FY 2016

Annual Report

(Provisional English Translation)

Nuclear Regulation Authority

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

Major Actions in Fiscal Year 2016

(1) Implementation of Conformity Review for New Regulatory Requirements

With respect to applications for change in reactor installation permission to the conformity to New Regulatory Requirements, reviews and inspections were rigorously and appropriately conducted. Applications for installation change were accordingly approved in April 2016 for Units 1, 2, 3, and 4 at the Takahama Nuclear Power Station (Kansai Electric Power Co., Inc.), October 2016 for Unit 3 at the Mihama Nuclear Power Station (Kansai Electric Power Co., Inc.), and January 2017 for Units 3 and 4 at the Genkai Nuclear Power Station (Kyūshū Electric Power Company).

An extension of the operation period for Units 1 and 2 at the Takahama Nuclear Power Station was approved in June 2016 and for Unit 3 at the Mihama Nuclear Power Station was approved in November 2016.

Applications for Installation changes were approved to Kyoto University Critical Assembly (KUCA) and Kinki University's nuclear power reactor in May 2016 and Kyoto University's research reactor (KUR) in September 2016.

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

(2) Oversight of Efforts to Decommission Reactors of TEPCO's Fukushima Daiichi Nuclear Power Station

Measures for Mid-term Risk Reduction at TEPCO's Fukushima Daiichi NPS for which priority safety levels were clarified was revised in December 2016. Completed measures and other measures for which oversight was continuously required were specified. Oversight and the provision of guidance were carried out to ensure that the disposition of treated water, the treatment of waste products generated through the decommissioning of reactors, and other such measures are appropriately undertaken.

The general monitoring of the environment throughout Fukushima Prefecture and the monitoring of the waters around TEPCO's Fukushima Daiichi Nuclear Power Station and of Tokyo Bay were undertaken and analytical results were released monthly in accordance with Comprehensive Radiation Monitoring Plan.

(For detailes, see Section 3, Chapters 1 and 3.)

(3) Reinforcing Nuclear Security Measures

With respect to nuclear security, it was determined in September 2016 to amend relevant ordinances of the NRA would be amended and to introduce a system to determinate trustworthiness of persons at certain nuclear facilities.

In January 2017, it was decided to make a request for a follow-up mission relating to the International Atomic Energy Agency's (IAEA) International Physical Protection Advisory Service (IPPAS), which had been carried out in FY 2014.

(For detailes, see Section 5, Chapter 1.)

(4) Reinforcing the Transmission of Information

Efforts were made to further reinforce the prompt and accurate transmission of information to the public.

(For details, see Section 6, Chapter 3.)

(5) Actions to Decommission the Monju

In December 2016, the Minister of Education, Culture, Sports, Science and Technology reported that the Monju would be transitioning to the stage of decommissioning and requested to consider so that an early application can be made for a plan on measures to decommission the reactor. In response, actions such as amendment of relevant ordinances of the NRA were carried out.

(For detailes, see Section 2, Chapter 9.)

(6) Responding to Issues Identified through the IRRS mission (including drafting bills, reinforcing systems)

A review by the IAEA's Integrated Regulatory Review Service (IRRS) mission team was conducted in January 2016, and an IRRS report containing 13 Recommendations and 13 Suggestions was submitted in April in that year by the IAEA.

The Nuclear Regulation Authority decided to address the issues identified through the IRRS mission, such as revision of inspection system, strengthening of radiation source control and radiological protection, and development and securement of human resources. To this end, as a part of the efforts undertaken for this purpose, the Nuclear Reguration Authority submitted a "Bill for partial revision of the Act on the Regulation of Nuclear Source Material, Nuclear Fuel Material and Reactors for strengthening safety measures in nuclear use" to the 193rd session of the Diet to amend the Nuclear Reactor Regulation Act, Radiation Hazard Prevention Act and Radiation Hazard Technical Standards Act, and made a budgetary request to strengthen corresponding systems.

(For detailes, see Section 1, Chapter 2 and Section 2, Chapters 1 and 2.)

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Chapter 1 Ensuring Trust in Nuclear Regulatory Administration

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

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

(1) Ensuring Independence

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

(See Reference 1-8 and -9 for a holding the NRA Commission Meetings and information on agenda items.)

(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 FY 2012 (September 19, 2012). The Code stipulates that the Chairman and the Commissioners must not receive donations from nuclear licensees 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 licensees. Information on 5 members appointed as of the end of FY 2016 has also been fully disclosed on the NRA website.

At the 4th NRA Commission Meeting of FY 2012 (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. Similar requirements were established for the appointment of members of the Reactor Safety Examination Committee, the Nuclear Fuel Safety Examination Committee, and the Radiation Council.

In FY 2016, 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

The NRA determined the "Policy on Ensuring Operational Transparency of the NRA" at the first NRA Commission Meeting held in FY 2012 (September 19, 2012). It decided that its Commission Meetings, the council, and study teams would be open to the public and that the minutes and materials associated with these meetings would be publicly disclosed and subject to live broadcasts via online video sites, with the basic elements stated in this Policy; (i) building an information disclosure system that doesn't require submitting disclosure requests, (ii) thoroughly adhering to disclosing discussions, and (iii) thoroughly adhering to commitment to text-based administration.

In accordance with this Policy, the NRA prepared summaries of all meetings attended by three or more Commissioners and interviews between the NRA Chairman, the NRA Commissioners or the officials of the NRA Secretariat and the regulated parties. The summaries were then open to the public with the names of the attendees and the reference materials used. Summaries of significant meetings and interviews were reported at the NRA Commission Meetings. Interviews with the regulated parties must be responded by two or more the Commissioners, regardless of whether or not the interviews related to regulatory matters, and the interviews' schedules and the status of their implementation were made public.

In order to make known widely the activities, the NRA responded to the press, having taken their interviews and coverages. There were 9 cases of media interviews taken by Commissioners and 24 cases of media coverage on site inspections and site visits by Commissioners in FY 2016. The NRA held the Commission Meetings and other study meetings in public in accordance with the "Policy on Ensuring Operational Transparency of the NRA" and the "Operational Guidelines for NRA Commission Meetings". The NRA Commission Meetings and other study meetings were broadcast live on YouTube and niconico Videos and abridged editions of meetings not broadcast live were released. In addition, for the conveniences of video viewers, the reference materials used at the Commission Meetings and other study meetings were posted on the NRA Website, so that the materials would be available as soon as each meeting started. The minutes of Commission Meetings were posted on the NRA Website on the following day, and those of various other study meetings around one week after the meeting. As

in FY 2015, a regular press conference by the NRA Chairman was held once a week, and regular NRA briefings by the NRA Secretariat were held twice a week. A total of 159 press conferences were held in FY 2016. 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 press conferences by the NRA Chairman were posted on the NRA website on the same day, when possible, and those of the regular briefings of the NRA Secertariat on the following day.

(4) Enhancing External Communication

(i) Communication with Nuclear Licensees

Since October 2014, the NRA has exchanged opinions with the top managers of licensees of major nuclear facilities. The reasons were (1) promoting of penetration of a safety culture in Japan as an entire country and efforts on safety improvement based on that, and (2) hearing of opinions of licensees on basic ideas and activities related to safety improvement, and proposals to improve current regulatory system for continuous improvement.

In FY 2016, the NRA exchanged opinions with 8 licensees. These focused on the following areas: efforts for safety improvement where nuclear licensees perform voluntarily (i.e. fostering safety culture), hearing ideas from nuclear licensees on improving the regulatory systems.

Discussions were also held with the executives of 3 licensees on issues affecting their respective facilities.

Based on these exchanges, it was confirmed at the 59th NRA Commission Meeting (February 1, 2017) that discussions would continue to be held about once a month with the executives of major nuclear facilities. It was decided then that topics for these discussions would be as following: (i) new actions and/or challenges for improving safety found after the previous discussion and (ii) other topics proposed by the NRA or licensees.

It was confirmed at the 43rd NRA Commission Meeting (November 16, 2016) that discussions would be held with the managers of nuclear power deartments of major nuclear facility. Based on the results, the first discussions with the magagers of nuclear power departments (regulated parties) were held on January 18, 2017.

(See Reference 1-10 for information on these discussions.)

(ii) Communication with Local Governments

The NRA Chairman met with the governor of Fukui Prefecture on August 25, 2016. In December 2016, he visited Ehime Prefecture, where he met with the governor of the Prefecture and the mayors of Yawatahama City and Ikata Town. He also provided the people of Ikata Town with explanations on effective ways of evacuating in the event of a nuclear disaster and shared

knowledge on radiation exposure, and they exchanged opinions. In February 2017, he visited Kagoshima Prefecture where he met with the governor of the Prefecture and the mayor of Satsumasendai City and interacted with the citizens of districts on Kamikoshiki Island and Kamikoshiki area. Presentations from NRA Chairman and opinion exchanges were made same as in the visit of Fukui Prefecture. The Director-General and Deputy Director-General of the NRA also met with the heads of local governments. In addition, efforts to enhance communications with local governments at various levels were also undertaken by staff members of the NRA Secretariat between February and March 2017 in Saga, Nagasaki and Fukuoka Prefectures, where local governments and citizens were given explanations on the results of conformity reviews to New Regulatory Requirements and details of Nuclear Emergency Response Guidelines.

(See Reference 1-11 for details on the results of the meetings.)

(iii) Other Communication

At various meetings of the NRA, external experts were included and the NRA has made use of their knowledge.

In addition to public commenting procedures in accordance with the Administrative Procedures Act (Act No. 88 of 1993), 27 cases of public commenting procedures not requested in the same act were carried out in FY 2016 to proactively obtain opinions from the public and the NRA responded carefully to them. In the public commenting procedures for a draft review sheet to Unit 3 of KEPCO's Mihama Nuclear Power Station (hereinafter referred to as the "Mihama Nuclear Power Station") in August 2016, one opinion gave a notice on the design policy as concerns any direct impact that pyroclastic fall deposits might have. In response, the NRA verified again that the functions of safety facilities are not affected by pyroclastic fall deposits. A meeting of the Study Team on Evaluation for Pyroclastic Fall Deposits was held, and the Study Team commenced an investigation concerning assessments of the concentration of pyroclastic fall deposits and impact on equipment.

The NRA also held a meeting with the Japan Atomic Energy Commission on July 20, 2016, on the human resources development in the field of nuclear power.

The Chairman of the NRA met with External Advisor[1] Dr. Richard Meserve in February 2017 and discussed various matters, including progress of a new inspection system based on advice from the External Advisors.

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 operating a call center.

[1] Key figure with extensive experience as the head of a nuclear regulatory body in the United States, the United Kingdom, and France; appointed by the Chairman of the NRA.

In FY 2016, the NRA received about 30 opinions and questions on the website and about 230 opinions and questions per month on average through the call center.

Table 1 Major Public Comments Asked for in FY 2016

Designated by Law	Optional
・Ordinance for partial revision of the Ordinance on the Security of Nuclear Reactor Facilities and Protection of Specific Nuclear Fuel Material at the Fukushima Daiichi Nuclear Power Station (TEPCO) ・Partial revision of the regulatory guide for standards applicable to nuclear fuel facilities associated with handling based on the graded approach ・Partial revision of the Ordinance on the Installation and Operation of Commercial Power Reactors Total 11 cases	・Draft review sheet of application for change in reactors installation of Units 3 and 4 at the Genkai Nuclear Power Station (Kyūshū Electric Power Company) ・Interim report on revision of regulations to radioisotope-utilizing facilities ・Thinking on regulatory controls pertaining to the burial of core internals wastes Total 16 cases

Section 2: Continuous Improvement of Organizational Structure and Management

1.Full-Scale Operation and Improvement of Management System

In order to maintain and improve the operational quality and to foster the safety culture based on the Nuclear Regulation Authority Management Rules (adopted on September 3, 2014), the NRA has been engaging in operations in accordance with various policies such as “Core Values and Principles of the NRA”, the “Statement on Nuclear Safety Culture”, the “Code of Conduct on Nuclear Security Culture”, “Mid-Term Goals for the First Term of the NRA”, and the “Annual Strategic Plan for FY 2016” and also conducted a management review to assess the results/achievements for FY 2016 at the 62nd NRA Commission Meeting (February 22, 2017). Taking into consideration the result, the “Revised Mid-Term Goals for the First Term of the NRA” and the “Annual Strategic Plan for FY 2017”, which were based on initiatives for FY 2017, were adopted at the 72nd NRA Commission Meeting in FY 2016 (March 22, 2017).

For policy evaluations of the NRA in accordance with the Government Policy Evaluations Act (Act No. 86 of 2001), the NRA conducted ex-post evaluations of measures implemented in FY 2015 and the pre-analysis of measures to be implemented in FY 2016 considering consistency with the Management System. It determined, then, the evaluation report of measures

implemented in FY 2015 and the pre-analysis table for measures to be implemented in FY 2016 at the 28th NRA Commission Meeting (August 24, 2016). After sending these reports to the Minister for Internal Affairs and Communications, they were posted on the NRA website. A basic plan for evaluating the NRA policies targeting 3 years from FY 2017 to FY 2019 was adopted at the 72nd NRA Commission Meeting (March 22, 2017).

In order to conduct internal operation audits from April 2016, Management System Office was established within the Secretariat of the NRA. In FY 2016, 6 sections were audited, and the Office provided some instructions to improve operation, such as development of a system for strategically responding to international issues, and formulation of systematic guidance for review procedures. (For more information, see Reference 1-12.)

Aiming at continuous improvement of the Management System, the NRA formulated "Roadmap for improvement of the NRA Management System" (adopted at the 45th NRA Commission Meeting on November 22, 2016) based on the issues clarified by indications of the International Atomic Energy Agency (IAEA). The NRA has been conducting an action program for maintaining and improving operational quality, including fostering nuclear safety culture and security culture through direct communication/dialogue with Commissioners/senior officials, listening to personnel working in the front lines.

2. Addressing issues clarified by the IRRS mission

The IAEA carries out Integrated Regulatory Review Service (IRRS), which is one of the review services offered in response to requests from its Member States to provide comprehensive review of a wide range of regulatory technical and policy issues including State's legal system and organizational structure for nuclear regulation.

The NRA decided to request the IRRS mission in December 2013, spent 2 years compiling a self-assessment report, and submitted it to the IRRS mission team.

The IRRS mission team conducted a review in January 2016, and submitted their report to the Japanese government on April 23.

In the report, Japan's nuclear regulatory frameworkwas recommended to be further improved although it has achieved the necessary safety levels by incorporating lessons learned from the accident at TEPCO's Fukushima Daiichi Nuclear Power Station. The IRRS team provided their findings; 2 cases of Good Practices along with 13 Recommendations and 13 Suggestions.

Good Practices

- The Government of Japan has put in place a framework which established and supports NRA as a new effective independent and transparent regulatory body with increased powers.

- NRA made a prompt and effective incorporation of the lessons learnt from the TEPCO Fukushima Daiinch accident in the areas of natural hazards, severe accident management, emergency preparedness and backfitting of existing facilities, into the Japanese legal framework.

Recommendations and Suggestions

- To amend relevant legislation with the aim of allowing NRA to improve the effectiveness of its inspections.
- To attract competent and experienced staff, and develop competencies relevant to nuclear and radiation safety through education, training, research and enhanced international cooperation.
- To develop requirements and guidance for emergency preparedness and response in relation to radiation sources.
- To give greater priority to the oversight of the implementation of radiation protection measures.

The NRA developed a coping strategy to address issues identified through the IRRS mission including challenges for improvement realized in the process of self-assessment for the IRRS mission, and decided to address corresponding 31 issues including inspections and enforcement, radiation source control and radiation protection, and development and securement of human resources .

As part of these efforts, a budget request was made by the NRA to reinforce its actions such as revision of inspection system, strengthening of radiation source control and radiation protection.

The NRA issued instructions to the Reactor Safety Examination Committee and the Nuclear Fuel Safety Examination Committee to follow up the issues identified through the IRRS mission. In response, from July 2016 to January 2017, the NRA Secretariat reported to these Committees on the status of actions for each issue. These Committees then conducted evaluations and provided advice to the NRA Secretariat. Follow-up discussions with the chairmen of both Committees were made at the 55th extraordinary NRA Commission Meeting (January 12, 2017). At the 59th NRA Commission Meeting (February 1, 2017), it was decided to continue following up the actions (evaluation and advice), observing and considerating progress of actions to the issues identified through the IRRS mission.

Section 3: Collaborating with the international community

In collaborating with international organizations, the NRA has shared findings and lessons learned from the accident at TEPCO's Fukushima Daiichi Nuclear Power Station with the

international community and gathered information and made exchanges in order to improve global nuclear safety through its participation in and dispatching of experts to various meetings held by the IAEA, Organisation for Economic Co-operation and Development (OECD) /Nuclear Energy Agency (NEA), and other organizations.

In collaborating with overseas nuclear regulatory authorities, the NRA has gathered information and made exchanges within multilateral frameworks, including the International Nuclear Regulators Association (INRA) and Top Regulators' Meeting on Nuclear Safety among China, Japan and Korea (TRM), as well as through bilateral meetings with overseas nuclear regulatory authorities. The NRA expressed its intention to join the Western European Nuclear Regulators Association (WENRA) as an observer and was approved. The NRA also has participated in meetings based on international treaties and conventions.

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

The NRA shares findings and experiences with the international community through attendance at conferences organized by international organizations, such as the IAEA and OECD/NEA, through dispatch of experts abroad, and puts the results of international activities to account for improvement of nuclear regulations in Japan.

(i) Participation in the conferences held by the IAEA, OECD /NEA

The Chairman and Commissioners attended international conferences as shown in Table 2, and shared the findings and lessons learned from the accident at TEPCO's Fukushima Daiichi Nuclear Power Station with the international community and exchanged information and opinions to contribute to improvement of international nuclear safety.

Commissioner Fuketa has been serving as Chair of the Committee on the Safety of Nuclear Installations (CSNI) of the OECD/NEA since December 2015.

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

Schedule	Name (Location) of Conferences	Attended by
April 5, 2016	IAEA International Nuclear Safety Group (INSAG) (Vienna)	Commissioner Fuketa
April 6-7, 2016	IAEA Commission on Safety Standards (CSS) (Vienna)	Commissioner Fuketa
June 8-9, 2016	OECD/NEA Committee on the Safety of Nuclear Installations (CSNI) (Paris)	Commissioner Fuketa
September 26-30, 2016	IAEA General Conference (Vienna)	Chairman Tanaka
October 4-7, 2016	IAEA Advisory Group on Nuclear Security (AdSec) (Vienna)	Commissioner Tanaka
October 24-25, 2016	IAEA International Nuclear Safety Group (INSAG) (Vienna)	Commissioner Fuketa
November 23-25, 2016	IAEA Technical Meeting on Lessons Learned and Safety Improvements Related to External Hazards Based on the IAEA Fukushima Report (Vienna)	Commissioner Ishiwatari
December 5-9, 2016	IAEA International Conference on Nuclear Security (Vienna)	Commissioner Tanaka
December 7-8, 2016	OECD/NEA Committee on the Safety of Nuclear Installations (CSNI) (Paris)	Commissioner Fuketa

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

Chairman of the NRA held discussions with Director-General Amano of the IAEA in April and October 2016. He also exchanged opinions with the Director-General Magwood of the OECD/NEA in November 2016. In these opinion exchanges, they discussed on ways to continue close cooperation with both of the international organizations in the future.

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

As a part of the international communication efforts, the NRA regularly releases the sea area monitoring results[2] in the surrounding areas of TEPCO's Fukushima Daiichi NPS and other areas (F1 Issues, Sea Area Monitoring). The NRA and the IAEA conducted results comparison of sea water 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] http://www.nsr.go.jp/english/f1issues/index.html

(2) Implementation of the various international conventions on nuclear safety

Together with the relevant ministries and agencies, the NRA is participating in various international initiatives under the frameworks as following: 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.

As key actions undertaken in FY 2016, the NRA prepared the seventh National Report of Japan and submitted it in August 2016 under a framework provided by the Convention on Nuclear Safety. At the seventh Review Meeting held in Vienna between March 27 and April 7, 2017, a peer review process among Contracting Parties was conducted on the submitted National Reports of Contracting Parties, including Japan. Commissioner Ban attended this meeting, from the NRA.

A meeting of the Parties to the Convention on Early Notification of a Nuclear Accident and Convention on Assistance in the Case of a Nuclear Accident or Radiological Emergency (meeting of Competent Authorities) was held in June 2016. The NRA participated in this meeting with the Ministry of Foreign Affairs.

In connection with the Convention on Physical Protection of Nuclear Material and Nuclear Facilities, Technical Meeting of the Representatives of State Parties to the Convention on the Physical Protection of Nuclear Material was held for the first time by the IAEA in December 2016 and was attended by the NRA officials. At this meeting, information was exchanged among officials of State Parties taking into account operations after the Amendments to the Convention on Physical Protection of Nuclear Material and Nuclear Facilities have come into force.

(3) Cooperation with Foreign Nuclear Regulatory Authorities

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

(i) International Nuclear Regulators Association (INRA) and other framework

The INRA 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. As of the end of FY 2016, its member countries include Japan, U.S.A., France, U.K., Germany, Canada, Sweden, Spain and Republic of Korea.

In May 2016, the 38th meeting of the association was hosted by Consejo De Seguridad Nuclear of Spain (CSN), which served as the chair of the association that year. This meeting

was attended by Commissioner Satoru Tanaka from the NRA and reported on, among other topics, the state of reviews conducted according to New Regulatory Requirements, the impact of the 2016 Kumamoto earthquake on nuclear facilities, and the current state of TEPCO's Fukushima Daiichi Nuclear Power Station.

The 39th meeting was held in Vienna, Austria during the session of the General Conference of the IAEA in September 2016. From the NRA, Chairman Tanaka attended and discussed on a wide range of issues related to nuclear regulations.

Western European Nuclear Regulators Association (WENRA) is a framework comprising the heads of regulators for nuclear safety within the European countries and it has held Plenary Meetings twice a year. On October 26 and 27, 2016, WENRA's Fall Plenary Meeting was held in Rome, Italy, which was attended by Commissioner Ban of the NRA. The NRA expressed its intention to join as an observer and it was approved.

(ii) Regional cooperation: China-Japan-Korea Top Regulators' Meeting (TRM[3])

The TRM was set up as a framework between Japan, China, and Republic of Korea to promote information exchange on regulatory issues and technical improvement, and its meeting has been held once a year since 2008. In 2016, China was the president. The 9th meeting was held in November, in Beijing, China. At this meeting, presentations on various topics were given, such as the current state of each country's regulatory activities, progress and work plans of three working groups (Online Information Sharing system, Human Resources Development, and Emergency Preparedness and Responses), and the Joint Emergency Drill carried out by Japan, China, and South Korea, and discussions on those topics followed. The three member countries agreed on updating information on contact points in emergency in each country and on conducting of exercises for notification among the three countries in the Joint Emergency Drill to be carried out from 2017.

The fourth TRM Plus was held in conjunction with the TRM. Focussing on more technical topics, including the current state of regulatory controls on TEPCO's Fukushima Daiichi Nuclear Power Station and progress of the decontamination of the surrounding areas, the management of radioactive waste in China and South Korea, and efforts to fulfilment of the Vienna Declaration, information and views were exchanged. Joint Emergency Drill among Japan, China, and South Korea was conducted at China's Daya Bay Nuclear Power Station in November 2016 previous to the 9th TRM.

(iii) Bilateral cooperation: Preparation of the cooperation arrangement documents

The NRA concluded arrangements and memorandums of understanding on cooperation with

[3] Top Regulators' Meeting on Nuclear Safety among China, Japan, and Korea

12 countries (13 nuclear regulatory authorities) by the end of FY 2015. Table 3 shows the results of conclusion by the end of FY 2016.

The NRA exchanges information and views on nuclear regulations with nuclear regulatory authorities in other countries through these bilateral frameworks.

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

Name of Country	Name of Authority	Year Concluded
United States	NRC[4]	Concluded in 2010 (Renewed in 2015)
	DOE[5]	2013
France	ASN	2013
United Kingdom	ONR[6]	2013
Russia	RTN[7]	2013
Sweden	SSM[8]	2013
Germany	BMUB[9]	2014
Spain	CSN	2013
Finland	STUK	2013
Canada	CNSC	2015
Vietnam	VARANS[10]	2014
Turkey	TAEK[11]	2014
Lithuania	VATESI[12]	2014

(iv) Bilateral meetings

On cooperating with the United States, the NRA requested the training for inspectors from the U.S. NRC and it was accepted. The training had been planned taking into consideration revision of the inspections system stipulated in the Act on the Regulation of Nuclear Source Material,

4 Nuclear Regulatory Commission
5 United States Department of Energy
6 Office for Nuclear Regulation
7 Rostekhnadzor
8 Swedish Radiation Safety Authority
9 Federal Ministry for the Environment, Nature Conservation, Building and Nuclear Safety
10 Vietnam Agency for Radiation and Nuclear Safety
11 Turkish Atomic Energy Authority
12 State Nuclear Power Safety Inspectorate of the Republic of Lithuania

Nuclear Fuel Material and Reactors (Act No. 166 of 1957; hereinafter referred to as the "Reactor Regulation Act"). In response, 5 officials of the NRA were dispatched for a one-year term to the NRC in July 2016. By performing on-site practices at power plants and participating in the same training conducted for inspectors of the NRC, these officials have been proactively gaining practical experience and exchanging information with NRC officials. In accordance with the agreement on cooperation, a Japan-US Steering Committee meeting was held in Tokyo in October 2016. They shared information on their efforts to technical matters to be considered in regulatory activities as well as the activities of NRA officials dispatched to the NRC, and made discussions on future technical cooperation. In March 2017, a Japan-US Steering Committee meeting was held in Bethesda, Maryland, in conjunction with the Regulatory Information Conference (RIC) which was hosted by the NRC. From the NRA, Commissioner Fuketa attended this meeting.

On cooperating with France, the fourth Japan-France Regulatory Authorities Meeting was held in Tokyo in September 2016. This meeting was attended by Commissioners Fuketa and Satoru Tanaka of the NRA and the Chairman and Commissioners of the ASN, France. At this meeting, opinions were exchanged on various topics, including the current state of regulations and the waste management in both countries, the response to carbon segregation in containment vessels made by Creusot Forge, and regulations on re-processing facilities. In November 2016, Commissioner Ban of the NRA visited the ASN in France and exchanged opinions on carbon segregation in containment vessels and other facilities.

On cooperating with Finland, a meeting for regulatory information exchange was held in Tokyo in September 2016. This meeting was attended by Commissioners Fuketa and Satoru Tanaka of the NRA and the Director-General of STUK, Finland. At this meeting, discussions were held on the current state of regulations in both countries, the regulatory framework, new regulations revised based on lessons learned from the accident at TEPCO's Fukushima Daiichi Nuclear Power Station, and regulatory controls on the waste management.

Furthermore, the regulatory information exchange meetings as cooporation with other than the above-mentioned coutries were held as follows: in Madrid, Spain, in May 2016 as cooperation with Spain; in Iwaki City, Fukushima Prefecture, in July 2016 as cooperation with the United Kingdom; in Bonn, Germany, in October 2016 as cooperation with Germany; in Tokyo, in October 2016 as cooperation with Canada; and in Tokyo, in October 2016 as cooperation with Sweden.

In addition, NRA Chairman met officials from NRC and DOE (United States), ASN (France), ONR (United Kingdom), BMUB (Germany), CSN (Spain), CNSC (Canada), Swiss Federal Nuclear Safety Inspectorate (ENSI[13]) (Switzerland), BAdan PEngawas TEnaga Nuklir (Nuclear

[13] Swiss Federal Nuclear Safety Inspectorate

Energy Regulatory Agency; BAPETEN[14]) (Indonesia), and others and made discussions on bilateral cooperation with these countries in FY 2016.

(v) Human Resource Development

The NRA held seminars on nuclear regulations in Hanoi, Vietnam, for the employees of VARANS (Vietnam) in July 2016 and February 2017 by the NRA Secretariat and NRA Human Resource Development Center in accordance with the memorandum of understanding concluded with VARANS.

In addition, the NRA conducted a training course on nuclear regulations for TAEK (Turkey) staff from September 27 to October 7, 2016, in Tokyo in accordance with the memorandum of understanding concluded with TAEK.

Section 4: Steady response to litigation affairs and legal support

The NRA responded to the litigation affairs and legal support for its affairs under the 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 Regional Legal Affairs Bureaus with respect to 46 pending cases and 2 cases with judgment regarding the affairs under jurisdiction of the NRA.

With respect to formal objections to the dispositions such as permission for change in reactors installation, 6 cases were dismissed and 2 were rejected. (For more information, see Reference 1-13.)

Section 5: Allegation System Concerning Information on Safety of Nuclear Facilities

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

At the end of FY 2016, there were no pending case and 3 cases had been completed.

[14] BAdan PEngawas TEnaga Nuklir （Nuclear Energy Regulatory Agency）

Chapter 2 Rigrous and Proper Implementation of Regulations on Nuclear Facilities

Section 1: Continuous Improvement of Regulation Systems concerning the Reactor Regulation Act

(1) Review of Inspection System

At the 5th NRA Commission Meeting (April 25, 2016), the NRA approved a policy on responding to issued concerning the inspection system to which nuclear facilities in the IRRS report, to ensure that this system can constitute a framework for enabling effective inspections to be conducted. Once revisions are made to the Reactor Regulation Act and the system on the primary responsibilities of the licensees are clear, this policy calls for having inspection items selected at the discretion of the inspection division.

Accordingly, meetings of the Study Team on Revisions to the Inspections System, which consists of NRA Commissioners, officials of the NRA Secretariat and experts, have been held since May. This team has promoted on-site discussions with licensees. After an interim report was drafted in August, public comment procedures were carried out, and investigations were conducted by the Reactor Safety Examination Committee and the Nuclear Fuel Safety Examination Committee. An interim report was settled in November.

After the NRA laid the groundwork for amending the Reactor Regulation Act based on this interim report, a framework for amending the Act was approved at the 52nd NRA Commission Meeting (December 28, 2016). The “Draft Bill for partial revision of the Act on the Regulations on Nuclear Source Material, Nuclear Fuel Material and Reactors to reinforce measures for nuclear security”, which was adopted at the 59th NRA Commission Meeting (February 1, 2017), was submitted to the 193rd session of the Diet and Cabinet decision made on February 7, 2017.

This bill aims to achieve higher levels of safety, from the standpoint of reinforcing actions undertaken by both regulated parties and regulatory agencies, by mandating that licensees independently carry out actions to verify conformity with regulatory requirements applicable to nuclear facilities and therefore fully meet their primary responsibilities for security. Regulatory agencies shall be urged to proactively engage in efforts to maintain and elevate levels of safety by establishing a new framework for comprehensively overseeing and evaluating their security activities in a consistent and seamless manner, from the licensing and designation of licensees to the completion of decommissioning measures without restrictions on timing and contents and by making assessments based on inspection results and engaging in oversight efforts by which improvement in security is accurately incorporated into subsequent inspections. In formulating regulatory requirements, the bill also stipulates that efforts shall be made to clarify these requirements according to characteristics of nuclear facilities based on the latest knowledge concerning the nuclear safety.

(2) Study of method of operational safety inspection

Receiving the instruction to study improvement measures concerning the inspection for checking conformity to the operational safety programs of nuclear facilities (hereafter referred to as “operational safety inspection”) in the 25th NRA meeting of FY 2012 (January 30, 2013), the NRA Secretariat examined a framework of the operational safety inspection. The progress was reported – identified as either short-term, mid-term and long-term issues – in the NRA Commission Meetings: 5th of FY 2013 (May 8, 2013), the 17th of FY 2013 (July 31, 2013), and the 1st of FY 2014 (April 2, 2014).

The specific approaches to the response to short-term issues, including the prioritization of the inspection items, have already been started. As for the mid- and long-term issues, the examinations have proceeded based on the policy of unannounced inspections and personnel interviews as well as utilization of indicators, scale, and risk information presented in the report of FY 2014 as the specific policies concerning the improvement measures for the commercial power reactor (excluding those under decommissioning procedures, hereinafter the same applies in this chapter). The results of examinations were reported in the 24th NRA Commission Meeting of FY 2015 (August 19, 2015) as follows:

- Utilization of unannounced inspection and personnel interviews

○ Establishment of implementation guidance

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

○ Enhancement of training

With the utilization of unannounced inspection and personnel interview method, basic communication training was newly established in cooperation with the NRA Human Resource Development Center because nuclear safety inspectors were required to improve their abilities to communicate with regulated parties. In addition, communication training for inspectors was reviewed.

○ Trial implementation of unannounced inspections and personnel interview method

Both inspection methods were implemented on a trial basis on some commercial power reactors in the third and fourth operational safety inspections of FY 2014. The opinions based on the results were reflected in the implementation guidance for improvement.

- Utilization of indicators, scale, and risk information

○ Selection of new indicators

As indicators related to safety, in addition to the number of unplanned scrams that have

used in the past, new indicators according to the actual conditions of the safety activities of licensee were selected by reference to the technical document (IAEA-TECDOC-1141 Operational safety performance indicator for nuclear power station) created by IAEA.

○ Utilization of findings by nuclear safety inspectors

The information for grasping the status of safety activities was extracted from the observations by nuclear safety inspectors to show the method for selecting operational safety inspection items.

○ Establishment of support system

For the implementation of an inspection specialized in a particular field, such as safety culture-fostering activities, examinations were performed to establish a system for implementing professional inspection.

Based on the results, the full operation of unannounced inspections and the personnel interview method was initiated in the operational safety inspection of FY 2015. At the 2nd NRA Commission Meeting (April 13, 2016), it was reported from the NRA Secretariat on the results of method of collecting data concerning newly selected indicators for safety. At this meeting, licensees installing commercial power reactors were instructed to collect and summarize indicators and report on the results of this process. It was decided to conduct a study for utilization of newly selected indicators and findings by nuclear safety inspectors for safety inspections, and to continue studies to improve operation of this new system.

Investigations will be conducted on the use of risk-related information for operational safety inspections when determining measures in response to violations of the operational safety programs.

These examinations have been implemented for commercial power reactors, and the examinations for other nuclear facilities will be implemented taking into consideration the characteristics of each facility.

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

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

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

As for commercial power reactors, after the NRA enforced the New Regulatory Requirements on July 8, 2013, 11 licensees submitted applications for permission for change in reactor installation concerning conformity to the New Regulatory Requirements of 26 plants of 16

nuclear power stations by the end of FY 2016. These applications are now reviewed strictly based on the policies approved by the NRA. In FY 2016, review meetings were held 113 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. (See Reference 3-1 for more information on applications concerning commercial power reactors.)

Based on discussions carried out at the meeting, reviews for applications for a change in reactor installation permission will be conducted for Units 1, 2, 3, and 4 of the Takahama Nuclear Power Station (KEPCO) (hereinafter referred to as “Takahama Nuclear Power Station”); Unit 3 of the Mihama Nuclear Power Station; Units 3 and 4 of the Genkai Nuclear Power Station (Kyūshū Electric Power Company) (hereinafter referred to as “Genkai Nuclear Power Station”); and Units 3 and 4 of the Ohi Nuclear Power Station (KEPCO) (hereinafter referred to as “Ohi Nuclear Power Station”). Scientific and technical opinions on draft review reports will be gathered on the technical abilities of licensees and the structure of and equipment installed in reactors. The NRA conducted opinion hearings on the peaceful use of nuclear power from Japan Atomic Energy Commission, and on the appropriateness of permission from the Minister of Economy, Trade and Industry. In accordance with the results of this process, change in installation permission was approved at the 4th NRA Commission Meeting (April 20, 2016) for Units 1, 2, 3, and 4 of the Takahama Nuclear Power Station; at the 35th NRA Commission Meeting (October 5, 2016) for Unit 3 of the Mihama Nuclear Power Station; and at the 56th NRA Commission Meeting (January 18, 2017) for Units 3 and 4 of the Genkai Nuclear Power Station.

Concerning the approval of construction plans, it was accepted that matters which were not crucial were processed exclusively by the Secretariat of the NRA on the basis of the discussions at the 63rd NRA Commission Meeting of FY 2014 (March 18, 2015). In response, the NRA Secretariat approved construction plans for Units 1 and 2 of the Takahama Nuclear Power Station on June 10, 2016, and for Unit 3 of the Mihama Nuclear Power Station on October 26 of the same year.

Up to the end of FY 2016, applications for change in reactor installation permission related to Specialized Safety Facilities have been submitted by 7 licensees, with 7 nuclear facilities and 13 plants and reviews have been carried out. With respect to reviews of changes in installation permission, the NRA has checked whether measures have been taken to ensure that functions necessary should be impaired in event of large-scale incidents such as intentional large-aircraft crashes and other acts of terrorism. As for application for changes in reactor installation permission to Units 3 and 4 of the Takahama Nuclear Power Station, after preparing a draft

review report of application for changes in reactor installation permission related to Specilized Safety Facilities, interviews with the Minister of Economy, Trade and Industry and Japan Atomic Energy Commission were conducted, and discussions were held based on the responses received. Taking into account the results, the NRA approved this application at the 33rd NRA Commission Meeting (September 21, 2016).

As contents of reviews of Specialized Safety Facility shall not be disclosed from a security standpoint, it was decided at the 53rd NRA Commission Meeting of FY 2015 (February 3, 2016) not to seek scientific and technical opinions to the public.

The devision for review within the NRA Secretariat was expanded from approximately 100 persons and 4 teams as of the summer of 2015 to approximately 120 persons and 5 teams.

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

As in FY 2015, the NRA has continued efforts aiming that all review processes efficiently proceed. The summaries of hearings with licensees for fact-checking are disclosed as well as the records of review meetings. Interviews with licensees are held after the review meeting to organize the findings and share perceptions.

(3) Status of Inspection Based on New Regulatory Requirements

In pre-service inspections of Units 1, 2, and 4 of the Takahama Nuclear Power Station and reactor 3 of the Ikata Nuclear Power Station (Yonden) (hereinafter referred to as “Ikata Nuclear Power Station”), it was checked whether construction was being carried out in accordance with the approved plans. Unit 3 of the Ikata Nuclear Power Station was found to have passed its pre-service inspection on September 7, 2016, and was accordingly granted a certificate.

2.Implementation of Operational Safety Inspection of Nuclear Facilitiles (such as commercial power reactor)

In order to ensure the safety of nuclear facilities such as commercial power reactors, the NRA has periodically conducted operational safety inspections, primarily through nuclear safety inspectors stationed at NRA Regional Offices (22 offices) located near nuclear facilities. In addition, these inspectors make daily patrols of nuclear facilities, conduct interviews to ascertain the state of operations and witness periodic tests in accordance with the configuration of each facility.

In FY 2016, operational safety inspections were conducted quarterily at each facility. In addition, operational safety inspection of important safety-related actions was conducted at Unit 3 of the Ikata Nuclear Power Station. 9 cases of non-compliance with operational safety

programs were identified. (See Reference 3-3 for information on implementation of Operational Safety Inspections.)

Operational safety inspections conducted in FY 2016 revealed incidents falling under the classification of *Monitoring*[15] as follows: one case involving Prototype Fast Breeder Reactor Monju (JAEA), 4 cases at the Ikata Nuclear Power Station, and one case at the Fukushima Daini Nuclear Power Station (TEPCO Holdings) (hereinafter referred to as "Fukushima Daini Nuclear Power Station").

In connection with the inappropriate laying of cables, incidents falling under the classification of *Violation 2*[15] were found at the Onagawa Nuclear Power Station (TOHOKU Electric Power Co.) (hereinafter referred to as "Onagawa Nuclear Power Station"), Fukushima Daini Nuclear Power Station, and Hamaoka Nuclear Power Station (CHUBU Electric Power Co.) (hereinafter referred to as "Hamaoka Nuclear Power Station").

[15] Classifications by which the extent to which Operational Safety Program have been contravened is indicated. Determinations are made as to whether or not additional inspections are necessary and the contents of and period for such inspections in accordance with the seriousness of each classification.

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

Since the enactment of New Regulatory Requirements in December 2013 by the end of FY 2016, applications for change operations permission such as license modification at 21 facilities were submitted by 9 licensees. 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). In FY 2016, a total of 87 review meetings attended in principle by the NRA Commissioners were held (see Reference 3-4 for information on the state of applications for facilities for handling nuclear fuel materials.).

On November 30, 2016, the regulatory guide for standards applicable to facilities for handling nuclear fuel was partially revised and a new evaluation guide was formulated in order to enable examinations to be efficiently carried out. This was based on the characteristics of each nuclear fuel facility, applying the graded approach to verifying conformity to New Regulatory Requirements.

Based on discussions at review meetings, applications for changes in installation and permission were approved on May 11, 2016 for Kyoto University Critical Assembly (KUCA) and Kinki University's nuclear power reactor and on September 21, 2016 for Kyoto University's research reactor (KUR). With respect to the subsequent authorization and approval of designs and construction methods, both of these 2 universities submitted the applications splitting up several times. By February 7, 2017, matters were fully approved for Kinki University and partially approved for Kyoto University's research reactor (KUR) and Kyoto University Critical Assembly (KUCA).

With respect to Kinki University's nuclear reactor, a certificate to indicate that it had passed its pre-service inspection and another to indicate that it had passed its periodic facility inspection were issued. It was confirmed that construction had been undertaken according to authorized design and construction methods and that the reactor comformed with the Ordinance on Technical Standards for the Capabilities of Research Reactorsl on March 17, 2017.

In January 2016, the Safety Oversight Team for Tokai Reprocessing Plant and other facilities was established in accordance with instructions received from the NRA in order to oversee safety activities to reduce risks within the Japan Atomic Energy Agency (JAEA)'s Nuclear Fuel Cycle Engineering Research Institute's Reprocessing Facility (hereinafter referred to as "Tokai Reprocessing Facility"), such as status of implementation of vitrification, the manners for ensuring safety in the decommissioning process. This team had found no sign that a plan to decommission the Tokai Reprocessing Facility was any closer to becoming implemented in practice and had concluded not to find any prospects that the initial plan would be realized due

to a lot of problems regarding vitrification. The NRA issued thus instructions to the JAEA on August 4, 2016, to look into and report on a plan for the decommissioning of the Tokai Reprocessing Facility and establish an effective plan to quickly reduce risks management of highly radioactive waste water. 9 meetings in total of the Oversight Safety Team were held in FY 2016, discussed on the approach to ensuring the safety of the Tokai Reprocessing Facility and a response to the report that was submitted by the JAEA on November 30, 2016.

Proposals for amending relevant ordinances were drafted aiming that approval applications decommissioning plans can be submitted as quickly as possible, as part of efforts to safely and reliably decommission the Tokai Reprocessing Facility and reduce risks at an early stage. Having implemented procedures of public comments, initiatives to have these amendments adopted on March 22, 2017, are being pursued. Along with the adoption of amendments to relevant ordinances, a “Views on Reviews Conducted for the Approval of a Plan to Decommission Fast Breeder Reactor Monju and the Nuclear Fuel Cycle Engineering Research Institute (Reprocessing Facility) (draft)” was compiled and public comments accordingly were asked in order to facilitate reviews.

4. Implementation of Operational Safety Inspections of nuclear fuel facilities

In order to ensure the safety of nuclear fuel facilities, the NRA has periodically conducted quarterly operational safety inspections, primarily through nuclear safety inspectors stationed at NRA Regional Offices (22 offices) located near nuclear facilities. In addition, these inspectors make daily patrols of nuclear facilities, conduct interviews to ascertain the state of operations and witness of periodic tests in accordance with the configuration of each facility. Operational safety inspections of to nuclear fuel facilities conducted in FY 2016 revealed violations of operational safety programs as follows: 4 cases at reprocessing facilities, 3 cases at processing facilities, and 2 cases at usage facilities.

In addition, on-site inspections of nuclear fuel material-utilizing facilities were conducted in 21 offices.

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

(1) Incidents Reported Based on the Reactor Regulation Act

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

In FY 2016, 4 events occurred at commercial power reactors. The NRA has received reports on these events from licensees and will strictly check on efforts being undertaken by licensees to

ascertain causes and implement recurrence-prevention measures. (Events reported based on the Act related to Specified Nuclear Facility are listed in Section 1(3) of Chapter 3 hereof.)

Events reported based on the Act are subject to evaluations conducted according to the International Nuclear and Radiological Event Scale[16] (hereinafter referred to as "INES"). Of the 4 events that occurred in FY 2016, the one in Unit 3 of the Takahama Nuclear Power Station was determined as level zero (event with no safety significance). The other three are being evaluated as of the end of FY 2016. Both of 2 events that had occurred in commercial power reactors in FY 2015 were also determined as level zero (event with no safety significance).

i. **Establishing entry-restricted zones associated with leaks of liquids in a waste-treatment building at the Tokai No. 2 Power Station (Japan Atomic Power Company)**

On June 2, 2016, the Japan Atomic Power Company reported that an entry-restricted zone had been set up in accordance with Operational Safety Programs in response to measurements taken of the amount of radioactivity in leaked liquids inside a tank-vent processing equipment room on the first underground level of a waste-treatment building at the Tokai No. 2 Power Station and that this fell under an event reported based on the Act.

On July 25, 2016 (corrected to December 12 of the same year), the licensee reported on the causes of and measures taken for this event. In response, the NRA has been examining details of the report as of the end of FY 2016.

ii. **Corrosion of the ventilation ducts in the central control room of Unit 2 of the Shimane Nuclear Power Station (Chugoku Electric Power Co.)**

On December 8, 2016, Chugoku Electric Power Co. reported that they had found corrosion (measuring approximately 100 cm x approximately 30 cm) in a duct system through an inspection of air-conditioning and ventilation ducts in the central control room of Unit 2 of the Shimane Nuclear Power Station that this fell under an event reported based on the Act.

An outline of this event was reported at the 48th NRA Commission Meeting (December 14, 2016) by the NRA Secretariat. At the 53rd NRA Commission Meeting (January 11, 2017), a report was also made by the NRA Secretariat on corrosion that was newly detected through inspections of parts resembling ducts. Accordingly, the NRA established a policy of investigating facilities other than Unit 2 at the Shimane Nuclear Power Station.

At the 56th NRA Commission Meeting (January 18, 2017), it was decided to require the licensees to conduct direct exterior inspections of the ducts of facilities which should be ensure those liveable conditions in emergency and to submit a report on the results. Reports of plans and the results of inspections by the licensees are being received.

[16] The INES was formulated by the IAEA and the OECD/NEA as a scale to concisely indicate the significance in terms of safety of a given accident or malfunction affecting a nuclear facility. This scale is divided into evaluation levels that range from level zero (event that is immaterial in terms of safety) to level 7 (serious accident).

On March 9, 2017, Chugoku Electric Power Co. reported on the causes of and measures taken to the event. In response, the NRA has been examining details of the report actually, as of the end of FY 2016.

iii. Damage to steam-generator tubes confirmed during periodic facility inspection of Unit 3 of the Takahama Nuclear Power Station (KEPCO)

On January 12, 2017, Kansai Electric Power Company (hereinafter referred to as "KEPCO") reported that they had detected a signal indicating damage to the high-temperature-side of heat-exchanger tubes of the A-steam-generator which is one of 3 generators at eddy-current testing of Unit 3 of the Takahama Nuclear Power Station, which had been shut down for Periodic Facility Inspection, , and that this fell under an event reported based on the Act.

A report on the causes of and measures to the event was submitted by the licensee on January 19, 2017. At the 60th NRA Commission Meeting (February 8, 2017), the NRA evaluated that the investigation of causes and recurrence-prevention measures implemented by KEPCO were proper.

iv. Damage to cylinder cooling water pumps attached to an emergency diesel generator of Unit 2 of the Tsuruga Nuclear Power Station (Japan Atomic Power Company)

On February 3, 2017, the Japan Atomic Power Company reported that they had confirmed damage to cylinder cooling water pumps attached to a B-emergency diesel generator of Unit 2 of the Tsuruga Nuclear Power Station (hereinafter referred to as "Tsuruga Nuclear Power Station"), which had been shut down for Periodic Facility Inspections. It was determined that the emergency diesel generators were not equipped sufficient function for ensuring security, and that this fell under an event reported based on the Act.

A report on the causes of and measures to the event was submitted by the licensee on March 21, 2017. The NRA has been examining details of the report actually, as of the end of FY 2016.

v. Responses to accidents and problems in FY 2015

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

On February 29, 2016, Kansai Electric Power Co., Inc. reported that alarms for an internal failure of main transformer/power generator were triggered and the automatic shutdown of the turbine and reactor occurred along with the automatic generator trip in Unit 4 of the Takahama Power Station that was in the process of startup when parallel operation of the generators was implemented, which fell under an event reported based on the Act.

On March 9, 2016, a report on the causes of and measures to the event was submitted by

the licensee (and partially corrected on March 16 of the same year). At the 1st NRA Commission Meeting (April 6, 2016), the results of an investigation was reported. It describes that the cause of the event lay in operations of the protective relays with a current momentarily exceeding the operating value during parallel operations due to a failure to change the operating value without taking into account the impact of tidal currents. At the same time, it was determined that recurrence-prevention measures by the licensee are proper, such as implementation of quantitative impact assessment in case of using non-conventional methods, providing lectures on impact assessments of momentary tidal currents to the staff in charge. It was decided that recurrence-prevention measures would be checked when conducting Operational Safety Inspections.

(b) Excessive insertion of the control rod in Unit 5 of TEPCO's Kashiwazaki Kariwa NPS during periodic facility inspection

On March 8, 2016, TEPCO (Currently Tokyo Electric Power Company Holdings, Inc.) reported that the control rod drift alarm was generated even though the control rod was not operated because of the restoration of the hydraulic control unit (hereinafter referred to as "HCU") in Unit 5 of the Kashiwazaki Kariwa NPS during periodic facility inspection. Since the HCU restoration work was performed when this alarm was generated, TEPCO determined that this control rod was inserted deeper than the total insertion position, which fell under an event reported based on the Act.

A report on the causes of and measures to the event was received from TEPCO on April 8, 2016. It was determined at the 15th NRA Commission Meeting (June 15, 2016) that the investigation and recurrence-prevention measures implemented by TEPCO were proper.

(2) Responses to other major events

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

On March 30, 2012, the former Nuclear and Industrial Safety Agency instructed Chubu Electric Power Co., Inc., to investigate the influence of seawater inflow on the overall nuclear facilities, concerning the event which occurred in Unit 5 of the Hamaoka NPS on May 14, 2011. The NRA received reports on this investigation on May 12 and December 15, 2015. At the 2nd NRA Commission Meeting (April 13, 2016), it was decided that soundness evaluations at a system level and beyond, conducted by the Chubu Electric Power Company, and evaluations of the appropriateness of applications for conformity reviews pertaining to New Regulatory Requirements also made by the Chubu Electric Power Company shall be specifically studied.

ii. Improper laying of electric cable

On September 28, 2015, TEPCO reported the improper laying of electric cables at the Kashiwazaki-Kariwa Nuclear Power Station (currently operated by TEPCO Holdings; hereinafter referred to as “Kashiwazaki-Kariwa Nuclear Power Station”).

At the 39th NRA Commission Meeting (November 4, 2015) of FY 2015, TEPCO was instructed to investigate and report on the state of electric cables at the Kashiwazaki-Kariwa Nuclear Power Station. The NRA received reports in accordance with these instructions from TEPCO on November 11 and 30, 2015.

At the 48th NRA Commission Meeting of FY 2015 (January 6, 2016), TEPCO was instructed to conduct an analysis to ascertain the root causes of the improper laying of electric cable (hereinafter referred to as “root-cause analysis”) as confirmed at the Kashiwazaki-Kariwa Nuclear Power Station and formulate recurrence-prevention measures according to the results. Licensees installing nuclear commercial power facilities other than the Kashiwazaki-Kariwa Nuclear Power Station were also instructed to investigate the state of the laying of electric cable at their installations.

A report was received from TEPCO on January 29, 2016. At the 55h NRA Commission Meeting of FY 2015 (February 10, 2016), the root-cause analysis conducted by the licensee and the policy on recurrence-prevention measures formulated according to the results were determined to be appropriate.

Reports were received from the other licensees by March 31, 2016. Final reports were also received from Shikoku Electric Power Company on May 13, 2016, and Japan Nuclear Fuel Limited (hereinafter referred to as “JNFL”) on April 28, 2016, as both of 2 licensees had been in the middle of their investigation on March 31, 2016.

At the 18th NRA Commission Meeting (June 29, 2016), it was decided that the operational safety inspection period would be extended and that additional inspections would be conducted to verify the state of the implementation of corrective measures, the state of the implementation of recurrence-prevention measures, and measures for improving the quality-management system at certain nuclear facilities identified in these reports: namely, the Onagawa Nuclear Power Station, Fukushima Daini Nuclear Power Station, and Hamaoka Nuclear Power Station, which were found to fall under “Violation 2” as a classification of violations of the Operational Safety Programs. It was also decided that these items would be selected as basic inspection items in operational safety inspections at a reprocessing facility operated by the NJFL, which was found to fall under “Monitoring” as a classification of violations of the Safety Regulations, (hereinafter referred to as “Rokkasho Reprocessing Plant”) and at the Higashidori Nuclear Power Station (Tohoku Electric Power Company) (hereinafter referred to as “Higashidori Nuclear Power Station”) and Shika Nuclear Power Station (Hokuriku Electric Power Company)

(hereinafter referred to as “Shika Nuclear Power Station”), facilities where no violation of the Operational Safety Programs was ascertained.

A final report was received concerning the Tokai Reprocessing Facility on August 10, 2016. At the 48th NRA Commission Meeting (December 14, 2016), it was decided that future safety measures of the JAEA would be verified by the Safety Oversight Team for Tokai Reprocessing Plant and other facilities.

iii. Inflow of rainwater into a reactor building at the Shika Nuclear Power Station

At the 37th NRA Commission Meeting (October 19, 2016), it was decided to respond to the inflow of rainwater into Unit 2 building at the Shika Nuclear Power Station that occurred on September 28, 2016, were carried out as follows: Asking the Hokuriku Electric Power Company (hereinafter referred to as “Hokuriku Electric Power Company”) to report on its investigation into this event, its causes, and any recurrence-prevention measures being implemented and conducting investigations at other nuclear facilities based on the results of checking and evaluating this report.

A report was received from Hokuriku Electric Power Company on October 28, 2016. At the 43rd NRA Commission Meeting (November 16, 2016), Hokuriku Electric Power Company was instructed to analyze the direct and root causes of this event and formulate recurrence-prevention measures based on the results. Licensees installing nuclear commercial power facilities, including Hokuriku Electric Power Company, were also instructed to investigate of measures to prevent the inflow of water into any building especially important for safety from parts penetrating into the building.

Reports on the results of the investigations were received from the licensees by December 26 of the same year (some penetrating parts at the Fukushima Daini Nuclear Power Station and Rokkasho Reprocessing Plant were still under investigation at the time). A final report was received from the JNFL on January 24, 2017. At the 60th NRA Commission Meeting (February 8, 2017), the NRA was reported on the results of current-state investigations into building-penetrating parts, and decided to instruct the lincensees who had not taken waterproofing measures and to formulate plans and to report them (hereinafter referred to as “plans for waterproofing measures”). Reports on plans for waterproofing measures were received from the licensees by March 8 of the same year. A report was received from TEPCO indicating that the results of the investigation at the Kashiwazaki-Kariwa Nuclear Power Station reported on December 22, 2016 was erroneous and that the results of current investigations were scheduled to be reported again from FY 2017.

At the 73rd NRA Commission Meeting (March 29, 2017), an outline of plans for waterproofing measures was reported and actions to verify the state these measures by licensees were approved.

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

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

The system approves the extention 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. This requires adaptation of the standard of safety during the extended period. By the end of FY 2016, applications for 3 plants at 2 nuclear power facilities were submitted by one licensee. Review meetings focusing on these applications were held 4 times in FY 2016. At these meetings, extensive discussions were made on safety evaluations with respect to earthquake resistance, tsunami resistance and other evaluations concerning the state of deterioration. (See Reference 3-6 for the state of approvals of applications for operating period extension.)

Based on these discussions, an extension of the operating period was approved at the 16th NRA Commission Meeting (June 20, 2016) for Units 1 and 2 at the Takahama Nuclear Power Station and at the 43rd NRA Commission Meeting (November 16, 2016) for Unit 3 at the Mihama Nuclear Power Station.

(2) Status of Review Concerning Aging Management

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 over 30 years. This takes place every 10 years and is reflected to the operational safety programs.

In FY 2016, applications for 2 plants at 2 nuclear power facilities operated by 2 licensees - as plants subject to only evaluations conducted on the assumption that they remain in a state of cold shutdown - were made. (See Reference 3-7 for the state of approval changes to the Operational Safety Programs concerning the aging management.) The NRA approved applications for changes to the operational safety program concerning aging management system for Unit 1 of the Takahama Nuclear Power Station (approved June 20, 2016), Unit 2 of the Takahama Nuclear Power Station (approved June 20, 2016), and Unit 3 of the Mihama Nuclear Power Station (approved November 16, 2016), which are subject to evaluations on the assumption that they will remain in operations; and for Unit 2 of the Tsuruga Nuclear Power Station (approved November 2, 2017), which is subject only to evaluations on the assumption

that it remains in a state of cold shutdown.

For the aging technology evaluation in the 40th year after the operation period extension approval was sought, reviews were performed to prevent the overlapping of review content.

7. Evaluation of the Activity of Fracture Zones in the Site

At the 2nd NRA Commission Meeting (September 26, 2012) and the 5th NRA Commission Meeting (October 17, 2012) of FY 2012, the NRA determined that on-site investigations and evaluations concerning 6 nuclear power plants for which the former Nuclear and Industrial Safety Agency had indicated that it was necessary to conduct additional investigations into fracture zones in the site (Ohi Power Station, Tsuruga Power Station, Higashidori NPS, Prototype Fast Breeder Reactor Monju, Mihama Power Station and Shika NPS).

A five-member Expert Meeting was set up for each NPS, including NRA Commissioner Shimazaki until the meeting on September 18, 2014, and thereafter Commissioner Ishiwatari and 4 academic experts. These experts had not been involved in earlier safety assessments (including seismic back checks and secondary assessment) for their respective facilities but were independently recommended by 4 related academic societies, the Japanese Society for Active Fault Studies, the Geological Society of Japan, the Japan Association for Quaternary Research and the Seismological Society of Japan. The Expert Meeting performs on-site investigations, holds regular evaluation meetings and prepares the report. A peer review meeting was held to examine whether the draft evaluation report confirmed in an Expert Meeting is based on scientific and technical standpoints from the perspective of a neutral outsider. The objective of a peer review meeting is to hear the opinions of more specialists in order to elaborate the evaluation reports, but not to re-evaluate those fracture zones. Although the NRA refers to the evaluation results as “important knowledge”, any decision concerning conformity should be made in the conformity review to the New Regulation Requirements.

In FY 2016, the investigations of 2 sites (Prototype Fast Breeder Reactor Monju and the Shika NPS) were implemented. With these investigations, evaluations were concluded.

(1) Shika NPS

The Expert Meeting on the Investigation of Fracture Zones in the Site of the Shika NPS confirmed the evaluation conducted up to FY 2015 and submitted evaluation reports to the 6th NRA Commission Meeting of FY 2016 (April 27, 2016). These stated that “with regard to the northwest section of S-1, it was reasonable to interpret that the protrusions along the northeast side have undergone displacement due to reverse fault activity since the Late Pleistocene. On the other hand, there had been no activity since the Late Pleistocene on the southeast section inclusive of the parking lot’s southeast trench.”

(2) Prototype Fast Breeder Reactor Monju

The Expert Meeting on the Investigation of Fracture Zones in the Site of Prototype Fast Breeder Reactor Monju held one evaluation meeting and one peer-review meeting in FY 2016 and submitted evaluation reports to the 69th NRA Commission Meeting of FY 2016 (March 15, 2017). These stated that “Fracture zone A and other fracture zones had not been active since at least the Late Pleistocene.”

８.Study on Monitoring of Volcanic Activities

The NRA evaluates the results of the monitoring of volcanic activity undertaken by licensees. Once a change in condition the possibility is considerably slim that volcanic activity cannot be accommodated in terms of the design and safety might be affected, it will take measures such as ordering shut down of nuclear reactors at an early stage.

The NRA designated new items to be investigated and discussed in Reactor Safety Examination Committee at the 46th NRA Commission Meeting of FY 2015 (December 16, 2015), the evaluation concerning volcanic monitoring in the NRA and the rough standard for making judgments concerning nuclear reactor shutdown. Instructions were issued at the 7th Reactor Safety Examination Committee (March 25, 2016) to set up the SubCommittee of Volcano Monitoring to conduct an investigation and review.

In FY 2016, the first meeting of the SubCommittee of Volcano Monitoring was held on October 17, 2016. Discussions were made on the following points: Evaluations by the NRA of the volcanic monitoring results of the Sendai Nuclear Power Station (Kyushu Electric Power Company), criteria formulated by the NRA to judge nuclear reactor shutdown pertaining to volcanic activity. The results were reported at the 15th meeting of the Reactor Safety Examination Committee held on February 2, 2017.

９.Actions taken for Monju

In response to Recommendation given by the NRA on November 13, 2015, the Minister of Education, Culture, Sports, Science and Technology on December 28, 2016, on the state of Monju; Monju would be moving onto the decommissioning stage, directing and supervising appropriately the JAEA. And the Minister requested to investigate initiatives so that a fast-tracked application for decommission plans of reactor Monju can be approved.

Given that the decommissioning of the reactor is tied to the following listed special factors, public comment procedures and other actions to amend the relevant ordinances are being pursued given that the early reduction of risks necessitates the approval of a decommissioning plan with the fuel assemblies not yet removed from the reactor core and actions needed to

enable the early commencement of steps for decommissioning under the supervision of the NRA: (i) the decommissioning stage will commence during construction, (ii) with little in the way of actual results in terms of the removal of fuel bundles from reactor cores, approximately five and a half years will be needed for work to remove fuel from the reactor core, and (iii) this will be the first time a sodium-cooled nuclear power reactor facility will be decommissioned in Japan.

In order to continuously oversee the current state of Monju and the actions taken by the JAEA, the first meeting of Safety Oversight Team for Prototype Fast Breeder Reactor Monju Decommissioning was held. Attendees were given expoanations of the state of preparations for decommissioning the reactor.

１０.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 FY 2016, briefings on the results of reviews to permit a change in the installation of and extend the operation period of Units 1 and 2 of the Takahama Nuclear Power Station were held at local government council meetings in Fukui Prefecture. After approval for an extension of the operation period for Unit 3 of the Mihama Nuclear Power Station was granted on November 16, 2016, briefings on the results of the reviews were held at various local government council meetings in Fukui Prefecture and at meetings of expert committees set up in neighboring Gifu Prefecture. Briefings on the results of reviews to application for change in reactor installation permission to Units 3 and 4 of the Genkai Nuclear Power Station were held by officials with the NRA Secretariat at local government-hosted meetings of expert committees in Saga Prefecture and Genkai Town. Briefings were also held at meetings with local residents held in Saga Prefecture, Nagasaki Prefecture, and Fukuoka Prefecture.

So that the review results were easily understood by the general public, information materials, including illustrations and photos, were created and publicized through the NRA's website.

１１.Developing guidelines concerning evaluations for improving safety

As the development of a guide for improving safety was clarified as an issue in the IRRS report, the operational guidelines concerning evaluations for improving the safety of commercial power reactors were revised on March 29, 2017.

１２.Radiation control status report

The NRA summarized a radiation control status report in FY 2015 on the state of the management of radioactive waste as reported by licensees and the management of occupational exposure for radiation workers are stipulated in paragraph 1 of Article 67 of the Reactor

Regulation Act by combining details corresponding to the first half of FY 2015, and publicly disclosed this report on November 27, 2015, and details corresponding to the second half of the same fiscal year as publicly disclosed on May 31, 2016.

(1) Commercial nuclear power reactors

Regarding the state of the management of radioactive gaseous and radioactive liquid waste at commercial power reactors in FY 2015, these values at commercial power reactors came in lower than the annual emission management targets as prescribed in the Operational Safety Programs, with the exception of the Fukushima Daiichi Nuclear Power Station (TEPCO), which had been designated Specified Nuclear Facility. Regarding the state of the management of radioactive solid waste, no facility of any commercial power reactor was found to be storing radioactive solid waste of an amount exceeding its storage capacity.

In FY 2015, the amount of occupational exposure of individual workers at all commercial power reactors was found to be lower than the prescribed dose limits (100 mSv per five years and 50 mSv per year) in the “Notification to Establish Dose Limits in Accordance with the Provisions of the Ordinance concerning the Installation and Operations of Commercial Power Reactors”.

(2) Nuclear fuel facilities

Regarding the state of the management of radioactive gaseous waste and radioactive liquid waste at nuclear fuel facilities in FY 2015, values at nuclear fuel facilities were found to come in below annual emission management targets and three-month average concentration management targets as prescribed by the Operational Safety Programs for each facility. Regarding the state of the management of radioactive solid waste, no facility was found to be storing radioactive solid waste of an amount exceeding its storage capacity.

In FY 2015, the amount of occupational exposure of individual workers at each nuclear fuel facility was found to be lower than the prescribed dose limits (100 mSv per five years and 50 mSv per year) in the “Notification to Establish Dose Limits in Accordance with the Provisions of the Ordinance concerning the Nuclear Fuel Material Fabrication and Enrichment Activities”. Regarding the concentration of radioactive substances pertaining to seawater, seabed soil, marine products, and other items prescribed in the Operational Safety Programs in the sea area around the marine outlets of reprocessing facilities in FY 2015, some measurement values were slightly high and exceeded the normal band of fluctuations. Given the state of facility operations and the pattern by which measurement values were changing, however, it is not believed that these values are attributable to any failure in the reprocessing facilities or other such issues.

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

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

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

In the IRRS report to Japan, Recommentions are noted: initiatives concerning radiation controls, such as strengthening radiation source regulations in nuclear emergency, shall be reinforced in Japan in light of international standards set by the IAEA.

Security pertaining to radioisotopes has been an issue ever since the implementation of protective measures was recommended by the IAEA in January 2011 in its “Nuclear Security Recommendations on Physical Protection of Nuclear Material and Nuclear Facilities” and is an investigative issue that should be prioritized for the foreseeable future by the Investigative Commission on Nuclear Security. With respect to specific protective measures, discussions were held at meetings of the Working Group on Nuclear Security concerning Radioactive Isotopes under this Commission. At a meeting held in June 2016, a Report on Protective Measures for Radioisotopes, which outlined the thinking of the Commission on control targets, criteria applicable to protective measures, the control framework, and other pertinent points, was formally adopted.

The necessity of “continuously prioritizing the security of nuclear substances and other radioactive substances” and “endeavoring to further strengthen global nuclear security structures” is also noted in the G7 Ise-Shima Leaders’ Declaration of May 27, 2016.

In response, meetings of the Study Team on the Regulation of Radioisotopes, etc., whose members include the NRA Commissioner, external experts, and officials of the NRA Secretariat, were held 8 times in FY 2016. With revisions to the Act on the Prevention of Radiation Hazards due to Radioisotopes, etc. (Act No. 167 of 1957) (hereinafter referred to as the “Radiation Hazards Prevention Act”) kept in mind, an investigation to rebuild regulations based on this act was conducted. This study team engaged in discussions with a focus on enhancing and fortifying emergency responses and adding security measures for radioisotope-utilizing facilities and consolidated its thinking on the framework of new regulations. Subsequently in November 2016, the *Intermediate Report of Reviews of Controls Applicable to Radioisotope-Utilizing Facilities – Aiming to Achieve Higher Safety Levels at Radioisotope-Utilizing Facilities* was put together through public comment procedures. A draft revision of the Radiation Hazards Prevention Act, based on this interim report was submitted to the 193rd session of the Diet.

ii. Developing systems pertaining to the Act on Technical Standards for Prevention

of Radiation Hazards

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.

Since a higher level of specialist knowledge than previously is required in formulating technical standards, it was decided that the scope of the authority of the Radiation Council should be expanded to investigate and deliberate technical standards relating to the prevention of radioactive hazards in order to facilitate the incorporation of technical standards into domestic statutes and regulations by the relevant administrative bodies. Since the scope of the authority of the Radiation Council is set out in the Act on Technical Standards for the Prevention of Radiation Hazards (Act No. 162 of 1958), a draft revision of this Act was drawn up and submitted to the 193rd session of the Diet together with a draft revision of the Radiation Hazards Prevention Act.

iii. Participation in International Meeting

Policy of protection against radiation emitted by radioisotopes and other sources has been discussed at international meetings of the International Commission on Radiological Protection (ICRP) and other meetings 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 4. Participation in Meetings held by the IAEA, etc.

Name of conference	Schedule	Major agendas
IAEA Radiation Safety Standards Committee （RASSC[40]） meetings	June 21-23, 2016 (the 40th)	・Public radiation protection and environmental protection ・Safety guide (application of the concepts of exclusion, exemption, and clearance) ・International basic safety standards
	November 21-23, 2016 (the 41th)	・Study on the review of the safety guidelines “Application of the Concepts of Exclusion, Exemption and Clearance”

Name of conference	Schedule	Major agendas
		・Process of restoring areas affected by the presence of residual radioactive substances
3rd Open-Ended Meeting of Legal and Technical Experts to Develop Internationally Harmonized Guidance for Implementing the Recommendations of the Code of Conduct on the Safety and Security of Radioactive Sources in Relation to the Management of Disused Radioactive Sources	June 27-July 1, 2016	・Formulating guidelines concerning the management of disused radioactive sources
Open-Ended Meeting of Technical and Legal Experts for Sharing of Information on States' Implementation of the Code of Conduct on the Safety and Security of Radioactive Sources and its supplementary Guidance on the Import and Export of Radioactive Sources	May 30-June 3, 2016	・Exchange of information pertaining to initiatives on a code of conduct on the safety and security of radioactive sources and guidance on the importing and exporting of radioactive sources
OECD/NEA Committee on Radiation Protection and Public Health (CRPPH[41]) annual meeting	April 13-15, 2016(the 74th)	・Reporting on the activities of expert groups and the ICRP, IAEA, and UNSCEAR ・Investigating the mandate to be pursued by the CRPPH
	March 27-29, 2017 (the 75th)	・Reporting on activities of the NEA that relate to the CRPPH ・Reporting by expert group on radiolgical protection aspects of Fukushima accident ・Reporting on the psychological impact of the nuclear accident ・Cultivating and protecting human resources with

Name of conference	Schedule	Major agendas
		knowledge and skills pertaining to protection from radiation

(2) Setting up Radiation Safety Research Promotion Fund

The need to restructure regulatory frameworks and further allocate resources pertaining to radioisotopes was indicated in the IRRS mission report. As of the end of FY 2016, there were no projects systematically promoting safety research in the radiation protection field as had been conducted by the former Nuclear Safety Commission and no investigative research constituting a basis for appropriate regulations applicable to radioisotopes was being conducted.

In order to fully update and optimize regulations to radioisotopes, it is essential that international knowledge possessed by the International Commission on Radiological Protection (ICRP) be incorporated without delay and that an environment for continuously generating knowledge that can help enhance regulations be developed.

For this reason, Radiation Safety Research Promotion Fund was set up aiming at systematically and effectively promoting investigative research constituting the basis of regulatory controls.

１４.Implementation of Reviews and Inspections pertaining to the Radiation Hazards Prevention Act

(1) Implementataion of Reviews and Inspections for Prevention of Radiation Hazards

To prevent radiation hazards due to the use of radioisotopes and other sources of radiation, the NRA has regulated the use, dealing, leasing, waste management, and other handling of radioisotopes, use of radiation generating apparartuses, and waste management and other handling of contaminated with radioisotopes, based on the Radiation Hazards Prevention Act. (See Reference 3-8 for information on the state of examinations and inspections conducted in accordance with the Radiation Hazards Prevention Act.)

Based on recommendations issued by the IRRS mission carried out in January 2016, oversight of registered certification bodies acting on behalf of the NRA in accordance with the Radiation Hazards Prevention Act will be reinforced. In addition, inspections of registered certification bodies have been conducted since FY 2016 in order to maintain and enhance their quality of operations and reliability of examinations.

(2) Radiation Control Status Report

Based on the provisions of paragraph 1 of Article 42 of the Radiation Hazards Prevention Act, the NRA summarized the state of the storage and disposition of radioisotopes and the state of

management of occupational exposure of individual workers are subject as carried out at the offices of locations subject to controls the Radiation Hazards Prevention Act. This was in the form of a written report on the status of the radiation control for FY 2015 (for which the applicable period extended from April 1, 2015, to March 31, 2016).

The status of the storage of waste of radioisotopes at all sites during FY 2015 did not exhibit a particularly large variation, compared with past situation.

The occupational exposure of individual workers at each site in FY 2015 fell below the dose limits prescribed by the Act at all sites.

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

Article 39 of the Ordinance for Enforcement of the Prevention of Radiation Hazards Act requires licensees handling radioisotopes to report accidents and failures which occurred in their sites (hereinafter referred to in this section as “event reported based on the Act”) to the NRA. In addition, paragraph 3 of Article 33 of the Radiation Hazards Prevention Act requires licensees to submit a notification when taking emergency measures.

In FY 2016, there were 3 events and one emergency measure taken. These cases were handled as described below.

In addition, INES-based evaluations are being conducted for these cases. For these 4 cases, all of which occurred in FY 2016, evaluations remain ongoing as of the end of FY 2016. For 4 cases that had occurred at the offices of locations where radioisotopes were handled in FY 2014 and FY 2015, evaluations resulted in findings of level zero in each case (event with no safety significance).

(i) Theft of radioisotopes at DAIKYO

On April 20, 2016, a portable level meter (internal cesium-137 sealed radiation source) left inside a company vehicle was stolen. The incident was therefore reported to the police on the same day, but the item was not found. The theft was reported as corresponding to an event reported based on the Act characterized in terms of the theft of radioisotopes on April 21, 2016. The police reported on June 10 that the stolen meter had been found.

Given that a primary cause of the theft was a failure to exercise proper management due to the familiarity with which the meter was being used, it was decided that recurrence-prevention measures would be implemented by thoroughly applying rules on usage and storage and by maintaining proper records.

(ii) Disappearance of radioisotopes at NS Environment Corporation

On May 10, 2016, a radiation-source component in a gas chromatography detector in storage (internal nickel-63 sealed radiation source) went missing at NS Environment Corporation. Since the component could not be found despite a search of all possible locations, the case was reported as corresponding to an event reported based on the Act characterized in terms of the misplacement of radioisotopes on May 16, 2016. Information was publicly released and search activities were continued but the component remained lost. It is presumed that it was disposed of in error.

Given that a primary cause of the misplacement could be inadequate management due to a failure to thoroughly carry out procedures for handling radiation sources, it was decided that management would implement recurrence-prevention measures, such as providing compliance education on the management of radiation sources, enabling checks through internal audits to be undertaken by clearly specifying the management of radiation sources in internal company rules, and carrying out procedures for the disposition of radiation sources through internal memos.

(iii) Disappearance of radioisotopes at the Metropolitan Police Department

On conducting an inventory check of radiation sources for handgun gunsights (internal tritium-sealed radiation source) at the general training center for riot police of the Metropolitan Police Department, it was found that a used set of the components was missing on October 7, 2016. Since the set could not be found despite a search of all possible locations, this case was reported as corresponding to an event reported based on the Act characterized in terms of disappearance of radioisotopes on October 18, 2016. While interviews and checks of relevant logs have been subsequently conducted and the search remains ongoing and the set has not yet been found.

It is thought that primary causes of failures such as this might lie in the practice of storing spare radiation sources for gunsights in equipment storage locations together with other components, a failure to properly check inventory, a failure to properly educate employees, and a lack of awareness of the importance of properly handling gunsights caused by over-familiarity through many years of use, which led to a lack of thoroughness. It was decided that recurrence-prevention measures would be implemented by thoroughly engaging in management procedures, such as preparing special cases in a dedicated storage location for storing sets, having inspections conducted daily by persons in charge, thoroughly educating employees who handle sets, having periodic inspections conducted by higher-level executives, and having changes to accessories put in writing.

(iv) Fire at Kyoto University

On July 1, 2016, a user exited a low-level lab in the Faculty of Medicine at Kyoto University having left a throw-in heater powered-on atop a wooden shelf. The heater overheated, which caused the shelf to catch fire, which in turn spread to an aerosol can placed by the window. As the fire grew, the building was evacuated and firefighting actions were undertaken. Unsealed radiation sources in the controlled-access zone were moved to prevent an expansion of contamination. Even after the extinction, samples containing unsealed radiation sources were collected and work to eliminate contaminants were carried out. Exposure assessments on firefighters and persons in the building showed that they were not exposed to radiation. Measurements taken of the exterior walls of the structure, window frames, and surrounding soil revealed that there was no leak of radiation out of the controlled-access zone.

15. Examinations for chief engineers of nuclear fuel, chief engineers of reactors, and supervisors of radiation protection

(1) Examinations for chief engineers of nuclear fuel and chief engineers of reactors

The NRA administers national examinations to qualify chief engineers of nuclear fuel and chief engineers of reactors engaging in security and supervisory functions relating to the operations of nuclear reactors and the handling of nuclear fuel materials. Certificates were issued to 25 persons for the 48th examination for chief engineers of nuclear fuel and 11 persons for the 58th (written) examination for chief engineers of reactors. The 49th examination for chief engineers of nuclear fuel and 59th (written) examination for chief engineers of reactors were administered in March 2017.

(2) Checking the certification program pertaining to partial exemptions for examinations for chief engineers of nuclear fuel and examinations for chief engineers of reactors

In accordance with the Ordinance on Details Concerning the Examination for Chief Engineers of Nuclear Fuel and the Ordinance on Details Concerning the Examination for Chief Engineers of Reactors, the NRA admits a partial exemption for the written examination to persons who have completed a university graduate course deemed to be appropriate for acquiring specialized knowledge required of chief engineers of nuclear fuel and chief engineers of reactors (hereinafter referred to as a “certification program”). On the other hand, universities that have provided a certification program are required to check their program every five years.

The University of Tokyo, which provides a certification program, submitted an application pertaining to a check of their certification program on April 11, 2016 (revised to November 29, 2016). Having verified that the university’s program complies with the certification standards, the

NRA issued a notification to that effect on February 15, 2017.

(3) Type I, type II, and type III radiation protection supervisors

The NRA administers examinations to assess qualifications for the appointment of radiation protection supervisors overseeing the handling of radioisotopes (type I and type II) in accordance with the Radiation Hazards Prevention Act. With respect to the examinations for radiation protection supervisors for FY 2016 administered in August 2016, 788 persons passed the examination for type I supervisors and 801 persons passed the examination for type II supervisors. Type I and type II certifications were issued to persons who passed the examination for radiation protection supervisors and who took and completed a course for radiation protection supervisors and type III licenses were issued to persons who took and completed a course for radiation protection supervisors.

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

Initiatives are being undertaken to promote the sharing of information among offices/divisions thereby ensure effective coordination in terms of safety and nuclear security.

Specifically, reviews for change-approval applications - as provided for in the regulations governing the protection of material - were conducted within the section verifying nuclear security with reference to the “Requirements and Evaluation Points Concerning the Impact on Safety Facilities of Installing and Modifying Protection Systems and Equipment” which were formulated by the section verifying safety. Along with investigations of initiatives undertaken by the IAEA and the United States, examinations were also conducted on a Program for Designating Persons Handling Nuclear Material Protection Information (tentatively named) within the NRA Secretariat.

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

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

(1) Approval and Inspections of the Implementation Plan

In order to employ appropriate management methods in accordance with the state of facilities, the NRA designated the Fukushima Daiichi NPS (TEPCO) a "Specified Nuclear Facility" on November 7, 2012, and indicated to TEPCO measures which should be taken in order to secure the given nuclear power reactor facilities and protect specified nuclear fuel material. An application for the approval of an "Implementation Plan Pertaining to Specified Nuclear Facilities at the Fukushima Daiichi NPS" (hereinafter referred to as "Implementation Plan") was received and approval was granted on August 14, 2013, after points of concern were indicated.

From April 1, 2016, to March 31, 2017, 28 changes in total to the Implementation Plan were approved. The state of compliance with the Implementation Plan was subject to daily inspection rounds undertaken by nuclear safety inspectors at the NRA Regional Office. In addition, TEPCO's works were supervised through operational safety inspections, pre-service inspections, welding inspections, and other actions. (See Reference 4-1 for information on the state of Implementation Plan approvals and inspections.)

(i) Installing fuel-handling equipment to remove fuel from the number 3 spent-fuel pool

With respect to the installation of fuel-handling equipment for the purpose of removing fuel from the number 3 spent-fuel pool, the plan is to carry out the work remotely with the use of a crane given the fact that the work will entail exposure to high doses of radiation. However, bolt-fastening work and other such actions will involve elements of manned work. For this reason, the NRA undertook discussions on measures to reduce dose levels on the operating floor where manned work will be performed and measures to manage dose levels to which workers will be exposed during the performance of work ahead of the installation of the given equipment at a meeting of the Commission on Supervision and Evaluation of the Specified Nuclear Facilities (hereinafter referred to as "Supervision and Evaluation Commission"). On June 25, 2014, an application for approval to change the Implementation Plan was received. A check of dose-reduction measures through the installation of shielding undertaken when installing fuel-handling equipment has been conducted. In FY 2016, checks were conducted at the 51st meeting of the Supervision and Evaluation Commission (February 20, 2017) to determine whether the dose rate on the operating floor has improved so sufficiently that manned work can be continuously performed, whether newly installed shielding will affect fuel in the fuel pool as a result of slippage

caused by earthquakes, and whether safety functions will work correctly even if an operator makes an operational error.

(ii) Establishing Facility Number 1 for analyzing and researching radioactive material

The JAEA had promoted a plan to install a facility in Fukushima prefecture to analyze and research debris, fuel debris, and other radioactive material for the decommissioning of reactors at TEPCO's Fukushima Daiichi Nuclear Power Station. Subsequent adjustments led to the establishment of facility number 1 for analyzing and researching radioactive material[17] (hereinafter referred to as "Facility Number 1") on the premises of TEPCO'S Fukushima Daiichi Nuclear Power Station. This facility shall be managed as part of a specified nuclear facility by TEPCO.

Before an application for approval to change the Implementation Plan was made, the NRA, based on an understanding that Facility Number 1 will be established on the premises of TEPCO's Fukushima Daiichi Nuclear Power Station, carried out discussions at the 24th meeting of the Supervision and Evaluation Commission on oversight for safety actions applied to Facility Number 1 by TEPCO and on whether there was sufficient capacity to handle the amount of samples that will need to be analyzed in the course of undertaking decommissioning work.

Since an application to change the Implementation Plan relating to the installation of Facility Number 1 was received on September 23, 2016, at a meeting of the Committee on Radioactive Waste Issues of the Specified Nuclear Facilities, the thinking for written arrangements between TEPCO and the JAEA and the system of communications in case a problem occurs were confirmed. The application was approved on March 7, 2017.

(iii) Land-side impermeable wall and other measures to suppress groundwater infiltration

Discussions on safety checks associated with the installation of a land-side impermeable wall were carried out at a meeting of the Supervision and Evaluation Commission. After verifying that the plan will not result in counter-productive results in terms of the level of contaminated water retained indoors, through a lowering of the level of groundwater attributed to the installation of an impermeable wall. The Implementation Plan was thus approved on March 30, 2016. Subsequently on October 17, 2016, an application was received to approve changes to the Implementation Plan pertaining to the second phase - (part 1) (freezing some (two) unfrozen parts (seven parts remaining)). Upon verifying that the groundwater level could be restored by stopping the sub-drain, this application was approved on December 2, 2016. Subsequently on February 1, 2017, an application was received to approve changes to the Implementation Plan

[17] An application for a second facility to handle water treatment-based waste and fuel debris with high radiation dose values is slated to be made.

pertaining to the second phase - (part 2) (freezing some (four) unfrozen parts (five parts remaining)). This application was approved on March 2, 2017.

The NRA seeks to have measures to restrict the infiltration of groundwater into reactor buildings implemented with a focus on sub-drains and has discussed the possibility of accelerating the fortification of sub-drains and the process of constructing tanks at sessions of the Supervision and Evaluation Commission. Based on these discussions, an application to change the Implementation Plan by incorporating a sub-drain pit for pumping purposes into a sub-drain and catchment facility was made on February 4, 2016 and approved on September 29, 2016, and an application to change the Implementation Plan by installing a purifier that includes sub-drains was made on October 21, 2016 and approved on January 25, 2017.

(iv) Investigating to protect against external events (measures to reduce water retention in structures)

The NRA has indicated the thinkings on the approach to protecting the Fukushima Daiichi NPS (TEPCO) from tsunami events: it consideres more important to eliminate contaminated water and other risk sources themselves rather than to seek to prevent the inflow of tsunami water onto the premises.

Accordingly, as the schedule for measures to reduce stagnating water in buildings was presented by TEPCO at a meeting of the Supervision and Evaluation Commission, an acceleration of the targeted date for the completion of the disposition of stagnating water in buildings (2020), the implementation of dust-containment measures for the performance of work, and the early elimination of contaminated water stored in condensers have been requested. With respect to water pumped up from an on-site well (groundwater drain and well point) with a four-meter disc that constitutes a factor behind the increasing volume of water retained in structures, the necessity of installing a new purifier to enable purification without having to transfer the water to the structure had been discussed.

Based on these discussions, an application to approve changes to the Implementation Plan associated with a review of the configuration of sub-drains and the level of stagnating water in buildings was made on April 11, 2016, an application to approve changes to the Implementation Plan associated with the installation of equipment to transfer stagnating water in the number 1 turbine building was made on October 5, 2016, and an application to approve changes to the Implementation Plan associated with the installation of groundwater drain preprocessing equipment and changes to the specifications of sub-drain water-collection equipment and transfer pipes was made on November 2, 2016. These applications were approved on July 22, 2016, January 31, 2017, and December 8, 2016, respectively.

With respect to the compliance with the Implementation Plan, works carried out by TEPCO have been supervised by various ways, including daily tours of inspection conducted by nuclear safety inspectors as well as 4 safety inspections, 21 pre-service inspections, and 10 welding inspections conducted between April 1, 2016, and March 31, 2017.

At the 8th NRA Commission Meeting (May 11, 2016), evaluations of reports received from TEPCO on leaks of RO-concentrated water (Sr-treated water[18]; same hereinafter) from transfer pipes leading to the G6 tank area were discussed. At the 41st NRA Commission Meeting (November 2, 2016), violations (monitoring) of the Implementation Plan pertaining to flaws in the maintenance plan for 66 kV paired transmission towers were discussed. The NRA received a report from TEPCO pertaining to a declaration of deviation from operating restrictions as set forth in Article 18 of Volume 1 of Implementation Plan III (reactor water-injection system) for a Specified Nuclear Facility arising from the stoppage of an operating pump after a worker touched the operating switch for regular reactor water-injection pump number 3 (type B) on December 5, 2016, which caused the cooling of the reactor by the regular reactor water-injection system to cease. Upon receiving this report, the NRA conducted an on-site inspection according to the provisions of paragraph 1 of Article 68 of the Reactor Regulation Act and verified that necessary measures had been taken.

With respect to periodic facility inspections, a third inspection was conducted with placed on equipment in Specified Nuclear Facilities for which the maintenance of performance was considered to be important.

(2) Measures for Mid-term Risk Reduction

The NRA developed Measures for Mid-term Risk Reduction at TEPCO's Fukushima Daiichi NPS (as of February 2015), at the 57th NRA meeting of FY 2014 (February 18, 2015), for the purpose of setting a target related to measures at TEPCO's Fukushima Daiichi NPS.

Subsequently, the Measures for Mid-term Risk Reduction at TEPCO's Fukushima Daiichi NPS (December 2016 version) were revised at the 48th NRA Commission Meeting (December 14, 2016) in accordance with the state of progress since the previous revisions were put into effect as well as the clarification by the Supervision and Evaluation Commission of the timing of the dismantling of the upper parts of stacks for Units 1 and 2 and the timing of the implementation of mega-float measures.

It was agreed the Measures for Mid-term Risk Reduction shall be reviewed on a regular basis

[18] Water whose concentration of cesium and strontium has been reduced on an anticipatory basis to a certain extent prior to purification by an Advanced Liquid Processing System (ALPS).

and the status of target achievements shall be assessed. Also, from a standpoint of overseas public relations, an English version of the Map was prepared, and was publicized on the NRA's homepage.

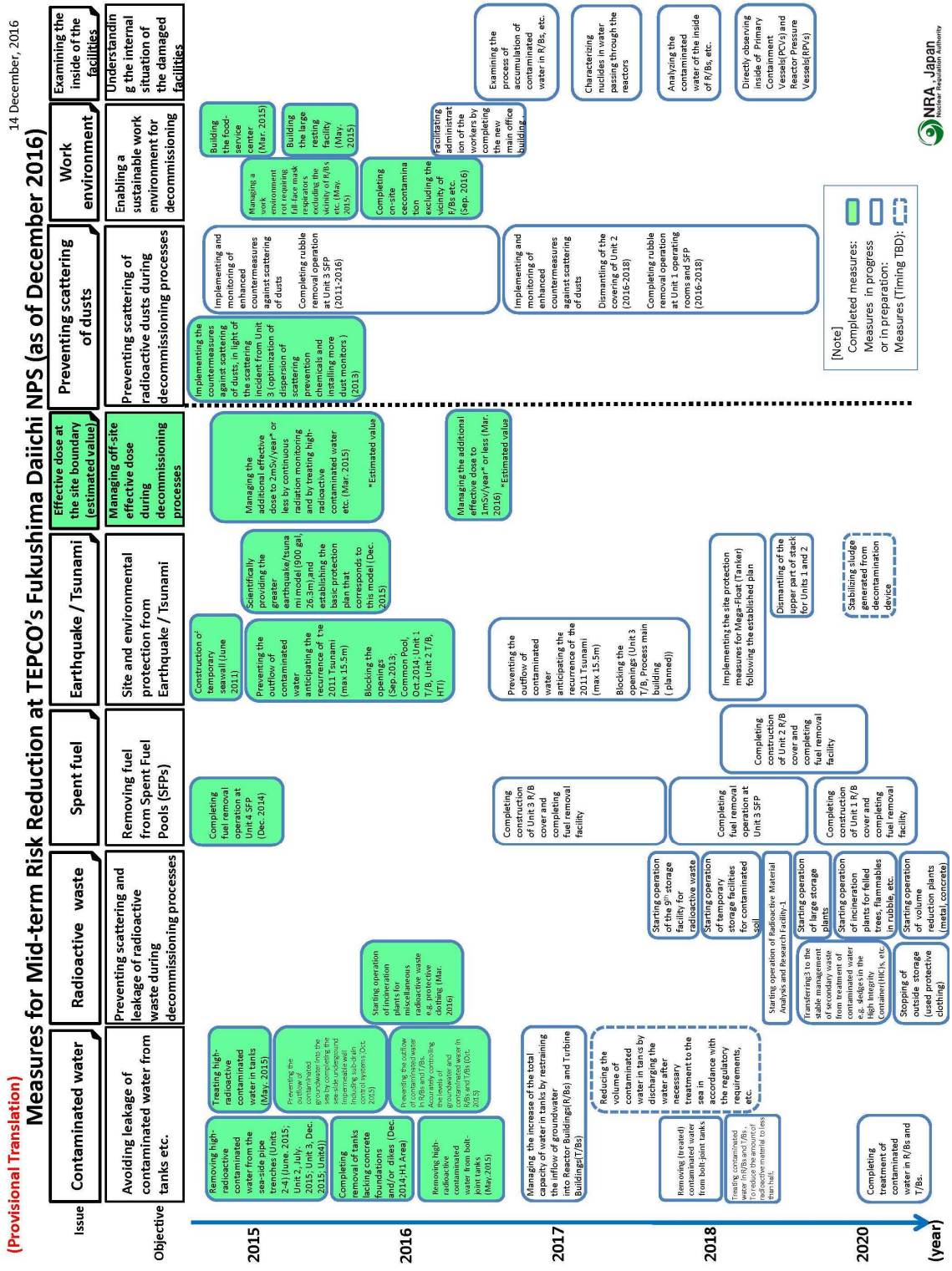

Figure 1. Measures for Mid-term Risk Reduction at TEPCO's Fukushima Daiichi NPS (December 2016 version)

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

Article 62-3 of the Reactor Regulation Act requires licensees to submit a report to the NRA whenever an event reported based on the Act occurs.

In FY 2016, there was an event at TEPCO's Fukushima Daiichi NPS. This event was handled as described below. However, no INES-based evaluation for this event has been conducted in light of plant circumstances. Nevertheless, an outline of this event and the impact that it has had on the environment has been reported to the IAEA.

With respect to a proposed revision that would add cases of minor leaks in order to present criteria for excluding leaks of radioactive liquid material from the scope for events, it was decided to ask public comments at the 64th NRA Commission Meeting of FY 2015 (March 30, 2016) and a resolution to enact this revision was adopted at the 9th NRA Commission Meeting (May 18, 2016).

(i) Leakage of RO-concentrated water from transfer pipes leading to the G6 tank area

On April 20, 2016, the leakage of RO-concentrated water from transfer pipes leading to the G6 tank area and the leakage of water with a concentration of radioactive material exceeding the effluent standard as prescribed in the Implementation Plan by TEPCO in a controlled area were reported as corresponding to events reported based on the Act. The NRA Secretariat checked the state of the site at TEPCO's Fukushima Daiichi NPS and verified that the leaked water remained within a limited scope that there had been no impact on the environment. Discussions on the state of an investigation into causes by TEPCO and on future responses were held.

On May 2, 2016, the NRA received a report on the cause of and measures to deal with this event. This report was subsequently checked. At the 8th NRA Commission Meeting (May 11, 2016), the following findings were made: there was no environmental impact that could be considered a cause of concern given that no significant fluctuations could be seen in values indicated by the radiation monitor set up at the drainage canal around the site, recurrence-prevention measures had been taken to have gaskets for the affected flange replaced and have inspections of transfer pipes for Sr-treated water installed outdoors conducted once a year with heat-insulating material in a removed state.

Section 2: Analysis of TEPCO's Fukushima Daiichi NPS accidents

The thorough analysis of the accident at TEPCO's Fukushima Daiichi NPS is a priority matter under the jurisdiction of the NRA and therefore validation from a technical point of view is crucial.

At the 34th NRA meeting of FY 2012 (March 27, 2013), the NRA decided to set up the Study Committee on Analysis of TEPCO's Fukushima Daiichi NPS Accidents to determine technical issues. The Committee consisted of Commissioner Fuketa, external experts, and officials of the NRA Secretariat, officials of JNES (at that time) and officials of the Japan Atomic Energy Agency. The meetings of the Commmittee have been held since May 2013.

The NRA proceeded with consideration by means of discussions by the Study Committee and on-site investigations of TEPCO's Fukushima Daiichi NPS. This includes 5 Study Committee meetings and 4 on-site investigations in FY 2013 and one Study 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 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.

The interim report contained analyses by use of plant data, analyses of on-site investigations carried out with regard to seven items, which were defined as the problems to be solved in the National Diet Investigation Commission Report, and pointed out in the reports by the Accident Investigation and Verification Committee at TEPCO's Fukushima Daiichi NPS. For the individual items, the NRA's opinions were finalized.

In FY 2016, the results of radiation-source investigations conducted to date on operating floors of Units 3 and 4 at TEPCO's Fukushima Daiichi NPS were summarized and presented to international conferences. The NRA also participated in investigative and research activities undertaken by the OECD/NEA.

Section 3: Implementation of Radiation Monitoring

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, finally revised on April 1, 2016) by carrieng out the general environmental radiation monitoring on Fukushima Prefecture and sea area monitoring surrounding the Fukushima Daiichi NPS (TEPCO) and Tokyo Bay and releasing the results of analysis each month.

Based on a review of environmental radiation monitoring carried out at the 55th NRA Commission Meeting of FY 2015 (February 10, 2016), the detailed monitoring of areas where evacuees were not likely be allowed to return home soon was conducted and the results of the process were released on November 18, 2016.

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

The NRA implemented airborne monitoring in the entire area of Fukushima. In February 2016, the NRA published the air dose rate map as of October 15, 2016 in the 80 km zone around TEPCO's Fukushima Daiichi Nuclear Power Station, as well as the map as of November 18, 2016, in the 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 FY 2015 (the aggregation of distribution data of radioactive materials along with accidents in the Fukushima Dai-ichi NPS of Tokyo Electric Power Co., Inc.) in June 2016 to post 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.

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

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

(3) Sea Area Monitoring

Continuing from FY 2015, 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 the vicinity, coast, offshore, and open ocean of TEPCO's Fukushima Daiichi NPS and from Tokyo Bay, and analyzed the radioactivity in those samples.

In addition, experts from IAEA environment laboratories visited Japan in May and November 2016, and in cooperation with the Secretariats of the NRA, collected seawater and sediment in May, and seawater and fisheries samples in November, offshore near TEPCO's Fukushima Daiichi NPS, in order to provide inter-laboratory comparisons of the results. They verified that the data of Japan shows a high level of accuracy as a result of this inter-laboratory comparison of the analysis results.

Chapter 4 Establishing Technical and Human Resource Foundations for Ensuring Nuclear Safety

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

1 .Persistent improvement of regulatory requirements

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

These requirements (including interpretation and guidelines) are to be continuously studied based on the latest scientific and technological knowledge.

(1) Formulating a process for incorporating up-to-date knowledge

Based on Recommendations concerning "regular reviews of regulatory requirements and guidelines" as issued by the IRRS mission, the conventional approach to incorporating the latest scientific and technical knowledge into regulatory controls was settled. The scope of information to be gathered and organized, the system for gathering and organizing, the thinking behind the application of such information to screening functions and regulatory requirements, and the procedures applicable to the process (hereinafter referred to as "process of incorporating up-to-date knowledge") were summarized and approved at the 45th NRA Commission Meeting (November 22, 2016).

In this context, it was decided that some actions also for regulatory requirements not subject to be revised shall be introduced to the process of incorporating up-to-date knowledge approximately every five years as a general rule. More specifically, the following actions will be introced to the process: identifying issues to be revised, checking the necessity of the revisions, organizing essential points to revise them.

When incorporating knowledge into regulatory controls, the thinking behind the application of such controls to new and upgraded facilities and equipment was stated in the process of incorporating up-to-date knowledge.

(2) Revising regulatory requirements in FY2016

(i) Partially revising Regulatory Guides on Technical Standards for nuclear fuel facilities in connection with the graded approach and formulating evaluation guidelines

The NRA approved basic concepts on the graded approach applicable to events at off-site

taking into consideration conformity reviews to New Regulatory Requirements for research reactors at the 15th NRA Commission Meeting (June 15, 2016). The graded approach for nuclear fuel facilities was discussed, based on this basic concept, at the 50th NRA Commission Meeting (September 7, 2016). The NRA then asked public comments on it and determined partially revising the following Regulatory Guides and formulating evaluation guidelines to nuclear fuel facilities on November 30, 2016, and put them into force accordingly.

- Regulatory Guide of the NRA Ordinance on Standards for the Location, Structure and Equipment of Fabrication Facilities;
- Regulatory Guide of the NRA Ordinance on Standards for the Location, Structure and Equipment of Usage Facilities;
- Regulatory Guide of the NRA Ordinance on Standards for the Location, Structure and Equipment of Waste Storage Facilities;
- Regulatory Guide of the NRA Ordinance on Standards for the Location, Structure and Equipment of Research Reactors;
- Guideline for Impact Evaluations in Connection with the Prevention of Damage Caused by Tornadoes and External Fires at Nuclear Fuel Facilities.

(ii) Ensuring habitability of nuclear reactor control room against toxic gas

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

As a simple evaluation conducted by the NRA Secretariat indicated that any leak of a toxic substance could possibly affect the habitability of a nuclear reactor control room, the NRA approved on November 25, 2015, a framework to be followed in formulating guidelines to satify requirements stipulated by ordinances and for use by examiners when checking the validity of toxic gas impact assessments conducted bylicensees.

Based on the results the "Meeting on Evaluating the Habitability of a Nuclear Power Plant Control Room During a Postulated Hazardous Chemical Release", a framework on regulatory requirements concerning the protection of commercial nuclear reactor facilities from toxic gas was summarized at the 19th NRA Commission Meeting (July 6, 2016). At the 37th NRA Commission Meeting (October 19, 2016), discussions were held and public commenting procedures were carried out on revision of ordinances pertaining to protection from toxic gas and formulating of relevant assessment guidelines.

(iii) Study on formulation of guidelines on human and organizational factors

Based on Suggestion on "Consideration of human and organizational factors" by IRRS mission, the Secretariat of the NRA is carrying out a study on the formulation of guidelines on assessing human and organizational factors in the design of reactor control rooms etc., the guidelines on assessing safety culture fostering, and guidelines on assessing cause analysis, in order to systematically consider human and organizational factors at the design stage. The status of the study was reported at the 45th NRA Commission Meeting of FY 2016 (November 22, 2016).

(iv) Examining the revision of ordinances on standards and the formulation of assessment guidelines for high-energy arcing fault (HEAF) events

The NRA, having engaged in research on high-energy arcing faults (hereinafter referred to as “HEAF”), learned that shortening the duration of continuous arcing can mitigate the impact of explosions attributed to arcing and can prevent fires.

In order to reduce risks from HEAF events, regulatory requirements were examined to be revised, based on the use of this knowledge. At the 62nd NRA Commission Meeting (February 22, 2017), it was approved to ask public comments on revised ordinances on standards for HEAF and guide concerning electrical panel designs.

(v) Guidelines for Assessing the Impacts of Tornadoes on 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 a Japanese version of the upgraded JEF Scale, which will make it possible to more precisely assess wind speed. Assessments of tornadoes and other turbulent winds based on this scale began in April 2016.

Accordingly, the NRA held discussions at a meeting of the Technical Information Committee (October 19, 2016), as a result, it was determined that guidelines would be revised to add JEF scale-based assessments to the Tornado Impact Assessment Guidelines. Investigations on the proposed amendments to the guidelines are being conducted.

(vi) Investigation in connection with standards applicable to dry cask for storage and transportation of spent fuel

In connection with the spent fuel storage in a nuclear power station - tied to discussions on Mitsubishi Heavy Industry’s Type-Designation Application for Type Design Specified Containers (for BWR fuel) as held at the 35th NRA Commission Meeting (October 5, 2016) - the NRA

decided to review standards applicable to earthquake resistance to ensure that casks for storage and transportation satisfy strict requirements. At the 61st NRA Commission Meeting (February 15, 2017), it was decided that the "Study Team on Spent Fuel Transport and Storage Cask" would be established to commence investigations.

(vii) Investigation in connection with evaluations of the concentration of pyroclastic fall

The NRA is analyzing reports issued by the Central Research Institute of the Electric Power Industry and assessments of the impact of pyroclastic fall in order to incorporate the findings and the latest knowledgh into regulatory activities. At the 61st NRA Commission Meeting (February 15, 2017), it was decided that meetings of the Study Team on Evaluation for Pyroclastic Fall Deposits, its first meeting was held on March 29, 2017.

(3) Utilization of private 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 private standards of the Atomic Energy Society of Japan (AESJ), the Japan Society of Mechanical Engineers (JSME), the Japan Electric Association (JEA), and other organizations as concrete detailed specifications that fulfill the performance levels.

(i) Conducting technical evaluations of private-sector standards

In order to conduct technical evaluations of the 2012 version of and 2013 and 2014 supplements to the Standards of Nuclear Facilities for Power Generation: Maintenance Standards and the following standards with respect to the Maintenance Standards, discussions that were a continuation of discussions held in FY 2015 were held at meetings of the Study Team on Technical Evaluation of Fitness-for-Service Standards. (See Reference 6-3 for information on the state of investigations.)

- Japan Electric Association: "Eddy current flaw detection testing guidelines for equipment at nuclear power stations (JEAG4217)", 2010 version
- Japan Electric Association: "Ultrasonic flaw detection testing regulations for in-service inspections of equipment at light-water nuclear power stations (JEAC4207)", 2008 version and 2012 supplement
- Japan Electric Association: "Vortex flaw detection testing guidelines for in-service inspections of steam generator heat exchanger tubes at nuclear power stations (JEAG4208)", 2012 version
- Japanese Society for Non-Destructive Inspection: "Qualifications and certification of engineers

for performance demonstration testing of ultrasonic flaw detection testing systems (NDIS 0603)", 2015 version

2.Study on regulations of radioactive waste associated with reactor decommissioning

In order to develop regulatory requirements for radioactive wastes of core internals with relatively-high radioactive concentration, which is generated by decommissioning and operation of nuclear facilities (hereinafter referred to as "core internals wastes."), the NRA have been discussing them in "The Study team on the Regulation of Radioactive Waste in Decommissioning" from FY 2015 (7 meetings were held in FY 2016).

As a result of this study, "Thinking on regulatory controls pertaining to the burial of core internals wastes" was formulated at the 29th NRA Commission Meeting (August 31, 2016) as a preliminary step for regulatory requirements.

At meetings of the Study Team on Radiation Protection Standards of Waste Disposal held since FY 2015, investigations of standards for radiation protection relating to the burial of waste and standards for releasing nuclear facility sites were conducted (5 meetings were held in FY 2016).

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

1.Promotion of safety research

(1) Implementation of safety research

To conduct its duties appropriately, the NRA must perform safety research to respond to the problems to persistently improve the nuclear safety, and accumulate the latest scientific and technical knowledge.

(i) Formulating the Basic Policy on Safety Research by the NRA

The NRA, in deciding to review research areas to be implemented based on progress in safety research conducted to date, formulated the "Basic Policy on Safety Research by the NRA" at the 19th NRA Commission Meeting (July 6, 2016) and decided that the "Fields of and Policy on the Implementation of Safety Research to be Promoted" would be formulated from FY 2017, in principle each year.

(ii) Formulating the "Fields of and Policy on the Implementation of Safety Research to be Promoted (for safety research to be conducted for and after FY 2017)"

The NRA reviewed safety research for and after FY 2017 based on the "Basic Policy on 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 FY 2017)" at the 20th NRA Commission Meeting (July 13, 2016).

(iii) Status of performed safety research

The NRA implemented 35 safety research projects in 9 research fields in FY 2016 based on "About Safety Research at the NRA (FY 2015 version)", which defines fields of safety research to be undertaken in and after FY 2015.

(iv) Outcome of safety research

As the outcome of safety research, the NRA released "NRA Technical Reports", which finalized the technical knowledge and the experimental data to be used for judgment of regulatory requirements, various guidelines, and examinations and inspections. In FY 2016, the NRA released 2 reports as listed below. In addition, the NRA submitted 13 papers and provided 43 conference presentations.

Table 5 NRA Technical Reports released in FY 2016

Date of issue	Title
June 2016	Data on Aircraft Crash Accidents
December 2016	Water Depth Coefficients for Evaluating Tsunami Pressure on Seawall

(v) Formulating rules for implementation of joint research

The NRA Secretariat reported at the 37rd NRA Commission Meeting (March 29, 2017) that "Rules for Implementation of Joint Research" would be formulated as a set of internal rules of the NRA, in order to effectively and efficiently carry out safety researches through reinforcing the system of cooperation with relevant research institutes.

(2) Evaluation of safety research

It is important to evaluate the progress of safety research and the utilization status of the utilization of outcomes in nuclear safety regulations and to improve it when necessary.

The NRA conducts evaluations for all safety research projects at the start and completion of each project.

(i) Intermediate evaluation of safety research in FY 2015

The NRA approved the results of the intermediate evaluation of safety research projects in FY 2015 at the 16th NRA Commission Meeting (June 20, 2016).

The intermediate evaluation in FY 2015 shows that, among projects with a research implementation period of 5 years or more, researches would be continued in 5 out of 6 projects which had been conducted for more than 3 years since the commencement as of the end of FY 2015.

It was decided that the remaining one would be terminated before its completion date (scheduled for FY 2017) since the initially planned results had been obtained.

(ii) Intermediate evaluation of safety research in FY 2016

The NRA approved the results of the intermediate evaluation of safety research projects in FY 2016 at the 52nd NRA Commission Meeting (December 28, 2016).

The intermediate evaluation for FY 2016 focused on 3 projects which had been conducted for 3 years since the commencement as of the end of FY 2016. Based on the evaluation, it was decided that research plans for 2 out of those 3 projects would be revised taking into consideration the evaluations which were based on opinions from external experts of the Technical Evaluation Committee on Safety Research and on checks by the NRA Secretariat.

It was decided that the remaining one would be carried out, changing the ways of the management, based on annual plans so as to conduct promptly and accordingly situational changes.

(iii) Annual evaluation of safety research in FY 2015

The NRA Secretariat reported on the results of the annual evaluation of safety research projects in FY 2015 at the 16th NRA Commission Meeting (June 20, 2016).

The annual evaluation for FY 2015 focused on 37 projects. It was determined that the continuation of research in FY 2016 on 34 out of those 37 projects was appropriate (2 projects were completed as planned and one project was completed as these projects had been determined by the intermediate evaluation for FY 2015).

Based on the results of the annual evaluation for FY 2015, the safety research plan for FY 2016 was formulated.

(iv) Ex-post evaluation of safety research in FY 2015 and ex-ante evaluation of safety research in FY 2017 plan

The NRA approved the results of the ex-post evaluation of safety research projects in FY 2015 and results of the ex-ante evaluation of safety research projects to be commenced in FY 2017, at the 33rd NRA Commission Meeting (September 21, 2016).

The ex-post evaluation of safety research in FY 2015 shows that in the 2 safety research projects which were completed as planned in FY 2015 the outcomes were obtained as expected,

generally. It was decided that the state of disclosure of the results and the state of their application to regulations would be checked through the future follow-up evaluations.

On the ex-ante evaluation of safety research in FY 2017, it was confirmed that 15 safety research projects newly established for FY 2017 complied with the “Fields of and Policy on the Implementation of Safety Research to be Promoted”. It was decided that the researches should be conducted in accordance with indications and opinions presented at the ex-ante evaluation.

2.Gathering and analysis of domestic and international trouble information

The NRA gathers and analyzes information on accidents and problems occurring in Japan and overseas and on trends of overseas regulations. The NRA investigates into required measures, obtaining the results of evaluations and advice provided by the Reactor Safety Examination Committee and the Nuclear Fuel Safety Examination Committee, and incorporates findings into regulatory requirements from time to time.

In FY 2016, 118 files on problems occurring in Japan and overseas were gathered and analyzed, and 7 meetings of the Technical Information Committee were held. Results of the investigation on measures to be taken and other matters were sequentially reported at the NRA Commission Meetings.

In FY 2016, the NRA asked public comments on amendments draft of ordinances into which the latest knowledge on HEAF events was incorporated as a part of efforts to new information into regulatory requirements and standards.

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

1. Securing personnel resources

In order to execute effective nuclear regulations, it is essential to secure personnel resources having expertise to support NRA’s highly professional and technical decisions. Since its establishment, the NRA has made employed experienced people with high skills and new graduates to be expected to take an important role in administrations for nuclear regulations in the future.

The NRA made recruitment efforts for experienced persons (worked in other sectors including the private), mainly targeting on personels expected to be in charge of reviews/inspections for safety regulations, nuclear disaster management, safety research and other duties as in FY 2015. As a result, the NRA employed 44 persons by April 1, 2017.

For new graduates recruitement, the NRA actively sought personels through open recruitement for research staff in charge of technical researches or investigations, conducting the “Nuclear Engineering Workers’ Employment Examination” (corresponding to the examination

for general office work) which is the NRA's own employment examination and making good use of the examination, to proactively employ new graduates majored in nuclear engineering. As a result, the NRA ensured 19 younger personels particularly expected to take an important role in administrations for nuclear regulations in the future.

Consequently, there were 955 employees and the ratio of employees to the prescribed number of personels at the NRA Secretariat attained to 98.7%, almost filled.

In order to attract large numbers of qualified personnel to apply for these positions, the NRA carried out proactively campaign for recruitement such as presentations on the acrivities/missions of the NRA and other public relations activities emphasizing the importance of regulations for nuclear safety.

Besides, 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 program for human resource development.This program has been carried out in collaboration with universities and other institutions since FY 2016. In FY 2016, 13 projects, some of which would be conducted by universities, were adopted.

Table 6 Situation of securing personnel resources from FY 2013 to FY 2016

	FY 2013	FY 2014	FY 2015	FY 2016	Total
Person with work experience	32	57	52	44	185
New employee	33	22	19	19	93
Total	65	79	71	63	278

2. Human resource development

(1) State of initiatives for human resource development and training in accordance with the Basic policy of development of NRA officials

Working for nuclear regulatory administration requires specialized and highly technical decisions for nuclear reactor engineering, earthquake and tsunami resistance evaluation, radiation protection, probabilistic risk assessment and others. Therefore, it is essential to continuously improve this field of expertise. Thus, training programs for employees were set up to carry out the human resource development in a systematic manner employing the NRA Human Resource Development Center, which was established in March 2014.

Specifically, the following actions were carried out: (i) advanced training courses on nuclear regulations for operational safety inspectors, nuclear emergency preparedness officers and other personnel who are required to obtain legal qualifiacations; (ii) practical training based on the use of full-sized instruments and equipment and mock testing equipment and training based on the use of plant simulators to improve the ability to deal with severe accidents; and (iii) training

to improve English-language proficiency and short-term overseas training to raise levels of expertise and globalism. With respect to initiatives to send employees to other domestic and overseas sites to study or work, employees have been, dispatched to overseas university graduate programs and foreign diplomatic missions (British Embassy in Tokyo) since FY 2016, in addition to being dispatched to specialized university graduate programs and international institutions.

In order to clarify the basic concepts and the framework of the human resource development initiatives, the NRA adopted “Basic Policy of Development of NRA Officials” (hereinafter referred to as “Basic Policy” in this section) (June 25, 2014) and approved the “About promotion of measures with regard to development of officials” (September 3, 2014). Accordingly, the NRA also engaged in initiatives to the human resource development the NRA Human Resource Development Center taking a main part in FY 2016.

(2) Developing a plant simulator for training

The NRA introduced a training simulator which can reproduce conditions of a reactor in accidents including severe accidents, as well as in normal time. It is expected, through its introducing, that the personnel can comprehend safety measures of reactors compling with the New Regulatory Requirements and responses for emergencies, and seize plant conditions in emergencies, and that their abilities to respond to severe accidents. After a training curriculum based on the use of this simulator was developed (start-up and shut-down course, transient and design basis accident course, and severe accident (station blackout) course), the training began in FY 2016 (96 persons in total have taken these courses).

The NRA has also continued development and improvement of equipment for more practical drills targeting on responses to severe accidents and advanced boiling water reactors.

(3) Improving the system for managing the competence of employees

Based on Basic Policy, the competence and model career path required for each key work was clarified. Accordingly, a trial run of the system for managing the competence of inspectors based on the use of career maps for competence management was undertaken in FY 2016. Based on the results of this trial run, the approach to the operations of this system for managing competence was enhanced.

In order to support activities for managing the competence of inspectors, guidelines applicable to inspectors were developed and career maps were also produced for employees other than inspectors. Career maps for inspectors are expanded so as to be consistent with the new inspection system based on the issues pointed out by the IRRS mission.

(4) Establishing a framework for developing inspectors

Efforts were made to improve the contents of quality assurance-related training of inspectors. A system for providing new employees with orientation and providing training to raise levels of expertise has also been organized.

Based on consideration of the new inspection system to respond to issues indicated by the IRRS mission, the NRA started works for the establishment of a framework for developing and qualifying inspectors making reference to the U.S. NRC. Specifically, a study team was dispatched to the NRC in July 2016 to investigate the NRC's training system and study the knowledge required as inspectors and a framework for qualifying inspectors. It started then to formulate an education and training program.

Qualifications for nuclear inspectors, radiation regulators, emergency preparedness officers, and nuclear safety reviewers are to be newly established and education and training programs and a framework set up for each qualification.

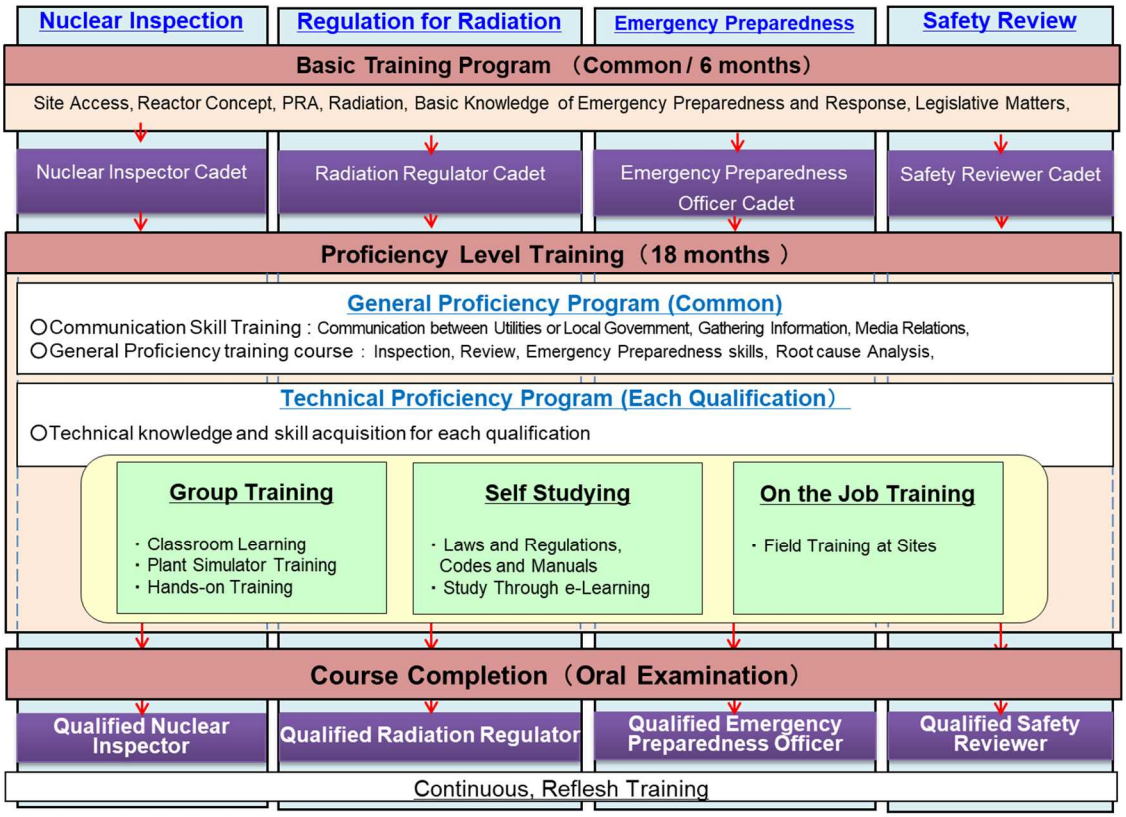

Figure 2. System the Human Resource Development of the NRA

(5) Holding seminars for the management of knowledge

In addition, with regard to knowledge management to systematically hand down the advanced knowledge from the experienced officials to younger officials (identification, collection and sorting of the knowledge to be transferred), the NRA promoted initiatives which were mainly

organized by staff in charge of knowledge management at each division and office of the NRA. In order to facilitate knowledge-management activities, guidelines were produced. Seminars and workshops for employees were also held with the aim of sharing past administrative experience and advanced technical knowledge with young employees.

Chapter 5 Enhancement of Nuclear Security and Consistent Implementation of Safeguards

Section 1: Enhancement of Nuclear Security

1. Response to Challenges regarding Nuclear Security

With respect to the key issues involving nuclear security, under the Committee on Nuclear Security established in FY 2012 (hereinafter referred to in this chapter as "Investigative Committee") working groups to handle the following specific issues were settled and examinations have proceeded: determinating trustworthiness of persons, nuclear security measures during transportation, and nuclear security pertaining to radiation materials and relevant facilities. As for nuclear security pertaining to radioactive materials, not just the Investigative Committee but also at the working group examined it intensively in FY 2016, as it is necessary to take into account issues on works in the fields from a broad perspective.

In addition, details concerning permission for changes in installation at Specialized Safety Facilities are shown in 1(1) of Section 2 of Chapter 2 hereof.

(1) Review of system to determinate trustworthieness of persons

The system to determine trustworthieness of persons is a measure to deal with internal threats at nuclear facilities. Verification is undertaken according to the history of internal employers and other information about individuals. Access to important zones is restricted depending on the results of this verification process.

In the IAEA's Nuclear Security Recommendations on the Physical Protection of Nuclear Materials and Nuclear Facilities (INFCIRC/225; hereinafter referred to as "Nuclear Materials Physical Protection Recommendations"), determinating trustworthieness of persons is recommended. In the fifth revision of the Nuclear Materials Physical Protection Recommendations (INFCIRC/225/Rev. 5), the national government is required to settle the targets and the methods of verification under this system.

Based on the Nuclear Materials Physical Protection Recommendations, specific investigations have been conducted at meetings of the Working Group on the Confirmation System of Trustworthieness which was established under the Investigative Committee since FY 2013. In October 2015, a report on the direction to introduce a system determining trustworthiness of persons was adopted at a meeting of the Investigative Committee and the NRA Commission Meeting.

Through investigations based on this report, at the 30th NRA Commission Meeting of FY 2016 (September 7, 2016), the NRA determined revised relevant Ordinances required to introduce this system, Notification stipulating some statutorily mandated requirements, and operational guidelines. On September 21, 2016, the Ordinances were promulgated and put into force, as a

result, this system was to be introduced at certain nuclear facilities.

(2) Review of security of nuclear material during transportation

It is required to take measures, such as locking under seal containers for transportation of specified nuclear fuel material, under the Ordinance on the Transportation of Nuclear Fuel Material Outside Plants and Business Offices (2016 NRA Ordinance No. 7). At the 20th NRA Commission Meeting of FY 2014 (August 20, 2014), it was decided that radioactive waste with long half-lives and low-heat (hereinafter referred to as “TRU waste”), which is expected to be returned from France , would be classified as coming under Category III in terms of the protection of nuclear material. It was therefore decided that the Ordinance on the Arrangement of Transportation for Specified Nuclear Fuel Material should be revised. . The draft of revised Ordinance was adopted at the 51st NRA Commission Meeting on December 21, 2016, promulgated on January 12, 2017, and put into force on February 1, 2017.

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

The need to develop a system for protective measures applicable to radioisotopes is rising in response to various circumstances, including the fact that it has been recommended in the IAEA’s “Nuclear Security Recommendations Concerning Radioactive Material and Relevant Facilities (January 2011)” and that cases of malicious theft of radioisotopes have emerged in recent years in Japan. Protective measures applicable to radioisotopes were treated as an investigative issue to be prioritized at the 1st meeting of the Investigative Committee (March 2013). Discussions on specific measures have been made at meetings of the Working Group on Nuclear Security concerning Radioactive Isotopes, which was established under the Investigative Committee.

At a subsequent meeting of the Investigative Committee held on June 13, 2016, a Report on Protective Measures concerning Radioisotopes, which summarized thinking on regulatory targets, requirements pertaining to protective measures, the regulatory framework and other pertinent matters, was finalized.

Based on this report, discussions were held at a meeting of the Study Team on Review of Regulatory Controls to Radioisotope-Utilizing Facilities (held on May 25, 2016) with a view to passing legislation. Through feedback from licensees and public commenting procedures, consequently, an interim report of a Review of Regulatory Controls Applicable to Radioisotope-Utilizing Facilities, which detailed the specific contents of protective measures applicable to highly hazardous radioisotopes (hereinafter referred to as “Specified Radioisotopes”), was finalized on November 9, 2016.

Licensees will now be obligated to formulate and notify regulations governing the protection

of Specified Radioisotopes, providing details of protective measures and appoint Specified Radioisotope protection managers who oversee operations. Discussions were also held on the provision of education and training to Specified Radioisotope protection managers and other persons engaged in similar duties.

Based on this interim report, work on amending the Radiation Hazards Prevention Act was pursued. An amendment bill was then approved by Cabinet and submitted to the 193rd regular session of the Diet.

(4) IAEA International Physical Protection Advisory Service (IPPAS) of nuclear material

Following Recommendations and Suggestions provided included in a report of the IAEA's International Physical Protection Advisory Service (IPPAS) conducted in FY 2014, the NRA is making efforts for continous improvements, including revision of relevant ordinances under discussions with the relevant ministries and agencies.

At the 53rd NRA Commission Meeting (January 11, 2017), the NRA decided to request a follow-up mission of the IPPAS, which would provide an opportunity to assess the appropriateness of responses by countries to which IPPAS mission was carried out in the past.

(5) Approaches to develop Nuclear Security Culture

The development of Nuclear Security Culture among licensees was clarified in the Ordinance Concerning the Installation and Operation of Commercial Power Reactors in 2012. More specifically, activities for fostering Nuclear Security Culture among licensees and the committements of the executives were set as regulatory requirements. In FY 2016, the NRA confirmed the approaches implemented by licensees through the inspection of physical protection as mentioned below. Efforts were made to strengthen the awareness of management regarding involvement in the development of Nuclear Security Culture through the NRA giving the direct explanation to them or conducting interviews with them.

In addition, lectures on Nuclear Security Culture have been given for exectives in an effort to raise their awareness of its importance.

In addition, the "Code of Conduct on Nuclear Security Culture" was defined in the 50th Committee of the FY 2014 (January 14, 2015) as a guideline for aiming to develop and maintain Nuclear Security Culture in NRA as a regulatory body to nuclear security, based on the "NRA's Core Values and Principles." The NRA has continuously engaged in the activities, such as training for officials of the Secretariat of the NRA. (See Reference 1-6 for "Code of Conduct on Nuclear Security Culture".)

(6) Cyber Security Measures Team

As international awareness grows on the necessity of reinforcing cyber-security measures, there is a need for licensees to further fortify their own systems of cyber-security and for the NRA to strengthen its cyber-security measures in accordance with Recommendations by the IAEA's IPPAS missions. To this end, the Cyber-Security Measures Team has commenced new activities within the NRA Secretariat.

2. Implementation of Nuclear Material Physical Protection Inspection

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

The NRA approves the physical protection program with which licensees and their employees must comply for protection of specified nuclear fuel material and inspects the situation of compliance with the program (hereinafter referred to as "the Physical Protection Inspection").

For Physical Protection Inspections in FY 2016, 37 changes to the Physical Protection Program were approved and checked strictly licensees' activities such as fostering Nuclear Security Culture and on cyber-security measures and other protective measures, in the Physical Protection Inspections. (See Reference 5-1 for information on the number of Physical Protection Inspections conducted in FY 2016.) Cyber-security measures were checked as a priority inspection item in the inspections in FY 2016.

(2) Violation of obligations to Physical Protection Programs

On October 7, 2015, a violation of obligations to the Physical Protection Program was confirmed through the Physical Protection Inspection conducted on Fukushima Daini NPS, which had the risk of developping into a serious incident with regard to physical protection.

While this case does not correspond to "organizational misconduct" through a deliberate or willful failure to fulfill the Physical Protection Program, as the event is attributed to an organizational system and affects the functioning of protective measures, is recognized as something that could develop into a serious matter in the Physical Protection. Thus, the NRA issued a reprimand to TEPCO on September 12, 2016, and demanded that there must be no recurrence.

Section 2: Safeguards efforts

1. Fulfilling international commitments

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 (Non-Proliferation Treaty) and concluded a

safeguards agreement (Japan-IAEA Safeguards Agreement)[19] 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.

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

(i) Permission for the use of internationally controlled materials and approval of provisions for accounting and control

As a general rule under the Japan-IAEA Safeguards Agreement, all nuclear materials in Japan are subject to this agreement. Thus, even if nuclear fuel materials not subject to safety controls are used, they would be subject to permission (approval) to use as internationally controlled materials. In FY 2016, there were 45 cases in which permission (approval) to use an internationally controlled material was granted and 275 cases in which permission to make a change (approval to make a change) was granted. In order to ensure proper accounting for and controlling of internationally controlled materials in Japan, users of these materials and nuclear power licensees are obligated to prescribe their provisions of accounting and controlling internationally controlled materials. In FY 2016, authorization (approvals) was granted to the provisions in 48 cases and changes were authorized (approved) in 109 cases.

(ii) Accounting reports, providing design information of facilities and other reportings, and applications based on the Additional Protocol

Accounting nuclear materials is an important basic step in Safeguards. The users of internationally controlled materials and licensees are obligated to report inventory and inventory changes of nuclear materials to the NRA in accordance with the Reactor Regulation Act. The NRA shall put together 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 body under the Reactor Regulation Act, and submit this report to the IAEA on a timely basis through the Foreign Ministry. In FY 2016, 2,100 parties were subject to this accounting report. (See Reference 5-2 for information onaccounting for and control of nuclear materiarls.)

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

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 a protocol supplementing this agreement ("Additional Protocol")[20] to the IAEA through the Foreign Ministry.

(iii) Verification activities

The IAEA conducted inspections of facilities and other on-site verification activities based on information submitted by Japan. These on-site verification activities were carried out in the presence of Japanese officials under a state of communications and adjustments undertaken by the NRA. For the most part, these inspections were conducted by the Nuclear Material Control Center, which is designated as a registered body for safeguards inspections under the Reactor Regulation Act, in conjunction with inspections of safeguards implemented according to instructions issued by the NRA. Design information of facilities is verified together with on-site inspections conducted by the NRA itself. On-site complementary access under the Additional Protocol is carried out by the NRA and the Foreign Ministry. (See Reference 5-2 for a record of on-site verification activities in FY 2016.)

(iv) Coordination for facilitating implementation of safeguards

The NRA held meetings with the IAEA with the attendance of relevant domestic organizations for the purpose of sharing of 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 FY 2016, 12 task force meetings in total, forcusing on specified groups, were held to carry out necessary investigations and made adjustments. A general conference of task forces was then held on December 9, 2016, to consolidate the activities. In accordance with the results of this process, reports and discussions were made at a conference of a joint Japan-IAEA safeguards committee by the Foreign Ministry on March 23, 2017, which was attended by the deputy secretary-general in charge of the IAEA Department of Safeguards.

(v) Safeguards applicable to the Fukushima Daiichi NPS (TEPCO)

By the end of 2014, the state of all nuclear materials in reactors other than Units 1 to 3 were re-checked, in line with progress of decommissioning works at the Fukushima Daiichi NPS (TEPCO). Normal on-site verification works have been carried out as of the end of FY 2016. Normal inspections cannot be carried out for Units 1 to 3 due to the difficulty of entering these reactors. Therefore, through consultations with the IAEA and relevant domestic organizations,

[20] An addition to an agreement concluded by and between the Japanese government and the IAEA regarding the implementation of provisions as provided for in Article 3(1) and (4) of the Treaty on the Non-Proliferation of Nuclear Weapons.

the NRA has applied a full-time monitoring system based on the use of surveillance cameras and radiation monitors and special additional verification activities to be applied only within this NPS site . The NRA established, thus, a framework to allow the IAEA to verify that no undeclared nuclear material has been moved within Units 1 to 3. In FY 2016, safeguard activities to remove fuel from the spent fuel pool at Unit 3 were studied and discussed, and the full-time monitoring system was fortified.

(vi) IAEA's Safeguards Conclusions

The IAEA draws a conclusion on safeguards based on an evaluation of all information obtained through safeguards activities carried out in a calendar 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 reported on their Safegurads Statement for 2015 that they found no indication of the diversion of declared nuclear material from peaceful nuclear activities and no indication of undeclared nuclear material or activities, and concluded all nuclear material remained in peaceful activities. Accordingly, this Broader Conclusion has been adopted continuously since the results of the implementation of safeguards in 2003 were obtained[21].

(2) Fulfilling bilateral nuclear cooperation agreements

(i) Procedures relating to internationally controlled materials in accordance with bilateral agreements

Japan has concluded bilateral nuclear cooperation agreements with 13 countries and one international organization and has undertaken commitments to use nuclear material, technology, specified equipment or material, or applicable nuclear material or equipment transferred between parties for only mutually peaceful purposes and to carry out procedures applicable to items subject to these agreements. In accordance with these agreements, the NRA processed 14 cases of verification pertaining to the management of the nationality of nuclear materials transferred from a party and 20 cases to a party of these agreements. In addition, with the support of the Nuclear Material Control Center, the NRA reported 13 cases of inventory listing in FY 2016.

(ii) Bilateral safeguard agreement

On April 19, 2016, a Japan-U.S. technical meeting on safeguards was held. Information and opinions on the implementation of safeguards were exchanged with American officials.

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[21] https://www.nsr.go.jp/data/000163727.pdf
https://www.iaea.org/sites/default/files/16/08/statement_sir_2015.pdf

2. Reinforcing information security related to safeguards

As a regisetered body for processing information and for inspecting safeguards under the Reactor Regulation Act, the Nuclear Material Control Center is required to engage in the strict management of information regarding its operations. As shortcomings in information security by the center were identified, however, it was decided at the 51st NRA Commission Meeting of FY 2015 (January 27, 2016) to issue a caution and instructions to the Center. The instructions required the Center to conduct additional investigations and preventive measures, and report the results to the NRA. The Center submitted a report at the 9th NRA Commission Meeting (May 18, 2016). Subsequently, the Center proceeded to reinforce information security with the support of specialist organizations and was evaluated by a third-party committee. On March 13, 15, and 17, 2017, NRA Secretariat officials conducted on-site inspections of the Center's offices in accordance with the Reactor Regulation Act to verify the state of information security and management.

3. Enhancing international understanding of Japanese safeguards

(1) Asia-Pacific Safeguards Network (APSN)

An annual conference of the Asia-Pacific Safeguards Network (APSN) was held in Tokyo on October 18 and 19, 2016, and was attended by 12 member countries, 2 observer countries and the IAEA. In order to promote the sharing of information between authorities for safeguards in each country in the Asia-Pacific region and the IAEA, the NRA, together with the Nuclear Material Control Center, described the state of the sharing of information with the IAEA at the time of the implementation of safeguards in Japan.

(2) Proactive transmission of information

In order to directly transmit information on safeguards activities in Japan to the international community, an English-language description of Japanese safeguards was posted to the NRA website at the end of March 2016[22]. In FY 2016, the contents were updated, expanded and supplemented with a link to the APSN website in order to strengthen the transmission of information.

At safeguard training courses held in Ispra, Italy, in April 2016 and Tokaimura, Ibaraki Prefecture, in November 2016 by the European Safeguards Research and Development Association (ESARDA) and JAEA, a talk was delivered to officials in charge of safeguards from attending countries on activities in Japan.

[22] https://www.nsr.go.jp/data/000142853.pdf

(3) Support for the implementation of safeguards by the IAEA and overseas countries

The technical capacity required for the implementation of safeguards by the IAEA has been reinforced in accordance with a support plan drafted by key IAEA member countries. To this end, Japan proactively contributed to the reinforcement of international safeguards. Specilically, Japan has helped reinforce the technical capacity of the IAEA and other member countries to implement safeguards through a framework that includes the IAEA's Japan Support Programme for Agency Safeguards (JASPAS). The plan covers a lot of ground, including participation in the IAEA's Office of Safeguards Analytical Services, which analyzes environmental samples obtained by IAEA inspectors, and providing training opportunities to IAEA inspectors and officials of member countries. The NRA has made overall coordinations to the support plan and provided the necessary funds. 21 tasks are being carried out as of the end of FY 2016.

Chapter 6 Enhancement of Nuclear Emergency Measures and Radiation Monitoring

Section 1: Continuous improvement of Nuclear Emergency Response Guidelines

(1) Enhancement and reinforcement of nuclear emergency preparedness

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 licensees, the national government and local governments. The guidelines endeavor 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 March 22, 2017, the guidelines were revised, incorporating protective measures in an emergency of nuclear fuel facilities and others.

A revision of emergency action levels (EAL) for commercial power reactors and EAL settings for nuclear fuel facilities were examined. An outline of the basic concept on each was summarized on March 8, 2017.

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

In order to the development of medical treatment systems in a nuclear emergency – consisting of 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 NRA Secretariat and a total of five facilities: the National Institutes for Quantum and Radiological Science and Technology (National Institute of Radiological Sciences), which have been collectively designated 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 Advanced radiation emergency medical support center and Nuclear emergency medical support center by the NRA. These organizations have pursued the establishment of a network for medical treatment in a nuclear emergency through collaboration among national-level and local-level conferences on promoting medical treatment and worked to develop and reinforce an environment for the provision of education and training.

With respect to manuals for medical responses in a nuclear emergency, “Distribution and Administration of Stable Iodine” and the “Radiation Survey and Simple Decontamination Manual for Evacuees in Nuclear Emergency” were revised. On March 29, 2017, the “Action Guidelines for Nuclear emergency medical assistance team” was formulated to clarify procedures and operations for dispatch Nuclear emergency medical assistance team.

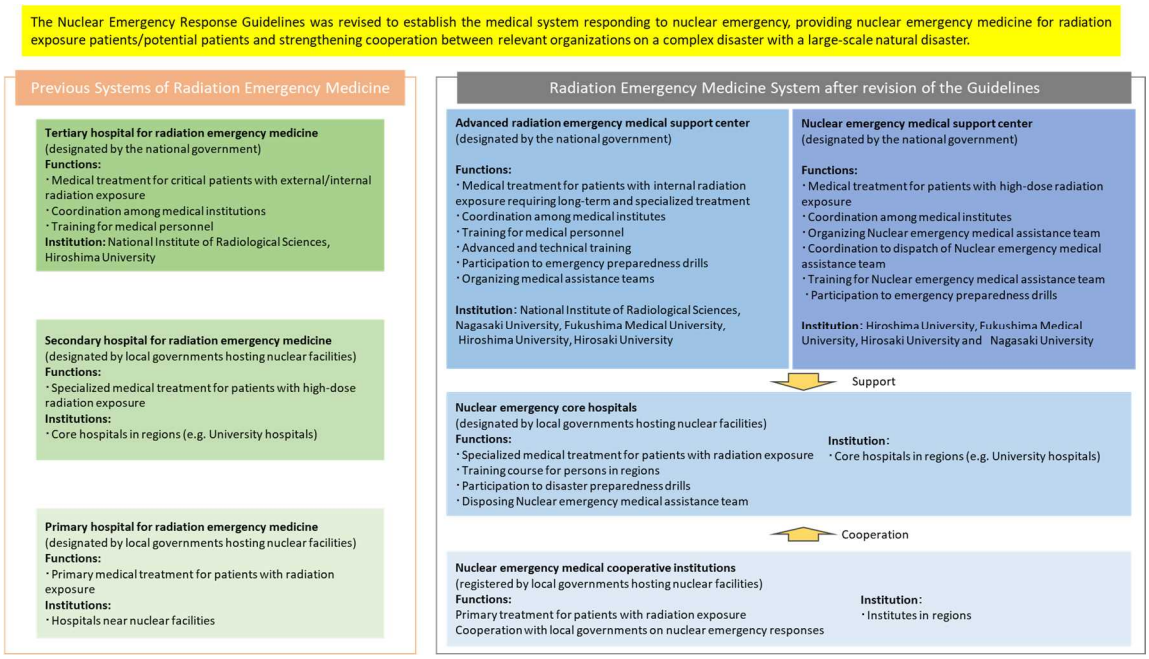

Figure 3 Medical treatment system in a nuclear emergency

Section 2: Enhancement of radiation monitoring

1. Enhancement and reinforcement of emergency monitoring system

The Nuclear Emergency Response Guidelines stipulate that the level of emergency will be determined in accordance with the situation of the affected facility to implement preventive protective measures. In particular, measures at 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. The NRA made every effort to enhance and reinforce the measurement system, such as effective emergency monitoring.

In order to properly implement a system of monitoring radioactive iodine, "*About emergency monitoring (additional reference of the Nuclear Emergency Response Guidelines)"* was revised and publicly released on September 26, 2016.

And, in order to actualize the implementation items and equipment for on-site and off-site monitoring in emergency of nuclear fuel facilities, the same additional reference was revised and publicly released on March 22, 2017.

NRA Offices for Radiation Monitoring were set up in Hokkaido and Niigata in April 2016 and the NRA Regional Offices for Radiation Monitoring were established at 10 sites by FY 2016, for effective emergency monitoring in close cooperation with the local government within the nuclear facility installation area. In addition, Regional Officers for Radiation Monitoring were increased

to the Saga Office for Radiation Monitoring in December 2016.

Efforts have been made to improve the operations of “Emergency radiation monitoring information sharing and announcement system”, which facilitates the integration, prompt sharing among concerned parties and public disclosure of the result of emergency monitoring. This system was used in various training activities, including the FY 2016 Nuclear Energy Disaster Prevention Drill.

2. Radiation monitoring of Nation-wide Environment[23]

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

In 47 prefectures throughout Japan, the NRA collected environmental samples, such as atmospheric suspended dust, fallout and soil for radioactivity analysis. In addition, the results of measurement by the FY 2015 were put into a database to be published. Furthermore, radiation dose rate is continuously measured at 297 monitoring posts throughout Japan to open the measured data on the NRA website.

In order to evaluate the impact of a nuclear test conducted by North Korea on September 9, 2016, the monitoring was reinforced with the cooperation of local governments and other relevant organizations in accordance with instructions issued by the Deputy Chief Cabinet Secretary on the same date. The results were opened on the NRA website.

(2) Oceanic environmental radioactivity comprehensive evaluation survey [program] (conducted since the FY 1983)

In order to investigate the impact of radiation on areas in the vicinity of nuclear power plants and the level of environmental radiation in Japan, financial support by the NRA has continued to be provided for the analysis of radioactivity in seawater found in the sea near nuclear power stations and nuclear fuel re-processing facilities (16 sea areas around Japan) and for radioactivity measurement (24 prefectures) conducted by prefectures that nuclear facilities were located or neighboring (24 prefectures).

In addition, the measurement results by the FY 2015 were put into the database to be opened on the NRA website.

(3) Radiation monitoring in the vicinity of nuclear power plants (issued subsidies since the FY 1974)

Financial support by the NRA has continued to be provided for preparation of facilities necessary for radiological measurement implemented by prefectures where nuclear facilities

[23] On April 1, 2013, control over affairs pertaining to the implementation of monitoring was transferred from the Ministry of Education, Culture, Sports, Science and Technology due to the partial enforcement of the Act for the Establishment of the Nuclear Regulation Authority.

were located or neighboring (24 prefectures) (budget in the FY 2016, 7.50 billion JPY). In addition, the measured results reported by those local governments were put into database to be published.

(4) Training for the monitoring personnel of local government (implemented since the FY 1990)

The "Environmental radioactivity analysis training", "Monitoring task training" and "Drill training concerning emergency monitoring center" were conducted for local governments' staff to improve radioactivity analysis skill and effectiveness of emergency monitoring by the local government.

3. Radiation survey concerning port call of nuclear powered warship[24]

The NRA periodically analyzes radiation in three ports (Yokosuka, Sasebo and Kinnakagusuku) where the United States nuclear powered warships make port calls. The NRA also measures air dose rate and collects seawater to analyze radiation in cooperation with related organizations such as the Japan Coast Guard, during entry, visit and exit of nuclear powered warships. Results are published on the NRA website daily and since FY 2015 have been transferred to a database for publication.

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

4. Meetings of the Technical Study Team on the Monitoring of Environmental Radiation

The NRA set up the Technical Study Team on the Monitoring of Environmental Radiation, which is engaged in continual studies on technical matters relating to monitoring, in October 2016. It was decided that the contents of investigations for the time being would consist of the technical basis of monitoring such as radiation measurement method series and quality assurance of monitoring, and continuous improvements of the monitoring method in emergencies and normal times. In FY 2016, study meetings were held 3 times. They investigated for emergency monitoring at nuclear fuel facilities and amending radiation measurement method series no. 33 ("in-situ measurement method based on the use of germanium semiconductor detectors"). The secretariats of the NRA amended the given measurement method on March 30, 2017, based on discussions held by the Study Team.

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[24] As with "implementation of nationwide radiation monitoring", control over affairs was transferred from the Ministry of Education, Culture, Sports, Science and Technology on April1, 2013.

Section 3: Preparation and operation of risk control system in NRA

1. Reinforcement of emergency response

The NRA made efforts to establish and reinforce the infrastructure for crisis control, in order to smooth and accurate countermeasures in emergency. The NRA, thus, revised “NRA EPR plan”, “the NRA initial response manual”, “local actions standard manual for nuclear emergency situations”, and “the NRA people and civil protection plan”.

In addition the NRA cooperated with relevant governments to revise “Nuclear Emergency Response Manual”, “Nuclear Emergency Response Manual to Armed Attacks”, “Basic Disaster Management Plan“, and “Basic Guidelines for Protection of the People“, and also has participated in emergency drills and exercises and contributed to the smooth and precise implementation of emergency responses on the part of the government.

On November 13 and 14, 2016, Nuclear Energy Disaster Prevention Drill for FY 2016 in accordance with the Nuclear Emergency Preparedness Act was carried out, jointly by the national government, local governments and licensees at the Tomari NPS with the participation of the Prime Minister in order to verify the effectiveness of disaster-prevention systems and evacuation plans to be implemented in a complex disaster situation, through actions coordinated with the Director General for Nuclear Disaster Management, Cabinet Office, and the NRA. Exercise to verify snow-clearing and evacuation procedures in the event of snowfalls and the accumulation of snow in winter was carried out on February 4, 2017, as part of Nuclear Energy Disaster Prevention Drill to verify the effectiveness of evacuation plans based on “Emergency Preparedness for the Tomari Area”.

The NRA Secretariat participated in the exercise management committee held by Cabinet Office to coordinate the exercise plan. In addition, in other nuclear facility locations, nuclear emergency exercises were conducted by the local governments and the NRA Secretariat personnel, including the Senior Specialists for Nuclear Emergency Preparedness and the Local Radiation Monitoring Officers at the site assisted in the preparation of the plan and attended the exercises. The NRA shall endeavor to continuously enhance and reinforce the local system of Nuclear Emergency Preparedness through the local Nuclear Emergency Preparedness Council set in each area by Cabinet Office based on experiences obtained through the exercises.

The NRA will also continuously checking provisions and plans taking occasions to conduct various exercises (i.e. gathering exercises in emergency, setting-up exercise of the Emergency Response Headquaters) and endeavor to ameliorate the business continuity plans responding to emergency cases, such as Tokyo Inland Earthquake and new strains influenza.

The NRA also participated in Emergency Drills by licensees as in previous year, seeking further improvement of emergency preparedness and response such as a broader approach to

sharing information with the NRA's Emergency Response Center (ERC) and immediate situational response centers for nuclear facilities.

Based on the provisions of the Basic Plan for Disaster Preparedness, liaison groups were established in central government ministries and agencies with nuclear power stations siting areas (hereinafter referred to as "Central Liaison Council" and "Local Liaison Councils"). These groups were organized to discuss on emergency responses in local sites and necessary supports, through sharing of information among relevant governments, local offices and licensees during normal times. In FY 2016, meetings of the Central Liaison Council were held twice and meetings of Local Liaison Councils were held in 13 different regions.

2. Reinforcement of licensees' emergency preparedness and response

The NRA has been holding the Debriefing Session of Emergency Drills by Nuclear Operators (hereinafter referred to as "briefing sessions") and evaluating for drills conducted by licensees since FY 2013.

At the briefing session held on June 22, 2016, the NRA evaluated that improvements were still needed to the following issues: sharing of information, the degree of difficulty and diversification of the exercise scenario, even as it was evaluated that emergency responses of the licensees had been improving. It was decided that evaluation benchmarks and criteria would be reviewed based on the results of evaluations conducted and applied to evaluations conducted beginning in FY 2016.

By continuously reviewing the benchmarks and criteria, further improvements of emergency responses of licensees will be sought.

3. Reinforcing the transmission of information

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, information transmission was expanded than the previous scope in response to the Kumamoto Earthquake in April 2016. Information on the following facts also will be provided: the fact that no large earthquakes affecting neighboring nuclear facilities had been observed, and that no abnormalities affecting facilities had arisen. Moreover, it was decided that information on any problems affecting nuclear facilities would be transmitted according to the degree of societal interest, even if such information is not subject to events reported based on the laws.

References

Reference 1. Ensuring Trust in Nuclear Regulatory Administration (Sections 1, 2, and 4 of 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
Chairman	Shunichi Tanaka	Shunichi Tanaka	Shunichi Tanaka
Commissioner (substitute for the Chairman)	Kunihiko Shimazaki	Toyoshi Fuketa	Toyoshi Fuketa
Commissioner (second substitute for the Chairman)	Toyoshi Fuketa	Satoru Tanaka	Satoru Tanaka
Commissioner (Third substitute for the Chairman)	Kayoko Nakamura	Kayoko Nakamura	Akira Ishiwatari
Commissioner (Fourth substitute for the Chairman)	Kenzo Oshima	Akira Ishiwatari	Nobuhiko Ban

（As of March 31, 2017）

2. Establishment of the NRA and organizational changes

September 19, 2012: NRA established;

March1, 2014: Japan Nuclear Energy Safety Organization (JNES) abolished and integrated into the NRA;

October 14, 2014: Director General for Nuclear Disaster Management, Cabinet Office settled.

- 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 FY 2015 budget of the NRA (after revision)

	Item	FY 2016 budget amount (after budget revision) (millions of yen)
General account	Shared NRA costs	3,911
	Costs of ensuring nuclear safety	3,974

	Radioactivity investigation and research costs	1,515
Special account for energy measures	Costs of power-usage measures	1,093
	Costs of nuclear safety regulatory measures	21,180
	Administrative handling costs	22,139
	Disbursements	0.27
	Reserve funds	100
Special account for reconstruction after the Great East Japan Earthquake	Costs of policies for environmental conservation and restoration	3,523
Total		57,434

4. Organization of the NRA

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

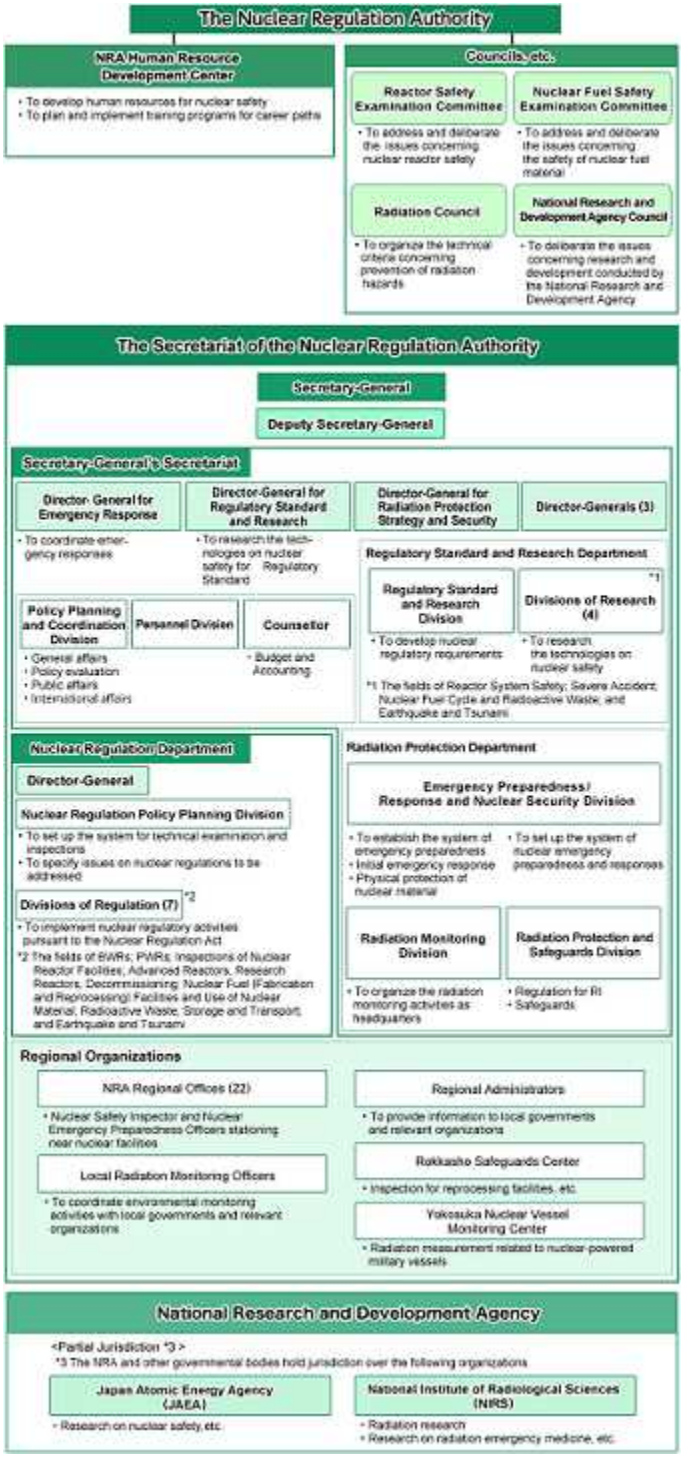

Figure 4. Organizational structure of the NRA (FY 2016)

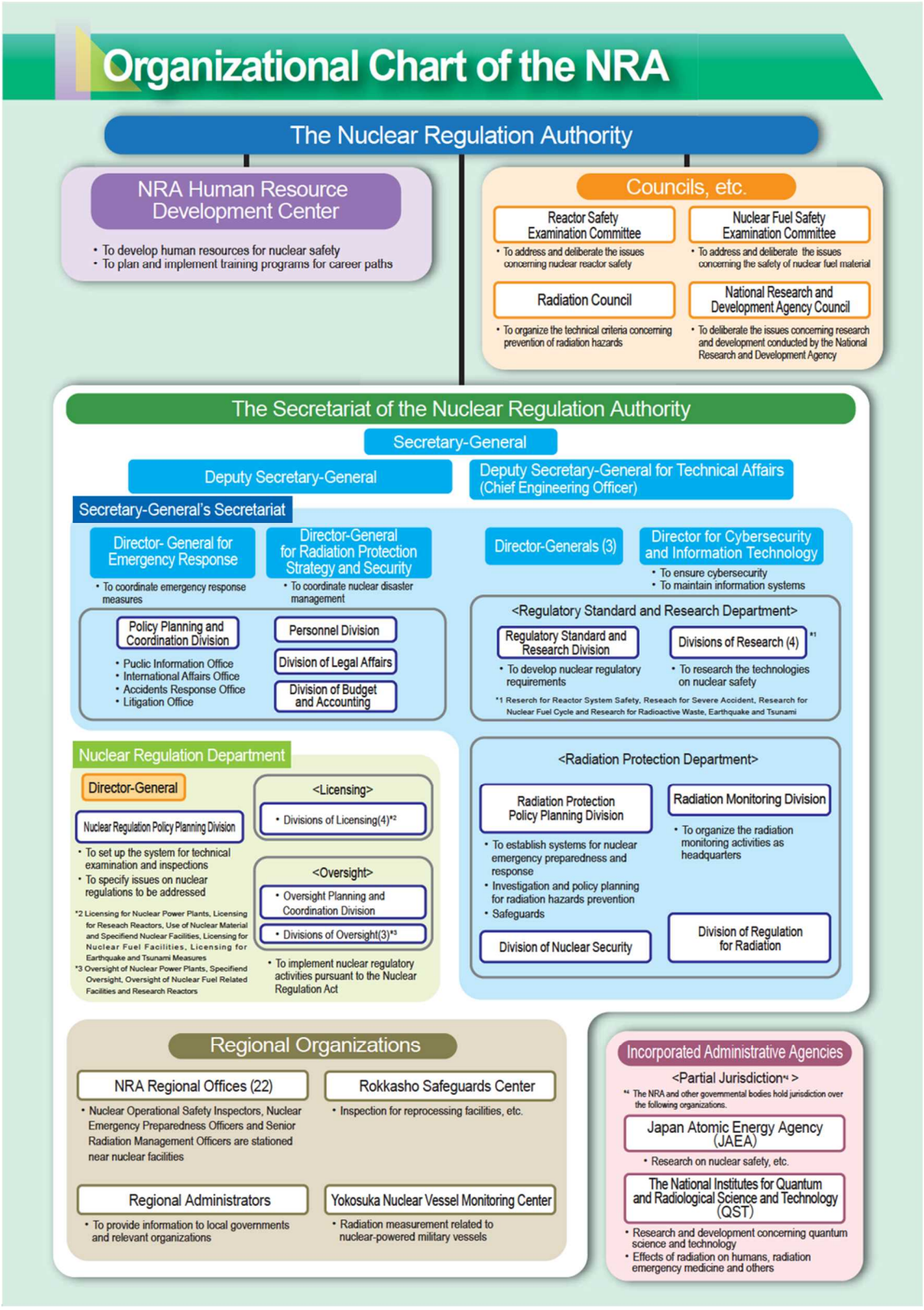

Figure 5. Organizational structure of the NRA (After April 2017)

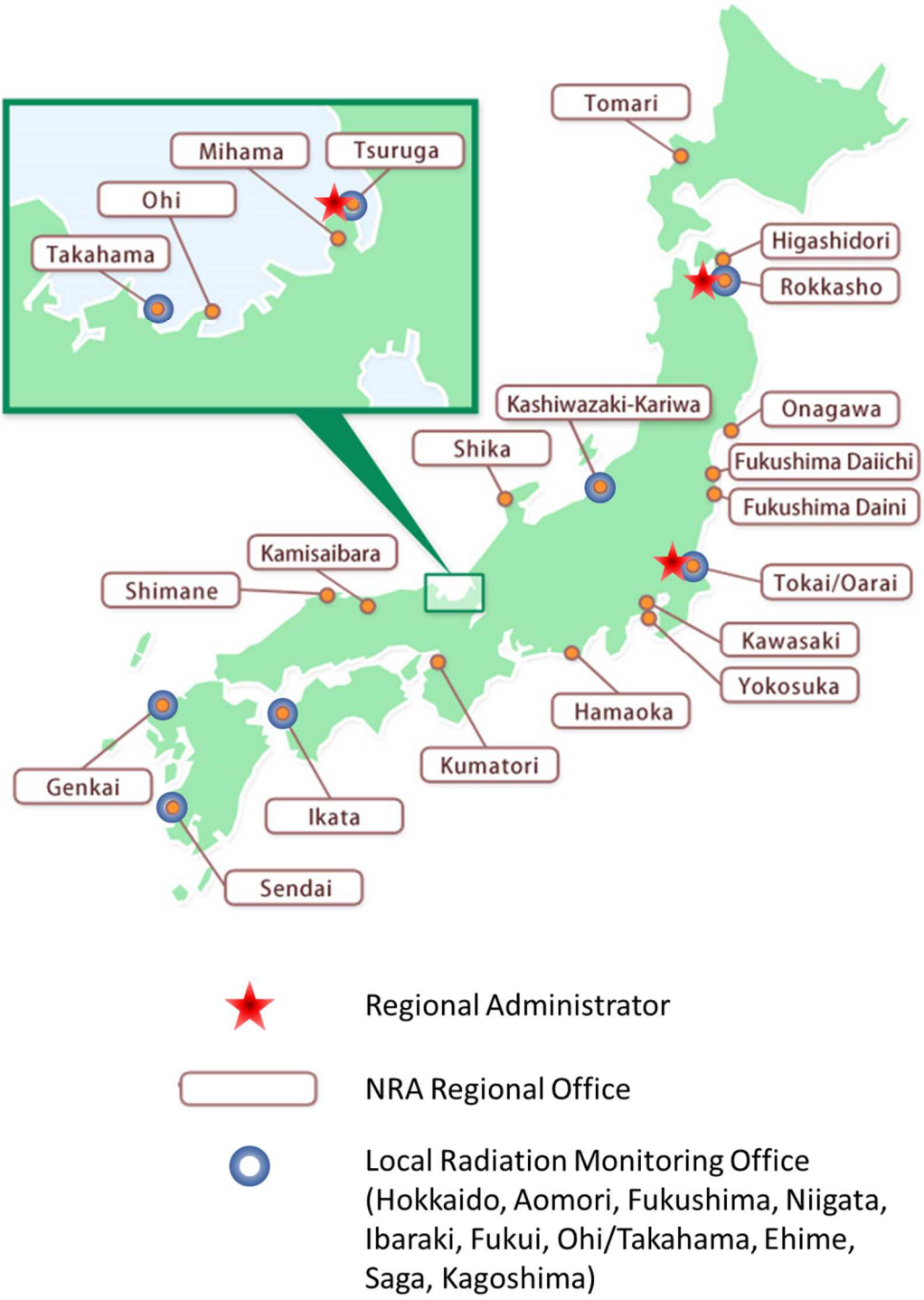

Figure 6. NRA Regional Offices

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:

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

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

Mission

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

Guiding Principles for Activities

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

(1) Independent Decision Making
We shall make decisions independently, based on the latest scientific and technological information, free from any outside pressure or bias.

(2) Effective Actions
We shall discard the previous ineffective approach to regulatory work and stress the importance of a field-oriented approach to achieve genuinely effective regulations.

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

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

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

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

2. Interface with Safety

Nuclear security and safety do not exst independently and measures for security and safety are mutually dependent on each other and could negatively affect on another. We shall make all possible efforts for the harmonization of bothe measures and senior management shall be responsible for providing the most appropriate solution in cases of conflicts.

3. Responsibility of Senior Management

Senior management shall demonstrate their commitment to nuclear security and shall make an assessment on how a positive nuclear security culture is developed within the NRA. In addition, senior management shall make a continuous effort to foster the positive culture through setting up concrete goals and measuring the achievement.

4. Capacity Building and Self-improvement

Nurturing competent staff is the responsibility of an organization and the NRA shall provide capacity building programmes on nuclear security. We shall have a 'questioning attitude' towards nuclear security issues at all times and strive to improve our effectiveness.

5. Confidentiality and Communication

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

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 Dai-ichi Nuclear Power Station of Tokyo Electric Power Company, Inc. The NRA will take the initiative in acting based on it. Thereby, the NRA will strive for raising awareness of the importance of safety culture among everyone involved in nuclear energy and hence contributing to fostering safety culture in Japan.

Code of conduct

1. Priority to safety

In lucid recognition that absolute safety is not achievable and the possibility of a serious accident remains, the overriding priority shall be placed on safety for "protecting people and the environment".

2. Decision-making taking into account the risks

Decision shall be made in an independent and objective manner taking due account of the risks. Anyone who makes a decision is responsible for explaining logically the rationale of the decision while clarifying its own roles, responsibilities, and authority.

3. Fostering, sustaining and strengthening safety culture

Managers shall take the initiative in fostering the attitudes and actions that place the overriding priority to safety in their respective organizations. For sustaining and further strengthening safety culture, they shall also be vigilant to any early warning signs of decline in safety culture and shape and enhance the working environment so that the staff can maintain high morale.

4. Maintaining high level of expertise and organizational learning

Recognizing the importance of scientific and technical expertise for safety, each organization shall collect and analyze the latest information in Japan and overseas on regulatory activities, operating experience, and others to feedback the findings in its activities. Managers shall shape and enhance the working environment to promote such organizational learning.

5. Effective communication

Open and frank discussion in the workplace shall be the basis in the pursuit of safety.Managers shall

create such working environment and promote active discussion in their respective organizations. Adequate communication shall be pursued both within the organization and with stakeholders for enhancing transparency and building trust by taking the initiative in information disclosure and exchange of a wide range of opinions.

6. Questioning attitude

All the personnel shall always have one's own "questioning attitude" without complacency whether there are any weaknesses that may affect safety, as well as whether there is any room for further improvement, and thereby identify safety issues.

7. Rigorous and prudent decisions and agile actions

In response to any challenges to ensuring safety, all the staff shall make conservative decisions for safety taking into account even the worst-case scenario, and take necessary actions with agility.

8. Harmonization with nuclear security

It is necessary to recognize that nuclear safety and security activities do not exist independently, namely complement each other and interfere with each other. All the personnel involved in nuclear safety and security activities shall respect each other's way of thinking and make efforts for harmonizing both activities. Senior managers shall take responsibility to select the most appropriate solution.

8. Actual record of the NRA Commission Meeting

(From April 1, 2016 to March 31, 2017)

No.	Date	Main topics
1	4. 6	・Evaluation of the report received from KEPCO related to automatic stoppage of Unit 4 caused by automatic stoppage of a generator at the Takahama NPS and measures to be taken ・Ordinance for partial revision of the Ordinance concerning the Installation and Operation of Commercial Power Reactors (draft) ・State of progress concerning the program of NRA human resource developement
2	4.13	・Draft of the review reports concerning application for change in reactor installation of Kyoto University's Research Reactor Institute (critical experiments facility) and application for permission for change in reactor installation of Kinki University's nuclear power laboratory ・Partial revision of the review standards applicable to extension of the operation period of commercial power reactors ・Gathering benchmarks to be used for operational safety inspections ・Measures to be taken to the inflow of seawater into Unit 5 at the Hamaoka NPS ・Inspections of the use of nuclear fuel materials ・Feedback received from External Advisors ・Overview of the results of International Nuclear Safety Group (INSAG) and Commission on Safety Standard (CSS) of IAEA

3	4.18	・State of nuclear facilities in connection with the 2016 Kumamoto Earthquake
4	4.20	・Results of requesting public comments to the draft review report and permission for change in reactors installation of Units 1, 2, 3, and 4 at the Takahama NPS (KEPCO) ・Requesting public comments on the Ordinance on the Transportation of Nuclear Fuel Material Outside Plants and Business Offices (draft)
5	4.25	・Report of the Integrated Regulatory Review Service (IRRS) mission to Japan
6	4.27	・Evaluation of the fault zones on the site of the Shika NPS (Hokuriku Electric Power Company) ・Situation of conformity review to New Regulatory Requirements of facilities for handling radioisotopes ・Planned implementation of site inspecton for users of nuclear fuel materials
7	4.27	・Approach on safety improvements at TEPCO Holdings
8	5.11	・Authorization of change in reactor installation at Kyoto University's Reactor Research Institute (crictical experiments facility) and permission for change in reactor installation at Kinki University's nuclear power laboratory ・Evaluation of the report from TEPCO Holdings pertaining to a leakage of RO-concentrated water from transfer pipes leading to G6 tank area at the Fukushima Daiichi NPS (TEPCO) ・Situation of operational safety inspection in the fourth quarter of FY 2015 ・Report on the seventh joint meeting of the Reactor Safety Examination Committee and the Nuclear Fuel Safety Examination Committee ・Process to consider actions to be taken for revisions of the inspection system
9	5.18	・Imparfect management of information security by the Nuclear Material Control Center ・Partial revision of the Ordinance on the Security of Nuclear Reactor Facilities and Protection of Specific Specified Nuclear Fuel Material at the Fukushima Daiichi Nuclear Power Station (TEPCO) and the results of requesting public comments on the revision ・Partial change of the operational method for reporting on an accident or malfunction under the law are to be made to the NRA ・NRA Annual Report for FY 2015 ・Overview of the results of the International Nuclear Regulators Association (INRA) and meetings of international regulatory authorities on nuclear security ・Overview of the results of meetings of the International Radiation Protection Association (IRPA)
10 ※1	5.23	・Decision on the formal objection to permission for change in reactors installation at the Takahama NPS (KEPCO) (Units 3 and 4) and the petition for stay of execution of approval of the constraction plan for Units 1 and 2 at the Sendai NPS (Kyushu Electric Power Company)
11	5.25	・Appointing members of the Reactor Safety Examination Committee and the Nuclear Fuel Safety Examination Committee ・Draft and requesting public comments for "*Thinking on regulatory controls pertaining to the burial of waste inside reactors"* ・Type certificate for Mitsubishi Heavy Industry's "Application for a type certificate for the design of specific containers related to spent fuel storage facilities (for PWR fuel)" ・Policy to review the regulatory controls to which radioisotope-utilizing facilities are subject ・Reinforcing the initial-response system to large-scale natural disasters ・U.S. business trip report

12	6. 1	・Establishment of the Ordinance for partial revision of the Ordinance on the Transportation of Nuclear Fuel Material Outside Plants and Business Offices ・Revision of procedures for conformity review of facilities for handling radioisotopes to New Regulatory Requirements ・Results of re-evaluations for important facilities from point of view of safety in facilities for handling nuclear fuel material ・Efforts for human resource development of the NRA staff
13	6. 1	・Approach on safety improvements (KEPCO)
14	6. 8	・Opinions of the NRA for “Change of designation of off-site centers for emergency response measures” ・Incorporating the results of policy evaluations into the NRA policies ・Basic Policy on Economic and Fiscal Management and Reform in 2016
15	6.15	・Evaluation of the report from TEPCO Holdings on an unforeseen operation of control rod during periodic facility inspection of Unit 5 at the Kashiwazaki-Kariwa Nuclear Power Station ・Graded approach based on conformity reviews of research reactors to New Regulatory Requirements ・Physical Protection to radioisotopes ・Overview of the results of Committee on the Safety of Nuclear Installations (CSNI) OECD/NEA
16	6.20	・Approving extension of the operarion period and change in operational safety program of Units 1 and 2 at the Takahama NPS (KEPCO) ・Results of evaluations of safety research (intermediate evaluation and annual evaluation) ・Results of nuclear material physical protection inspections in FY 2015 ・Albtrary decisions in the fourth quarter of FY 2015 ・Outline of an interview with Dr.Shimazaki, former representative of Chairman of the NRA
17 ※2	6.27	・Approving appointment of executives of designated organization for safeguards inspections
18	6.29	・Evaluation of reports received from licensees on the improper laying of cables and measures to be taken ・Direction for conducting safety research ・Preparing materials of concepts on New Regulatory Requirements applicable to commercial power reactors ・Overview of the results of discussions the government of the U.S. and Canada
19	7. 6	・Basic Policy on Safety Research by the NRA ・Framework on regulatory requirements concerning protection from toxic gases at commercial power reactor facilities
20	7.13	・Results of estimates of seismic motion at the Ohi NPS ・Draft of the Ordinance for Reinforce Internal Threats Measures (such as introducing system to determinate trustworthiness of persons) and requesting public comments on the draft ・Fields of and Policy on the Implementation of Safety Research to be Promoted ・Report of results of the debriefing session to evaluate emergency drills by nuclear operators ・Reinforcing dissemination of information on large-scale natural disasters
21	7.13	・Approach on safety improvements (Hokkaido Electric Power Company)
22	7.20	・Inadequency of the legislative procedures of an user of nuclear fuel materials ・Results of selection of programs for the NRA human resource development ・Interview with Dr.Shimazaki, former representative of Chairman of the NRA

23	7.27	・Process estimation of seismic motion at the Ohi NPS ・Draft of the review report of application for change in reactor installation to Kyoto University's Research Reactor Institute (reseach reactor) ・"Preventing expansion of accidents releasing large amounts of radioactive materials" in New Regulatory Requirements to research reactors ・Partial revision of the Ordinance of the Installation and Operations of Commercial Power Reactors and the results of requesting public comments on the revision ・Seventh National Report of Japan of the Convention on Nuclear Safety
24	7.27	・Approach on safety improvements (Chubu Electric Power Company)
25 ※3	8. 2	・Draft of the review report on application for change in reactors installation of Units 3 and 4 at the Takahama NPS (KEPCO) , designated as Specialized Safety Facilities
26	8. 3	・Draft of the review of application for change in reactors installation of Units 3 and 4 at the Takahama NPS (KEPCO), designated as Specialized Safety Facilities ・Requesting public comments on the draft of the review report on application for permission for change in reactor installation of Unit 3 at the Mihama NPS (KEPCO) ・Operational safety inspections in the first quarter of FY 2016 ・Action plan for the Tokai Reprocessing Facility
27	8.24	・Comments of external experts on NRA's Administrative Review ・Conducting an investigation into the possibility of carbon segregation in containment vessels confirmed by ASN, France ・Performance evaluation of JAEA in FY 2015 (draft) ・Performance evaluation of National Institutes for Quantum and Radiological Science and Technology (draft) ・Policy evaluation report of implementation measures for FY 2015 and pre-analysis table of implementation measures for FY 2016 ・Preparing materials concerning the concept on New Regulatory Requirements applicable to commercial power reactors
28	8.24	・Approach on safety improvements (Tohoku Electric Power Company)
29	8.31	・Results of requesting public comments to "Thinking on regulatory controls pertaining to the underground burial of in-reactor waste (draft)" and the action plan ・Ordinance for partial revision of the Ordinance on the Installation and Operations of Commercial Nuclear Power Reactors regarding Technical Evaluation of Aging Management (draft) ・Reports on accidents or malfunctions under the law
30	9. 7	・Progress and future plans with respect to revisions of the inspection system and regulatory controls applicable to radioisotope-utilizing facilities ・Situation of conformity review to New Regulatory Requirements of facilities for handling radioisotopes / Partial revision of the regulatory guide for standards applicable to nuclear fuel facilities associated with handling based on the graded approach and establishment of the new evaluation guide (draft) ・Establishment of the Ordinance to Reinforce Internal Threat Measures (such as introducing system to determinate trustworthiness of persons) (draft) ・Partial correction on partial revision of the Ordinance on the Arrangement of Transportation for Specified Nuclear Fuel Material ・Priority measures of the NRA in FY 2017 ・Results of the meeting between the regulatory authorities in Japan and Finland ・Report on partipation in the 35th International Geological Congress (IGC)

31 ※4	9.12	・Violations of the obligations subject to Physical Protection Programs ・Revision of the review report on application for change in reactors installation of Units 3 and 4 at the Takahama NPS (KEPCO), designated as Specialized Safety Facilities
32	9.14	・NRA opinions on the plan of Nuclear Energy Disaster Prevention Drill for FY 2016 ・Results of the implementation of Safeguards Activities in Japan in 2015 and publication of "Safeguards Statements for 2015" of IAEA ・Report on the results of the fourth meeting of Japan-France Regulatory Authorities Meeting
33	9.21	・Permission for change in reactors installation of Units 3 and 4 at the Takahama NPS (KEPCO), designated as Specialized Safety Facilities ・Approving change in reactor installation at Kyoto University's Reactor Research Institute (research reactor) ・Revision of NRA's EPR Plan and establishment of initial response manual to emergency of nuclear-powered warships ・Revision of Measures for Mid-term Risk Reduction at TEPCO's Fukushima Daiichi NPS (ver. September 2016) (draft) ・Results of evaluation for safety research (ex ante and ex post facto evaluations)
34	9.21	・Approach on safety improvements (Chugoku Electric Power Company)
35	10. 5	・Results of requesting public comments to the draft review report and permission for change in reactor installation of Unit 3 of the Mihama NPS (KEPCO) ・Hearing opinions of Japan Atomic Energy Commission and the Minister of Economy, Trade and Industry on application for permission for change in reactors installation from 11 licensees installing commercial power reactors ・Establishment of Technical Study Team on Environmental Radiation Monitoring ・Type designation to Mitsubishi Heavy Industry's Type-Designation Application for Type Design Specified Containers (for BWR fuel) ・Overview of IAEA General Conference, International Nuclear Regulators Association (INRA) and bilateral meetings
36	10.12	・Revision based on a secondary review of the Ordinance on the Arrangement of Transportation for Specified Nuclear Fuel Material ・Report of on the eighth, ninth, and tenth joint meetings of the Reactor Safety Examination Committee and the Nuclear Fuel Safety Examination Committee ・Arbitrary decisions in the first quarter of FY 2016 ・Outline of the Advisory Group on Nuclear Security (AdSec), IAEA
37	10.19	・Partial revision of the Ordinance on the Installation and Operations of Commercial Power Reactors regarding Technical Evaluation of Aging Management and the results of requesting public comments on the revision ・State of investigation into the possibility of carbon segregation in containment vessels confirmed by ASN, France ・Partial revision of the Ordinance on Standards Applicable to the Positioning of, Structure of, and Equipment at Commercial Power Reactors and Auxiliary Facilities and requesting public comments on the revision ・Inflow of rainwater into a nuclear reactor building at the Shika NPS ・Roadmap for improvement of the NRA Management System (draft)
38	10.19	・Approach on safety improvements (Hokuriku Electric Power Company)
39 ※5	10.20	・Selection of members of the Reactor Safety Examination Committee and the Nuclear Fuel Safety Examination Committee

40	10.26	・Report from the University of Tokyo in accordance with an order to collect reports ・State of an investigation into the emergence of discoloration and rust in the lower plenum of the storage building for vitrified canisters in waste control facility of JNFL (results of an investigation into the number two storage zone) ・Assessment of the impact of pyroclastic fall diposits on commercial power reactor facilities
41	11. 2	・Results of requesting public comments on the draft of the interim report for revision of the inspection system ・Permission for change in reactors installation to 11 licensees installing commercial power reactors ・Appointing members of the Reactor Safety Examination Committee and the Nuclear Fuel Safety Examination Committee ・Operational safety inspections in the second quarter of FY 2016 ・Overview of the results of International Nuclear Safety Group (INSAG) of IAEA ・Overview of the results of General Conference of the Western European Nuclear Regulators Association (WENRA)
42	11. 9	・Requesting public comments on the draft of the review report on application for change in reactors installation of Units 3 and 4 at the Genkai NPS (Kyushu Electric Power Company) ・Results of requesting public comments on the draft of the interim report for revision of regulations applicable to radioisotope-utilizing facilities (draft) ・Safety research “Water Depth Coefficients for Evaluating Tsunami Pressure on Seawall”
43	11.16	・Approval for extention of the operation period and change in operational safety program for Unit 3 at the Mihama NPS (KEPCO) ・Evaluation of the report received from the Hokuriku Electric Power Company on the inflow of rainwater into a nuclear reactor building at the Shika NPS and measures to be taken ・Assessments of the impact of pyroclastic fall deposits on commercial power reactor facilities ・Discussions with the licensees installing major nuclear facilities (regulated parties) ・Radiation control status report of nuclear facilities in FY 2015
44	11.16	・Approach on safety improvements (Japan Atomic Power Company)
45	11.22	・Committee for Reforming TEPCO and Overcoming 1F Challenges ・Results of investigation into the possibility of carbon segregation in containment vessels confirmed by ASN, France ・Issues and actions to revision of regulatory requirements ・Efforts to one of issues of IRRS: “Taking personal and organizational factors into account” ・Roadmap for improvement of the NRA Management System (draft)
46	11.30	・Draft of the review report on application for change in reactors installation of Units 1 and 2 at the Sendai NPS (Kyushu Electric Power Company) ・Partial revision of the regulatory guide for standards applicable to nuclear fuel facilities associated with handling based on the graded approach and establishment of the new evaluation guide ・Procedure to review EAL for commercial power reactors ・Report on participation in IAEA Technical Meetings
47	12. 7	・Ordinance for partial revision of the Ordinance on the Security of Nuclear Reactor Facilities and Protection of Specific Nuclear Fuel Material at the Fukushima Daiichi Nuclear Power Station (TEPCO) ・Arbitrary decisions in the second quarter of FY 2016 ・Outline of the results of the ninth China-Japan-Korea Top Regulators’ Meeting (TRM)

48	12.14	・The third operational safety inspection in FY 2016 at JNFL's enrichment and waste disposal site (processing facility) and measures to be taken ・Evaluation of the report received from the Tokai Reprocessing Facility (JAEA) on the decommissioning plan and measures to be taken ・Corrosion of the ventilation ducts in the central control room of Unit 2 at the Shimane Nuclear Power Station (Chugoku Electric Power Co.) ・Revision of Measures for Mid-term Risk Reduction at TEPCO's Fukushima Daiichi NPS (ver. December 2016) (draft) ・Overview of the results of Committee on the Safety of Nuclear Installations (CSNI) , OECD/NEA ・Outline of the results of the IAEA's International Conference on Nuclear Security
49	12.14	・Approach on safety improvements (JNFL)
50 ※6	12.19	・Decision on the formal objection to the approval of the construction plan for Units 1 and 2 at the Sendai NPS (Kyushu Electric Power Company) and to the approval of the construction plan for Units 3 and 4 at the Takahama NPS (KEPCO)
51	12.21	・Imperfect management of inspection records at the Reactor Decommissioning R&D Center Fugen (JAEA) ・Establishment of the Ordinance for partial revision of the Ordinance on the Arrangement of Transportation for Specified Nuclear Fuel Material (draft) ・Situation of conformity review to New Regulatory Requirements of facilities for handling radioisotopes ・Reviewing "Policies on the application of New Regulatory Requirements to nuclear fuel facilities" to research reactors without S-class facilities
52	12.28	・Response to Recommendation from the NRA to the Minister of Education, Culture, Sports, Science and Technology ・Outline of the draft bill for partial revision of the Act on the Regulation of Nuclear Source Material, Nuclear Fuel Material and Reactors ・Revision of Nuclear Emergency Response Guidelines and requesting public comments on the revision ・Results of evaluations for safety research (intermediate evaluation) ・NRA's proposed budget and organization and the number of agency personnel plan for FY 2017
53	1.11	・Committee for Reforming TEPCO and Overcoming 1F Challenges ・Results of the inspections on places under similar conditions in which corrosion emerged at the ventilation ducts in the central control room of Unit 2 at the Shimane Nuclear Power Station (Chugoku Electric Power Co.) ・Request for a follow-up mission of the IAEA's International Physical Protection Advisory Service (IPPAS)
54	1.11	・Discussion with President of the JAEA on the decommissioning plan of the Tokai Reprocessing Facility
55	1.12	・Discussions with the chairmen of the Reactor Safety Examination Committee and the Nuclear Fuel Safety Examination Committee ・Evaluation and advice on actions of the NRA to issues indicated by the IRRS mission
56	1.18	・Results of requesting public comments on the draft of review of Units 3 and 4 at the Genkai NPS (Kyushu Electric Power Company) and permission for change in reactors installation ・Actions to decommission of the Prototype Fast Breeder Reactor Monju

57	1.25	・Results of requesting public comments on partial revision of the Ordinance on the Security of Nuclear Reactor Facilities and Protection of Specific Nuclear Fuel Material at the Fukushima Daiichi Nuclear Power Station (TEPCO) (draft) ・Issues and measures regarding standards applicable to dry-type cask for shipping and stockpiling of spent fuel ・Responses from the licensees on assessments of the impact of pyroclastic fall deposits on commercial power reactor facilities and studies on assessments of the impact of pyroclastic fall deposits
58	1.31	・Discussion with President of the JAEA on the decommission plan of Prototype Fast Breeder Reactor Monju
59	2.1	・Draft bill for partial revision of the Act on the Regulation of Nuclear Source Material, Nuclear Fuel Material and Reactors in order to reinforce safety measures ・Ordinance for partial revision of the Ordinance on the Installation and Operations of reactors in research and development stage related to decommission of Prototype Fast Breeder Reactor Monju (draft) and Ordinance for partial revision of the Ordinance on the Business of Reprocessing Spent Fuel related to decommissioning of the Nuclear Fuel Cycle Engineering Research Institute (Reprocessing Facility) (draft) ・Partial revision of the operation guide concerning evaluations for safety improvement of commercial power reactors (draft) ・New items for examination and deliberation by the Reactor Safety Examination Committee and the Nuclear Fuel Safety Examination Committee ・Future discussions between the NRA and the licensees (executive officers) ・Damage caused to the fuel-handling building at the Takahama NPS by fall of a crane
60	2.8	・Results of requesting public comments on the draft of review report on Units 1 and 2 at the Sendai NPS (Kyushu Electric Power Company) and permission for change in reactors installation (draft) ・Results of an investigation into penetrating parts of nuclear reactor buildings ・Evaluation of the report from KEPCO on damage caused to steam-generator heat-exchanger tubes of Unit 3 at the Takahama NPS and measures to be taken (draft) ・Topics of nuclear facilities
61	2.15	・Taking into account the impact of earthquakes on fuel assemblies in commercial power reactors ・Operational safety inspection in the third quarter of FY 2016 ・Future actions of the Reactor Safety Examination Committee and the Nuclear Fuel Safety Examination Committee upon having received new items for examination and deliberation ・Investigating evaluations on the impact of pyroclastic fall deposits on commercial power reactor facilities ・Issues and responses to standards applicable to dry-type cask for shipping and stockpiling of spent fuel ・Progress with respect to NRA human resource development project and public offering of new projects in FY 2017 ・Radiation-protection standards of waste disposal
62	2.22	・Requesting public comments on the draft of the review report on application for permission for change in reactors installation of Units 3 and 4 at the Ohi NPS (KEPCO) (draft) ・Partial revision of the Ordinance on Technical Standards for Commercial Power Reactors and Auxiliary Facilities Pertaining to high-energy arcing fault (draft) and requesting public comments on the revision ・Safety research to be conducted in the area of radiation protection in FY 2017 ・Management review for FY 2016

63 ※7	2.24	・Revising documents subordinate to NRA ordinances pertaining to the physical protection
64	2.28	・Efforts for conformity reviews by TEPCO Holdings
65	3.1	・Concept on reviews for approval of the decommissioning plan of Prototype Fast Breeder Reactor Monju and the Nuclear Fuel Cycle Engineering Research Institute (reprocessing facility) ・Establishing Cyber-Security Measures Team ・Conducting on-site inspections of designated bodies for information processing and designated bodies for safeguards inspections under the Act on the Regulation of Nuclear Source Material, Nuclear Fuel Material and Reactors ・Evaluating the report received from KEPCO on fall of a crane jib at the Takahama NPS and measures to be taken ・Release of the outline of the NRA's initiatives (draft)
66	3.2	・Radiation-protection standards of waste disposal
67 ※8	3.7	・Draft of the review report on application for permission for change in reactors installation of Units 1 and 2 at the Sendai NPS (Kyushu Electric Power Company), designated as Specialized Safety Facilities(draft)
68	3.8	・Draft of the review report on application for change in reactors installation of Units 1 and 2 at the Sendai NPS (Kyushu Electric Power Company), designated as Specialized Safety Facilities (draft) ・Draft of the review report on application for change in nuclear fuel material processing business of GNF-Japan (processing facility) (draft) ・EAL for commercial power reactors and nuclear fuel facilities ・Situation of conformity review to New Regulatory Requirements of commercial power reactors ・Situation of conformity review to New Regulatory Requirements of facilities for handling radioisotopes ・Change in the mid and long term targets of JAEA
69	3.15	・Re-evaluating important facilities for safety in connection with the withdrawal of application for permission to operate processing business in the number three development office for plutonium fuel at JAEA's Nuclear Fuel Cycle Engineering Research Institute ・Report received from the JNFL in accordance with an order to collect reports ・Evaluation of the fault zones on the site of JAEA's Monju reactor ・Draft of Cabinet Order for partial revision of the NRA Organization Order ・Arbtrary decisions in the third quarter of FY 2016
70	3.21	・Initiatives of JANSI, as self-regulatory organization
71 ※9	3.21	・Ruling on a lawsuit seeking the state compensation (Maebashi District Court) in connection with the accident at TEPCO's Fukushima Daiichi NPS
72	3.22	・Establishment of the Ordinance for partial revision of the Ordinance on the Installation and Operations of reactors in research and development stage and the Ordinance to partial revision of the Ordinance on the Business of Reprocessing Spent Fuel ・Revision of Nuclear Emergency Response Guidelines ・Prioritized items on the inspections conformity to the operational safety programs in FY 2017 (draft) ・Determining the plan pertaining to management systems and policy evaluations ・U.S. business trip report
73	3.29	・Approving the decommissioning plans for Unit 1 at the Genkai NPS (Kyushu Electric Power Company), Unit 1 at the Tsuruga NPS (Japan Atomic Power Company), Units 1 and 2 at the Mihama NPS (KEPCO), and Unit 1 at the Shimane NPS (Chugoku Electric Power Company)

		(draft) ・Partial revision of the operational guidelines for evaluating safety improvement of commercial power reactors (draft) ・Plans for preventive measures of water leaks to be applied to penetrating parts ・Formulating of rules for implementation of joint research

※1 The 10th meeting in FY 2016 was closed to the public because the meeting examined suitability and propriety of disposition implemented by NRA themselves. Opening of examination to the public 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 decision through simple procedure might be obstructed.

※2 The 17th meeting in FY 2016 was closed to the public because it handled the exective officers selection in an organization. The information disclosure could endanger personal rights and benefits, and disturb ensuring fair and smooth personnel affairs management of the organization concerned.

※3 The 25th meeting in FY 2016 was closed to the public considering the viewpoint of security because it handled the review process of Specialized Safety Facilites.

※4 The 31st meeting in FY 2016 was closed to the public considering the viewpoint of security because it handled the information on physical protection and the review process of Specialized Safety Facilities.

※5 The 39th meeting in FY 2016 was closed to the public because it handled selection of the Examination Committees' members. The information disclosure could endanger personal rights and benefits, and disturb ensuring fair and smooth personnel affairs for selecting examination committee members.

※6 The 50th meeting in FY 2016 was closed to the public because the meeting examined suitability and propriety of disposition implemented by NRA themselves. Opening of examination to the public 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 decision through simple procedure might be obstructed.

※7 The 63rd meeting in FY 2016 was closed to public to prevent endangering public safety by disclosing information relating to the physical protection to a person(s) who might ultimately attempt to sabotage nuclear facilities with such information.

※8 The 67th meeting in FY 2016 was closed to the public considering the viewpoint of security because it handled the review process of the Specialized Safety Facilities.

※9 The 71st meeting in FY 2016 was closed to the public because the discussion was related to the lawsuits concerning affairs under the jurisdiction of the NRA , which falls under Non-Disclosed Information stipulated in Article 5 of the Act on Access to Information Held by Administrative Organs.

9. List of decision made in NRA

(From April 1, 2016 to March 31, 2017)

Date	Decision made in Committee
4. 6	・Evaluation of the report received from KEPCO related to automatic stoppage of Unit 4 caused by automatic stoppage of a generator at the Takahama NPS and measures to be taken
4. 13	・Conformity of application for change in reactor installation of Kyoto University's Research Reactor Institute (critical experiments facility) to the requirments stipulated in the Act on the Regulation of Nuclear Source Material, Nuclear Fuel Material and Reactors ・Review report concerning application for permission for change in reactor installation of Kinki University's nuclear power laboratory ・Partial revision of the review standards applicable to extension of the operation period of commercial power reactors ・Gathering benchmarks as to be used for operational safety inspections (Instruction)
4. 20	・Change in reactors installation at the Takahama NPS (Units 1, 2, 3, and 4)
4. 27	・Planned implementation of site inspecton of users of nuclear fuel materials
5. 11	・Change in reactor installation at Kyoto University's Research Reactor Institute (critical experiments facility) (Approval) ・Change in reactor installation at Kinki University's nuclear power laboratory (Permission) ・Evaluation of a report from TEPCO Holdings on a leakage of RO-concentrated water from transfer pipes leading to G6 tank area at the Fukushima Daiichi NPS (TEPCO)
5. 18	・Ordinance for partial revision of the Ordinance on the Security of Nuclear Reactor Facilities and Protection of Specific Nuclear Fuel Material at the Fukushima Daiichi Nuclear Power Station (TEPCO) ・Partial revision of operations as provided for in Article 18 (instructions) of the Ordinance on the Security of Nuclear Reactor Facilities and Protection of Specific Nuclear Fuel Material at the Fukushima Daiichi Nuclear Power Station (TEPCO) ・NRA Annual Report for FY 2015
5. 23	・Decision on the formal objection to permission for change in reactor installation at the Takahama NPS (KEPCO) (Units 3 and 4) and the petition for stay of execution of approval of the constraction plan for Units 1 and 2 at the Sendai NPS (Kyushu Electric Power Company)
5.25	・Appointing members of the Reactor Safety Examination Committee and the Nuclear Fuel Safety Examination Committee ・Type certificate for Mitsubishi Heavy Industry's "Application for a type certificate for the design of specific containers related to spent fuel storage facilities (for PWR fuel)" ・Policy to review the regulatory controls to which radioisotope-utilizing facilities are subject ・Revision of the NRA's EPR plan
6.1	・Ordinance for partial revision of the Ordinance on the Transportation of Nuclear Fuel Material Outside Plants and Business Offices
6. 8	・Hearing opinions of the NRA for "Change of designation of off-site centers for emergency response measures" (Reply) ・Incorporating the results of policy evaluations into the NRA policies

6.15	・Evaluation of the report from TEPCO Holdings on an unforeseen operation of control rod during periodic facility inspection of Unit 5 at the Kashiwazaki-Kariwa Nuclear Power Station
6.20	・Approving application for extension of the operation period for the Takahama NPS (KEPCO) (extension of the operation period for Unit 1) ・Approving application for extension of the operation period for the Takahama NPS (KEPCO) (Unit 2) ・Approving application for change in operational safety program for the Takahama NPS (KEPCO) (technological evaluation of aging management for Units 1 and 2)
6.27	・Approving appointment of executives of designated organization for safeguards inspections
7.6	・Basic Policy on Safety Research by the NRA
7.20	・Collecting reports in accordance with Article 67 of the Act on the Regulation of Nuclear Source Material, Nuclear Fuel Material and Reactors (the University of Tokyo, Graduate School of Engineering, Department of Nuclear Energy and Management)
7.27	・Review report of application for change in reactor installation to Kyoto University's Research Reactor Institute (reseach reactor) ・Partial Revision of the Ordinance of the Installation and Operations of Commercial Nuclear Power Reactors ・Revision of guidelines on procedures pertaining to construction plan for nuclear power reactor facilities ・Seventh National Report of Japan of the Convention on Nuclear Safety
8.3	・Hearing opinions on permission for change in reactors installation at the Takahama NPS (KEPCO) (Units 3 and 4) ・Hearing opinions on permission for change in reactor installation at the Mihama NPS (KEPCO) (Unit 3) ・Examinating the decommissioning plan of the Tokai Reprocessing Facility (JAEA) (Instruction)
8.24	・Conducting an investigation into the possibility of carbon segregation in containment vessels confirmed by the ASN, France ・Performance evaluation of the JAEA in FY 2015 ・Performance evaluation of the National Institutes for Quantum and Radiological Science and Technology ・Policy evaluation report of implementation measures in FY 2015 and a pre-analysis table of implementation measures for FY 2016
8.31	・Thinking on regulatory controls pertaining to the underground burial of in-reactor waste
9.7	・Ordinance for partial revision of the Ordinance on the Business of Reprocessing of Spent Fuel ・Announcement setting forth matters to be stated in a declaration stipulated in the provisions of item xxvi(a)(2) of paragraph (2) of Article 16-3 of the Ordinance on the Business of Reprocessing Spent Fuel ・Operational guidelines for determinating trustworthiness of persons at nuclear power facilities ・Ordinance for partial revision of the Ordinance on the Arrangement of Transportation for Specified Nuclear Fuel Material and the Ordinance on Off-site Transportation of Nuclear Fuel Materials
9.12	・Compliance to regulations of the physical protection (Reprimand)
9.14	・Hearing opinions on the plan of Nuclear Energy Disaster Prevention Drill for FY 2016 (Reply)

9.21	・Permission for change in reactors installation at the Takahama NPS (Units 3 and 4) ・Permission for change in reactor installation at Kyoto University's Research Reactor Institute (research reactor) (Approval) ・Revision of NRA's EPR Plan ・Initial-response manual to emergency of nuclear-powered warships
10.5	・Application for permission for change in reactor installation at the Mihama NPS (Unit 3) ・Hearing opinions of the Japan Atomic Energy Commission and the Minister of Economy, Trade and Industry on application for permission for change in reactor installation from 11 licensees installing commercial power reactors ・Establishment of Technical Study Team on Environmental Radiation Monitoring ・Type designation for type-design specified containers of Mitsubishi Heavy Industry's spent fuel storage facilities
10.19	・Partial revision of the Ordinance on the Installation and Operations of Commercial Power Reactors Pertaining to Technological Evaluation of Aging Management
11.2	・Interim report for revision of the inspection system ・Permission for change in reactors installation from 11 licensees installing commercial power reactors ・Appointing members of the Reactor Safety Examination Committee and the Nuclear Fuel Safety Examination Committee
11.9	・Hearing opinions on permission for change in reactors installation at the Genkai NPS (Kyushu Electric Power Company) (Units 3 and 4) ・Interim report for revision of regulations applicable to radioisotope-utilizing facilities
11.16	・Approving application for extension of the operation period for the Mihama NPS (KEPCO) (Unit 3) ・Approving application for change in the operational safety program at the Mihama NPS (KEPCO) (technology evaluation of aging management of Unit 3) ・Measures to be taken to the inflow of rainwater into the Unit 2 reactor building at the Shika NPS (Hokuriku Electric Power Company) (Instruction)
11.22	・Roadmap for improvement of the NRA Management System
11.30	・Hearing opinions on permission for change in reactors installation at the Genkai NPS (Kyushu Electric Power Company) (Units 1 and 2) ・Ordinance for partial revision of the Regulatory Guide of the NRA Ordinance on Standards at Processing Facilities ・Ordinance for partial revision of the Regulatory Guide of the NRA Ordinance on Standards for the Location, Structure, and Equipment at Usage Facilities ・Ordinance for partial revision of the Regulatory Guide of the NRA Ordinance on Standards for the Location, Structure, and Equipment at Waste Strage Facilities ・Ordinance for partial revision of the Regulatory Guide of the NRA Ordinance on Standards for the Location, Structure, and Equipment at Reactors at the Research and Development Stage ・Regulatory guide for impact evaluations in connection with the prevention of damage caused by tornadoes and external fires at nuclear fuel facilities

12.14	・Collecting reports in accordance with Article 67 of the Act on the Regulation of Nuclear Source Material, Nuclear Fuel Material and Reactors (JNFL's enrichment and waste disposal site (processing facility))
12.19	・Decision on the formal objection to approval of the construction plan for Unit 1 at the Sendai NPS ・Decision on the formal objection to approval of the construction plan for Unit 2 at the Sendai NPS ・Decision on the formal objection to approval of the construction plan for Unit 3 at the Takahama NPS and approval of the construction plan for Unit 4 at the Takahama NPS
12.21	・Measures to imperfect management of inspection records at the Reactor Decommissioning R&D Center Fugen (JAEA) (Instruction) ・Ordinance for partial revision of the Ordinance on the Arrangement of Transportation for Specified Nuclear Fuel Material
1.18	・Permission for change in reactors installation at the Genkai NPS (Units 3 and 4) ・Measures to decommissioning the Prototype Fast Breeder Reactor Monju
1.25	・Partial revision of the Ordinance on the Security of Nuclear Reactor Facilities and Protection of Specific Nuclear Fuel Material at the Fukushima Daiichi Nuclear Power Station (TEPCO)
2.1	・Draft bill for partial revision of the Act on the Regulation of Nuclear Source Material, Nuclear Fuel Material and Reactors in order to reinforce safety measures ・New items for examination and deliberation by the Reactor Safety Examination Committee and the Nuclear Fuel Safety Examination Committee
2.8	・Permission for change in reactors installation at the Sendai NPS (Units 1 and 2) ・Measures to the inflow of rainwater into the Unit 2 reactor building at the Shika NPS (Hokuriku Electric Power Company) (Additional Instruction) ・Evaluation of the report from KEPCO on damage caused to steam-generator heat-exchanger tubes of Unit 3 at the Takahama NPS and measures to be taken
2.22	・Review report on application for permission for change in reactors installation of Units 3 and 4 at the Ohi NPS (KEPCO)
2.24	・Revising documents subordinate to NRA ordinances pertaining to the physical protection in connection with reinforce of internal-threat measures (such as introducing system to determinate trustworthiness of persons) ・Revising relevant rules in connection with revisions of documents subordinate to NRA ordinances pertaining to the physical protection in connection with the reinforce of internal-threat measures
3.1	・Procedures for conducting on-site inspections of designated information processing bodies and designated safeguards inspections bodies under the Act on the Regulation of Nuclear Source Material, Nuclear Fuel Material and Reactors
3.8	・Hearing opinions on permission for change in reactors at the Sendai NPS (Kyushu Electric Power Company) (units 1 and 2) ・Hearing opinions on application for permission for change in nuclear fuel material processing business of GNF-Japan
3.15	・Re-evaluating important facilities for safety in connection with the withdrawal of permission to operate a processing business in the number three development office for plutonium fuel at JAEA's Nuclear Fuel Cycle Engineering Research Institute (Instruction) ・Draft of Cabinet Order to partial revision of the NRA Organization Order

3.22	・Ordinance to partial revision of the Ordinance on the Installation and Operations of reactors in the research and development phase ・Ordinance for partial revision of the Ordinance on the Business of Reprocessing Spent Fuel ・Revision of Nuclear Emergency Response Guidelines ・Determining the state of incorporating the results of the policy evaluations of measures implemented in FY 2015 into the NRA policies ・Determining the basic plan for evaluating the NRA policies ・Determining Implementation Plan for ex-post evaluations of measures implemented in FY 2016 ・Partial revision of the NRA Mid-Term Goal for the First Term ・NRA Annual Strategic Plan for FY 2017
3.29	・Partial revision for the operational guidelines for evaluating safety improvement of commercial power reactors

１０.Opinion exchanges with licensees

（１）Opinion exchanges with the executives on safety improvements

Date	Nuclear Licensees
June 1, 2016	The Kansai Electric Power Co. , Inc.
July 13, 2016	Hokkaido Electric Power Co. , Inc.
July 27, 2016	Chubu Electric Power Co. , Inc.
August 24, 2016	Tohoku Electric Power Co. , Inc.
September 21,2016	The Chugoku Electric Power Co. , Inc.
October 19, 2016	Hokuriku Electric Power Co.
November 16, 2016	The Japan Atomic Power Co.
December 14, 2016	Japan Nuclear Fuel Limited (JNFL)

（２）Opinion exchanges with the executives on specific issues

Date	Nuclear Licensees	Main issues of discussions
April 27, 2016	TEPCO Holdings	Efforts to improve safety at TEPCO Holdings
January 11, 2017	JAEA	Plans for the decommissioning of the Tokai Reprocessing Facility
January 31, 2017	JAEA	The decommissioning plans of Fast Breeder Reactor Monju
February 28, 2017	TEPCO Holdings	Approaches to conformity reviews at TEPCO Holdings
March 21, 2017	Japan Nuclear Safety Institute (JANSI)	Efforts of JANSI as a self-regulatory organization

（３）Opinion exchange with managers of nuclear power departments in the licensees installing major nuclear facilities

Date	Nuclear Licensees
January 18, 2017	TEPCO Holdings, Chubu Electric Power Company, KEPCO

１１．Meetings with Local Governments in FY 2016

Date	Meeting with	NRA Representative
May 18	Governor of Shimane Prefecture Chairperson of the Shimane Prefectural Assembly	Secretary-General
May 19	Mayors of 27 municipalities (including the mayor of Tsuruga City), chairpersons of 20 municipal assemblies (including representatives)	Deputy Director-General
May 24	Deputy-Governor of Shiga Prefecture	Deputy Director-General
May 30	Governor of Ehime Prefecture	Secretary-General
June 2	Chairperson of the Fukui Prefectural Assembly, Chairperson of the Shizuoka Prefectural Assembly	Secretary-General
June 17	Governor of Tottori Prefecture	Secretary-General
July 15	Governor of Shimane Prefecture	Secretary-General
July 21	Mayor of Mihama, Fukui Prefecture	Chief of the Public Relations Office (acting Deputy Director-General)
July 27	Mayor of Matsue, Shimane Prefecture	Deputy Director-General
August 25	Governor of Fukui Prefecture	Chairman Secretary-General
November 10	Governor of Shimane Prefecture	Secretary-General
November 18	Chairperson of the Fukui Prefectural Assembly, Chairperson of the Shizuoka Prefectural Assembly	Secretary-General
November 22	Deputy-Governor of Shiga Prefecture	Chief of the Public Relations Office (acting Deputy Director-General)
March 6	Mayor of Ohi Town, Fukui Prefecture	Deputy Director-General

１２.Results of the FY 2016 internal audit conducted in accordance with the NRA Management Rules

An internal audit was administered to 6sections in FY 2016 pursuant to Article 36 of the NRA Management Rules.

The FY 2016 internal audit revealed nothing that came under “Items requiring improvement (Recommendations)”. However, 11 items coming under “Items for which improvement is desired (Suggestions)” and three items coming under “Cross-sectional issues affecting divisions and groups” were identified. In addition, 11 items were described as corresponding to “Good Practice”.

○Classifications of identified items in the audit

Classification	Contents
R: Recommendations (items requiring improvement)	Corresponds to items requiring improvement as provided for in the Management Rules (Recommendations; items requiring improvement) ・Item that violates or that could violate a statute or ordinance ・Item that does not satisfy individual operational requirements ・Item for which this classification is otherwise deemed necessary by the person responsible for promoting management
S: Suggestions (items for which improvement is desired)	Item for which improvement is desired, including in terms of operational effectiveness and appropriateness
S': Cross-sectional issues	Item for which improvement is proposed in order to address an issue that affects not just the audited section but also the division, group, or entire agency
GP: Good practice items（Good Practice）	Example that should ideally be emulated by others outside the audited section

Audited section	Identification classification	Outline of audit results	State of improvement and future plans
Director-General's Secretariat			

Audited section	Identification classification	Outline of audit results	State of improvement and future plans
International Affairs Office	S1	・ An investigation to develop the strategic management systems within the NRA Secretariat with respect to international affairs (including the development of an information platform and the reinforcement of hub functions to connected concerned parties with relevant information) should be conducted.	＜State of improvement＞ ・ Endeavoring to establish a system to verify matters clearly was promoted with consolidating information on the handling of international affairs by the NRA and provide information and conceptionson international affairs thereby shared throughout the NRA with a view to ensuring better strategic management of international affairs. ・ Clarifying the internal management system designed to follow up on the results of international conferences with a viewpoint to reinforcing hub functions for linking concerned parties with relevant information, ameliorating regulatory frameworks by incorporating international requirements and overseas knowledge that should be incorporated appropriately and on a timely the part of the NRA, and helping to inject the NRA's knowledge and perspectives into international discussions on nuclear safety. ・ Clarifying responsibilities between operations of the international affairs office and other divisions and offices within the NRA Secretariat in order to reinforce relations among all groups within theNRA. ＜Future plans＞ ・ Actions will be taken by the NRA as a whole with the international affairs office taking a primary role to ensure that these mechanisms are being appropriately operated.

Audited section	Identification classification	Outline of audit results	State of improvement and future plans
	S2	・ Operational processes should be reconsidered: as examples of accepted practice, such as business administration concerning proposals and summaries of agenda items discussed in bilateral dialogues/meetings and the transmission of information to overseas parties.	＜State of improvement＞ ・ Re-checking the processes to propose agenda items in bilateral dialogues so that the NRA can make more use of those dialogues for more strategic communications, and promoting arrangements of flexible opportunities to dialogues taking the latest issues (for example, adding agenda items concerning carbon segregation to bilateral meetings with France). ＜Future plans＞ ・ Reconsidering the operational processes within the NRA concerning the transmission of marine monitoring data obtained in the vicinity of the Fukushima Daiichi NPS. The policy on selecting materials for English-language press releases is slated to undergo reorganization in the future.
	GP	・ Urging the participation of young officials in international conferences ・ Initiatives for the development of systematic manuals ・ Effective sharing of information	

Audited section	Identification classification	Outline of audit results	State of improvement and future plans
Regulatory Standard and Research Department			
Division of Research for Reactor System Safety	S3	・ It shall be reconsidered on the following issues: collecting the latest information with consideration to incorporate it into regulatory requirements, such as specifying knowledge to be collected in prior at academic conferences, the submission of proposals for new safety research projects.	＜Future plans＞ ・ When the details of the program for an academic conference or similar event are made clear, information to be reported shall be shared within the section and announcements for the acquisition of information shall be specified. Where necessary, apportionning among participants for investigations at conferenceswill be made. Up-to-date knowledge will be acquired systematically and utilized for investigations into proposals for new safety-research projects and reviews of standards in accordance with the “Program for incorporating up-to-date knowledge of the Regulatory Standard and Research Department”.
	S4	・ A system should be developed for carrying out medium- to long-term research by prescribing a suitable policy for developing and securing human resources and diversifying the areas of specialization by researchers.	＜Future plans＞ ・ Personnel capable of engaging in a variety of research projects will be cultivated and secured by prescribing a medium- to long-term plan for managing the competence, deepening levels of expertise of individual researchers by sending them to domestic and overseas research laboratories, and developing a system for enabling participation in research projects in highly related areas of specialization.

Audited section	Identification classification	Outline of audit results	State of improvement and future plans
	GP	・ Demonstration of initative in terms of safety research throughout the Department ・ Text-based materials for the transmission of skills and techniques have been formulated by Senior Technical Consultant for each team.	
Division of Research for Severe Accident	S5	・ The acquisition of up-to-date knowledge, with its incorporation into regulatory requirements kept in mind, and proposals for new safety research projects should beconsidered.	＜Future plans＞ ・ Up-to-date knowledge that could be harnessed with regulatory controls in connection with measures to deal with severe accidents and probabilistic risk assessments shall be acquired. Up-to-date knowledge obtained will be systemically shared through internal meetings and knowledge to be investigated in detail will be specified. An investigative system will be constructed in the section and other measures will be taken to conduct detailed investigations of specified up-to-date knowledge, the results of which will be harnessed to propose new safety research projects and investigate reviews of standards and requirements.

Audited section	Identification classification	Outline of audit results	State of improvement and future plans
	S6	・ The process of ascertaining information on regulated parties (such as assessments for safety improvements) should be clarified so that such information can be incorporated into safety research.	＜Future plans＞ ・ Meetings held regularly by the Department with the Federation of Electric Power Companies will be used to ascertain information on regulated parties. Interviews held by the Nuclear Regulation Department with licensees in connection with safety-improvement assessments (probabilistic risk assessments) will continue to be attended to ascertain licensees' trends.
	S7	・ The process of communicating with the Radiation Protection Department (including regular meetings) should be clarified.	＜Future plans＞ ・ Operations will continue to be pursued in close collaboration with the group in Division of Nuclear Disaster Measures and Physical Protection of Nuclear Materials, which is involved in safety research. The approach to undertaking regular meetings will be considered.
	GP	・ Rotation of newly hired employees within the section based on educational considerations ・ Text-based materials for the transmission of skills and techniques have been formulated by Senior Technological Consultants for each group.	
＜Cross-sectional issues＞ Proposed to Rregulatory	S´1	・ It is important to properly establish a process for coordinating research contents with relevant sections and offices within the NRA through meetings of the Technical Information Committee.	＜Future plans＞ ・ The process of coordinating with the Devisions within the Nuclear Regulation Department when formulating and evaluating plans for safety research has been specifically prescribed. Efforts will be made to properly establish this process to ensure that it is reliably undertaken.

Audited section	Identification classification	Outline of audit results	State of improvement and future plans
Standard and Reserch Division as issues for the overall Department	S´2	・ The development of rules to allow officials to proactively participate in academic conferences and other events should be examined.	＜Future plans＞ ・ Rules to enable officials to participate in academic conferences and proactively engage in discussions (particularly discussions unrelated to regulatory controls) shall be developed as byelaws.
Radiation Protection Department			
Radiation Protection and Safeguards Division	S8	・ The framework for providing guidance to and supervision of the Nuclear Material Control Center, to which operations for the management and reporting of nuclear material accounting have been outsourced, should be reinforces. This includes a check of the operational process.	＜State of improvement＞ ・ Guidance is being provided to the Nuclear Material Control Center to have operational processes developed. These processes are currently being organized and sorted out by the Nuclear Control Center with the support of external experts. ＜Future plans＞ ・ This fiscal year, policies for improving operational quality in accordance with organized operational processes will be checked through on-site inspections of the Center. These will be carried out as inspections collect reports for registered safeguards bodies and registered information processing bodies, pursuant to from information processing organizations under the Reactor Regulation Act. ・ Beginning in the next fiscal year, the state of initiatives to improve operational quality will continue to be checked and required guidance will be provided on an ongoing basis.
	GP	・ Effective resource allocation and improvements of ability and competence through the use of a detailed work responsibility schedule	
Nuclear Regulatory Department			

Audited section	Identification classification	Outline of audit results	State of improvement and future plans
Under Safety Regulation Managers (in charge of BWR)	S9	・ The documentation of experience and know-how should be carried out by producing "Review viewpoints and points to be checked" and endeavoring to produce a "Review operations manual" based on the particular issues on BWR reviews.	＜State of improvements＞ ・ "Review viewpoints and points to be checked" is being produced based on the state of progress in BWR reviews. ＜Future plans＞ ・ A "Review operations manual" is being produced based on issues clarified by the IRRS and is slated to be formulated before the end ofFY 2016. Even after a manual is formulated, required documents will continue to be added and produced.
	S10	・ Efforts should be made to review the organization of review team in accordance with the state of reviews.	＜State of improvements＞ ・ The organization review teams at BWR plants was expanded from one team to two teams in January of this year based on the state of reviews. The review teams will continue to be reconsidered whenever required.
	GP	・ Transmission of analytical data on the accident at the TEPCO's Fukushima Daiichi NPS to in Japan and overseas. ・ Frank exchange of opinions within the review team.	
<Cross-sectional issues> Proposed to the Nuclear Regulatory Planning Section as issues for the entire Nuclear Regulatory Division	S´3	・ The systematization into manuals of efforts and tactics accumulated and/or elaborated through reviews conducted in the field with respect to communications with regulated partiesshould be examined.	＜State of improvements＞ ・ Work to formulate "Review operations manual" for nuclear power plants, where conformity reviews are making relatively good progress, is proceeding by the end of FY 2016. ＜Future plans＞ ・ Work for other facilities is proceeding referring the manuals for nuclear power plants.
NRA Human Resource Development Center			
Management Section	S11	・ Evacuation guidance for not just officials belonging to the Human Resource Development Center but also overseas trainees and training instructors should beexamined.	＜State of improvements＞ ・ Overseas trainees and others have been identified as targets of guidance in "Formation and duties of the HR Development Center's in-house fire brigade". ＜Future plans＞ ・ An English-language version to guide overseas trainees in handling a potential disaster will be prepared and disseminated during their visits.
	GP	・ Manual that takes operational risks into account has been produced.	

１３.Record of responses to formal objections in FY 2016

	Objection	Date of determination	Contents of determination
1	Formal objection to the disposition of permission for change in reactor installation to Units 3 and 4 at the Takahama NPS	May 23, 2016	Dismissed
2	Formal objection to the disposition of permission for change in reactor installation to Units 3 and 4 at the Takahama NPS	May 23, 2016	Dismissed
3	Formal objection to the disposition of permission for change in reactor installation to Units 3 and 4 at the Takahama NPS	May 23, 2016	Dismissed
4	Formal objection to the disposition of approval of a construction plan for Unit 1 at the Sendai NPS	December 19, 2016	Dismissed
5	Formal objection to the disposition of approval of a construction plan and petition for stay of execution for Unit 1 at the Sendai NPS	May 23, 2016 December 19, 2016	Non-stoppage of execution Dismissed
6	Formal objection to the disposition of approval of a construction plan and petition for stay of execution for Unit 2 at the Sendai NPS	May 23, 2016 December 19, 2016	Non-stoppage of execution Dismissed
7	Formal objection to the disposition of approval of a construction plan for Unit 4 at the Takahama NPS	December 19, 2016	Rejected
8	Formal objection to the disposition of approval of a construction plan and petition for stay of execution for Units 3 and 4 at the Takahama NPS	December 19, 2016 Same day	Non-stoppage of execution Rejected

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. And 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

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 (a) developing National Reports, (b) conducting peer reviews among the Contracting Parties, and (c) attending meetings of Contracting Parties (Review Meetings) and undertaking other activities (known as the "review process") 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 Natinoal 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 (the Joint Convention)

The Joint Convention covers safety in managing spent fuels 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 in cooperation with other relevant authorities (Ministry of Foreign Affairs

and Ministry of Economy, Trade and Industry).

(Major activities under the Joint Convention)

Period	Description
October 2014	Submission of the fifth National Report of Japan
May 2015	FifthRebiew 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 the framework for notifying any nuclear accidents with radiological consequences beyond national borders to state party and IAEA which potentially affected state party, while the Convention on Assistance provides the framework for international collaboration of assistance in radiological emergency. The meeting of the contracting parties (meeting of competent authorities) to the Convention on Early Notification and the Convention on Assistance is held every two years. The latest meeting was held in June 2016, 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 States Parties to provide protective measures on nuclear material during international transport and protection of nuclear materials against illegal acquisition and use. In May 2016, the Amendment to the Conventionentered into forth, and the protection obligation 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.

In relation to this convention, the technical meeting of relevant authorities of the convention parties was held in the IAEA from November 30 to December 2, 2016, and the NRA staff attended. At this eeting, information exchange took place among the parties by the NRA about operation after the Amendment to the Convention on the Physical Protection of Nuclear Material will be in force.

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.Collaborations under international organizations

(1) International Atomic Energy Agency (IAEA)

The International Atomic Energy Agency is an international organization (with 168 member countries as of February 2016) that was established in 1957 under the purview of the United Nations for the purpose of promoting the peaceful use of nuclear power. Headquartered in Vienna and helmed by Director General Amano, this organization holds General Conferences (once a year) and other such events. (The Japanese delegation, participating in these conferences, is headed by Minister of State for Science and Technology Policy and that includes Chairman of the NRA.)

Activities of the IAEA for nuclear safety are wide-ranging, such as the formulation and review of IAEASafety 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; Commissioner Fuketa of the NRA serves as a member of this standing committee) 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 Fuketa 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 the Standing Advisory Group on Nuclear Applications (SAGNA; Senior Advisor Nakamura serves as a member of this committee), and is thereby making various international contributions through the IAEA as international experts.

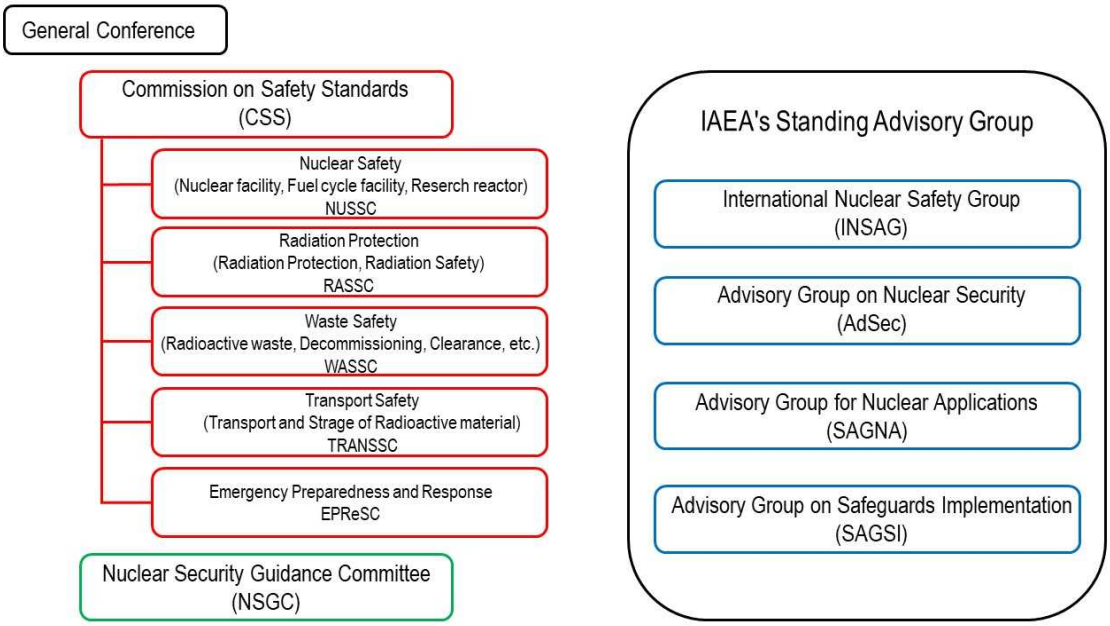

Figure 7. Key IAEA committees in which the NRA participates

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 IRRS mission for January 2016, and 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) (31 member countries as of January 2017; 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 consequenses could be caused by accidents (such as sharing information on regulatory intiatives undertaken by member countries 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), Committee on the Safety of Nuclear Installations (CSNI; Commissioner Fuketa has been serving as Chair of this committee since an assembly held in June 2016), 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.

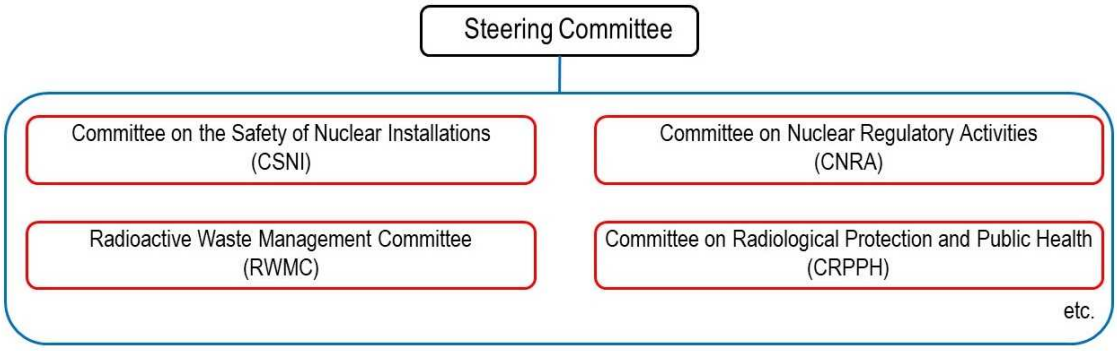

Figure 8. Major OECD/NEA committees in which the NRA participates

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 Name	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.
HEAF	Conducting experiments to ascertain the mechanisms behind the occurrence and progression of high energy arcing faults (HEAF) is conducted.
BSAF	The causes of the TEPCO's Fukushima Daiichi NPS accident, and pathways of the emission of radioactive substances into the environment are analyzed and also SA (severe accident) phenomina are subject to benchmark analyses based on the use of accident progression analysis codes.
HYMERES	Testing and analyses relating to the behavior of hydrogen in containment vessel during a major 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

(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 countries and 11 observer countries as of October 2016). Plernary 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

(5) Regional cooperation: 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

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 held twice a year bilateral meetings (steering committee) and information exchanges concerning specified themes, and with the French Nuclear Safety Authority (ASN) bilateral meeting has been held once a year and information exchange concerning specified themes is held. Also with the other overseas regulatory bodies, exchanges opinion and information has been held.

(Organizations with which the NRA has concluded bilateral arrangements and memorandums of understanding for cooperative initiatives (as of the end of March FY 2016))

- 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 Secvice 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 Regulations on Nuclear Facilities (Chapter 2)

1. Status of Application for Review of Commercial Power Reactors

Applicant	Targeted power reactor	Receipt date	Number review meetings	Number of on-site investigations	Date of approval
Hokkaido Electric Power Co., Inc.	Tomari NPS (Units 1 and 2)	Installation permit change; Construction plan; Operational safety program change July 8, 2013	5	2	—
	Tomari NPS (Unit 3)	Installation permit change; Construction plan; Operational safety program change July 8, 2013	8	3	—
	◆Tomari NPS (Unit 3)	Installation permit change; December 18, 2015	—	—	—
Tohoku Electric Power Co., Inc.	Onagawa NPS (Unit 2)	Installation permit change; Construction plan; Operational safety program change December 27, 2013	20	1	—
	Higashidori NPS (Unit 1)	Installation permit change; Construction plan; Operational safety program change June 10, 2014	6	1	—
Tokyo Electric Power Company Holdings, Inc.	Kashiwazaki Kariwa NPS (Units 6, 7)	Installation permit change; Construction plan; Operational safety program change September 27, 2013	37	2	—
	◆Kashiwazaki Kariwa NPS (Units 1, 6, 7)	Installation permit change; December 15, 2014	—	—	—
Chubu Electric Power Co., Inc.	Hamaoka NPS (Unit 3)	Installation permit change; June 16, 2015	4	1	—
	Hamaoka NPS (Unit 4)	Installation permit change; Construction plan; Operational safety program change	10	1	—

		February 14, 2014 January 26, 2015 (*1)			
Hokuriku Electric Power Company	Shika NPS (Unit 2)	Installation permit change; Construction plan; Operational safety program change August 12, 2014	2	—	—
Kansai Electric Power Co. , Inc	Ohi Power Station (Units 3, 4)	Installation permit change; Construction plan; Operational safety program change July 8, 2013	4	—	—
	Takahama Power Station (Units 3, 4)	Installation permit change; Construction plan; Operational safety program change July 8, 2013	—	—	Permission for change in reactor installation February 12, 2015 Approval of construction plan (Unit 3) August 4, 2015 Approval of construction plan (Unit 4) October 9, 2015 Approval of operational safety program change October 9, 2015
	◆Takahama Power Station (Units 3, 4)	Installation permit change; December 25, 2014	3	—	Permission for change in reactor installation September 21, 2016
	Takahama Power Station (Units 1, 2 (3, 4))	Installation permit change; March 17, 2015 Construction plan; July 3, 2015	2	—	Permission for change in reactor installation April 20, 2016 Approval of construction plan (Unit 1,2) June10, 2016
Kansai Electric Power Co. , Inc	Takahama Power Station (Units 1, 2 (3, 4))	Installation permit change; December 22, 2016	2	–	–
	Mihama Power Station (Unit 3)	Installation permit change; Operational safety program change March 17, 2015 Construction plan; November 26, 2015	13	–	Permission for change in reactor installation October 5, 2016 Approval of construction plan October 26, 2016

Chugoku Electric Power Co.,. , Inc.	Shimane NPS (Unit 2)	Installation permit change; Construction plan; Operational safety program change December 25, 2013	11	—	—
	Shimane NPS (Unit 2)	Installation change; July 4, 2016	1	—	—
Shikoku Electric Power Co. , Inc.	Ikata Power Station (Unit 3)	Installation permit change; Construction plan; Operational safety program change July 8, 2013	—	1	Permission for change in reactor installation July 15, 2015 Approval of construction plan March 23, 2016 Approval of operational safety program change April 19, 2016
	◆Ikata Power Station (Unit 3)	Installation permit change; January 14, 2016	4	—	—
Kyushu Electric Power Co. , Inc.	Genkai NPS (Units 3, 4)	Installation permit change; Construction plan; Operational safety program change July 12, 2013	12	1	Permission for change in reactor installation January18, 2017
	Sendai NPS (Units 1 and 2)	Installation permit change; Construction plan; Operational safety program change July 8, 2013	4	—	Permission for change in reactor installation September 10, 2014 Approval of construction plan (Unit 1) March 18, 2015 Approval of construction plan (Unit 2) May 22, 2015 Approval of operational safety program change May 27, 2015
Kyushu Electric Power Co. , Inc.	◆Sendai NPS (Units 1 and 2)	Installation permit change; December 17, 2015	12	2	—
Japan Atomic	Tokai Daini NPS	Installation permit change; Construction plan; Operational safety program change May 20, 2014	23	2	—

Power Company	Tsuruga NPS (Unit 2)	Installation permit change; Operational safety program change November 5, 2015	–	—	—
J-Power	Oma NPS (*2)	Installation permit change; Construction plan; December 16, 2014	5	—	—

・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 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 FY 2016.

◆: 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 dry storage facility for spent fuel.

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

2. System of Conformity Review of nuclear power stations to New Regulatory Requirements

3.Status of Inspection in Major Nuclear Facilities

(April 1, 2016 - March 31, 2017)

Tomari NPS, Hokkaido Electric Power

All reactor operations were shut down during the following periods.

		Implementation period	Result / Remarks
Periodic facility inspecition	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 30 – June 10, 2016	No particular safety concerns.
	2nd time	August 26 - September 8, 2016	No particular safety concerns.
	3rd time	November 28 – December 9, 2016	No particular safety concerns.
	4th time	February 27 - March 10, 2017	Inspection results being summarized.

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

All reactor operations were shut down during the following periods.

		Implementation period	Result / Remarks
Periodic facility inspection	Unit 1	From February 6, 2011 (under implementation)	
Operational safety inspection	1st time	June 6 - June 17, 2016	No particular safety concerns.
	2nd time	August 29 - September 9, 2016	No particular safety concerns.
	3rd time	November 28 - December 9, 2016	No particular safety concerns.
	4th time	February 27 - March 10, 2017	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 30 - June 10, 2016	No particular safety concerns.
	2nd time	August 24 - September 13, 2016	No particular safety concerns.
	3rd time	November 24 - December 8, 2016	No particular safety concerns.
	4th time	February 27 - March 10, 2017	Inspection results being summarized.

Others	・With respect to a case in which cables and other elements did not conform to design requirements at the NPS on June 29 (outside of the period of operational safety inspection), it was determined that execution as provided for in

		Article 3 (Quality assurance plan) of the operational safety program was insufficient and that this case was judged to be violation of the operational safety program (Violation 2).

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 April 19, 2012 and January 31, 2014, respectively. On November 7, 2012, they were designated as "Specified Nuclear Facilities." On December 7 of the same year, the NRA received "Implementation Plan." On August 14, 2013, "Implementation Plan with Regards to Fukushima Daiichi NPS's Specified Nuclear Facilities" was approved.

		Implementation period	Result / Remarks
Periodic facility inspection periodic 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		
		August 9 – December 6, 2016	Inspection result: Good
Inspection of the status of implementation of actions for safety defined by implementation plan			
	1st time	May 25 - June 7, 2016	No particular safety concerns.
	2nd time	August 25 - September 7, 2016	Breach of implementation plan (monitoring) is confirmed.
	3rd time	November 24 - December 7, 2016	No particular safety concerns.
	4th time	March 2 - March 15, 2017	Inspection results being summarized.

Accident and malfunction	・Breach of implementation plan (monitoring) is also confirmed outside the operatinoal safety inspection.

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 6 - June 17, 2016	No particular safety concerns.
	2nd time	September 1 - September 21, 2016	Violation of safety regulations (monitoring) is confirmed.
	3rd time	December 5 - December 16, 2016	No particular safety concerns.
	4th time	February 22 - March 7, 2017	Inspection results being summarized.
Others	・ With respect to a case in which cables and other elements did not conform to design requirements at the NPS on June 29 (outside of the period of operational safety inspection), it was determined that execution as provided for in Article 3 (Quality assurance plan) of the operational safety program was insufficient and that this case was judged to be violation of the operational safety program (Violation 2).		

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 30 - June 10, 2016	No particular safety concerns.
	2nd time	September 5 - September 16, 2016	No particular safety concerns.
	Operational safety inspection for important actions for safety (Unit 1)		
		July 29 - September 13, 2016	No particular safety concerns.
	3rd time	November 28 - December 15, 2016	No particular safety concerns.
	Operational safety inspection for important actions for safety (Unit 5)		
		July 8 - December 7, 2016	No particular safety concerns.
	Operational safety inspection for important actions for safety (Unit 7)		
		October 3 - October 24, 2016	No particular safety concerns.
	Operational safety inspection for important actions for safety (Unit 6)		
		October 25 - November 10, 2016	No particular safety concerns.
	4th time	February 20 - March 3, 2017	Inspection results being summarized.

Tokai Power Station, The Japan Atomic Power Company

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

		Implementation period	Result / Remarks
Operational safety inspection	1st time	May 16 - May 20, 2016	No particular safety concerns.
	2nd time	August 1 - August 5, 2016	No particular safety concerns.
	3rd time	November 14 - November 18, 2016	No particular safety concerns.
	4th time	February 6 - February 10, 2017	Inspection results being summarized.

Tokai Daini Power Station, The Japan Atomic Power Company

All reactor operations were shut down during the following periods.

		Implementation period	Result / Remarks
Periodic facility inspection		From May 21, 2011 (under implementation)	
Operational safety inspection	1st time	May 30 - June 10, 2016	No particular safety concerns.
	2nd time	August 29 - September 9, 2016	No particular safety concerns.
	3rd time	November 28 - December 9, 2016	No particular safety concerns.
	4th time	February 20 - March 3, 2017	Inspection results being summarized.

Hamaoka NPS, Chubu Electric Power Co. , Inc.

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

(Units 1 and 2 (under decommissioning procedures))

		Implementation period	Result / Remarks
Operational safety inspection	1st time	August 24, 29 - 31, and September 5 - 8, 13, 2016	No particular safety concerns.
	2nd time	February 20, 23, 24 and March 2 - 10, 2017	Inspection results being summarized.

(Units 3 through 5)

		Implementation period	Result / Remarks
Periodic facility inspection	Unit 3	From November 29, 2010 (under implementation)	
	Unit 4	From January 25, 2012 (under implementation)	
	Unit 5	From March 22, 2012 (under implementation)	
Operational safety inspection	1st time	June 6 – June 17, 2016	No particular safety concerns.
	2nd time	August 24 - September 13, 2016	No particular safety concerns.
	3rd time	November 24 - December 9, 2016	No particular safety concerns.
	4th time	February 20 - March 10, 2017	Inspection results being summarized.

Others	・With respect to a case in which cables and other elements did not conform to design requirements at the NPS on June 29 (outside of the period of operational safety inspection), it was determined that execution as provided for in Article 3 (Quality assurance plan) of the operational safety program was insufficient and that this case was judged to violation of the operational safetyprogram (Violation 2). ・On April 11, in Units 3 and 4, deviancy from operational restriction occurred and restituted on the next 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 30 - June 10, 2016	No particular safety concerns.
	2nd time	August 29 - September 9, 2016	No particular safety concerns.
	3rd time	November 28 - December 9, 2016	No particular safety concerns.
	Operational safety inspection for important actions for safety (Unit 1)		
		October 20 – November 24, 2016	No particular safety concerns.
	4th time	February 27 - March 10, 2017	Inspection results being summarized.

Tsuruga Power Station, The Japan Atomic Power Company

All reactor operations were shut down during the following periods.

		Implementation period	Result / Remarks
Periodic facility inspection	Unit 1	From January 26, 2011 (under implementation)	
	Unit 2	From August 29, 2011 (under implementation)	
Operational safety inspection	1st time	May 30 - June 10, 2016	No particular safety concerns.
	2nd time	August 29 - September 9, 2016	No particular safety concerns.
	3rd time	November 28 - December 9, 2016	No particular safety concerns.
	4th time	February 28 - March 13, 2017	Inspection results being summarized.

Mihama Power Station, Kansai Electric Power Co. Inc.

All reactor operations were shut down during the following periods.

		Implementation period	Result / Remarks
Periodic facility inspection	Unit 1	From November 24, 2010 (under implementation)	
	Unit 2	From December 18, 2011 (under implementation)	
Operational safety inspection	Unit 3	From May 14, 2011 (under implementation)	
	1st time	May 30 - June 10, 2016	No particular safety concerns.
	2nd time	August 29 - September 9, 2016	No particular safety concerns.
	3rd time	November 28 - December 9, 2016	No particular safety concerns.
	4th time	March 1 - March 14, 2017	Inspection results being summarized.

Ohi Power Station, Kansai Electric Power Co. Inc.

All reactor operations were shut down during the following periods.

		Implementation period	Result / Remarks
Periodic facility inspection	Unit 1	From December 10, 2010 (under implementation)	
	Unit 2	From December 16, 2011 (under implementation)	
	Unit 3	From September 2, 2013 (under implementation)	
	Unit 4	September 15, 2013 (under implementation)	
Operational safety inspection	1st time	May 30 - June 10, 2016	No particular safety concerns.
	2nd time	August 29 - September 9, 2016	No particular safety concerns.
	3rd time	November 28 - December 9, 2016	No particular safety concerns.
	4th time	February 27 - March 10, 2017	Inspection results being summarized.

Takahama Power Station, Kansai Electric Power Co. Inc.

All reactor operations were shut down during the following periods.

		Implementation period	Result / Remarks
Periodic facility inspection	Unit 1	From January 10, 2011 (under implementation)	
	Unit 2	From November 25, 2011 (under implementation)	
	Unit 3	From December 9, 2016 (under implementation)	
	Unit 4	From July 21, 2011 (under implementation)	
Pre-service inspection	Unit 1	From November 14, 2016 (under implementation)	
	Unit 2	From November 14, 2016 (under implementation)	
	Unit 3	August 17, 2015 – February 26, 2016	Inspection result: Pass
	Unit 4	From October 21, 2015 (under implementation)	
Operational safety inspection	1st time	May 30 - June 10, 2016	No particular safety concerns.
	Operational safety inspection for important actions for safety (Units 3)		
		April 21 – June 24, 2016	No particular safety concerns.
		June 20 – June 27, 2016	No particular safety concerns.
	Operational safety inspection for important actions for safety (Units 4)		
		April 21 – June 24, 2016	No particular safety concerns.
		June 20 – June 27, 2016	No particular safety concerns.
		February 19 – July 15, 2016	No particular safety concerns.
		July 22 – August 5, 2016	No particular safety concerns.
		August 16 – August 22, 2016	No particular safety concerns.
	2nd time	August 29 - September 9, 2016	No particular safety concerns.
	Operational safety inspection for important actions for safety (Units 3)		
		July 25- September 27, 2016	No particular safety concerns.
		November 2 – November 14, 2016	No particular safety concerns.
	Operational safety inspection for important actions for safety (Units 4)		
		November 2 – November 14, 2016	No particular safety concerns.
	3rd time	November 28 - December 9, 2016	No particular safety concerns.
	Operational safety inspection for important actions for safety (Units 3)		

		October 21 – December 26, 2016	No particular safety concerns.
	Operational safety inspection for important actions for safety (Units 4)		
		October 21 – December 26, 2016	No particular safety concerns.
	4th time	February 27 - March 10, 2017	Inspection results being summarized.
	Operational safety inspection for important actions for safety (Units 3)		
		January 26 – March 30, 2017	Inspection results being summarized.
	Operational safety inspection for important actions for safety (Units 4)		
		January 26 – March 30, 2017	Inspection results being summarized.

Shimane NPS, The Chugoku Electric Power Co. Inc.

All reactor operations were shut down during the following periods.

		Implementation period	Result / Remarks
Periodic facility inspection	Unit 1	From November 8, 2010 (under implementation)	
	Unit 2	From January 27, 2012 (under implementation)	
Pre-service inspection	Unit 3	Pre-service inspection in the construction stage under implementation.	Construction processes up to 3 in the table of Article 17 of the Ordinance on Safety of Nuclear Power Workpieces have already been implemented.
Operational safety inspection	1st time	May 30 - June 10, 2016	No particular safety concerns.
	2nd time	August 29 - September 9, 2016	No particular safety concerns.
	3rd time	November 28 - December 9, 2016	No particular safety concerns.
	4th time	February 20 - March 3, 2017	Inspection results being summarized.

Ikata Power Station, Shikoku Electric Power Co. Inc.

Nuclear reactors of Units 3 was started up on August 12, 2016

		Implementation period	Result / Remarks
Periodic facility inspection	Unit 1	From September 4, 2011 (under implementation)	
	Unit 2	From January 13, 2012 (under implementation)	
	Unit 3	April 29, 2011 – September 7, 2016	Inspection result: Good
Pre-service inspection	Unit 3	April 5, 2016 – September 7, 2016	Inspection result: Pass
Operational safety inspection	1st time	May 9, 2016 – May 27, 2016	Four cases of violation of operational safety program (monitoring) are confirmed.
	Operational safety inspection for important actions for safety (Units 3)		
		June 23 – June 29, 2016	No particular safety concerns.
		July 12 – July 20, 2016	No particular safety concerns.
		July 20 – July 22, 2016	No particular safety concerns.
		August 5 – August 24, 2016	No particular safety concerns.
	2nd time	August 29 – September 9, 2016	No particular safety concerns.
	Operational safety inspection for important actions for safety (Units 3)		
		November 21 – November 29, 2016	No particular safety concerns.
	3rd time	November 28 – December 9, 2016	No particular safety concerns.
	Operational safety inspection for important actions for safety (Units 3)		
		October 27 – December 26, 2016	No particular safety concerns.
		December 19 – December 26, 2016	No particular safety concerns.
	4th time	February 27 - March 10, 2017	Inspection results being summarized.

	Operational safety inspection for important actions for safety (Units 3)		
		January 31 – March 30, 2017	Inspection results being summarized.

Genkai NPS, Kyushu Electric Power Co. Inc.

All reactor operations were shut down during the following periods.

		Implementation period	Result / Remarks
Periodic facility inspection	Unit 1	From December 1, 2011 (under implementation)	
	Unit 2	From January 29, 2011 (under implementation)	
	Unit 3	From December 11, 2010 (under implementation)	
	Unit 4	From December 25, 2011 (under implementation)	
Operational safety inspection	1st time	May 30 - June 10, 2016	No particular safety concerns.
	2nd time	August 29 - September 9, 2016	No particular safety concerns.
	3rd time	November 28 - December 9, 2016	No particular safety concerns.
	4th time	February 27 - March 10, 2017	Inspection results being summarized.

Sendai NPS, Kyushu Electric Power Co. Inc.

After unit 1 was started up on August 11, 2015, it was shut down on October 6, 2016, and started up on December 8, 2016.
After unit 2 was started up on October 15, 2015, it was shut down on December 16, 2016, and started up on February 23, 2017.

		Implementation period	Result / Remarks
Periodic facility inspection	Unit 1	October 6, 2016 – January 6, 2017	Inspection result: Good
	Unit 2	December 16, 2016 – March 24, 2017	Inspection result: Good
Pre-service inspection	Unit 1	March 30, – September 10, 2015	Inspection result: Pass
	Unit 2	June 10 – November 17, 2015	Inspection result: Pass
Operational safety inspection	Operational safety inspection for important actions for safety (Unit 1)		
		May 27 - June 8, 2016	No particular safety concerns.
		June 10 - June 22, 2016	No particular safety concerns.
	Operational safety inspection for important actions for safety (Unit 2)		
		May 27 - June 8, 2016	No particular safety concerns.
		June 10 - June 22, 2016	No particular safety concerns.
	1st time	June 6 - June 24, 2016	No particular safety concerns.
	Operational safety inspection for important actions for safety (Unit 1)		
		April 28 - June 28, 2016	No particular safety concerns.
	Operational safety inspection for important actions for safety (Unit 2)		
		April 28 - June 28, 2016	No particular safety concerns.
	2nd time	August 25 - September 7, 2016	No particular safety concerns.

	Operational safety inspection for important actions for safety (Unit 1)		
		July 29 - September 27, 2016	No particular safety concerns.
	Operational safety inspection for important actions for safety (Unit 2)		
		July 29 - September 27, 2016	No particular safety concerns.
	Operational safety inspection for important actions for safety (Unit 1)		
		October 4 - October 11, 2016	No particular safety concerns.
		October 7 - October 17, 2016	No particular safety concerns.
		October 14 - October 20, 2016	No particular safety concerns.
		October 26 - November 25, 2016	No particular safety concerns.
	Operational safety inspection for important actions for safety (Unit 2)		
		October 26 - November 25, 2016	No particular safety concerns.
	Operational safety inspection for important actions for safety (Unit 1)		
		November 18 - November 25, 2016	No particular safety concerns.
		November 22 - December 1, 2016	No particular safety concerns.
	3rd time	November 28 - December 9, 2016	No particular safety concerns.
	4th time	February 27 - March 10, 2017	Inspection results being summarized.
	Operational safety inspection for important actions for safety (Unit 1)		
		February 1 - March 28, 2017	Inspection results being summarized.
	Operational safety inspection for important actions for safety (Unit 2)		
		Decembe 22, 2016 - January 5, 2017	Inspection results being summarized.
		February 3 - February 10, 2017	Inspection results being summarized.
		February 7 - February 16, 2017	Inspection results being summarized.
		February 17 - March 7, 2017	Inspection results being summarized.
		March 15 - March 22, 2017	Inspection results being summarized.

Prototype Fast Breeder Reactor Monju, Japan Atomic Energy Agency

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

		Implementation period	Result / Remarks
Pre-service inspection		Pre-service inspection (performance inspection) at the stage of construction is being suspended Pre-service inspections related to area-monitoring devices, emergency power-supply equipment, and ventilators (replaced to maintain equipment functions) were conducted.	
Operational safety inspection	1st time	June 2 - June 15, 2016	Violation of operational safety program (monitoring) is confirmed.
	2nd time	September 1 - September 14, 2016	No particular safety concerns.
	3rd time	December 1 - December 14, 2016	No particular safety concerns.
	4th time	March 2 - March 15, 2017	Inspection results being summarized.

Others	On September 10, 2016, deviancy from operational restriction occurred and restituted on the same day (It was confirmed in the second operational safety inspection)

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

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

		Implementation period	Result / Remarks
Periodic facility inspection		November 30 - December 27, 2016	Inspection result: Good
Operational safety inspection	1st time	May 23 – 27, 2016	No particular safety concerns.
	2nd time	August 22-26, 2016	No particular safety concerns.
	3rd time	November 21 - 25, 2016	No particular safety concerns.
	4th time	February 13-24, 2017	Inspection results being summarized.

Others	Modifications of inspection records without due procedures had been made, which was found after third operational safety inspection was completed. It was then determined to be violation of the operational safetyprogram.

*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 2016.

* Information as of March 31, 2017 is described.

4. Status of Application for Review of Nuclear Fuel Facilities

Applicant	Facilitiy	Receipt date	Number of review meetings	Number of on-site investigations	Date of approval
Japan Nuclear Fuel Limited	Reprocessing facility	License modification Operational safety program change January 7, 2014	24	1	—
	MOX fuel fabrication facility	License modification January 7, 2014	21	1	—
	Uranium enrichment facility	License modification Operational safety program change January 7, 2014	9	1	—
	Waste interim storage facility	License modification January 7, 2014	13*	1	—
Recyclable-Fuel Storage Company	Spent fuel interim storage facility	License modification January 15, 2014	5*	2	—
Mitsubishi Nuclear Fuel Co. , Ltd.	Uranium fuel fabrication facility	License modification Operational safety program change January 31, 2014	11	1	—
Japan Atomic Energy Agency	Waste interim storage facility	License modification February 7, 2014	9	1	—
	JRR-3	Installation permit change Operational safety program change September 26, 2014	24	2	—
	HTTR (High-temperature engineering test reactor)	Installation permit change Operational safety program change November 26, 2014	17	1	—
	Waste Treatment Facility of Nuclear Science Research Institute	Installation permit change February 6, 2015	12	1	—
	JMTR (Materials testing reactor)	Installation permit change Operational safety program change March 27, 2015	—	—	—

	NSRR	Installation permit change March 31, 2015	11※	1	—
	STACY (Static Experiment Critical Facility)	Installation permit change Change in design and construction methods Operational safety program change March 31, 2015	12※	—	—
	Experimental fast reactor nuclear reactor facility	Installation permit change Operational safety program change March 30, 2017	—	—	—
Nuclear Fuel Industries, Ltd.	Uranium fuel fabrication facility (Tokai Works)	License modification Operational safety program change February 14, 2014	10	1	—
	Uranium fuel fabrication facility (Kumatori Works)	License modification Operational safety program change April 18, 2014	9	1	—
Global Nuclear Fuel Japan	Uranium fuel fabrication facility	License modification Operational safety program change April 18, 2014	10	1	—
Kyoto University	KUR (Kyoto University Research Reactor)	Installation permit change Operational safety program change September 30, 2014 October 5, 2016** Change in design and construction methods (No.1) September 14, 2016 (No.2) December 27, 2016 (No.3) January 25, 2017 (lightning-protection system)	2	—	Approval of installation permit change September21, 2016 Approval of operational safety program change February 28, 2017 Approval of design and construction methods (No.1) February 15, 2017 (No.2)

		February 17, 2017 (No.4) March 31, 2017			February 24, 2017 (No.3) March 3, 2017 (lightning-protection system) March 30, 2017
	KUCA (Kyoto University Critical Assembly)	Installation permit change Operational safety program change September 30, 2014 May 27, 2016** Change in 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	1	—	Approval of installation permit change May 11, 2016 Approval of operational safety program change August 29, 2016 Approval of design and construction methods (No.1) February 15, 2017 (upgrading nuclear instrumentation cables) February 24, 2017 (seismic reinforcement of the number 1 solid waste storehouse) February 1, 2016
Kinki University	Kinki University nuclear reactor	Installation permit change Operational safety program change October 20, 2014 Design and construction methods (No.1) June 30, 2016 (No.2) August 4, 2016 (No.3)	1	—	Approval of installation permit change May 11, 2016 Approval of operational safety program change February 2, 2017 Approval of design and construction methods (No.1) (No.2)

		October 13, 2016			October 13, 2016 (No.3) February 7, 2017
Japan Atomic Power Company	Tokai low level waste disposal facility	Business licensing July 16, 2015	4	—	

・The numbers of review meetings and on-site investigations represent the number of times held in FY 2016.

・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.

*For the facilities denoted by an asterisk (*), public review meetings have been held since June 2016 in accordance with “Reviewing the process of conducting conformity reviews after New Regulatory Requirements to nuclear fuel facilities come into force”, which was approved by the NRA on June 1, 2016.

** An application for changes to the operational safety program made on September 30, 2014, was withdrawn on May 27, 2016, and re-submitted on the same day and October 5, 2016.

5.Numbers of reviews and inspections of nuclear facilities
(April 1, 2016 – March 31, 2017)

(i) Status of the reviews and inspections of commercial power reactors

Facility type		No. of cases
Commercial power reactors (17 facilities) (Under decommissioning procedures: 2 facilities)	Installation permit change	25
	Notification of installation permit change	16
	Approval of construction plan	5
	Approval of change to construction plan	0
	Notification of construction plan and construction plan change	4
	Pass in pre-service inspection	1
	Pass in fuel assembly inspection	3
	Evaluation for the implementation system of the welding licensee Inspection	39
	Evaluation for regular operator inspections	3
	Completion of periodic facility inspection	3
	Approval of operational safety programs or approval of changes	20
	Operational safety inspection	112
	Approval of change to decommissioning plan	0
	Check of method and implementation system for determining assignment of responsible facility licensee	0
	Approval of the trial use of reactor	1
	Approval of partial use	1
	Instruction for omission of pre-service inspection	1
	Instruction for omission of fuel assembly inspection	1
	Approval of implementation plan change	42
	Approval of partial use of specified nuclear facilities	8
	Completion of preservice inspection on Specified Nuclear Facilities	21
	Completion of welding inspection on Specified Nuclear Facilities	4
	Completion of welding inspection for imports of Specific Nuclear Facilities	6
	Completion of periodic facility inspection on Specified Nuclear Facilities	1
	Inspection of implementation status of measures for safety defined in implementation plan	4
Commercial power reactors in the research and development phase (Under construction: 1 facility) (Under decommissioning procedures: 1 facility)	Notification of construction plan and construction plan change	1
	Completion of periodic facility inspection	1
	Approval of operational safety programs or approval of changes	1
	Operational safety inspection	8

(ii) Status of reviews and inspections of nuclear fuel facilities

Type of facility		No. of cases
Fabrication facilities (6 facilities) (Under construction: 1 facility)	Approval of changes to design and construction methods	3
	Pass in pre-service inspection	4
	Approval of welding method	0
	Approval of operational safety programs or approval of changes	12
	Operational safety inspection	24
Research and test reactor facilities (22 facilities) (under decommissioning procedure: 8)	Installation permit change (Approval)	3
	Approval (authorization) of a design and construction method or approval (authorization) of changes	15
	Pass in periodic facility inspection	1
	Pass in pre-service inspection	1
	Approval of welding method	0
	Approval (authorization) of operational safety program or approval (authorization) of changes	13
	Operational safety inspection	44
	Approval of change to decommissioning plan	1

Type of facility		No. of cases
Spent fuel interim storage facility (under construction: 1 facility)	Pass in welding inspection	6
	Approval of welding method	2
	Type certificate	1
	Type designation	1
Reprocessing facilities (2 facilities)	Approval of methods for design and construction	8
	Approval of changes to design and construction methods	2
	Pass in pre-service inspection	6
	Approval of welding method	0
	Approval of operational safety program or approval of change	3
	Operational safety inspection	8
Category 2 waste disposal facilities (2 facilities)	Conformation of waste package	8
	Approval of operational safety program or approval of change	3
	Operational safety inspection	8
Waste interim storage facilities (2 facilities)	Approval of methods for design and construction	1
	Pass in welding inspection	2
	Approval of welding method	3
	Approval of operational safety programs or approval of changes	2
	Operational safety inspection	8
Facilities where nuclear fuel materials are used (13*1 facilities)	Approval of change of use	9
	Pass in facility inspection	14
	Approval of operational safety program or approval of change	28
	Operational safety inspection	52
	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	5
	Approval of design of nuclear fuel package	7
	Approval of transport container	10
	Confirmation of off-site transportation	10
	Confirmation of radioactive concentration	4

・There is no facility that received designation or approval of business of refining facility or Category 1 waste disposal facility as of March 31, 2017.

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

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	Takahama Power Station (Unit 1)	April 30, 2015	3	June 20, 2016	July 7, 2016 *1
	Takahama Power Station (Unit 2)	April 30, 2015	3	June 20, 2016	July 7, 2016 *1
	Mihama Power Station	November 26, 2015	1	November 16, 2016	November 30, 2016

Applicant	Targeted power reactor	Receipt date	Review meeting (No. of times)	Date of approval	Date at which 40 years have elapsed after operation started
	(Unit 3)				

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

7. Status of Application and Approval of Operational Safety Programs Change concerning Plant Life Management

Applicant	Targeted power reactor	Receipt date	Review Meeting (No. of times)	Date of approval	Date at which 30 years or 40 years elapse after operation started
Tohoku Electric Power Co. , Inc.	Unit 1 of the Onagawa NPS (30 years) (only maintaining cold shutdown)	November 6, 2013	—※4	May 21, 2014	June 1, 2014
Tokyo Electric Power Company 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 3 of the Fukushima Daini NPS (30 years) (only maintaining cold shutdown)	June 20, 2014	—※4	June 10, 2015	June 21, 2015
	Unit 3 of the Fukushima Daini NPS (30 years) (only maintaining cold shutdown)	August 23, 2016	—※4	—	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 28, 2017
Kansai Electric Power Co. , Inc	Unit 1 of the Takahama Power Station (40 years) (only maintaining cold shutdown)	November 12, 2013	—*4	November 12, 2014	November 14, 2014
	Unit 3 of the Takahama Power Station (30 years) (operation preconditioned)	January 15, 2014	2	November 18, 2015*3	January 17, 2015
	Unit 4 of the Takahama Power Station (30 years) (operation preconditioned)	June 3, 2014	2	November 18, 2015*3	June 5, 2015
	Unit 2 of the Takahama Power Station (40 years) (only maintaining cold shutdown)	November 11, 2014	—*4	April 8, 2015	November 14, 2015
Kansai Electric Power Co. , Inc	Unit 1 of the Takahama Power Station (40 years) (operation preconditioned)	April 30, 2015	4	June 20, 2016	July 7, 2016*1
	Unit 2 of the Takahama Power Station (40 years) (operation preconditioned)	April 30, 2015	4	June 20, 2016	July 7, 2016*1

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
	Unit 1 of the Mihama Power Station (only maintaining cold shutdown)	September 29, 2015	—*4	November 17, 2015	—※2
	Unit 3 of the Mihama Power Station (40 years) (operation preconditioned)	November 26, 2015	1	November 16, 2016	November 30, 2016
The Chugoku Electric Power Co. , Inc.	Unit 1 of the Shimane NPS (40 years) (only maintaining cold shutdown)	September 27, 2013	—*4	February 26, 2014	March 29, 2014
Kyushu Electric Power Co. , Inc.	Unit 1 of the Sendai NPS (30 years) (operation preconditioned)	December 18, 2013	2	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	3	November 18, 2015	November 28, 2015
Japan Atomic Power Company	Unit 2 of Tsuruga Power Station (30 years) (only maintaining cold shutdown)	February 15, 2016	—*4	February 2, 2017	February 17, 2017

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

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

*3: The review of aging management measures is implemented based on the conformity review to New Regulatory 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 reviews and inspections under the Radiation Hazards Prevention Act

(From April 1, 2016 to March 31, 2017)

Licensee	Type of permissions and notifications	No.
Permission users (Number of places: 2,283)	Permission (approval) of use	38
	Permission (approval) of change for permission of use	279
	Approval of merger or split of juridical persons	17
	Notification of termination of use, etc.	129
	On-site inspection	407
Notification users (Number of places: 510)	Notification of use	12
	Notification of change for notification of use	29
	Notification of termination of use, etc.	20
	On-site inspection	1
Notification users of approved devices with certification label (Number places: 4,872)	Notification of approved devices with certification label	1015
	Notification of change concerning use of approved devices with certification label	701
	Notification of termination of use, etc.	857
	On-site inspection	0
Notification dealers (Number of places: 310)	Notification of selling business	9
	Notification of change for notification of selling business	40
	Notification of termination of business, etc.	7
	On-site inspection	0
Notification lessors (Number of places: 154)	Notification of rental business	1
	Notification of change for notification of rental business	28
	Notification of termination of business, etc.	3
	On-site inspection	0
Permission waste management licensees (Number of places: 7)	Permission of change for waste management business	1
	Notification of termination of business, etc.	0
	On-site inspection	0
Off-site transport of radioisotopes	Approval of containers to be transported	97
Registered certification bodies, etc. (number of registered organizations: 17)	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, registered periodic verification bodies	17

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

1. Approval of Implementation Plan and Inspection

(From April 1, 2016 to March 31, 2017)

Type of approval/inspection	Number
Approval of changes in Implementation Plan	28
Completion of pre-service inspection	21
Approval of test use	0
Approval of partial use	8
Instruction of omission of pre-service inspection	0
Completion of welding inspection	4
Completion of welding inspection for imports	6
Completion of periodic facility inspection	1
Operational safety inspection	4

Reference 5. Enhancement of Nuclear Security and Consistent Implementation of Safeguards (Chapter 5)

1.Approval of Nuclear Material Physical Protection Program (From April 1, 2016 to March 31, 2017)

Approvals of changes of the Nuclear Material Physical Protection Program	37 (breakdown) Fuel facility: 1 Test nuclear reactor for test: 4 Commercial power reactor: 22 Research and development stage reactor: 1 Storage facility: 0 Reprocessing facility: 1 Radioactive waste storage facility: 0 Facility using nuclear fuel materials: 7 Specified nuclear facility: 1
Inspection of Compliance with Nuclear Material Protection Programs (Inspection of Physical Protection)	59 (breakdown) Fuel facility: 7 Test nuclear reactor for test: 7 Commercial power reactor: 17 Research and development stage reactor: 2 Storage facility: 1 Reprocessing facility: 2 Radioactive waste storage facility: 2 Facility using nuclear fuel materials: 20 Specified nuclear facility: 1

2.Safeguards

(1) Number of accounting reports for FY 2016

(From April 1, 2016 to March 31, 2017)

Type	Number
Inventory change report	800
Material balance report	391
Physical Inventory Listing	4043
Nuclear fuel material management report	7861

(2) Record of on-site verification activities carried out in FY 2016

(From April 1, 2016 to March 31, 2017)

Type	NRA	Nuclear Material Control Center	Ministry of Foreign Affairs
Inspections (safeguard inspections)	18 person-days	1728 person-days	
Design Information	100 person-days		

Verification			
Complementary Access	22 person-days		18 person-days

Reference 6　Activities of Study Meetings

※as of the end of FY 2016

1. Councils and others
(1) Reactor Safety Examination Committee
(2) Nuclear Fuel Safety Examination Committee
(3) Radiation Council
(4) The National Research and Development Agency Council

2. Review Meeting
(1) The Review Meeting on conformity to the New Regulatory Requirements

3. Study Teams
(1) The Study Team on the Regulation of Radioactive Waste in Decommissioning
(2) Study Team on Radiation Protection Standards of Waste Disposal
(3) The Study Team on Nuclear Emergency Preparedness Measures
(4) The Study Team on Radiation Emergency Medicine
(5) Technical Study Team on Environmental Radiation Monitoring
(6) The Study Team on Technical Evaluation of Fitness-for-Service Standards
(7) Study Team on Spent Fuel Transport and Storage Cask
(8) Study Team on Evaluation for Pyroclastic Fall Deposits
(9) Safety Oversight Team for Tokai Reprocessing Facility Plant and Other Facilities
(10) Safety Oversight Team for Prototype Fast Breeder Reactor Monju Decommissioning
(11) Study Team on Oversight Program
(12) Study Team on the Regulation of Radioisotopes, etc.

4. Expert Meeting on the Investigation of Fracture Zones in Nuclear Power Plants
(1) The Expert Meeting on the Investigation of Fracture Zones in the Site of the Prototype Fast Breeder Reactor “Monju”

5. Committees with specific themes
(1) The Committee on Nuclear Security
(2) The Committee on Supervision and Evaluation of the Specified Nuclear Facilities
(3) The Committee on Radioactive Waste Issues of the Specified Nuclear Faclities
(4) The Technical Information Committee
(5) The Meeting on Evaluating the Habitability of a Nuclear Power Station Control Room During a Postulated Hazardous Chemical Release
(6) The Technical Evaluation Committee on Safety Research

6. Others
(1) Debriefing Session of Emergency Drills by Nuclear Operators
(2) NRA Policy Review Meeting
(3) Expert Meeting on NRA’s Administrative Review -FY 2016-

1.Councils and other committees

(1) Reactor Safety Examination Committee

(i) Description

At the NRA Commission Meeting held on April 16, 2014, the appointment of Examination Committee members was approved. On May 12, the first joint review meeting of the Reactor Safety Examination Committee and the Nuclear Fuel Safety Examination Committee was held.The committee had convened since then, in FY 2016, eight meetings in total were held more or less monthly since July of FY 2016 in order to discuss on IRRS reviews (seven of these meetings were jointly held). During this period, appointment of new members was approved at the 41st NRA Commission Meeting (November 2, 2016). At the joint review meeting of the Reactor Safety Examination Committee (15th) and the Nuclear Fuel Safety Examination Committee (14th), it was reported that additional instructions from the NRA had been given, as new items for examination and deliberation, “Under a new framework due to revision of inspections, directions for oversight and assessment of nuclear facilities, and administrative measurements including use of risk information and incorporation of performance in terms of security”, “Development of systems within regulatory bodies for oversight and assessment”, and “Comparative evaluation between safety targets aimed by the NRA and safety level attained through conformity to New Regulatory Requirements”.

Meetings of the subcommittee of Volcano Monitoring, had been established in FY 2015, were also held. (For more information, see Section 2-8 of Chapter 2.)

(ii) Members of Reactor Safety Examination Committee

Examination commissioners	Tadahiro Katsuta	Associate Professor, School of Law, Meiji University
	Tetsuo Kobayashi	Professor emeritus, Kagoshima University
	Naoto Sekimura	Professor, School of Engineering, the University of Tokyo
	Tsuyoshi Takada	Professor, School of Engineering, the University of Tokyo
	Makoto Takahashi	Professor, Technology and Social Systems Graduate School of Engineering, Tohoku University
	Kosuke 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
	Akiko Matsuo	Professor, Faculty of Science and Technolog, keio University
	Ryo Murakami	Professor, Department of Volcanic Activity Research of Institute of Seismology and Volcanology of Hokkaido University
	Ken Muramatsu	Affiliate Professor, Faculty of Engineering, Tokyo City University
	Akio Yamamoto	Professor, Material Science and Technology Studies, Graduate School of Engineering, Nagoya University
	Hiroko Yoshida	Instructor, 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, Verification Center
Temporary commissioners	Takahiro Okura	Professor, Institute for Geothermal Sciences, Kyoto University
	Hiroki Miyamachi	Professor, Department of Earth and Environmental Science, Faculty of Science, Kagoshima University
Expert commissioners	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	Head of the Volcano Disaster-Prevention Research Division, National Research Institute for Earth Science and Disaster Resilience

(iii) Latest activities of the subcommittee of volcano monitoring

Number	Date	Agenda
1	10.17	• Investigation and review matters of the subcommittee of Volcano Monitoring • Evaluations conducted by the NRA for the results of volcanic monitoring by parties installing nuclear power reactors • The rough standard for making judgments concerning nuclear reactor shutdown pertaining to volcanic activity as formulated by the NRA • Others

(2) Nuclear Fuel Safety Examination Committee

(i) Description

At the NRA Commission Meeting held on April 16, 2014, the appointment of Examination Committee members was approved. On May 12, the first joint review meeting of the Reactor Safety Examination Committee and Nuclear Fuel Safety Examination Committee was held. The committee had convened since then, in FY 2016, seven meetings in total were held more or less monthly since July of FY 2016 in order to discuss on IRRS reviews (all meetings were jointly held). During this period, appointment of new members was approved at the 41st NRA Commission Meeting (November 2, 2016). At the joint meeting of the Reactor Safety Examination Committee (15th) and the Nuclear Fuel Safety Examination Committee (14th), it was reported that additional instructions from the NRA had been given, as new items for examination and deliberation, “Under a new framework due to revision of inspections, directions for oversight and assessment of nuclear facilities, and administrative measurements including use of risk information and incorporation of performance in terms of security”, “Development of systems within regulatory bodies for oversight and assessment”, and “Comparative evaluation between safety targets aimed by the NRA and safety level attained through conformity to New Regulatory Requirements”.

(ii) Members of Nuclear Fuel Examination Committees

Examination commissioners	Hironobu Unesaki	Professor, Kyoto University Research Reactor
	Yoichi Enokida	Professor, Graduate School of Engineering, Nagoya
	Toshiaki Ohe	Professor, School of Engineering, Tokai University
	Tadahiro Katsuta	Associate Professor, School of Law, Meiji University
	Kayo Sawada	Assistant Professor, Institute of Materials and Systems for Sustainability, Nagoya University
	Tsuyoshi Takada	Professor, School of Engineering, the University of Tokyo
	Akiko Matsuo	Professor, Faculty of Science and Technology, Keio University
	Shinsuke Yamanaka	Professor, Graduate School of Engineering, Osaka University
	Akio Yamamoto	Professor, Material Science and Technology Studies, Graduate School of Engineering, Nagoya University
	Hiroko Yoshida	Instructor, 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, Verification Center

(iii) Latest activities of joint review meetings of the Reactor Safety Examination Committee and the Nuclear Fuel Safety Examination Committee in FY 2016

RSE Committee meeting	NFSE Committee meeting	Month/day	Agenda
8th joint		7/1	・ Appointing the chairperson of the Reactor Safety Examination Committee ・ Appointing the chairperson of the Nuclear Fuel Safety Examination Committee ・ Policy on responding to issues clarified in an IRRS report and by the IRRS ・ State of examinations by the Study Team on Revisions to the Inspections System ・ Other matters
9th joint		8/5	・ Actions concerning “Measures to incorporate operating experience (No. 11)” (for IRRS mission) ・ State of examinations by the Study Team on Revisions to the Inspections System (for IRRS mission) ・ State of examinations on screening and technical information requiring actions ・ State of examinations on technical information requiring actions ・ Other matters (reporting on matters discussed at the previous meeting)
10th joint		9/12	・ State of examinations by the Study Team on Revisions to the Inspections System (for IRRS mission) ・ State of response to IRRS-indicated matters pertaining to the regulation of radiation sources and radiological protection ・ Other matters (for IRRS mission)
11th joint		10/24	・ Appointing the chairperson of the Nuclear Fuel Safety Examination Committee ・ State of examinations by the Study Team on Revisions to the Inspections System (for IRRS mission) ・ Actions concerning “Management system (issues no. 2-4)” (for IRRS mission) ・ Actions concerning “Criteria for releasing sites (issue no. 17)” (for IRRS mission) ・ Actions concerning “Development of regulatory requirements concerning the disposition of nuclear reactor waste (issue no. 19)” (for IRRS mission) ・ Actions concerning “Standards concerning soil cover for the burial of waste (issue no. 21)” (for IRRS mission)
12th	—	11/21	・ Adding members to the Reactor Safety Examination Committee and the Nuclear Fuel Safety Examination Committee ・ Actions concerning issues clarified by the IRRS
13th joint	12th joint	12/5	・ Actions concerning issues clarified by the IRRS ・ Results of the investigation on the possibility of carbon segregation in nuclear reactor vessels confirmed by the ASN, France (report) ・ Other matters
14th joint	13th joint	1/5	・ Outline of the Draft Bill for partial revision of the Act on the Regulation of Nuclear Source Materials, Nuclear Fuel Materials and Reactors ・ Actions concerning issues clarified by the IRRS ・ State of discussions and studies on NRA’s response to issues clarified by the IRRS, such as advice and evaluations by the Reactor Safety Examination Committee and the Nuclear Fuel Safety Examination Committee, and future issues ・ Other matters (including action plans)
15th joint	14th joint	2/2	・ Results of an exchange of opinions between the NRA and the chairpersons of the Reactor Safety Examination Committee and Nuclear Fuel Safety Examination Committee ・ New items for examination and deliberation on the Reactor Safety Examination Committee and the Nuclear Fuel Safety Examination Committee ・ State of the Nuclear Reactor Volcano Sub-Committee ・ State of screenings ・ Other matters

(3) Radiation Council

(i) Description

The 133rd general meeting of the Radiation Council was held on March 2, 2017. At this meeting, members were appointed, a representative of the chairperson was nominated, and the secretariat reported on response of the NRA to issues indicated by the IRRS and on current state pertaining to radiation protection.

(ii) Members of Radiation Council

Commissioners	Yoshitomo Uwamino	Director, Safety Management Group, RIKEN Nishina Center for Accelerator-Based Science
	Kenji Kamiya	Vice President (Reconstruction Support/Radiation Medicine), Hiroshima University and Vice President, Fukushima Medical University
	Reiko Kanda	Director-General, Center for the Integration of Information on Radiation Protection, Comprehensive Radiological Research Laboratory, National Institutes for Quantum and Radiological Science and Technology
	Yoko Fujikawa	Associate Professor, Kyoto University Research Reactor Institute
	Keiji Oda	Executive Vice President of Kobe University and Professor, Kobe University Graduate School of Maritime Sciences
	Kumiko Karasawa	Professor, Faculty of Medicine, Tokyo Women's Medical University
	Kazuro Sugimura	Executive Vice President of Kobe University and Professor, Kobe University Graduate School of Medicine
	Shoji Futatsugawa	Dedicated Director, Japan Radioisotope Association

(4) The National Research and Development Agency Council

(i) Description

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

In the FY 2016, the National Research and Development Agency Council was held once and determined some provisions including changing names of subcommittees.

In addition, sub-committee of the National Institutes for Quantum and Radiological Science and Technology was held 2 times to hear opinion including performance evaluation of the National Institutes for Quantum and Radiological Science and Technology.

In addition, meeting of sub-committee of Japan Atomic Energy Agency was held 2 times to hear opinions including performance evaluation for Japan Atomic Energy Agency.

(ii) Members of the National Research and Debelopment Agency Council

Commissioners	Michiaki Kai	Professor, Environmental Health Science, Department of Health Sciences, Oita University of Nursing and Health Science
	Kenji Kamiya	Deputy Commandant, Hiroshima University Director of Radiation Emergency Medicine Promotion Center
	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 Yoneoka	Executive Director, Japan Accreditation Board Director-General, Accreditation Center

(iii) Members of sub-committees

• Sub-committee of the National Institutes for Quantum and Radiological Science and Technology

Commissioners	Michiaki Kai	Professor, Environmental Health Science, Department of Health Sciences, Oita University of Nursing and Health Science
	Kenji Kamiya	Deputy Commandant, Hiroshima University Director of Radiation Emergency Medicine Promotion Center
	Hirokuni Yamanishi	Professor, Atomic Energy Research Institute, Kinki University

• Sub-committee of the Japan Atomic Energy Agency

Commissioners	Seiichi Koshizuka	Professor, School of Engineering, The University of Tokyo
	Akio Yamamoto	Professor, Graduate School of Engineering, Nagoya University
	Yuko Yoneoka	Executive Director, Japan Accreditation Board Director-General, Accreditation Center

2.Review Meeting

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

(i) Description

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 113 review meetngs on the NPS, and 87 meetings on the nuclear fuel facilities in FY 2016. They also held 4 review meetings in FY 2016 on applications from licensees for operational safety program change concerning plant life management.

(ii) Members of Review Meeting

• Review Meeting on Conformity to the New Regulatory Requirements for Nuclear Power Plants

NRA	Akira Ishiwatari	Commissioner of the Nuclear Regulation Authority
	Toyoshi Fuketa	Commissioner of the Nuclear Regulation Authority
Secretariat of the NRA	Tomoho Yamada	Director, Nuclear Regulation Department
	Hiroshi Yamagata	Director-General
	Tomoya Ichimura	Nuclear Regulation Liaison Officer（for PWR）
	Yuji Ono	Nuclear Regulation Liaison Officer（for BWR）
	Masaru Kobayashi	Director-General for Earthquake Resistance and Other Regulatory Affairs
	Hisashi Miyamoto	Nuclear Regulation Liaison Officer
	Kaoru Oasada	Nuclear Regulation Liaison Officer
	Hiroyuki Naito	Director for Nuclear Safety Review
	Matsuji Takeyama	Nuclear Regulation Liaison Officer
	Takumi Samukawa	Nuclear Regulation Liaison Officer

• Review Meeting on Conformity to the New Regulatory Requirements for Nuclear Fuel Facilities

NRA	Satoru Tanaka	Commissioner of the Nuclear Regulation Authority
	Akira Ishiwatari	Commissioner of the Nuclear Regulation Authority
Secretariat of the NRA	Tomoho Yamada	Director, Nuclear Regulation Department
	Masahiro Aoki	Director-General
	Shinzo Kuromura	Nuclear Regulation Liaison Officer (in charge of new reactor, test research reactor, decommissioning)
	Kazuya Aoki	Nuclear Regulation Liaison Officer for Nuclear Regulation of Waste, Storage and Transport
	Hiroshi Kataoka	Nuclear Regulation Liaison Officer (in charge of Fabrication and Reprocessing)
	Masaru Kobayashi	Director-General for Earthquake Resistance and Other Regulatory Affairs
	Shigekatsu Ohomuko	Nuclear Regulation Liaison Officer
	Tomoki Shibutani	Nuclear Regulation Liaison Officer
	Akihiko Ogawa	Nuclear Regulation Liaison Officer
	Kiyomitu Hasegawa	Nuclear Regulation Liaison Officer
	Kaoru Oasada	Nuclear Regulation Liaison Officer
	Hiroyuki Naito	Director for Nuclear Safety Review

3.Study Teams

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

(i) Description

The study team consisting of the Commissioner Satoru Tanaka and external experts in the FY 2014 was established for preparation of regulation and standards concerning radioactive waste generated during decommission of reactor. 7 meetings were held in the FY 2016.

(ii) Members of the Study Team on the Regulation of Radioactive Waste in Decommissioning

NRA	SatoruTanaka	Commissioner of the Nuclear Regulation Authority
	Akira Ishiwatari	Commissioner of the Nuclear Regulation Authority (Attended on the 15th and 16th meetings)
External experts	Takeshi Iimoto	Assistant Professor, Division for Environment, Health and Safety, Tokyo University Environmental Safety Headquarter
	Tetsuo Iguchi	Professor, Graduate School of Engineering, Nagoya
	Toshiaki Ohe	Professor, Tokai University School of Engineering Department of Nuclear Engineering
	Tadahiro Katsuta	Associate Professor, School of Law, Meiji University
	Takahiro Yamamoto	National Institute of Advanced Industrial Science and Technology Research Institute of Earthquake and Volcano Geology Principal Staff, Regulatory Research
	Hiroshi Sato	Professor, Earthquake Prediction Research Center, Earthquake Research Institute, the University of Tokyo (Attended on the 15th and 16th meetings)
	Keiji Takemura	Professor, Geothermal Research Laboratory affiliated with the Graduate School of Science, Kyoto University (Attended on the 16th meeting)
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	Tadao Tanaka	Director, Safety Research Center Environment Safety Research Divison
	Seiji Takeda	Director, Safety Research Center Environment Safety Research Unit Environmental Impact Evaluation Research Division
Secretariat of the NRA	Tetsuo Ohmura	Director General for Emergency Response
	Masahiro Aoki	Director-General
	Takaaki Kurasaki	Director, Regulatory Standard and Research Division
	Kazuya Aoki	Director for Nuclear Regulation of Waste, Storage and Transport
	Masahiro Uchida	Director, Division of Research for Nuclear Fuel Cycle and Radioactive waste
	Tomoki Shibutani	Director for Policy Planning and Conditioning, Regulatory Standard and Research Division
	Norikazu Yamada	Principal Researcher, Research for Nuclear Fuel Cycle and Radioactive waste

(2) Study Team on Radiation-Protection Standards of Waste Disposal

(i) Description

In order to reorganize regulatory legislation with a focus on radiation-protection standards in connection with the end of the specific regulatory period radioactive waste disposal, the study team consists of Commissioner Ban, Commissioner Satoru Tanaka, and external experts was established in FY 2015. 5 meetings were held in FY 2016.

(ii) Members of the Study Team on Radiation-Protection Standards Waste Disposal

NRA	Nobuhiko Ban	Commissioner of the Nuclear Regulation Authority
	Satoru Tanaka	Commissioner of the Nuclear Regulation Authority
External experts	Takeshi Iimoto	Associate Professor, Division for Environment, Health and Safety, the University of Tokyo
	Michiaki Kai	Professor, Department of Health Sciences, Oita University of Nursing and Health Sciences
	Atsuo Kishimoto	Project Professor, Graduate School of Public Policy, the University of Tokyo
	Yuichi Niibori	Professor, Graduate School of Engineering, Tohoku University
Japan Atomic Energy Agency	Tadao Tanaka	Director, Safety Research Center Environment Safety Research Divison
Secretariat of the NRA	Tetsuo Ohmura	Director General for Emergency Response
	Masahiro Aoki	Director-General
	Takaaki Kurasaki	Director, Regulatory Standard and Research Division
	Kazuya Aoki	Director for Nuclear Regulation of Waste, Storage and Transport
	Shinzo Kuromura	Director, Division of Regulation (in charge of new reactor, test research reactor, decommissioning)
	Masahiro Uchida	Director, Division of Research for Nuclear Fuel Cycle and Radioactive waste
	Tomoki Shibutani	Director for Policy Planning and Conditioning, Regulatory Standard and Research Division
	Norikazu Yamada	Principal Researcher, Research for Nuclear Fuel Cycle and Radioactive waste

(3) The Study Team on Nuclear Emergency Preparedness Measures

(i) Description

The NRA determines Nuclear Emergency Response Guidelines to ensure the smooth implementation of nuclear emergency responses by nuclear licensees, the national government and local governments. 3 meetings were held in FY 2016 to examine protective measures in an emergency of nuclear fuel facilities and others.

(ii) Members of the Study Team on Nuclear Emergency Preparedness Measures

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

(4) Technical Study Team on the Monitoring of Environmental Radiation

(i) Description

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. 3 meetings of this study team, which consists of Commissioner Nobuhiko Ban and external experts, were held in FY 2016 in order to continuously examine technical matters on monitoring. (For more information, see Section 3-4 of Chapter 6 hereof.)

(ii) Members of the Study Team on the Monitoring of Environmental Radiation

NRA	Nobuhiko Ban	Commissioner of the Nuclear Regulation Authority
External experts	Tatsuo Aono	Team Leader, Environmental Radiation Dynamics Research Team, Fukushima Project Headquaters, National Institute of Radiological Sciences, National Institutes for Quantum and Radiological Science and Technology
	Takeshi Iimoto	Associate Professor, the University of Tokyo
	Kiyomi Ito	Deputy Director-General, Okayama Prefectural Institute for Environmental Science and Public Health
	Tomoyuki Takahashi	Associate professor, Kyoto University
	Keiko Tagami	Senior Fellow, Environmental Transfer Parameter Research Team, Fukushima Project Headquaters, 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
Secretariat of the NRA	Hiromu Katayama	Director-General for Radiation Protection Strategy and Security
	Rikio Minamiyama	Director, Radiation Monitoring Division
	Satoshi Hisano	Director for Institutional, Radiation Monitoring Division
	Jun Sasaki	Regional Adjustment Senior Specialist, Radiation Monitoring Division
	Masaki Uesugi	Technical Counselor, Radiation Monitoring Division
	Satoshi Yamamoto	General Manager, Environmental Radioactivity Office
	Shinji Oikawa	Environmental Radioactivity Officer
	Gyo Sato	Director, Emergency Preparedness/Response and Nuclear Security Division
	Kenzou Fujimoto	Technical Counselor, Emergency preparedness/Respose and Nuclear Security Divison
	Hidenori Yonehara	Specialist, Radiation Protection and Safeguards Division
	Takashi Nakamura	Technical Counselor, Radiation Controls Office

(5) Study Team on Technical Evaluations of the Fitness-for-Service Standards

(i) Description

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 Addhedaof 2013 and 2014 eddition, and relevant standards.4 meetings of this study team were held in FY 2016**.**

(ii) Members of the Study Team on Technical Evaluations of the Maintenance Standards

NRA	Satoru Tanaka	Commissioner of the Nuclear Regulation Authority
External experts	Yoshio Arai	Professor, Graduate School of Science and Engineering, Saitama University
	Masahide Suzuki	Professor, 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 Materials and Structural Integrity Research Division, Nuclear Safety Research Center
	Jinya Katsuyama	Materials and Structural Integrity Research Division, Nuclear Safety Research Center Assistant Principal Staff, Structural Integrity Research Group
Secretariat of the NRA	Tetsuo Ohmura	Director General for Emergency Response
	Takaaki Kurasaki	Director, Regulatory Standard and Research Division
	Hideaki Ono	Director for Policy Planning and Conditioning, Regulatory Standard and Research Division

(6) Study Team on Spent Fuel Transport and Storage Cask

(i) Description

It was determined in FY 2016 that meetings of this study team, whose members include Commissioner Fuketa, Commissioner Ishiwatari, and external experts, would be held in connection with the stockpiling of spent fuel using casks for shipping and stockpiling at nuclear power plants.

(ii) Members of the Study Team on Spent Fuel Transport and Storage Cask

NRA	Toyoshi Fuketa	Commissioner of the Nuclear Regulation Authority
	Akira Ishiwatari	Commissioner of the Nuclear Regulation Authority
Secretariat of the NRA	Hiroshi Yamagata	Director–General for Policy Planning and Coordination
	Takaaki Kurasaki	Director, Regulatory Standard and Research Division
	Koichi Kobayashi	Director, Divisions of Research (Earthquake and Tsunami)
	Yuji Ono	Director, Division of Regulation for BWR
	Takashi Mukai	Director for Policy Planning and Coordination, Regulatory Standard and Research Division
	Hidefumi Kawauchi	Chief Officer for Technical Research and Examination, Division of Research for Earthquake and Tsunami
	Toru Iijima	Chief Officer for Technical Research and Examination, Division of Research for Earthquake and Tsunami

(7) Study Team on Evaluation for Pyroclastic Fall Deposits

(i) Description

A meeting of this study team, consisting of Commissioner Fuketa, Commissioner Ishiwatari and other officials, was held once in FY 2016 to discuss on assessments of the impact of pyroclastic fall deposits on nuclear facilities.

(ii) Members of the Study Team on Pyroclastic Fall Deposits

NRA	Akira Ishiwatari	Commissioner of the Nuclear Regulation Authority
	Toyoshi Fuketa	Commissioner of the Nuclear Regulation Authority
Secretariat of the NRA	Hiroshi Yamagata	Director General for Policy Planning and Coordination
	Takaaki Kurasaki	Director, Regulatory Standard and Research Division
	Koichi Kobayashi	Director, Divisions of Research for Earthquake and Tsunami
	Kunio Onisawa	Director, Divisions of Research for Reactor System Safety
	Mitsuhiro Kajimoto	Director, Division of Research for Severe Accident
	Masaru Kobayashi	General Regulatory Officer for Earthquake Resistance
	Takashi Mukai	Director for Policy Planning and Coordination, Regulatory Standard and Research Division
	Toru Iijima	Chief Officer for Technical Research and Examination, Division of Research for Earthquake and Tsunami
	Hiroshi Ono	Chief Officer for Technical Research and Examination, Division of Research for Reactor System Safety

(8) Safety Oversight Team Tokai Reprocessing Facility Plant and Other Facilities

(i) Description

9 meetings of Monitoring Team, consisting of the NRA Commissioner and officials of the NRA Secretariat, were held in FY 2016 to check continuously the state of implementation of measures for risk reduction such as vitirifying treatment at the JAEA's Tokai Reprocessing Facility and the means for the safety and decommissioning of this facility.

(ii) Members of Safety Oversight Team Tokai Reprocessing Facility Plant and Other Facilities

NRA	Satoru Tanaka	Commissioner of the Nuclear Regulation Authority
Secretariat of the NRA	Masahiro Aoki	Director-General
	Hiroshi Kataoka	Director, Division of Regulation for Nuclear Fuel (Fabrication and Reprocessing) Facilities and Use of Nuclear Material
	Kiyomitu Hasegawa	Nuclear Regulation Liaison Officer (Reprocessing)
	Yutaka Miyawaki	Director for Nuclear Safety Review (Advanced reactors)

(9) Safety Oversight Team for Prototype Fast Breeder Reactor Monju Decommissioning

(i) Description

A meeting of this monitoring team, consisting of the NRA Commissioner and officials the NRA Secretariat, was held in FY 2016 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.

(ii) Members of Safety Oversight Team for Prototype Fast Breeder Reactor Monju Decommissioning

NRA	Satoru Tanaka	Commissioner of the Nuclear Regulation Authority
Secretariat of the NRA	Masahiro Aoki	Director-General
	Shinzo Kuromura	Director, Division of Regulation for Advanced Reactors, Research Reactors, and Decommissioning
	Yutaka Miyawaki	Director for Nuclear Safety Review (Advanced reactors)
	Takumi Oyamada	Regional Administrator

(10) Study Team on Oversight Program

(i) Description

8 meetings of this study team, consisting of Commissioner Toyoshi Fuketa and external experts and others, were held in FY 2016 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 regulated parties was established, for detailed studies on revision of inspection system. 7 meetings of this working group were held in FY 2016.

(ii) Members of the Study Team on Oversight Program

NRA	Toyoshi Fuketa	Commissioner of the Nuclear Regulation Authority
External experts	Tadahiro Katsuta	Associate Professor, School of Law, Meiji University
	Naoto Sekimura	Professor, Graduate School of Engineering, the University of Tokyo
	Shigeru Takahashi	Professor, School of Law, Hosei University
	Yuko Yoneoka	Executive Director, Japan Accreditation Board Director-General, Accreditation Center
Secretariat of the NRA	Masaya Yasui	Secretary-General (participated as the Deputy Secretary-General for Technical Affairs from 1st meeting to 8th)
	Tomoho Yamada	Director, System Revision Deliberations Office
	Shuichi Kaneko	Senior Coordinator, System Revision Deliberations Office
	Toshiyuki Kadono	Deputy-Director for Planning and Coordination, System Revision Deliberations Office
	Masashi Hirano	Deputy-Director for Planning and Coordination, System Revision Deliberations Office
	Masaharu Yoshino	Deputy-Director for Planning and Coordination, System Revision Deliberations Office
	Shinya Ito	Specialist, System Revision Deliberations Office
	Yasuo Kosaku	Specialist, System Revision Deliberations Office
	Yoji Takasu	Specialist, System Revision Deliberations Office
	Shuji Murao	Specialist, System Revision Deliberations Office
	Tsuneo Murakami	Specialist, System Revision Deliberations Office

(11) Study Team on the Regulation of Radioisotopes, etc.

(i) Description

IRRS mission team indicated that the NRA should consider strengthening actions for regulation of radioisotopes including responses to emergencies related to radiation sources. In the IRRS report those indications were presented as Recommendations and/or Suggestions.. In accordance with the indications, a study team, consisting of the NRA Commissioners, external experts, officials of the NRA Secreratiat and observers, was established in FY 2016 in order to restructure regulatory systems based on the Radiation Hazards Prevention Act while taking amendments to this act into account. 8 meetings were held in the same year.

(ii) Members of the Study Team on the Regulation of Radioisotpes, etc.

NRA	Nobuhiko Ban	Commissioner of the Nuclear Regulation Authority
	Satoshi Tanaka	Commissioner of the Nuclear Regulation Authority
External experts	Tetsuo Iguchi	Professor, Quantum Engineering, Graduate School of Engineering, Nagoya University
	Akira Saka	Executive Director, Japan Cybercrime Control Center
	Yoshihide Nakamura	Facilitator of Medical RI Operations, Pharmaceuticals and Radioisotopes Division, Japan Radioisotope Association
	Naoki Matsuda	Professor, Radiation Risk Control Division, Atomic Bomb Disease Institute, Nagasaki University
Secretariat of the NRA	Hiromu Katayama	Director-General for Radiation Protection Strategy and Security
	Ryouzou Nishida	Director, Radiation Protection and Safeguards Division
	Toshiyasu Teratani	Deputy-Director for Planning and Coordination, Radiation Protection and Safeguards DIvision
	Masashi Ichise	International Radiation Measures Specialist, Radiation Protection and Safeguards Division
	Yoshiyuki Shimane	General Manager, Radiation Regulation Office
	Takehiko Matsumoto	Senior Radiation Inspections Manager, Radiation Regulation Office
	Kazuhiro Tani	Senior Radioactive Materials Security Specialist, Radiation Regulation Office
	Kazuyoshi Masumoto	Technical Consultant, Radiation Regulation Office
Observers	Fire Defense Agency (Ministry of Public Management, Home Affairs, Posts and Telecommunications)	
	Ministry of Land, Infrastructure,Transport and Tourism	
	Ministry of Health, Labour and Welfare	
	National Police Agency	

4. Expert Meeting on the Investigation of Fracture Zones in nuclear power plants

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

(i) Description

The on-site research was conducted, and also the research evaluation and the peer review meeting were held once in FY 2016. Participants include the NRA Commissioner and external experts for on-site research and evaluation of faults at the site of Fast Breeder Prototype Reactor Monju.

(ii) Members of the Expert Meeitng on the Investigatoin of Fracture Zones in the Site of Prototype Fast Breeder Reactor "Monju"

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

5.Committes with specific themes

(1) The Committee on Nuclear Security

(i) Description

The Committee on Nuclear Security, consisting of the NRA Commissioner, external experts and officials of the NRA Secretariat, was established in FY 2012 for pursuing enhancement of nuclear security in Japan as well as for addressing international contributions to nuclear security. The Committee meeting was held once in FY 2016. The meeting of Working Group on Nuclear Security concerning Radioactive Isotopes was held once in FY 2016.

(ii) Members of the Committee on Nuclear Security

NRA	Satoru Tanaka	Commissioner of the Nuclear Regulation Authority
External experts	Isao Itabashi	Director, Center for Analysis and Studies, Council for Public Policy
	Sukeyuki Ichimasa	Chief Research Officer, Defense Policy Research Laboratory, Policy Research Division, National Institute for Defense Studies, Ministry of Defense
	Akira Saka	Executive Director, Japan Cybercrime Control Center
	Kaoru Naito	Former Director of Nuclear Material Control Center
	Hiroshi Mashima	Corporate Adviser, Japan Marine Science Inc.
	Ichiro Yamaguchi	Senior Research Fellow, Department of Environmental Health, National Institute of Public Health
Secretariat of the NRA	Hiromu Katayama	Director-General for Radiation Protection Strategy and Security
	Ryouzou Nishida	Director, Radiation Protection and Safeguards Division
	Toshiyasu Teratani	Deputy-Director for Planning and Coordination, Radiation Protection and Safeguards Division
	Kazuhiro Tani	Senior Radioactive Materials Security Specialist, Radiation Regulation Office
	Hiroaki Eguchi	Head of Nuclear Security Office, Emergency Preparedness/Response and Nuclear Security Division

(iii) Members of Working Group

Working Group on Nuclear Security concerning Radioactive Isotopes

NRA	Satoru Tanaka	Commissioner of the Nuclear Regulation Authority
External experts	Nobumasa Akiyama	Professor, School of International and Public Policy, Hitotsubashi University
	Isao Itabashi	Director, Center for Analysis and Studies, Council for Public Policy
	Sukeyuki Ichimasa	Chief Research Officer, Defense Policy Research Laboratory, Policy Research Division, National Institute for Defense Studies, Ministry of Defense
	Akira Saka	Executive Director, Japan Cybercrime Control Center
	Naomitsu Onoda	Senior Director for Research, National Maritime Research Institute
	Keiko Sakurai	Professor, Faculty of Law, Gakushuin University
	Kaoru Naito	Former Director of Nuclear Material Control Center
	Hiroshi Mashima	Corporate Adviser, Japan Marine Science Inc.
	Ichiro Yamaguchi	Senior Research Fellow, Department of Environmental Health, National Institute of Public Health
Secretariat of the NRA	Hiromu Katayama	Director-General for Radiarion Protection Strategy and Security
	Ryouzou Nishida	Director, Radiation Protection and Safeguards Division
	Toshiyasu Teratani	Senior Planning Coordinator, Radiation Protection and Safeguards Division

(2) Committee on Supervision and Evaluation of the Specified Nuclear Facilities

(i) Description

11 meetings of the Committee on the Supervision and Evaluation of the Specified Nuclear Facilities, consisting of the NRA Commissioner, officials of the NRA Secretariat and external experts, was established and 11 meetings of the Committee were held in FY 2016. It was discussed on the implementation plan for Specified Nuclear Facilities and the general ideas on the seismic adequacy of nuclear reactor structures Units 1 to 4 at TEPCO's Fukushima Daiichi NPS.

(ii) Members of the Committee on Suprevision and Evaluation of the Specified Nuclear Facilities

NRA	Toyoshi Fuketa	Commissioner of the Nuclear Regulation Authority
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
	Hiroshi Yamagata	Director-General
	Yasukazu Mochimaru	Regional Administrator (in charge of Fukushima)
	Shinichi Araki	Senior Coordinator for TEPCO's Fukushima Daiichi Accident Response Measures
	Toshihiro Imai	Director, TEPCO's Fukushima Daiichi Accident Response Measures Office
	Kyoji Adachi	Deputy Director for Safety Management Examination (BWR), Division of Oversight of Nuclear Power Plants

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

(i) Description

2 meetings of the Committee on Regulating Radioactive Waste of the Specified Nuclear Facilities, consisting of the NRA Commissioner, officials of the NRA Secretariat and external experts, were held in FY 2016. It was discuss on the stable long-term management of waste at TEPCO's Fukushima Daiichi NPS.

(ii) Members of the Committee on Radioactive Waste Issues of the Specified Nuclear Facilities

NRA	Satoru Tanaka	Commissioner of the Nuclear Regulation Authority
External experts	Noriko Asanuma	Associate Professor, Department of Nuclear Engineering, Faculty of Engineering, Tokai University
	Tetsuo Iguchi	Professor, Graduate School of Engineering, Nagoya
	Yaohiro Inagaki	Associate Professor, Department of Applied Quantum Physics and Nuclear Engineering, Graduate School of Engineering, Kyushu University
	Masatomo Sato	Professor Emeritus, Hokkaido University
Secretariat of the NRA	Michio Sakurada	Deputy Secretary-General for Technical Affairs
	Hiroshi Yamagata	Director-General
	Yasukazu Mochimaru	Regional Administorator (in charge of Fukushima)
	Shinichi Araki	Secnior Coordinator for TEPCO's Fukushima Daiichi Accident Response Measures
	Toshihiro Imai	Director, TEPCO's Fukushima Daiichi Accident Response Measures Office
	Satoshi Kawasaki	Senior officer for Technical Research and Examination (in charge of waste and decommissioning) Division of Research for Nuclear Fuel Cycle and Radioactive Waste

(4) Technical Information Committee

(i) Description

The Technical Information Committee meetings are held once per one or two months under the leadership of Commissioner Fuketa to collect and evaluate the information on nuclear safety so that it shall be reflected in regulations at the right time. In FY 2016, 7 meetings were held.

(ii) Members of Technical Information Committee

NRA	Toyoshi Fuketa	Commissioner of the Nuclear Regulation Authority
Secretariat of the NRA	Michio Sakurada	Deputy Secretary-General for Technical Affairs (Attended from the 19th to 23rd meetings as Director-General, Nuclear Regulation Department)
	Tomoho Yamada	Director, Nuclear Regulation Department (Attended from the 19th to 23rd meetings as Director-General)
	Tetsuo Ohmura	Director-General for Emergency Response
	Masahiro Aoki	Director-General
	Hiroshi Yamagata	Director-General(Attended the 24th meeting) (Attended the 19th, 20th, 21st, and 23rd meetings as Deputy Director-General for Regulation of Nuclaer Power Plants)
	Takaaki Kurasaki	Director, Regulatory Standard and Research Division
	Kunio Onisawa	Director, Divisions of Researchfor Reactor System Safety
	Mitsuhiro Kajimoto	Director, Division of Research for Severe Accident (Attended the 19th, 20th, 21st, and 23rd meetings)
	Masahiro Uchida	Director, Division of Research for Nuclear Fuels Cycle and Radioactive Waste
	Koichi Kobayashi	Director, Divisions of Research for Earthquake and Tsunami (Attended from the 19th to 23rd meetings)
	Yuji Ono	Director for Nuclear Regulation (BWR) (Attended the 19th, 20th, 22nd, 23rd and 24th meetings)
	Tomoya Ichimura	Director for Nuclear Regulation(PWR) (Attended the 19th, 20th, 21st, 23rd and 24th meetings)
	Atsuo Sawada	Director for Nuclear Regulation(Inspections of Nuclear Reactor Facilities)
	Shinzo Kuromura	Director, Division of Regulation (Advanced Reactor, Research Reactor, Decommissioning) (Attended from the 19th to 23rd meetings)
	Hiroshi Kataoka	Director for Nuclear Regulation (Fabrication and Reprocessing) (Attended from the 19th to 23rd meetings)
	Kazuya Aoki	Director for Nuclear Regulation (Waste, Storage and Transport) (Attended from the 19th to 23rd meetings)
	Masaru Kobayashi	Deputy Direcotr-General for Seismic Safety (Attended the 22ndand 23rd meetings)
	Yutaka Hara	Director, International Affairs Office (Attended the 22nd and 24th meetings)
	Masashi Hirano	Senior Coordinator for Internatinal Collaborations (Attended from the 19th to 23rd meetings)
	Shinichi Araki	Director, Nuclear Regulation Policy Planning Division (Secretariat)
	Youichi Ishii	Director for Policy Planning (Secretariat)
Japan Atomic Energy Agency	Toru Nakatsuka	Chief Engineer, Regulatory Information Analysis Office, Safety Research Center

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

(i) Description

The Committee, consisting of external experts and others, was organized to conduct assessment of toxic gas impact generated by causes other than fire as to the condition of reactor-control rooms. The meeting was held once in FY 2016.

(ii) Members of the Meeting on Evaluating the Habitability of a Nuclear Power Station Control Room During a Postulated Hazardous Chemical Release

External experts	Kiyotaka Tsunemi	Leader of Emission and Exposure Analysis Group, Research Institute of Science and Sustainability, National Institute of Advanced Industrial Science and Technology
	Atsumi Miyake	Professor, Graduate School of Environment and Information Sciences, Yokohama National University
	Yoshihiro Yamaguchi	Professor, Trauma and Critical Care Center, Faculty of Medicine, Kyorin University
Secretariat of the NRA	Tetsuo Ohmura	Director General for Emergency Response
	Takaak Kurasaki	Director, Regulatory Standard and Research Division
	Mitsuhiro Kajimoto	Director, Division of Research for Severe Accident
	Kyoko Funayama	Chief Officer for Technical Research and Investigation, Division of Research for Severe Accident

(6) The Technical Evaluation Committee on Safety Research

(i) Description

The six Technical Evaluation Committees are organized as following, in order to obtain technical assessment from the external experts in the respective engineering fields for conducting the interim and post-assessment on the safety research in the NRA.

(ii) Members of Technical Evaluation Committees

Technical Committee on Plant Safety

External experts	Tadaaki Kunugi	Professor, Graduate School of Engineering, Kyoto University
	Takanori Kitada	Professor, Graduate School of Engineering, Osaka University
	Nobuatsu Tanaka	Professor, College of Engineering, Ibaragi University

Technical Committee on Nuclear Fuel and Material

External experts	Tatsumi Arima	Assistant Professor, Graduate School of Engineering, Kyushu University
	Manabu Kanematsu	Professor, Faculty of Science and Technology, Tokyo University of Science
	Ken Kurosaki	Associate Professor, Graduate School of Engineering, Osaka University
	Masato Mochizuki	Professor, Graduate School of Engineering, Osaka University

Technical Committee on Severe Accident

External experts	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
	Koji Morita	Professor, Graduate School of Engineering, Kyushu University

Technical Committee on Nuclear Fuel Cycle and Radioactive Waste

External experts	Noriko Asanuma	Associate Professor, School of Engineering, Tokai University
	Youichi Enokida	Professor, Graduate School of Engineering, Nagoya University
	Hiroshige Kikura	Associate Professor, Laboratory for Advanced Nuclear Energy, Tokyo Institute of Technology
	Ikuji Takagi	Professor, Graduate School of Engineering, Kyoto University
	Ken Muramatsu	Visiting Professor, Faculty of Engineering,Tokyo City University

Technical Committee on Evaluations of BackEnd

External experts	Kan Ozaki	Professor, Graduate School of Engineering, Hokkaido University
	Yuichi Niibori	Professor, Graduate School of Engineering, Tohoku University
	Shinsuke Yamanaka	Professor, Graduate School of Engineering, Osaka University
	Takahiro Yamamoto	Principal Research Manager, Research Institute of Earthquake and Volcane Geology, Geological Survey of Japan, National Institute of Advanced Industrial Science and Technology (National Research Institute)

Technical Committee on Earthquake and Tsunami

External experts	Tomotaka Iwata	Professor, Disaster Prevention Research Institute, Kyoto University
	Naoki Sakai	General Manager, Preparatory Office, Center for Advanced Research Facility, National Research Institute for Earth Science and Disaster Resilience (National Research Institute)
	Manabu Shoji	Associate Professor, Graduate School of Systems and Information Engineering, University of Tsukuba
	Osamu Furuya	Associate Professor, Faculty of Science and Technology,Tokyo City University

⑥.Other

(1) Debriefing Session of Emergency Drills by Nuclear Operators

(i) Description

As to the emergency drills conducted by licensees at their sites, the Debriefing Session was held once in FY 2016 under the leadership of Commissioner Fuketa to provide nuclear licensees with opportunites to promote information sharing with the NRA and improve emergency response ablility.

(ii) Members of the Emergency-Drill Debriefing Session for Nuclear Operators

NRA	Toyoshi Fuketa	Commissioner of the Nuclear Regulation Authority
Secretariat of the NRA	Tetsuo Ohmura	Director-General for Emergency Response
	Tomoho Yamada	Director-General, Nuclear Regulation Department
	Hiroshi Yamagata	Deputy Director-General for Nuclear Power Plants
	Shinji Kinjo	Director, Public Information Office
	Mitsuhiro Kajimoto	Technological Foundation Group, Chief Cabinet Secretary Director, Division of Regulation for Research Reactors, Nuclear Fuel (in charge of severe accident)
	Takeshi Akahori	Chief Technology Research Investigator
	Gyo Sato	Director, Emergency Preparedness/Response and Nuclear Security Division
	Shinichi Murata	Director, Nuclear Operators Disaster Prevention and Training Promotion Team
	Dai Mizuno	Head, Accidents Response Office, Emergency Preparedness/Response and Nuclear Security Division
	Yuji Ono	Director for Nuclear Regulation Division(in charge of BWR)
	Tomoya Ichimura	Director for Nuclear Regulation Division(in charge of PWR)
	Takayuki Hoshi	Specialist for Disaster Prevention
Japan Atomic Energy Agency (JAEA)	Tomoyuki Sugiyama	Principal Researcher, Safety Research Center Group Leader, Severe Accident Evaluation Research Group
Japan Nuclear Safety Institute	Kazuaki Honda	Operating Officer General Manager, Plant Operations Support Division
	Mutsuo Takai	General Manager, Plant Operations Support Division and Disaster Prevention Emergency Support Division

(2) NRA Policy Review Meeting

(i) Description

It is required to conduct hearing opinions from external experts on the policy assessment (ex-postevaluation) conducted by the NRA. The NRA Policy Review meeting was held once in FY 2016.

(ii) Members of the NRA Policy Review Meeting

External experts	Yoshinori Iizuka	Professor emeritus, the University of Tokyo
	Hideaki Shiroyama	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

(3) Expert Meeting on the NRA's Administrative Review -FY 2016-

(i) Description

In the administrative project review, all ministries and government offices are required to clarify the status of the implementation of all their projects, taking into account external opinions. Furthermore, as part of the review, the 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 FY 2016.

(ii) Members of Expert Meeting on the NRA's Administrative Review of FY 2016

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