

## THE BASIC POLICIES OF THE NUCLEAR SAFETY COMMISSION

The Nuclear Safety Commission (NSC)  
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### I Objectives

In January 2000, the Nuclear Safety Commission (NSC) issued its “Basic Policies of Present Measures” after the critical accident at the uranium conversion facility of the JCO Corporation in Tokai Village, Ibaraki Prefecture. The NSC, based on this policy, has been determining and implementing various and prompt measures to cope with the safety-related problems in Japan.

Almost all the planned measures have already been carried out, including emergency preparedness for nuclear disasters. In consideration of the recent situation of nuclear safety, it seems, however, that the NSC has come to the second stage of further fulfillment of the safety regulatory system. The NSC, therefore, has decided to settle anew its basic policies.

The key to nuclear safety assurance in Japan is to keep the potential risk in nuclear application, which may affect the health of the public and the social environment, within an allowable level and is as low as reasonably achievable (ALARA). For this purpose, the defense-in-depth philosophy has been applied and quality assurance has been required to thoroughly carry out in Japan. The NSC recognizes that it is the basis for ensuring Japan’s nuclear safety activities to accelerate this policy further. The tragic accident, however, occurred at Mihama Unit 3 of the Kansai Electric Power Co., Inc. on August 9, 2004, involving 11 people (five died, six were injured). This is deeply regrettable and troubling. It was the first time in Japan that so many casualties were incurred at a nuclear power plant in operation, even though the accident was not radiation related. All persons engaged in nuclear development should consider this accident very seriously. The NSC must make the most of the lessons learned from this accident to reflect on its nuclear safety assurance activities.

Considering the above matters, the NSC emphasizes the following three pillars in development of the new basic policies.

- 1 Improvement and reinforcement of the quality in the present activities of assurance
- 2 Further enhancement of the nuclear safety regulatory system in foreseeing future
- 3 Establishment of firm basis of infrastructure for nuclear safety assurance

In the new basic policies, both the items to be solved within the next three years or so and the issues to be steadily discussed from a long-term viewpoint will be included. In reviewing these matters, it will be necessary to carefully watch and positively cope with the world-wide movement more than ever, because the matters regarding nuclear safety assurance have been widely recognized to be globally important issues.

## II Basic Policies

- 1 Improvement and reinforcement of the quality in the present activities of assurance
  - 1) Improvement of the quality of activities for nuclear safety assurance
    - i) Enhancing the activities on the subsequent regulation review

The NSC intends to effectively supervise and audit the regulatory activities conducted by the regulatory bodies, such as the Nuclear and Industry Safety Agency (NISA), to continuously improve the quality of their regulation activities and to enhance nuclear safety regulation in Japan. Thus the commission plans to enhance the subsequent regulation review activities. For these purposes, it will establish a new methodology on subsequent regulation review and develop related manuals within fiscal 2004.

Based on the results obtained from its subsequent regulation review, the NSC plans to provide opportunities to discuss the problems of nuclear safety regulation and to create proposal policies within fiscal 2004, with the aim of building an effective safety regulation system.

- ii) Restructuring and refinement of nuclear safety examination guides

The restructuring and refinement of the nuclear safety examination guides produced by the NSC as the standards for nuclear safety regulation are implemented with full consideration of the recent scientific and technological advancements in order to prepare new policies for risk-informed and performance-based regulation to enhance efficiency and effectiveness. The work will be performed in collaboration with concerned

academic societies and associations.

In the restructure of the examination guides, safety regulation policies and the practical methodologies are both reviewed, complying with the recent movements of risk information utilization based on the principles of defense-in-depth and ALARA within the fiscal 2004. In their systematization, the treatment of examination guidance will be considered under reviewing status of development of standards in non-governmental organization.

Each examination guide is reviewed and refined. The needs and necessary refinements are performed based on the state of the latest scientific and technical knowledge and on current academic and industry standards. Work to produce new guides for necessary fields will also be performed.

iii) Enhancing the NSC's supervision and audit of subsequent regulation functions

The NSC is making efforts to obtain ISO-9001 certification within fiscal 2005, so that its supervisory/audit activities will be continuously reliable, fair, and high quality. The commission also plans to continuously improve the transparency of its own activities and the traceability of its activity records. It also hopes to obtain certification in all the activities of the commission as well as in the field of supervision and audits.

iv) Strengthening radiation protection

During the next three years or so, the NSC will try to grasp in detail the actual situation of the administrative and management systems of radiation protection at the sites where radiation is used for industrial and other purposes. The NSC will propose remedial measures to the responsible administrative bodies, as the need arises, based on the evaluation by the Special Committee on Radiation Protection. In addition, the NSC will also carefully investigate and evaluate the actual situation of radiation exposure of radiation workers. This is because the collective dose of radiation among workers at nuclear power plants in Japan has been reported to be comparatively higher than that in other countries. The NSC will make proposals to the competent administrative authorities, if necessary.

2) Reinforcement of safety assurance in nuclear backend

i) Reprocessing

The NSC should confirm that the matters to be paid attention to from the viewpoint of safety assurance in the process of uranium cold tests at the Rokkasho Reprocessing Plant of Japan Nuclear Fuel have been adequately implemented, as pointed out by its Project Team for Regulatory Review of Reprocessing Facility Safety this April. The NSC should also examine the matters to be considered for safety assurance at the stage of a comprehensive test using spent fuel before starting it. Besides the problems pointed out in the stage of a comprehensive test have to be verified before starting operation.

ii) High-level radioactive waste disposal

The NSC submitted a report entitled, "Basic Way of Thinking About Safety Regulation of High-level Radioactive Waste Disposal" (a primary report) in November 2002. Its Special Advisory Board on High-Level Waste Disposal Safety should have a clear grasp of the present status of R&D on the items pointed out in the primary report and discuss the future course, through which the NSC aims to draw up safety inspection guidelines for safety assurance. The NSC will review these policies within fiscal 2005.

iii) Near-surface disposal

The NSC's Special Committee on Radioactive Waste Disposal and Decommissioning Safety will draw up a report on the basic way of thinking about safety regulation of near-surface disposal of radioactive wastes released from research institutes and others within fiscal 2004. The committee will also continuously discuss the safety examination guidelines and the radiation protection standards for near-surface disposal in underground 50 to 100 meters below the earth's surface of low-level radioactive waste generated from reactor core internal et al and will make a report within two years.

iv) Decommissioning

The NSC's Special Committee on Radioactive Waste Disposal Safety and Decommissioning Safety will make a report within a year or so on the way of thinking about safety regulation of nuclear reactor facilities being decommissioned, in consideration of the results of subsequent regulation reviews.

v) Clearance-level

NSC's Special Committee on Radioactive Waste Disposal Safety and Decommissioning

Safety will examine the way of thinking about the clearance-level of the materials (the level under which the material is not regulated as radioactive waste) released from nuclear reactor facilities, that was proposed by the NSC, in consideration of the recent trend of discussion in the International Atomic Energy Agency (IAEA) and submit a report within fiscal 2004.

3) Reinforcement of the measures to cope with nuclear incidents/accidents and disasters

i) Collection and analysis of information on incidents/accidents

The NSC will collect and sort information on major accidents and failures occurred at nuclear facilities at home and abroad, especially information on the phenomena of recurrence and aging and will extract other phenomena essential to safety assurance of nuclear facilities. Based on these results, NSC's Special Committee on Analysis and Evaluation of Nuclear Accidents and Failures will examine the matters to be reflected in the nuclear safety assurance measures of Japan. Then the NSC will make a necessary proposal in fiscal 2005.

Due to the August 9 accident at Mihama Unit 3, the NSC has been trying to thoroughly reflect on the lessons learned from the accident for future safety assurance activity, in consideration of the results of a many-faceted investigation into the accident conducted by the Subcommittee on the secondary system piping accident at Mihama Unit 3 under the Special Committee on Analysis and Evaluation of Nuclear Accidents and Failures.

The NSC will also discuss the ways to collect information on accidents and other problems when utilizing radioactive materials and radiation.

ii) Reinforcement of nuclear disaster prevention measures

The NSC will verify the national nuclear disaster prevention system by making full use of the results of safety studies in this field and in reference to the measures taken by the IAEA, other international organizations, and other countries for disaster prevention, so that it will be able to thoroughly fulfill its responsibilities.

Specifically speaking, the NSC will strengthen the emergency information collection system and utilize IT technology during fiscal 2004 – 2005. It will also examine and verify the long-term measures to be taken for the restoration of the former state after

nuclear accidents and the results of safety studies on radiation dose evaluation, reduction of radiation hazard (internal decontamination and so on), medical treatment technology, and so on. The commission will collect information relating to the IAEA's internal medical preparation for the guidelines concerned, the measures taken by other countries for disaster prevention and the medical treatment for radiation exposure. Based on the information mentioned above, the NSC will revise the guidelines on nuclear disaster prevention if necessary to improve the effectiveness of the existing nuclear disaster prevention measures.

The NSC has been examining the emergency medical treatment for radiation exposure, based on the report entitled, "What Emergency Medical Treatment for Radiation Exposure Should Be" written by its Special Committee on Nuclear Disaster and the "Disaster Prevention Measures in the Vicinity of Nuclear Facilities" (guidelines for disaster prevention) revised in July 2003. It will do a survey on the progress in preparation for the local governments' emergency medical treatment system for radiation exposure and in preparation for a network connecting relevant organizations within fiscal 2005 and write a report within fiscal 2006.

The "Law Concerning the Measures to Protect the People During an Armed Attack" approved June 2004 provides that the "NSC will give technical advice." The NSC will keep collecting related information so that it will be able to adequately give such technical advice.

## 2 Further enhancement of the nuclear safety regulatory system in foreseeing future

### 1) Establishment of safety goals

Based on the "interim report on the discussion on safety goals" issued in December 2003, the NSC's Special Committee on Safety Goals will examine the subsidiary quantitative objectives and the effectiveness of such activities as making the safety goals well accepted in society, reviewing the method of probabilistic safety assessment (PSA) of commercial nuclear power reactors, and reexamining the prospects of their practical enforcement by the end of fiscal 2005.

The NSC will examine the results of so-called "level 3 PSA" and external events (such as earthquakes) considering the relevant safety research results.

Concerning the ways to apply the tentative safety goals to the existing safety regulatory

system, the NSC will reexamine the system based on the results of the “risk-informed” safety regulatory system mentioned below.

2) Utilization of risk information

The NSC’s Task Force on Incorporation of Risk Information into Safety Regulation will examine what the risk-informed regulation system in Japan should be by making each role of the competent organizations clear, including that of the commission, the regulatory agencies, electric utilities, academic societies and associations, and other related organizations. The Task Force will also examine how mutual relationships among them should be, what kind of measures each organization has been taking, and what other industries of Japan and other countries are undertaking in this field.

The utilization of risk information on the regulation of light water reactors will be the first subject of discussion. Other types of nuclear facilities will subsequently be examined without delay, if necessary. The Task Force will evaluate the above by the end of fiscal 2006. Based on it, the NSC will lay down the future course of utilization of risk information by, among other measures, reexamining the relevant guidelines.

3) Discussion on the future direction of the safety regulation legal system

i) Discussion on the nuclear safety regulation legal system

It is pointed out that such problems as aging of nuclear facilities, reactor decommissioning, issues of radioactive waste management, and so on were not adequately foreseen at the beginning of nuclear development in the existing nuclear safety regulation legal system of Japan. Taking this fact into consideration, the NSC will start with overall examination of the nuclear safety legal system by reinforcing connection and coordination among the laws and making good use of the latest scientific and technical knowledge, including risk information.

ii) Examination of performance indicators

In consideration of 2 2), the NSC will encourage the regulatory agencies to prepare so-called “performance indicators” regarding technical safety and require them to concretely show the integrity of light water reactor facilities, (e.g. to disclose the results of performance evaluation for an individual nuclear power plant).

### 3 Establishment of firm basis of infrastructure for nuclear safety assurance

#### 1) Promotion of safety researches

In reference to the “Prioritized Plan for Nuclear Safety Research,” the NSC’s Special Committee on Nuclear Safety Research will improve the effectiveness of the safety research promotion system by strengthening the mediator function between the needs of the commission and the regulatory agencies and the actual research activities of competent R&D organizations. The committee will examine the needs for nuclear safety research within fiscal 2004 so that it will contribute toward establishing medium-term goals and to plan the new independent administrative corporation set up by combining the Japan Atomic Energy Research Institute (JAERI) and the Nuclear Fuel Cycle Development Institute (JNC). The NSC will then evaluate safety research activities based on the medium-term plan to promote safety studies within fiscal 2007.

#### 2) Developing and securing human resources

The NSC will encourage relevant organizations to train and ensure personnel to support nuclear safety activities according to the plan by rearranging the working environment so that high-caliber personnel engaged in other industries are willing to participate in nuclear safety activities. The NSC itself will also take measures to motivate personnel to work for nuclear safety. Each year, the commission praises many individuals for their distinguished services in safety assurance and safety research.

#### 3) Fostering safety culture

The NSC will hold a regular meeting entitled, “Site Interviews on Safety Culture,” in which the chairperson usually visits nuclear facilities and exchanges views with workers. Based on the results, the commission will examine and review the relevant guidelines so that each electric utility company will be able to evaluate its safety culture in accordance with them. It will then make a positive contribution toward making a safety culture index along with the IAEA.

#### 4) Assurance of transparency and traceability

The NSC will examine actual efforts of electric utility companies based on the “electric utility companies’ actions for the assurance of transparency of nuclear safety” (June 2003) and point out problems, if any, from the viewpoint of further improvement of

transparency and traceability of their activities, not as one of public information activities.

From the same standpoint, the NSC will also examine the relevant situation of the nuclear fuel cycle implementing body, and point out any problems. The NSC will continuously implement its decision on “information disclosure at the NSC” (May 2004) so as to improve the transparency and traceability of its own activities.

#### 5) Strengthening of international activities

The NSC will continuously watch global nuclear safety trends, including those of the international organizations such as the IAEA to positively cope with current issues. For this purpose, the commission will make efforts to establish a complete system for collecting and analyzing information on nuclear safety as a whole nation, in cooperation with other competent authorities.

Concerning radiation protection, the NSC will take all appropriate actions necessary in cooperation with other organizations by grasping the trends of the International Commission of Radiological Protection (ICRP). New advice may be given within a year or so.

#### 6) Promotion of dialogue with the general public

Among the activities of the NSC, public communication is especially important, including safety goals, risk information, and many other issues. The NSC therefore constantly strives to build closer relationships with the public by holding nuclear safety symposia, through dialogue with the public, discussions with academics and other experts, and many other activities.

### III Other

The NSC will evaluate and confirm the progress in the basic measures prescribed here in reference to the opinions of knowledgeable and competent persons. The NSC will also review the basic policies themselves, and revise whenever necessary in consideration of the trends at home and abroad concerning nuclear safety.