Convention on Nuclear Safety  
Questions Posted To Japan  in 2005

|  |  |  |  |
| --- | --- | --- | --- |
|  | Country | Article  General | Ref. in National Report Preface (1) |
| Question/ Comment | On page Preface-2, it is stated that the reduction in the number of nuclear installations being commissioned by FY 2010 reflects “a loss of public confidence in nuclear power caused by the criticality accident at a uranium fuel processing plant of JCO Co.”. Also, the report describes in numerous places the steps and activities that Japan is undertaking to re-gain public confidence.  Please provide some examples of Japan’s efforts to regain public confidence. | | |
| Answer | The activities to regain public confidence, are conducted by regulatory bodies, nuclear industries and licensees respectively, and they are as reported in section 10.2 of our National Report. | | |
|  | Country | Article  General | Ref. in National Report Preface (5) (1) |
| Question/ Comment | On page Preface-5, it is stated that “the Reactor Regulation Law was amended to stipulate that quality assurance should be established and should be included in the Operational Safety Program, and that compliance with the Program should be confirmed at the Nuclear Safety Inspection.” This gives the impression that quality assurance was not a regulatory requirement before this amendment to the Reactor Regulatory Law. Please elaborate. | | |
| Answer | Before the renovation of safety regulation of October 2003( Section 5 of the preface of our National Report), NISA (1) reviewed the “QA basic policy” of the license holder in the establishment license stage, and (2) confirmed “explanatory document of QA” in construction stage. The license holder conducted QA activities preparing “QA Plan” based on the association standards “Rules of Quality Assurance for Safety of NPPs, JEAC 4111-2003,(Table 7-2-1 of our National Report).  After the renovation of October 2003, the license holder is requested by law to put its QA activities in the Operational Safety Program, and NISA approves it and inspects the license holder’s compliance with it through the Nuclear Safety Inspection. (Please see sections 13.1,13.2 and 13.3 of our National Report) | | |
|  | Country | Article  General | Ref. in National Report p. 1 |
| Question/ Comment | The reports reviewed by France in view of the third peer-review meeting were all examined according to a standard list of issues derived from the obligations of the Convention. If an issue appeared to be covered in an incomplete way by the report of a Contracting Party, this led to a question or comment. However France recognizes that the corresponding information may be available in other existing documents. | | |
| Answer | The comment is noted. | | |
|  | Country | Article  General | Ref. in National Report |
| Question/ Comment | The Japanese report “Convention on Nuclear Safety National Report of Japan for Third Review Meeting” provides a detailed description for each article. Each article is clearly arranged with a short introduction and good structure for the reported items. All changes to the previous report are marked. Pointers are used to provide additional information in other articles or in legislation, guidelines and rules. This makes the report easy to review. | | |
| Answer | Thanks for your comment. | | |
|  | Country | Article  General | Ref. in National Report Preface-3 |
| Question/ Comment | What are the results of the OSART mission of November 2004? | | |
| Answer | OSART mission of IAEA visited Kashiwazaki-Kariwa NPP Units 4 and 6 on November 1 through 17, 2004, and reviewed operational management of these units.  We understand IAEA is now preparing the review report of that visit. | | |
|  | Country | Article  General | Ref. in National Report Preface-4 |
| Question/ Comment | (Preface-4, TEPCO Falsification issues) Concerning the TEPCO Falsification case, we understand that top management of TEPCO were blamed and punished. Did regulatory body (NISA) demand this punishment?  Was the regulatory body not responsible for that situation? Was there any punishment for top management of regulatory body? If not, what's the reason? | | |
| Answer | Concerning the Tokyo Electric Power Co.(TEPCO)’s 29 Falsification in Self-Controlled Inspection Records, NISA issued letter of severe warning as an administrative notice on October 1st 2002 (letter No.1 Oct.1.2002) to the president of TEPCO with the name of the Minister of METI, titled “On the Falsification of Self-Controlled Inspection Records” On the 29th of November 2002, NISA enforced the one year suspension of operation of the Unit 1, Fukushima-Daiichi NPPs against the violation to the Reactor Regulation Law. This enforcement was against the falsifications of reactor containment leakage rate tests that were conducted in the Periodic Inspections of 1991 and 1992 where the unfair injection of compressed air to the reactor containments were conducted. NISA decided to introduce the new inspection system of Licensee’s Periodic Inspection and Periodic Safety Management Review by amendment of Electric Utility Industry Law, replacing former self –controlled inspection, as the measure to preclude the reccurrence of the falsification of the self controlled inspection. | | |
|  | Country | Article  General | Ref. in National Report Preface 5 |
| Question/ Comment | (Preface 5. Renovation of the regulatory system of nuclear safety) In the renovation of regulatory system, it is stated that your present regulatory system has been 'improved' and your activities were strengthened. NISA, although transformed to special organization, still exists under METI which has both nuclear power promotion function and regulatory function. In that regard, the degree of separation between promotional function and regulatory function was not changed. Can it be regarded as renovation? | | |
| Answer | NISA is established as an agency within METI, which has both promotional function and regulatory function. Effective separation between the two functions is established, as it is legally ensured that Director General of NISA, quite independently, can establish policy on nuclear regulation and direct implementation of the policy. Renovation of the Regulatory System of Nuclear Safety in the Preface of our national report deals with not the framework of regulatory administration but the substance of the regulation. | | |
|  | Country | Article  General | Ref. in National Report Preface |
| Question/ Comment | Does the budget of JNES delivered from government? Does it receive fees for regulatory activities from utilities? If yes, what is the process? | | |
| Answer | The budget for JNES’s activities in mid-term goals given by NISA is paid annually by the grant from government. The license holder, who applies for license or approval, pays predetermined fees to government. JNES does not collect fees directly from the license holder for the JNES part of the inspection. As an exception, the license holder, who applies for welding inspection and package inspection in transportation, pays fees directly to JNES. In these inspections, JNES conducts all the inspections, and issues approval. These inspections are highly technical and the criteria are so descriptive that there remains no room for discretion in judging. These inspections had been entrusted by the Ministry to designated non-governmental organization. JNES took over these inspections. In addition, fees for Licensees’ Periodic Safety Management Review are also paid directly to JNES. In this review JNES examines the licensees’ system for Licensees’ Periodical Inspection. This review is similar to the ISO9000 type review. | | |
|  | Country | Article  General | Ref. in National Report Preface |
| Question/ Comment | Do the personnel of NISA move out to other parts and others move in NISA within METI? If yes, how do you solve the problems of discontinuation of experience accumulation? When staff members are recruited, what training or education are provided before they begin works? | | |
| Answer | A staff member of NISA personnel moves in and out NISA along with general rotation procedure of METI personnel. When rotating a staff, NISA, in addition to his/her expertise necessary for the job, considers his/her career promotion by assignment in advanced training course, on-the-job training at offices of resident Nuclear Safety Inspectors, assignment in some regulatory position in METI other than nuclear regulation, assignment in position in international organization or in JNES. For a new staff member without any career, NISA provides special training course on nuclear regulation in addition to METI’s general training course. For a new staff member with some expertise in nuclear safety, NISA provides special training course focused on NISA’s mission and ethics of regulatory activities. | | |
|  | Country | Article  General | Ref. in National Report Preface |
| Question/ Comment | Please provide information on how the director general of NISA and president of JNES are elected or designated. Who are involved in this process and how the candidates are certified? What are the requirements or competence necessary for certification or approval? | | |
| Answer | The Minister of Economy, Trade and Industry appoints the director general of NISA, considering appointee’s experience, knowledge and management capability in ensuring safety of commercial power plant. Mr. Kazuo Matsunaga has been appointed director general of NISA, after serving the two year term as Deputy Director General. The Minister of Economy, Trade and Industry appoints president of JNES, after consultation with senior officials of METI and NISA, on the basis of Article 20 of the Law of the General Rules for Incorporated Administrative Agency, taking into consideration the appointee’s specialty in nuclear safety. Dr. Hideki Nariai, president of JNES, is professor emeritus of Tsukuba University, and served as president of the Atomic Energy Society of Japan. He is one of the leading figures in Japan in nuclear safety. | | |
|  | Country | Article  General | Ref. in National Report Preface |
| Question/ Comment | In the preface of the report a description is given of the falsification of self-controlled Records by TEPCO. It was stated that NISA ordered TEPCO to reconstruct its quality assurance system and renovate its organizational climate fostering true safety culture. It is unclear from the description if there was any involvement of upper management of TEPCO, e.g., by feigning ignorance? Was there a pressure from economics? Is there any more to tell about the at that time governing organizational climate? | | |
| Answer | In March 2003, in a report made against the background of a string of scandals which came to light one after another from August 2002 regarding the situation of the countermeasures to prevent recurrence, Tokyo Electric Power Co., Inc. analyzed the questions as detailed hereinafter.Followings are quotes from the report: (1) Questions about the quality assurance system a) Regarding quality assurance in the nuclear power division, including the participation of top management and the relationship between the head office and the power stations, responsibilities and rights were unclear across all areas. b) Since the fundamental rules for conducting business were not clearly prescribed in regulations, manuals, or other documents, business was often conducted at the discretion of individuals or the organization. -Regarding nonconformity management, because the definition of the nonconformity itself was unclear, and because the fundamental rules for managing nonconformity were not prescribed in a comprehensive way, the philosophy behind the process for making decisions about nonconformity was unclear. - Regarding the management of inspections and tests, because no standards for procedures defining responsibilities and rights were given, systems and judgments were different for every inspection and test. -Regarding the management of documents and records, because standards were not prescribed for the scope and retention period for records being managed and retained, the necessary records were not maintained. c) In the PDCA cycle of “planning (plan), performing (do), evaluating performance (check), and improving based on the results of the evaluation (act),” because the regulations for evaluations (check) and improvement (act) were inadequate, the mechanisms for continuous improvement were unclear. d) The way of deeming things related quality assurance (QA thinking) has not spread through the whole organization or all the individuals in it. e) The checking function of other divisions did not function adequately. In addition, the company-wide audit function did not function adequately because of the following problems. - Audits with an emphasis on topical themes were conducted, but systematic audits on quality assurance were not. - Expert auditing personnel were not developed. (2) Problems with the corporate culture and compliance with ethical business policies a) TEPCO established the Statute of Enterprise Action in 1997, gave its highest priority to ensuring the safety of society, and extolled the virtues of doing our level best to keep stable power supplies, preserve the environment, secure communication, and comply with legislation, among other TEPCO goals. However, it cannot be said that the spirit of these words spread into every corner of its organization. In 1999, to reform the organizational culture, TEPCO put together “five proposals for reforming the culture,” aiming to create an organization open to society and based on an outgoing corporate culture. However, it cannot be said with certainty that this activity was followed through to the full. The reasons for this include the weak awareness of the questions among company members because of the continuing lack of operations to increase understanding of these issues and the lack of preparation in the system in our company for promoting them. b) The excessive consciousness about stable power supply resulted in the execution of illegal action (during the leakage rate test of the reactor containment at Fukushima Daiichi Nuclear Power Station, Unit 1). In addition, a passive and reluctant approach to reporting the occurrence of trouble in nuclear power stations to regulatory agencies was shown throughout. c) Because of the fixed nature of personnel rotations, of the special characteristics of the nuclear power division, it became homogenized and closed to other divisions. This meant that checks by other divisions, including top management, did not function adequately. d) There was homogenization and a closed atmosphere in every category of the nuclear power division. Therefore, because of the excessive consciousness that difficult problems should be resolved by a specific group on its own, opinions about responses to problems were not sought widely, leading to self-righteous judgments about safety. (3) The question of the formation and the spread of the safety culture.Because the handling of technology of nuclear power generation with potential risks to society has been submitted to TEPCO, it is essential that attention is paid to all safety matters based on their levels of priority. However,- (In this string of scandals,) it was repeatedly decided that “as long as TEPCO secures (what TEPCO deems to be) safety, it'll be all right” (because of self-righteous judgments about safety).- It was decided that providing stable power supply had a higher priority than questions of safety. (such as the illicit act during the leakage rate test of the reactor containment of Fukushima Daiichi Nuclear Power Station, Unit 1)These showed that the formation and the spread of this culture (a safety culture) and the stance on nuclear safety were lacking.These questions were present in all TEPCO nuclear power stations for a prolonged period. Because the existence of these problems were not conveyed to the management level, effective countermeasures for resolving this could not be adopted, and, even if plans for improvement were conducted, they could not be carried out to their full. This is taken as a question of management. | | |
|  | Country | Article  General | Ref. in National Report Preface |
| Question/ Comment | In the description of the falsification of the containment leakage rate test of unit 1 of the Fukushima Daiichi NPP is stated that inspectors of the regulatory body attended the test. What is the message behind this statement? | | |
| Answer | The Periodic Inspection regarding the containment leakage rate test is one of the tests that the inspector witnesses. Thus the inspector attended to the inspection. In the containment leakage rate test of the TEPCO in 1991 and 1992, the falsifications were conducted. This is the description in the preface meant. | | |
|  | Country | Article  General | Ref. in National Report Preface 5-(10) |
| Question/ Comment | The establishment of JNES seems a logical step after the TEPCO falsification and the Containment Leakage Rate Test falsification issues. However, the deployment of 100 site resident inspectors might be considered an overreaction to the events. Is there a program to monitor the effectiveness of the new regulatory system in general and of the resident inspectors in particular? | | |
| Answer | Stationing of inspectors at nuclear installations started in 1980s and there already were 50 inspectors stationed at increasing number of nuclear installations. After the JCO criticality accident in 1999, established are the Nuclear Safety Inspector which inspects license holder’s compliance with the Operational Safety Program and the Senior Specialist for Nuclear Emergency to strengthen nuclear emergency preparedness. To satisfy these new regulatory demands, the number of the Nuclear Safety Inspectors is substantially increased, who serve concurrently as the Senior Specialists for Nuclear Emergency. At present, about 100 inspectors /specialists are stationed at nuclear installations and fuel cycle facilities, 100 being considered appropriate number.Regulatory activities of NISA’s personnel including the Nuclear Safety Inspectors and Senior Specialists for Nuclear Emergency are constantly surveyed and audited by the Nuclear Safety Commission. | | |
|  | Country | Article  General | Ref. in National Report Preface 5-(10) + 8.4 |
| Question/ Comment | Under point 10 of the preface and in 8.4 a description is given of the establishment of Japan Nuclear Energy Safety Organization (JNES). What has been done to avoid duplication of activities of respectively NISA and JNES stemming differences in insights regarding what each organization considers its own responsibility and that what belongs to the other organization? (This is often the case with two organizations with more or less the same kind of activities and more or less the same hierarchical competences.) | | |
| Answer | The responsibilities and the mandates of NISA and JNES are clearly defined and no overlaps exist between their activities. As the administrative organization that is dedicated to nuclear safety and industrial safety, NISA used to conduct policy making, licensing decision making, administrative work of inspection rule-making and implementation of investigation, testing and study necessary to root cause analysis in the accident investigation. By the establishment of JNES, many of the implementation of investigation, testing and study necessary to root cause analysis in the accident investigation were entrusted to JNES. And many of the process in the technical examination in licensing and inspections were entrusted to JNES from the NISAs’ licensing decision making and administrative work of inspection.  By this work allocations, NISA intensify its competence to policy planning, and thus it is possible to improve nuclear safety regulations and to improve the performance of regulatory systems, by utilizing the fruit of the JNES’s investigation, testing and study. In the regulatory enforcement area, using the result of JNES’s technical reviews and process inspections together with the enhancement of NISA’s human resources, it became possible to conduct more effective and efficient administrative decision makings in licensing and inspection. | | |
|  | Country | Article  General | Ref. in National Report Preface-8 |
| Question/ Comment | PSA is mandatory to be carried out by the licensee with self controlled review. Japan may clarify that how does the regulatory body assure that the PSA carried out by the licensees conform to the international practice and the necessary elements have been included? Has the regulatory body issued any regulatory guides for the PSA studies? | | |
| Answer | As explained in section 18.4, Accident Managements (AM) were prepared by licensees to all the LWR plants in Japan, following the review result on severe accidents of the NSC and by the requests of MITI (then).  In the preparation of AM, PSA to pre-AM plants were conducted in order to identify the AM items, and also PSA to Post-AM plants were conducted in order to confirm the effectiveness of AM.  Before the execution of these PSA, Japanese PSA specialists reviewed the requirements to internal event level-1 PSA and level-2 PSA, and they compiled a manual for PSA execution in a committee of Nuclear Safety Research Association.  The above-mentioned PSA was conducted using this manual. Concerning the AM preparations by licensees, Technical Advisory Committee of MITI (then) was established to evaluate the validity of licensees’ AM, in the process, referring to the NUPEC’s cross-check results, the verification of the PSA methods and results were confirmed.  At present, PSA is included as one of the elements of PSR, however, this is not a regulatory requirement, and it is one of self-imposed activities to be implemented as used to be, so that regulatory body does not confirm the contents of PSA results. As explained in section 14.6, PSA become very important tool for RIR introduction to regulatory decision making. From the standpoint of ensuring the reliability and the transparency of assessment methodologies, currently, the Atomic Energy Society of Japan has been performing the standardization of assessment methodologies under fair and neutral procedures including public review. NISA and JNES extensively participate in those activities of academic and industrial societies. | | |
|  | Country | Article  General | Ref. in National Report |
| Question/ Comment | The existing situation in the countries with nuclear power programs is characterized by the need for more frequent upgrading of control systems as compared to NPP major process equipment since the lifetimes of automation features and process equipment differ by the factor of 3-5. Besides, fast progressing development of automation features does not allow to perform adequate replacement of the obsolete automatic controls with new, up-to-date ones. The appearance of programmable automation features with new capabilities to perform information and control functions is currently not quite properly substantiated in terms of reliable functioning, and this is noted in the IAEA and IEC documents. In this situation it is essential to have a well-reasoned concept of control systems upgrading that could be performed with no breach of NPP safe operation standards and regulations. Does your country have a concept of upgrading safety-related control systems for all operating nuclear plants? | | |
| Answer | Licence holders either replaced or are preparing the replace in future to digital control facilities from the conventional control whether they are safety related facilities or not. There were no experience of replacement to digital controlled safety system, but the planning for replacement is under the way. As for non-safety control system, replacements to digital system were done in many NPPs. In case of equipments for safety system and non-safety control system are common in hardware and software, these experiences of replacement of non-safety control system may be useful to the replacement of safety system. | | |
|  | Country | Article  General | Ref. in National Report |
| Question/ Comment | Widespread use of programmable automation features to substitute human action at NPPs eventually results in a situation where these features are being offered and applied to implement safety-related functions, in particular, reactor emergency protections. As is known, reliability of programmable automation features cannot be estimated quantitatively, while the qualitative justification can always be admitted as incomplete, which is noted in the IAEA and IEC documents. In this connection a question arises as to the need for justifying/demonstrating the applicability of programmable automation features for these purposes as well as availability of positive experience with their use. Do you have good experience with justifying the applicability of digital programmable safety-related NPP protection systems implemented on recommendations from IAEA and IEC at operating nuclear plants? | | |
| Answer | In Japan, in the replacement of safety protection system to digital system, the renewal of equipments is the main purpose, and the automation of operator action is not considered as necessary.  In the replacement of safety protection system to digital system, the system may be verified by appropriate execution of V&V, in this case also the experiences of execution of V&V in the new plants are useful.  (Note) V&V: Verification and Validation | | |
|  | Country | Article  General | Ref. in National Report Annex 3 (item 3.6) |
| Question/ Comment | Could you give more details on the scope of competence of the Radiation Review Council (RRC) mentioned in Section 7.2 of the Report and in item 3.6 of Annex 3. In doing so it would be desirable to clarify the distribution of functions between RRC and other regulatory authorities (NISA, MEXT and MLIT). | | |
| Answer | The Radiation Review Council, based on the Law for Technical Standards of Radiation Hazards Prevention (Law No.162, 1958), is a council established within MEXT for the purpose of clarifying the basic policy on establishing technical standards on prevention of radiation hazards, and coordinating them. When head of a related governmental organization intends to establish technical standards of radiation hazards prevention, he/she shall consult with the Council. The Council may state its opinions to the heads of related governmental organizations to maintain consistency among technical standards for radiation hazards prevention. Related governmental organizations and related laws are as follows.  MEXT The Law Concerning Prevention from Radiation Hazards due to Radioisotopes etc. The Law for Regulations of Nuclear Source Material, Nuclear Fuel Material and Reactors  National Personnel Authority National Public Service Law  Ministry of Health, Labor and Welfare Medical Care Law, Clinical Laboratory Technicians and Health Laboratory Technicians Law, Pharmaceutical Affaires Law  Ministry of Agriculture and Fishery Law for Veterinary Medicine  METI The Law for Regulations of Nuclear Source Material, Nuclear Fuel Material and Reactors Electricity Utilities Industry Law Law for Safety of Mining  Ministry of Land, Infrastructure and Transport The Law Concerning Prevention from Radiation Hazards due to Radioisotopes etc. Ship Personnel Law Ship Safety Law Aviation Law  The Radiation Review Council consists of not more than twenty members of experts. It may designate specialists to investigate professional matters. The main committee of the Council discussed how to incorporate exemption levels of the BSS into national legislation and published a report on it in October 2002. | | |
|  | Country | Article  General | Ref. in National Report Annex 3 (item 3.8) |
| Question/ Comment | 1) Why the Ministry of Health and Labor of Japan was not included in the list of the authorities of state regulation of nuclear and radiation safety (regulatory bodies)? 2) From the presented information it is not quite clear whether the Ministry of Health and Labor of Japan is responsible for supervision over the compliance with its standards (radiological and sanitary-hygienic aspects of radiation safety) in the nuclear industry, or these regulatory functions are performed inter alia by NISA, MEXT, MLIT? 3) Maybe there is another regulatory body in Japan for this purpose? | | |
| Answer | The Reactor Regulation Law, the Industrial Safety and Health Law, etc. regulate radiation protection at nuclear installations, which were detailed in the first National Report of Japan. The Reactor Regulation Law prescribes zone control in radiation protection, dose equivalent control for personnel engaged in radiation work, measurement and monitoring of radiation levels, radioactive waste release and storage management, and the maintenance of radiation management equipment, in order to protect personnel engaged in radiation work and the public.  The Industrial Safety and Health Law, and Rules for Prevention of Damage from Ionization Radiation under the law, stipulate measures to be taken by operators to prevent workers’ health damage from radiation. The Ministry of Health, Labor and Welfare is a regulatory body based on the Industrial Safety and Health Law. The Radiation Hazards Prevention Law regulates the handling of radioisotopes, radiation generating devices, and material contaminated with radioisotopes, etc. to prevent radiation hazards and to ensure public safety. | | |
|  | Country | Article  General | Ref. in National Report Annex 3 |
| Question/ Comment | 1) Is the "leak before break" concept implemented at Japanese NPPs? 2) What regulatory documents exist which regulate the introduction of the above concept? 3) Are there examples of this concept having been introduced? 4) How do NPPs with ice condensers deal with the problem of boric acid granules "packing/caking" phenomenon? | | |
| Answer | 1),2) The NSC decided that the introduction of LBB concept to the break mode of Austenite SUS piping that constitute the RCS pressure boundary, in the design of protection of facilities that has safety function is appropriate.  This is announced as the NSC endorsement. However this does not means LBB concept is applicable ECCS evaluation and C/V integrity evaluation. 3) In the application of LBB concept, conditions for manufacturing of pipe materials and maintenance and leak detection from RCS boundary are defined. In many PWR plants these conditions were satisfied and LBB concepts were applied in new plant and also applied at the time of SG replacements. For example, pipe whip restraints were reduced.  4) In Ice Condenser Plants, no clogging of steam flow to ice condenser by the following design and operational management:  - at normal condition, ice flakes packed in pillar shape is installed standing with gaps in ice basket, it is checked regularly for this configuration and the gap existence.  Thus the ice basket works as the ice container and steam path. See for the drawing of ice basket: http://www-atm.jst.go.jp/atomica/dic\_0160\_01.html - in case of LOCA, the ice pillars within the ice basket will melt by steam generated by the accident, and the ice basket is constructed by punched metal with holes in the plates and the escape of the big ice lump that may clog the steam path is avoided. - In order to avoid sublimation of ice, thin film is covering the ice pillars. | | |
|  | Country | Article  General | Ref. in National Report Preface (5) |
| Question/ Comment | Three kinds of factors are mentioned that contributed to the TEPCO falsification case. What kinds of investigations were made as a basis for these conclusions? Were the problems unique for TEPCO? | | |
| Answer | The three kinds of factors; factors on the license holders’ side, on the regulatory side and common to the both sides were taken from the NISA’s “Interim Report on the Falsification of Self-Controlled Inspection Records of NPPs” dated.October 1st, 2002.  The Interim Report was the result of the investigation conducted on TEPCO’s falsification of self-controlled inspection records, including on-site inspections in September 2nd to 4th 2002, and hearings to TEPCO headquarters office on September 6th 2003 and NPPs NISA instructed on the 26th of September 2002, other license holders than TEPCO to make full review on their plants to confirm if there were any falsifications in the past self-controlled inspection records and also instructed to report the review results by the end of March 2003 . Some license holders interim review report to this instruction were also reflected. | | |
|  | Country | Article  Article 6 | Ref. in National Report Para 6.2(1) |
| Question/ Comment | Australia is grateful for the detailed explanation provided in this section and the Preface to the National Report concerning the falsification of self-controlled inspection records by Tokyo Electric Power Company (TEPCO). Australia acknowledges the prompt investigative and regulatory action taken by NISA following the public announcement of the falsification of the records in August 2002. Australia would appreciate receiving further information on the actions taken between July 2000 and August 2002 to investigate the allegations that TEPCO had falsified self-controlled inspection records. | | |
| Answer | Activity on the Allegation System from July 2000 to August 2002 was as follows.  July 2000 to November 2000 On July 3, 2000, an allegation was filed at the then Agency of Natural Resources and Energy (ANRE), relating to the report of inspection conducted in 1989 of Fukushima-Daiichi Nuclear Power Station, Unit 1. The agency, referring the case to the Nuclear Power Plant Safety Information Allegation Investigation Committee which discussed the case on 4,7 and 31 of the same month, asked Tokyo Electric Power Co. (TEPCO), on July 4, 2000, to investigate the alleged case, conducted, on September 28, 2000, on-the-spot investigation by itself and sent a letter, on August 7, 2000, to the alleger confirming the fact and asking for contacts with other parties concerned.  November 13, 2000 to March 2002 On November 13, 2000, the alleger filed another allegation. ANRE, referring the case to the committee again on November 21, 2000, requested TEPCO, in writing, to investigate the alleged cases. On August 8, 2001, TEPCO returned, in writing, that it did not confirm the fact claimed by the first allegation. On December 21, 2000, ANRE sent a letter to the alleger to confirm facts of the two cases and received a response, on January 29, 2001, that the alleger could not specify the exact date of the case in the second allegation. The committee, on August 16, 2001, confirmed that in August 1994, the period referred to in the allegation, the unit 1 was in full operation allowing no access to the pressure vessel and no other unit was under inspection or replacing shroud. On the committee’s decision on October 11, 2001, NISA, on October 15, asked parties concerned in General Electric, who was referred to in the first allegation, to confirm the case. Parties concerned in General Electric returned on January 31, 2002, and suggested that the case might be true.   March 2002 to August 2002 On May 23, 2002, General Electric Co. provided NISA with information suggesting falsification of inspection record other than the alleged cases. NISA heard the cases from TEPCO on April 16, 2002 through July 19.   August 7, 2002 to August 29, 2002 On August 7, 2002, TEPCO reported to NISA that there were falsification cases other than the two alleged cases. NISA, after intensive hearing from TEPCO and General Electric Co., disclosed, on August 29, 2002, that there existed 29 falsification cases including the two alleged cases. | | |
|  | Country | Article  Article 6 | Ref. in National Report 6.2 (1)(1),p6-2 |
| Question/ Comment | (See also 6.2(1)(3), page 6-2) Subsection 6.2 of the report outlines events at NPP’s. One licensee in particular (Tokyo Electric Power Co.), was found to be falsifying records of testing and inspection results. In one case this resulted in a warning letter; in another case, a suspension of a reactor operating license. Falsification of records and data appear to be a systemic problem at that utility. Please elaborate if the actions of the regulatory body were accompanied by a more detailed audit of management practices at that utility. | | |
| Answer | NISA issued letter of severe warning as an administrative notice on October 1st 2002 (letter No.1 Oct.1.2002) to the president of Tokyo Electric Power Co. with the name of the Minister of METI, titled “On the Falsification of Self-Controlled Inspection Records” In the letter it was instructed to conduct strictly special inspections as an enforcement of administrative measures. This notice was concerning the 29 incidents of unfair actions, NISA disclosed the survey results on the 29th of August 2002.  And the confirmation of the survey results were conducted with on the spot inspections to 3 NPPs of Fukushima-Daiichi, Fukushima-Daini and Kasiwazaki-Kariwa from the 2nd to the 4th of September, and the on the spot inspections to Tokyo Headquarter Office on the 6th of September 2002 . It was confirmed that there were Falsifications of the Self-Controlled Inspection Records, however there were not recognized of the violation of Technical Standards. On the 29th of November 2002, NISA instructed the one year suspension of the Unit 1 of Fukushima-Daiichi NPPs operation against the violation to the Reactor Regulation Law. This enforcement was against the falsifications of reactor containment leakage rate tests that were conducted in the periodic Inspections of 1991 and 1992 where the unfair injection of compressed air to the reactor containments was conducted. Triggered by the information sent on 25th of September, NISA instructed to TEPCO on the 30th of September 2002 to report all the record from the start of commission till then for all the TEPCO NPPs, and on the 23rd of October 2002, the order of the collection of reports on the fact finding survey results of the reactor containment leakage rate test was issued. Based on this, NISA surveyed on this falsification, the results were published on the 25th of October 2002, and decided to enforce the suspension of the operation of the said unit based on the Reactor Regulation Law. On the 22nd of November the hearing to this penalty was opened, and on 29th of November, order to suspend the operation for one year of unit 1 of Fukushima-Daiichi NPPs was issued to Tokyo Electric Power Co. | | |
|  | Country | Article  Article 6 | Ref. in National Report 6.2 (2)(2), p 6-3 |
| Question/ Comment | This paragraph mentions falsification of data related to inspection of mixed oxide fuels. The licensee’s root cause and the corrective actions appear to be related to quality assurance program and implementation. Please elaborate as to whether the falsification was related only to QA. | | |
| Answer | Based on the report of Basic Policy Committee of Council for Electricity Industry “Report of Review Committee on BNFL Mox Fuel Issue”, the major cause of the falsification of the inspection record for Mox fuel was the defects in BNFL’s quality assurance organization system and structure. More precisely, the lack in the independency of quality control organization, the problems in the security of quality control data, lack in the quality control training and the lack of supervision to the work itself. The control of purchase in the electric utility and the plant vender were not appropriate, too.  The electric utility improved their quality assurance program to prevent the recurrence of data falsification and implemented it. The electric utility clarified their own action items to be taken before and during manufacturing of the fuel, in the purchase of Mox fuel, and constructed a framework within the company to organize, operate and evaluate the quality assurance activities.  NISA evaluated approaches of the electric utility, and concluded they are appropriate. | | |
|  | Country | Article  Article 6 | Ref. in National Report 6.2, 2(4), p 6-3 |
| Question/ Comment | The report offers information on the secondary pipe rupture accident at Unit 3 of Mihama Power Station. Please provide information on any subsequent investigations performed independently by the regulatory body. | | |
| Answer | 1. In September 2004, the Minister of METI issued a grave warning in writing to the president of KEPCO, and ordered to suspend operation of Mihama Unit 3 because of its non-conformance with the technical standard, on the basis of Article 40 of the Electricity Utilities Industry Law. 2. NISA published “Interim Report on the Secondary Pipe Rupture in Mihama Unit 3 of the Kansai Electric Power Company” on September 27,2004, and the final report on it on March 30, 2005. 3. Variation of reactor parameters after the accident showed good conformity with the analysis in the safety examination of establishment license of the plant. Technical investigation of pipe rupture mechanism conducted by JNES and JAERI showed erosion/corrosion. 4. The immediate cause was the omission of inspection points in the inspection list, resulting in overlooking pipe thinning by erosion/corrosion, the root cause being inadequate functioning of maintenance management system and quality assurance system of Kansai Electric Power CO., Mitsubishi Heavy Industries Co. and Nihon Arms Co. 5. Also pointed out were lack of communication between KEPCO and Mitsubishi, inadequate procurement management of KEPCO. overlooking continued omission of inspection point, and too rigid schedule control of periodic inspection by KEPCO often resulting in non-conformance with the technical standard. 6. NSC is confirming the adequacy of the investigation made by NISA. | | |
|  | Country | Article  Article 6 | Ref. in National Report 6.2 |
| Question/ Comment | In relation with falsification of records, the report seems to imply that the regulatory response was to ask the licensees to audit themselves.  Please elaborate if the regulatory body is planning to perform any regulatory follow-up activities (for example, augmented or independent inspections). | | |
| Answer | NISA made major renovation of nuclear safety regulation in October 2003, and the licence holders were obliged by the Reactor Regulation Law to establish the quality assurance system for maintenance management.  The licence holders were requested as the first: to have high level of conscious of safety priority from the top management level to the bottom of the contractors field workers, as the second: to rotate “the plan do check action circle”. For the time being, NISA will make utmost effort for the licence holders to enhance quality assurance system and to improve maintenance management system, with the auditing type inspections and surprise inspections to confirm the conformity of licence holder’s management systems. | | |
|  | Country | Article  Article 6 | Ref. in National Report P6-2.Ch6.2 |
| Question/ Comment | (1) How to trace the quality of MOX fuel purchased from abroad ? (2) How to prevent two-phase flow flushing the pipe of secondary system resulting in thickness reduction of the pipe? Is it to be considered to change the material of the pipe? | | |
| Answer | (1)In the purchase of MOX fuel from abroad, the utility dispatch his inspector(s) to stay at the factory during the manufacturing, he (they) inspect(s) and confirm(s) that the products are with in the specifications, and also confirm(s) manufacturing process, records and thus confirm the fuels are manufactured with appropriate quality assurance activities. The shipment of the fuels is done after all the inspections were cleared. After the acceptance in Japan, fuels must pass the imported fuel inspection by NISA before loading to the reactor core.(2) The licence holder evaluates the existence of cavitation or flashing in the system based on the operating temperature and the pressure distribution within piping. When the existence is expected, change of the layout and the diameter of piping will be considered to improve the pressure distribution.  And the material changes to low alloy steel or stainless steel may also be considered. | | |
|  | Country | Article  Article 6 | Ref. in National Report §6.2-6.3; p. 6-2/6-3 |
| Question/ Comment | Could Japan give more details about improvement of the organization management to avoid recurrence of event such as document falsification and also the secondary pipe rupture occurred at Mihama unit 3? | | |
| Answer | 1. Measures against the falsification of documents In the amendment of Electricity Utility Industry Law in October 2002, the Self-Controlled Inspection was re-defined as Licensee’s Periodic Inspection. The amendment request licence holders to record and keep the results of the inspection, and also provided the penalty when the licence holders falsified the inspection results About the QA systems, regulatory body defined the regulatory requirement on QA systems concerning maintenance management in the amendment of Reactor Regulation Law, and requests the licence holders to establish QA systems concerning maintenance management. Details are shown in section 13.1 of our National Report. 2.. Secondary Pipe Rupture of Mihama Unit 3NISA is conducting necessary measures to the management of pipe wall thinning based on “Tentative Action” which is shown in the “Interim Report of Mihama Unit 3 Secondary Pipe Rupture Investigation Committee” dated 27th September 2004.In Nuclear Safety Inspections, NISA confirms licensee’s practice for the management of pipe wall thinning, and NISA instructs to the licensees of the improvement and recommends information sharing among licensees. On 28th of December 2004, the Rules of Enforcement of Electricity Utility Industry Law was amended to clarify the inspection methods and the parts and components to be inspected about Turbine System Components in the Licensee’s Periodic Inspection. On 18th February 2005, Notification was issued to licence holders, instructing the measures taken, as a temporary remedy, in the management of pipe wall thinning\* such as; determination of systems to be inspected, of measurement points, of inspection interval, and actions to be taken for remaining life. \* Management of pipe wall thinning was used to be conducted by electric utilities practices. NISA also asked JSME to develop “Standard for of pipe wall thinning management” applying the all the data of past troubles caused by wall thinning, and NISA is participating in this program,. When the development of the standard is completed as scheduled in September 2005, NISA will conduct technical evaluation and endorse the standard as regulatory criteria in the administrative procedure. NISA will monitor in Nuclear Safety Inspections if licence holders conduct the appropriate wall thinning management using the developed standard. | | |
|  | Country | Article  Article 6 | Ref. in National Report |
| Question/ Comment | Has the regulatory body applied fines or penalties to individual managers and experts who falsified inspection records? | | |
| Answer | Against the falsification of self-controlled inspection records reported in Article 6 of the report (Section 6.2(1) 1)), no penalty was provided.  As explained in our National Report, Electricity Utility Industry Law was amended in October 2003. In the amendment, the self-controlled inspection was redefined as Licensee’s Periodic Inspection, that is to be conducted by licence holders. Licence holders are obliged to record and keep records of the inspection results.  After the amendment, it was provided that when licence holders do not record the inspection results, falsify the records, then any individual(s) shall be punished with imprisonment maximum of one year and /or fine of maximum one million yen by the Article 117-2-2 (please see page A-3-51 of the Annex to National Report)  At the same time to the corporate who made falsification shall be punished with fine of maximum one hundred million yen by the Article 121-1-2 (please see page A-3-52 of the Annex to National Report) | | |
|  | Country | Article  Article 7 | Ref. in National Report 7.2(1) |
| Question/ Comment | Australia appreciates the overview of Japanese law governing nuclear installations. Does the law require the keeping of records of inspections conducted by licence holders? If so, by whom and for what length of time? | | |
| Answer | The license holder is obliged to keep inspection records by both the Electric Utilities Industry Law and the Reactor Regulation Law. Under the Electric Utilities Industry Law, the license holder keeps records of the Licensee’s Periodic Inspection 5 years after dismantling of specific electric facilities of nuclear power plants. Duration of record keeping for specific electric facilities other than nuclear power plants varies with the contents of the records. (Article 49-4 items 2 of Rules for the Enforcement of the Electric Utility Industry Law) Under the Reactor Regulation Law, the license holder is obliged to keep records of operation of the reactor, etc. (Article 7 of the Rules for the Installation, Operation, etc. of Commercial Nuclear Power Reactors) | | |
|  | Country | Article  Article 7 | Ref. in National Report 7.2(1) |
| Question/ Comment | Australia understands that the Minister of METI is required to report the status of regulatory activities to the NSC on a quarterly basis and that the NSC reviews the regulatory activities based on the quarterly report and consultation with the licence holder and maintenance contractors. Does Japanese law require the Minister to report on a prescribed set of matters? If so, could Japan describe those matters in brief. Further, does the NSC conduct plant inspections to confirm the regulatory activities reported by METI as part of its quarterly report? | | |
| Answer | The items that the Minister of METI should report to the NSC are the approvals of the Operational Safety Program(OSP) and the changes of OSP, approval of the design and the method of construction and the changes of them, pre-service inspections and the welding inspections and the periodic inspections of the facilities. They are provided in the Article 72-3 of the Reactor Regulation Law. The NSC does not directly inspect the license holders’ own inspection activities and other maintenance activities, but may confirm license holders’ maintenance activities as necessary. | | |
|  | Country | Article  Article 7 | Ref. in National Report P7-4.Ch7.1 |
| Question/ Comment | Please give more information on how to implement the punishment articles required by the safety related Acts or regulations. | | |
| Answer | As to the enforcements of the Laws, section 7.4 of our National Report explains. The penalties are shown in the Annex 3 page A 3-17 with the Articles 77and the subsequent articles in the Reactor Regulation Law and in the Annex 3 page A-51 with the Article 115 and subsequent articles in the Electric Utility Industry Law, | | |
|  | Country | Article  Article 7 | Ref. in National Report p7-7 |
| Question/ Comment | (7.3 (4) Operation Stages, pages 7-7) It is stated that the reporting criteria were more clearly defined for the improvement of transparency of information to the public.  What are the major items to be reported (What is the major reporting criteria)? | | |
| Answer | They are shown in the Table 19-3 of our National Report. | | |
|  | Country | Article  Article 7 | Ref. in National Report |
| Question/ Comment | What is the exact criteria which you use to distinguish power reactor and research reactor ?  What's the difference in licensing procedure, technical safety standards and regulatory inspection between the two? | | |
| Answer | Power reactor means any reactor that generates the electricity using the heat generated by the reactor. Research reactor means any reactor that is used for research, testing and other reactors than those not used for power generation.  In Japan, the regulation of reactors is based on the Reactor Regulation Law.  Power reactors are regulated by NISA, research reactors are regulated by the Nuclear Safety Division, Office for Nuclear Regulation, Science and Technology Policy Bureau, Ministry of Education, Culture, Sports, Science and Technology (MEXT). The regulatory procedure for both type of reactors are basically similar. The procedure for power reactor is shown in our National Report and explanation is omitted in this response. For research rectors, regulation during establishment stage, construction stage and operation stage is conducted with Article 23 (Establishment of Reactor), Article 24 (Criteria for Approval), Article 28 (Pre-Service Inspection), Article 28-2 (Welding Methods and Inspection), Article 29 ( Periodic Facility Inspection) and Article 30 (Operation Plan) of Reactor Regulation Law, as is the case of power reactors. The detailed rules and technical criteria were provided and enforced by MEXT. | | |
|  | Country | Article  Article 7 | Ref. in National Report Articles 7 and 8 |
| Question/ Comment | In accordance with Article 7 of the Report it is stated that safety review during licensing is performed by NISA. Meanwhile, in Article 8 of the Report it is mentioned that NSC analyzes the results of this review. 1) What is the essence of NSC analysis (is it a kind of repeated review?)? 2) Can METI grant a license without approval of the results of NISA's review by NSC? 3) How are the contradictions settled and whose opinion is decisive? 4) Can JNES staff members be involved and are they actually involved in safety review? 5) Why do they duplicate functions of NSC and ACE (Sections 8.5 and 8.6 of the Report) on safety assurance issues related to R&D activities in the areas of nuclear energy and nuclear energy use? 6) How are the responsibilities distributed in this case? 7) When comparing Tables 8-1 and 8-3 one can observe some duplication of functions of NISA and NSC divisions. Is that so? 8) Does the document mentioned in Section 14.1 (sub-item 2) (See Article 14) specify the requirements to the conduct of safety review and preparation of report as a result of the review? 9) Can you assure the quality of review using this document? | | |
| Answer | 1). In order to make sure to ensure nuclear safety, nuclear safety regime consists of two organizations, so called double check system, one is administrative organization that enforce regulation directly to licence holder (regulatory bodies: METI etc.), and the other is the NSC that supervise and audit the regulatory activities. For example, in the new establishment or modification of nuclear reactor, safety examination by METI is conducted, and the NSC examines the adequacy of the results of the METI examination independently. In construction and operation stage of reactors, regulatory activities conducted by regulatory bodies are supervised and audited by the NSC (Implementation of Regulation Review)  The examination of NSC to review the adequacy of METI (NISA) safety examination is conducted based on Reactor Regulation Law Article 24.   2). As shown in the response 1), the safety examination by the NSC is one of the legal procedures that can not be omitted.   3). The Minister of METI (NISA) has the authority to issue the license of the power reactor establishment and operation.  NISA shall receive and give values to the mandatory advice from the NSC.   4).As staff of JNES, specialists of JNES do not participate to the reactor establishment safety examination.   5).There is no overlaps between the functions of the NSC and the AEC. Based on the Atomic Energy Basic Law, concerning the matters of R&D in the utilization of nuclear energy, the NSC has the responsibility to the matters to ensure safety, the AEC has the responsibility to the matters other than that of the NSC.  6). As explained in 5), concerning the matters in the utilization of nuclear energy, the functions of both commissions have no overlaps, and the NSC has responsibility to plan, deliberate and decide the matters related to the nuclear safety. As some examples of the matters, the establishment of the guideline that are used in the safety examination of establishment license, the promotion of the R&D used for the nuclear safety regulation are the responsibilities of the NSC. The AEC develops the Long Term Programs for Research, Development and Utilization of Nuclear Energy every five years, thus the functions of the both commissions are separated.  7).There are no overlaps between the functions of NISA and the NSC.  Table 8-1 summarizes the names and the assigned duties of the regulatory organizations of NISA.  Table 8-3 explains the names and the mandates of the advisory committees established by the NSC.  NISA practices their regulatory activities by these organizations, and the NSC conducts the supervision and audit of the regulatory bodies with the support of these organizations.  8).The documents referred in section 14.1,2) of the national report are the Regulatory Guides that were prepared by the NSC and shown in table 7-1. NISA applies these Regulatory Guides in his safety examinations. The result of safety examination is published as a report and open to public at the time of license decision.  9). These Regulatory Guides are consistent to international standards, prepared with the discussions by our knowledgeable specialists and are open to public. The use of these guides is useful to enhance the objective and reasonable safety examinations. | | |
|  | Country | Article  Article 7 | Ref. in National Report 7.3 |
| Question/ Comment | The Periodic inspection and the Licensees periodic inspection are mentioned. Which SSCs are covered by these inspections every 13 months? What inspection methods are used? | | |
| Answer | The SSCs to be inspected in the Periodic Inspections and Licensee’s Periodic Inspections within every 13 months are a) nuclear reactor, b) reactor cooling system equipments, c) instrumentation and control system equipments, d) fuel equipments, e)radiation management equipments, f)disposal equipments, g)reactor containment facilities, h)emergency generators, and i)steam turbines with associated facilities, main valves, condenser, heat exchangers and main piping of nuclear power plants(Article 90-2 of Rule on Electricity Utility Industry Law, ( page, A3-59 of Annex to our National Report) In Licensees’ Periodic Inspection (LPI), the compliance to the technical standards of these SSC is confirmed by licensee. In Periodic Inspection by NISA (JNES), important inspection items of LPI are confirmed of the compliance to the technical standard with witnessing or confirming the LPI records by NISA’s Electric Structure Inspector or JNES’s Electric Structure Inspector. | | |
|  | Country | Article  Article 7 | Ref. in National Report 7.3 |
| Question/ Comment | Reporting criteria for failures etc. have been more clearly defined. Licensees have established a system to collect and disseminate information, including “minor events” outside the reporting criteria. What is the definition of a “minor event” and what data sources are used for such events? | | |
| Answer | The definition of “minor events” outside the reporting criteria are as follows; 1. Deformations, defects, cracks, thinning, wearing, pinholes or the sign of those are recognized to the equipments important to safety. (examples; when any indication was found and remedy was taken with the checks or inspection as the follow up to the incident of similar plants: when any indication was recognized by nondestructive inspection and operation was continued after the evaluation for the continuous operation: when any indication was recognized by nondestructive inspection and possibility for the damage to the integrity after subsequent cycle and remedy was taken to maintain the integrity: when un-expected replacement of main components done although similar incident was not recognized in the past: and when the specification was changed to improve reliability although there are no problem in integrity.) 2.When violation of Operational Safety Program were recognized 3.When any deviation from the operation limits  4. When the reactor was shutdown or power change more than 5% was caused due to failure  5.When any fire in NPP broke out 6.When measures to prevent recurrence of incidents are taken from the point of prevention of possible incidents(examples; important parts or items of main piping, main valves, pumps are not included in the inspection item list) These data are registered in NUCIA, public open library, by utilities voluntarily. | | |
|  | Country | Article  Article 7 | Ref. in National Report 7.3 |
| Question/ Comment | What is the role of the Safety Analysis Report (SAR) in the Japanese legislative and regulatory system and what requirements exist with regard to keeping the SAR up-to-date? | | |
| Answer | The Safety Analysis Report in your question is one of attachments of the documents for Establishment License( See section 14.1(1) of our National Report)  The role of this attachment is the document that explains the basic design and the safety of the reactor to be constructed. The regulatory body examine if the application comply with the requirements of the Examination Guide prepared by the NSC, based on the Safety Analysis Report.  If any changes in design, equipments or tests are necessary, and if these changes stand to the change in the conditions of license, licence holders must apply for the modification of Establishment License and need approval before any changes are performed. In these process said Safety Analysis Report is necessary as the attachment to the application. | | |
|  | Country | Article  Article 7 | Ref. in National Report |
| Question/ Comment | 1. Could additional information be obtained on functions, authorities, working hours and location of the emergency response centre? | | |
| Answer | The emergency response center is located in NISA, METI, Tokyo. In the center plant information of the NPP in emergency are delivered online from the NPP, and the equipments for TV conference communication between every Off-site center are equipped.  When the notice of specific initial event as defined by the Article 10 of Nuclear Emergency Law is received or when the happening of the specific initial events are recognized, METI Nuclear Emergency Alert Headquarters will be established, and when the specific initial events of Article 15 of the Nuclear Emergency Law happens, METI Nuclear Emergency Response Headquarters will be established.  In the emergency response center the secretariat for these headquarters will be established and the secretariat conduct information collection, coordination between relevant organization, and public broadcasting.  NISA places night watches during night and holidays as the preparation for quick startup of the emergency response center. | | |
|  | Country | Article  Article 7 | Ref. in National Report |
| Question/ Comment | 2. Is the frequency of equipment inspections changed after transfer to the 1.5-year fuel campaign? | | |
| Answer | At present there is no plan to change the frequency of Periodic Inspection (13 months) | | |
|  | Country | Article  Article 7 | Ref. in National Report |
| Question/ Comment | 3. Could additional information be obtained on licensing authorities granted to METJ and NJSA? Does the text of para. 7.4 imply that nuclear installations may be operated without an appropriate licence under certain conditions in Japan? | | |
| Answer | The Reactor Regulation Law does not allow the operation of Nuclear Installation without licence in any cases. | | |
|  | Country | Article  Article 7 | Ref. in National Report section 7.1 |
| Question/ Comment | This paragraph states that the objective of the Atomic Energy Basic Law is ''to secure future energy resources, achieve progress in science and technology, and promote industry, by encouraging research, development, and utilisation of nuclear energy, and thereby contribute to improvement of the welfare of human society and the national living standard.'' It also states that to achieve these objectives the law provides for the establishment of laws and regulations. How does Japan ensure there is a separation between the promotion and safety of nuclear energy in the development and application of these regulations? | | |
| Answer | Based on the Atomic Basic Law, the Atomic Energy Commission has been established to plan, consider and determine the matters (excluding those related to implementing regulation for ensuring safety) related to the research, development and utilization of nuclear power. The Nuclear Safety Commission has been established based on the Atomic Energy Basic Law, to plan, consider and determine the matters related to ensuring safety.  NISA has been established as the regulatory body to administer the safety regulations under METI.  Besides METI, MEXT and MNLT administer the safety regulations in the utilization of nuclear energy based on the responsibilities defined by each Establishment Law and Reactor Regulation Law. Thus the organizations engaged in the promotion and the safety regulation of nuclear energy are established by law and promoting organization and regulatory bodies make policy decision independently. | | |
|  | Country | Article  Article 7 | Ref. in National Report Sect. 7 p 7-1 to 7-7 |
| Question/ Comment | In what ways does the public have legal rights to participate in nuclear matters? Is there a provision for a public adjudicatory hearing? If so, what role does NSC or NISA play in adjudicatory hearing? | | |
| Answer | In the planning stage of new construction of NPP, Environmental Impact Assessment Law provides procedure for public participation to the assessment of environmental impact of the planned NPP as shown in section17.5 and Fig.17-1 of our National Report.  In the establishment license stage, primary public hearings and secondary public hearing are held, although these practices are not mandate based on regulation.  METI holds primary public hearings to obtain understanding and cooperation of local residents by the explanation of the licence holder and to hear the opinions of the local residents. The results of public hearings are taken into consideration in the safety examination.(please see section 7.3(1) and Fig.7-3 of our National Report) The NSC holds a secondary public hearing, focusing on safety problems characteristic to the specific installation to hear the opinions of local residents as a process of deliberating the result of METI safety examination in establishment license.  In the secondary public hearing, METI is responsible for the explanations of the summary of the safety examination and for the response to the opinions expressed in the hearing. .(please see section 7.3(2) and Fig.7-3 of our National Report) Concerning the dialogue with local residents, NISA held anumber of explanatory meetings for the residents in the vicinity of sites as shown in 8.3(4) in the National Report.  When Nuclear and Industrial Safety Subcommittee, ACNRE makes any decision of the proposal that may affect basic policy or of introduction/modification of system that may affect the people’s right and obligation, public comments are called.  When any major report of the committees under the NSC are proposed as committees decision, the secretariat of the NSC makes open the proposed report for certain time of period for public comments | | |
|  | Country | Article  Article 7.1 | Ref. in National Report |
| Question/ Comment | An alleger has been given more legal protection. What is the experience of the allegation system in Japan and what is expected after this legal modification? | | |
| Answer | Present allegation system allows an allegation be filed at NISA, Ministry of Education, Culture, Sports, Science and Technology or NSC. An allegation on a nuclear installation may be filed at NISA or NSC. Twenty three cases were filed at NISA from October 2002 to January 2005, while 4 cases were filed at NSC from March 2003 and January 2005. Allegation system is expected to facilitate prompt regulatory action against violation of regulations by operators. | | |
|  | Country | Article  Article 7.1 | Ref. in National Report |
| Question/ Comment | Regarding design standards, NISA is replacing specification code with performance code. Please explain the significance of this. | | |
| Answer | NISA is in the process of replacing government’s technical design rules from specification base standards to performance base standards. By these, licensees may enjoy more variety of options in their decision in fulfilling the requirements. In addition to this, standards established by academic society and association can also be applied as performance code.In case of applying these standards to nuclear power plants, the governmental basic policy is utilizing more academic society and association standards that are endorsed by the regulatory body. As the academic society and association standards have been properly modified according to technical progress, it can be expected such advantages as speedily accommodating up to dated technologies, clarification of the judgment basis, and restructuring the systematic regulatory standards that are necessary for safety establishment under the modified design rules. Moreover, this will prompt the technical evolution or revolution on nuclear safety by activating the academic society and association, and will increase the effectiveness of safety governmental regulation. | | |
|  | Country | Article  Article 7.2.3 | Ref. in National Report p. 7-7, 7.3 |
| Question/ Comment | Are there any guides or other specific regulations for the scope and performance of a periodic safety review? What is the rationale behind the decision not to demand a PSA as mandatory part of a periodic safety review? | | |
| Answer | The amendment, in October 2003, of the Reactor Regulation Law and the related rules has integrated the periodic safety review into legislation, as it is mentioned in section 14.3(2). The periodic safety review requests license holders to assess, every ten years, how they implemented lessons learned from experiences at national and foreign nuclear installations and technical knowledge obtained from various research and development efforts.  NISA, considering implementation of PSA is still under intense discussion, requests, without enforcement, license holders to use PSA in their activities including Periodic Safety Reviews, by a notification dated December 2003. | | |
|  | Country | Article  Article 8 | Ref. in National Report 8.2, p 8-2 |
| Question/ Comment | The report states that “JNES provides together with NISA infrastructure to assure safety in the use of nuclear energy.” Please explain how the roles and responsibilities of NISA differ from those of JNES. Please elaborate as to what is the audit function of the NSC. | | |
| Answer | 1. As shown in 8.3(1), page8-3, based on the Reactor Regulation Law and Electric Utility Industry Law, the responsibilities of NISA and JNES are allocated as : -JNES implement and notify the results to NISA on Pre-Service Inspections, Periodic Facility Inspections, a part of Periodic Inspections and Licensee’s Safety Management Review.  -NISA evaluate the licence holder’s inspection system based on the -JNES’s inspection or review results. -NISA inspect the important items by himself.   The relevant clauses of the Laws are; Reactor Regulation Law; Article 28: Pre-Service Inspections, Article 29: Periodic Facility Inspections, and Electric Utility Industry Law;  Article 50: Pre-Service Inspections, Article 54: Periodic Inspections and Article 55: Licensee’s Safety Management Review.  2. The NSC based on the Article 24 of the Reactor Regulation Law, at the stage of reactor establishment, independently re-examine the adequacy of the results of NISA examination concerning technical competence of nuclear operator, site, and the basic design of structure and equipment from the points of prevention of radiological hazards, focusing on the evaluation of the safety of the reactor core and the radiation exposure due to establishment of the nuclear installation.  In operation stage of reactors, NISA report quarterly to the NSC of the implementation status of Periodic Facility Inspections and Nuclear Safety Inspections. The NSC referring these reports, investigate the regulatory activities conducted by regulatory bodies in order to improve the effectiveness and the transparency, and to express opinions | | |
|  | Country | Article  Article 8 | Ref. in National Report P8-1.Ch8.1 |
| Question/ Comment | How to assure the effective management for interfaces between different regulatory bodies, and interfaces between regulatory body ,electrical company and nuclear power plant? | | |
| Answer | We understand the “interface” as “the roll of each organization”.The NSC is responsible for planning, deliberation and decisions on matters that are related to ensuring safety of the research, development, and utilization of nuclear energy. The rolls of the NSC, NISA and JNES at establishment license, construction and operating stages of NPP are explained in sections 7.2(1), 7.3(2),(3),(4), 8.5 and 8.6.  NISA hears the opinions of electricity utilities as necessary about the regulatory policies through the discussions in the committees and working group under Nuclear and Industrial Safety Subcommittee of ACNRE. As to the interfaces between NPP and regulatory body, Special Inspection Instructors collect opinions and proposal from inspectors and licence holders as explained in section 11.3(1) of our National Report. | | |
|  | Country | Article  Article 8 | Ref. in National Report |
| Question/ Comment | It is not quite clear from Article 8, which organization is responsible for safety regulation since in Section 8.3 it is said that now instead of AEC this function is performed by NSC, which has in its structure a special committee for standards and guides on nuclear safety and a working group for implementing risk-informed safety regulation. Or is this function performed by NISA, which also has in its structure a nuclear standards and regulations division, whose responsibility is to regulate nuclear power reactors at the design stage? | | |
| Answer | In Japanese nuclear safety regime, the Nuclear Safety Commission plan, consider and determine the matters related to ensuring safety, and NISA administers actual regulatory decisions as the regulatory body. Concerning the introduction of RIR, the NSC established “Task Force for Introduction of Safety Regulations Using Risk Information” as shown in Table 8-3, and the Task Force is investigating and deliberating the roll of the relevant organizations in the introduction of safety regulations using risk information. NISA established “Risk Informed Regulation Sub committee” under the Nuclear and Industrial Safety Subcommittee, and reviewing the practical application of Risk Informed Regulation.  The developments of the rules and standards are basically the responsibility of NISA. The rules and standards (Annex 3.5 the Reactor Regulation Law and Annex 3.9 the Electric Utility Industry Law of the National Report) that are enforced at the construction and operation stage of the power reactor facilities were developed by NISA.  As explained to the Russian question (Seq.No.35), The NSC re-examines the safety examination of NISA and the regulatory guides are developed by the NSC.  NISA also, use these guides in the safety examination for the licensing of the establishment license of reactor. | | |
|  | Country | Article  Article 8 | Ref. in National Report |
| Question/ Comment | Is it within the competence of NSC to supervise/regulate the compliance with the sanitary-hygienic requirements of radiation safety? | | |
| Answer | The Nuclear Safety Commission audits the adequacy of safety examination by NISA on establishment license of a nuclear reactor, and confirms radiation safety-related matters using self-established guides. NISA and MEXT, the regulatory bodies, conduct their regulatory activities on radiation protection for facilities and activities concerning utilization of nuclear energy, on the basis of technical standards and the guides mentioned above. | | |
|  | Country | Article  Article 8 | Ref. in National Report 8.3 |
| Question/ Comment | It is not mentioned whether NISA has Quality Management System for regulatory activities. If there is such a system, please explain the main features of it. | | |
| Answer | NISA does not have adopted a quality management system for its regulatory activities similar to IAEA guidelines or ISO-9000 series. As the regulatory activities of NISA are detailed in our national report, Articles 7, 8, 17, 18, a Quality Management System for regulatory activities is built in NISA’s regulatory framework itself. For example, “Plan” is given by the relevant legislation on safety regulation. Also, NISA participate in IAEA’s activity to establish management system, and watches other international activities in that area. | | |
|  | Country | Article  Article 8 | Ref. in National Report 8.3 |
| Question/ Comment | NISA has enhanced its public relation activities. Are there any restrictions on providing information to the public as a result of the 9/11 events in USA? | | |
| Answer | After the 9/11 event in USA, the security measures in Japanese NPPs were enhanced. As a result some limitations on information disclosure were enforced. For example, the tour to nuclear installation by public was avoided. | | |
|  | Country | Article  Article 8 | Ref. in National Report 8.4 |
| Question/ Comment | JNES is an incorporated administrative agency. What does that mean from the legal status point of view? Does NISA regularly audit the competence and work performance of JNES? | | |
| Answer | An Incorporated Administrative Agency (the Agency) is any organization that is established based on the Law of the General Rules for Incorporated Administrative Agency(General Rule), in order to execute administrative works with publicity, more effective and more efficient way. Minister of METI instruct to JNES of the mid-term goal to be accomplished in the operation of his work based on the General Rule. JNES establishes the midterm plan that is approved by the Minister of METI, and annual program that is consistent to this mid-term plan is prepared by JNES and it is notified to the Minister of METI. Concerning the audit by the Minister, in the General Rule, it is provided that “the Minister may collect the report, may conduct on the spot inspection and may request corrective actions to the Agency in order to secure the appropriate implementation of the work of the Agency with respect to administrative works with publicity”. Till now there were no experiences of collection of report, or on the spot inspection, or corrective action. Concerning the evaluation of the Agency’s performance, based on General Rule, “Committee on the Evaluation of the Agency Performance” which was established within METI, conduct “neutral, third party’s evaluation” The results of the evaluation of the Agency’s performance about the midterm objectives will be reflected to the goal of the Agency for next midterm by the Minister. | | |
|  | Country  Ukraine | Article  Article 8 | Ref. in National Report |
| Question/ Comment | What is the legal ground for differentiation of regulatory functions, authorities and responsibilities between different state bodies to prevent duplication, contradictions and ambiguities in established standard and rules, especially in related regulatory areas? | | |
| Answer | As it is stated at Article 7 of our national report, Japan has enacted the Atomic Energy Basic Law as its basic law on the utilization of nuclear energy. Under the Atomic Energy Basic Law the Reactor Regulation Law has been established, which assigns competent minister and ministry responsible for regulation of each activity in the utilization of nuclear energy. The establishment law for each ministry clearly defines duties and responsibilities of the ministry without any duplication. The ministry conducts its regulatory activities based on the legislation mentioned above. | | |
|  | Country | Article  Article 8 | Ref. in National Report section 8.2 |
| Question/ Comment | Article 8 of the Convention it states that, 'Each Contracting Party shall take the appropriate steps to ensure an effective separation between the functions of the regulatory body and those of any other body or organisation concerned with the promotion or utilisation of nuclear energy'. In Japan the Commissioners of the NSC are appointed by the Prime Minister. How does Japan ensure that this does not prejudice effective separations between the safety of nuclear energy and the promotion of nuclear energy? | | |
| Answer | As explained in detail in sections 8.2, 8.5 and 8.6, the Nuclear Safety Commission is clearly the commission that plan, consider and determine the policy about regulation to ensure nuclear safety.  The Atomic Energy Commission is the commission that plan, consider and determine the national policy related to the promotion of utilization of nuclear energy. Concerning the responsibilities and the assigned duties, it is clearly defined without any overlap by the Atomic Energy Commission and the Nuclear Safety Commission Establishment Law, and the separation of the function of the regulation to ensure nuclear safety and the promotion of nuclear energy utilization shall not be hindered. | | |
|  | Country | Article  Article 8 | Ref. in National Report section 8.3 (2) |
| Question/ Comment | Section 8.3 (2) states that NISA has approximately 300 staff engaged in nuclear safety regulation, of which 100 are Nuclear Safety Inspectors. Is there an overlap with the duties of these 100 inspectors with that of JNES and if so, how is this managed? | | |
| Answer | Inspection items assigned to NISA and JNES are clearly defined in Electricity utility Industry Law and Reactor Regulation Law, and there are no overlaps between two Organizations. In Electricity Utility Industry Law,  1)The inspections to be conducted by NISA and JNES for which the interfaces are clearly defined in the Laws.  -NISA receives the application from, notifies the results to and decides enforcement to the licence holder,  -JNES conducts the inspection, for which inspection items are classified in the Laws.  2)The inspections to be conducted only by JNES, In the Laws, the inspections that JNES conducts are defined. And JNES receives the application from, and notifies the results to the licence holder. In some of the inspections (Licensee’s Safety Management Review, Welding Safety Management Review), JNES report the inspection results to NISA, and NISA evaluate the result of inspection, notifies the evaluation results to and decides enforcement to the licence holder.In Reactor Regulation Law,Nuclear Safety Inspection is defined by Reactor Regulation Law, it is conducted by NISA to check if the licensee’s is observing the corporate manual to ensure quality management and maintenance management in accordance with the Operational Safety Program. | | |
|  | Country | Article  Article 8 | Ref. in National Report section 8.3(4) |
| Question/ Comment | Section 8.3 (4) states that NISA discloses information on incidents and accidents to the public. Are all the incidents that are reported to the Regulator communicated to the public? | | |
| Answer | All the incidents and failures reported to NISA from licence holders based on the law are disclosed to public. | | |
|  | Country | Article  Article 8 | Ref. in National Report section 8.5 |
| Question/ Comment | Section 8.5 gives details of the responsibilities of NSC. It states that NSC supervises and audits the regulatory activities of NISA. Are there similar arrangements set up for JNES? | | |
| Answer | The NSC conducts the investigation of NISA’s regulatory activities by hearing or on the spot confirmation. As a part of the investigation, the NSC conducts similar investigation as it necessitates to JNES that conducts a part of regulatory activity based on regulations. | | |
|  | Country | Article  Article 8 | Ref. in National Report S 8 p 8-1 to 8-8 |
| Question/ Comment | The report discusses NISA’s increased activities to enhance public communication and public trust and need for transparency.... how do you measure public confidence in nuclear power and in NISA? What metrics are used in estimating public confidence? | | |
| Answer | We think how to enhance public communication and public trust is one of the international subjects and a challenge to NISA. One of the effective metrics may be to take public opinion polls, which will represent public understanding of nuclear safety and NISA’s activity. It is very important to establish cooperative relationship or partnership between the public and NISA through public involvement and effective dialogue, which is beyond easy metrics. | | |
|  | Country | Article  Article 8 | Ref. in National Report S 8 p 8-1 to 8-8 |
| Question/ Comment | NISA opened a Nuclear Energy Library in JNES, where the public can access license application documents of nuclear installations, reports of incidents and accidents etc,. Is NISA also making these types of information available on NISA/JNES websites for easy public access? | | |
| Answer | The status of addition/modification of establishment license documents, inspection results, status of the amendment of Operational Safety Program, minutes of advisory committees/accident investigation committees and the event information and the root cause analysis reports are open to public in NISA/JNES Website.  The enforcement about the event (Mihama Unit 3 incident etc.), some topic information(results of C/V leak rate test etc.) interpretation of reporting criteria and new technical standards are also open to public through NISA/JNES Websites. Application documents, incident reports are document prepared by the licence holders, so they were not included in NISA/JNES Websites. | | |
|  | Country | Article  Article 8 | Ref. in National Report S 8 p 8-1 to 8-8 |
| Question/ Comment | Is NISA/JNES making inspection reports available to the public? There is no specific mention of inspection reports being available to the public. Do you hold period public meetings at each nuclear installation to discuss safety review results? | | |
| Answer | The inspection results are obligated to report to the NSC quarterly based on Reactor Regulation Law and Electric Utility Industry Law as shown in section 8.5, and results of inspections are publicly available through NISA H.P. Website.  NISA is not considering the period public meeting that explains about the inspection results to the local residents.  However, NISA is extensively explaining the measures taken by NISA to the local residents, in the socially interested significant events like TEPCO Falsification Issue and Mihama Unit 3 Secondary pipe Rupture. | | |
|  | Country | Article  Article 8.1 | Ref. in National Report §8.4 - p. 8-5 |
| Question/ Comment | The report states (p. 9.2-9.3) that NISA (understood as the regulatory body) has inspectors who conduct both planned inspections and on-the spot inspection. The report states also (p. 8.5) that JNES (understood as the technical support organisation of the regulatory body) performs also inspection. This is summarized in the scheme given p. 8.6 where "inspection" appears at various places. Could Japan clarify the exact responsibility for inspection between these various bodies? | | |
| Answer | The inspections shown in a) and b) are done when the reactor is shut down;  a) Licenseefs Periodic Inspection and Periodic Safety Management Review (Annual Inspection) Licenseefs Periodic Inspection (LPI) and Periodic Safety Management Review (PSMR) are explained in detail in the section 19.3(page 19-3 to 19-4), LPI are performed under the responsibilities of licence holder(LH), and the inspection results must be recorded and kept by the LH. JNES receiving the LHfs application, reviews at the site, the LHfs organization conducting the LPI, inspection method, schedule control, and other items provided in the ordinance of METI, and JNES report the review results to NISA headquarters under his responsibility.NISA receiving the review results from JNES, evaluate the report, decide and inform the result of the evaluation to the LHfs performances. If the LHfs performances are excellent, NISA may lighten the inspection requirements for the LHfs subsequent inspection.  b) Periodic Inspection (PI) Receiving the application from the LH, NISA and JNES conducts the PI on the structures important to safety by witnessing the LPI. NISA informs the inspection results to the LH. In the case JNES performs a part of PI under the direction of NISA, JNES reports the results of inspection to NISA. NISA evaluate and decide the inspection report and inform to the LH of the result of evaluation and decision under the NISAfs responsibility.  c) Nuclear Safety Inspection (Quarterly)  NISA conducts Nuclear Safety Inspections to confirm the LHfs observance of Operational Safety Program, and inform the results to the LH under his responsibility. d) On the Spot Inspection (9.2(10)) In case, when any violation of the requirements of the Reactor@Regulation Law or Electric Utility Industry Law is suspected, On the Spot Inspection may be conducted. This inspection is primarily conducted under the responsibility of NISA. JNES sometimes conducts On the Spot Inspection under the direction of NISA, in that case, JNES reports the result immediately to NISA. NISA decide the enforcement based on the JNESfs report and inform the LH of the decision. | | |
|  | Country | Article  Article 8.1 | Ref. in National Report 8-4 |
| Question/ Comment | What criterion is applied as regards notifying the public of events at nuclear and radioactive facilities, and with what degree of social acceptance? | | |
| Answer | All the incidents and failures reported in accordance with legal requirements to NISA were open to public. The reporting criteria are as shown in Table 19-3 of our National Report.It is acknowledged of this practice socially, we are continuing the effort for further understanding of general public as shown in section 8.3(3) of our National Report. | | |
|  | Country | Article  Article 8.2 | Ref. in National Report p. 8-1/8-8 |
| Question/ Comment | The report mentions (p. 8.4) that, "in order to recover the trust of the public which was lost", NISA held meetings to exchange opinions concerning the measures to prevent recurrence of events and has been making efforts to address the comprehensible explanation of nuclear safety. The report mentions (p 8.1) that NISA was established as a special organisation in the METI with functions, which are "substantially separated". However the report mention (p. 8.8) that the Minister of METI, before issuing an establishment license for nuclear installations, shall receive the views of the Atomic Energy Commission with regard that the license "will cause no hindrance to the planned development or utilization of nuclear energy". Can Japan better explain how the current "separation" of the NISA from the METI can efficiently insure the public that the decisions of the regulator are never hindered by the need of AEC to remove any obstacle to the development of nuclear energy? | | |
| Answer | The description of the third paragraph in section 8.6 explains the process of safety examination for establishment license, which is required by the Article 24 of the Reactor Regulation Law. In the Article 24 of the Reactor Regulation Law, it is provided that, METI receives the views from the AEC. In this process, the consistency to the planned development or utilization of nuclear energy for peaceful purposes and the financial basis are confirmed to the licensing by the AEC. The NSC similarly confirms the licensee’s competence and no-hindrance to the radiation safety in the licensing. The responsibilities and the mandates of the AEC and the NSC are clearly defined without any overlaps in their establishment law. | | |
|  | Country | Article  Article 9 | Ref. in National Report page 9-1 |
| Question/ Comment | At which stage of the nuclear facility lifetime the plan for its decommissioning is developed and whether implementation of this plan is a part of the operational licence? | | |
| Answer | 1.The decommissioning of a nuclear installation is determined by the licence holder, there are limit to the plant life is not defined in regulatory system.When a licence holder plans to dismantle the reactor, the notice of dismantling together with documents explaining the methods of dismantling, mile stone of dismantling program, methods of radioactive waste treatment must be submitted to NISA 30 days before start of dismantling.  2. In Japan operational license for reactor was not issued, instead, the license to establish, operate, decommissioning reactor as a whole is issued. Any licence holder of establishment of reactor shall not be free from the obligation of license until dismantling and decommissioning of reactor was completed, otherwise transfer the license to the other. | | |
|  | Country | Article  Article 9 | Ref. in National Report |
| Question/ Comment | What is the final goal of the nuclear facility decommissioning and whether it is entire and definite site release from sources of ionising radiation, from regulatory control for restricted or unrestricted use for industrial and other purposes? | | |
| Answer | 1.The purpose of decommissioning of Nuclear Installations is to decontaminate the radioactive contamination of site and buildings, to dispose the radioactive waste and to release from regulatory control.The preparation of so called “Site Release Criteria” is a future challenge.  2.The AEC decided the policy about the re-use of site after the decommissioning of commercial NPPs so that the site would be better used as reactor site again with the consent of local community. As the Japanese NPP site is not so much contaminated, this policy is not the requirement based on the radiation protection. | | |
|  | Country | Article  Article 9 | Ref. in National Report p. 9-2, 9 |
| Question/ Comment | Is the accident management program revised and updated as part of the periodic safety review? | | |
| Answer | Severe accident/ Accident management were prepared voluntarily as one of the safety management activity by licence holders.  In PSR, the preparation, modification and updating of accident management are not obligated. | | |
|  | Country | Article  Article 9 | Ref. in National Report S. 9 pg 9-1 to 9-3 |
| Question/ Comment | What restraints or sanctions, short of suspension or shutdown, does the regulatory body place upon the licensee when the licensee does not implement identified fixes to address safety issues in the agreed-upon time period? | | |
| Answer | The penalty on the licensee is provided in the Reactor Regulation Law and Electric Utility Industry Law, and suspension of operation, revocation of license or penalty is enforced in corresponding to the nature of each violation.  As to the enforcements of the Laws, section 7.4 (page 7-7) of our National Report explains. The penalties are shown in the Annex 3 page A 3-17 with the Articles 77and the subsequent articles in the Reactor Regulation Law and in the Annex 3 page A-51 with the Article 115 and subsequent articles in the Electric Utility Industry Law, | | |
|  | Country | Article  Article 10 | Ref. in National Report 10, p 10-1 |
| Question/ Comment | Within the second paragraph on this page, the report states that “In the renovated regulation, they clarify requirements for the license holder’s quality assurance activities including organization, management etc urging the license holder to establish robust safety culture. The license holder is intensifying efforts to respond to it.” Please explain what concrete measures the license holders have undertaken and implemented to respond to regulatory requirements for robust safety culture. | | |
| Answer | The measures taken by the Japanese nuclear industry to strengthen the safety cultures are basically shown in 10.2(2)2).  As an example, followings are the measures taken by TEPCO. (1) Announcement of Safety First Management Policy \* Efforts to make known of ¡°TEPCO Corporate Charter¡± (Since November 2002, it is printed on the back of the cover of monthly corporate journal)  \*President re-instruct all the employees to take the safety first approach at the occasion of submission and publishing of the ¡°Final Report of Full Review for the Appropriate Conduct of Self-Controlled Inspection on Nuclear Installations¡± on 28th of March 2003. \*The EMAIL message to all the employees of nuclear departments from Director General for Nuclear Installation  (2) Cheer up the pride and spirit of the NPP site workers \*Joint action team of the company¡¯s and subcontractor¡¯s site leaders at Kashiwazaki-Kariwa NPPs -Extract good practices and improvement items from the investigation and opinion polls -Implementation of four activities of adjustment, rearrangement, cleanliness and cleaning that are aiming to disseminate ¡°my plant consciousness¡± \*Opinion Exchange Meeting with Subcontractors at each NPP site -Adoption of the opinion for the improvement of NPP site management.  -Enhancement of Co-Working consciousness with subcontractors through bilateral communication.  \*Establishment of codes of conducts corresponding to NPP level, Group wise and individual   (3) Securing transparency by open information policy \*Disclose the minor events information that are well below the reporting level of regulatory body to the site vicinity and also to outside the TEPCO \*Establishing ¡°NPP local information meeting¡± (Fukushima Area and Kashiwazaki-Kariwa Area)  -Participation of the representatives of local residents and the reflection of their opinions -Disclosure of information about the NPP operation -Secure the free access of local residents to NPP \*Disclosure of NPP real time performance data (Generator Output, Radiation Monitoring Post Readings, Duct Radiation Monitor¡¡Readings etc.)  (4) Dissemination of ¡°Reporting Culture¡± \* Introduction of Corrective Action Program in Incompliance Management  \*Establishment of ¡°Incompliance Management Committee¡± -Implementation of inter-NPPs discussion and decision making of incompliance information (Grading of events, decision on reflection to other NPPs, to whom, to what organization the information to be reported etc.)  (5) Dissemination of Questioning Attitude \*Promotion of STAR (Stop/Think/Action/Review) activities at Kashiwazaki ¨CKariwa NPPs \*Promotion of CBA(Check Before Action) activities at Fukushima Daiichi NPPs  (6)Establishment of the framework to monitor job performance \*Establishment of ¡°Nuclear Safety /Quality Assurance Conference¡± - Outsiders¡¯ intensive review on nuclear safety and quality assurance \*Establishment of internal audit organization independent from nuclear department  - ¡°Nuclear Quality Audit Department (Headquarters)¡± and ¡°Quality Audit Department (each NPP)¡± \*Enhancement of cross-function on Quality and Safety (Destruction of Self Complacency Organizational Climate)  - Establishment of ¡°Nuclear Engineering /Quality Safety Department (Headquarters)¡± and ¡°Quality Safety Department (NPP)¡± | | |
|  | Country | Article  Article 10 | Ref. in National Report P10-1.Ch10.2 |
| Question/ Comment | Please give more information on the detail measures taken by Japan nuclear industry to strengthen safety culture. | | |
| Answer | The measures taken by the Japanese nuclear industry to strengthen the safety cultures are basically shown in 10.2(2)2).  As an example, followings are the measures taken by TEPCO.  (1) Announcement of Safety First Management Policy  \* Efforts to make known of ¡°TEPCO Corporate Charter¡± (Since November 2002, it is printed on the back of the cover of monthly corporate journal)  \*President re-instruct all the employees to take the safety first approach at the occasion of submission and publishing of the ¡°Final Report of Full Review for the Appropriate Conduct of Self-Controlled Inspection on Nuclear Installations¡± on 28th of March 2003.  \*The EMAIL message to all the employees of nuclear departments from Director General for Nuclear Installation   (2) Cheer up the pride and spirit of the NPP site workers  \*Joint action team of the company¡¯s and subcontractor¡¯s site leaders at Kashiwazaki-Kariwa NPPs -Extract good practices and improvement items from the investigation and opinion polls -Implementation of four activities of adjustment, rearrangement, cleanliness and cleaning that are aiming to disseminate ¡°my plant consciousness¡± \*Opinion Exchange Meeting with Subcontractors at each NPP site -Adoption of the opinion for the improvement of NPP site management.  -Enhancement of Co-Working consciousness with subcontractors through bilateral communication.  \*Establishment of codes of conducts corresponding to NPP level, Group wise and individual   (3) Securing transparency by open information policy \*Disclose the minor events information that are well below the reporting level of regulatory body to the site vicinity and also to outside the TEPCO \*Establishing ¡°NPP local information meeting¡± (Fukushima Area and Kashiwazaki-Kariwa Area)  -Participation of the representatives of local residents and the reflection of their opinions-Disclosure of information about the NPP operation -Secure the free access of local residents to NPP \*Disclosure of NPP real time performance data (Generator Output, Radiation Monitoring Post Readings, Duct Radiation Monitor¡¡Readings etc.)  (4) Dissemination of ¡°Reporting Culture¡± \* Introduction of Corrective Action Program in Incompliance Management  \*Establishment of ¡°Incompliance Management Committee¡± -Implementation of inter-NPPs discussion and decision making of incompliance information (Grading of events, decision on reflection to other NPPs, to whom, to what organization the information to be reported etc.)  (5) Dissemination of Questioning Attitude \*Promotion of STAR (Stop/Think/Action/Review) activities at Kashiwazaki ¨CKariwa NPPs \*Promotion of CBA(Check Before Action) activities at Fukushima Daiichi NPPs  (6)Establishment of the framework to monitor job performance \*Establishment of ¡°Nuclear Safety /Quality Assurance Conference¡±  - Outsiders¡¯ intensive review on nuclear safety and quality assurance \*Establishment of internal audit organization independent from nuclear department  - ¡°Nuclear Quality Audit Department (Headquarters)¡± and ¡°Quality Audit Department (each NPP)¡± \*Enhancement of cross-function on Quality and Safety (Destruction of Self Complacency Organizational Climate)  - Establishment of ¡°Nuclear Engineering /Quality Safety Department (Headquarters)¡± and ¡°Quality Safety Department (NPP)¡± | | |
|  | Country | Article  Article 10 | Ref. in National Report § 10.2 – p. 10-2 |
| Question/ Comment | Could Japan explain what practical measures have been taken by the Regulatory Body as result of meetings and studies mentioned in sub-paragraphs 1, 2, 3? | | |
| Answer | 1.Participation to International Meetings For example, Japan proposes “Standardization of inspection and audit of nuclear safety culture by regulatory body” at SEGHOF in joint CSNI/ CSNR OECD/NEA This becomes one of the themes for future discussion.  2.The activities of the NSC Subsection 10.2(1)2) explains the NSC’s activities supporting licensees to foster safety culture. The NSC doesn’t take any regulatory practices so far, the dialogue meetings promote licensee’s activity of safety culture. In the meetings, the licensees or cooperating companies explain their activities and the challenge they are facing and the NSC suggests advices in terms of promoting their activities. 3.The activities of NISA Followings are some examples of measures taken for the challenge to the regulatory body based on the discussion of the NISA’s advisory meetings on safety culture  a)The renovation to the efficient and effective regulation The requirements to the licence holder’s quality assurance system were established and the measures are under the way to establish licence holder’s quality assurance system.  b) Optimization of inspection and audit  As one of incentive to the licence holders, the optimization based on the evaluation of the performance of licence holder in the Periodic Safety Management Review (PSMR) are introduced, the volume and quality of inspection in the subsequent PSMR may be reduced if the PSMR results were excellent  c)Accountability to public Under the basic policy of ensuring the transparency of regulatory information and regulatory activities and the policy of dialogue and participation oriented systemic communication activities are under the way. | | |
|  | Country | Article  Article 10 | Ref. in National Report § 10.2 – p. 10-2 |
| Question/ Comment | Could Japan explain if the attempt to “quantify” the level of safety culture of the licence holders by the Regulator has been considered appropriate and beneficial for safety? | | |
| Answer | As a regulator, we would like to avoid the evaluation of the implementation of licensee’s QA system. Since so many human activities are involved in the QA system, it is difficult to quantify all the phases of human activities. We believe the execution of the requirements explained in Article 13 of our National Report. | | |
|  | Country | Article  Article 10 | Ref. in National Report 10.2 – p. 10-2 |
| Question/ Comment | During the second CNS review meeting Japan answered to a question that “the method for measuring the level of safety was under discussion at NUPEC”. Could Japan indicate whether these discussions led to measures applied by the Regulator and, if yes, which ones? | | |
| Answer | In the response to a question raised in the 2nd RM, Japan responded as follow. "The method for measuring the level of safety is under studying in NUPEC, that is a support organization of NISA, to develop the method based on the former ASCOT guidelines.". In the aforementioned developments, measures of the safety culture for licensees` self assessment has been developed and tried by pilot study . The publication of measures were published in Japan and presented to NUTHOS-6 (6th International Topical Meeting On Nuclear Reactor Thermal Hydraulics, Operations and Safety). Currently, the discussion on the regulatory approach to the safety culture is under the way, such as the requirement for the implementation of self-assessment by licensee, and the regulatory body`s review procedures about self-assessment, and inspections and evaluation items determined. | | |
|  | Country | Article  Article 10 | Ref. in National Report Chap. 10, P. 10-3 |
| Question/ Comment | How did safety culture improve after the implementation of various preventive measures against recurrence of falsification? | | |
| Answer | Taking an example of TEPCO, they are implementing following activities in order to enhance safety culture, and they are discussing adoption of Performance Indicator (PI) of safety culture and will implement it in near future. We expect the degrees of improvement of safety culture may be available.iThe similar questions are CN-4, SE-10j  (1) Announcement of Safety First Management Policy \* Efforts to make known of gTEPCO Corporate Charterh (Since November 2002, it is printed on the back of the cover of monthly corporate journal)  \*President re-instruct to all the employees to take the safety first approach at the occasion of submission and publishing of the gFinal Report of Full Review for the Appropriate Conduct of Self-Controlled Inspection on Nuclear Installationsh on 28th of March 2003. \*The EMAIL message to all the employees of nuclear departments from Director General for Nuclear Installation  (2) Cheer up the spirit and pride of the NPP site workers \*Joint action team of the companyfs and subcontractorfs site leaders at Kashiwazaki-Kariwa NPPs -Extract good practices and improvement items from the investigation and opinion poles -Implementation of four activities of adjustment, rearrangement cleanliness and cleaning aiming to disseminate gmy plant consciousnessh \*Opinion Exchange Meeting with Subcontractors at each NPP site -Adoption of the opinions for the improvement of NPP site management.  -Enhancement of Co-Working consciousness with subcontractors through bilateral communication.  \*Establishment of codes of conduct corresponding to NPP level, Group wise and individual   (3) Securing Transparency by open information policy \*Disclose the minor events information that are well below the reporting level of regulatory body to the site vicinity and also to outside the TEPCO. \*Establishing gNPP local information meetingh (Fukushima Area and Kashiwazaki-Kariwa Area)  -Participation of the representatives of local residents and the reflection of their opinions -Disclosure of information about the NPP operation -Secure the free access to NPP \*Disclosure of NPP real time data (Generator Output, Radiation Monitoring Post Readings, Duct Radiation Monitor Readings etc.)  (4) Dissemination of gReporting Cultureh \* Introduction of Corrective Action Program in incompliance management  \*Establishment of gIncompliance Management Committeeh -Implementation of inter-NPPs discussion and decision making of incompliance information (Grading of events, decision on reflection to other NPPS, to whom, to what organization the information to be reported etc.)  (5) Dissemination of Questioning Attitude \*Promotion of STAR (Stop/Think/Action/Review) activities at Kashiwazaki -KariwaNPPS \*Promotion of CBA(Check Before Action) activities at Fukushima Daiichi NPPS  (6)Establishment of the framework to monitor job performance \*Establishment of gNuclear Safety /Quality Assurance Conferenceh - Outsidersf extensive review on nuclear safety and quality assurance \*Establishment of internal audit organization independent from nuclear department  - gNuclear Quality Audit Department (Headquarters)h and gQuality Audit Department (each NPP)h \*Enhancement of cross-function on Quality and Safety (Destruction of Self Complacency Organizational Climate)  - Establishment of gNuclear Engineering /Quality Safety Department (headquarters)h and gQuality Safety Department (NPP)h | | |
|  | Country | Article  Article 10 | Ref. in National Report 10.2 |
| Question/ Comment | (10-2, Efforts for Improvement in Safety Culture) You have made great efforts to enhance safety culture of nuclear industry. Did you evaluate the safety culture of regulatory body, especially after TEPCO issue? Do you have any plan to promote programs for the safety culture of regulatory body(NISA) and related organization(JNES)? | | |
| Answer | Methodology to establish safety culture within regulatory bodies is still under discussion. Also, methodology to evaluate it in both regulatory bodies and license holders has yet to be established. The training curriculum of NISA and JNES personnel includes lectures on mission, vocational ethics, equity, etc. | | |
|  | Country | Article  Article 10 | Ref. in National Report p10-1 |
| Question/ Comment | 1. In para 10.2(p.10-1), activities to enhance regarding promotion of safety culture were stated. Regarding activities of the NISA, could you provide more detailed explanation about clarified tasks of nuclear business operator and regulatory body to resolve the problems related to the deterioration of safety culture?  2. It is stated that, in paragraph 4), as an attempt of regulatory body to monitor and quantify safety culture level of license holders, JNES prepared review items on safety culture. Do you think it possible for regulatory body to do so?   3. Please provide us more detailed explanation about future plan of JNES's activities related to safety culture. | | |
| Answer | 1. There exists no regulatory activity of NISA directly intended to prevent deterioration of safety culture of the license holder. The regulatory body, through the Periodic Safety Management Review, reviews safety culture-related requirements for organizational management in JEAC4111-2003, a quality management document adopted by license holders.   2. We understand that elements in safety culture such as “attitude” and “recognition” may not be in the scope of regulatory control.   3. Future plan includes clarification of the requirements for licensee’s self-assessment of safety culture, methodology for regulatory control, interface between safety culture and requirements for quality management, etc. | | |
|  | Country | Article  Article 10 | Ref. in National Report 10.2 |
| Question/ Comment | Under 10.2 is stated that JNES prepared review items on safety culture as a tool for the regulatory body to monitor and to quantify safety culture and examined the adequacy of these items by applying them to incidents. Does that mean that safety culture is only an issue for the regulatory body if an event/incident has occurred? What does NISA and/or JNES do to monitor regularly the daily safety culture at the plants? | | |
| Answer | The description of 10.2, 4) introduces that the attempt was conducted to examine the adequacy of the review items developed by JNES applying them to foreign and domestic incidents that might be caused by organizational deficiency, it is not our intention that the safety culture is only an issue for the regulatory body if an event/incident has occurred.  In the regulatory requirements during the monitoring of the adequacy of licensees’ quality management system, the elements related to safety culture are partially included, thus regulatory body confirms the quality management system is effectively operated. | | |
|  | Country | Article  Article 10 | Ref. in National Report 10.2 |
| Question/ Comment | In 10.2 is stated that part of improving safety culture in the nuclear industry is done by Peer Review activities. How often are these missions being held? Are those different than, e.g., IAEA-OSART missions or similar WANO missions? | | |
| Answer | 1. The frequency of peer review of NS net is 1/(4-6years)/facility 2. The differences from OSART/WANO peer review NS net peer review members participate to the review as “equal partners”, they are the domestic members of NS net that are organizations related nuclear business, research institutes.The review result is open to the public. | | |
|  | Country | Article  Article 10 | Ref. in National Report A10.2 P10-1 |
| Question/ Comment | In the renovated safety regulation by the NSC and NISA, the requirements for the licence holder’s quality assurance activities including organization, management etc. have been included, urging the licence holders to establish robust safety culture. Japan may kindly elaborate the requirements for assessment of safety culture by the regulatory body? | | |
| Answer | At present, contents of regulatory activities to evaluate safety culture in the current regulatory requirement to licensees’ quality management system(\*), need to be agreed and understood between regulatory body and licensees.(\*):whether implementation of licensees self assessment of the attitude behavior are necessary? and how to treat these self assessment?There is no rule which carries out direct regulation of the safety culture. In section 10.2(1), 2) explains the NSC’s approach to support licensees in fostering the safety culture, the example is opinion exchange meeting on safety culture. In the meeting, licensee reports their approach and their challenges in fostering safety culture, the NSC members advises the licensee to enhance safety culture from various view points.The NSC is analyzing the information obtained in the opinion exchange meetings, and is supporting the evaluation of NPPs’ safety culture.The NSC is not defining the performance indicator (PIs) to evaluate safety culture but supporting the licensees to define these PIs. | | |
|  | Country | Article  Article 10 | Ref. in National Report Page 10-3 |
| Question/ Comment | “Some utilities have established institutes for research of safety culture and human factors” Could you provide some details regarding the size of these institutes and about their activities. | | |
| Answer | The examples of the licence holder’s institutes for safety culture and human factors are  (1) Central Research Institute of Electric Power Industry, Human Factors Research Center http://criepi.denken.or.jp/en/ (2) TEPCO R&DOrganization http://www.tepco.co.jp/company/rd/kaihatsu/taisei/index-j.html (3) Institute of Nuclear Safety System, Inc. Institute of Social Research http://www.inss.co.jp/e/index.htm | | |
|  | Country | Article  Article 10 | Ref. in National Report Subsection 10.2(2) |
| Question/ Comment | Subsection 10.2(2) says that NSC assists in the assessment of safety culture characteristics of Japanese NPPs. What characteristics and indicators have been adopted in Japan to assess the status of safety culture at NPPs? | | |
| Answer | Subsection 10.2(1)2) explains the NSC’s activities supporting licensees to foster safety culture. Dialogue meeting is one example of these activities. In the meetings, the licensees or cooperating companies explain their activities and problems for fostering their safety culture and NSC exchanges views in terms of promoting their activities. The NSC assists in the assessment of safety culture at NPPs by means of analyzing the facts got from the meetings. So far, the NSC doesn’t have any specified the indicators to assess the status of safety culture at NPPs, but the NSC is supporting the licensees to identify these indicators. | | |
|  | Country | Article  Article 10 | Ref. in National Report |
| Question/ Comment | Please explain in a little more detail what programmes are currently in place at the Japanese NPPs to promote good safety culture among staff at all levels of the organisation? What is the experience of the efforts made so far to promote good safety culture? | | |
| Answer | The measures taken by the Japanese nuclear industry to strengthen the safety cultures are basically shown in 10.2(2)2). As an example, followings are the measures taken by TEPCO. (1) Announcement of Safety First Management Policy \* Efforts to make known of "TEPCO Corporate Charter" (Since November 2002, it is printed on the back of the cover of monthly corporate journal)  \*President re-instruct all the employees to take the safety first approach at the occasion of submission and publishing of the "Final Report of Full Review for the Appropriate Conduct of Self-Controlled Inspection on Nuclear Installations" on 28th of March 2003. \*The EMAIL message to all the employees of nuclear departments from Director General for Nuclear Installation (2) Cheer up the pride and spirit of the NPP site workers \*Joint action team of the company's and subcontractor's site leaders at Kashiwazaki-Kariwa NPPs -Extract good practices and improvement items from the investigation and opinion polls -Implementation of four activities of adjustment, rearrangement, cleanliness and cleaning that are aiming to disseminate "my plant consciousness" \*Opinion Exchange Meeting with Subcontractors at each NPP site -Adoption of the opinion for the improvement of NPP site management.  -Enhancement of Co-Working consciousness with subcontractors through bilateral communication.  \*Establishment of codes of conducts corresponding to NPP level, Group wise and individual (3) Securing transparency by open information policy \*Disclose the minor events information that are well below the reporting level of regulatory body to the site vicinity and also to outside the TEPCO \*Establishing "NPP local information meeting" (Fukushima Area and Kashiwazaki-Kariwa Area) -Participation of the representatives of local residents and the reflection of their opinions -Disclosure of information about the NPP operation-Secure the free access of local residents to NPP \*Disclosure of NPP real time performance data (Generator Output, Radiation Monitoring Post Readings, Duct Radiation Monitor¡¡Readings etc.) (4) Dissemination of "Reporting Culture" \* Introduction of Corrective Action Program in Incompliance Management  \*Establishment of "Incompliance Management Committee" -Implementation of inter-NPPs discussion and decision making of incompliance information (Grading of events, decision on reflection to other NPPs, to whom, to what organization the information to be reported etc.) (5) Dissemination of Questioning Attitude \*Promotion of STAR (Stop/Think/Action/Review) activities at Kashiwazaki -Kariwa NPPs \*Promotion of CBA(Check Before Action) activities at Fukushima Daiichi NPPs (6)Establishment of the framework to monitor job performance  \*Establishment of "Nuclear Safety /Quality Assurance Conference" - Outsiders' intensive review on nuclear safety and quality assurance \*Establishment of internal audit organization independent from nuclear department - "Nuclear Quality Audit Department (Headquarters)" and "Quality Audit Department (each NPP)" \*Enhancement of cross-function on Quality and Safety (Destruction of Self Complacency Organizational Climate) - Establishment of "Nuclear Engineering /Quality Safety Department (Headquarters)" and "Quality Safety Department (NPP)" | | |
|  | Country | Article  Article 10 | Ref. in National Report |
| Question/ Comment | The nuclear safety Planning committee and the nuclear safety Steering committee are mentioned. What are the composition and authority of these committees? For how long have they been in place? | | |
| Answer | Followings are an example of one of license holder's practice.  Following items are provided in the Operational Safety Program (OSP) and if any of those items are within the scope of any one of the following designated committees, then those items can not be implemented unless these items must be deliberated and confirmed in the discussion of any one of the designated committee.  (Nuclear Safety Planning Committee )  1.Nuclear Safety Planning Committee is established at its head office (Article 6 of OSP) 2.Nuclear Safety Planning Committee deliberate and confirms followings. Some of the items that are pre-defined must be deliberated and confirmed in Nuclear Safety Steering Committee at each site, before this committeefs deliberation. (1) Any changes to the equipments, systems and the facilities that are described in the main text of the Establishment License Application Document  (2) Any change s to OSP (3)Other matters that this committee decided to do so. 3.The chairman is the director of the nuclear power generation department. 4. The committee members are chairman, Nuclear Engineering Quality And Safety Department Manager, Nuclear Power Operation Department Manager, Reactor Chief Engineers and those personnel that the chairman has selected among the General Managers.   (Nuclear Safety Steering Committee) Nuclear Safety Steering Committee is established at each site. office (Article 7 of OSP) .The Steering Committee deliberate and confirm the following items relating to the safety of NPPs. Some of the minor items that are predetermined by the Steering Committee will be excluded.  (1) Items related to safety management regime (2) Items related to periodic evaluation of NPPs (3) Items related to operation management (4) Items related to fuel management  (5) Items related to radioactive waste management (6) Items related to radiation control (7)Items related to maintenance (8) Items related to the modification of reactor facility (9) Items related to the operator action during emergency conditions  (10) Items related to training and education for safe operation (11)Items related the follow up of the implementation of measures to prevent recurrence of incidents that are occurred at similar NPPs  3. The chairman is the Director of the Station. 4. The Steering Committee consists of the chairman, Nuclear Engineering Quality And Safety Department Manager, Reactor Chief Engineers and those personnel that the chairman has selected among the General Managers.  Similar committees are organized in every Power Companies since 1970s. | | |
|  | Country | Article  Article 10 | Ref. in National Report s.10 p 10-1 to 10-4 |
| Question/ Comment | Do licensees conduct self assessments of their safety culture? What performance measures, if any, are being used to measure safety culture of an operating organization? | | |
| Answer | At present, the implementation of self assessment of safety culture and the disclosure of the results to regulatory body, general public stakeholders are not mandate of the licence holder.  However, the licence holders recognize the necessity of self assessment.  For example, TEPCO is now reviewing the Performance Indicators (PI) on Safety Culture in order to utilize for self assessment of safety culture, and in near future, it is expected to be applied. At present the study on the PIs to measure Safety Culture is in progress at CRIEPI. | | |
|  | Country | Article  Article 11 | Ref. in National Report 11.3, p 11-2 |
| Question/ Comment | The report indicates that “nuclear regulatory bodies and nuclear power industry are making efforts for ensuring nuclear experts now and in the future.” Please indicate how such efforts are financed. Are the activities of regulatory bodies financed through fees imposed on the license holders? | | |
| Answer | The financial resources for the training and education of the specialists of regulatory bodies, industries, universities/institutes are provided within the budget for their own organization.  The budget for regulatory bodies is basically government budget.  As to JNES, grants, fees for entrust are delivered from the government budget to JNES budget. In addition, the license fees to JNES are use as the part of the JNES budget. | | |
|  | Country | Article  Article 11 | Ref. in National Report A11.3 P11-3 |
| Question/ Comment | Japan may mention policy regarding posting of inspectors at a specific site. Is there any limit on the duration of stay at a particular site in order to preclude complacency in the inspectors for a specific NPP? | | |
| Answer | Jobs of nuclear safety inspectors are regularly rotated along with general rotation procedure of other personnel. There is no fixed term for rotation, usual term is two years or three years. | | |
|  | Country | Article  Article 11 | Ref. in National Report 11.3 |
| Question/ Comment | A senior specialist on Nuclear Emergency is stationed at each nuclear installation with duties also to prevent progression of a nuclear emergency. How does this affect the licensees responsibilities to take adequate measures in an emergency situation? | | |
| Answer | In accordance with the Special Law for Nuclear Emergency, in an emergency, licensees must take appropriate actions to resolve emergency conditions.  The licensee's Manager for Nuclear Emergency Preparedness must inform to the Senior Specialist for Nuclear Emergency at site and to NISA of the Specific Event.  The Senior Specialist for Nuclear Emergency prepares the facilities in Off-site center at stand-by conditions, receiving the notice from the licensee, collect the information to understand the situations, and is expected to make advise to tentative measures, to act as the core in the nuclear emergency response at the frontline, and to make effort to act in cooperative way with the relevant organizations In this way the rolls of licensee and the related organizations were clearly defined and their responsibilities are clear. | | |
|  | Country | Article  Article 11 | Ref. in National Report 11.3 |
| Question/ Comment | Is there a system to rotate the nuclear safety inspectors stationed at the NPPs? If yes, please explain. | | |
| Answer | Jobs of nuclear safety inspectors are regularly rotated along with general rotation procedure of other personnel. His/her next job will be assigned considering his/her specialty, his/her suitability for the job and his/her own view on the job as well as NISA's demand for the job. | | |
|  | Country | Article  Article 11 | Ref. in National Report 11.3 |
| Question/ Comment | As in many nuclear countries, there is a concern in Japan about the generation shift of competent staff in the industry. What is the average age of the licensed personnel groups mentioned in table 11-1? Are there any current problems to recruit new staff? | | |
| Answer | The average ages of the licensed personnel were not estimated. | | |
|  | Country | Article  Article 12 | Ref. in National Report § 12.2 – p. 12-3 |
| Question/ Comment | The report indicates that symptom-oriented procedures are prepared in addition to scenario-based procedures: could Japan give some details on the use of these procedures (when and on which criteria do the operators choose each type of procedures)? | | |
| Answer | Plant parameters and the limits to identify the plant conditions are pre-defined so as to select appropriate procedure in accordance with the plant conditions.  For example, when any reactor trips happen, operator monitors the pre-defined parameters, and when it is possible to identify the event, he follows scenario-based procedure, during in this procedure or in the cases when he can not identify the event, and when the pre-defined parameters exceeded certain limits, he moves to symptom-based procedure. Further, when the readings of radiation monitor(s) within containment vessel exceeds limits, he moves to AM manuals. Training course using simulator, for the switching between appropriate procedures are conducted. Please see the answer to the Question (Seq.No.94 from Russia) which is similar to this. | | |
|  | Country | Article  Article 12 | Ref. in National Report 12.2 (3), p12 |
| Question/ Comment | Your National Report described that verification and assessment of the modification works are performed to prevent human errors in the maintenance and management works.  What kind of 'Human Factors activities' is required for preventing human errors in modification work? | | |
| Answer | 1. License holders established their own nuclear training centers where extensive training and education for operation managements and maintenance managements are conducted.  2. To improve work management, the qualification system for work manager was established, and during the training and education on work management and on safety education, the experiences of the past failures and human errors were introduced in order to prevent human errors and its recurrences.  3. To improve work process or techniques, the training at nuclear training centers and mock up training at manufacturing plants were conducted for the workers before their engagement in special modernization works like the replacement of components in reactor vessel and preventive maintenance work for SCC(laser peening), because these works need high level techniques and skills. | | |
|  | Country | Article  Article 12 | Ref. in National Report 12.1 , p12-1 |
| Question/ Comment | Human Performance may be incorporated in the Risk-Informed Implementation Plan.  What kinds of human performance and methodology are required in relation with the implementation of Risk-Informed regulation in your country? | | |
| Answer | At present, implementation of Risk Informed Regulation is under intense discussion in NISA. Risk Informed Regulation depends on Probabilistic Safety Assessment, where reliability of human behavior is widely analyzed. The analysis needs human error data collection, evaluation of omission errors by THERP method and evaluation of system and components failure recovery error. | | |
|  | Country | Article  Article 12 | Ref. in National Report |
| Question/ Comment | According to estimates from different sources, up to 40% of emergencies at NPPs are caused by human errors (NPP operating, maintenance and servicing personnel). It would be desirable to learn about the achievements at Japanese NPPs in the area of reducing the number of plant personnel errors. What methods of reducing human factor induced failures out of those recommended by IAEA and IEC have proved to be most effective (please, give examples from the operating experience and quantitative estimates of results)? | | |
| Answer | Concerning the effort for reduction of human errors by licensees, it was explained in detail at section12.2 for design and operation stage. As shown in figure 2.6 of Annex, the number of human errors per reactor is decreased. Due to the aging of NPPs, modernization works are increasing, the importance for the reduction in the maintenance work is increasing. In order to reduce human errors in modification works, following measures were taken. The measures in management aspects, qualification system for “Work Manager” were established, in the system, past troubles and human errors information was introduced in the safety and work management training process in order to prevent the recurrence of human errors.  In the construction aspects, training in NPP Maintenance Training Center or mock-up training at factory can be introduced for the high-grade technology or special modification works like replacement of components within reactor vessel, or preventive maintenance for SCC (laser peening) | | |
|  | Country | Article  Article 12 | Ref. in National Report Subsection 12.2(2) |
| Question/ Comment | Subsection 12.2(2) says that NPPs have procedures developed to cope with design-basis accidents. Besides, there exist symptom-based emergency operating procedures, which allow to prevent accident progression without identification of the causes (initiating event). Procedures are also available to deal with severe accidents which go beyond the design basis. 1) Does it follow from the above that three kinds of emergency procedures are in force at every nuclear plant? 2) If so, then are there criteria for passing from one type of procedure to another? 3) Who performs the management of operating personnel actions during accident management efforts? 4) Do you have drills to train the passing over from actions under one kind of procedure to another? 5) Which document specifies the requirements to the scope and sequence of conducting the Periodic Safety Review (PSR) as well as requirements to the content and structure of PSR report? | | |
| Answer | 1) Three kind of emergency procedure are equipped in all the NPPS in Japan. 2) Criteria (Parameters to be monitored) are pre-determined so that the operator may use appropriate procedure in accordance with the plant conditions. 3) Actual actions are performed by individual operator, the operator perform necessary actions following the instructions of shift supervisor under the conditions prepared for the appropriate operator actions are possible. 4) Drills to train the passing over from actions under one kind of procedure to another are performed using training simulators. 5) As explained in sections 14.3(2) of our National Report, NISA issued a Notification in December 2003 titled “On the Implementation of the Periodic Safety Review”, under the Rules for Commercial Power Reactors, which requested license holders to conduct the Periodic Safety Review. In the notification NISA request licence holders to conduct evaluation of implementation status of maintenance activities, the reflection of up-to-date technology to the maintenance activities.  The detailed requirements are provided in the NISA instruction document “The implementation of Periodic Safety Review of Light Water Reactor” dated 17th of December 2003, NISA No,1-031204 | | |
|  | Country | Article  Article 12 | Ref. in National Report |
| Question/ Comment | How is organisational change reviewed by NISA? Are there many such cases? | | |
| Answer | When any changes in NPPs' organization that may affect the safe operation, licence holders must notify the change in Operational Safety Program(OSP), and need approval of the changes from NISA.  The observance of the OSP is confirmed in Nuclear Safety Inspections. | | |
|  | Country | Article  Article 13 | Ref. in National Report P13-3.Ch13.3 |
| Question/ Comment | How to implement quality surveillance activities besides the QA audit in nuclear power plants? | | |
| Answer | Licenseesf QA activities are done in accordance with JEAC4111-2003 gRules of Quality Assurance for Safety of Nuclear Power Plantsh that is basically same as ISO9001.  As an activity about the evaluation of licenseesf quality management system@(QMS), top management regularly reviews the corporate QMS including that of NPPs. It requires to@do internal audit, process monitoring, measuring, inspecting and testing the QMS (corresponds to Check in the PDCA cycle). As to procurement control, QA surveillance of supplier by the licensee requires to follows gProcurement Controlh in the said Rule. i.e. (1)In the selection of suppliers, it evaluates ability to supply the procured goods. (2)In the verification of the supplied goods, inspections or other necessary activities are done to confirm the procured goods satisfy the requirements.  The regulatory bodyfs activities about these licenseesf QA activities are explained in section13.2 of our national report. | | |
|  | Country | Article  Article 13 | Ref. in National Report § 13.1 – p. 13-1 |
| Question/ Comment | Could Japan specify whether a Quality Management Programme for Regulatory activities has been developed and, if yes, what are the main features of this programme? | | |
| Answer | NISA does not have adopted a quality management system for its regulatory activities similar to IAEA guidelines or ISO-9000 series. As the regulatory activities of NISA are detailed in our national report, Articles 7, 8, 17, 18, a Quality Management System for regulatory activities is built in NISA’s regulatory framework itself. For example, “Plan” is given by the relevant legislation on safety regulation. Also, NISA participate in IAEA’s activity to establish management system, and watches other international activities in that area. | | |
|  | Country | Article  Article 13 | Ref. in National Report p. 13-3, 13.3 |
| Question/ Comment | The license holder audits the manufacturer’s QA activities. The license holder performs an independent in-house QA audit by departments other than the nuclear department reporting directly to top management. Are external audits performed for the license holder by an independent organisation? | | |
| Answer | Licensee is requested to provide the methods to control appropriate implementation of purchasing goods or services. In order to satisfy these requirements, licensee audit contractor’s QA activities. Licensee is requested also to conduct audit regularly in order to clarify the necessary safety management activities are performed. When any independent organization within the licensee’s organization exists, this independent organization conducts the audit. Further, licensee is requested to be inspected by NISA and JNES by the laws. However, it is not requested to licensee as a regulatory requirement, to be audited by independent external organization. | | |
|  | Country | Article  Article 13 | Ref. in National Report 13.2 |
| Question/ Comment | According to Article 13.2, Confirmation of QA by Regulatory Body, NISA performs examination of QA program in construction stage.  Doesn't NISA perform any confirmation activities such as inspection or audit on QA during construction stage, i.e. manufacturing of major components? | | |
| Answer | As shown in 13.2(2), NISA requests the license holder to submit the “Description on QA Program”. Welding inspections and pre-service inspections are conducted to confirm the integrity of the main components in manufacturing stage. The discussions of regulation for NISA to conduct systematic surveillance on licensee’s quality assurance system at the construction stage are under way. | | |
|  | Country | Article  Article 13 | Ref. in National Report |
| Question/ Comment | It is now legally required of the licensees to have a QA programme and NISA inspects the implementation of this programme. What is the experience so far? | | |
| Answer | The Reactor Regulation Law, by the amendment of October 2003, stipulates that the license holder should establish a quality assurance (QA) program and include it in their Operational Safety Program. License holders prepare QA program in accordance with JEAC4111-2003, which is duly accepted by the regulatory body. In May 2004, NISA approved all of the new Operational Safety Programs submitted by all of license holders. The Nuclear Safety Inspection by NISA on the license holder's QA program started in 2004. NISA is, at present, closely watching development of the quality management system (QMS) in the license holder's QA program. Also, the Nuclear Safety Inspectors stationed at all of the nuclear installation are jointly developing the standard procedure for the Nuclear Safety Inspection, coordinating inspection method and sharing information on the inspection. | | |
|  | Country | Article  Article 14 | Ref. in National Report 14.6, p 14-8 to -11 |
| Question/ Comment | This section on risk informed regulation describes what Japan is undertaking in this area. Most of the text of this section deals conceptually with the idea and suggests the need for further study. Japan has accepted the idea of risk informed regulation but has not yet found a way to implement it which would satisfy the needs of stakeholders. They are seeking input from academia, and industry, and have not actually implemented this concept yet. Please provide an update at the Third Review Meeting. | | |
| Answer | At the end of 2004, “Risk Information Application Sub-committee” was established under the Nuclear and Industrial Safety Subcommittee. The mandate of the subcommittee is deliberation of the basic concept of the risk information application, preparation of the application program and the discussion on the preparation of the guidelines for regulation.  The first meeting was held at the beginning of 2005, and the discussions are in progress. | | |
|  | Country | Article  Article 14 | Ref. in National Report P14-5.Ch14.3 |
| Question/ Comment | How to utilize PSR results to improve aging management in nuclear power plants? | | |
| Answer | Aging management (AM) is defined as different from Periodic Safety Review (PSR shown in 14.3(2)1)) in the Reactor Regulation Law. AM is required for the nuclear reactors before the day of 30 years after commissioning, as shown in 14.3(2)2) in the report.Section “14.3(2) Periodic Safety Assessment” requires licence holders to perform two kinds of evaluations.  The first one is”Periodic Safety Review” that is provided in the first section of Article 15-2 of “The Rule for Commercial Nuclear Power Reactors”, and it is required every 10 years after commissioning. The second one is the Aging Management Review (AMR) that is provided in the second section of Article 15-2 of “The Rule for Commercial Nuclear Power Reactors”, and it is required every 10years after the 30 years of the commission.  In AMR, license holders technically evaluate if the current maintenance activities are effective to the prevention of the loss of function of the components and structures due to the conceivable revelation of aging phenomena on structures and components of nuclear power stations. The licence holders prepare 10 years maintenance program (Long-Term Maintenance Program) reflecting the afore-mentioned technical evaluation.  NISA evaluates the Long Term Maintenance Program, and NISA reflects the results on its inspection program. | | |
|  | Country | Article  Article 14 | Ref. in National Report 14.5, page 14-8 |
| Question/ Comment | On page 14-8 it is stated: "Since indicators of the qualitative goal is important to show the safety level, it is desirable to be objective and common to all risks accompanied to various activities, in which the possibility of health damage is not fully excluded.Therefore, the individual mortality of the pubic should be used as the indicator to meet these requirements. And the events to be concerned that may have effects on the quantitative goal are both internal events such as failure of components and human error, and external events such as earthquakes, tsunamis, and fall of an airplane. But, intentional and artificial events such as destructive activity against an industry are excluded." Japan is a densely populated country. A major nuclear accident may have a serious impact on population centres in the vicinity of nuclear installations. Have you also considered the use of societal risk (group risk) and soil contamination as indicators? | | |
| Answer | The draft safety goal, published by the Nuclear Safety Commission, deals only with the risk to an individual member of the public. When compiling draft safety goal, safety goals for collective dose and for societal risk were discussed profoundly. But they were not adopted, it being considered that these safety goals need further comprehensive discussion, and quantification of these safety goals is very difficult. | | |
|  | Country | Article  Article 14 | Ref. in National Report |
| Question/ Comment | Safety assessment through PSR – “PSA for internal events during the shutdown condition was additionally implemented through the PSR in 2001 and afterwards”. Could you provide more details about the shutdown PSA and what are the main initiating events considered? | | |
| Answer | In the PSA for shutdown condition, 15 states were defined for the plant conditions from hot-shutdown, decay heat removal by RHR operation including mid-loop operation, reactor restart, to power operation. For each states, stand-by conditions of emergency power decay heat removal system are considered, and the core damage frequency due to the failure of decay heat removal. Main initiating events are loss of RCS inventory, loss of one train of RHR system, maintenance LOCA(J&K LOCA), station blackout and reactivity accidents. | | |
|  | Country | Article  Article 14 | Ref. in National Report |
| Question/ Comment | Are there any legal requirements to ensure financial resources for waste management and decommissioning? | | |
| Answer | As shown in 11.1(2) of our National Report, deposit of Fund for Dismantling Nuclear Power Facilities, and deposit for reserves covering final disposal of vitrified wastes were enacted in laws. METI enacted the Ministerial Order of Reserve Fund for Dismantling Nuclear Power Facilities, in accordance with the provisions of Article 35 of the Electricity Utilities Industry Law. Electric utilities deposit reserves for decommissioning on the basis of this order. The total amount deposit by ten utilities at the end of fiscal 2003 was about 1 trillion yen. They also deposit reserves covering final disposal of high level radioactive wastes and other wastes resulting from reprocessing of spent fuels. The deposit is reserved in financial accounts of the Nuclear Waste Management Organization of Japan, an implementing organization for disposal, founded by the Law for Final Disposal of Specified Radioactive Waste enacted in June 2000. | | |
|  | Country | Article  Article 14 | Ref. in National Report Section 14.4 |
| Question/ Comment | Section 14.4 of the Report says that in 2002 NISA enacted an "Assessment Standard on the Airplane Fall Probability to a Nuclear Power Reactor Facility", which is taken into account during NPP siting activity. 1) Does this standard have a probabilistic criterion that defines a possibility to disregard an event like aircraft crash in the design basis for reactor containment? 2) What measures/actions can reduce the probability of such an event? 3) If it is impossible to reduce this probability to an acceptable level, then what aircraft parameters (mass, velocity) are input in containment strength calculations? | | |
| Answer | 1.@The criterion for consideration for design to reactor facility of the aircraft crash is 10 to -7th per reactor year.  2.@The guidance to avoid the flight over the vicinity of reactor site are done to the air carriers by National Aviation Control Authority. The prohibition of the flight under the regulated height is enforced above the nuclear installation by the authority. The signal lights are installed at NPPs in for easy recognition of the NPP. 3.@The NPP sites in Japan were chosen so that the frequency of aircraft crash were estimated so low that aircraft crash were never considered in the design of containment vessels. | | |
|  | Country | Article  Article 14 | Ref. in National Report 14.3 |
| Question/ Comment | In PSR, reactors are assessed against “state of the art” technical knowledge. What documents or standards are evaluated for that purpose? | | |
| Answer | NISA issued a Notification in December 2003 titled “On the Implementation of the Periodic Safety Review”, under the Rules for Commercial Power Reactors, which requested license holders to conduct the Periodic Safety Review and assess how they implemented lessons learned from experiences at national and foreign nuclear installations and technical knowledge obtained from various research and development efforts. | | |
|  | Country | Article  Article 14 | Ref. in National Report 14.4 |
| Question/ Comment | Please provide an overview of the current state of PSA level 1 and 2 for the 52 Japanese NPPs? How is PSA used in the safety work of the licensees? | | |
| Answer | 1. As to operating 52 plants, results of level 1 PSA to before and after the preparation of AM, and the results of level 2 PSA (for C/V failure frequency) for 11 typical plants were reported in 2002 fiscal year, the results of remaining 42 plants were reported in 2003 fiscal year.  2. As shown in the section 14.4 (2) and (3) of our National Report, licence holders use PSA in the preparation and the verification of AM, in PSR and AOTs. | | |
|  | Country | Article  Article 14 | Ref. in National Report 14.6 |
| Question/ Comment | What is the time plan for introduction of risk informed safety regulations? How to win public understanding of this? | | |
| Answer | At the end of 2004, “Sub-committee for the application of risk information” was established under the “Nuclear and Industrial Safety Subcommittee, ACNRE.  The Subcommittee deliberates the basic concept of the application of risk information to regulatory decision making, prepare the program for the application of risk information and discuss the preparation of guideline for regulation.  The first Meeting was held in early 2005, and the discussions are going on.  On the basic concept of the application of risk information to regulatory decision making, it will be posted for public comment to reflect the public opinion.  As one of the action plan for the application of risk information, information release by way of news letter, Web-site, various symposium and meeting of academic society may be taken in order to obtain public understanding through transparent discussion and opinion exchange process. | | |
|  | Country | Article  Article 14 | Ref. in National Report |
| Question/ Comment | 1. The “Aging Management Review” is conducted after 30 years of operation. At the same time, electronics of the process control system are considered outdated and obsolete in 10 years. Is their replacement obligatory in accordance with the established intervals? | | |
| Answer | The regulatory body does not request the licensee to replace the electronics of the process control system.  Licensee conducts maintenance work to their SSCs, considers the degradation of parts, availability of replacing parts and recommended life time and prepares renewal plans. | | |
|  | Country | Article  Article 14 | Ref. in National Report |
| Question/ Comment | 2. Could more detailed information on implementation of Standard Technical Specifications (STS) in Japan, mentioned in para 14.4 of the Report, as a method to assess the adequacy of the time authorised for equipment outage be obtained? | | |
| Answer | AOT was set based on the operation performances of Japanese NPPs considering the effect of domestic equipments’ failure data, and the adequacy of recovering time, using US Standard Tech Spec. as a reference. | | |
|  | Country | Article  Article 14 | Ref. in National Report S.14 p.14-6 to 14-11 |
| Question/ Comment | How does the operator of the facility use the risk data? For example, is the risk assessment used for decision making regarding backfitting or evaluating proposed design changes? The report does not describe this aspect. | | |
| Answer | Examples for using risk information in the decision making of the design change by licensees are following,  In the application to the ABR design: CDF of ABWR was reduced about 1/10 of that of BWR5 by the improvement of high pressure ECCS, 3 trains RHRS, and diversity for control rods driving forces. | | |
|  | Country | Article  Article 14 | Ref. in National Report S 14 p 14-1 to 14-11 |
| Question/ Comment | What plant design, equipment and test changes must receive regulatory approval prior to implementation? On what basis does the regulatory authority approve the proposed design changes? What documentation substantiates the approval? | | |
| Answer | When licensee intends to change the items licensed or approved under Reactor Regulation Law, or to change the items on Construction Plan approved under Electric Utility Industry Law, before the implementation of the changes, the licensee must apply in accordance with the relevant laws for the approval of the change.  The procedures and the criteria of the examinations are as explained in 14.1 and 14.2 of our National Report. When licensee intends to change test described in the Operational Safety Program, he must apply for the approval of NISA for the changes of the Operational Safety Program. | | |
|  | Country | Article  Article 14.1 | Ref. in National Report § 14.3 – p. 14-4 |
| Question/ Comment | During the 2nd CNS Review meeting, in response to question n°75 related to Article 14, Japan answered (written response, page 22/36) that large contribution to CDF occurs during mid-loop operating conditions before fuel unloading in PWR and during reactor restoration after refuelling in BWR.  Could Japan indicate what precise measures were taken to reduce CDF contributions during shutdown or low power operations? (Changes in procedures, implementation of additional instrumentation, modification of technical specifications...). | | |
| Answer | In some PWRs, additional water-level instrumentations, e.g. ultra sonic instrumentations, were equipped in order to improve the monitoring of water-level during mid-loop operation, and these contributed the reduction of CDF.  Some of AM measures during operation are also effective to CDF reduction during shutdown conditions. (Examples are emergency power supply from the adjacent unit both for PWRs and BWRs, alternate emergency injection for BWRs.) As an example of the developments of operation manual, some plants prepared the manual for mitigation action for the loss of RHR function ( Reflux cooling and gravity injection for PWRs) No change was made in technical specifications( Operational Safety Program). | | |
|  | Country | Article  Article 14.1 | Ref. in National Report § 14.3 – p. 14-5 |
| Question/ Comment | Among items to be implemented at the PSR, this report mentions that there is an evaluation of the state of the art, technical knowledge to activities for safe operation (consideration of the newest technical knowledge). During the 2nd CNS Review meeting, Japan answered to question n°105 that the earthquake level was not assessed on the occasion of a periodic safety review (written response, page 31/36). Could Japan indicate if it has changed its position? | | |
| Answer | In the past, re-confirmation of seismic safety for existing nuclear installations was performed, although the re-confirmation was not a part of PSR. In the PSR for individual nuclear installation, re-confirmation of seismic safety was not required.  The review of guideline for examination of seismic design of nuclear power plants is on going and Seismic PSA is one of the major issues on the review process. Seismic-PSA will be the considerable evaluation methods in the guideline after the practical trial of the Seismic PSA for existing NPPs. | | |
|  | Country | Article  Article 14.1 | Ref. in National Report § 14.5 – p. 14-7 |
| Question/ Comment | Could Japan provide complementary information relating to Safety Goals: - Do these Safety Goals relate to existing or future plants or both? - Will the Safety Goals be considered as a strict limit or as an orientation value with a range of uncertainty? | | |
| Answer | The safety goal, proposed now, still remains a draft. Although it is intended to be applied to all nuclear plants, its application needs further discussion. It is intended that necessary measures should be taken to reduce its risk, and that a nuclear installation does not fail the safety goal because risk of the installation is slightly higher than a millionth per annum | | |
|  | Country | Article  Article 14.1 | Ref. in National Report § 14.6 – p. 14-10/14 |
| Question/ Comment | Japan is prepared to extend utilisation of risk information and it is required to normalize the standard PSA methodologies by academic and industrial societies and perform PSA with those methodologies. The report states that while NISA cooperates with academic and industrial societies for review of PSA methodologies, NISA will recommend license holders to perform PSA with such standardized methodologies. Could Japan give more information on the extent of this cooperation? | | |
| Answer | NISA is replacing specification code with performance code. NISA provide basic functional requirements as performance code. NISA entrusted the detailed code that satisfies the requirements to the academic and industrial society standards. As to PSA standards NISA intends to prepare an academic and industrial society standard in line with this policy.  The “cooperation” here means that, the staff of NISA together with JNES participates actively to the activities of academic and industrial societies (\*). The word “recommend licence holders to perform PSA” here means that, NISA make clear arrangements to endorse these standards to be used by the licence holders in the application of license. (\*):Those academic and industrial societies are thought to be fair and neutral in the development of use of nuclear energy. | | |
|  | Country | Article  Article 14.1 | Ref. in National Report § 14.6 – p. 14-10/14 |
| Question/ Comment | Up to now the implementation of PSA was asked by NISA although it remained to be a voluntary activity of license holders. Does the introduction of risk information in safety regulation require absolutely PSA? | | |
| Answer | The implementation of PSA is under intense discussion. NISA, at present, recognizes that PSA is useful to confirm the adequacy of present regulation and that it is not necessary to make PSA one of the regulatory requirements. NISA, therefore, requests, without enforcement, operators to use PSA in their activities including establishing accident management measures and conducting Periodic Safety Reviews. | | |
|  | Country | Article  Article 14.1 | Ref. in National Report p. 14-4, 14.3 |
| Question/ Comment | Does the periodic safety review take into account e.g. extreme weather conditions, new knowledge about earthquakes or new core designs with high burn-up? | | |
| Answer | The items you referred as examples are not necessarily the items reviewed in PSR. Those items are appropriately taken actions case by case, based on the judgments of regulatory body.  1),2) In the safety examination at the establishment license stage, the nuclear installations are required to design so that any impact of flooding, Tsunami, wind, freezing, snow, and landslides does not jeopardize the safety of the installations. As an extreme weather condition, if any situation that may exceed the conditions assumed in the safety examination to the specific or generic sites, is feared, or if any new knowledge in earthquake were revealed, regulatory body, based on his decision, instructs licensees of re-evaluation and confirms the safety. Hyogo-ken Nambu Earthquake of January 17, 1995 provides an example of re-evaluation. This large scale earthquake occurring directly beneath a large city caused the greatest damage in several decades. Two days after the occurrence of the earthquake, the NSC established the “Study Committee on Seismic Safety at Nuclear Installations in Consideration to Hyogo-ken Nambu Earthquake” in order to review and examine the adequacy of the relevant guidelines on seismic design used in the safety examination of nuclear installations. The review showed no deficiency in the adequacy of the guidelines.  At the occasion, the Agency for Natural Resources and Energy, MITI (then) requested license holders to assessed the seismic resistance of those NPPs that were licensed before the issuance of Regulatory Guide for Reviewing Seismic Design of Nuclear Power Reactor Facilities using the latest knowledge and the result showed the design was adequate.  3) In the case of loading of high burn-up fuel to reactor core, confirmation of the safety in the use of the fuel will be necessary by the Approval of Fuel Assembly Design (please see 14.2(2) of our National Report) | | |
|  | Country | Article  Article 14.1 | Ref. in National Report p. 14-3, 14.1 |
| Question/ Comment | Which acceptance criteria have been used for the regulatory review of the radiological consequences of design basis accidents? Are these criteria related to releases or related to radiological exposures? If dose limits are applied, which are the parameters (e.g. exposure pathways, integration times, distances) considered for the calculation? | | |
| Answer | The acceptance criteria of design base accidents are that risk by extreme radiation exposure must be avoided to the individuals of public. Namely, we judge that the risk is small enough when the effective dose due to an accident is less than 5 mSv to any individuals in the vicinity of NPP site. For the site evaluation acceptance criteria are; infant thyroids dose to be less than 1.5SV, and whole body dose to be less than 0.25SV for a major accident, and acceptance criteria are; adults thyroids dose to be less than 3 SV, Whole body population accumulated dose to be less than 20 thousand ManSV for hypothetical accident. (please see Annex 3.13 page A3-81 of our National Report)  The parameters used in the analysis are exposure pathways, meteorological conditions, distances and respiration rate. | | |
|  | Country | Article  Article 15 | Ref. in National Report P15-4.Ch15.2 |
| Question/ Comment | The average annual collective dose of BWR is increased gradually. Please give more information on what preventive measurements have been taken or to be taken by the NPPs in Japan to reduce the annual collective dose? | | |
| Answer | The reasons for increase of BWR collective doses are repair and inspection works were done under the high radiation dose environment during periodic inspections. In order to reduce the collective dose, we analyzed the exposure doses in the large scale preventive maintenance activities like core shroud replacements and recirculation pipes replacements, and determined that maturing the workers skill and the installation of temporary shields are effective in the reduction of collective dose. Reflecting these lessons learned, we obtained the reduction in collective dose for the series of similar replacement works as shown in Figure of 15.2(1) b.  We think detailed analysis is necessary to identify the factors causing high collective doses, in fiscal 2004; licence holders and academic society cooperate under the leadership of NISA, to investigate and to extract the factors that may lead to optimization of the doses. In fiscal 2005, we investigate the concrete measures for optimization of collective doses. | | |
|  | Country | Article  Article 15 | Ref. in National Report |
| Question/ Comment | Section 15.3 states that the Rules for Prevention of Damage from Ionizing Radiation require that license holder should calculate the dose of personnel, if daily dose due to external exposure exceeds 1 mSv at 1 cm dose equivalent, using the method prescribed by the Minister of Health and Labor.  What is the method prescribed by the Minister of Health and Labor? | | |
| Answer | Rules for Prevention of Hazards due to Ionizing Radiation under the Industrial Safety and Health Law provide that external and internal doses within controlled area should be measured of workers engaged in radiation work and emergency work, and that doses should be calculated, without delay, according to the method formulated by the Minister of Health and Labor, recorded and kept for thirty years. The method is as follows. - effective dose from internal exposure should be calculated by the nuclides and chemical forms - effective dose from external exposure should be calculated by addition of the 1 cm dose equivalent from external exposure and dose equivalent from internal exposure - equivalent dose of lens and skin should be calculated by equivalent dose from external exposure | | |
|  | Country | Article  Article 15 | Ref. in National Report |
| Question/ Comment | In relation to 15.3, it is described that as one of approach to scientific and rational regulation, feasibility of optimizing the collective dose by effective and efficient inspection/repair work introducing Rules on Fitness-for-Service for Nuclear Power Plants.   Please explain how the Rules on Fitness-for-Services for Nuclear Power Plants can be related with optimizing the collective dose. | | |
| Answer | On October 2003, Fitness for Service Assessment was introduced when any cracks were found at pressure boundary of reactor coolant and core shroud and its support ring. Before then, there were no fitness for service assessment criteria for cracks, and any cracks, when found, were repaired to meet the technical standard. The introduction of Fitness for Service Assessment, which takes into consideration aging and fracture mechanics, makes it possible to continue operation to a certain period even when the cracks were found. Based on this, license holders are able to plan more reasonable maintenance program, which is expected to result in reduction of collective dose. | | |
|  | Country | Article  Article 15 | Ref. in National Report |
| Question/ Comment | Please exemplify in a little more detail different ALARA -measures taken by the licensees and how such measures are followed up at the plants. | | |
| Answer | The measures taken to typical PWR and BWR plants in Japan are as shown in the Attachment to this response. In the some of the attachment file, Japanese Font is included, and we could not change it to English font, so that you might have difficulty in viewing. We will bring hard copies to the 3rd RM. | | |
|  | Country | Article  Article 16 | Ref. in National Report P 16-5 |
| Question/ Comment | Implementation of a Nuclear Emergency Drill in paragraph 16.3 states that on November 26. 2003, a drill for the Unit 2 of the Genkai Nuclear Power Station was conducted and about 9,400 persons including local residents etc. participated in the drill. Regarding above statement, 1. How did you select residents?  2. How many residents participated ? 3. What area did residents participate in the drill? | | |
| Answer | 1. Local government decides the participating district in emergency drill year by year, to allow as many residents as possible within 10 km radius from nuclear installation may participate in the drill. 2. The resident participants were about 6,600. 3. All the residents within 2km radius and in down wind sector of 3 km from NPP were evacuated. And the residents in down wind sector of 3-7km from NPP were sheltered. | | |
|  | Country | Article  Article 16 | Ref. in National Report 16.2, p16-2 |
| Question/ Comment | What are the rationale and the assumptions used for establishing "emergency planning zone" for research reactors in the case of postulated accidents and accident consequence assessment? | | |
| Answer | Research reactor is out of target in Convention on Nuclear Safety. For your reference, the following information can be provided: For hypothetical accidents of research reactors, the duration of radioactive material release was assumed to be 24 hours for a middle/ high power research reactor (thermal output † 500kW), referring to the containment performance. The height of discharge point is described in the application for establishment license. With those conditions of radioactive material release, the distance from a reactor to give 10mSv for external radiation dose or 100mSv for equivalent dose of childrenfs thyroid was estimated as EPZ . As a result, estimated EPZ, varied depending on the thermal output of reactors are within a 1.5km radius. (thermal output 10MW`50MW) | | |
|  | Country | Article  Article 16 | Ref. in National Report 16.2 , p16-2 |
| Question/ Comment | What is the regional medical treatment system established in July 2003? And what are the designation requirements and financial supports for local medical institutions? | | |
| Answer | The regional medical treatment system for exposed patients in emergency divide Japan into two regions, namely East and West, taking into consideration the geographical conditions for the medical institutes with the highest capacity for life saving treatment in emergency. The manpower and technical cooperation and the coordination are provided within each region. The local governments concerned establish medical treatment system in emergency, receiving financial support from the national government. | | |
|  | Country | Article  Article 16 | Ref. in National Report 16.2, p16-3 |
| Question/ Comment | Which institution has a role of coordinating the environmental radiological monitoring in the vicinity of nuclear facilities in the event of radiological emergency? | | |
| Answer | After the announcement of the nuclear emergency, Radiation Group which is organized within the Joint Council for Nuclear Emergency Response established under the Local Nuclear Emergency Response Headquarters collects the radiological monitoring information and evaluates it. (See Fig. 16-1) | | |
|  | Country | Article  Article 16 | Ref. in National Report 16.2, p16-4 |
| Question/ Comment | Are there any transportation measures for rapid dispatch of the emergency personnel from each organization for organizing Off-Site Center in the event of emergency? | | |
| Answer | The staff from distant area will be transported by aircrafts or helicopters of the Self Defense Force. | | |
|  | Country | Article  Article 16 | Ref. in National Report 16.3 |
| Question/ Comment | In 16.3 a short description is given of several emergency preparedness exercises where the licensee, the local government and the national government were involved. Is it possible to describe the most important lessons learned? | | |
| Answer | The national level exercises under the Special Law for Nuclear Emergency, had been conducted 4 times so far. The evaluations of the exercise were conducted by the specialist with the knowledge in nuclear emergency preparedness, and the lessons learned from the evaluations are: “it is necessitynecessary to perform further improvement in;  a) speedy information sharing among governmental organizations, b) further clarification of responsibility allocation between central and local governments, and staff arrangement,  c) the clarification of the NSC’s roll in judgment and prediction of accident scenarios were pointed out “.And also training and skill-up for the use of facilities and equipments installed to the offsite center are necessary. | | |
|  | Country | Article  Article 16 | Ref. in National Report Table 16.2 |
| Question/ Comment | It would be desirable to clarify the following points regarding Table 16.2: 1) Do you drill personnel accident management actions according to a specific accident scenario or you only rehearse the response actions defined by the action plan related to declaring a "Nuclear Emergency"? 2) When conducting the exercises, do you take into consideration the specific status of a nuclear plant, at which the "Nuclear Emergency" was declared? | | |
| Answer | 1) There are Drills planned by National Government, Local Government and licence holders respectively. They exercises both the drills based on scenarios and the drills without scenario known (blind drills) appropriately. In each of the drills, the participants act in the action area as pre-defined, especially in the blind drills, participants are required to collect and distribute the information on the current status and the prediction to subsequent progression of emergency, this means the participants are requested to play active rolls more than described in manual procedure. NISA also conducts drills internally.  2. The scenarios are prepared in such a way that may require sheltering or evacuation assuming the multiple loss of the function of the system that was not assumed in the safety design, to protect from the emergency. . | | |
|  | Country | Article  Article 16 | Ref. in National Report section 16.3 |
| Question/ Comment | This section describes the Emergency Preparedness procedures that are in place to test emergency plans. Who judges whether these exercises are satisfactory? | | |
| Answer | National Government Drill planning was prepared reflecting the review and comments from the relevant organizations before performing the drill.  The performance of the drill was evaluated by the specialist with the knowledge in nuclear emergency preparedness as well as collection of the participants’ answers to questions.  After the drill, the evaluation of the results of drill is conducted by the outside knowledgeable persons based on the records and documents, and lessens learned and points to be improved were extracted, and they were reflected to subsequent drills. | | |
|  | Country | Article  Article 16 | Ref. in National Report S 16 p 16-1 to 16-7 |
| Question/ Comment | How do you inform the public about emergency preparedness in the vicinity of the nuclear plant? | | |
| Answer | The national government and local governments encourage the local residents to participate in the emergency drills, distribute brochures, facilitate the emergency communication instruments (cable broadcasting facilities, Cable TV, Internet) and also hold the tour program to the Emergency Preparedness Facility (Off-site Center). | | |
|  | Country | Article  Article 16.1 | Ref. in National Report § 16.2 – p. 16-3 |
| Question/ Comment | Could Japan explain whether specific actions are scheduled in case of a fast kinetic accident, i.e. an accident leading to radiation exposure of the public within a short period of time? | | |
| Answer | We do not prepare any specific actions scenario in case of a fast kinetic accident, as NPPs are designed, manufactured constructed and operated based on the multi-barrier and defense in depth philosophy against the radioactivity release to environment, it is highly unconceivable to experience an accident leading to radiation exposure of the public within a short period of time  However, in order to respond in an emergency, emergency medical treatment system was established for local residents. | | |
|  | Country | Article  Article 16.1 | Ref. in National Report § 16.3 – p. 16-5 |
| Question/ Comment | Could Japan summarize the main outcomes of national and international drills as recommended in section 61 of the report of the President of the 2002 review meeting? | | |
| Answer | After the 4 national level exercises under the Special Law for Nuclear Emergency, necessity to perform further improvement in a) speedy information sharing among governmental organizations, b) further clarification of responsibility allocation between central and local governments, and staff arrangement, c) the clarification of the NSC’s roll in judgment to the situations and prediction of accident scenarios were pointed out. And also training and skill-up for the use of communication facilities and equipments installed to the offsite center are necessary. | | |
|  | Country | Article  Article 16.1 | Ref. in National Report § 16.3 – p. 16-5 |
| Question/ Comment | Could Japan give examples of accident scenarios used for national emergency drills? | | |
| Answer | Accident scenario of 2003 for the Genkai Unit2 Exercise of Kyushu Electric Power Company were as follows; Main Feed Water Pipe Rupture, --> Reactor Auto Shutdown --> Failure to Continue to Operate AFWP --> Feed and Breed Operation --> Failure of ECCS Recirculation Switch Over --> Core Uncover --> Breech of Fuel Cladding --> Start Fuel Melting --> Containment Vessel Internal Pressure Increase --> Recovery of ECCS Recirculation, Recover Containment Vessel Spray Pump --> Cease of Radioactivity Leakage to Environment | | |
|  | Country | Article  Article 16.1 | Ref. in National Report Chap. 16, P.16-5 |
| Question/ Comment | How do they ensure, that all power plant participates in national nuclear emergency drills, if only one national drill is held per year? | | |
| Answer | Sixteen nuclear power stations are now in operation, and one station is selected every year to have comprehensive drill on nuclear emergency which is planned by the national government. In addition, local governments where nuclear power stations are located conduct drills on nuclear emergency once in a year in cooperation with license holders and the national government. | | |
|  | Country | Article  Article 16.1 | Ref. in National Report Chap. 16, P.16-1 |
| Question/ Comment | How the emergency preparedness is managed during the decommissioning phase of nuclear facilities? | | |
| Answer | Emergency preparedness during decommissioning phase is, basically, similar to the one during operation phase. | | |
|  | Country | Article  Article 16.2 | Ref. in National Report |
| Question/ Comment | In which way is the public informed in advance of and in case of an emergency about the hazard of nuclear power and about the appropriate behaviour in case of an emergency? | | |
| Answer | In an emergency, communication of emergency information and the instruction for sheltering or evacuation will be conducted by communication measures such as broadcasting cars, emergency radio system, Cable TV system, wire radio system and internet that were prepared by local governments. Broadcasting companies are designated as the designated public organizations, and they are required to broadcast necessary information to general public through TV and radio. | | |
|  | Country | Article  Article 16.2 | Ref. in National Report p. 16-3, 16.2 |
| Question/ Comment | Which responsibility and competence for decisions do the different centers have? Does the “Joint Council for Nuclear Emergency Response” finally decide on countermeasures? | | |
| Answer | Nuclear Emergency Response Headquarters (NERH) is the organization established to promote the emergency response when the prime minister announces nuclear emergency.  It coordinates the response of the relevant organizations in the emergency response implementation area.  The head of the NERH is the prime minister who has the authority to instruct necessary order to the relevant organizations.  Local Nuclear Emergency Response Headquarters(LNERH) is the organization established in the Off-site center in the vicinity of NPP. It execute a part of the duties of NERH, the head of NERH (the prime minister) may entrust a part of his authority to the head of LNERH. Joint Council for Nuclear Emergency Response (JCNER) at Off-site center consists of the head of LNERH, and the responsible persons of local government, relevant emergency organizations.  They exchange the emergency information and with common understanding of the situation, they cooperate in the response. | | |
|  | Country | Article  Article 17 | Ref. in National Report P 17-2 |
| Question/ Comment | Is there any selection criterion for NPP site in relation with an active fault zone ?. Was there any case that a nuclear power plant was constructed on an active fault zone or in the vicinity of an active fault zone ?   If yes, a) What is the name of the NPP ?  b) How far is the active fault from the site ?  c) What's the magnitude of the largest potential earthquake related to the active fault ?  d) What's the length of the active fault ? | | |
| Answer | There are no prescriptive criteria concerning the active faults in siting criteria. In the seismic design of nuclear installations, detailed geological survey is requested to define the seismic force due to the active faults\* in the vicinity of NPP site.  In Japan there were no NPP that has active faults within close vicinity of the site. If there were active faults within close vicinity of the site, the impact to the seismic design would be discussed \*:The active faults that had been active within past 50 thousands years, which is requested to be considered by “Regulatory Guide for Reviewing Seismic Design of Nuclear Power Reactor Facilities” | | |
|  | Country | Article  Article 17 | Ref. in National Report |
| Question/ Comment | What are the regulatory procedures for survey and evaluation of capable fault or geological structure suspicious of a capable fault without evidences, found at or near the site area of nuclear facilities in operation or under licensing review process? If there are any nuclear facility sites that were (or are) engaged in this procedure, like the controversial 'Tsuruga Fault Zone' to the nearby Tsuruga NPPs in Fucui, how were the issues resolved? | | |
| Answer | In the case, when the evidence does not exist but the suspicious of the Capable Fault in the vicinity of NPP site under operation or under safety examination, and also in the case when new knowledge was found , regulatory body instruct the license holder to conduct additional survey of the geological structure, as necessary. If the geological structure is found to be such active fault that need be considered in seismic design, appropriate measures will be taken.  For Tsuruga NPP station, seismic design of the operating Units 1& 2 were confirmed by “Regulatory Guide for Reviewing Seismic Design of Nuclear Power Reactor Facilities”. As the Units 3 & 4, are now in the process of safety examination of establishment license, NISA instructed the license holder to conduct additional survey for the active faults in the vicinity of the site, and the survey is underway. | | |
|  | Country | Article  Article 17 | Ref. in National Report |
| Question/ Comment | Were tsunamis, caused by various sources such as earthquakes, volcano eruptions, landslides, etc., taken into consideration in the design of nuclear power plants? If yes, what are the methods and procedures for considering tsunamis in the plant design for each source (the evaluation method of tsunamis, plant protection against tsunamis, etc.)?   What plants were designed against tsunamis and what are the location and maximum magnitude of each source assumed in the design? If not considered, what are the reason and countermeasures for protecting the plants against potential tsunamis? | | |
| Answer | After surveying traces of tsunami height in the vicinity of the site, tsunamis which had most impact are selected. Tsunami simulation analysis is conducted for these tsunamis to decide the maximum tsunami height and the minimum tsunami height. Site ground level is decided against the maximum tsunami height, while design to secure the cooling sea water system is decided against the minimum tsunami height. In the survey, all tsunamis caused by volcano, land slides as well as earthquake are considered. These survey and analysis has been done to all the NPPs in Japan. | | |
|  | Country | Article  Article 17 | Ref. in National Report p17-5 |
| Question/ Comment | (17.6 Re-evaluation of Site Related Factors, p.17-5)  It is stated that all the factors related to site selection must be re-evaluated at the time of alteration of an establishment license, such as new plant construction at the existing site. However, it seems that the seismic safety of the NPPs commissioned in the early 1970s should be re-evaluated irrespective of alteration of the license, since the methodologies for seismic design of NPP facilities and seismic qualification of equipment by test were drastically evolved and improved after the mid 1970s.  1. Was the seismic re-evaluation of the NPPs carried out based on newly-established seismic requirements or methodologies?  2. If it was done, for which NPPs was the seismic re-evaluation performed and what were the re-evaluation method and procedure? 3. What kind of new geologic and seismologic information was taken into account in the seismic re-evaluation? 4. What were the corrective actions from the seismic re-evaluation? 5. Were those activities parts of the PSR (Periodic Safety Review) described in Article 14.3, p.14 - 5? | | |
| Answer | 1. “Regulatory Guide for Reviewing Seismic Design of Nuclear Power Reactor Facilities” was published in 1978. License holders of NPPs, that had been licensed before the publication of the guide, conducted seismic analysis and confirmed safety.  In 1995, NISA( then METI) confirmed the seismic safety of all the units, following Hyogo-ken Nanbu Earthquake. 2. NISA conducted re-evaluation of the units licensed before the publication of the said regulatory guide. Seismic confirmations were done in accordance with the regulatory guide on each of buildings, facilities, components and piping that are classified important by the importance criteria for seismic design. Two seismic design wave motions S1 and S2 were used in the confirmations. 3. Seismic design wave motions S1 incorporates past earthquakes that affected the site and the vicinity and the earthquakes that might happen in near future caused by highly active faults nearby.  Seismic design wave motions S2 incorporates the earthquake that may be caused by the fault of which activity is low in the vicinity but that may give big effect to the site, the earthquake assumed to occur based on the engineering judgment on the concept of earthquake zone structure\* and the near field earthquake of Magnitude 6.5. \*: geological zone that may have common character of earthquake considering the nature of occurrence of the past earthquakes. 4. As the seismic safety was confirmed by re-evaluation, no measures were taken in any of Japanese NPPs. 5. These were not included in the activities of PSR. | | |
|  | Country | Article  Article 17 | Ref. in National Report Section 17.6 |
| Question/ Comment | The following would be desirable to clarify regarding Section 17.6: 1) When performing re-evaluation of the factors related with the site, do you take into consideration the changes in the administrative-territorial boundaries and in the demographic situation? 2) Do you have a regulatory framework which prohibits the changes to the administrative-territorial boundaries and construction of other facilities in the vicinity of the operating NPP site? | | |
| Answer | 1.Concerning the population data, evaluation of factors related site conditions will be conducted based on the data at the time of license application. In this procedure, if any change in population distribution, or any change in administrative territorial boundary exist, they will be reflected. 2.Concerning the regulation in operating stage, there is no restriction to prohibit the changes in administrative territorial boundary or construction of facilities.  If any facilities those may cause danger to the vicinity are to be constructed, individual regulating law will be enforced.  For example, in the construction of LNG tanks, High Pressure Gas Safety Law is applied, and it requires the minimum isolation distance from neighboring facilities, thus the construction of LNG tanks in the vicinity to NPPs is controlled. | | |
|  | Country | Article  Article 17.3 | Ref. in National Report § 17.3 – p. 17-3 |
| Question/ Comment | Beyond actions taken to preclude that nuclear facilities withstand external phenomena, does Japan study the on site effect of flood (for instance, possible leak path via galleries and ducts and then the possible degradations of train A and B equipment)? | | |
| Answer | Areas where important facilities are installed within a reactor building are water tight structure and equipped with dike. Thus even if flooding occurred in any compartment, the water tight structure does not jeopardize other compartments  The ground level of the site is enough to resist Tsunami or flooding, and NPPs are designed to be resistant to outer flooding. And JNES is implementing the study of flooding PSA. | | |
|  | Country | Article  Article 17.3 | Ref. in National Report |
| Question/ Comment | SSCs of high importance shall be designed to withstand the most severe conditions of natural phenomena and a combination of such natural forces and loads. How are most severe conditions determined? | | |
| Answer | The most severe conditions of natural phenomena (flooding, Tsunami, winds, freezing, snowing landslide) are determined for each phenomenon, as higher than severest of the historical records phenomenon considering the reliability of the records and judging with statistical reliability. As to earthquake, in Regulatory Guide for Reviewing Seismic Design of NPPs, basic design earthquake ground motion S1 and basic design earthquake ground motion S2 design earthquake are defined. And the reactor facility must withstand to this design conditions. The load at Normal Operation, Anticipated Transient during Operation and Accidents are superposed to the seismic load of design earthquake. For example, LOCA load and the S1 seismic load are superposed. However, accident loads of those the probability of accidents are extremely low and the duration of the accident conditions are extremely short are not superposed, for example, the LOCA load and the S2 seismic load are not superposed. Remark: For earthquake, S1 and S2 seismic load are defined in Regulatory Guide for Reviewing Seismic Design of NPPs. ( see also section 17.3 of our National Report) | | |
|  | Country | Article  Article 18 | Ref. in National Report 18.4 |
| Question/ Comment | What hardware measures have been installed or are considered for preventing or mitigating severe accidents? | | |
| Answer | Examples of hardware measures for preventing or mitigating severe accidents are; a) for PWR plants; Alternate recirculation (installation of alternate sump pump or C/V spray line core injection installing the tie line between C/V spray system and RHRS) / C/V cooling by natural convection(using normal C/V-HVAC system) / Alternate CCW(using HVAC-CCWS) / C/V injection using fire protection water system) / Power supply from the neighboring unit / programming hydrogen burning for Ice Condenser Plants b) for BWR plants; Alternate reactivity control(recirculation pump trip and automatic injection of alternate control rods) / Alternate core injection(using fire protection water system) / Automization of depressurization of reactor (Automization after reactor uncover) / Heat removal from C/V (venting using dry-well cooler) / Power supply from the neighboring unit | | |
|  | Country | Article  Article 18 | Ref. in National Report 18.5 |
| Question/ Comment | How do older reactors in general fulfil modern requirements on physical and functional separation, withstanding of single failures and CCF? | | |
| Answer | Physical and functional separation, withstanding of single failures and CCF, had been taken measures to prevent serious nuclear emergencies by voluntarily maintenance management activities of utilities. | | |
|  | Country | Article  Article 18.3 | Ref. in National Report § 18.6 – p. 18-7 |
| Question/ Comment | Japan indicates that several safety improvement have been defined and implemented. It would be interesting to know how these modifications take into account the human factor aspect: - Before the modification (design stage of the modification) - During the modification (ergonomics, radiation protection…) - After the modification (plant operation, Man Machine Interface, procedures, maintenance, testing…) This question applies to modifications related to design and/or to operation (new procedures for example). | | |
| Answer | As an example, design against human factors were applied to the control panel in central control room as explained in 12.2 (1) 1),2). Concerning operation procedures, amendments of remarks on manual action reflecting lessons learned from incidents and amendments of the description of hints on manual actions are continuing. | | |
|  | Country | Article  Article 19 | Ref. in National Report |
| Question/ Comment | Since 1980s, problems related to sizing or control switch setting of safety-related motor-operated valve in nuclear power plants have been identified and programs have been established for solving these problems. For example, United States issued Generic Letter 89-10(Safety-Related Motor-Operated Valve Testing and Surveillance) and 96-05 (Periodic Verification of Design-Basis Capability of Safety-Related Motor-Operated Valves) to solve these problems.  Did you experience similar problems in MOV? Is there any plan to cope with the problems about safety-related motor-operated valve? If yes, please explain the plan briefly. | | |
| Answer | A typical example of motor-operated-valve problem is as follows; In November 1992, Unit 2 (BWR) of Fukushima-Daiichi NPPs of TEPCO was preparing restart up. The reactor was tripped due to annunciation of alarm signal of failure of turbine inlet valve motor in reactor high pressure injection pump. The investigation revealed that, at replacement of motor of the valve in 1987, torque of the replaced motor was smaller than the values required by design, so that at opening valve action, motor could not rotate and caused over-current in the motor coils till burnout. The remedial action to replace it with motor of large torque was taken. Necessary actions were taken for all domestic plants, learning lessons from the example mentioned above and from other foreign experiences. | | |
|  | Country | Article  Article 19 | Ref. in National Report radwaste management |
| Question/ Comment | 1) Are there regulatory documents on radwaste management including accounting and control of radwaste generation? 2) What are the data on the annual radwaste generation, accumulation, availability of liquid radwaste solidification and solid radwaste reprocessing facilities? 3) Do you ship the radwaste for disposal/burial and what containers are used for waste packaging? | | |
| Answer | 1.Please refer to sections 15.2(2) and 15.3 of our National Report. 2.Japan had ratified the Joint Convention on the Safety of Spent Fuel Management and on the Safety of Radioactive Waste management, and the information you requested are in our National Report for the first review meeting , it was opened in http://www.meti.go.jp/report/data/g30901aj.html The latest information was published in ”The status of radioactive waste management and the status of radiation worker radiation dose exposure in Nuclear Installation in Japan in fiscal 2003” November 2004 http://www.meti.go.jp/interface/nisa/regularly/3\_announce/info.cgi?mode=content&category=1&page=389  3.The low level RW packaged in drums as concrete cement were shipped and emplaced at Japan Nuclear Fuel Limited Unit 1 Disposal Facility. In the shipments of aforementioned drums, they are packed in the package that conforms IAEA code of transportation of radioactive material. | | |
|  | Country | Article  Article 19 | Ref. in National Report SNF management |
| Question/ Comment | 1) What special technologies do you use for management and storage of spent nuclear fuel (SNF) that contains leaky and faulty fuel rods? 2) How is the long-term storage of SNF is organized at NPPs? 3) What is the duration of SNF storage at NPPs? 4) Are there repositories for SNF long-term storage at NPP sites? 5) Do you practice shipment of SNF away from NPP sites? 6) Do you perform SNF reprocessing? | | |
| Answer | 1. Usually leaky and faulty fuel rods are stored in fuel rack in spent fuel pool. When the storage in fuel rack is not appropriate, they are stored in so-called faulty fuel container. 2. In Japanese NPPs, storage is not long-term, they will be shipped to the reprocessing facility as appropriate. 3. It depends on the receiving reprocessing facility’s design conditions and the design of shipping casks. For example Japan Nuclear Fuel Limited Recycle Facility accepts any fuels after 1 years cooling unloaded from the reactor core. 4. There are no specific limit for the duration of storage, however as explained in 2) they were shipped to the reprocessing facility as appropriate. 5.and 6. Spent fuel generated in power reactors are sent to reprocessing facilities after a period of on-site cooling and storage. The spent fuel was reprocessed overseas in accordance with contracts with British and French companies, with the exception of a portion reprocessed by the Tokai Reprocessing Plant of the JNC.  In the meantime, taking into account that the call for domestic reprocessing, JNFL began constructing the Rokkasho-mura Spent Fuel Reprocessing Plant, based on operational experience accumulated at the Tokai Reprocessing Facility and on technologies and experience from countries advanced in reprocessing. The plant is to be completed by 2006(as of February 2005). Storage of spent fuel in the plant’s storage facility began in 1999 and export of spent fuel to foreign reprocessing plants ended in July 2001. | | |
|  | Country | Article  Article 19.2 | Ref. in National Report |
| Question/ Comment | Commercial reactors have now been allowed by NISA to operate within the rated thermal power level. Please explain the significance of this. What power uprates of reactors have been done or are planned in Japan? | | |
| Answer | In Japan, commercial NPPs were operated to maintain electricity power as rated level. In winter when sea water temperature become lower and condencer efficiency become higher, reactor core power was controlled so that the electrical output do not exceeds rated value. In December 2001, NISA allowed the licensee to operate NPPs at rated thermal output based on the safety evaluation of NPP. This makes NPPs possible to generate electrical output higher than rated electrical output within the limit of the rated core thermal output. The practice of maintaining rated thermal power operation with electric power up-rated in winter is desirable from the point of power supply, effective utilization of facilities Concerning the up-rates of reactor thermal power is not planned at present. | | |
|  | Country | Article  Article 19.3 | Ref. in National Report |
| Question/ Comment | Safety reviews on the operation of the NPP must be included in the Operational Safety Program according to table 19-1. What reviews are required? | | |
| Answer | When issuing approval of the Operational Safety Program, NISA examines the program to confirm that it is consistent with the basic design and design policy already examined at establishment license of the installation, and is sufficient to ensure prevention of hazards in operation. | | |
|  | Country | Article  Article 19.3 | Ref. in National Report |
| Question/ Comment | Licensees have a system for domestic and international experience feedback analysis. Please explain the typical procedure used at the plant level to analyse and feed-back such information to the relevant staff. | | |
| Answer | Licensees’ NPP technical department reviews the necessity for the reflection of operating experiences of domestic and foreign NPPs, that are down-loaded from open library like NUCIA. The review results were filed and the implementation of necessary remedy was followed with the filing system. When the implementation of the remedy was completed NPPs Committee close the final confirmation of the results. | | |
|  | Country | Article  Article 19.4 | Ref. in National Report table 19.3 |
| Question/ Comment | Article 19 (vi) of the convention states, 'incidents significant to safety are reported in a timely manner by the holder of the relevant licence to the regulatory body'. Details of the reporting criteria are shown in Table 19-3. Can you please provide details of the timescales for reporting incidents to the regulator? How does the regulatory authority use these reports? | | |
| Answer | Based on Reactor Regulation Law, incidents and failure that happened at NPPs are reported to NISA on ASAP basis. NISA on the receipt of the report, information is press released and NISA informs to local residents. | | |
|  | Country | Article  Article 19.6 | Ref. in National Report § 19.6 – p. 19-5 |
| Question/ Comment | The report mentions that quite all the events are rated as level 0 on the INES scale. However the INES scale provide for a level x+1 rating in case of lack of safety culture: does it mean that there is never lack of safety culture in Japanese NPP to the contrary of NPPs in most of other contracting parties? | | |
| Answer | In Japan, Level X+1 was indicated when additional factor (lack of safety culture, improper manual) are discovered in accordance with INES manual. Events rated as Level X+1 were 22 since August 1992 till now. Almost all of them were the lack of safety culture. | | |
|  | Country | Article  Article 19.6 | Ref. in National Report § 19.6 – p. 19-5 |
| Question/ Comment | A lot of reports on events in Japan are rated at level "0-", level that does not exist in the INES scale. Since all levels are normally rated above 0, indicating by this a more or less severe deficiency, should it be understood that "0-", which is below zero, means that such events are good practices? | | |
| Answer | “0-“ is same as “0” in INES, it does not mean a good practice. In Japan, in order to make detail classification of the events, Level 0 event s are subdivided to Level 0+ and Level 0-. Level 0+ stands for “those events that is not important to safety but related to safety”. Level 0- stands for “those events that is not important to safety and not related to safety”. We use this as “national tuning” which was accepted formally by IAEA. Japan reported these two divisions of Level 0 events to IAEA INES technical meeting. | | |
|  | Country | Article  Article 19.6 | Ref. in National Report p. 19-5, 19.6 |
| Question/ Comment | The utilities have to report incidents or failures that have occurred in NPPs to NISA. What are the reporting criteria and reporting schedule in case of an incident? | | |
| Answer | As to the reporting criteria, it is reported in Table 19-3, in our National Report. Based on the Reactor Regulation Law, incidents and failures that happened at NPPs are reported to NISA on ASAP basis. NISA on the receipt of the report, information is press released and NISA informs to local residents. | | |
|  | Country | Article  Article 19.7 | Ref. in National Report § 19.7 – p. 19-6 |
| Question/ Comment | Could Japan indicate if PSA is used for the analysis of events and incidents (precursor programme) as a complement to the deterministic analysis? | | |
| Answer | In Japan, if any incidents occur, regulatory body perform events and incidents analysis (precursor programme) as necessary using PSA and obtains the risk information on the incident.  For example, risk assessment was conducted for the Hamaoka unit 1 hydrogen combustion accident in steam condensation system piping of the residual heat removal system, and also the evaluation of the effectiveness of the remedy by estimating the risk reduction was conducted. | | |