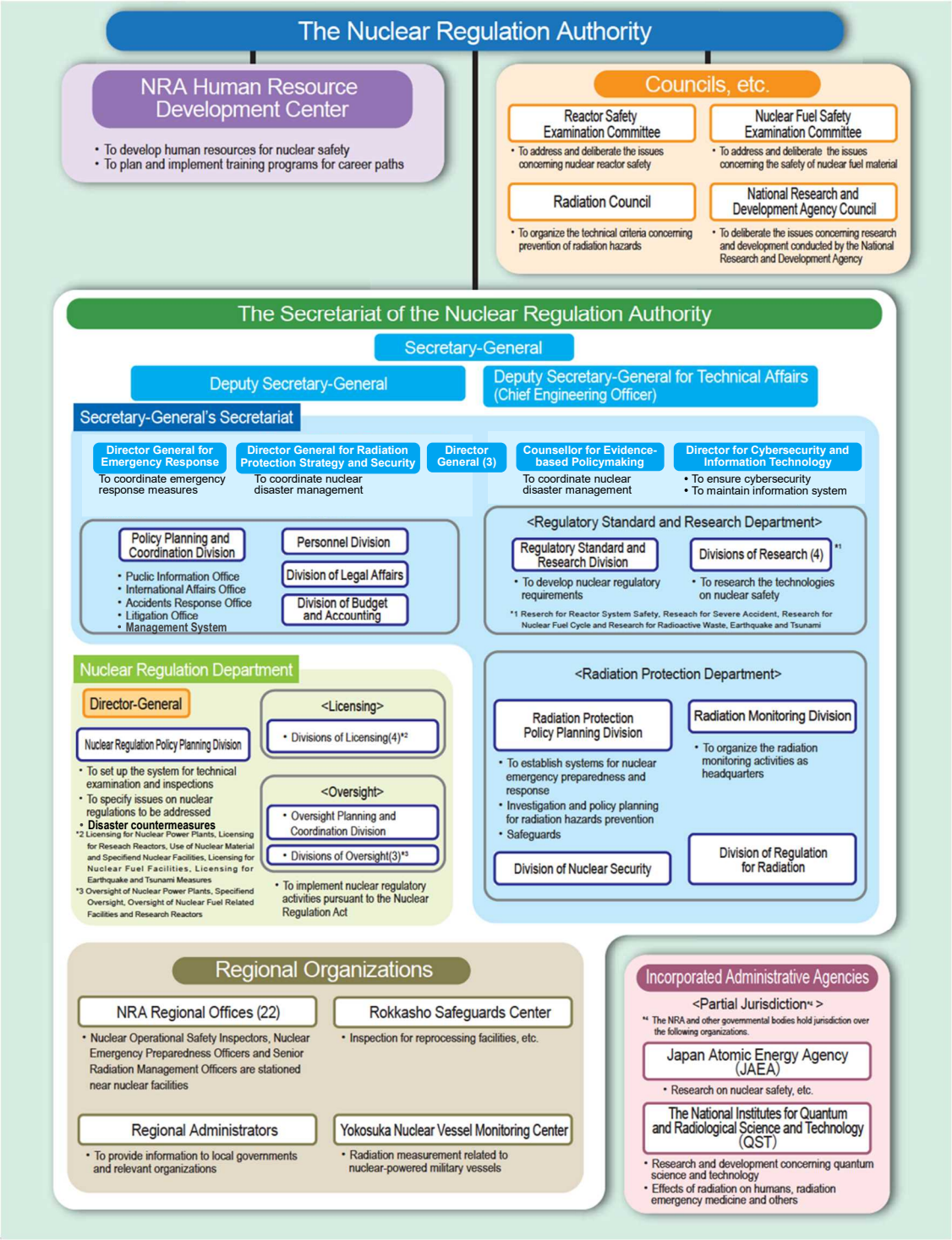


Figure i Organizational Structure of the NRA (April 2018 – March 2019)

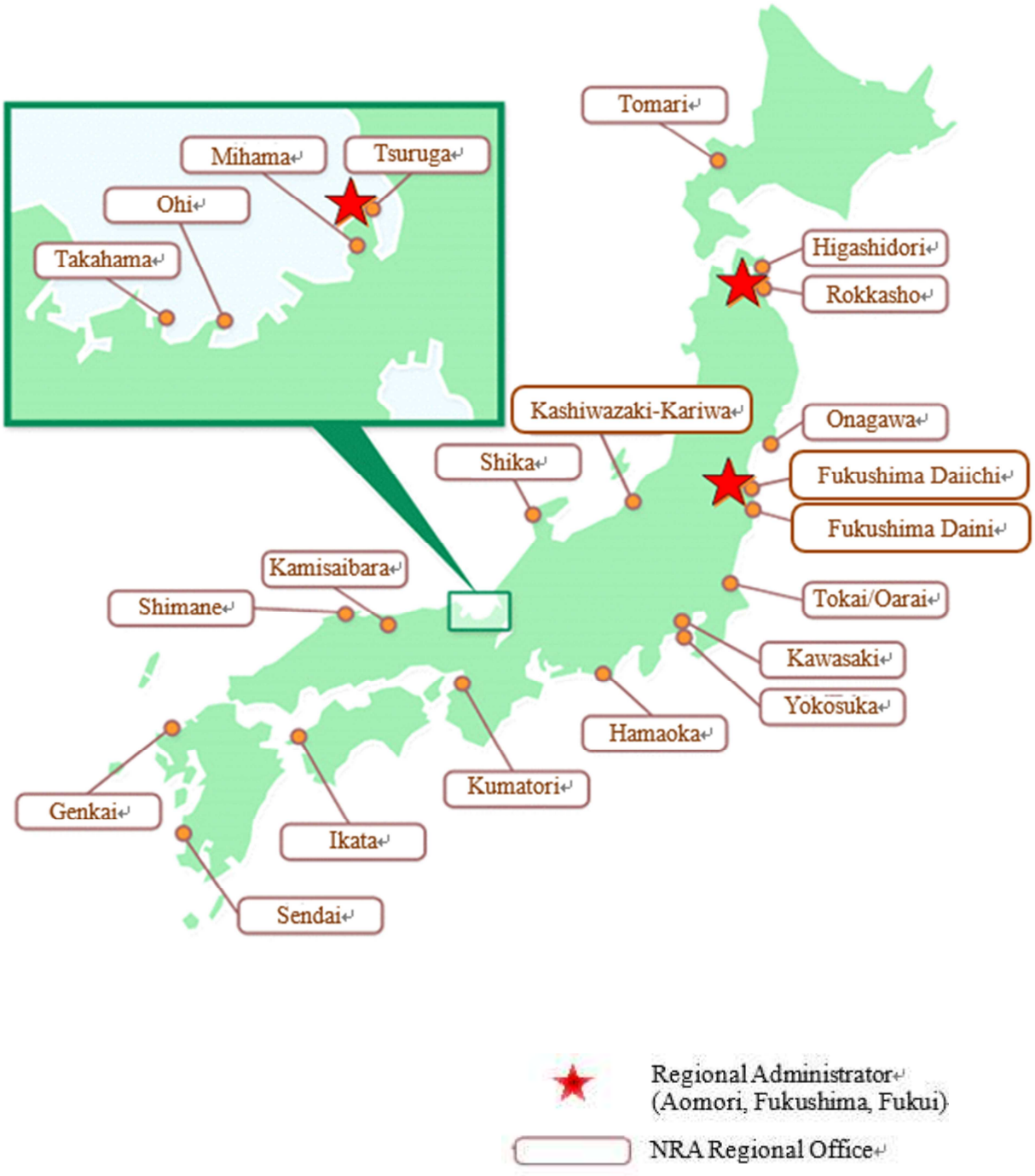


Figure ii Location of NRA Regional Offices and Stationing of Regional Administrators

5. NRA's Core Values and Principles

(Determined on January 9, 2013 by the NRA)

Bearing in mind that:

- The NRA was established to 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:

- 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.

6. Code of Conduct on Nuclear Security Culture

(Determined on January 14, 2015 by the NRA)

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

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

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

Code of Conduct

1. Recognizing Threat

The NRA and its Secretariat shall recognize that nuclear security 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 effect on another. We shall make all possible efforts for the harmonization of both measures and senior management shall be responsible for providing the most appropriate solution in cases of conflicts.

3. Responsibilities of Senior Management

Senior management shall demonstrate their commitment to nuclear security and shall make an assessment on how a positive nuclear security culture is developed within the NRA. In addition, senior management shall 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 programs on nuclear security.

We shall have a ‘questioning attitude’ towards nuclear security issues at all times and strive to improve our effectiveness.

5. Confidentiality and Communication

While strictly observing confidentiality of nuclear security information, we shall proactively communicate with relevant stakeholders, as necessary, with a view to fostering a positive nuclear security culture in Japan.

7. Statement on Nuclear Safety Culture

(Determined on May 27, 2015 by the NRA)

Safety shall be given the overriding priority in the utilization of nuclear energy. Safety culture is recognized as continued practices with mindful awareness of this principle. It is the duty of everyone involved in nuclear energy to foster safety culture.

Recognizing its importance, the Nuclear Regulation Authority (NRA) has developed the code of conduct on safety culture taking due account of the lessons learned from the accident at the Fukushima Daiichi Nuclear Power Station of Tokyo Electric Power Company, Inc. The NRA will take the initiative in acting based on it.

Thereby, the NRA will strive 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.

8. Actual Record of the NRA Commission Meetings

(From April 1, 2018 to March 31, 2019)

Number	Date	Deliberation Topic
1	4.4	・Improvement activities in reprocessing business ・Exchange of technical views between licensees and regulator ・Development of "Ordinary Monitoring (Supplementary reference material Nuclear Emergency Response Guidelines)" ・Progress in "Radiation Safety Research Promotion Project"
2	4.11	・Results of FY2017 Nuclear Material Physical Protection Inspections, FY2018 priority inspection items, and results of confirmation of physical protection measures for nuclear material transportation for FY2017 ・Generic Criteria (GC) and Operational Intervention Level (OIL) ・Status of the review of conformity to New Regulatory Requirements (NPSs) ・Status of the review of conformity to New Regulatory Requirements (nuclear fuel facilities) ・Development policy for FY2017 NRA Annual Report ・FY2017 third quarter discretionary disposition report and corrections of first quarter discretionary disposition report
3	4.18	・Direction of review of the "Facility Requirements to Medical Institutions for Nuclear Emergency" ・Approach to tornado impact evaluation in response to the revision of tornado evaluation method of the Japan Meteorological Agency
4 *1	4.23	・Election and appointment of members of the Reactor Safety Examination Committee and the Nuclear Fuel Safety Examination Committee
5	4.25	・Evaluation and further actions concerning Chubu Electric Power's report on designation of access control area due to deposits containing radioactive materials in the waste volume reduction building at Hamaoka NPS (draft) ・Approach to regulation of uranium fabrication facilities ・Discussion toward harmonization of nuclear safety, nuclear security, and safeguards ・Application of interim measures for low-power reactors without class S facility to NSRR ・Results of FY2017 on-site inspections for nuclear fuel material users ・Permission for change in reactor installation for Advanced Converter Reactor Fugen of Japan Atomic Energy Agency (draft) ・Results of the IAEA Advisory Group on Nuclear Security (AdSec) meeting
6 *2	5.7	・Finalization of the results of construction plan review for the Specialized Safety Facility of Sendai NPS Unit 1 of Kyushu Electric Power
7	5.9	・Operation of legal reporting system for the event of missing radioisotopes (draft) ・Future research evaluation process ・Results of the IAEA International Nuclear Safety Group (INSAG) meeting
8	5.9	・Opinion exchange with chairs of the Reactor Safety Examination Committee and the Nuclear Fuel Safety Examination Committee (responses to the instructions concerning safety goals and New Regulatory Requirements)
9	5.16	・Method for determining pipe support structure intervals in nuclear power plants ・Development of regulatory requirements for mid-depth disposal: discussion on the application of ALARA approach based on the studies by the Study Team on the Regulation of Radioactive Waste in Decommissioning ・Implementation status of FY2017 fourth quarter Operational Safety Inspections ・The findings of the National System of Safeguards of Japan from its safeguards activities in 2017 ・Revision of operation guidelines for the Allegation System of Nuclear Facilities Safety Information
10	5.23	・Results of inspections by nuclear licensees in response to the corrosion of main control room HVAC ducts found at Shimane NPS Unit 2 ・Approach to responses to accidents and problems ・Recent operation of the Technical Information Committee ・Results of the International Nuclear Regulators Association (INRA) meeting

Number	Date	Deliberation Topic
11	5.30	・Finalization of the results of review of the application for permission for change in reactor installation for Ikata NPS Unit 3 of Shikoku Electric Power (draft) ・FY2017 NRA Annual Report (draft) ・Nomination of members of the Reactor Safety Examination Committee and the Nuclear Fuel Safety Examination Committee (draft) ・Development of regulatory requirements for mid-depth disposal: use of dose evaluation in the application of ALARA approach ・Partial revision of the Regulations on the standards for the position, structure and equipment of commercial nuclear power reactors and associated facilities (draft) and solicitation of public comments: spent fuel storage in dry casks for storage and transportation ・Solicitation of public comments on the partial revision of the Regulations on the standards for the position, structure, and equipment of commercial nuclear power reactors and associated facilities: addition of dry casks to specified components subject to type certification and type designation ・Results of FY2017 on-site inspections for designated organization for information processing and implementing safeguards inspection
12	5.30	・Opinion exchange between the NRA and top management of TEPCO Holdings
13	6.6	・Draft revision of Nuclear Emergency Response Guidelines, etc. and solicitation of public comment. ・Partial revision of the Regulations on Establishment and Operation of Research Reactors, etc. (draft) and solicitation of comments: review of relevant rules for radiation control status report ・Measures for improving transparency of review ・Review on the NRA's use of industry codes and standards (draft) ・Results of the 6th Review Meeting of the Joint Convention on the Safety of Spent Fuel Management and on the Safety of Radioactive Waste Management
14	6.13	・Approval of decommissioning plan for Tokai Reprocessing Plant of the Japan Atomic Energy Agency (draft) ・Review on confining function of fuel cladding during earthquakes
15	6.20	・Response to deviation from limiting condition for operation due to damaged exhaust pipe expansion joint of emergency diesel generator (B) at Hamaoka NPS Unit 5 ・Progress of work in preparation for reform of inspection system ・Results of FY2017 on-site inspections for registered certification organization ・Publication of "Safeguards Statement for 2017" by the IAEA
16 *3	6.25	・Approval of appointment of board members of the designated organization for implementing safeguards inspection
17	6.27	・Permission for change in reactor installation for Ikata NPS Unit 3 of Shikoku Electric Power (draft): Installation of an on-site permanent direct current power source (third system) ・Response to failures of steam generator heating tubes found in Takahama NPS Unit 4 of Kansai Electric Power ・Application for permission for change in nuclear material utilization for the Nuclear Fuel Cycle Engineering Laboratories of the Japan Atomic Energy Agency ・Discretionary disposition in fourth quarter of FY2017
18	7.4	・Solicitation of comments on the draft review report for the application for permission for change in reactor installation for Tokai Daini NPS of Japan Atomic Power Co. ・Funding support to Japan Atomic Power Co. by TEPCO Holdings (draft) ・Draft review report on the application for permission for change in waste management business for the Oarai Research and Development Institute of the Japan Atomic Energy Agency
19	7.11	・The NRA's comments on "FY2018 Comprehensive Nuclear Emergency Response Drill" ・Solicitation of public comments on the amendment draft of relevant laws and regulations to introduce security measures for specified radioisotopes ・Solicitation of public comments on the draft government ordinance of the Cabinet Order to partially amend the Enforcement Order of the Act on Prevention of Radiation Hazards due to Radioisotopes, etc. ・Reference level to be used in preparing proactive nuclear emergency response program (first deliberation)
20	7.18	・Hearing of opinions of the Japan Atomic Energy Commission and the Minister of Economy, Trade and Industry on the permission for change in reactor installation for Ohi NPS of Kansai Electric Power (modifications of the method for disposing of spent fuel from Units 1 and 2) (draft) ・Response to the "issue of loss of RHR pump functions due to steam voids"

Number	Date	Deliberation Topic
		・ "Fields of and Policy on the Implementation of Safety Research to be Promoted" (draft) ・ Reference level to be used in preparing proactive nuclear emergency response program (second deliberation)
21	7.25	・ Revision of the Nuclear Emergency Response Guidelines (draft) and revision of the Facility Requirements to Medical Institutions for Nuclear Emergency, etc. ・ Establishment of a regulation for the development of the NRA-related regulations for streamlining the radiation management reports by licensees, etc. (draft) ・ Results of debriefing session on Emergency Drills by licensees ・ Outline results of FY2018 First NRA Policy Assessment Meeting
22	8.1	・ External experts' comments on administrative project review ・ Solicitation of public comments on draft revision of the Enforcement Ordinance for the Reactor Regulation Act and establishment and revisions of relevant regulations in response to the re-examination of categorization for waste disposal business and new establishment of the regulation for specified waste disposal areas ・ Development of regulatory requirements for mid-depth disposal: implementation of opinion exchange with licensees on the outline draft of the category 2 waste disposal business permission ・ "Plutonium Utilization in Japan" ・ Basics of regulatory requirements for spent fuel storage in dry casks for storage and transportation within nuclear power plant sites (additional consideration) ・ Enhancement of capabilities to comprehend plant conditions in emergencies ・ Results of exchange of views with U.S. and Canadian government agencies
23	8.22	・ "The 5th Strategic Energy Plan" ・ Request for cooperation in radiation protection in the Specified Reconstruction and Rehabilitation Base Areas ・ Permission for change of waste management business at the Oarai Research and Development Institute of the Japan Atomic Energy Agency (draft) ・ Response status to partial loss of upper part of a fuel assembly channel box (grip) and responses to past accidents and problems experienced at nuclear facilities ・ Implementation status of Operational Safety Inspections in the first quarter of FY2018 ・ Ex-post evaluation of safety research (draft)
24	8.29	・ FY2017 performance evaluation of the Japan Atomic Energy Agency (draft) ・ FY2017 performance evaluation of the National Institutes for Quantum and Radiological Science and Technology (draft) ・ Policy assessment of the measures implemented in FY2017 and pre-analysis table for policy assessment of the measures to be implemented in FY2018 (draft) ・ Reference level to be used in preparing proactive nuclear emergency response program (third deliberation)
25	8.29	・ Opinion exchange between the NRA and top management of the Electric Power Development Co.
26 *4	8.31	・ Election and appointment of the members of the Reactor Safety Examination Committee and the Nuclear Fuel Safety Examination Committee
27	9.5	・ Review report on the application for change in reactor installation for the Nuclear Science Research Institute of the Japan Atomic Energy Agency (modifications of JRR-3 reactor facility, etc.) (draft) ・ Review report on the application for change in establishment permit for the Nuclear Science Research Institute of the Japan Atomic Energy Agency (modifications of radioactive waste disposal facility, etc.) (draft) ・ Status of actions toward harmonization of nuclear safety, nuclear security, and safeguards ・ FY2019 NRA budget request and organization/capacity request
28 *5	9.10	・ Current status and challenges of information system security
29	9.12	・ Revision of the Reactor Regulation Act and establishment and revisions of relevant regulations in response to the re-examination of categorization for waste disposal business and new establishment of the regulation for specified waste disposal areas (draft) ・ Method for determining pipe support structure intervals in nuclear power plants (report) ・ Actions in the event of alarm system failure at commercial power reactor facilities ・ Requirements concerning installation of fire detectors at nuclear power plants ・ Review on the impacts of neighboring nuclear facilities ・ Reference level to be used in preparing proactive nuclear emergency response program (fourth

Number	Date	Deliberation Topic
		deliberation) ・ Report on the results of the sixth Japan-France Regulatory Authorities Meeting
30 *6	9.13	・ Implementation of oral examinations for Chief Engineers of Reactors
31	9.19	・ Permission for change in reactor installation for Ohi NPS of Kansai Electric Power: change of spent fuel disposal method for Units 1 and 2 (draft) ・ Results of review on the application for permission of whole transfer of Toshiba Critical Assembly and Toshiba Training Reactor to Toshiba Energy Systems as a result of absorption-type split between Toshiba Corporation and Toshiba Energy Systems (draft) ・ Election and appointment of members of the Reactor Safety Examination Committee and the Nuclear Fuel Safety Examination Committee (draft) ・ Response policy to steam generator heating tube failure found at Takahama NPS Unit 3 of Kansai Electric Power ・ Response policy to the abnormality of emergency diesel generator (B) of Kashiwazaki-Kariwa NPS Unit 1 ・ Approval criteria for decommissioning plans (removal of spent fuel, etc.) for research reactor facilities and nuclear material utilization facilities ・ Evaluation of accidents and problems at radioisotopes, etc. handling companies ・ Progress of studies by the “Study Team on Evaluation of Ground Motions without Identification of Seismic Sources”
32	9.26	・ Review on the impacts of neighboring nuclear facilities (second deliberation) ・ Permission for change in installation for Tokai Daini NPS of Japan Atomic Power Co. (draft) ・ Answer from Minister of Economy, Trade and Industry on TEPCO Holdings ・ Trial operation of new inspection system ・ Discretionary disposition in first quarter of FY2018 ・ Report on the IAEA General Conference, meeting of the International Nuclear Regulators Association (INRA), etc. and trip report to Finland
33	10.3	・ External Advisors ・ Problems of fuel handing machine at TEPCO Fukushima Daiichi NPS Unit 3 ・ Enhancement of comprehension of plant conditions in emergencies (interim report) ・ Schedule for IAEA International Physical Protection Advisory Service (IPPAS) Follow-up Mission ・ The NRA’s Implementation plan for “male parental leave”
34	10.1(	・ Review report on the application for change in reactor installation for the Nuclear Science Research Institute of the Japan Atomic Energy Agency (modifications of JRR-3 reactor facility, etc.) (draft) ・ Approach to tornado impact evaluation in response to the revision of tornado evaluation method of the Japan Meteorological Agency (report on opinion exchange with licensees, partial revision of tornado evaluation guide at nuclear power plants (draft), and associated solicitation of comments) ・ Review status of the construction plan for Tokai Daini NPS of Japan Atomic Power Co.
35 *7	10.15	・ Threats such as sabotage separately defined by the NRA under Article 91, paragraph 2-29 of the Regulations on Installation and Operation of Commercial Power Reactors ・ Results of opinion hearing on insider threat countermeasures for nuclear facilities other than commercial power reactors
36	10.17	・ Permission for change in establishment permit for the Nuclear Science Research Institute of the Japan Atomic Energy Agency (modifications of radioactive waste disposal facility) (draft) ・ Reference dose to be referred in formulating proactive nuclear emergency response program ・ Lessons learned from disruptions to the operation of monitoring posts and signal transmission caused by the 2018 Eastern Hokkaido Iburi Earthquake and response actions for the future ・ Lessons learned from partial suspension of off-site center functions due to the impact of Typhoon No. 21 in 2018 and response actions for the future ・ Status of the technical evaluation of fitness-for-service rules (interim report) ・ Board of Audit’s request for treatment of consigned goods for commissioned projects ・ Results of the third meeting of the Working Group on Safety Culture (WGSC) of OECD/NEA’s Committee on Nuclear Regulatory Activities (CNRA)
37	10.24	・ Permission for whole transfer of Toshiba Critical Assembly and Toshiba Training Reactor to Toshiba

Number	Date	Deliberation Topic
		Energy Systems as a result of absorption-type split between Toshiba Corporation (licensee of these facilities) and Toshiba Energy Systems (draft) ・ Results of review on University of Tokyo's application for change in reactor installation (draft) ・ Handling of issues relating to the relocation of dust monitors at TEPCO's Fukushima Daini NPS and the reliability of the monitoring system installed at the site boundary ・ Status of review of conformity to New Regulatory Requirements for nuclear power stations ・ Status of review of conformity to New Regulatory Requirements for nuclear fuel facilities, etc.
38	10.31	・ Establishment of amended versions of relevant laws and regulations pertaining to introduction of security measures for specified radioisotopes (draft) ・ Establishment of the draft of the Cabinet Order to partially amend the Enforcement Order of the Act on Prevention of Radiation Hazards due to Radioisotopes, etc. (draft) ・ Basic considerations for publicizing meetings and interviews with licensees ・ Results of opinion exchange between External Advisors and the NRA
39 *8	11.5	・ Establishment of review criteria for physical protection measures
40	11.7	・ Approval of life extension of Tokai Daini NPS of Japan Atomic Power Co. and approval of change of nuclear facility operational safety program (draft) ・ Permission for change in reactor installation for the Nuclear Science Research Institute of the Japan Atomic Energy Agency (modifications of JRR-3 reactor facility, etc.) (draft) ・ Implementation status of Operational Safety Inspections in the second quarter of FY2018 ・ Review of operational safety programs in connection with volcanic ash countermeasures: re-marshaling of basic approaches to volcanic ash countermeasures
41	11.14	・ Finalization of review results of the application for permission for change in reactor installation for Takahama NPS Units 1 to 4 of Kansai Electric Power (draft): prevention of outflow from controlled areas due to internal flooding, etc. ・ Finalization of review results of the application for permission for change in reactor installation for Ikata NPS Unit 3 of Shikoku Electric Power (draft): measures to maintain radioactive material confinement function of fuel cladding under seismic conditions ・ Draft revisions of relevant regulations to enhance countermeasures against insider threats at nuclear facilities other than commercial power reactors and solicitation of comments on the drafts ・ Revision of operational guide for safety improvement evaluation for uranium fabrication facilities
42	11.21	・ Response to the application for approval of change of operational safety program relating to drum integrity confirmation at the waste disposal site of the Nuclear Science Research Institute of the Japan Atomic Energy Agency: actions for long-term storage of radioactive waste ・ Revision of document "Distribution and Administration of Stable Iodine" ・ Actions in the event of alarm system failure at commercial power reactor facilities ・ Approach to future research evaluation ・ Exchange of views with Kansai Electric Power on the distribution of volcanic ash from Daisen Volcano and results of field investigation
43 *9	11.22	・ Election and appointment of members of NRA Policy Review Meeting ・ Establishment of official interpretation of the regulations pertaining to the introduction of security measures for specified radioisotopes (draft)
44	11.28	・ General outline of radiation protection measures for the Specified Reconstruction and Rehabilitation Base Areas and results of investigation ・ Establishment of partial revision of the guide for tornado impact evaluation for nuclear power plants (draft) ・ Review on the impacts of neighboring nuclear facilities (third deliberation) ・ Procedures for convening Policy Review Meeting

Number	Date	Deliberation Topic
45	12.5	・ Finalization of the review of the applications for permissions for change in reactor installation for Mihama NPS Unit 3, Ohi NPS Units 3 and 4 of Kansai Electric Power, Ikata NPS Unit 3 of Shikoku Electric Power, and Sendai NPS Units 1 and 2 and Genkai NPS Units 3 and 4 of Kyushu Electric Power (draft): applications for change in reactor installation in response to revisions of regulations ・ Revisions of relevant regulations for spent fuel storage in dry casks for storage and transportation within nuclear power plant sites and the results of public comment solicitation ・ Basic considerations for publicizing meetings and interviews with licensees (second deliberation) ・ Results of current situation survey of monitoring systems installed at site boundaries ・ Enhancement of comprehension of plant conditions in emergencies (interim report) ・ Results of the eleventh Top Regulators' Meeting on Nuclear Safety among China, Japan, and Korea ・ Results of IAEA Advisory Group on Nuclear Security (AdSec) meeting
46 *10	12.10	・ Draft review report on the application for permission for change in reactor installation relating to the Specialized Safety Facility of Genkai NPS Units 3 and 4 of Kyushu Electric Power (draft)
47	12.12	・ Draft radiation protection measures for Specified Reconstruction and Rehabilitation Base Areas ・ Permission for change in reactor installation for Takahama NPS Units 1 to 4 of Kansai Electric Power (draft): prevention of outflow from controlled areas due to internal flooding, etc. ・ Permission for change in reactor installation for Ikata NPS Unit 3 of Shikoku Electric Power (draft): measures to maintain radioactive material confinement function of fuel cladding under seismic conditions ・ Regulatory response to re-evaluation of eruptive volume of Daisen-Namatake tephra from Daisen Volcano (draft) ・ Status of review of operational safety programs in connection with volcanic ash countermeasures ・ Policy for addressing the change of rubber expansion joints installed in seawater pipes of Hamaoka NPS Unit 3 of Chubu Electric Power ・ Clarification of the way to apply New Regulatory Requirements to nuclear fuel facilities, etc.: carrying-out of uranium powder at uranium fabrication facility, processing of radioactive waste at Oarai waste management facility for housekeeping of nuclear facilities in Oarai area ・ Partial revision of fire protection review criteria for commercial nuclear power plants and solicitation of comments (draft): consideration of fire detector installation requirements and clarification of requirements based on review experience ・ Change of medium- and long-term goals of the Japan Atomic Energy Agency
48 *11	12.17	・ Results of International Physical Protection Advisory Service (IPPAS) Follow-up Mission ・ Violation of compliance with physical protection provisions
49	12.17	・ Opinion exchange between the NRA and top management of Shikoku Electric Power
50	12.19	・ Violation of operational safety program relating to bad connection of diesel generator B starter circuit of Tomari NPS Unit 3 of Hokkaido Electric Power and further regulatory response to the event ・ Violation of operational safety program relating to inadequate control of contaminated items at the Reprocessing Plant of Japan Nuclear Fuel Ltd. and further regulatory response to the event ・ Revision of the “Basic Considerations for the Application of New Regulatory Requirements Applicable to Commercial Power Reactors” ・ Procedure for using in advance part of a facility for which business permission or installation permission was granted (draft) ・ Policy for reviewing the decommissioning plan for the reprocessing facility at the Nuclear Fuel Cycle Engineering Laboratories of the Japan Atomic Energy Agency
51 *12	12.25	・ Decision concerning the formal objection and petition for stay of execution related to the approval of modifications of operational safety program of Sendai NPS of Kyushu Electric Power and the formal objection and petition for stay of execution related to the permission for change in reactor installation for Ikata NPS Unit 3 of Shikoku Electric Power
52	1.9	・ Determination of priority for FY2019 Radiation Safety Research Promotion Project and applications of research themes ・ Partial revision of the “Procedures for Management of Administrative Documents in the NRA” and discretionary disposition in the second quarter of FY2018 ・ NRA supplementary budget bill for FY2018, FY2019 budget request, and FY2019 organization/capacity bill ・ FY2019 priority issues (excluding individual review)
53	1.16	・ FY2019 priority issues (excluding individual review) (second deliberation) ・ Evaluation of Chubu Electric Power’s report on the leakage of exhaust gas resulting from deviation

Number	Date	Deliberation Topic
		from limiting condition for operation due to damaged exhaust pipe expansion joint of emergency diesel generator (B) at Hamaoka NPS Unit 5 and further regulatory response to the event · Permission for change in reactor installation for Mihama NPS Unit 3, Ohi NPS Units 3 and 4 of Kansai Electric Power, Ikata NPS Unit 3 of Shikoku Electric Power, and Sendai NPS Units 1 and 2 and Genkai NPS Units 3 and 4 of Kyushu Electric Power (draft): applications for changes in reactor installation in response to revisions of regulations · Application for permission for change in nuclear fuel material usage for the Nuclear Fuel Cycle Engineering Laboratories of the Japan Atomic Energy Agency · Response to tsunamis that may not be accompanied by tsunami warning (in light of the 2018 Sunda Strait tsunami which was induced by a volcanic eruption)
54	1.23	· Revision of operational guide for safety improvement evaluation for uranium fabrication facilities (draft) and solicitation of comments · Policy for reviewing the application for construction approval for the Experimental Fast Reactor "Joyo" of the Oarai Research and Development Institute (South Area) of the Japan Atomic Energy Agency · Results of evaluation of safety researches (draft) (interim evaluation and ex-ante evaluation) · Commission of External Advisors · Members of the Policy Assessment Meeting and determination of FY2019 Policy Assessment implementation plan (draft)
55	1.29	· Opinion exchange between the NRA and top management of the Japan Atomic Energy Agency
56	1.30	· Policy for formulating an action plan based on the recommendations and suggestions by the IAEA Integrated Regulatory Review Service (IRRS) Mission and self-evaluation results and status of related work · Application for permission for change in reactor installation for Genkai NPS Units 3 and 4 of Kyushu Electric Power: change of storage capacity of spent fuel storage pools and new construction of spent fuel dry storage facility
57	2.6	· Status and future schedule of adjustment with the Ministry of Education, Culture, Sports, Science and Technology for the change of medium- and long-term goals of the Japan Atomic Energy Agency · Status of review of the application for approval of changes of spent fuel storage business at Recyclable-Fuel Storage Center of Recyclable-Fuel Storage Company · Clarification of the policy for the review of major accidents in the review of conformity to new regulatory requirements for the reprocessing facility of Japan Nuclear Fuel Ltd. · Dealing of nuclear fuel materials via the internet
58 *13	2.12	· Decision concerning the formal objection and petition for stay of execution related to the approval of modifications of operational safety program of Sendai NPS of Kyushu Electric Power and the formal objection and petition for stay of execution related to the permission of the modifications of reactor establishment permit for Ikata NPS unit 3 of Shikoku Electric Power · Preparation for public access to the WANO (World Association of Nuclear Operators) peer review report
59	2.13	· Revision of the NRA regulations to enhance countermeasures against insider threats at nuclear facilities other than commercial power reactors (draft) · Revision of the review criteria relating to the requirements for installing fire detectors and the results of comment solicitation (draft) · Status of the implementation of Operational Safety Inspections in the third quarter of FY2018 · Status of adjustment with the Ministry of Education, Culture, Sports, Science and Technology for the change of medium- and long-term goals of the Japan Atomic Energy Agency · Corrections to review report on the application for permission for change in reactor installation for Genkai NPS Units 3 and 4 of Kyushu Electric Power
60	2.18	· Opinion exchange between the NRA and top management of Japan Nuclear Fuel Ltd.
61	2.20	· Draft policy for revising the regulatory requirements for pit disposal and trench disposal · Publication of Activities of the Nuclear Regulation Authority (March 11 Report) (draft) and evaluation of FY2018 priority plan (management review) · Progress in development of the NRA management system improvement roadmap · Results of FY2018 annual safety research evaluation
62 *14	2.27	· Election and appointment of the members of the Reactor Safety Examination Committee and the Nuclear Fuel Safety Examination Committee · Election and appointment of members of the Radiation Council

Number	Date	Deliberation Topic
		・Election and appointment of members of the immediate emergency response committee
63	2.27	・Revision of Measures for Mid-term Risk Reduction at TEPCO's Fukushima Daiichi NPS (February 2019 version) (draft) ・Draft revision of dry casks for storage and transportation and clarification of requirements in the RFS review policy: general consideration of the measures for maintaining cask functions in case of damage of storage building ・IAEA's safety standards for uranium clearance ・Correction to a document summarizing the contents of the FY2017 Radiation Control Report for nuclear facilities
64 *15	3.5	・Draft review report on the application for reactor establishment permit modifications relating to the Specialized Safety Facility of Genkai NPS units 3 and 4 of Kyushu Electric Power (draft)
65	3.6	・Finalization of review results for the application for change in reactor installation relating to the Specialized Safety Facility of Genkai NPS Units 3 and 4 of Kyushu Electric Power (draft) ・Enhancement of comprehension of plant conditions in emergencies and changes of operation manual (internal rules) for Emergency Response Support System (ERSS) ・Formulation of an operational guide for safety improvement evaluation for uranium fabrication facilities (draft) ・Revision of Measures for Mid-term Risk Reduction at TEPCO's Fukushima Daiichi NPS (March 2019 version) (draft) ・Policy for reconsideration of periodic safety review (PSR) of research reactor facilities ・Discretionary disposition in the third quarter of FY2018
66	3.13	・Designation of Core Advanced Radiation Emergency Medical Support Center and confirmation of facility requirements for Advanced Radiation Emergency Medical Support Center and Nuclear Emergency Medical Support Centers ・Modifications of medium- to long-term targets and evaluation axes of the National Institutes for Quantum and Radiological Science and Technology ・Revisions of relevant regulations for spent fuel storage in dry casks for storage and transportation within nuclear power plant sites and the results of comment solicitation (draft) ・Review of the NRA internal rules for approving the methods for clearance measurement and evaluation ・Development of official interpretation of the technical evaluation of the fitness-for-service rules and solicitation of comments on this matter ・Government ordinance to partially revise the NRA Organization Ordinance
67	3.20	・Results of FY2018 Comprehensive Nuclear Energy Disaster Prevention Drill ・Solicitation of comments on the draft revisions of relevant laws and regulations associated with making mandatory security measures for specified radioisotopes ・Publication of the "Emergency Radiation Monitoring Information Sharing and Announcement System" at normal times ・Discussion on the review of the application for permission for change of reprocessing business at Japan Nuclear Fuel Ltd.
68	3.27	・Progress of preparation for the operation of the new inspection system and the basic policy for operational safety inspections in FY2019 (draft) ・Policy for the review of approval criteria for decommissioning plans for research reactors and nuclear material utilization facilities ・Cooperation and collaboration between the NRA and Japan Atomic Energy Agency in the area of human resource development through nuclear safety research ・Results of policy assessment and their reflection in future policies (for the parts published in FY2018) (draft) ・FY2019 NRA Priority Plan (draft)

*1 The 4th meeting in FY2018 4th was closed to the public because it handled the election and appointment of members of the Reactor Safety Examination Committee and the Nuclear Fuel Safety Examination Committee. The disclosure of such information and deliberations could endanger personal rights and benefits, and disturb ensuring fair and smooth personnel affairs for selecting examination committee members.

*2 The 6th meeting in FY2018 was closed to the public considering the viewpoint of security because it discussed information related to the contents of examinations related to the contents of the Specialized Safety Facilities.

*3 The 16th meeting in FY2018 was closed to the public because it was related to the election and appointment of board members of the subject corporate body. The disclosure of such information and deliberations could endanger personal rights and benefits, and disturb fair and smooth personnel affairs by the corporate body.

*4 The 26th meeting in FY2018 was closed to the public because it was held for the election and appointment of members of the Reactor Safety Examination Committee and the Nuclear Fuel Safety Examination Committee. The disclosure of such information and deliberations could endanger personal rights and benefits, and disturb ensuring fair and smooth personnel affairs for selecting examination committee members.

*5 The 28 meeting in FY2018 was closed to the public because it discussed information on physical protection and the disclosure of such information and deliberation could endanger public safety by providing the information to a person or persons who might attempt to sabotage nuclear facilities with such information.

*6 The 30th meeting in FY2018 was closed to the public because it discussed information on the qualification examinations for Chief Engineers of Reactors pursuant to Article 41, Paragraph 1, Item i of the Reactor Regulation Act. The disclosure of such information and deliberations could disturb proper implementation of the examination by providing the information to persons intending to take the examination.

*7 The 35th meeting in FY2018 was closed to the public because it discussed information on physical protection and the disclosure of such information and deliberations could endanger public safety by providing the information to persons who might attempt to sabotage nuclear facilities with such information.

*8 The 39th meeting in FY2018 was closed to the public because it discussed information on physical protection and the disclosure of such information and deliberations could endanger public safety by providing the information to persons who might attempt to sabotage nuclear facilities with such information.

*9 The 43rd meeting in FY2018 was closed to the public because the first part of the Meeting was held for the election and appointment of members of the Policy Assessment Meeting and the disclosure of such information and deliberations could endanger personal rights and benefits, and disturb ensuring fair and smooth personnel affairs for selecting the examination members, and the second part was also closed to the public considering the viewpoint of security because it discussed specific examples of physical protection of specified radioisotopes.

*10 The 46th meeting in FY2018 was closed to the public considering the viewpoint of security because it discussed the review of the Specialized Safety Facility.

*11 The 48th meeting in FY2018 was closed to the public because it discussed information on physical protection and the disclosure of such information and deliberations could endanger public safety by providing the information to a person or persons who might attempt to sabotage nuclear facilities with such information.

*12 The 51st meeting in FY2018 was closed to the public because it deliberated the appropriateness and legitimacy of disposition implemented by the NRA itself. Disclosure of such information could disturb hearing of honest opinions from the persons involved in the disposition, and as a result, the original function of formal objection that performs fair and neutral judgment through simple procedure might be obstructed.

*13 The 58th meeting in FY2018 was closed to the public because the first part of the Meeting deliberated the appropriateness and legitimacy of disposition implemented by the NRA itself. Disclosure of such information could disturb hearing of honest opinions from the persons involved in the disposition, and as a result, the original function of formal objection that performs fair and neutral judgment through simple procedure might be obstructed. The second part was also closed to the public because the confidential contents of the WANO (World Association of Nuclear Operators) peer review report corresponded to non-disclosure information stipulated in Article 5 paragraph 3 of the Act on the Disclosure of Information Held by Administrative Organizations (1999, Act No. 42).

*14 The 62nd meeting in FY2018 was closed to the public because it was held for the election and appointment of members of the Reactor Safety Examination Committee and the Nuclear Fuel Safety Examination Committee. The disclosure of information and deliberations could endanger personal rights and benefits, and disturb ensuring fair and smooth personnel affairs for selecting examination committee members.

*15 The 64th meeting in FY2018 was closed to the public considering the viewpoint of security because it discussed the review of the Specialized Safety Facility.

9. NRA Commission Decisions in FY2018

(From April 1, 2018 to March 3l, 2019)

Date of determination	Decision made in Committee
4.25	・Evaluation and further actions concerning Chubu Electric Power's report on designation of access control area due to deposits containing radioactive materials in the waste volume reduction building at Hamaoka NPS ・Application for permission for change in reactor installation for Advanced Converter Reactor facility (permission)
5.30	・Application for permission for change in reactor installation for Ikata NPS (modification of Unit 3 power reactor) (hearing of opinions) ・FY2017 NRA Annual Report ・Nomination of members of the Reactor Safety Examination Committee and the Nuclear Fuel Safety Examination Committee
6.13	・Approval of decommissioning plan for the reprocessing facility of the Nuclear Fuel Cycle Engineering Laboratories of the Japan Atomic Energy Agency
6.25	・Approval of appointment of board members of the designated organization for implementing safeguards inspection
6.27	・Application for permission for change in reactor installation for Ikata NPS (modifications of Unit 3 power reactor facility) (permission)
7.4	・Solicitation of comments on the application for permission for change in reactor installation for Tokai Daini NPS (modifications of reactor facility) ・Funding support to the Japan Atomic Power Co. by TEPCO Holdings ・Application for permission for change in waste management business for the Oarai Research and Development Institute of the Japan Atomic Energy Agency (hearing of opinions)
7.11	・Hearing of opinions on the "FY2018 Comprehensive Nuclear Energy Disaster Prevention Drill" (answers)
7.18	・Application for permission for change in reactor installation for Ohi NPS (modifications of the method for disposing of spent fuel from Units 1 and 2) (hearing of opinions)
7.25	・Revision of the Nuclear Emergency Response Guidelines ・Regulation for the development of the NRA-related regulations for streamlining radiation management reports by licensees, etc.
8.1	・Ex-ante evaluation report on the depth requirements for waste disposal facilities in terms of physical protection
8.22	・Application for permission for change in waste management business at the Oarai Research and Development Institute of the Japan Atomic Energy Agency (permission)
8.29	・FY2017 performance evaluation of the Japan Atomic Energy Agency ・FY2017 performance evaluation of the National Institutes for Quantum and Radiological Science and Technology ・Policy Assessment of measures implemented in FY2017 and pre-analysis table for policy assessment of measures to be implemented in FY2018 ・Status of incorporation of FY2017 ex-ante regulatory evaluation results into NRA policies
9.5	・Application for permission for change in establishment for the Nuclear Science Research Institute of the Japan Atomic Energy Agency (modifications of radioactive waste disposal facility, etc.) (hearing of opinions)
9.12	・Government Ordinance for development and revision of relevant regulations in response to partial enforcement of the Act on Partial Revision of the Reactor Regulation Act for Strengthening Safety Measures in the Use of Nuclear Power (Petition) ・Establishment and revisions of relevant regulations relating to re-examination of categorization for waste disposal business and new establishment of regulations for specified waste disposal areas
9.13	・Partial revision of the "Policy on NRA Administrative Document Management Guidelines"
9.19	・Application for permission for change in reactor installation for Ohi NPS (change of spent fuel disposal method for Units 1 and 2) (permission) ・Approval of whole transfer of Toshiba Critical Assembly to Toshiba Energy Systems as a result of absorption-type split between Toshiba Corporation and Toshiba Energy Systems (hearing of opinions) ・Approval of whole transfer of Toshiba Training Reactor to Toshiba Energy Systems as a result of absorption-type split between Toshiba Corporation and Toshiba Energy Systems (hearing of opinions) ・Appointment of members of Reactor Safety Examination Committee and Nuclear Fuel Safety Examination Committee

Date of determination	Decision made in Committee
9.26	・Application for permission for change in reactor installation for the power reactor at Tokai Daini NPS (permission)
10.10	・Application for permission for change in reactor installation for the Nuclear Science Research Institute of the Japan Atomic Energy Agency (modifications of JRR-3 reactor facility, etc.) (hearing of opinions)
10.15	・Threats such as sabotage separately defined by the NRA under Article 91 paragraph 2-29 of the Regulations on Installation and Operation of Commercial Power Reactors
10.17	・Permission for change in establishment for the Nuclear Science Research Institute of the Japan Atomic Energy Agency (modifications of radioactive waste disposal facility)
10.24	・Approval of whole transfer of Toshiba Critical Assembly to Toshiba Energy Systems as a result of absorption-type split between Toshiba Corporation and Toshiba Energy Systems ・Approval of whole transfer of Toshiba Critical Assembly to Toshiba Training Reactor as a result of absorption-type split between Toshiba Corporation and Toshiba Energy Systems ・University of Tokyo's application for change in reactor installation (hearing of opinions)
10.31	・Cabinet Order to partially amend the Enforcement Order of the Act on Prevention of Radiation Hazards due to Radioisotopes, etc. and Cabinet Order for Enforcement Date (request for Cabinet deliberation) ・Regulation to partially amend the Enforcement Regulation of the Act on Prevention of Radiation Hazards due to Radioisotopes, etc. ・Relevant notifications pertaining to the introduction of security measures for specified radioisotopes ・Cabinet Order to partially amend the Enforcement Order of the Act on Prevention of Radiation Hazards due to Radioisotopes, etc. (request for Cabinet deliberation)
11.5	・Review criteria for physical protection measures
11.7	・Approval of life extension of Tokai Daini NPS of Japan Atomic Power Co. (extension of operation period of power reactor facility) ・Approval of change of nuclear facility operational safety program for Tokai Daini NPS of Japan Atomic Power Co. (technical evaluation on plant aging) ・Permission for change in reactor installation for the Nuclear Science Research Institute of the Japan Atomic Energy Agency (modifications of JRR-3 reactor facility, etc.)
11.14	・Application for permission for change in reactor installation for Takahama NPS (modifications of Units 1 to 4 power reactor facilities) (hearing opinions) ・Application for permission for change in reactor installation for Ikata NPS (modifications of Unit 3 power reactor facilities) (hearing opinions)
11.22	・Interpretation of the regulations pertaining to introduction of security measures for specified radioisotopes
11.28	・Partial revision of the guide for tornado impact evaluation for nuclear power plants ・Procedures for convening the Policy Assessment Meeting
12.5	・Application for permission for change in reactor installation for Mihama NPS (modifications of Unit 3 power reactor facility) (hearing opinions) ・Application for permission for change in reactor installation for Ohi NPS (modifications of Units 3 and 4 power reactor facilities) (hearing opinions) ・Application for permission for change in reactor installation for Ikata NPS (modifications of Unit 3 power reactor facility) (hearing opinions) ・Application for permission for change in reactor installation for Sendai NPS (modifications of Units 1 and 2 power reactor facilities) (hearing opinions) (for the application on June 26, 2018) ・Application for permission for change in reactor installation for Sendai NPS (modifications of Units 1 and 2 power reactor facilities) (hearing opinions) (for the application on November 1, 2018) ・Application for permission for change in reactor installation for Genkai NPS (modifications of Units 3 and 4 power reactor facilities) (hearing opinions) (for the application on June 26, 2018) ・Application for permission for change in reactor installation for Genkai NPS (modifications of Units 3 and 4 power reactor facilities) (hearing opinions) (for the application on November 1, 2018)
12.12	・Application for permission for change in reactor installation for Takahama NPS (modifications of Units 1 to 4 power reactor facilities) (permission) ・Application for permission for change in reactor installation for Ikata NPS (modifications of Unit 3 power reactor facility (permission) ・Hearing from Kansai Electric Power (Ohi PS, Mihama PS and Takahama NPS of Kansai Electric Power)
12.17	・Compliance with physical protection rules (caution)
12.19	・Revision of "Basic Considerations for the Application of New Regulatory Requirements Applicable to Commercial Power Reactors" (formulated on June 29, 2016)
1.9	Partial revision of the "NRA Administrative Document Management Guidelines"

Date of determination	Decision made in Committee
1.16	・Evaluation of Chubu Electric Power's report on the leakage of exhaust gas resulting from deviation from limiting condition for operation due to damaged exhaust pipe expansion joint of emergency diesel generator (B) at Hamaoka NPS Unit 5 and further regulatory response to the event ・Application for permission for change in reactor installation for Mihama NPS (modifications of Unit 3 power reactor facility) (permission) ・Application for permission for change in reactor installation for Ohi NPS (modifications of Units 3 and 4 power reactor facilities) (permission) ・Application for permission for change in reactor establishment permit modifications for Ikata NPS (modifications of unit 3 power reactor facility) (permission) ・Application for permission for change in reactor installation for Sendai NPS (modifications of Units 1 and 2 power reactor facilities) (permission) (for the application on June 26, 2018) ・Application for permission for change in reactor installation for Sendai NPS (modifications of Units 1 and 2 power reactor facilities) (permission) (for the application on November 1, 2018) ・Application for permission for change in reactor installation for Genkai NPS (modifications of Units 3 and 4 power reactor facilities) (permission) (for the application on June 26, 2018) ・Application for permission for change in reactor installation for Genkai NPS (modifications of Units 3 and 4 power reactor facilities) (permission) (for the application on November 1, 2018) ・Permission for change of nuclear fuel material usage (the Nuclear Fuel Cycle Engineering Laboratories of the Japan Atomic Energy Agency)
1.23	・Implementation plan for ex-post assessment of measures implemented in FY2018
2.12	・Formal objection and petition for stay of execution related to the approval for change in operational safety program of Sendai NPS of Kyushu Electric Power ・Formal objection and petition for stay of execution related to the permission for change in reactor installation for Ikata PS Unit 3 of Shikoku Electric Power
2.13	・Revision of the NRA regulations to enhance countermeasures against insider threats at nuclear facilities other than commercial power reactors ・Partial revision of the review criteria for fire protection at commercial power reactor facilities
2.20	・Activities of the Nuclear Regulation Authority (March 11 Report)
3.6	・Application for change in reactor installation for Genkai NPS (modifications of Units 3 and 4 power reactor facilities) (hearing of opinions) ・Abolition of operational manual for Emergency Response Support System (ERSS) ・Operational guide for safety improvement evaluation for uranium fabrication facilities ・Partial revision of operational guide for safety improvement evaluation for fabrication facilities and reprocessing facilities ・Partial revision of the regulation on the development and revision of relevant regulations due to partial enforcement of the Nuclear Regulation Authority Establishment Act
3.13	・Designation of Core Advanced Radiation Emergency Medical Support Center ・Confirmation of facility requirements for Advanced Radiation Emergency Medical Support Center and Nuclear Emergency Medical Support Centers ・Modification of performance targets to be achieved by the National Institutes for Quantum and Radiological Science and Technology (medium- to long-term targets) and modification of evaluation axes ・Partial revisions of relevant regulations for spent fuel storage in dry casks for storage and transportation within nuclear power plant sites, etc. ・Guides on casks used for spent fuel storage within nuclear power plant sites ・Regulation for partial revision of the Regulation on Installation and Operation of Commercial Power Reactors ・Government Ordinance to partially amend the Order for Organization of Nuclear Regulatory Commission (Petition) ・Regulation for partial amendment of the NRA Organization Regulation
3.27	・Basic policy for inspections for compliance with operational safety programs in FY2019 ・Results of policy assessment and their reflection on future policies (for parts published in FY2018) ・FY2019 NRA Priority Plan

10. Opinion Exchange with Licensees

(1) Exchange of Opinions with Chief Executive Officers (CEOs) on Safety Improvements

Date	Nuclear Licensees
May 30, 2018	TEPCO Holdings
August 29, 2018	Electric Power Development Co.
December 17, 2018	Shikoku Electric Power
January 29, 2019	Japan Atomic Energy Agency
February 18, 2019	Japan Nuclear Fuel Ltd.

(2) Exchange of Opinions with Chief Nuclear Officers (CNOs) of Licensees of Major Nuclear Facility Operators

Date	Nuclear Licensees	Main Issues of Discussions
August 3, 2018	Kansai Electric Power, Chubu Electric Power, TEPCO Holdings, Shikoku Electric Power, Federation of Electric Power Companies	· Sophistication of PRA by licensees · Establishment of "Atomic Energy Association (ATENA)" · Impacts of aging degradation of components and structures at nuclear power plants
January 10, 2019	Kansai Electric Power, Chubu Electric Power, TEPCO Holdings, Federation of Electric Power Companies	· Status of trial operation of nuclear regulatory inspection · Atomic Energy Association (ATENA) · Licensing procedure for safety improvement · Completion of Specialized Safety Facility within the time limit

(3) Visits to Nuclear Power Stations by NRA Commissioners

	Date	Purpose	Place of Visit (NPS, etc.)	Commissioner in Charge
1	April 19–20, 2018	On-site inspection	Shimane NPS, Chugoku Electric Power	Commissioner Yamanaka
2	May 11, 2018	On-site inspection	Shimane NPS, Chugoku Electric Power	Commissioner Tanaka
3	May 11, 2018	On-site investigation	Tokai Daini NPS, Japan Atomic Power Co.	Commissioner Yamanaka
4	May 19, 2018	On-site inspection	Tomari PS, Hokkaido Electric Power	Chairman Fuketa, Commissioner Ban
5	June 7, 2018	On-site investigation	Reprocessing Facility, Japan Nuclear Fuel Ltd.	Commissioner Tanaka
6	June 21, 2018	Examination on-site investigation	Hyogo Earthquake Engineering Center, National Research Institute for Earth Science and Disaster Resilience	Commissioner Yamanaka
7	June 22, 2018	On-site investigation	Prototype Advanced Converter Reactor "Fugen," Prototype Fast Breeder Reactor "Monju," Japan Atomic Energy Agency	Commissioner Tanaka
8	June 30, 2018	On-site inspection	Prototype Fast Breeder Reactor "Monju," Japan Atomic Energy Agency	Chairman Fuketa, Commissioner Yamanaka
9	July 12–13, 2018	On-site investigation	Takahama PS, Mihama PS, Kansai Electric Power	Commissioner Yamanaka

	Date	Purpose	Place of Visit (NPS, etc.)	Commissioner in Charge
10	July 27, 2018	On-site investigation	Genkai NPS, Kyushu Electric Power	Commissioner Ishiwatari
11	August 2, 2018	On-site inspection	Nuclear Fuel Cycle Engineering Laboratories, Japan Atomic Energy Agency	Commissioner Tanaka
12	August 2, 2018	On-site inspection	Fukushima Daiichi NPS, TEPCO Holdings	Commissioner Ban
13	August 30, 2018	On-site investigation	Oarai Research and Development Institute, Japan Atomic Energy Agency	Commissioner Tanaka
14	October 1, 2018	On-site inspection	Ohi PS, Kansai Electric Power	Commissioner Yamanaka
15	October 5, 2018	On-site inspection	Fukushima Daiichi NPS, TEPCO Holdings	Chairman Fuketa
16	October 11–12, 2018	On-site investigation	Tomari PS, Hokkaido Electric Power	Commissioner Ishiwatari
17	October 19, 2018	On-site inspection	Reprocessing Facility, Japan Nuclear Fuel Ltd.	Commissioner Ban
18	October 19, 2018	On-site inspection	Kumatori works, Nuclear Fuel Industries, Ltd.; Nuclear Science Research Institute, Kyoto Univ.	Commissioner Tanaka
19	October 25–26, 2018	On-site inspection	Kagoshima Environmental Radiation Monitoring Center; Sendai NPS, Kyushu Electric Power	Commissioner Ban, Commissioner Yamanaka
20	October 29, 2018	On-site investigation of volcanic ash distribution	Koshihata Basin, Kyoto City (investigation of volcanic ash distribution)	Commissioner Ishiwatari
21	November 2, 2018	On-site inspection	Horonobe Underground Research Center, Japan Atomic Energy Agency	Commissioner Tanaka
22	November 9, 2018	On-site inspection	Fukushima Daiichi NPS, TEPCO Holdings	Commissioner Tanaka
23	November 15–16, 2018	On-site investigation	Oma Nuclear Construction Office, J-Power	Commissioner Ishiwatari
24	November 15–16, 2018	On-site investigation	Shimane NPS, Chugoku Electric Power	Commissioner Yamanaka
25	December 7, 2018	On-site investigation	Ohi PS, Kansai Electric Power	Commissioner Ishiwatari
26	December 13, 2018	On-site investigation	Prototype Fast Breeder Reactor "Monju," Japan Atomic Energy Agency	Commissioner Tanaka
27	December 21, 2018	On-site investigation	Ningyo-toge Environmental Engineering Center, Japan Atomic Energy Agency	Commissioner Tanaka
28	December 26–27, 2018	On-site inspection	Nuclear Science Research Institute and Oarai Research and Development Institute, Japan Atomic Energy Agency	Chairman Fuketa
29	December 27, 2018	On-site inspection	Kashiwazaki-Kariwa NPS, TEPCO Holdings	Commissioner Yamanaka
30	January 11, 2019	On-site investigation	Nuclear Science Research Institute, Japan Atomic Energy Agency	Commissioner Tanaka
31	January 18, 2019	On-site inspection	Reprocessing Facility, Japan Nuclear Fuel Ltd.	Commissioner Yamanaka
32	January 31 – February 1, 2019	On-site inspection	Ikata PS, Shikoku Electric Power	Commissioner Yamanaka
33	March 9, 2019	On-site inspection	Takahama PS, Kansai Electric Power	Chairman Fuketa

	Date	Purpose	Place of Visit (NPS, etc.)	Commissioner in Charge
34	March 28–29, 2019	On-site inspection	Kashiwazaki-Kariwa NPS, TEPCO Holdings	Commissioner Yamanaka

11. Meetings and Opinion Exchange with Local Parties

(1) Meetings with Local Governments in FY2018

Date	Meeting with	NRA representative
May 14, 2018	Mayors of 27 municipalities (including Mayor of Tsuruga City), chairpersons of 18 municipal assemblies (including substitutions)	Deputy Director-General
May 22, 2018	Deputy Governor of Shiga Prefecture	Deputy Director-General
May 29, 2018	Governor of Ehime Prefecture	Secretary-General
May 29, 2018	Chairperson of the Niigata Prefectural Assembly, Chairperson of the Shizuoka Prefectural Assembly, Chairperson of the Shimane Prefectural Assembly, Chairperson of the Kagoshima Prefectural Assembly	Secretary-General
July 5, 2018	Mayor of Kasuga	Deputy Director-General
July 11, 2018	Mayor of Omaezaki, Chairperson of the Omaezaki Municipal Assembly	Secretary-General
July 11, 2018	Mayor of Matsue	Secretary-General
July 12, 2018	Mayor of Mihama, Chairperson of the Mihama Municipal Assembly	Deputy Director-General
August 22, 2018	Governor of Shimane Prefecture	Secretary-General
August 27, 2018	Governor of Fukui Prefecture	Deputy Director-General
November 8, 2018	Governor of Shimane Prefecture, Chairperson of the Shimane Prefectural Assembly	Secretary-General
November 16, 2018	Chairperson of the Shizuoka Prefectural Assembly	Secretary-General
November 28, 2018	Mayors of Tomari, Iwanai, Kyowa, and Kamoenai	Deputy Director-General
December 20, 2018	Deputy Governor of Hokkaido	Deputy Director-General

(2) Visits of nuclear facilities by NRA Commissioners and Exchange of opinions with local parties

Date	Description	Examples of Attendees	Attendance of Commissioners in charge
June 18, 2018	Opinion exchange with local parties concerned on the regulation in general of Prototype Fast Breeder Reactor “Monju”	Governor of Fukui Prefecture	Chairman Fuketa
June 30, 2018	Opinion exchange with local parties concerned on regulatory issues relating to nuclear facilities	Mayors of Mihama, Wakasa, Obama, Minamiechizen, etc.	Chairman Fuketa Commissioner Yamanaka
October 26, 2018	Opinion exchange with local parties concerned on regulatory issues relating to nuclear facilities	Governor of Kagoshima Prefecture, Mayors of Satsumasendai, Akune, Hioki, etc.	Commissioner Yamanaka Commissioner Ban

(3) On-site Opinion Exchange between the NRA Secretariat and Local Parties Concerned

Date	Venue	Name of meeting/session	Main attendees
April 12, 2018	Hokkaido	Hokkaido Disaster Prevention Council, Nuclear Disaster Prevention Task Force, Expert Committee	Experts

Date	Venue	Name of meeting/session	Main attendees
September 3 – October 19, 2018	Aomori Prefecture	Opinion exchange meetings on nuclear power (Municipalities of Yomogita, Kazamaura, Noheji, Nanbu, Nishimeya, and Fukaura)	Local residents
December 18, 2018	Aomori Prefecture	Aomori Prefecture Nuclear Policy Committee	Experts
February 22, 2019	Aomori Prefecture	FY2018 fourth meeting of Aomori Prefecture Nuclear Facilities Environmental Radiation Monitoring and Evaluation Council, Monitoring Subcommittee	Experts, members of the Prefectural Assembly, chairpersons of relevant Municipal Assemblies, local governments
May 16, 2018 – February 13, 2019 (4 times)	Aomori Prefecture	Press explanation of Operational Safety Inspection results to Aomori reporters' association	Aomori reporters' association
June 8, 2018 – March 1, 2019 (4 times)	Aomori Prefecture	Report of Operational Safety Inspection results	Local governments
January 4, 2019	Aomori Prefecture	Greeting by newly appointed Higashidori NRA Regional Administrator	Heads of local governments, local governments
May 15, 2018	Miyagi Prefecture	The Panel on the Safety of Unit 2 of the Onagawa NPS	Experts
May 25, 2018	Miyagi Prefecture	FY2018 Meeting of Heads of Sections for Nuclear Administration	Local governments
January 29, 2019	Miyagi Prefecture	Meeting of heads of local governments on UPZ	Heads of local governments
June 25, 2018 – November 29, 2018 (18 times)	Fukushima Prefecture	Explanation to local residents on the re-consideration of deployment of real-time dose measuring systems	Local residents
May 22, 2018 – January 24, 2019 (4 times)	Fukushima Prefecture	Prefectural Council for Ensuring the Safety of Reactor Decommissioning	Residents, representatives of organizations
June 7, 2018 – February 7, 2019 (2 times)	Fukushima Prefecture	Fukushima Prefecture Labor Safety and Health Subcommittee	Local governments, experts
June 14, 2018 – February 14, 2019 (4 times)	Fukushima Prefecture	Fukushima Prefecture Environmental Monitoring Evaluation Subcommittee	Local governments, experts
April 27, 2019 – January 10, 2019 (3 times)	Fukushima Prefecture	Fukushima Prefecture Council on Decommissioning and Contaminated Water	Heads of local governments, representatives of organizations
May 16, 2018 – January 25, 2019 (3 times)	Fukushima Prefecture	Fukushima Prefecture Decommissioning Safety Monitoring Council	Local governments, experts
August 7, 2018 – October 2, 2019 (2 times)	Fukushima Prefecture	Naraha Nuclear Facility Monitoring Committee	Experts
April 11, 2018 – March 6, 2019 (12 times)	Niigata Prefecture	Regional Panel for Ensuring Transparency of Kashiwazaki-Kariwa NPS	Experts, local governments, licensees

Date	Venue	Name of meeting/session	Main attendees
August 28, 2018	Niigata Prefecture	Summer school on nuclear emergency preparedness	Heads of local governments, local governments, licensees
September 10, 2018 – December 25, 2018 (2 times)	Niigata Prefecture	Niigata Prefecture Nuclear Emergency Evacuation Verification Committee	Experts, local governments, licensees
October 29, 2018 –January 31, 2019 (6 times)	Niigata Prefecture	Municipal Study Group on Nuclear Safety Measures	Experts, local governments, licensees
January 28, 2019	Niigata Prefecture	Confirmation of evacuation routes in nuclear emergencies	Heads of local governments, local governments
February 6, 2019	Niigata Prefecture	Niigata Prefecture Nuclear Emergency Drill (desktop drill)	Heads of local governments, local governments, experts
December 13, 2018	Ibaraki Prefecture	Explanation of the results of the drill in emergency communication at the time of nuclear facility accidents and problems	Local governments, licensees
January 13, 2019 – February 17, 2019 (6 times)	Ibaraki Prefecture	Explanation session to local residents on the results of the review of conformity to new regulations for Tokai Daini NPS	Residents
March 12, 2019 – March 26, 2019 (2 times)	Ibaraki Prefecture	Residents nuclear conference	Residents, local governments, licensees
July 13, 2018	Kanagawa Prefecture	Kanagawa Prefecture Environmental Radiation Monitoring Committee	Local governments, licensees, experts
October 22, 2018	Kanagawa Prefecture	Kawasaki Nuclear Facility Safety Committee Secretariat meeting	Local governments, licensees
November 26, 2018	Kanagawa Prefecture	Kawasaki Nuclear Facility Safety Committee meeting	Local governments, licensees
April 26, 2018 – January 30, 2019 (4 times)	Ishikawa Prefecture	Joint Meeting of Akasumi Area Committee and Safety Promotion Liaison Committee	Heads of local governments, representatives of residents
April 26, 2018, November 1, 2018	Ishikawa Prefecture	Shika “Shika Nuclear Power Station” Safety Promotion Committee	Heads of local governments, representatives of residents
July 3, 2018 – March 18, 2019 (4 times)	Ishikawa Prefecture	Ishikawa Prefecture Nuclear Environmental Safety Control Council	Experts, local governments
March 26, 2019	Toyama Prefecture	Toyama Prefecture Disaster Prevention Council, Nuclear Emergency Response Subcommittee	Heads of local governments, experts, local governments
August 2, 2018 – March 20, 2019 (4 times)	Fukui Prefecture	Fukui Prefecture Nuclear Environmental Safety Control Council	Members of the Prefectural Assembly, heads of local governments, representatives of organizations
August 9, 2018 – March 15, 2019 (2 times)	Fukui Prefecture	Fukui Prefecture Expert Committee	Experts
December 3, 2018	Fukui Prefecture	Mihama Nuclear Environmental Safety Monitoring Committee	Members of the Municipal Assembly, representatives of residents, experts

Date	Venue	Name of meeting/session	Main attendees
October 19, 2018	Fukui Prefecture	Ohi-Takahama General Promotion Council	Members of the Municipal Assembly
February 15, 2019	Fukui Prefecture	Wakasa Nuclear Power Station Environmental Safety Council	Members of the Municipal Assembly, representatives of residents
March 27, 2019	Fukui Prefecture	Obama Nuclear Power Station Environmental Safety Council	Members of the Municipal Assembly, representatives of organizations
January 21, 2019	Kyoto Prefecture	Community Council on Ohi NPS in Kyoto Prefecture	Heads of local governments
June 1, 2018	Shiga Prefecture	Shiga Prefecture Nuclear Safety Liaison Council	Local governments, experts
February 27, 2019	Gifu Prefecture	Gifu Prefecture Disaster Prevention Council, Nuclear Expert Subcommittee	Local governments, experts
June 20, 2018 – March 14, 2019 (4 times)	Shizuoka Prefecture	Omaezaki Special Panel on Nuclear Safety	Members of the Municipal Assembly
May 11, 2018	Osaka Prefecture	First meeting of Kumatori Radiation Disaster Prevention Liaison Committee	Local governments, licensees
July 27, 2018	Osaka Prefecture	65th Kumatori Nuclear Issue Council	Vice Chairperson of the Municipal Assembly, community representatives
July 31, 2018	Osaka Prefecture	FY2018 Izumisano Nuclear Issue Council	Members of the Municipal Assembly, representatives of residents
February 7, 2019	Osaka Prefecture	66th Kumatori Nuclear Issue Council	Vice Chairperson of the Municipal Assembly, community representatives
February 18, 2019	Osaka Prefecture	Meeting on emergency monitoring plan	Local governments
March 28, 2019	Osaka Prefecture	Izumisano Disaster Prevention Council	Heads of local governments, etc.
April 7, 2018	Osaka Prefecture	Open house of Off-site Center	Local residents
May 17 – June 29, 2018 (3 times)	Okayama Prefecture	Explanation on renewal of Kamisaibara Promotion Center	Local governments, construction-related persons
May 28, 2018 – February 26, 2019 (7 times)	Okayama Prefecture	Explanation on the Operational Safety Inspection results	Local governments
September 21, 2018	Okayama Prefecture	Explanation on Tottori Prefecture Nuclear Emergency Response Drill	Local governments
October 15, 2018, November 15, 2018	Okayama Prefecture	Explanation on Tottori Prefecture Nuclear Emergency Response Drill (TV conference)	Local governments
January 25, 2019	Okayama Prefecture	Review meeting on Tottori Prefecture Nuclear Emergency Response Drill (TV conference)	Local governments
December 7, 2018	Okayama Prefecture	Opinion exchange on fire protection	Tsuyama Area Firefighting Union
May 30, 2018	Shimane Prefecture	FY2018 Unnan Disaster Prevention Council	Local governments, designated local administrative organs, designated local public services

Date	Venue	Name of meeting/session	Main attendees
April 12, 2018 – March 18, 2019 (5 times)	Shimane Prefecture	Explanation of Operational Safety Inspection results	Local governments
May 23, 2018 – March 6, 2019 (5 times)	Ehime Prefecture	Ikata Nuclear Power Station Environmental Investigation Technical Liaison Council	Local governments, licensees
August 28, 2018, May 28, 2019 (2 times)	Ehime Prefecture	Ikata Nuclear Power Station Environment and Safety Management Committee, Environmental Safety Subcommittee	Experts
August 28, 2018, March 28, 2019 (2 times)	Ehime Prefecture	Ikata Nuclear Power Station Environmental Safety Control Committee	Heads of local governments, local governments, experts
July 9, 2018, November 19, 2018 (2 times)	Ehime Prefecture	Ikata Environmental Monitoring Committee	Heads of local governments, Members of the Municipal Assembly, representatives of residents
May 30, 2018, January 28, 2019	Saga Prefecture	Saga Prefecture Nuclear Environmental Safety Liaison Committee	Heads of local governments, representatives of residents
May 22, 2018 – February 15, 2019 (3 times)	Kagoshima Prefecture	Satsuma Sendai City Nuclear Safety Measures Liaison Council	Heads of local governments, Members of Municipal Assemblies, representatives of residents
August 17, 2018, January 21, 2019	Kagoshima Prefecture	Nuclear Safety Measures Liaison Council	Heads of local governments
*In addition to those stated in the table, meetings of working groups of local nuclear preparedness councils and committees on radiation supervision or monitoring are occasionally held in related prefectures, and the personnel of the NRA Secretariat attend.			

12. Consultation and Opinion Exchange with Japanese and Foreign Experts

(1) Opinion Exchange with Domestic Experts

Date	Expert	Commissioner
July 9, 2018	Kiyoshi Kurokawa, Professor Emeritus, National Graduate Institute for Policy Studies (Former Chairman of the National Diet Accident Investigation Committee), Satoshi Ishibashi, Visiting Researcher, National Graduate Institute for Policy Studies (Former Deputy Investigation Head of the National Diet Accident Investigation Committee Secretariat)	Chairman Fuketa, Commissioner Yamanaka

(2) Opinion Exchange with Foreign Experts

Date	Expert	Commissioner
April 9, 2018	William D. Magwood, IV, Director General of OECD/NEA	Commissioner Yamanaka, Commissioner Ban
May 23, 2018	William D. Magwood, IV, Director General of OECD/NEA	Chairman Fuketa
June 22, 2018	Daniel Iracane, Deputy Director General of OECD/NEA	Chairman Fuketa
August 10, 2018	William D. Magwood, IV, Director General of OECD/NEA	Chairman Fuketa
October 29, 2018	Richard A. Meserve, External Advisor Dana Drábová, External Advisor Andy Hall, External Advisor	Chairman Fuketa, Commissioner Tanaka, Commissioner Yamanaka, Commissioner Ban, Commissioner Ishiwatari
November 14, 2018	William D. Magwood, IV, Director General of OECD/NEA	Chairman Fuketa
November 28, 2018	Daniel Iracane, Deputy Director General of OECD/NEA	Chairman Fuketa
November 30, 2018	Massimo Aparo, Deputy Director General and Head of the Department of Safeguards, IAEA	Chairman Fuketa
January 31, 2019	William D. Magwood, IV, Director General of OECD/NEA	Chairman Fuketa

(3) Opinion Exchange with Foreign Regulators

Date	Participant	Commissioner
July 23, 2018 – July 29, 2018	Kristine Svinicki, Chairman of U.S. Nuclear Regulatory Commission (NRC) Michael Binde, President of Canadian Nuclear Safety Commission (CNSC)	Chairman Fuketa
September 3, 2019 – September 4, 2018	Sixth Japan-France Regulatory Authorities Meeting Pierre-Franck Chevet, President of Nuclear Safety Authority (ASN), France Sylvie Cadet-Mercier, Commissioner of ANS	Chairman Fuketa Commissioner Tanaka
September 17, 2018 – September 21, 2018	IAEA General Conference, bilateral meetings (NRC, U.K. Office of Nuclear Regulation (ONR), Radiation and Nuclear Safety Authority of Finland (STUK), Swedish Radiation Safety Authority (SSM), Spanish Nuclear Safety Council (CSN), Swiss Federal Nuclear Safety Inspectorate (ENSI), Institute for Radiological Protection and Nuclear Safety (IRSN, France)), and meeting of International Nuclear Regulators Association (INRA) (nuclear regulators of the U.S., the U.K., Finland, Sweden, Spain, Switzerland, and France)	Chairman Fuketa
November 26, 2018 – November 30, 2018	32nd IAEA Advisory Group on Nuclear Security (AdSec)	Commissioner Tanaka
November 27, 2018	11th Top Regulators' Meeting on Nuclear Safety among China,	Commissioner

– Nov 28, 2018	Japan, and Korea (TRM）（Korea, Gyeongju City） Korea: Uhm Jaesik, Chairperson of Nuclear Security and Safety Commission (NSSC) China: Deputy Director Zhao of Ministry of Environmental Protection/National Nuclear Safety Administration	Yamanaka
February 19, 2019 – February 21, 2019	Lydie Évrard, Commissioner of ANS, France	Commissioner Tanaka
March 6, 2019	Stephen G. Burns, Commissioner of U.S. NRC	Chairman Fuketa

13. Results of the FY2018 Internal Audit Conducted in Accordance with the NRA Management Rules and the State of Improvement

An internal audit was administered to 4 sections and a theme in FY2018 pursuant to Article 36 of the NRA Management Rules.

◦ Classifications of items identified in the audit

Category	Findings
Items requiring improvement R: Recommendation	Corresponds to items requiring improvement as provided in Article 38 of the NRA Management Rules ・Item that violates or that could violate a statute or ordinance that violates or could violate a law or regulation • Item that does not satisfy individual operational requirements • Item found to be necessary by the person responsible for promoting management (Director of the Management System Office)
Items for which improved is desired S: Suggestion	Item for which improvement is desired for operational effectiveness and appropriateness
GP: Good Practice	Example that should ideally be emulated by others outside the audited section

(1) Results of thematic audits (Audit implementation period: June to September 2018)

◦ Taking account of the IRRS Mission's recommendation for systematization, hierarchization, and visualization of operations, audits were conducted for relevant sections and divisions to confirm whether internal information sharing tools such as portals are adequately designed to effectively control important electronic data such as Commission decisions.

◦ The audits pointed out items that need improvement, such as maintenance of books pursuant to the NRA Administrative Document Management Guidelines and development of rules for using the NRA's information sharing space, and recommended improvements.

Items that need improvement	Statue of improvement in relevant section(s)
R1 Maintain books such as Commission Rules according to the NRA Administrative Document Management Guidelines.	[General Administration Division] · Improvement of management procedures is under review for the books to be managed by General Administration Division
R2 Establish a unified approach to the use and management (including publication contents and publication procedures) of information sharing space of the NRA (NRA website, staff portals (all information sharing sites, instructional sites, etc.), knowledge portal).	[General Administration Division, etc.] · The "Common Drive Reconstruction Review Team" by volunteer staff is in the process of developing the rules for using the information sharing space of the NRA. · The new rules will become effective in April 2019.

R3 Update the documents with old section/office names that exist on the all information sharing sites to meet the latest status.	[General Administration Division] · Old section/office names were replaced with new names. [Radiation Protection Policy Planning Division] · Obsolete pages using "Radiation Protection Policy Planning Division" were deleted.
R4 Improve the format, etc. in order to prevent inappropriate masking in materials submitted by licensees that are posted on the NRA website.	[Legal Section] · Legal Section is collaborating with relevant offices/divisions to revise the rules.

(2) Results of audits for 4 Sections/Division (Audit implementation period: November 2018 to February 2019)

(a) Audited Section: Section of Review of Nuclear Fuel Facilities, etc., Nuclear Regulation Department

◦ Audits were conducted for two Sections to evaluate the effects of reorganization, considering the fact that the old Nuclear Regulation Department was restructured in July 2017 into the Review Group and Inspection Group, and the Nuclear Fuel Facility Review Section and Nuclear Fuel Facility Oversight Section were newly established.

◦ Items that should be improved (S) were identified and an improvement plan was prepared, including promotion of the development of regulatory requirements for radioactive waste disposal and proper management of staff with concurrent assignments.

Item that should be improved
S1 At the FY2018 53rd NRA Commission Meeting, the NRA set out the priority issues "enhancement of regulatory requirements for near surface disposal of low-level radioactive waste containing uranium waste, expansion of the scope of clearance level, and development of reasonable confirmation methods for the level." Continue to work with Regulatory Standard and Research Division to promote activities to resolve these issues and strengthen the arrangements to do so.
S2 After the reorganization in July 2017, a number of staff members of Nuclear Fuel Facility Review Section, Research Reactor Review Section, Nuclear Fuel Facility Oversight Section, and Specialized Inspection Section have concurrent assignments. Implement appropriate management measures, including clarification and sharing of the office procedures such as approval procedures, as well as positive use of the effects of concurrent staff assignment. In addition, make preparations for the enforcement of the new inspection system and cancel concurrent assignment of staff as appropriate.

◦ A good practice (GP) was identified for the efforts to effectively implement work after the reorganization and to cultivate safety culture activities.

GP1: Since many staff members have concurrent assignments, they are working in cooperation, such as by sharing administrative work among sections.

(b) Audited Section: Section of Oversight of Nuclear Fuel Facilities, etc., Nuclear Regulation Department

◦ Audits were conducted for two Sections to evaluate the effects of reorganization, considering the fact that the old Nuclear Regulation Department was restructured in July 2017 into the Review Group and Inspection Group, and the Nuclear Fuel Facility Review Section and Nuclear Fuel Facility Oversight Section were newly established.

○An improvement plan was prepared for proper management of staff with concurrent assignments and offering of sufficient opportunities for staff training.

Item that should be improved
S3 Develop a training plan in cooperation with NRA Human Resource Development Center and Personnel Division in order to appropriately ensure training opportunities that are required for the qualification of section staff.
S4 After the reorganization in July 2017, a number of staff members of Division of Licensing for Research Reactors, Use of Nuclear Material and Specified Nuclear Facilities, Division of Licensing for Nuclear Fuel Facilities, Division of Oversight of Nuclear Fuel Related Facilities and Research Reactors, and Division of Specified Oversight have concurrent assignments. Implement appropriate management measures, including clarification and sharing of office procedures such as approval procedures, as well as positive use of the effects of concurrent staff assignment. In addition, make preparations for the enforcement of the new inspection system and cancel concurrent assignment of staff as appropriate.

◦ Good practices (GPs) were identified for the efforts to effectively implement work after the reorganization and to cultivate safety culture activities.

GP2: Since many staff members have concurrent assignments, they are working in cooperation, such as by sharing administrative work among sections.

GP3: Plans for specific activities are shown in each Section to address each action guideline provided in the Nuclear Safety Culture Statement of the NRA.

(c) Audited Division: Radiation Protection Policy Planning Division, Radiation Protection Department

◦ An audit was conducted to evaluate the effects of reorganization, considering the fact that the Radiation Protection Policy Planning Division responsible for policy planning for radiation protection-related matters such as radiation-related deliberation and safety research was established as a result of the reorganization in July 2017.

◦ Items that should be improved (S) were identified and an improvement plan was prepared, including enhancement of cooperation with the National Institutes for Quantum and Radiological Science and Technology and improvement of performance efficiency of entrusted research.

Item that should be improved
S5 In implementing procedures such as consignment contracts, make efforts to efficiently implement consigned work, such as by starting public offering procedures prior to contracts as early as possible.
S6 Make more frequent communications with the National Institutes for Quantum and Radiological Science and Technology and relevant ministries and agencies.
S7 Manage the books adequately in line with the NRA Administrative Document Management Guidelines.

- A good practice (GP) was identified for the contents of international activities of the Radiation Protection Group.

  GP4: Development of basic approach to enhance international activities by the Radiation Protection Group including cultivation of young staff.

(d) Audited Section: Division of Regulation for Radiation, Radiation Protection Group

- An audit was conducted to evaluate the effects of reorganization, considering the fact that the Division of Regulation for Radiation was established as a result of the reorganization in July 2017.
- Items that should be improved (S) were identified and an improvement plan was prepared, including improvement of performance efficiency of entrusted researches and clear definition of responsibilities of Deputy Director-General and Inspectors in radiation regulation.

Item that should be improved
S8 Consider appropriate work arrangements for ensuring efficient contract procedures and implementation of multiple research projects, such as by eliminating work imbalances by using teamwork that addresses both technical aspects of specifications and administrative procedures for concluding contracts.
S9 Clarify the responsibilities of the Deputy Director-General and Inspectors in radiation regulation and systematically consider competence management.
S10 Consider specific procedures to respond to accidents and problems at RI facilities in cooperation with the Emergency Response Office.

- Good practices (GPs) were identified for sharing the findings and points noticed during inspections.

  GP5: Radiation Protection Department is promoting information sharing and knowledge improvement of staff members through review team meetings and study sessions.

GP6: Radiation Protection Department is working to establish a proper management system and to document the necessary procedures for properly dealing with about 16,000 postal applications and notification documents (per annum).

14. Record of responses to formal objections in FY2018

	Formal objection	Date of determination	Contents of determination
1	Formal objection to the disposition of approval of changes in operational safety program at Sendai NPS	February 12, 2019	Dismissed
2	Formal objection to the disposition permission for change in reactor installation for Ikata PS Unit 3	February 12, 2019	Dismissed

Reference 2: Implementation of International Conventions on Nuclear Safety (Section 3 of Chapter 1)

The NRA pursues collaborations with international organizations and cooperative ties with overseas regulatory bodies through various efforts, such as implementation of international conventions on nuclear safety, formulating and reviewing IAEA Safety Standards, and participating in joint research projects. Thereby, the NRA aims to continuously improve nuclear regulations in Japan and make improvements in nuclear safety in the international community.

1. Implementation of International Conventions on Nuclear Safety

(1) Convention on Nuclear Safety (Nuclear Safety Convention)

The Convention 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 (i) developing National Reports, (ii) conducting peer reviews among the Contracting Parties, and (iii) attending meetings of Contracting Parties (Review Meetings) and undertaking other activities (known as the "review process") every 3 years.

(Major activities under the Convention on Nuclear Safety)

Period	Description
August 2013	Submission of the sixth National Report of Japan
March–April 2014	Sixth Review Meeting (Participants from the NRA: Commissioner Oshima and other officials)
August 2016	Submission of the seventh National Report of Japan
March–April 2017	Seventh Review Meeting (Participants from the NRA: Commissioner Ban and other officials)

(2) Joint Convention on the Safety of Spent Fuel Management and on the Safety of Radioactive Waste Management (Joint Convention)

The Joint Convention covers safety in management of 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 mitigating consequences should any accident happen. The NRA is responsible for developing the National Reports as set forth in the Joint Convention, and conducting peer reviews every three years.

(Major Activities under the Joint Convention)

Period	Description
October 2014	Submission of the fifth National Report of Japan
May 2015	Fifth Review Meeting (Participants from the NRA: Commissioner Satoru Tanaka and other officials)
October 2017	Submission of the sixth National Report of Japan
May–June 2018	Sixth Review Meeting (Participants from the NRA: Commissioner Satoru Tanaka and other officials)

(3) 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 a framework for notification of a nuclear accident with radiological consequences beyond national borders to a potentially affected state party and the IAEA, while the Convention on Assistance provides a framework for international cooperation for assistance in a nuclear accident or 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 June 2018 and the Ministry of Foreign Affairs and the NRA staff attended it.

(4) Convention on the Physical Protection of Nuclear Material and Its Amendment, and International Convention for the Suppression of Acts of Nuclear Terrorism

The Convention on the Physical Protection of Nuclear Material requires its state parties to provide protective measures on nuclear materials during international transport and protection of nuclear materials against illegal acquisition and use. In May 2016, the Amendment to the Convention came into effect with respect to Japan, and the obligation under the Convention having been extended, the Convention shall apply to nuclear material used for peaceful purposes in domestic use, storage and transport of nuclear materials and nuclear facilities.

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.

2. Collaboration under International Organizations

(1) International Atomic Energy Agency IAEA

The International Atomic Energy Agency is an international organization (with 170 member states as of December 2018) that was established in 1957 under the purview of the United Nations for the purpose of promoting the peaceful use of nuclear power. The Agency is headquartered in Vienna and helmed by Director General Amano. The IAEA holds General Conferences (once a year) and other such events, and the Japanese delegation, headed by the Minister of State for Science and Technology Policy and including the Chairman of the NRA, participated in the General Conference in 2018.

Activities of the IAEA for nuclear safety are wide-ranging, such as the formulation and review of IAEA Safety Standards; activities concerning emergency responses, radiation protection, and physical protection; and international cooperative activities undertaken in order to improve nuclear regulatory controls.

The Commission on Safety Standards (CSS) oversees standards committees reviewing draft safety standards. The NRA also proactively participates in activities organized by the CSS and its subordinate committees.

The NRA also participates in a number of other groups, including the IAEA's International Nuclear Safety Group (INSAG; Commissioner Yamanaka of the NRA serves as a member of this standing advisory committee), the Advisory Group on Nuclear Security (AdSec; Commissioner Satoru Tanaka of the NRA serves as a member of this group), and is thereby making various international contributions through the IAEA as international experts.

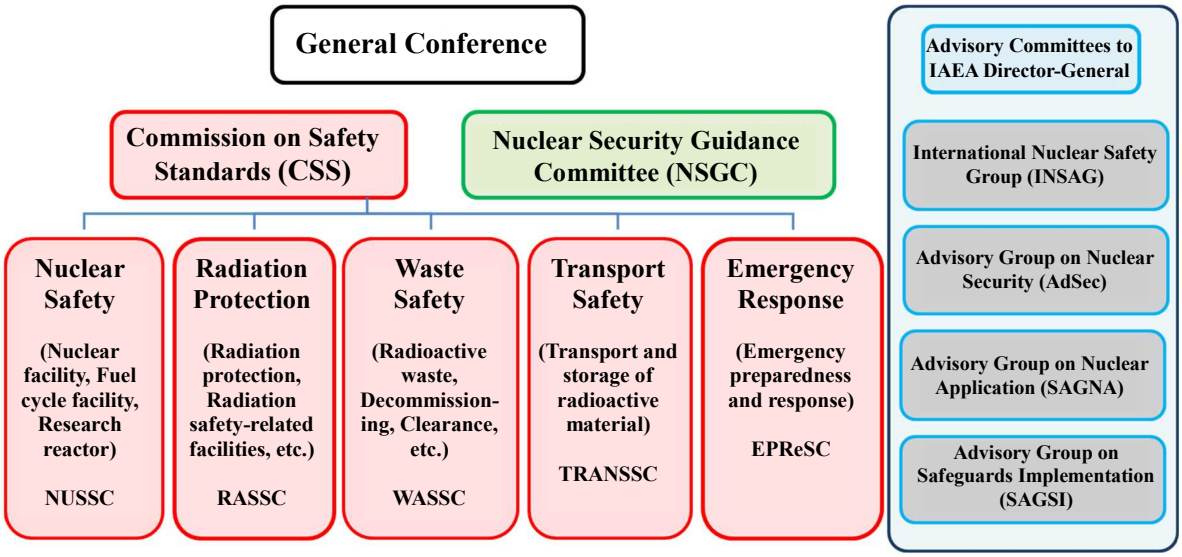


Figure iii Major IAEA Committees in which the NRA Participates

The NRA proactively participates in and contributes to initiatives to improve nuclear safety worldwide through the Regulatory Cooperation Forum (RCF; plenary meeting, meetings of the steering committee, and support meetings are each held once a year), a cooperative framework tying regulatory bodies together under the IAEA; the Asia Nuclear Safety Network (ANSN; meetings of the steering committee (twice a year) and meetings of the Self-Assessment Coordination Group (SACG) (twice a year) are held; Japanese officials serve as the Deputy Chairperson of the Steering Committee and Chairperson and Deputy-Chairperson of the SACG), a cooperative framework for improving the safety of nuclear facilities in Asia; and other such programs. In addition, the NRA is working to gather technological information and share knowledge through joint projects organized by the IAEA.

(Major joint projects organized by the IAEA in which the NRA is participating)

Project Name	Description
ISSC-EBP	Developing detailed guidelines on IAEA safety requirements pertaining to external events.
FUMAC	Investigating fuel-behavior models when LOCA occur.
IGALL	Formulating a technological foundation and practical guidance relating to the aging management of to facilitate the long-term operations of systems, structures, and equipment that are important for the safety of light-water reactors and heavy-water reactors.
Cooperative project relating to ocean monitoring carried out with the IAEA	Samples for ocean monitoring being carried out in waters off the coast of Fukushima Prefecture are being obtained jointly with the IAEA. The results of evaluations and analyses of the methods used are intercompared.

The IAEA also offers, responding to requests from its Member States, peer review services, such as the IRRS which provides a peer review service that comprehensively evaluates a wide range of issues, including legal systems and organizations relating to nuclear regulatory controls. The NRA requested an IRRS mission for January 2016, and an IPPAS mission for February 2015 to review the state of the implementation of nuclear security measures.

(2) Organization for Economic Co-operation and Development's Nuclear Energy Agency (OECD/NEA)

Established in 1958 and headquartered in Paris, the Organization for Economic Co-operation and Development's Nuclear Energy Agency discusses its activities at meetings of its steering committee (twice a year) (33 member states as of December 2018; headed by Director-General Magwood). By harnessing the advantages of the OECD/NEA in terms of its ability to encourage the sharing of the latest information among advanced nuclear power-utilizing countries, the organization undertakes discussions and activities relating to the prevention of nuclear accidents and mitigation of consequences could be caused by accidents (such as sharing information on regulatory initiatives undertaken by member states based on the lessons learned from the accident at the TEPCO's Fukushima Daiichi NPS and joint research on nuclear safety).

Various investigations relating to nuclear safety are being conducted by standing committees, including the Committee on Nuclear Regulatory Activities (CNRA), the Committee on the Safety of

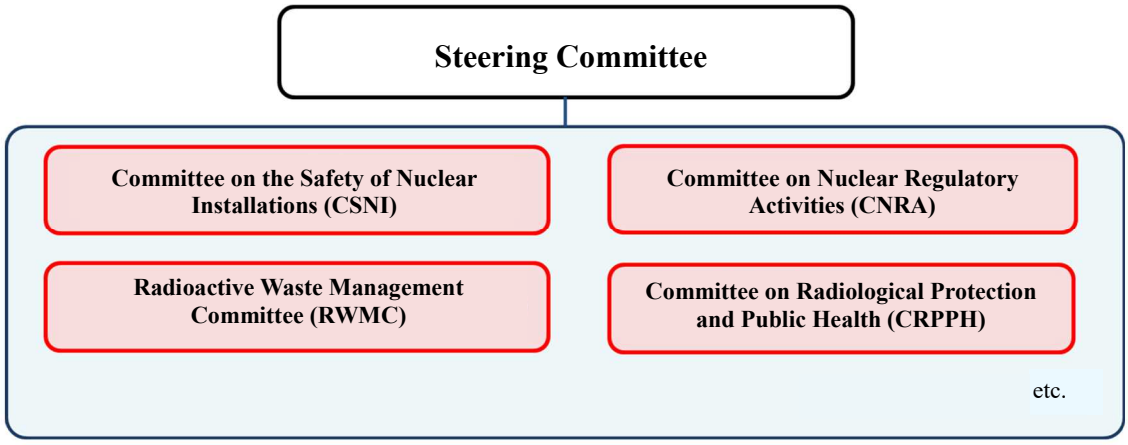


Figure iv Major OECD/NEA Committees in which the NRA Participates

Nuclear

Installations (CSNI), the Committee on Radiological Protection and Public Health (CRPPH), and the Radioactive Waste Management Committee (RWMC), as well as subordinate working groups. The NRA has actively participated in these various bodies and activities.

In addition, the NRA participates in various joint projects under the purview of the OECD/NEA, collects the latest technical information in advanced countries and contributes to upgrading technologies.

(Major OECD/NEA joint projects in which the NRA participates)

Project	Description
MDEP/PG	A program undertaken for the purpose of sharing regulatory experiences relating to safety regulatory controls applied to advanced reactors through multilateral discussions on design evaluations, standards, and inspections for advanced reactors.
BSAF	The causes of the TEPCO's Fukushima Daiichi NPS accident, and pathways of the release of radioactive materials into the environment are analyzed and also SA (severe accident) phenomena are subject to benchmark analyses based on the use of accident progression analysis codes.
HYMERES	Experiments and analyses relating to the behavior of hydrogen in containment vessel during severe accident are conducted.

(3) International Nuclear Regulators Association (INRA)

Meetings of the INRA are held twice a year as an opportunity for the top officials of regulatory bodies in major advanced nuclear power-utilizing countries (Japan, United States, France, United Kingdom, Germany, Canada, Sweden, Spain, and South Korea) to freely and directly exchange opinions on timely issues.

(Record of participation in INRA)

Period	Main participants from the NRA
May 2013	Chairman Tanaka, Commissioner Fuketa
September 2013	Chairman Tanaka
April 2014	Chairman Tanaka
September 2014	Chairman Tanaka
May 2015	Chairman Tanaka
September 2015	Director-General for Technical Affairs Yasui
May 2016	Commissioner Satoru Tanaka
September 2016	Chairman Tanaka
May 2017	Secretary-General Yasui
September 2017	Secretary-General Yasui
May 2018	Secretary-General Yasui
September 2018	Chairman Fuketa

(4) Western European Nuclear Regulators Association (WENRA)

WENRA is a conference body that comprises the heads of regulatory bodies in European countries. Its objective is to promote sharing of information on safety of nuclear power in Europe and functioning as a network among the heads of safety regulatory bodies in Europe (18 member states and 11 observer countries as of October 2016). Plenary Meetings are held twice a year in spring and autumn. The NRA has been officially participating in the meetings an observer capacity since October 2016.

(Record of participation in WENRA)

Period	Main participants from the NRA
April 2016	Secretary-General Shimizu
October 2016	Commissioner Ban
April 2017	Commissioner Ban
October 2017	Senior Coordinator for International Collaborations Hirano
April 2018	Director of Nuclear Policy Planning Division, Ichimura
November 2018	Director of Nuclear Policy Planning Division, Ichimura

(5) Top Regulators' Meeting among China, Japan and Korea (TRM)

Meetings of the top regulators in China, Japan, and South Korea (NRA, Ministry of Environmental Protection of China/National Nuclear Safety Administration (MEP/NNSA), Nuclear Safety and Security Commission of the ROK (NSSC)) have been held once a year with a rotating chair since FY 2008. Information is also exchanged at meetings of three working groups subordinate to the TRM (Online Information Sharing System Working Group, Emergency Preparedness Response Working Group, and Human Resources Development Working Group). In addition, TRM Plus meetings have been held yearly in conjunction with TRMs since FY 2013 to deal with more technical issues.

(Record of holding and participating in TRMs)

Period	Main participants from the NRA
November 2012	Commissioner Oshima
November 2013	Commissioner Oshima
September 2014	Chairman Tanaka, Commissioner Oshima
October 2015	Commissioner Ban
November 2016	Secretary-General Shimizu
December 2017	Commissioner Yamanaka
November 2018	Commissioner Yamanaka

3. Bilateral Cooperation

The NRA has concluded arrangements and memorandums of understanding concerning the implementation of cooperative initiatives and the exchange of regulatory information with the following 12 countries (13 regulatory bodies) and engages in the exchange of information and opinions with various overseas regulatory bodies. With the U.S. Nuclear Regulatory Commission (U.S. NRC), the NRA has, twice a year, held bilateral meetings (steering committee) and information exchanges concerning specified themes, and with the French Nuclear Safety Authority (ASN) bilateral meetings have been held once a year, as well as information exchange concerning specified themes. Also with the other overseas regulatory bodies, opinion and information exchanges have been held.

(Organizations with which the NRA has concluded bilateral arrangements and memorandums of understanding for cooperative initiatives (as of the end of March 2018))

- United States: Nuclear Regulatory Commission (NRC)
- United States: Department of Energy (DOE)
- France: Nuclear Safety Authority (ASN, Autorité de sûreté nucléaire)
- Russia: Federal Environmental, Industrial and Nuclear Supervision Service of Russia (RTN, Rostekhnadzor)
- Canada: Canadian Nuclear Safety Commission (CNSC)
- United Kingdom: Office for Nuclear Regulation (ONR)
- Sweden: Swedish Radiation Safety Authority (SSM, Strålsäkerhetsmyndigheten)
- Germany: Federal Ministry of the Environment, Nature Conservation, Building and Nuclear Safety (BMUB, Bundesministerium für Umwelt, Naturschutz, Bau und Reaktorsicherheit)
- Spain: Nuclear Security Council (CSN, Consejo de Seguridad Nuclear)
- Finland: Radiation and Nuclear Safety Authority (STUK, Säteilyturvakeskus)
- Lithuania: State Nuclear Power Safety Inspectorate (VATESI, Valstybinės atominės energetikos saugos inspekcija)
- Turkey: Turkish Atomic Energy Authority (TAEK, Türkiye Atom Enerjisi Kurumu)
- Vietnam: Vietnam Agency for Radiation and Nuclear Safety (VARANS)

Reference 3: Rigorous and Proper Implementation of Regulation of Nuclear Facilities (Chapter 2)

1. Status of Application for Review of Commercial Power Reactors

Applicant	Targeted power reactor	Receipt date	Review meetings (number)	On-site inspections (number)	Date of approval
Hokkaido Electric Power Co., Inc.	Tomari NPS (Units 1, 2)	July 8, 2013 · Installation permit change · Construction plan · Operational safety program change	4	1	—
	Tomari NPS (Unit 3)	July 8, 2013 · Installation permit change · Construction plan · Operational safety program change	4	1	—
	◆Tomari NPS (Unit 3)	December 18, 2015 · Installation permit change	—	—	—
Tohoku Electric Power Co., Inc.	Onagawa NPS (Unit 2)	December 27, 2013 · Installation permit change · Construction plan · Operational safety program change	41	—	—
	Higashidori NPS (Unit 1)	June 10, 2014 · Installation permit change · Construction plan · Operational safety program change	4	—	—
Tokyo Electric Power Company Holdings, Inc.	Kashiwazaki-Kariwa NPS (Units 6 and 7)	September 27, 2013 · Installation permit change · Construction plan · Operational safety program change	—	—	December 27, 2017 · Permission for change in reactor installation
	◆Kashiwazaki-Kariwa NPS (Units 1, 6 and 7)	December 15, 2014 · Installation permit change	—	—	—
Chubu Electric Power Co., Inc.	Hamaoka NPS (Unit 3)	June 16, 2015 · Installation permit change	9	—	—
	Hamaoka NPS (Unit 4)	February 14, 2014 January 26, 2015 (*1) · Installation permit change · Construction plan · Operational safety program change	9	—	—
Hokuriku Electric Power Company	Shika NPS (Unit 2)	August 12, 2014 · Installation permit change · Construction plan	4	—	—

Applicant	Targeted power reactor	Receipt date	Review meetings (number)	On-site inspections (number)	Date of approval
		· Operational safety program change			
Kansai Electric Power Co., Inc.	Ohi NPS (Units 3 and 4)	July 8, 2013 · Installation permit change · Construction plan · Operational safety program change	—	—	May 24, 2017 · Permission for change in reactor installation August 25, 2017 · Approval of construction plan (Units 3 and 4) September 1, 2017 · Approval of operational safety program change
	◆Ohi NPS (Units 3 and 4)	March 8, 2019 · Installation permit change	2	—	—
	Takahama NPS (Units 3 and 4)	July 8, 2013 · Installation permit change · Construction plan · Operational safety program change	—	—	February 12, 2015 · Permission for change in reactor installation August 4, 2015 · Approval of construction plan (Unit 3) October 9, 2015 · Approval of construction plan (Unit 4) October 9, 2015 · Approval of operational safety program change
	◆Takahama NPS (Units 3 and 4)	December 25, 2014 · Installation permit change April 26, 2017 · Construction plan	6	1	September 21, 2016 · Permission for change in reactor installation
	Takahama NPS (Units 1 and 2, (3, 4))	March 17, 2015 · Installation permit change July 3, 2015 · Construction plan	—	—	April 20, 2016 · Permission for change in reactor installation June 10, 2016

Applicant	Targeted power reactor	Receipt date	Review meetings (number)	On-site inspections (number)	Date of approval
					· Approval of construction plan (Units 1 and 2)
	◆Takahama NPS (Units 1 and 2, (3, 4))	December 22, 2016 · Installation permit change March 8, 2018 November 16, 2018 · Construction plan (*3)	9	–	March 7, 2018 · Permission for change in reactor installation
	Mihama NPS (Unit 3)	March 17, 2015 · Installation permit change · Operational safety program change November 26, 2015 · Construction plan	—	—	October 5, 2016 · Permission for change in reactor installation October 26, 2016 · Approval of construction plan
	◆Mihama PS (Unit 3)	April 20, 2018 · Installation permit change	18	1	—
The Chugoku Electric Power Co., Inc.	Shimane NPS (Unit 2)	December 25, 2013 · Installation permit change · Construction plan · Operational safety program change	12	1	—
	◆Shimane NPS (Unit 2)	July 4, 2016 · Installation permit change	—	—	—
	Shimane NPS (Unit 3)	August 10, 2018 · Installation permit change	1	—	—
Shikoku Electric Power Co., Inc.	Ikata NPS (Unit 3)	July 8, 2013 · Installation permit change · Construction plan · Operational safety program change	—	—	July 15, 2015 · Permission for change in reactor installation March 23, 2016 · Approval of construction plan April 19, 2016 · Approval of operational safety program change
	◆Ikata NPS (Unit 3)	January 14, 2016 · Installation permit change December 7, 2017 March 16, 2018	9	—	October 4, 2017 · Permission for change in reactor installation

Applicant	Targeted power reactor	Receipt date	Review meetings (number)	On-site inspections (number)	Date of approval
		May 11, 2018 August 13, 2018 ・Construction plan (*3)			March 25, 2019 ・Approval of construction plan
Kyushu Electric Power Co., Inc.	Genkai NPS (Units 3 and 4)	July 8, 2013 ・Installation permit change ・Construction plan ・Operational safety program change	—	—	January 18, 2017 ・Permission for change in reactor installation August 25, 2017 ・Approval of construction plan (Unit 3) September 14, 2017 ・Approval of construction plan (Unit 4) September 14, 2017 ・Approval of operational safety program change
	Sendai NPS (Units 1 and 2)	July 8, 2013 ・Installation permit change ・Construction plan ・Operational safety program change	—	—	September 10, 2014 ・Permission for change in reactor installation March 18, 2015 ・Approval of construction plan (Unit 1) May 22, 2015 ・Approval of construction plan (Unit 2) May 27, 2015 ・Approval of operational safety program change
	◆Genkai NPS (Units 3 and 4)	December 20, 2017 ・Installation permit change	14	—	—

Applicant	Targeted power reactor	Receipt date	Review meetings (number)	On-site inspections (number)	Date of approval
	◆Sendai NPS (Units 1 and 2)	December 17, 2015 ・Installation permit change May 24, 2017 August 8, 2017 March 9, 2018 ・Construction plan (Unit 1) (*3) July 10, 2017 August 8, 2017 March 9, 2018 ・Construction plan (Unit 2) (*3)	3	—	April 5, 2017 ・Permission for change in reactor installation May 15, 2018 July 26, 2018 February 18, 2019 ・Approval of construction plan (Unit 1) August 10, 2018 August 31, 2018 ・Approval of construction plan (Unit 2)
Japan Atomic Power Company	Tokai Daini NPS	May 20, 2014 ・Installation permit change ・Construction plan ・Operational safety program change	16	2	・September 26, 2018 ・Permission for change in reactor installation October 18, 2018 ・Approval of construction plan
	Tsuruga NPS (Unit 2)	November 5, 2015 ・Installation permit change ・Operational safety program change	3	—	—
Electric Power Development Co., Ltd. (J-Power)	Oma NPS (*2)	・Installation permit change ・Construction plan	6	1	—

・ Several applications may be reviewed at one session of the review meeting.
・ The number of review meetings mainly attended by members of the NRA is mentioned as a rule.
・ 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.
・ The numbers of review meeting and on-site investigation represent the number of times held in FY2018.

◆ : Application concerning Specialized Safety Facility

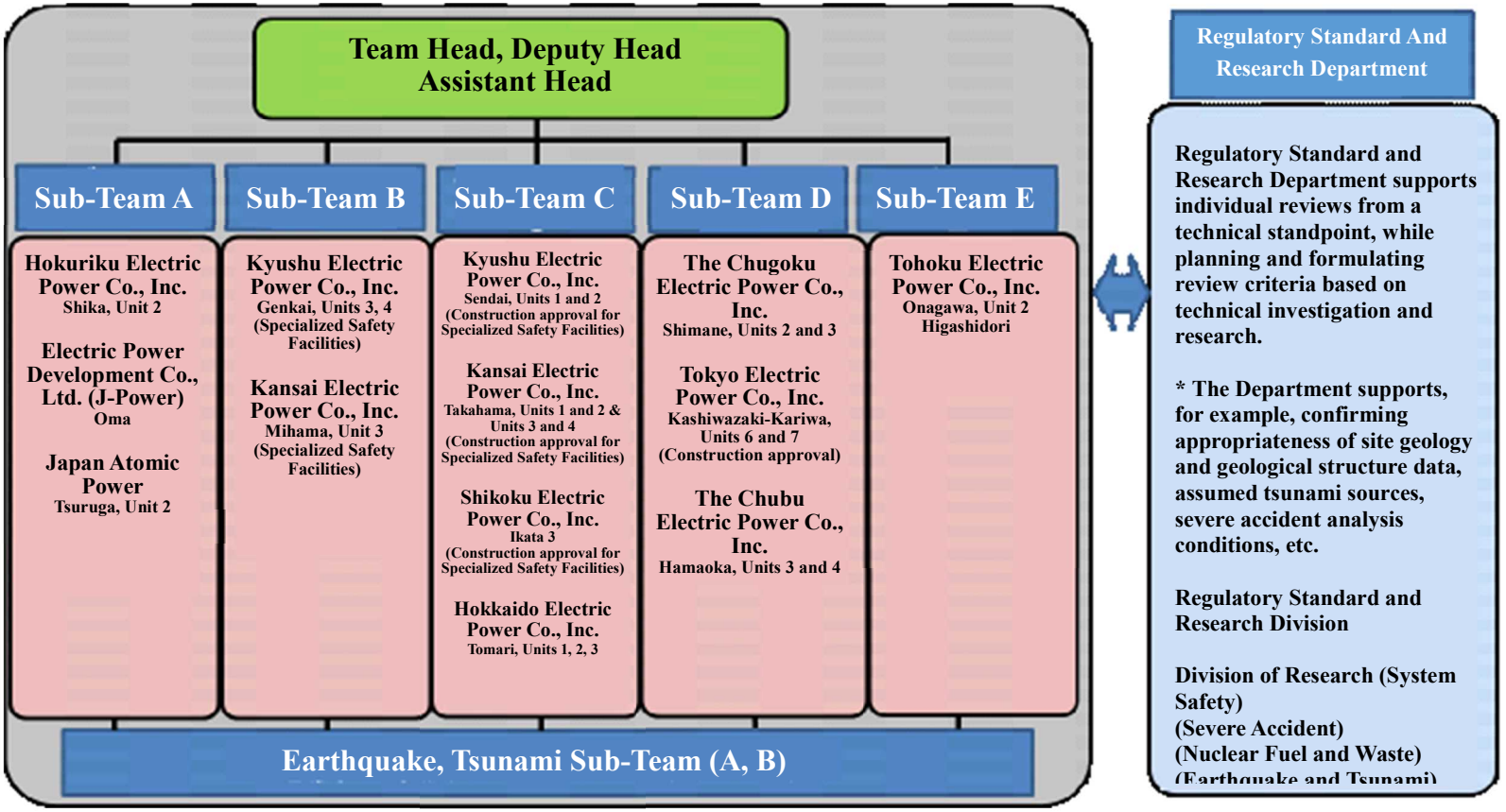
*1 Application for reactor installation permit change of nuclear power reactor dated February 14, 2014, was withdrawn on January 26, 2015, and submitted again in order to add a dry storage facility for spent fuel.

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

*3 The construction plan is divided into several phases and separate applications are submitted.

2. System of Conformity Review of Nuclear Power Stations to New Regulatory Requirements

Specially established "Study Team on Conformity to New Regulatory Requirements" conducted review with Support from Regulatory Standard and Research Department



3. Status of Inspection in Major Nuclear Facilities

(From April 1, 2018 to March 3l, 2019)

Tomari NPS, Hokkaido Electric Power Co., Inc.

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 28 – June 8, 2018	No particular safety concerns.
	2nd time	August 27 – September 7, 2018	No particular safety concerns.
	3rd time	November 26 – December 7, 2018	No particular safety concerns.
	4th time	February 25 – March 8, 2019	Inspection results being summarized.

Other	One case of violation of operational safety program (violation 2) relating to bad connection of diesel generator B starter circuit of Tomari NPS Unit 3 was confirmed when operational safety inspection was not being conducted.

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	May 28 – June 8, 2018	No particular safety concerns.
	2nd time	August 27 – September 7, 2018	No particular safety concerns.
	3rd time	November 26 – December 7, 2018	No particular safety concerns.
	4th time	February 18 – March 1, 2019	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	May 28 – June 8, 2018	No particular safety concerns.
	2nd time	August 27 – September 7, 2018	No particular safety concerns.
	3rd time	November 26 – December 14, 2018	No particular safety concerns.
	4th time	February 18 – March 1, 2019	Inspection results being summarized.

Fukushima Daiichi NPS, Tokyo Electric Power Company Holdings, Inc.

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

		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	Periodic Facility Inspection		
		From August 10, 2018 (under implementation)	
Inspection of implementation status of measures for safety defined in implementation plan	1st time	May 30 – June 12, 2018	No particular safety concerns.
	2nd time	September 3 – September 14, 2019	Violation of implementation plan (monitoring) was confirmed.
	3rd time	November 28 – December 11, 2019	No particular safety concerns.
	4th time	February 20 – March 5, 2019	Inspection results being summarized.
	Operational Safety Inspection deemed necessary to conduct safety actions		
		From February 8, 2019	Inspection is underway.

Fukushima Daini NPS, Tokyo Electric Power Company Holdings, Inc.

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 law was approved.)
	Unit 2	(Shut-down)	
	Unit 3	(Shut-down)	
	Unit 4	(Shut-down)	
Operational Safety Inspection	1st time	June 4 – June 20, 2018	No particular safety concerns.
	2nd time	September 3 – September 14, 2018	No particular safety concerns.
	3rd time	November 26 – December 7, 2018	Violation of operational safety program is to be further confirmed.
	4th time	February 25 – March 8, 2019	Inspection results being summarized.

Kashiwazaki-Kariwa NPS, Tokyo Electric Power Company Holdings, Inc.

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	May 28 – June 8, 2018	No particular safety concerns.
	2nd time	August 27 – September 7, 2018	No particular safety concerns.
	3rd time	November 26 – December 7, 2018	No particular safety concerns.
	4th time	February 25 – March 8, 2019	Inspection results being summarized.

Tokai Power Station, The Japan Atomic Power Co.

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

		Implementation Period	Result/Remarks
Operational Safety Inspection	1st time	August 6 – August 10, 2018	No particular safety concerns.
	2nd time	February 12 – February 15, 2019	Inspection results being summarized.

Tokai Daini Power Station, The Japan Atomic Power Co.

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	May 21 – June 1, 2018	No particular safety concerns.
	2nd time	August 16 – August 31, 2018	No particular safety concerns.
	3rd time	November 26 – December 7, 2018	No particular safety concerns.
	4th time	February 25 – March 8, 2019	Inspection results being summarized.

Hamaoka NPS, Chubu Electric Power Co., Inc.

During the following periods, Units 1 and 2 were under decommissioning procedures (during the period of demolition work of facilities around nuclear reactor area), and Units 3 through 5 were shut down.

		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	May 24 – June 8, 2018	No particular safety concerns.
	2nd time	August 27 – September 11, 2018	No particular safety concerns.
	3rd time	November 26 – December 7, 2018	No particular safety concerns.
	4th time	February 25 – March 8, 2019	Inspection results being summarized.

Other	・Deviation from the limiting condition for operation occurred in Unit 5 on June 5, 2018 and the plant returned to normal condition on June 12. ・Deviation from the limiting condition for operation occurred in Unit 4 on October 6, 2018 and the plant returned to normal condition within the day.

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	May 28 – June 8, 2018	No particular safety concerns.
	2nd time	August 27 – September 7, 2018	No particular safety concerns.
	3rd time	November 26 – December 7, 2018	No particular safety concerns.
	4th time	February 18 – March 1, 2019	Inspection results being summarized.

Tsuruga NPS, The Japan Atomic Power Co.

During the following period, Unit 1 has been under decommissioning procedures (during the preparation period for demolition work of facilities including nuclear reactor), and Unit 2 was shut down.

		Implementation Period	Result/Remarks
Periodic Facility Inspection	Unit 1	December 3, 2018 – March 22, 2019	Inspection results: Good
	Unit 2	From August 29, 2011 (under implementation)	
Operational Safety Inspection	1st time	May 24 – June 8, 2018	No particular safety concerns.
	2nd time	August 30 – September 14, 2018	No particular safety concerns.
	3rd time	November 26 – December 7, 2018	No particular safety concerns.
	4th time	February 25 – March 8, 2019	Inspection results being summarized.

Mihama NPS, Kansai Electric Power Company Inc.

During the following periods, Units 1 and 2 were under decommissioning procedures (during the preparation period for dismantling work). Unit 3 was shut down.

		Implementation Period	Result/Remarks
Periodic Facility Inspection	Unit 1	January 15 – April 25, 2018 From January 21, 2019 (under implementation)	Inspection results: Good
	Unit 2	January 12 – April 25, 2018 From January 22, 2019 (under implementation)	Inspection results: Good
	Unit 3	From May 14, 2011 (under implementation)	
Pre-service Inspection	Unit 3	From January 15, 2018 (under implementation)	
Operational Safety Inspection	1st time	May 28 – June 11, 2018	No particular safety concerns.
	2nd time	August 23 – September 7, 2018	No particular safety concerns.
	3rd time	November 26 – December 7, 2018	No particular safety concerns.
	4th time	March 1 – March 15, 2019	Inspection results being summarized.

Ohi NPS, Kansai Electric Power Company Inc.

Units 1 and 2 were shut down during the following periods. Unit 3 was in operation. The reactor of Unit 4 was started up on May 9, 2018.

		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	September 2, 2013 – April 10, 2018	Inspection results: Good
	Unit 4	September 15, 2013 – June 5, 2018	Inspection results: Good
Pre-service Inspection	Unit 3	September 11, 2017 – April 10, 2018	Inspection results: Pass
	Unit 4	September 14, 2017 – June 5, 2018	Inspection results: Pass
Operational Safety Inspection	1st time	May 28 – June 8, 2018	No particular safety concerns.
	Operational safety inspection for important actions for safety (Unit 3)		
		April 26 – June 27, 2018	No particular safety concerns.
		June 18 – June 21, 2018	No particular safety concerns.
	Operational safety inspection for important actions for safety (Unit 4)		
		April 6 – April 16, 2018	No particular safety concerns.
		April 11 – April 19, 2018	No particular safety concerns.
		April 26 – June 27, 2018	No particular safety concerns.
		April 10 – June 21, 2018	No particular safety concerns.
		May 1 – May 16	No particular safety concerns.
	2nd time	August 27 – September 7, 2018	No particular safety concerns.
	Operational safety inspection for important actions for safety (Units 3 and 4)		
		July 27 – September 25, 2018	No particular safety concerns.
	3rd time	November 26 – December 7, 2018	No particular safety concerns.
	Operational safety inspection for important actions for safety (Units 3 and 4)		
		October 26 – December 25, 2018	No particular safety concerns.
		November 19 – November 27, 2018	No particular safety concerns.

	4th time	February 25 – March 8, 2019	Inspection results under compilation.
	Operational safety inspection for important actions for safety (Units 3 and 4)		
		January 30 – March 28, 2019	Inspection results being summarized.
		March 13 – March 19, 2019	Inspection results being summarized.
Other	・Deviation from the limiting condition for operation occurred in Unit 3 on October 17, 2018 and the plant returned to normal condition on October 19, 2018. ・One case of violation of the operational safety program relating to partial interference with firebreak was confirmed when operational safety inspection was not being conducted.		

Takahama PS, Kansai Electric Power Company, Inc.

During the following periods, Units 1 and 2 were shut down; the reactors of Units 3 and 4 were started up on August 31, 2018 and November 7, 2018 respectively.

		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	August 3 – December 7, 2018	Inspection results: Good
	Unit 4	May 18 – September 28, 2018	Inspection results: Good
Pre-service Inspection	Unit 1	From November 14, 2016 (under implementation)	
	Unit 2	From November 14, 2016 (under implementation)	
Operational Safety Inspection	1st time	May 28 – June 8, 2018	No particular safety concerns.
	Operational safety inspection for important actions for safety (Unit 3)		
		April 27, 2018	No particular safety concerns.
		May 8 – May 15, 2018	No particular safety concerns.
	Operational safety inspection for important actions for safety (Unit 4)		
		April 27, 2018	No particular safety concerns.
		May 8 – May 15, 2018	No particular safety concerns.
		May 17 – May 21, 2018	No particular safety concerns.
		May 18 – May 28, 2018	No particular safety concerns.
		May 25 – May 30, 2018	No particular safety concerns.
	2nd time	August 27 – September 7, 2018	No particular safety concerns.
	Operational safety inspection for important actions for safety (Units 3 and 4)		
		September 26, 2018	No particular safety concerns.
	Operational safety inspection for important actions for safety (Unit 3)		
		August 2 – August 6, 2018	No particular safety concerns.
		August 3 – August 13, 2018	No particular safety concerns.
		August 10 – August 15, 2018	No particular safety concerns.
	Operational safety inspection for important actions for safety (Unit 4)		
		July 24 – July 30, 2018	No particular safety concerns.
		July 27 – August 3, 2018	No particular safety concerns.
		August 17 – September 7, 2018	No particular safety concerns.
	3rd time	November 26 – December 7, 2018	No particular safety concerns.
	Operational safety inspection for important actions for safety (Units 3 and 4)		
		October 26 – December 26, 2018	No particular safety concerns.
	Operational safety inspection for important actions for safety (Unit 3)		
		October 11 – October 16, 2018	No particular safety concerns.
		October 15 – October 22, 2018	No particular safety concerns.
		October 31 – November 13, 2018	No particular safety concerns.
	4th time	February 25 – March 8, 2019	Inspection results being summarized.
	Operational safety inspection for important actions for safety (Units 3 and 4)		
		January 28 – March 28, 2019	Inspection results being summarized.
		March 13 – March 19, 2019	Inspection results being summarized.
Other	・Deviation from the limiting condition for operation occurred in Units 3 and 4 on June 8, 2018 and the plants returned to normal condition on September 9, 2018. ・Deviation from the limiting condition for operation occurred in Unit 4 on August 19, 2018 and the plant returned to normal condition within the day.		

Shimane NPS, The Chugoku Electric Power Co., Inc.

During the following period, Unit 1 has been under decommissioning procedures (during the preparation period for demolition work), and Units 2 and 3 were shut down.

		Implementation Period	Result/Remarks
Periodic Facility Inspection	Unit 1	January 18 – May 25, 2018 From February 22, 2019 (under implementation)	Inspection results: Good
	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 28 – June 8, 2018	One case of violation of operational safety program (monitoring) is confirmed.
	2nd time	August 27 – September 7, 2018	No particular safety concerns.
	3rd time	November 26 – December 7, 2018	No particular safety concerns.
	4th time	February 25 – March 6, 2019	Inspection results being summarized.

Ikata PS, Shikoku Electric Power Co., Inc.

During the following periods, Unit 1 was under decommissioning procedures (during the preparation period for demolition work), Unit 2 was shut down, and the reactor of Unit 3 was started up on October 27, 2018.

		Implementation Period	Result/Remarks
Periodic Facility Inspection	Unit 1	March 22 – July 12, 2018	Inspection results: Good
	Unit 2	From January 13, 2012 (under implementation)	
	Unit 3	October 3, 2017 – November 28, 2018	Inspection results: Good
Operational Safety Inspection	1st time	May 24 – June 7, 2018	No particular safety concerns.
	Operational safety inspection for important actions for safety (Unit 3)		
		April 26 – June 28, 2018	No particular safety concerns.
		June 11 – June 18, 2018	No particular safety concerns.
	2nd time	August 27 – September 7, 2018	No particular safety concerns.
	Operational safety inspection for important actions for safety (Unit 3)		
		July 30 – September 27, 2018	No particular safety concerns.
	3rd time	November 26 – December 7, 2018	No particular safety concerns.
	Operational safety inspection for important actions for safety (Unit 3)		
		September 28 – October 9, 2018	No particular safety concerns.
		October 19 – November 5, 2018	No particular safety concerns.
		October 26 – December 25, 2018	One case of violation of operational safety program (monitoring) is confirmed.
		December 10 – December 17, 2018	No particular safety concerns.
	4th time	February 26 – March 8, 2019	Inspection results being summarized.
	Operational safety inspection for important actions for safety (Unit 3)		
		January 25 – March 26, 2019	Inspection results being summarized.
		February 8 – February 15, 2019	Inspection results being summarized.

Genkai NPS, Kyushu Electric Power Co., Inc.

During the following periods, Unit 1 was under decommissioning procedures (during the preparation period for demolition work), Unit 2 was shut down, and the reactors of Units 3 and 4 were started up on March 23, 2018 and June 16, 2018, respectively.

		Implementation Period	Result/Remarks
Periodic Facility Inspection	Unit 1	January 16 – May 10, 2018 From February 4, 2019 (under implementation)	Inspection results: Good
	Unit 2	From January 29, 2011 (under implementation)	
	Unit 3	December 11, 2010 – May 16, 2018	Inspection results: Good
	Unit 4	December 25, 2011 – July 19, 2018	Inspection results: Good
Pre-service Inspection	Unit 3	September 11, 2017 – May 16, 2018	Inspection results: Pass
	Unit 4	October 23, 2017 – July 19, 2019	Inspection results: Pass
Operational Safety Inspection	1st time	May 29 – June 13, 2018	No particular safety concerns.
	Operational safety inspection for important actions for safety (Unit 3)		
		March 15 – April 24, 2018	No particular safety concerns.
		May 29 – June 28, 2018	No particular safety concerns.
	Operational safety inspection for important actions for safety (Unit 4)		
		April 20 – April 26, 2018	No particular safety concerns.
		April 25 – May 28, 2018	No particular safety concerns.
		May 29 – June 28, 2018	No particular safety concerns.
		May 8 – May 16, 2018	No particular safety concerns.
	2nd time	August 23 – September 7, 2018	No particular safety concerns.
	Operational safety inspection for important actions for safety (Units 3 and 4)		
		July 31 – September 28, 2018	No particular safety concerns.
		August 20 – August 27, 2018	No particular safety concerns.
	Operational safety inspection for important actions for safety (Unit 4)		
		June 8 – July 2, 2018	No particular safety concerns.
	3rd time	November 26 – December 7, 2018	No particular safety concerns.
	Operational safety inspection for important actions for safety (Units 3 and 4)		
		October 30 – December 26, 2018	No particular safety concerns.
	Operational safety inspection for important actions for safety (Unit 3)		
		October 15 – October 24, 2018	No particular safety concerns.
	Operational safety inspection for important actions for safety (Unit 4)		
		November 16 – November 28, 2018	No particular safety concerns.
	4th time	February 25 – March 8, 2019	Inspection results being summarized.
	Operational safety inspection for important actions for safety (Units 3 and 4)		
		January 25 – March 27, 2019	Inspection results being summarized.
		March 19 – March 27, 2019	Inspection results being summarized.

Sendai NPS, Kyushu Electric Power Co., Inc.

During the following periods, the reactors of Units 1 and 2 reactors were started up on May 30, 2018 and August 29, 2018, respectively.

		Implementation Period	Result/Remarks
Periodic Facility Inspection	Unit 1	January 29 – June 29, 2018	Inspection results: Good
	Unit 2	April 23 – September 28, 2018	Inspection results: Good
Operational Safety Inspection	1st time	June 4 – June 15, 2018	No particular safety concerns.
	Operational safety inspection for important actions for safety (Unit 1)		
		May 11 – May 17, 2018	No particular safety concerns.
		May 11 – May 23, 2018	No particular safety concerns.
		May 25 – June 13, 2018	No particular safety concerns.
		April 27 – June 27, 2018	No particular safety concerns.
	Operational safety inspection for important actions for safety (Unit 2)		
		April 20 – April 25, 2018	No particular safety concerns.
		April 26 – May 2, 2018	No particular safety concerns.
		May 1 – May 9, 2018	No particular safety concerns.
		April 27 – June 27, 2018	No particular safety concerns.
	2nd time	August 27 – September 7, 2018	No particular safety concerns.
	Operational safety inspection for important actions for safety (Units 1 and 2)		
		July 25 – September 26, 2018	No particular safety concerns.
	Operational safety inspection for important actions for safety (Unit 2)		
		July 27 – August 3, 2018	No particular safety concerns.
		July 30 – August 9, 2018	No particular safety concerns.
		August 17 – September 10, 2018	No particular safety concerns.
	3rd time	November 26 – December 7, 2018	No particular safety concerns.
	Operational safety inspection for important actions for safety (Units 1 and 2)		
		October 4 – December 27, 2018	No particular safety concerns.
	4th time	February 25 – March 8, 2019	Inspection results being summarized.
	Operational safety inspection for important actions for safety (Units 1 and 2)		
		January 29 – March 29, 2019	Inspection results being summarized.
		March 13 – March 20, 2019	Inspection results being summarized.
	Operational safety inspection for important actions for safety (Unit 1)		
		January 21 – January 30, 2019	Inspection results being summarized.
	Operational safety inspection for important actions for safety (Unit 2)		
		February 18 – February 27, 2019	Inspection results being summarized.

Prototype Fast Breeder Reactor Monju, Japan Atomic Energy Agency

Under decommissioning (fuel removal)

		Implementation Period	Result/Remarks
Periodic Facility Inspection		December 15, 2018 – July 27, 2019	Inspection underway.
Operational Safety Inspection	1st time	June 7 – June 20, 2018	No particular safety concerns.
	2nd time	September 6 – September 19, 2018	No particular safety concerns.
	3rd time	November 30 – December 11, 2018	No particular safety concerns.
	4th time	March 1 – March 12, 2019	Inspection results being summarized.

Advanced Converter Reactor Fugen, Japan Atomic Energy Agency

Under decommissioning (dismantling work is in progress for the facilities outside the reactor area)

		Implementation Period	Result/Remarks
Periodic Facility Inspection		September 1 – December 28, 2018	Inspection results: Good
Operational Safety Inspection	1st time	May 14 – May 18, 2018	No particular safety concerns.
	2nd time	August 20 – August 24, 2018	No particular safety concerns.
	3rd time	November 12 – November 16, 2018	No particular safety concerns.
	4th time	February 18 – February 22, 2019	Inspection results being summarized.

* The Reactor Regulation Act stipulates to conduct the operational safety inspection four times per year. (For the nuclear power reactor facilities that get the authorization of decommissioning plan, the operational safety inspection shall be conducted four times or less per year.)

For example, “3rd time” in the table means the third operational safety inspection in FY 2018.

4. Status of Application for Review of Nuclear Fuel Facilities

Applicant	Facility	Receipt date	Review meetings (number)	On-site inspections (number)	Date of permission
Japan Nuclear Fuel Limited	Reprocessing Facility	· License modification and operational safety program change: January 7, 2014 · Design and construction methods - (Main facility, No. 1): May 31, 2018 - (Main facility, No. 2): July 13, 2018 - (Main facility, No. 3) (spent fuel reception and storage facilities (No.1)): October 5, 2018 - (Main facility, No. 4) (solid waste disposal facility (No. 1)): October 29, 2018	7	1	—
	MOX Fuel Fabrication Facility	· License modification: January 7, 2014 · Design and construction methods − (No. 1) (No. 2): November 9, 2018 − (No. 3) (No. 4): December 27, 2018	7	1	—
	Uranium Enrichment Facility	· License modification: May 14, 2013 · Operational safety program change: January 7, 2014 · Design and construction methods − (No. 1): September 7, 2018	4	—	· Approval of license modification: May 17, 2017
	Waste Management Facility	· License modification and operational safety program change: January 7, 2014 · Design and construction methods − (No. 1): May 31, 2017 − (No. 2): October 5, 2018 − (No. 3): October 29, 2018	5	1	—
	Waste Processing Facility	· License modification: August 1, 2018	7	—	—
Recyclable-Fuel Storage Company	Spent Fuel Storage Facility	· Operational safety program change: March 29, 2013 · License modification: January 15, 2014 · Design and construction methods − (No. 1): March 22, 2016	7	—	—
Mitsubishi Nuclear Fuel	Uranium Fuel Fabrication Facility	· License modification and operational safety program change: January 31, 2014 · Design and construction methods − (No. 1): November 30, 2017 − (No. 2): June 25, 2018 − (No. 3): February 20, 2019	4	—	· Approval of license modification: November 1, 2017 · Approval of design and

Applicant	Facility	Receipt date	Review meetings (number)	On-site inspections (number)	Date of permission
					construction methods − (No. 1): June 19, 2018
Japan Atomic Energy Agency (JAEA)	Waste Interim Storage Facility	· License modification: February 7, 2014 · Operational safety program change: March 14, 2014 · Design and construction methods − (No. 1): September 25, 2017 − (No. 2): February 28, 2018 − (No. 3) (No. 4) (No. 5): December 26, 2018	2	—	· Approval of license modification: August 22, 2018
	JRR-3	· Installation permit change and operational safety program change: September 26, 2014 · Design and construction methods − (No. 1): September 3, 2019 − (No. 2): September 3, 2019 − (No. 3): October 12, 2018 − (No. 4): November 1, 2018 − (No. 5): November 1, 2018 − (No. 6): November 30, 2018 − (No. 7): November 30, 2018 − (No. 8): February 5, 2019	4	—	· Permission for change in reactor installation: November 7, 2018 · Approval of methods for design and construction − (No. 3): March 14, 2019 − (No. 5): March 14, 2019
	HTTR (High-temperature engineering test reactor)	· Installation permit change and operational safety program change: November 26, 2014, October 17, 2018* · Design and construction methods − (No. 1): February 9, 2018 − (No. 2): July 11, 2018 − (No. 3): November 16, 2018 − (No. 4): March 26, 2019	9	1	—
	Radioactive Waste Treatment Facility of Nuclear Science Research Institute	· Installation permit change: February 6, 2015 · Design and construction methods − (No. 1): November 14, 2017 − (No. 2): March 12, 2018 − (No. 3): June 1, 2018 − (No. 4): August 29, 2018 − (Partial renewal of process monitors): September 18, 2018 − (No. 5): October 4, 2018 − (No. 6): November 29, 2018	2	1	· Permission for change in reactor installation: October 17, 2018 · Approval of design and construction methods − (No. 1): December 17, 2018

Applicant	Facility	Receipt date	Review meetings (number)	On-site inspections (number)	Date of permission
	JMTR (Materials Testing Reactor)	· Installation permit change and operational safety program change: March 27, 2015 (withdrawn on (December 5, 2017)	—	—	—
	NSRR (Nuclear Safety Research Reactor)	· Installation permit change: March 31, 2015 · Design and construction methods − (No. 1): July 4, 2017 − (No. 2): August 4, 2017 − (No. 3): August 24, 2017 − (No. 4): October 13, 2017 − (No. 5): December 13, 2017 − (No. 5): Modification approval application: November 29, 2018 · Operational safety program change: March 6, 2018	2	—	· Permission for change in reactor installation: January 31, 2018 · Approval of design and construction methods − (No. 1) February 20, 2018 − (No. 2) February 26, 2018 − (No. 3) February 15, 2018 − (No. 4) April 20, 2018 − (No. 5) July 10, 2018 · Approval of operational safety program change: March 22, 2018
	STACY (Static Experiment Critical Facility)	· Installation permit change: March 31, 2015 · Design and construction methods − (No. 1): August 9, 2016 − (Fuel fabrication): August 1, 2017 − (No. 2): August 10, 2017 − (Seismic retrofit of Experiment Building A): November 29, 2017 − (No. 3): March 29, 2019 (Renewal of STACY) · Operational safety program change: August 9, 2016	2	—	· Permission for change in reactor installation: January 31, 2018 · Approval of design and construction methods − (No. 1): March 29, 2018 − (Fuel rod fabrication): May 30, 2018

Applicant	Facility	Receipt date	Review meetings (number)	On-site inspections (number)	Date of permission
					− (No. 2) (Seismic retrofit of Experiment Building A): July 5, 2018 · Approval of operational safety program change: March 1, 2018
	Experimental Fast Reactor Facility	· Installation permit change and operational safety program change: March 30, 2017	7	—	—
Nuclear Fuel Industries, Ltd	Uranium Fuel Fabrication Facility (Tokai Works)	· License modification · Operational safety program change: February 14, 2014 · Design and construction methods − (No. 1) (No. 2) (No. 3): February 9, 2018	2	—	· Approval of license modification: December 20, 2017 · Approval of operational safety program change: December 3, 2018 · Approval of design and construction methods − (No.1) (No.2): May 22, 2018 − (No.3): May 28, 2018
	Uranium Fuel Fabrication Facility (Kumatori Works)	· License modification · Operational safety program change: April 18, 2014 · Design and construction methods − (No. 1): October 22, 2018	3	—	· Approval of license modification: March 28, 2018
Global Nuclear Fuel Japan	Uranium Fuel Fabrication Facility	· License modification: July 24, 2013 · Operational safety program change: April 18, 2014 · Design and construction methods − (No. 1): May 19, 2017	3	—	· Approval of license modification: April 5, 2017 · Approval of design and

Applicant	Facility	Receipt date	Review meetings (number)	On-site inspections (number)	Date of permission
					construction methods − (No. 1): January 30, 2019
Kyoto University	KUR (Kyoto University Research Reactor)	· Installation permit change and operational safety program change: September 30, 2014, October 5, 2016** · Design and construction methods − (No. 1): September 14, 2016 − (No. 2): December 27, 2016 − (No. 3): January 25, 2017 − (Lightning-protection system): February 17, 2017 − (No.4): March 31, 2017 − (No.5): June 2, 2017 − (Leakage warning system at waste treatment facility): July 7, 2017	—	—	· Approval of license modification: September 21, 2016 · Approval of operational safety program change: February 28, 2017 · Approval of design and construction methods − (No. 1): February 15, 2017 − (No. 2): February 24, 2017 − (No. 3): June 12, 2017 − (Lightning-protection system): March 30, 2017 − (No.4): June 12, 2017 − (No.5): July 14, 2017 − (Leakage warning system at waste treatment facility): July 27, 2017
	KUCA (Kyoto University Critical	· Installation permit change: September 30, 2014	1	—	· Approval of installation permit

Applicant	Facility	Receipt date	Review meetings (number)	On-site inspections (number)	Date of permission
	Assembly)	• Operational safety program change: September 30, 2014, May 27, 2016** • Design and construction methods − (No. 1): July 26, 2016 − (No. 2): December 27, 2016 − (Upgrading nuclear instrumentation cables): December 27, 2016 − (Seismic reinforcement of the number 1 solid waste storehouse): December 27, 2016 − (Lightning-protection system): February 17, 2017 − (Leakage warning system of wastewater tank): June 2, 2017			change: May 11, 2016 • Approval of operational safety program change: June 15, 2017, August 29, 2016 • Approval of design and construction methods − (No. 1): February 15, 2017 − (No. 2): April 25, 2017 − (Upgrading nuclear instrumentation cables): February 24, 2017 − (Seismic reinforcement of the number 1 solid waste storehouse): February 1, 2017 − (Lightning-protection system): April 20, 2017 − (Leakage warning system of wastewater tank): June 13, 2017

Applicant	Facility	Receipt date	Review meetings (number)	On-site inspections (number)	Date of permission
Kindai University	Kindai University Nuclear Reactor	・Installation permit change and operational safety program change: October 20, 2014 ・Design and construction methods －(No. 1): June 30, 2016 －(No. 2): August 4, 2016 －(No. 3): October 13, 2016	2	―	・Permission for change in reactor installation: May 11, 2016 ・Approval of operational safety program change: February 28, 2017 ・Approval of design and construction methods －(No. 1) (No. 2): October 13, 2016 －(No. 3): February 7, 2017
Japan Atomic Power Company	Tokai Low Level Waste Disposal Facility	・Business licensing: July 16, 2015	6	―	

・There is no facility that received designation or approval of business of refining facility or Category 1 waste disposal facility as of March 3l, 2019.

・The numbers of review meetings and on-site investigations represent the number of times held in FY2018.

・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.

* An application for changes to the operational safety program filed on November 26, 2014 was withdrawn on October 17, 2018 and re-filed on the same day.

5. Numbers of Reviews and Inspections of Nuclear Facilities

(From April 1, 2018 to March 3l, 2019)

(a) Status of the Reviews and Inspections of Commercial Power Reactors

Facility type		No. of cases
Commercial nuclear power reactors (45 facilities) (Under decommissioning procedures: 9 facilities)	Installation permit change	12
	Notification of installation permit change	29
	Approval of construction plan	26
	Approval of change to construction plan	17
	Notification of construction plan	5
	Extension of review period relating to notification of construction plan	1
	Pass in pre-service inspection	46
	Approval of fuel assembly design	2
	Pass in fuel assembly inspection	22
	Evaluation for the implementation system of the welding licensee Inspection	26
	Evaluation for regular operator inspections	3
	Completion periodic facility inspection	15
	Approval of operational safety programs or approval of changes	29
	Operational safety inspection	146
	Notification of results of evaluation for safety improvement	3
	Approval of extension of the operation period	1
	Approval of change to decommissioning plan	1
	Check of method and implementation system for determining assignment of responsible facility licensee	11
	Approval of the trial use of reactor	6
	Approval of partial use	10
	Instruction of omission of pre-service inspection	17
	Instruction for omission of fuel assembly inspection	5
	Approval of the Implementation Plan change	31
	Approval of partial use of Specified Nuclear Facilities	9
	Completion of pre-service inspection on Specified Nuclear Facilities	27
	Completion of welding inspection on Specified Nuclear Facilities	16
	Completion of welding inspection for imports of Specified Nuclear Facilities	0
	Completion of Periodic Facility Inspection on Specified Nuclear Facilities	0
	Inspection of implementation status of measures for safety defined in the Implementation Plan	4
Commercial power reactors in the research and development phase (Under decommissioning procedures: 2 facilities)	Permission for installation permit change	1
	Notification of installation permit change	1
	Completion of periodic facility inspection	1
	Approval of operational safety program or its approval of changes	3
	Operational safety inspection	8
	Approval of change to decommissioning plan	1
	Notification of minor change to decommissioning plan	2

(b) Status of Reviews and Inspections of Nuclear Fuel Facilities

Facility type		No. of cases
Fuel facility (6 facilities) (Under construction: 1 facility)	Installation permit change	0
	Approval of changes to design and construction methods	3
	Approval of methods for design and construction	2
	Pass in pre-service inspection	0
	Approval of welding method	1
	Approval of operational safety program change	5
	Operational safety inspection	24
Test nuclear reactor facility (22 facilities) (Under decommissioning procedures: 10 facilities)	Approval of Installation permit change	3
	Approval of a design and construction method or approval of changes	12
	Completion of periodic facility inspection	3
	Completion of pre-service inspection	10
	Approval of welding method	0
	Approval of operational safety program or approval of changes	6
	Operational safety inspection	38
	Approval of decommissioning plan	0
	Approval of change to decommissioning plan	4
Spent fuel interim storage facility (Under construction: 1 facility)	Pass in welding inspection	0
	Approval of welding method	0
	Type certificate or approval of change	3
	Type designation or approval of change	0
Reprocessing facility (2 facilities) (Under decommissioning procedures: 1 facility)	Approval of design and construction method	1
	Approval of modification of design and construction method	1
	Acceptance of pre-service inspection	1
	Approval of welding method	1
	Approval of decommissioning plan	1
	Approval of change to decommissioning plan	3
	Approval of operational safety program change	3
	Operational safety inspection	8
Category 2 waste disposal facilities (2 facilities)	Confirmation of waste package	10
	Approval of operational safety program change	1
	Operational safety inspection	8
Waste interim storage facility (2 facilities)	Approval of methods for design and construction	0
	Pass in welding inspection	3
	Approval of welding method	1
	Approval of operational safety programs or approval of changes	2
	Operational safety inspection	8
Facilities where nuclear fuel materials are used (11 facilities)	Approval of change of use	2
	Pass in facility inspection	12
	Approval of operational safety programs or approval of changes	17
	Operational safety inspection	44
	Approval of decommissioning plan	0
	Confirmation of decommissioning measure completion	0
Off-site disposal and transportation of nuclear fuel material, etc.	Confirmation of off-site disposal	0
	Approval of design of nuclear fuel package	16
	Approval of transport container	12
	Confirmation of off-site transportation	34
	Confirmation of radioactive concentration	1

- There is no facility that received designation or approval of business of refining facility or Category 1 waste disposal facility as of March 3l, 2019.

* Two approvals of welding method were granted for a single application for fuel manufacturing and reprocessing facilities.

6. Status of Application and Approval of Operation Period Extension

Applicant	Targeted power reactor	Receipt date	Review meeting (No. of times)	Date of approval	Date at which 40 years have elapsed after operation started
Kansai Electric Power Co., Inc.	Unit 1 of the Takahama NPS	April 30, 2015	—	June 20, 2016	July 7, 2016*1
	Unit 2 of the Takahama NPS	April 30, 2015	—	June 20, 2016	July 7, 2016*1
	Unit 3 of the Mihama NPS	November 26, 2015	—	November 16, 2016	November 30, 2016
Japan Atomic Power Company	Tokai Daini NPS	November 24, 2017	5	November 7, 2018	November 27, 2018

・ The numbers of review meetings represent the number of times held in FY2018.

*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.

7. Status of Application and Approval of Operational Safety Program 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
Hokkaido Electric Power Co., Inc.	Unit 1 of the Tomari NPS (30 years) (only maintaining cold shutdown)	June 18, 2018	1※4	—	June 22, 2019
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 Holdings, Inc.	Unit 2 of the Fukushima Daini NPS (30 years) (only maintaining cold shutdown)	July 31, 2013	—*4	January 22, 2014	February 3, 2014
	Unit 2 of the Fukushima Daini NPS (30 years) (only maintaining cold shutdown)	October 31, 2018	1※4	January 30, 2019	—※2
	Unit 3 of the Fukushima Daini NPS (30 years) (only maintaining cold shutdown)	June 20, 2014	—*4	June 10, 2015	June 21, 2015
	Unit 4 of the Fukushima Daini NPS (30 years) (only maintaining cold shutdown)	August 23, 2016	—*4	August 16, 2017	August 25, 2017
	Unit 1 of the Kashiwazaki-Kariwa NPS (30 years) (only maintaining cold shutdown)	September 16, 2014	—*4	September 14, 2015	September 18, 2015
Chubu Electric Power Co., Inc.	Unit 3 of the Hamaoka NPS (30 years) (only maintaining cold shutdown)	August 25, 2016	—*4	August 16, 2017	August 28, 2017
Kansai Electric Power	Unit 1 of the Takahama NPS	November 12, 2013	—*4	November 12, 2014	November 14, 2014

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
Co., Inc.	(40 years) (only maintaining cold shutdown)				
	Unit 3 of the Takahama NPS (30 years) preconditioned	January 15, 2014	—	November 18, 2015*3	January 17, 2015
	Unit 4 of the Takahama NPS (30 years) (operation preconditioned)	June 3, 2014	—	November 18, 2015*3	June 5, 2015
	Unit 2 of the Takahama NPS (40 years) (only maintaining cold shutdown)	November 11, 2014	—*4	April 8, 2015	November 14, 2015
Kansai Electric Power Co., Inc.	Unit 1 of the Takahama NPS (40 years) (operation preconditioned)	April 30, 2015	—	June 20, 2016	July 7, 2016*1
	Unit 2 of the Takahama NPS (40 years) (operation preconditioned)	April 30, 2015	—	June 20, 2016	July 7, 2016*1
	Unit 1 of the Mihama NPS (only maintaining cold shutdown)	September 29, 2015	—*4	November 17, 2015	—*2
	Unit 3 of the Mihama NPS (40 years) (operation preconditioned)	November 26, 2015	—	November 16, 2016	November 30, 2016
The Chugoku Electric Power Co., Inc.	Unit 1of the Shimane NPS (40 years) (only maintaining cold shutdown)	September 27, 2013	—*4	February 26, 2014	March 29, 2014
	Unit 2 of the Shimane NPS (30 years) (operation preconditioned)	February 7, 2018	4	—	February 10, 2019
Kyushu Electric Power Co., Inc.	Unit 1 of the Sendai NPS (30 years) (operation preconditioned)	December 18, 2013	—	August 5, 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) (operation preconditioned)	November 21, 2014	—	November 18, 2015	November 28, 2015
Japan Atomic Power Company	Unit 2 of the Tsuruga NPS (30 years) (only maintaining cold shutdown)	February 15, 2016	—*4	February 2, 2017	February 17, 2017
	Tokai Daini NPS (40 years) (operation preconditioned)	November 24, 2017	5	November 7, 2018	November 27, 2018

・The numbers of review meetings represent the number of times held in FY2018.

*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 reactor facilities.

*3 The review of aging management measures is implemented based on the conformity review to New Regulatory Requirements, 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 reports the results to the NRA to seek the approval. From June 11, 2015, they will be operated in accordance with the NRA Document Management Procedures (September 19, 2012) based on discussions at the NRA Commission Meeting held on June 10, 2015.

8. Status of Application and Approval of Decommissioning Plans

Type of facility	Applicant	Facility	Date of application	Date of approval
Fuel facility (1 facility)	Japan Atomic Energy Agency	Ningyo-toge Environmental Engineering Center	September 28, 2018	—
Test nuclear reactor facility (Under decommissioning procedures: 10 facilities)	Japan Atomic Energy Agency	Nuclear Science Research Institute JRR-2	May 12, 2006	November 6, 2006
		Nuclear Science Research Institute JRR-4	December 25, 2015	June 7, 2017
		Transient Experiment Critical Facility (TRACY), Nuclear Science Research Institute	March 31, 2015	June 7, 2017
		Deuterium Critical Assembly (DCA), Oarai Research and Development Institute	May 12, 2006	October 20, 2006
		First Nuclear Ship "Mutsu," Aomori Research and Development Center	March 31, 2006	October 20, 2006
	University of Tokyo	University of Tokyo Reactor (Yayoi)	June 29, 2012	August 24, 2012
	Rikkyo University	Rikkyo University Reactor	May 30, 2006	June 1, 2007
	Goto Educational Corporation	TCU Reactor, Atomic Energy Research Laboratory, Tokyo City University	May 30, 2006	June 5, 2007
	Hitachi Ozenji Center	Hitachi Training Reactor (HTR)	May 31, 2006	April 20, 2007
	Toshiba Nuclear Engineering Laboratory	Toshiba Nuclear Critical Assembly (NCA)	March 31, 2006	May 22, 2007
Commercial power reactors (Under decommissioning procedures: 7 facilities)	Japan Atomic Power Company	Tokai NPS	March 10, 2006	June 30, 2006
		Unit 1 of the Tsuruga NPS	February 12, 2016	April 19, 2017
	Chubu Electric Power Co., Inc.	Units 1 and 2 of the Hamaoka NPS	June 1, 2009	November 18, 2009
	Kyushu Electric Power Co., Inc.	Unit 1 of the Genkai NPS	December 22, 2015	April 19, 2017
	Kansai Electric Power Co., Inc.	Units 1 and 2 of the Mihama NPS	February 12, 2016	April 19, 2017
	The Chugoku Electric Power Co., Inc.	Unit 1 of the Shimane NPS	July 4, 2016	April 19, 2017
	Shikoku Electric Power Co., Inc.	Unit 1 of the Ikata NPS	December 26, 2016	June 28, 2017
Commercial power reactors in the research and development phase (Under decommissioning procedures: 2 facilities)	Japan Atomic Energy Agency	Prototype Advanced Converter Reactor	November 7, 2006	February 12, 2008
		Prototype Fast Breeder Reactor Monju	December 6, 2017	March 28, 2018
Reprocessing Facility		Reprocessing Facility, Nuclear Fuel Cycle Engineering Laboratories	June 30, 2017	June 13, 2018

9. Status of Reviews and Inspections under the Radiation Hazards Prevention Act

(From April 1, 2018 to March 3l, 2019)

Licensee	Type of permissions and notifications	Number
Permission users (Number of places: 2,283)	Permission (approval) of use	26
	Permission (approval) of change for permission of use	260
	Approval of merger or split of juridical persons	8
	Notification of termination of use, etc.	78
	On-site inspection	155
Notification users (Number of places: 510)	Notification of use	12
	Notification of change for notification of use	31
	Notification of termination of use, etc.	42
	On-site inspection	45
Notification users of approved devices with certification label (Number places: 4,872)	Notification of approved devices with certification label	862
	Notification of change concerning use of approved devices with certification label	760
	Notification of termination of use, etc.	890
	On-site inspection	0
Notification dealers (Number of places: 310)	Notification of selling business	10
	Notification of change for notification of selling business	72
	Notification of termination of use, etc.	11
	On-site inspection	37
Notification lessors (Number of places: 154)	Notification of rental business	5
	Notification of change for notification of rental business	39
	Notification of termination of use, etc.	0
	On-site inspection	13
Permission waste management licensees (Number of places: 7)	Permission of change for waste management business	1
	Notification of termination of use, etc.	0
	On-site inspection	7
Off-site transport of radioisotopes	Approval of containers to be transported	88
Registered certification bodies, etc. (Number of registered organizations: 17)	On-site inspection of registered certification bodies, registered inspection bodies, registered periodic verification bodies, registered consignment verification bodies, registered concentration verification bodies, registered testing bodies, registered qualifications training bodies, and registered periodic verification bodies	9

Reference 4: Oversight of Efforts toward the Decommissioning of Reactors at TEPCO's Fukushima Daiichi NPS (Chapter 3)

1. Approval and Inspection for Specified Nuclear Facilities (TEPCO Fukushima Daiichi NPS)

(From April 1, 2018 to March 31, 2019)

Type of Approval/Inspection	No. of cases
Approval of changes in the Implementation Plan	31
Completion of pre-service inspection	27
Approval of test use	2
Approval of partial use	9
Instruction of omission of pre-service inspection	0
Completion of welding inspection	16
Completion of welding inspection for imports	0
Completion of periodic facility inspection	0
Operational safety inspection	4

Reference 5: Information on Safety Research (Chapters 4 and 6)
1. FY2018 Safety Research

No.	Research area	Project	Period
1	External events	Improvement of earthquake hazard evaluation reliability	FY2017–2019
2		Improvement of tsunami hazard evaluation reliability	FY2017–2020
3		Methods for evaluating earthquake activity history	FY2017–2019
4		Methods for evaluating fault seismic activity using fault fracture materials	FY2013–2019
5		Collection of scientific knowledge on volcanic impact evaluation	FY2013–2018
6		Evaluation of fragility of facilities and equipment related to earthquakes, tsunamis, and other external events	FY2017–2020
7	Fire protection	Impact evaluation related to fire protection	FY2017–2020
8	Human and organizational factors	Incorporation of the latest knowledge of human and organizational aspects in safety regulation	FY2014–2018
9	Risk evaluation	Development of PRA methods and their application to regulation	FY2017–2021
10	Severe accident (LWR)	Experiments on important physicochemical phenomena under severe accident of LWR	FY2015–2019
11		Development of simulation codes for physicochemical phenomena including large uncertainties under severe accident of LWR	FY2017–2022
12		Development of analysis methodologies for the containment failure and probabilistic assessment of risks associated with accident of LWR	FY2017–2022
13		Accident progression analysis for severe accident sequence groups	FY2017–2019
14	Nuclear and thermal-hydraulic characteristics	Development of domestic system analysis codes	FY2012–2018
15		Experimental study on thermal-hydraulic evaluation of accidents	FY2012–2018
16	Nuclear fuel	Study on fuel integrity for advanced regulation	FY2007–2021
17		Study on fuel safety under accident conditions for advanced regulation	FY2006–2018
18	Materials and structures (including aging degradation)	Integrity evaluation of materials irradiated in LWRs	FY2006–2019
19		Evaluation of ultimate strength of containment at the time of major accidents	FY2017–2021
20		Evaluation of long-term integrity of polymeric materials used in electric and instrumentation systems	FY2017–2019
21	Specified Nuclear Facilities	Development of methods for evaluating debris criticality in Fukushima Daiichi NPS units	FY2014–2021
22	Fuel cycle facilities	Advanced risk assessment methods for fuel manufacturing and reprocessing facilities	FY2017–2020
23	Radioactive waste disposal facilities	Methods for investigating long-term natural events that can have impacts on waste disposal and methods for evaluating long-term changes of barrier characteristics	FY2017–2020
24	Decommissioning and clearance	Technologies used for evaluation of radioactivity concentration in radioactive waste	FY2017–2020
25	Nuclear emergency response	Use of risk information for emergency action level (EAL)	FY2017–2019
26	Nuclear emergency response, radiation control and regulation	“Strategic Program for Promoting Regulatory Radiation Safety Research”	FY2017–

Reference 6:
Enhancement of Nuclear Security (Chapter 5)

1. Approval and Inspection for Physical Protection Programs

(From April 1, 2018 to March 3l, 2019)

Approvals of changes of the Physical Protection Program	91 (breakdown) Fabricating and Enrichment Facility: 3 Research and Test Reactor: 7 Commercial Power Reactor: 61 Power Reactor in a Research and Development Phase: 0 Spent Fuel Storage Facility: 0 Spent Fuel Reprocessing Facility: 3 Radioactive Waste Storage Facility: 2 Nuclear Fuel Materials Using Facility: 11 Specified Nuclear Facility: 4
Inspection of compliance with the Physical Protection Program	56 (breakdown) Fabricating and Enrichment Facility: 7 Research and Test Reactor: 7 Commercial Power Reactor: 17 Power Reactor in a Research and Development Phase: 2 Spent Fuel Storage Facility: 1 Spent Fuel Reprocessing Facility: 2 Radioactive Waste Storage Facility: 2 Nuclear Fuel Materials Using Facility: 17 Specified Nuclear Facility: 1

Reference 7:
Activities of Committees, Councils, Review Meetings, Study Teams, etc.

(Meeting records are as of the end of FY2018)

1. Committees and Councils
   (1) Reactor Safety Examination Committee
   (2) Nuclear Fuel Safety Examination Committee
   (3) Joint Review Meetings of Reactor Safety Examination Committee and Nuclear Fuel Safety Examination Committee
   (4) Radiation Council
   (5) National Research and Development Agency Council

2. Review Meetings
   (1) Review Meeting on Conformity to the New Regulatory Requirements
   (2) Review Meeting on Decommissioning of Nuclear Facilities

3. Study Teams
   (1) Study Team on the Regulation of Radioactive Waste in Decommissioning
   (2) Technical Study Team on Environmental Radiation Monitoring
   (3) Study Team on Technical Evaluation of Fitness-for-Service Standards
   (4) Study Team on Human and Organizational Factors for Nuclear Regulation
   (5) Safety Oversight Team for Tokai Reprocessing Plant and Other Facilities
   (6) Safety Oversight Team for Prototype Fast Breeder Reactor Monju Decommission
   (7) Study Team on Oversight Program
   (8) Study Team on Evaluation of Ground Motions without Identification of Seismic Sources
   (9) Study Team on Administration of Stable Iodine

4. Committees with Specific Themes
   (1) Commission on Supervision and Evaluation of the Specified Nuclear Facilities
   (2) Committee on Radioactive Waste Issues for the Specified Nuclear Facilities
   (3) Technical Information Committee
   (4) Technical Evaluation Committees

5. Other Meetings
   (1) NRA Policy Review Meeting
   (2) Expert Meeting on NRA's Administrative Project Review – FY2018
   (3) Meeting on Hearing Opinions of Licensees Concerning New Regulatory Requirements
   (4) Research Promotion Committee, Research Evaluation Committee, Debriefing Session of Research Results
   (5) Working Level Exchange of Technical Views
   (6) Debriefing Session of Emergency Drills by Nuclear Operators

1. Committees and Councils

(1) Reactor Safety Examination Committee

Overview

The Reactor Safety Examination Committee (RSEC) is a committee that was established to investigate and deliberate matters related to reactor safety at the request of the NRA Commission in accordance with the Act for Establishment of the Nuclear Regulation Authority. Taking account of the additional resolution by the House of Councilors to the Act for Establishment of the Nuclear Regulation Authority, the RSEC's investigation and deliberation are intended to provide objective advice on the NRA Commission's decisions, not to substitute for these decisions. The RSEC is also expected to confirm the effectiveness of the regulatory activities by the NRA and advise on these activities from a scientific and technical viewpoint considering the NRA's status as a third party.

Currently, the RSEC has five matters for investigation and deliberation delegated by the NRA Commission. The RSEC has established the Subcommittee on Volcano Monitoring that addresses matters related to volcanic activities, and the Subcommittee on Reactor Safety Fundamentals that addresses matters other than those addressed by the Subcommittee on Volcano Monitoring.

At the NRA Commission Meeting on February 5, 2014, the NRA approved the proposal for establishing the RSEC in accordance with the Act for Establishment of the Nuclear Regulation Authority. Following this, the RSEC held its first meeting on May 12, 2014 and has held meetings regularly since then.

In FY2018, the RSEC held two meetings, the Subcommittee on Reactor Safety Fundamentals held one meeting, and the Subcommittee on Volcano Monitoring held three meetings. As a major activity, the RSEC developed a report to the NRA Commission, "Comparative Evaluation between Safety Goals being pursued by the NRA and Safety Level to be attained through Conformity to New Regulatory Requirements (an Approach to Clear Explanation to the Public)," on April 5, 2018. This was reported to the NRA Commission by the RSEC Chairperson at the 8th Extraordinary NRA Commission Meeting held on May 9, 2018.

Members of the Committee

Examination commissioners	Mayuki Uchiyama	Professor, Department of Radiology, the Jikei University School of Medicine
	Hiroyuki Oigawa	Director, R&D Program Management Department, Director, Office of Strategic Planning, Japan Atomic Energy Agency
	Tadahiro Katsuta	Associate Professor, School of Law, Meiji University
	Reiko Kanda	Director, Center for Radiation Protection Knowledge, National Institute of Radiological Sciences, National Institutes for Quantum and Radiological Science and Technology
	Tetsuo Kobayashi	Professor emeritus, Kagoshima University
	Naoto Sekimura ◎	Vice President and Professor, School of Engineering, the University of Tokyo
	Tsuyoshi Takada	Professor, School of Engineering, the University of Tokyo
	Makoto Takahashi	Professor, Technology and Social Systems, Graduate School of Engineering, Tohoku University
	Yasuyoshi Nagai	Professor, Metal Materials Research Laboratory, Tohoku University Head of the affiliated International Research Center for Nuclear Materials Science

	Toshiko Nakagawa	Professor, Faculty of Engineering, Tokyo City University
	Ken Nakajima	Professor, Kyoto University Research Reactor Institute
	Takehiko Nakamura	Director of Nuclear Safety Research Center, Sector of Nuclear Safety Research and Emergency Preparedness, Japan Atomic Energy Agency (JAEA)
	Akemi Nishida	Assistant Principal Staff, Structural Integrity Research Group, Materials and Structural Integrity Research Division, Nuclear Safety Research Center, Sector of Nuclear Safety Research and Emergency Preparedness, Japan Atomic Energy Agency (JAEA)
	Shinya Hohara	Associate Professor, Atomic Energy Research Institute, Kindai University
	Akiko Matsuo	Professor, Faculty of Science and Technology, Keio University
	Yu Maruyama	Director, Risk Analysis and Applications Research Division, Nuclear Safety Research Center, Sector of Nuclear Safety Research and Emergency Preparedness, Japan Atomic Energy Agency (JAEA)
	Makoto Murakami	Professor, Institute of Seismology and Volcanology, Faculty of Science, Hokkaido University
	Ken Muramatsu	Affiliate Professor, Faculty of Engineering, Tokyo City University
	Hiroko Yoshida	Associate Professor, Radioisotope Research and Education Center, Graduate School of Pharmacy, Tohoku University
	Sachiko Yoshihashi	Associate Professor, Nuclear Fuel Management Facility, Nagoya University Associate Professor, Quantum Energy Engineering, Department of Material Science and Technology, Graduate School of Engineering, Nagoya University
	Yuko Yoneoka	Executive Director, Japan Accreditation Board Director-General, Accreditation Center
Temporary commissioners	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 commissioner	Hiroshi Shinohara	Prime Senior Researcher, Research Institute of Earthquake and Volcano Geology, Geological Survey of Japan, National Institute of Advanced Industrial Science and Technology
	Takakazu Tanada	Manager, Principal Chief Researcher of the Volcano Disaster Resilience Research Division, National Research Institute for Earth Science and Disaster Resilience

*Double circle (◎) indicates the Chairperson.

Members of the Subcommittee on Reactor Safety Fundamentals

Examination commissioners	Makoto Murakami	Professor, Institute of Seismology and Volcanology, Faculty of Science, Hokkaido University
	Ken Muramatsu	Affiliate Professor, Faculty of Engineering, Tokyo City University
	Akio Yamamoto	Professor, Graduate School of Engineering, Nagoya University
	Hiroko Yoshida	Lecturer, Radioisotope Research and Education Center, Graduate School of Pharmacy, Tohoku University
	Sachiko Yoshihashi	Associate Professor, Nuclear Fuel Management Facility, Nagoya University Associate Professor, Quantum Energy Engineering, Department of Material Science and Technology, Graduate School of Engineering, Nagoya University
	Yuko Yoneoka	Executive Director, Japan Accreditation Board Director-General, Accreditation Center
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
	Takeshi Iimoto	Associate Professor, Division for Environment, Health and Safety, the University of Tokyo
	Tatsuya Itoi	Associate Professor, Graduate School of Engineering, the University of Tokyo
	Reiko Kanda	Director, Center for Radiation Protection Knowledge, National Institute of Radiological Sciences, National Institutes for Quantum and Radiological Science and Technology
	Hiroshi Shinohara	Prime Senior Researcher, Research Institute of Earthquake and Volcano Geology, Geological Survey of Japan, National Institute of Advanced Industrial Science and Technology
	Takakazu Tanada	Manager, Principal Chief Researcher of the Volcano Disaster Resilience Research Division, National Research Institute for Earth Science and Disaster Resilience
	Shinya Hohara	Associate Professor, Atomic Energy Research Institute, Kindai University

*Double circle (◎) indicates the Chairperson.

Members of the Subcommittee on Volcano Monitoring

Examiner	Tetsuo Kobayashi	Professor emeritus, Kagoshima University
	Makoto Murakami	Specially appointed professor, Institute of Seismology and Volcanology, Faculty of Science, Hokkaido University
Temporary examiner	Takahiro Okura	Professor, Aso Volcanological Laboratory, Institute for Geothermal Sciences, Kyoto University
	Hiroki Miyamachi	Professor, Department of Earth and Environmental Sciences, Graduate School of Science and Engineering, Kagoshima University
Expert examiner	Hiroshi Shinohara	Prime Senior Researcher, Research Institute of Earthquake and Volcano Geology, Geological Survey of Japan, National Institute of Advanced Industrial Science and Technology
	Takakazu Tanada	Manager, Principal Chief Researcher of the Volcano Disaster Resilience Research Division, National Research Institute for Earth Science and Disaster Resilience

(2) Nuclear Fuel Safety Examination Committee

Overview

The Nuclear Fuel Safety Examination Committee (NFSEC) is a committee that was established to investigate and deliberate matters related to nuclear fuel safety at the request of the NRA Commission in accordance with the Act for Establishment of the Nuclear Regulation Authority. Taking account of the additional resolution by the House of Councilors to the Act for Establishment of the Nuclear Regulation Authority, the NFSEC's investigation and deliberation are intended to provide objective advice on the NRA Commission's decisions, not to substitute for these decisions. The NFSEC is also expected to confirm the effectiveness of the regulatory activities by the NRA and advise on these from a scientific and technical viewpoint considering the NRA's status as a third party.

The NFSEC currently has the matters for investigation and deliberation delegated by the NRA Commission as listed in (3) below.

At the NRA Commission Meeting on February 5, 2014, the NRA approved the proposal for establishing the NFSEC in accordance with the Act for Establishment of the Nuclear Regulation Authority. Following this, the NFSEC held its first deliberation meeting on May 12, 2014 and has held meetings regularly since then.

In FY2018, the NFSEC had three meetings, the Subcommittee on Reactor Safety Fundamentals had one meeting, and the Subcommittee on Volcano Monitoring had three meetings. As a major activity, the NFSEC developed a report to the NRA Commission, "Comparative Evaluation between Safety Goals being pursued by the NRA and Safety Level to be attained through Conformity to New Regulatory Requirements (an Approach to Clear Explanation to the Public)," on April 5, 2018. This was reported to the NRA Commission by the NFSEC Chairman at the 8th Extraordinary NRA Commission Meeting held on May 9, 2018.

Members of the Committee

Examination commissioners	Hironobu Unesaki	Professor, Kyoto University Research Reactor Institute
	Yoichi Enokida	Professor, Graduate School of Engineering, Nagoya University
	Tadahiro Katsuta	Associate Professor, School of Law, Meiji University
	Akira Kirishima	Associate Professor, Institute of Multidisciplinary Research for Advanced Materials, Tohoku University
	Ken Kurosaki	Associate Professor, Graduate School of Engineering, Osaka University
	Kayo Sawada	Assistant Professor, Institute of Materials and Systems for Sustainability, Nagoya University
	Minako Sumi	Vice Director, Radiation Oncology Department, Cancer Institute Hospital of JFCR
	Ikuji Takagi	Professor, Graduate School of Engineering, Kyoto University
	Tsuyoshi Takada	Professor, School of Engineering, the University of Tokyo
	Takehiko Nakamura	Director of Nuclear Safety Research Center, Sector of Nuclear Safety Research and Emergency Preparedness, Japan Atomic Energy Agency (JAEA)
	Akiko Matsuo	Professor, Faculty of Science and Technology, Keio University
	Akio Yamamoto ◎	Professor, Graduate School of Engineering, Nagoya University
	Hiroko Yoshida	Associate Professor, Graduate School of Pharmacy, Tohoku University
	Sachiko Yoshihashi	Associate Professor, Nuclear Fuel Management Facility, Nagoya University

*Double circle (◎) indicates the Chairperson.

(3) Joint Review Meetings of Reactor Safety Examination Committee and Nuclear Fuel Safety Examination Committee

RSEC No.	NFSEC No.	Date	Topics
18th joint	20th joint	July 3, 2018	・Appointment of the chairperson of the RSEC ・Appointment of the chairperson of the NFSEC ・Activities of the Subcommittee on Reactor Safety Fundamentals ・Status of screening and technical information to be addressed ・Progress reform of inspection system
19th joint	21st joint	November 1, 2018	・Activities of the Subcommittee on Volcano Monitoring ・Responses to items pointed out by IRRS mission ・Regulator's organizational arrangements for oversight and evaluation (human resource development for inspectors, mechanism of qualification, etc.) ・Status of screening and technical information to be addressed, etc.
4th joint meeting with (Subcommittee on Reactor Safety Fundamentals)	22nd joint	March 15, 2019	・Progress reform of inspection system ・Regulator's organizational arrangements for oversight and evaluation in view of reform of inspection system (human resource development for inspectors, mechanism of qualification, etc.) ・Responses to items pointed out by IRRS mission ・Status of screening and technical information to be addressed, etc.

Meetings of Subcommittee of Volcano Monitoring

No.	Date	Topics
3	Apr 13, 2018	・Judging guidance to stop reactor operation that is developed by the NRA, etc.
4	Aug 10, 2018	・NRA's evaluation of the results of volcano monitoring conducted by power reactor licensees ・Judging guidance to stop reactor operation that is developed by the NRA, etc.
5	Mar 22, 2019	・Judging guidance to stop reactor operation that is developed by the NRA, etc. ・Research to accumulate knowledge on large-scale volcanic eruptions, etc.

Investigation and deliberation delegated by the NRA Commission to the Reactor Safety Examination Committee and Nuclear Fuel Safety Examination Committee

・Collection and analysis of worldwide accident and problem information and information on regulatory trends, deliberation on the necessity for the NRA's actions to address the information, and reporting of the results to the Commission including advice. [Instruction Request to RSEC/NFSEC in February 2014]
・Deliberation on the NRA's evaluation of the results of volcano monitoring conducted by NPP licensees and judging guidance to stop reactor operation that is developed by the NRA.

[Request Instruction to RSEC in December 2015**]**
・Evaluation of and advice on the NRA's responses to the improvement items pointed out by the IRRS (Integrated Regulatory Review Service) Mission in January 2016. **[**Request Instruction to RSEC/ NFSEC in March 2016**]**
・Deliberation on expected specific regulatory oversight, evaluation and administrative actions, including use of risk information and experience in safety ensuring, and expected regulator's organizational arrangements for oversight and evaluation (human resource development for inspectors, mechanism of qualification, etc.), towards operation of new oversight and evaluation systems in line with the review of inspection system, and reporting of the results including advice. **[**Request Instruction to RSEC/NFSEC in February 2017**]**
・Deliberation of "Comparative Evaluation between Safety Goals being pursued by the NRA and Safety Level to be attained through Conformity to New Regulatory Requirements (an Approach to Clear Explanation to the Public)" and reporting of the results including advice. **[**Request Instructions to RSEC/NFSEC in February 2017**]**

(4) Radiation Council

Overview

In FY2018, general meetings of the Radiation Council were held 4 times. The Council formulated the "The report on the lessons about the technical standards for prevention of radiation hazards in emergency exposure situations and existing exposure situations after the TEPCO Fukushima Daiichi Nuclear Power Plant accident." The Council deliberated the necessary matters for incorporating the 2007 Recommendations of ICRP into domestic regulation.

Members of the Radiation Council

Commissioners	Yoshitomo Uwamino	Contract Researcher, RIKEN Nishina Center for Accelerator-Based Science
	Kazuko Ohno	Professor, Department of Radiological Technology Faculty of Medical Science, Kyoto College of Medical Science
	Keiji Oda	Executive Vice President, Kobe University and Professor, Kobe University Graduate School of Maritime Sciences
	Michiaki Kai	Professor, Human Biology Division, Department of Health Sciences, Oita University of Nursing and Health Sciences
	Kenji Kamiya ◎	Vice President (Reconstruction Support/Radiation Medicine), Hiroshima University and Vice President, Fukushima Medical University
	Kumiko Karasawa	Professor, Radiation Oncology Department, School of Medicine, Tokyo Women's Medical University
	Reiko Kanda	Director, Center for Radiation Protection Knowledge, National Institute of Radiological Sciences, National Institutes for Quantum and Radiological Science and Technology
	Atsuo Kishimoto	Professor, Ethical, Legal and Social Issues Core, Osaka University Institute for Datability Science
	Chie Takada	Radiation Dosimetry and Instrumentation Section, Radiation Protection Department, Nuclear Fuel Cycle Engineering Laboratories, Sector of Nuclear Fuel, Decommissioning and Waste Management Technology Development, Japan Atomic Energy Agency
	Shoji Futatsugawa ○	Executive Director, Japan Radioisotope Association
	Naoki Matsuda	Professor, Atomic Bomb Disease Institute, Nagasaki University
	Sumi Yokoyama	Associate Professor, School of Health Sciences, Fujita Health University
	Hiroko Yoshida	Associate Professor, Radioisotope Research and Education Center, Graduate School of Pharmacy, Tohoku University

*Double circle (◎) indicates the chairperson, and circle (○) indicates the deputy to the chairperson.

Meetings of the Radiation Council

No.	Date	Topics
141	June 22, 2018	・Appointment of Chairperson and Vice Chairperson ・Status of discussion at the “Committee on Adequate Management of Medical Radiation” ・Procedure to introduce 2007 ICRP Recommendations into domestic regulation ・Follow-up of the radiation protection requirements developed in connection with TEPCO’s Fukushima Daiichi NPD accident ・Recent activities of ICRP, etc.
142	September 28, 2018	・Status of discussions in relevant ministries and agencies on the “Approach to Radiation Protection of the Lens of the Eye” (recommended views) ・Follow-up of the radiation protection requirements developed in connection with TEPCO’s Fukushima Daiichi NPD accident, etc.
143	January 25, 2019	・Follow-up of the radiation protection requirements developed in connection with TEPCO’s Fukushima Daiichi NPD accident ・International trends in technical standards for prevention of radiation hazards, etc.
144	March 15, 2019	・Status of discussions in relevant administrative agencies on the “Approach to Radiation Protection of the Lens of the Eye” (recommended views) (reporting) ・Introduction of 2007 ICRP Recommendations (dose limits for female radiation workers), etc.

(5) National Research and Development Agency Council

Overview

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

In FY2018, sub-committee meetings of the National Institutes for Quantum and Radiological Science and Technology were held 3 times to hear opinions including performance evaluation of the National Institutes for Quantum and Radiological Science and Technology and proposed modifications of medium- to long-term targets and evaluation axes.

In addition, meetings of the sub-committee of JAEA were held 3 times to hear opinions including performance evaluation for JAEA.

Members of the National Research and Development Agency Council

Commissioners	Michiaki Kai○	Professor, Environmental Health Science, Human Biology Division, Oita University of Nursing and Health Science
	Kenji Kamiya	Vice President, Hiroshima University Director of Radiation Emergency Medicine Promotion Center
	Seiichi Koshizuka ◎	Professor, School of Engineering, the University of Tokyo
	Hirokuni Yamanishi	Professor, Atomic Energy Research Institute, Kinki University
	Akio Yamamoto	Professor, Graduate School of Engineering, Nagoya University
	Yuko Hirose	Executive Producer, Editorial Office, BS Nippon Corporation

*Double circle (◎) indicates the chairperson, and circle (○) indicates the deputy to the chairperson.

Members of Subcommittees

Subcommittee of the National Institute for Quantum and Radiological Science and Technology

Commissioners	Michiaki Kai	Professor, Environmental Health Science, Human Biology Division, Oita University of Nursing and Health Science
	Kenji Kamiya	Vice President, Hiroshima University Director of Radiation Emergency Medicine Promotion Center
	Hirokuni Yamanishi	Professor, Atomic Energy Research Institute, Kinki University

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 Hirose	Executive Producer, Editorial Office, BS Nippon Corporation

Meetings of Subcommittees

Subcommittee of the National Institute for Quantum and Radiological Science and Technology

No.	Date	Topics
5	July 9, 2018	・Implementation policy for FY2017 performance evaluation of the National Institutes for Quantum and Radiological Science and Technology ・FY2017 performance evaluation of the National Institutes for Quantum and Radiological Science and Technology (Hearing from the National Institutes for Quantum and Radiological Science and Technology)
6	July 20, 2018	・FY2017 performance evaluation of the National Institutes for Quantum and Radiological Science and Technology (summarization of opinions), etc.
7	February 19, 2019	・Change of National Institutes for Quantum and Radiological Science and Technology medium- and long-term goals and evaluation axes * Document-based deliberation during February 19 to 21, 2019

The Subcommittee of Japan Atomic Energy Agency

No.	Date	Topics
7	July 20, 2018	・FY2017 performance ・Other matters
8	August 06, 2018	・Summarization of opinions for FY2017 performance
9	December 13, 2018	・Proposal for change of JAEA medium- and long-term goals

2. Review Meetings

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

Overview

Applications for change 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 the Secretariat of the NRA in addition to the commissioner of the NRA. The team held 129 review meetings on the NPSs, and 38 meetings on the nuclear fuel facilities in FY2018. They also held 4 review meetings in FY2018 on applications from licensees for operational safety program change concerning plant life management.

Members of Review Meeting

Review Meeting on Conformity to the New Regulatory Requirements for Nuclear Power Plants

NRA Commissioners	Toyoshi Fuketa	NRA Chairman (Attended until the 500th meeting as NRA Commissioner)
	Akira Ishiwatari	NRA Commissioner
	Shinsuke Yamanaka	NRA Commissioner (Attended from the 513th meeting)
Secretariat of the NRA	Michio Sakurada	Deputy Secretary-General for Technical Affairs (Chief Engineering Officer)
	Tomoho Yamada	Director-General, Nuclear Regulation Department
	Hiroshi Yamagata	Director General for Emergency Response
	Tatsuya Taguchi	Director for Nuclear Regulation (Review of Power Reactors) (Attended from the 672nd meeting)
	Yuji Ono	Director for Nuclear Regulation (Review of Power Reactors) (Attended until the 671st meeting)
	Kaoru Oasada	Director for Nuclear Regulation (Earthquake and Tsunami)
	Hiroyuki Naito	Director for Safety Regulation
	Shoji Takeyama	Director for Safety Regulation
	Akihiro Fujimori	Director for Safety Regulation (Attended from the 662nd meeting)
	Takumi Koyamada	Director for Safety Regulation (Attended until the 661st meeting)
	Takumi Samukawa	Director for Safety Regulation
	Keiichi Watanabe	Director for Safety Regulation (Attended from the 610th meeting)
	Junichi Iwata	Director for Safety Regulation (Attended from the 598th meeting)
	Hiromitsu Yoneyama	Director for Safety Regulation (Attended until the 576th meeting)
	Kenji Kawasaki	Director for Safety Regulation
	Michio Yamaguchi	Director for Safety Regulation
	Naoki Amano	Director for Safety Regulation
	Yasuhiro Kawashita	Senior Deputy Director for Planning and Examination
	Masaaki Ikeda	Director general for Technical Research and Examination

Review Meeting on Conformity to the New Regulatory Requirements for Nuclear Fuel Facilities

NRA Commissioners	Satoru Tanaka	NRA Commissioner
	Akira Ishiwatari	NRA Commissioner
Secretariat of the NRA	Tomoho Yamada	Director-General, Nuclear Regulation Department
	Masahiro Aoki	Director-General
	Hiroshi Kataoka	Director-General
	Yuji Ono	Director for Nuclear Regulation for Research Reactors
	Kazuya Aoki	Director for Nuclear Regulation for Nuclear Fuel Facilities
	Shinji Kinjo	Director, Division of Oversight of Nuclear Fuel Related Facilities and Research Reactors
	Katsunobu Aoyama	Nuclear Regulation Research Officer
	Kaoru Oasada	Director for Nuclear Regulation (Earthquake and Tsunami)
	Tomoki Shibutani	Director for Safety Regulation
	Akihiko Ogawa	Director for Safety Regulation
	Yutaka Miyawaki	Nuclear Regulation Research Officer
	Kiyomitu Hasegawa	Director for Safety Regulation
	Takumi Koyamada	Director for Safety Regulation
	Hiroyuki Naito	Director for Safety Regulation
	Yasushi Togasaki	Senior Deputy Director for Planning and Examination
	Yukio Hosono	Senior Deputy Director for Planning and Examination

Review Meeting on Technical Evaluation of Aging Management of Nuclear Power Plants

Secretariat of the NRA	Tomoho Yamada	Director-General, Nuclear Regulation Department
	Tatsuya Taguchi	Director for Nuclear Regulation (Review of Power Reactors)
	Masaaki Ikeda	Director general for Technical Research and Examination
	Naoki Amano	Deputy Director for Safety Management Examination
	Akihiro Fujimori	Nuclear Regulation Research Officer

(2) Review Meeting on Decommissioning of Nuclear Facilities

Overview

The Review Meeting on Decommissioning of Nuclear Facilities is held with an NRA Commissioner and NRA Secretariat staff to deliberate decommissioning plans of nuclear facilities. In FY2018, this Review Meeting was held three times for nuclear power plants and once for a nuclear fuel facility.

Members of Review Meeting on Decommissioning of Nuclear Facilities

Review Meeting on Decommissioning Plan for Nuclear Power Reactor Facilities

NRA Commissioner	Satoru Tanaka	NRA Commissioner
Secretariat of the NRA	Tomoho Yamada	Director-General, Nuclear Regulation Department
	Yuji Ono	Director for Nuclear Regulation (for Research Reactors), Director for Nuclear Regulation (for BWR) (Attended until the 2nd meeting)
	Tatsuya Taguchi	Director for Nuclear Regulation (Review of Power Reactors) (Attended from the 3rd meeting)
	Takumi Koyamada	Director for Safety Regulation (Attended the 1st meeting)
	Akihiro Fujimori	Nuclear Regulation Research Officer (Attended from the 2nd meeting)

3. Study Teams

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

Overview

The study team consisting of the Commissioner Satoru Tanaka and external experts was established in FY2014 for preparation of regulation and standards concerning radioactive waste generated during decommissioning of reactors. Three meetings were held in FY2018.

Members of the Study Team on the Regulation of Radioactive Waste in Decommissioning

NRA Commissioners	Satoru Tanaka	NRA Commissioner
	Nobuhiko Ban	NRA Commissioner (Attended the 30th and 31st meetings)
External experts	Takeshi Iimoto	Professor, Division for Environment, Health and Safety, the University of Tokyo
	Tetsuo Iguchi	Professor, Graduate School of Engineering, Nagoya University
	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 Institutes for Quantum and Radiological Science and Technology	Isao Kawaguchi	Chief Researcher, Center for Radiation Protection Knowledge, National Institute of Radiological Sciences
Japan Atomic Energy Agency	Tetsuji Yamaguchi	Director, Safety Research Center Environment Safety Research Division
	Seiji Takeda	Director, Safety Research Center, Environment Safety Research Unit, Environmental Impact Evaluation Research Division
	Toshikatsu Maeda	Director, Safety Research Center Radioactive Waste Safety Research Group Environmental Impact Evaluation Research Division
Secretariat of the NRA	Masahiro Aoki	Director-General
	Hiroshi Tsujihara	Director, Regulatory Standard and Research Division
	Kazuya Aoki	Director for Nuclear Regulation for Nuclear Fuel Facilities
	Takashi Mukai	Director, Division of Research for Nuclear Fuel Cycle and Radioactive Waste
	Tomoki Shibutani	Director for Policy Planning and Coordination, Regulatory Standard and Research Division
	Norikazu Yamada	Chief Officer for Technical Research and Examination, (Waste Disposal, Decommissioning)
	Norikazu Yamada	Chief Officer for Technical Research and Examination, (Waste Disposal, Decommissioning)

(2) Technical Study Team on Environmental Radiation Monitoring

Overview

In order to conduct radiation monitoring appropriately during emergencies and during normal times, it is important to endeavor constantly to develop the technological bases of monitoring, review methods, and maintain skills needed for monitoring. Three meetings of this study team, which consists of Commissioner Nobuhiko Ban and external experts, were held in FY2018 in order to continuously examine technical matters on monitoring. (For more details, see Section 1-4 of Chapter 6.)

Members of the Technical Study Team on Environmental Radiation Monitoring

NRA Commissioner	Nobuhiko Ban	NRA Commissioner
External experts	Tatsuo Aono	Team Leader, Environmental Radiation Dynamics Research Team, Fukushima Project Headquarters, National Institute of Radiological Sciences, National Institutes for Quantum and Radiological Science and Technology
	Takeshi Iimoto	Professor, the University of Tokyo
	Tomoyuki Takahashi	Associate professor, Kyoto University
	Keiko Tagami	Team Leader, Environmental Transfer Parameter Research Team, Fukushima Project Headquarters, National Institute of Radiological Sciences, National Institutes for Quantum and Radiological Science and Technology
	Minoru Takeishi	Analytical Technology Development Advisor, Fukushima Environmental Safety Center, Sector of Fukushima Research and Development, Japan Atomic Energy Agency
	Takumaro Momose	Deputy Director-General, Nuclear Fuel Cycle Engineering Laboratories, Japan Atomic Energy Agency
	Hiromi Yamazawa	Professor, Nagoya University
	Hitoshi Takegahara	Director, Aomori Prefectural Nuclear Power Safety Center
Secretariat of the NRA	Hiromu Katayama	Director-General for Radiation Protection Strategy and Security
	Shoji Takeyama	Director, Radiation Monitoring Division
	Yuji Okonogi	Director for Institutional, Radiation Monitoring Division
	Keizo Negi	General Manager, Environmental Radioactivity Office
	Gyo Sato	Director, Radiation Protection Policy Planning Division

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

Overview

The study team consisting of the Commissioner Satoru Tanaka and external experts was organized to examine technical evaluations of "Codes for Nuclear Power Generation Facilities – Rules on Fitness-for-Service for Nuclear Power Plants" 2012 edition and Supplements of the 2013 and 2014 editions, and relevant standards. Six meetings of this study team have been held in total so far. In FY2017, the study team investigated measures taken in other countries for issues identified by the team.

Members of The Study Team on Technical Evaluation of Fitness-for-Service Standards

NRA Commissioner	Satoru Tanaka	NRA Commissioner
External experts	Yoshio Arai	Professor, Graduate School of Science and Engineering, Saitama University
	Masahide Suzuki	Specially Appointed Professor, Nuclear System Safety Engineering, Graduate School, Nagaoka University of Technology
	Toshiyuki Takagi	Professor, Institute of Fluid Science, Tohoku University
	Yuichi Tsuji	Professor, Department of Electronic Engineering, School of Engineering, Tokyo Denki University
	Takashi Furukawa	Deputy Director, Nondestructive Evaluation Center, Japan Power Engineering and Inspection Corporation
Japan Atomic Energy Agency	Hirotaka Nishiyama	Director for Structural Integrity Research Group, Materials and Structural Integrity Research Division, Nuclear Safety Research Center
	Jinya Katsuyama	Structural Integrity Research Group, Materials and Structural Integrity Research Division, Nuclear Safety Research Center Assistant Principal Staff, Structural Integrity Research Group
Secretariat of the NRA	Michio Sakurada	Director of Regulatory Standard and Research Department
	Hiroshi Tsujihara	Director of Regulatory Standard and Research Division
	Masayuki Haginuma	Director for Policy Planning and Coordination, Regulatory Standard and Research Division

(4) Study Team on Human and Organizational Factors for Nuclear Regulation

Overview

The study team consisting of the Commissioner Ban and external experts was established in FY2017 for preparation of NRA guidelines for assessing and inspecting licensees' efforts to enhance safety culture and NRA guidelines for reviewing and investigating licensees' analysis on causes of non-conformity. The study team has held a total of 7 meetings, with 5 in FY2017 and 2 in FY2018.

Members of the Study Team on Human and Organizational Factors for Nuclear Regulation

NRA Commissioner	Nobuhiko Ban	NRA Commissioner
External experts	Tadahiro Katsuta	Associate Professor, School of Law, Meiji University
	Takeshi Nakajo	Professor, Industrial and Systems Engineering, Faculty of Science and Engineering, Chuo University
	Kazuhiko Noguchi	Professor, Graduate School of Environment and Information Sciences, Yokohama National University Director of Center for Creation of Symbiosis Society with Risk
	Yuko Yoneoka	Executive Director of Japan Accreditation Board Director-General of Accreditation Center
Secretariat of the NRA	Michio Sakurada	Deputy Secretary-General for Technical Affairs (Chief Engineering Officer)
	Tetsuo Ohmura	Director-General for Policy Planning and Coordination (Attended the 1st meeting)
	Hiroshi Tsujihara	Director, Regulatory Standard and Research Division
	Takaaki Kurasaki	Director, Regulatory Standard and Research Division (Attended the 1st meeting)
	Fumihisa Nagase	Director, Divisions of Research for Reactor System Safety
	Takumi Samukawa	Director for Safety Regulation (Licensing for Nuclear Power Plants), Division of Licensing for Nuclear Power Plants
	Atsuhiko Kosaka	Senior Deputy Director for Planning and Examination, Division of Supervision of Nuclear Power Plants

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

Overview

Eight meetings of this oversight team, consisting of the NRA Commissioner and officials of the NRA Secretariat, were held in FY2018 to check continuously the state of implementation of measures for risk reduction such as vitrifying treatment at the JAEA's Tokai Reprocessing Plant and the means for the safety and decommissioning of this facility.

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

NRA Commissioner	Satoru Tanaka	NRA Commissioner
Secretariat of the NRA	Masahiro Aoki	Director-General
	Hiroshi Kataoka	Director-General
	Hisashi Miyamoto	Director for Nuclear Regulation for Research Reactors (Attended until the 25th meeting)
	Yuji Ono	Director for Nuclear Regulation (for Research Reactors) (Attended from the 26th meeting)
	Kazuya Aoki	Director for Nuclear Regulation for Nuclear Fuel Facilities）
	Shinji Kinjo	Director, Division of Oversight of Nuclear Fuel Related Facilities and Research Reactors
	Norikazu Yamada	Chief Officer for Technical Research and Examination, (Waste Disposal, Decommissioning)
	Shigekatsu Omukai	Director for Safety Regulation (Test Reactors) (Attended until the 25th meeting)
	Yasushi Togasaki	Senior Deputy Director for Planning and Examination (Test Reactors) (Attended from the 26th meeting)
	Kiyomitsu Hasegawa	Nuclear Regulation Liaison Officer (Fabrication and Reprocessing, Use of Nuclear Material, Research Reactors)
	Akihiko Ogawa	Director for Safety Regulation (Uranium Processing)
	Tomoki Shibutani	Director for Policy Planning and Coordination for Disposal and Waste
	Yutaka Miyawaki	Director for Safety Regulation (Nuclear Fuel Fabrication and Reprocessing)
	Makoto Ohigashi	Chief Inspector Specialized in Nuclear Facilities

(6) Safety Oversight Team for Prototype Fast Breeder Reactor Monju Decommission

Overview

This monitoring team, consisting of the NRA Commissioner and officials of the NRA Secretariat, was established in January 2017 in order to check continuously the state of decommissioning of the JAEA's Fast Breeder Reactor Monju and the actions carried out by the JAEA. Nineteen meetings of the monitoring team were held through March 2019.

Members of the Safety Oversight Team for Prototype Fast Breeder Reactor Monju Decommission

NRA Commissioner	Satoru Tanaka	NRA Commissioner
Secretariat of the NRA	Masahiro Aoki	Director-General
	Yuji Ono	Director for Nuclear Regulation (for Research Reactors)
	Kiyomitsu Hasegawa	Nuclear Regulation Liaison Officer (Fabrication and Reprocessing, Use of Nuclear Material, Research Reactors)
	Yukio Hosono	Senior Deputy Director for Planning and Examination
	Masami Nishimura	Regional Administrator

(7) Study Team on Oversight Program

Overview

Three meetings of this study team, consisting of NRA Commissioners and external experts and others, were held in FY2018 to examine actions taken for improvements to the oversight program, including the response to issues indicated in IRRS reports concerning the system of inspecting nuclear facilities. A working group subordinate to this study team consisting of officials of the NRA Secretariat and licensees was established, for detailed studies on reform of inspection system. Nine meetings of this working group were held in FY2018.

Members of the Study Team on Oversight Program

NRA Commissioners	Toyoshi Fuketa	NRA Commissioner (Attended until the 11th Working Group Meeting)
	Shinsuke Yamanaka	NRA Commissioner (Attended from the 9th Working Group Meeting)
External experts	Tadahiro Katsuta	Associate Professor, School of Law, Meiji University
	Naoto Sekimura	Professor, School of Engineering, the University of Tokyo
	Shigeru Takahashi	Professor, Faculty of Law, Hosei University
	Yuko Yoneoka	Executive Director, Japan Accreditation Board, Director-General, Accreditation Center
Secretariat of the NRA	Masaya Yasui	Secretary-General (Attended until the 11th Working Group Meeting)
	Tomoho Yamada	Director-General, Nuclear Regulation Department (Attended as the Team Head until the 11th Working Group Meeting)
	Hiroshi Kataoka	Director–General for Policy Planning and Coordination (Attended from the 9th Working Group Meeting)
	Shuichi Kaneko	Director, Oversight Planning and Coordination Division (Attended until the 11th meeting as Deputy-Director of Planning and Coordination of System Revision Deliberations Office)
	Masakazu Shima	Senior Oversight Instructor, Oversight Planning and Coordination Division (Attended from the 22nd Working Group meeting)
	Masashi Hirano	Senior Coordinator for International Collaborations, Office for International Affairs (Attended until the 11th meeting as Deputy-Director of Planning and Coordination of System Revision Deliberations Office)
	Toshiyuki Koganeya	Director for Nuclear Regulation (Oversight of Nuclear Power Plants), Nuclear Regulation Department (Attended from the 9th meeting)
	Masaharu Yoshino	Senior Deputy Director for Planning and Examination, Division of Oversight of Nuclear Power Plants (Attended until the 11th meeting as Deputy-Director of Planning and Coordination of System Revision Deliberations Office)
	Atsuhiko Kosaka	Senior Deputy Director for Planning and Examination, Division of Oversight of Nuclear Power Plants (Attended from the 9th meeting)
	Hirofumi Nunoda	Director, Oversight Evaluation Office, Oversight Planning and Coordination Division

	Toshiyuki Kadono	Director for Nuclear Regulation (Specified Oversight), Nuclear Regulation Department (Attended until the 11th Working Group meeting as Deputy-Director for Planning and Coordination of System Revision Deliberations Office)
	Yoji Takasu	Senior Deputy Director for Planning and Examination, Division of Specified Oversight (Attended until the 11th Working Group session as Specialist of System Revision Deliberations Office)
	Yasuhiro Kawashita	Senior Deputy Director for Planning and Examination, Division of Specified Oversight (Attended from the 9th meeting)
	Shuji Murao	Senior Deputy Director for Planning and Examination, Division of Specified Oversight (Attended until the 11th Working Group session as Specialist for System Revision Deliberations Office)
	Atsuo Sawada	Nuclear Regulatory Systems Research Officer, Division of Specified Oversight (Attended from the 9th meeting)
	Kenichi Watanabe	Deputy Director, Division of Specified Oversight (Attended from the 9th meeting)
	Shinji Kinjo	Director for Nuclear Regulation Department (Oversight of Nuclear Fuel Related Facilities and Research Reactors), Nuclear Regulation Department (Attended from the 9th meeting)
	Naoki Kumagai	Senior Oversight Instructor, Division of Oversight of Nuclear Fuel Related Facilities and Research Reactors (Attended from the 9th meeting)

(8) Study Team on Evaluation of Ground Motions without Identification of Seismic Sources

Overview

Four meetings of the study team, consisting of the NRA Commissioner, external experts, and employees of the NRA Secretariat, were held in FY2018 with the purpose of clearly showing a commonly-usable method of determining ground motions without identification of seismic sources (ground motions of Mw below 6.5) at stations throughout Japan on the basis of seismological investigation.

Members of the Study Team on Evaluation of Ground Motions without Identification of Seismic Sources

NRA Commissioner	Akira Ishiwatari	NRA Commissioner
External experts	Shinji Toda	Professor, Disaster Science Division, International Research Institute of Disaster Science, Tohoku University
	Yoshiaki Hisada	Professor, Director of Research Center for Urban Disaster Mitigation, Research Institute for Science and Technology, Kogakuin University
	Hiroyuki Fujiwara	Head of the Integrated Research on Disaster Risk Reduction Division, National Research Institute for Earth Science and Disaster Resilience
	Hiroe Miyake	Associate Professor, Center for Integrated Disaster Information Research, Interfaculty Initiatives in Information Studies, the University of Tokyo
	Yasutaka Murono	Director of the Center for Railway Earthquake Engineering Research, Railway Technical Research Institute
	Koshun Yamaoka	Professor, Earthquake and Volcano Research Center, Graduate School of Environmental Studies, Nagoya University
Secretariat of the NRA	Michio Sakurada	Deputy Secretary-General for Technical Affairs (Chief Engineering Officer) (Director of Regulatory Standard and Research Department)
	Tomoho Yamada	Director-General, Nuclear Regulation Department
	Kaoru Oasada	Director, Division of Licensing for Earthquake and Tsunami
	Koichi Kobayashi	Director, Division of Research for Earthquake and Tsunami
	Shunichiro Mita	Director for Nuclear Safety, Division of Licensing for Earthquake and Tsunami Measures, Nuclear Regulation Department
	Toru Iijima	Chief Officer for Technical Research and Examination, Division of Research for Earthquake and Tsunami, Regulatory Standard and Research Department
	Genyu Kobayashi	Chief Officer for Technical Research and Examination, Division of Research for Earthquake and Tsunami, Regulatory Standard and Research Department
	Reiko Tajima	Officer for Technical Research and Examination, Division of Research for Earthquake and Tsunami, Regulatory Standard and Research Department

(9) Study Team on Administration of Stable Iodine

Overview

Three meetings of the study team, consisting of external experts and the Secretariat of the NRA, were held in FY2018 for the purpose of discussions from a medical point of view in order to revise the guideline "Distribution and Administration of Stable Iodine" developed by the Secretariat of the NRA. This discussion was triggered by the facts that the WHO Guideline "Iodine thyroid blocking: Guideline for use in planning for and responding to radiological and nuclear emergencies" was revised in 2017 and that there are requests from local governments for simplification of the pre-distribution procedure for Stable Iodine.

Members of Study Team on Administration of Stable Iodine

External experts	Makoto Akashi	Executive Officer, National Institutes for Quantum and Radiological Science and Technology
	Naoko Arata	Division of Maternal Medicine, National Center for Child Health and Development
	Hiromi Ishikawa	Executive Board Member, Japan Medical Association
	Noboru Takamura	Professor, Department of Global Heath, Medicine and Welfare, Atomic Bomb Disease Institute, Nagasaki University
	Taizo Nagata	Executive Director, Japan Pharmaceutical Association
	Yoshihiro Yamaguchi	Chairperson, Special Committee on Nuclear Emergency Response, Japanese Association for Acute Medicine
	Susumu Yokoya	Specially Appointed Professor, Fukushima Global Medical Science Center, Fukushima Medical University, Head of Thyroid and Endocrine Center
	Kunihiko Yokoyama	Deputy Director, Central Hospital of Matto Ishikawa, Chief of PET Imaging Center
Secretariat of the NRA	Hiromu Katayama	Director-General for Radiation Protection Strategy and Security
	Gyo Sato	Director, Radiation Protection Policy Planning Division
	Toshimitsu Honma	Radiation Protection Technology Researcher, Radiation Protection Policy Planning Division
	Sakura Tanaka	Director for Policy Planning and Coordination, Radiation Protection Policy Planning Division

4. Committees with Specific Themes

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

Overview

Eleven meetings of the Commission on Supervision and Evaluation of the Specified Nuclear Facilities, consisting of an NRA Commissioner, officials of the NRA Secretariat, and external experts, were held in FY2018 to evaluate the schedule control and safety measures for decommissioning work of TEPCO's Fukushima Daiichi NPS and to give necessary advice.

Members of the Commission on Supervision and Evaluation of the Specified Nuclear Facilities

NRA Commissioner	Satoru Tanaka	NRA Commissioner
External experts	Yoshinori Kittaka	Professor, Graduate School of Urban Environmental Sciences, Tokyo Metropolitan University
	Tomoyoshi Tokunaga	Professor, Department of Environment Systems, Graduate School of Frontier Sciences, the University of Tokyo
	Reiko Hachisuka	Society President of Okuma Town Society of Commerce and Industry
	Akio Yamamoto	Professor, Graduate School of Engineering, Nagoya University
Secretariat of the NRA	Michio Sakurada	Deputy Secretary-General for Technical Affairs (Chief Engineering Officer)
	Hiroshi Yamagata	Director General for Emergency Response
	Rikio Minamiyama	Regional Administrator (in charge of Fukushima)
	Toshihiro Imai	Director, Office for Accident Measures of Fukushima-Daiichi Nuclear Power Station (Attended until the 67th Meeting)
	Atsushi Takeuchi	Director, Office for Accident Measures of Fukushima-Daiichi Nuclear Power Station (Attended from the 61st Meeting)

(2) Committee on Radioactive Waste Issues for the Specified Nuclear Facilities

Overview

A meeting of the Committee on Radioactive Waste Issues for the Specified Nuclear Facilities, consisting of an NRA Commissioner, officials of the NRA Secretariat, and external experts, was held in FY2018 to discuss the stable long-term management of waste at TEPCO's Fukushima Daiichi NPS.

Termination of this Committee was decided at the 63rd NRA Commission Meeting (February 27, 2019) in consideration of the progress in decommissioning work and operation of the Committee. For the future, the stable long-term management of waste will be discussed by the Commission on Supervision and Evaluation of the Specified Nuclear Facilities.

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

NRA Commissioner	Satoru Tanaka	NRA Commissioner
External experts	Noriko Asanuma	Associate Professor, Department of Nuclear Engineering, Faculty of Engineering, Tokai University
	Tetsuo Iguchi	Professor, Graduate School of Engineering, Nagoya University
	Yaohiro Inagaki	Associate Professor, Department of Applied Quantum Physics and Nuclear Engineering, Graduate School of Engineering, Kyushu University
	Masatomo Sato	Professor Emeritus, Hokkaido University
	Seiichiro Tanaka	Society President of Futaba Town Society of Commerce and Industry
Secretariat of the NRA	Michio Sakurada	Deputy Secretary-General for Technical Affairs (Chief Engineering Officer)
	Hiroshi Yamagata	Director General for Emergency Response
	Rikio Minamiyama	Regional Administrator (in charge of Fukushima)
	Toshihiro Imai	Director, Office for Accident Measures of Fukushima-Daiichi Nuclear Power Station (Attended until the 7th Meeting)
	Atsushi Takeuchi	Director, Office for Accident Measures of Fukushima-Daiichi Nuclear Power Station (Attended from the 7th Meeting)

(3) Technical Information Committee

Overview

A meeting of the Technical Information Committee, consisting of NRA Commissioners and directors of related divisions of the NRA Secretariat and others, is held every two months with the purpose of organizing and sharing information relating to accidents and failures that have occurred at nuclear power stations in Japan and abroad and the necessity of reflecting the latest scientific and technological knowledge to regulations. Five meetings of the Committee were held in FY2018.

Members of the Technical Information Committees

The NRA Commission	NRA Commissioner (One Commissioner)
Secretariat of the NRA	Deputy Secretary-General for Technical Affairs (Chief Engineering Officer)
	Director General for Emergency Response
	Director–General for Policy Planning and Coordination (two persons)
	Director, Office for International Affairs
	Senior Coordinator for International Collaborations
	Director of Regulatory Standard and Research Division, Regulatory Standard and Research Department
	Director, Division of Research for Reactor System Safety, Regulatory Standard and Research Department
	Director, Division of Research for Severe Accident, Regulatory Standard and Research Department
	Director, Division of Research for Nuclear Fuel Cycle and Radioactive Waste, Regulatory Standard and Research Department
	Director, Division of Research for Earthquake and Tsunami, Regulatory Standard and Research Department
	Director-General, Nuclear Regulation Department
	Director for Nuclear Regulation Policy Planning Division, Nuclear Regulation Department
	Director for Nuclear Regulation (Licensing for Nuclear Power Plants), Licensing Group, Nuclear Regulation Department
	Director for Nuclear Regulation (Licensing for Research Reactors), Licensing Group, Nuclear Regulation Department
	Director for Nuclear Regulation (Licensing for Nuclear Fuel Facilities), Licensing Group, Nuclear Regulation Department
	Director for Nuclear Regulation (Licensing for Earthquake and Tsunami Measures), Licensing Group, Nuclear Regulation Department
	Director, Oversight Planning and Coordination Division, Oversight Group, Nuclear Regulation Department
	Director for Nuclear Regulation (Oversight of Nuclear Power Plants), Oversight Group, Nuclear Regulation Department
	Director for Nuclear Regulation (Specified Oversight), Oversight Group, Nuclear Regulation Department
	Director for Nuclear Regulation (Oversight of Nuclear Fuel Related Facilities and Research Reactors), Oversight Group, Nuclear Regulation Department
	Nuclear Regulation Policy Planning Division, Nuclear Regulation Department (Secretariat)
Japan Atomic Energy Agency	Chief Engineer, Regulatory & International Information Analysis Office, Sector of Nuclear Safety Research and Emergency Preparedness
Secretariat of the NRA	Nuclear Regulation Policy Planning Division, Nuclear Regulation Department (Secretariat)

Technical Evaluation Committees

(4) Overview

Twelve meetings of the six Technical Evaluation Committees were organized as follows in FY2018, in order to obtain technical assessment from the external experts in the respective engineering fields for conducting the interim and post-assessment on safety research in the NRA.

Members of the Technical Evaluation Committees

Technical Committee on Plant Safety

External experts	Takanori Kitada	Professor, Graduate School of Engineering, Osaka University
	Tadaaki Kunugi	Professor, Graduate School of Engineering, Kyoto University
	Akio Gofuku	Professor, College of Engineering, Okayama University
	Nobuatsu Tanaka	Professor, College of Engineering, Ibaraki University

Technical Evaluation Committee on Nuclear Fuel

External experts	Tatsumi Arima	Assistant Professor, Graduate School of Engineering, Kyushu University
	Ken Kurosaki	Associate Professor, Graduate School of Engineering, Osaka University

Technical Committee on Earthquake and Tsunami

External experts	Tomotaka Iwata	Professor, Disaster Prevention Research Institute, Kyoto University
	Naoki Sakai	Head of Office for Strategic Planning, Center for Advanced Research Facilities, National Research Institute for Earth Science and Disaster Resilience
	Manabu Shoji	Associate Professor, Graduate School of Systems and Information Engineering, University of Tsukuba
	Osamu Furuya	Professor, School of Science and Engineering, Tokyo Denki University

5. Other Meetings

(1) NRA Policy Review Meeting

Overview

It is a requirement to conduct hearing of opinions from external experts on the policy assessment (ex-post evaluation) conducted by the NRA. The NRA Policy Review Meeting was held on July 19, 2018 to collect the opinions on the policy assessment.

Members of the NRA Policy Review Meeting

External experts	Yoshinori Iizuka	Professor emeritus, the University of Tokyo, President, Japan Accreditation Board
	Hideaki Shiroyama	Professor, Graduate School of Public Policy, the University of Tokyo, Professor, Graduate Schools for Law and Politics, the University of Tokyo
	Motoyuki Suzuki	Professor emeritus, the University of Tokyo
	Kenjiro Tao	Previous Member of National Public Safety Commission, Former Chief Justice of Hiroshima High Court
	Asei Machi	Freelance journalist

(2) Expert Meeting on NRA's Administrative Project Review – FY2018

Overview

In the administrative project review, all ministries and government offices are required to clarify the status of implementation of all their projects, taking into account external opinions. Furthermore, as part of the review, an expert meeting shall be held for some of the projects for hearing external experts' opinions on problems and improvement. The Expert Meeting was held 3 times in FY2018.

Members of the Expert Meeting

External experts	Hirokuni Iijima	Professor, Faculty of Economics, Chuo University
	Mei Nishigaki	Partner, Avantia GP
	Yukiko Tabuchi	Administration and Management Consultant

(3) Meeting on Hearing Opinions of Licensees Concerning New Regulatory Requirements

Overview

This Meeting is held as appropriate when any need arises to publicly hear licensees' views on the new regulatory requirements. In FY2018, the Meeting was held once on the regulatory requirements for high-energy arcing faults, twice on the extent of the testing for weld joints for reactor pressure vessels, and once on the prioritization of technical evaluation.

Members of the Meeting on Hearing Opinions of Licensees Concerning New Regulatory Requirements

・ Regulatory requirements for high-energy arcing faults

Secretariat of the NRA	Michio Sakurada	Director of Regulatory Standard and Research Department
	Tomoho Yamada	Director-General, Nuclear Regulation Department
	Fumihisa Nagase	Director, Divisions of Research for Reactor System Safety

・ Extent of the testing for weld joints for reactor pressure vessels; technical evaluation of rules on fitness-for-service

Secretariat of the NRA	Michio Sakurada	Director of Regulatory Standard and Research Department
	Hiroshi Tsujihara	Director of Regulatory Standard and Research Division
	Masayuki Haginuma	Director for Policy Planning and Coordination, Regulatory Standard and Research Division

・ Prioritization of technical evaluation

Secretariat of the NRA	Hiroshi Tsujihara	Director of Regulatory Standard and Research Division
	Masayuki Haginuma	Director for Policy Planning and Coordination, Regulatory Standard and Research Division

(4) Research Promotion Committee, Research Evaluation Committee, Debriefing Session of Research Results

Overview

For the Radiation Safety Research Strategic Promotion Project, which was launched in FY2017, the NRA publicly seeks research project offers for the priority research areas set by the NRA every fiscal year. The Research Promotion Committee held 4 meetings in FY2018 in order to select research themes for the project, to manage their progress, and to set the priority research areas for the next fiscal year.

In addition, the Research Evaluation Committee held 2 meeting in order to evaluate research plans and research results, and the Debriefing Session of Research Results was held once.

Members of the Research Promotion Committee and the Research Evaluation Committee

Research Promotion Committee

NRA Commissioner	Nobuhiko Ban	NRA Commissioner
External experts	Tetsuo Ishikawa	Professor, School of Medicine, Fukushima Medial University
	Tomoyuki Takahashi	Associate Professor, Kyoto University Research Reactor Institute
	Yoshihide Nakamura	Senior Advisor, Japan Radioisotope Association
	Sadaaki Furuta	Director, PESCO, Co., Ltd Chubu Office
Secretariat of the NRA	Gyo Sato	Director, Radiation Protection Policy Planning Division
	Shoji Takeyama	Director, Radiation Monitoring Division
	Ryozo Nishida	Director, Division of Regulation for Radiation
	Sakura Tanaka	Director for Policy Planning and Coordination, Radiation Protection Policy Planning Division
	Naoko Yoshizumi	Director for Planning and Examination, Radiation Protection Policy Planning Division
	Yuji Okonogi	Director for Institutional, Radiation Monitoring Division
	Yasushi Omachi	Deputy Director, Radiation Protection Policy Planning Division
	Naoki Sato	Deputy Director, Radiation Protection Policy Planning Division
	Toshimitsu Honma	Radiation Protection Technology Researcher, Radiation Protection Policy Planning Division
	Takashi Nakamura	Senior Technical Consultant, Division of Regulation for Radiation

Research Evaluation Committee

External experts	Itsumasa Urabe	Professor, Department of Computer Science, Faculty of Engineering, Fukuyama University
	Keiji Oda	Executive Vice President, Kobe University
	Shoji Futatsugawa	Executive Director, Japan Radioisotope Association
	Hiroko Yoshida	Associate Professor, Radioisotope Research and Education Center, Graduate School of Pharmacy, Tohoku University

(5) Working Level Exchange of Technical Views

(a) Working Level Exchange of Technical Views (Exchange of views with CNOs under working group)

Based on the intentions of the licensees, a forum for exchanging views at the working level between the licensees and the NRA was established in order to have in-depth discussions on the matters raised at the discussion sessions with the Chief Nuclear Officers (CNOs). Two meeting were held in FY2018 to discuss the "issue of loss of RHR pump functions due to steam voids."

Date of meeting	Licensees	Major topics
May 23, 2018	Kansai Electric Power Co., Inc., Hokkaido Electric Power Co., Inc., Shikoku Electric Power Co., Inc., Kyushu Electric Power Co., Inc., Japan Atomic Power Company, Federation of Electric Power Companies	Working level exchange of technical views concerning the issue of loss of RHR pump functions due to steam voids.
July 10, 2018	Kansai Electric Power Co., Inc., Hokkaido Electric Power Co., Inc., Shikoku Electric Power Co., Inc., Kyushu Electric Power Co., Inc., Japan Atomic Power Company, Federation of Electric Power Companies	Working level exchange of technical views concerning the issue of loss of RHR pump functions due to steam voids.

The forums for exchanging views at the working level between the licensees and the NRA have been held as appropriate on a case-by-case basis, in order to hear the licensees' views on topics such as nuclear safety, safety technologies, and nuclear regulation.

- Meeting on the installation requirements for fire sensors at nuclear power plants
- Exchange of views on the regulatory review concerning the impacts from neighboring nuclear facilities
- Exchange of views on the response to the possible failures of alarm systems at power reactor facilities
- Meeting for hearing the current status of environmental monitoring systems
- Meeting for exchanging views on the information collection related to the distribution of ash from Daisen volcano
- Meeting on the methods for determining the intervals of piping support structures at nuclear power plants

(6) Debriefing Session of Emergency Drills by Nuclear Operators

Overview

As to the emergency drills conducted by nuclear operators at their business establishments, the Debriefing Session was held twice in FY2018 under the leadership of Commissioner Yamanaka and Commissioner Tanaka to provide nuclear operators with opportunities to promote information sharing with the NRA and improve emergency response ability.

Members of the Debriefing Session of Emergency Drills by Nuclear Operators

NRA Commissioners	Shinsuke Yamanaka	NRA Commissioner (Attended the 9th meeting)
	Satoru Tanaka	NRA Commissioner (Attended the 10th meeting)
Secretariat of the NRA	Hiroshi Yamagata	Director General for Emergency Response
	Tomoho Yamada	Director-General, Nuclear Regulation Department (Attended the 9th meeting)
	Hiroshi Kataoka	Director-General
	Masahiro Aoki	Director-General (Attended the 10th meeting)
	Tomoya Ichimura	Director for Nuclear Regulation Policy Planning Division (Attended the 9th meeting)
	Yuji Ono	Director for Nuclear Regulation (for BWR) (Attended the 9th meeting)
	Toshiyuki Koganeya	Director for Nuclear Regulation (Oversight of Nuclear Power Plants)
	Shinji Kinjo	Director, Division of Oversight of Nuclear Fuel Related Facilities and Research Reactors (Attended the 10th meeting)
	Hisashi Miyamoto	Director for Nuclear Regulation for Research Reactors (Attended the 10th meeting)
	Kazuya Aoki	Director for Nuclear Regulation for Nuclear Fuel Facilities (Attended the 10th meeting)
	Masanori Fukasawa	Director for Severe Accident, Division of Research for Severe Accident
	Shuichi Kaneko	Director of Emergency Preparedness and Response Office
	Shinichi Murata	Director of Accidents Response Office
	Hiroyuki Sugawara	Director for Policy Planning and Coordination, Emergency Preparedness and Response Office
Cabinet Office	Shinichi Araki	Director-General for Nuclear Regulation Policy of Nuclear Emergency Preparedness
Japan Atomic Energy Agency	Kazuo Yoshida	Nuclear Safety Research Center, Sector of Nuclear Safety Research and Emergency Preparedness, Severe Accident Evaluation Research Group
Japan Nuclear Safety Institute	Hiroyuki Ito	Operating Officer, General Manager of Technical Support Department
	Mutsuo Takai	Manager for Nuclear Disaster Prevention, Technical Support Department