Regulatory Activity on Nuclear Safety

November 24, 2004

Nuclear and Industrial Safety Agency (NISA)

Translated by the International Affairs Group, JNES

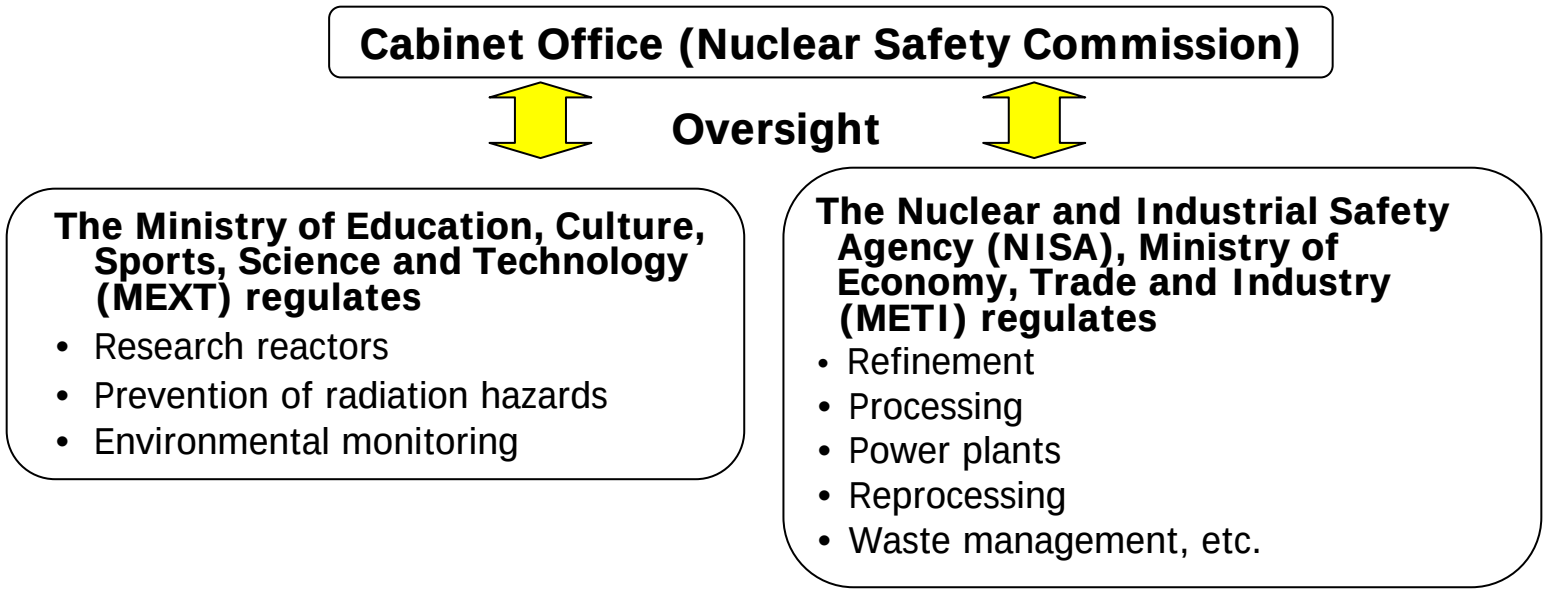
A native speaker of English checked this document in March 2007.

◆ Contents

1. Study Results on Nuclear Safety Regulation after Setup of NISA

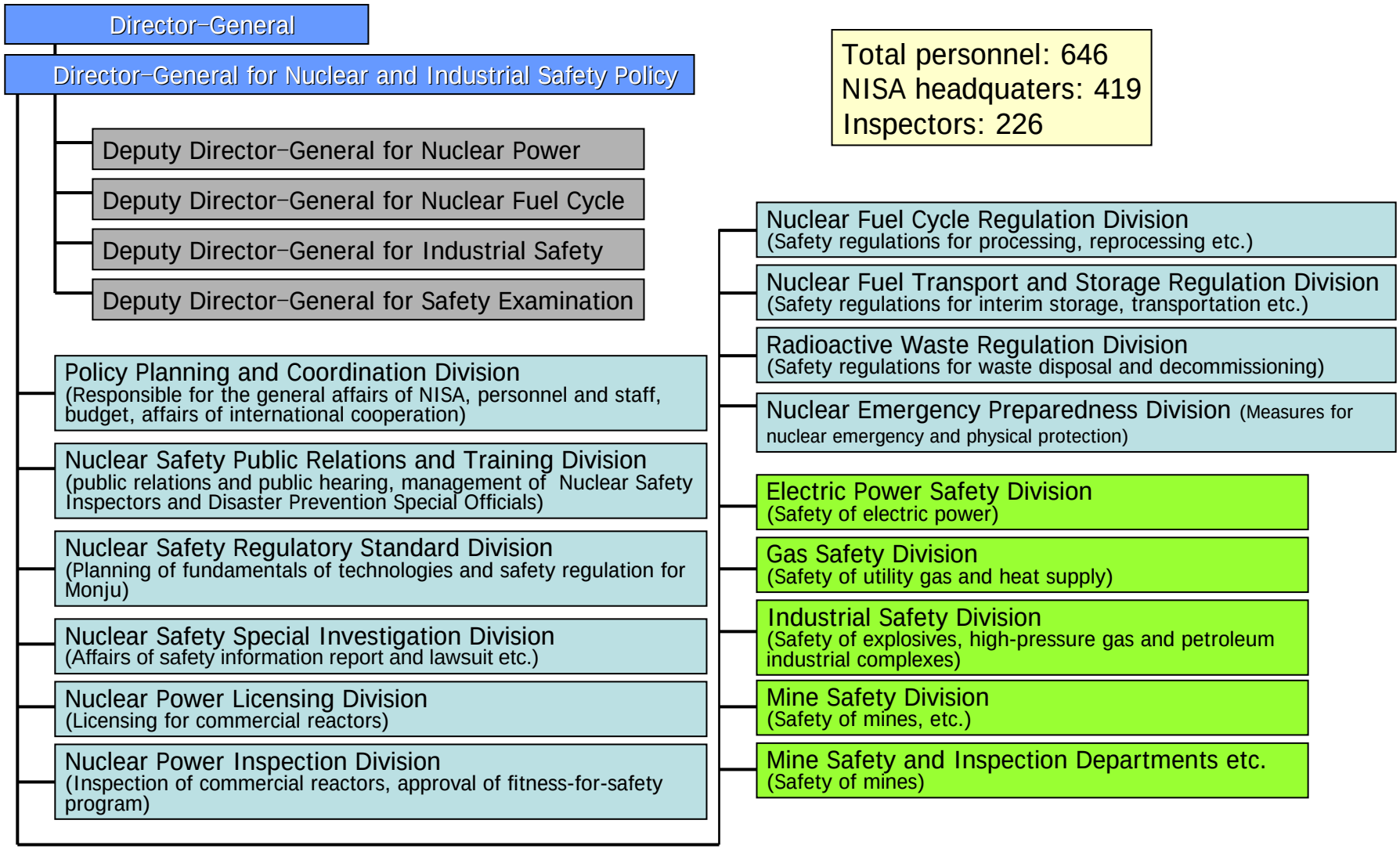
1) Alignment of the Nuclear Safety Regulation

- In the wake of the reorganization of government ministries and agencies, the responsibilities to regulate nuclear safety in the context of energy utilization, which had been shared by the Science and Technology Agency and the Ministry of International Trade and Industry, was consolidated into NISA's authority. NISA was established in the Ministry of Economy, Trade and Industry (METI) on January 6, 2001.
- NISA regulates commercial power reactors, nuclear fuel fabrication operations, etc., and the Nuclear Safety Commission, placed in the Cabinet Office, oversees the NISA's regulatory activities.
- This two-step regulatory process is called the "cross-check" system.



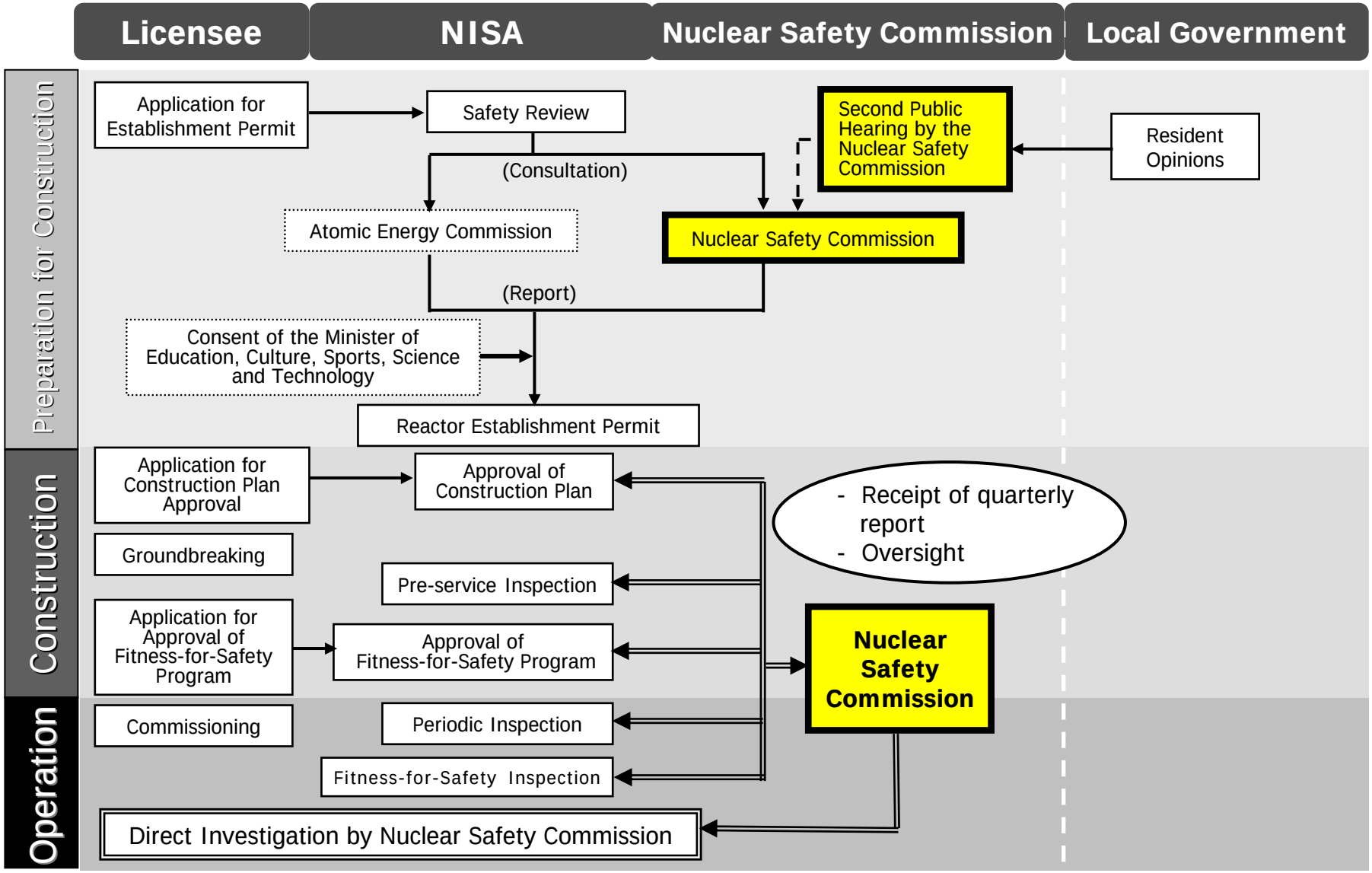
NISA's Organization Chart

As of April 2004



Total personnel: 646
NISA headquaters: 419
Inspectors: 226

< Nuclear Safety Regulatory Process in Perspective >
(From establishment permit application to operation)



2) Establishment of a Subcommittee on Nuclear and Industrial Safety, and Consultation of the Minister of Economy Trade and Industry

- In December 2000, the “Subcommittee on Nuclear and Industrial Safety“ (hereinafter referred to as the “subcommittee") was established as a dedicated committee for deliberations over the nuclear safety regulation accommodating the suggestion of the Coordination Subcommittee of the Advisory Committee for Energy and Resources .
- In January 2001, the Minister of Economy Trade and Industry consulted the Advisory Committee for Energy and Resources on “a way to ensure nuclear safety in the changing environment of today", and the study activity was committed to the subcommittee.

3) Ensuring the Nuclear Safety Infrastructure (Subcommittee Report of July 2001)

- The subcommittee proposed the course that the nuclear safety regulation should follow and also proposed the needs for enhancement of the nuclear safety infrastructure in July 2001,

1. Course that the nuclear safety regulation should follow:
    (1) Principles of the nuclear safety regulation (four principles)
    (2) Course of action that should be taken by NISA
        (a) Code of conduct (Four codes of conduct)
        (b) Oversight by the Nuclear Safety Commission
        (c) Functional enhancement and transparent and fair operations of safety regulation support organizations, such as public research institutes,

2. Enhancement of the nuclear safety infrastructure
    (1) Institutional infrastructure
    (2) Knowledge infrastructure
    (3) Human resource infrastructure
    (4) Facility infrastructure
    (5) Financial infrastructure

< Principles of the Nuclear Safety Regulation >

(1) Licensees Take the Primary Responsibility for Nuclear Safety and the National Government, Entrusted by the Public, Regulates the Licensees' Safety Activities

(2) Safety Regulation Should be Effective by Incorporating the Latest Technical Knowledge.

(3) Safety Regulation Should be Clear and Open to the Public

(4) Actively Respond to the International Trends

< The Code of Conduct of the Nuclear Safety Regulation >

(1) Sense of Mission

- Perform duties with a sense of tension while putting public safety first.
- Act aggressively in emergencies to ensure safety.
- Review operations continuously and upgrade the operational activities.

(2) Scientific and Rational Judgment

- Know correctly plant conditions as an agency dedicated to ensuring safety.
- Make a rational judgment based on the scientific knowledge with sufficient information and data.

(3) Ensuring Transparency and Accountability

- Be committed to disclose information on a “day-to-day regulatory activities” basis without keeping them a secret.
- Disclose NISA’s activities to the public “what NISA considered” and “how NISA took action”.

(4) Fairness and Neutrality

- Always make a fair and neutral judgment as a regulatory body.
- Never judge in consideration of the profit for the industry.

4) Course of Action in the Reconsideration of Inspection System for Nuclear Facilities (June 2002 Subcommittee Report)

- The subcommittee report in June 2002 showed the course of action which NISA should take in the reconsideration of the inspection system.
- The needs for improvement in the inspection effectiveness were pointed out.
  Many of which were realized in the nuclear regulatory reforms in the wake of
  the falsifications by Tokyo Electric Power Co., Inc.

Measures for Improvement of the Inspection Effectiveness

(1) Enhancement of quality assurance activities

(2) Adoption of inspection without notice

(3) Utilization of quantitative risk assessment

(4) Inspection procedures according to the evaluation of safety fitness levels

(5) Development of standards and codes

(6) Active actions in accordance with laws

(7) Utilization of lessons learned from minor troubles

5) Falsification Issues and Causes of Tokyo Electric Power Co., Inc.,

< Example of the case >
- Cracks in shroud etc.
- Inappropriate description of the repair record
- Gap, wear, etc. of pumps

(1) The falsification of the self-imposed inspection record

- Two allegations (whistle blowing) in 2000 were the starter.
- A total of 29 cases were disclosed by NISA on August 29, 2002.
- NISA identified no problems in 13 of the cases and found problematic cases in 16.

(2) Further problem identification effort through comprehensive investigation order

- On August 30, 2002, based on the investigation result of the falsification record cases, 16 nuclear licensees were directed to carry out the comprehensive investigation into the past self-imposed inspection records.
- Utilities reported that cracks and symptoms of cracks were found in the re-circulation system piping or the shroud.

(3) The falsification of the results during the containment vessel leakage rate testing

- It became clear that the leakage rates were falsified by the Tokyo Electric Power Co., Inc. during the reactor containment vessel inspections (in 1991 and 1992) at the Unit 1 of the Fukushima Daiichi Nuclear Power Station. Leakage rate testing is one of the periodic inspection items by the National Government.
- The National Government took enforcement actions to shutdown the plant for one year (October 26, 2002).
- It was decided to carry out the leakage rate inspection for all nuclear power plants operated by the concerned company under the presence of the NISA inspectors.

In April 2003, all of Tepco's 17 units were forced to shutdown

- Thorough confirmation of safety on the shutdown reactors
- A total of 40 times of explanation were conducted to the local residence on the status of safety confirmation.

16 out of 17 units re-started operation as of November 24, 2004.
(7 units of the Kashiwazaki-Kariwa NPS, 9 units of the Fukushima NPSs).

(Factors that caused the falsification issues)

Factors for licensees:

(1) The self-righteous judgment by a limited number of persons was routinely conducted.
(2) Preservation of records and re-evaluation of the inspection results were not considered important.
(3) Awareness for quality assurance was poor.

Factors for the National Government:

(1) Licensee's self-imposed inspection were not definitely stipulated by the law.
Judgment was entrusted to the licensees.
(2) The methodology for confirming structural integrity after commissioning was not definite.

Factors common to both sides:

Awareness for safety fitness and accountability including scientific and rational bases was inadequate.

6) Actions in response to the Accident at Mihama Unit 3 of Kansai Electric and the Interim Report

- **The piping failure accident of the secondary system at Unit 3 of the Mihama Power Station of Kansai Electric Power Co., Inc. (Kansai Electric) occurred on August 9, 2004, resulted in the death and injury of 11 persons at the nuclear power station. The National Government took this situation seriously and took the following actions based on the interim report documented by the accident investigating committee and released on September 27:**

< To Kansai Electric >

- The Minister of Economy Trade and Industry (METI) issued (1) a letter of strict warning; (2) an order to conform to the technical standards; and (3) a notification letter to downgrade the assessment of the periodic safety management review result.
- Strict implementation of special inspections (special reviews) for Kansai Electric installations.

< To all nuclear power licensees >

- NISA issued directions to all licensees to take preventive measures pointed out by the investigation committee and notified to actions to confirm licensee responses.

< NISA's own actions>

- METI revised the ministerial orders to incorporate a requirement to systematically check the structural integrity of the main piping and the main vessels.
- METI authorize the use of piping management guides, which the licensees conventionally used, after revising them.
- The licensee’s wall thickness management on the secondary system piping is confirmed at the fitness-for-safety inspection by the National Government

< Major Activities for the Accident at the Mihama PS Unit No. 3 >

At the Diet and Local Government

- On August 9; The Deputy Director-General of NISA visited the site, and established the local headquarters.
- On August 10; the Minister of Economy Trade and Industry (with the Director-General of NISA) visited and observed the Mihama PS etc., and exchanged opinions with the persons concerned.
- Since then, the Director-General and the Deputy Director-General visited Fukui Prefecture 7 times and 5 times, respectively, in August and September.
- Kepco stopped power operation of all nuclear power plants on purpose, following the appeal of the Governor of the Fukui Prefecture after August 13, and checked similar parts related to the failure etc.
- August 31; The Committee on Economy and Industry of the House of Representatives made 1st discussion during the Diet recess.

Accident Investigating Committee

- August 10; Established the "Investigating Committee for the Piping Failure Accident of the Secondary System at the Unit 3 of the Mihama Power Station" in the Reactor Safety Subcommittee of the Advisory Committee for Energy and Resources, and the Subcommittee dispatched two members immediately to the site, and special survey started.
- August 11; 1st accident investigating committee meeting (all accident investigating committee meetings were open to the public. Moreover, the press briefing was implemented subsequently. Reference materials were all uploaded to the NISA homepage.
- August 19; 2nd accident investigating committee meeting
- August 27; 3rd accident investigating committee meeting
- September 6; 4th accident investigating committee meeting (held in Fukui city)
- September 17; 5th accident investigating committee meeting
- September 27; 6th accident investigating committee meeting "interim documentation"

METI / NISA

- August 9; Notification from Kepco that the Mihama PS Unit No. 3 stopped automatically
- August 11; In accordance with the Electric Utility Act, all nuclear power plants and main thermal power plants were ordered to survey and report on the status of the wall-thickness management at the possible part of the pipe wall thinning.
- Since then, NISA received the reports one by one and confirmed the results.
- August 13; In accordance with the Electric Utility Act, etc. the entry and inspection to the Mihama PS were conducted.
- The NISA inspectors conducted witness inspections on the Kepco's checks made for the places where the wall-thickness management has not been adequate for all of the shutdown units. The integrity of the piping was confirmed including pipes newly modified.
- September 27; Measures were put in place based on the interim documentation, such as sending a strict-warning letter to Kepco by the Minister of Economy Trade and Industry, etc. (See the previous slide)

- September 27; The Director-General explained to the governor of Fukui Prefecture on the content of the interim documentation and the actions of the Ministry of Economy, Trade and Industry based on the activity results. Moreover, managers of NISA explained to all the local governments where nuclear power generation plants are installed other than Fukui Prefecture in total of 40 times or more.
- September 29; Committee on Economy and Industry of the House of Representatives made 2nd discussion during the Diet recess.
- October 6; Committee on Economy and Industry of the House of Councilors made discussion during the Diet recess.

2. Drastic Reform in Nuclear Safety Regulation Based on the Principles

Principle 1: Licensees Take the Primary Responsibility for Nuclear Safety and the National Government, Entrusted by the Public, Regulates the Licensees' Safety Activities

- **Licensees:**
  - Take the primary responsibility for providing nuclear safety to the public.
  - Should establish quality assurance systems and maintenance management programs, and implement the appropriate safety management in compliance with the new regulations introduced in October 2003.

  ➔Not only the "results" but also the "process" is subject to inspection to attain safety.
- **The National Government:**
  - Assume the responsibility for monitoring and regulating the licensees' operations.
  - Should establish nuclear safety regulations for the licensees to comply with, and review and inspect the appropriateness of the licensee's operations.

  ➔Under the new regulations in which quality management and maintenance management are checked, inspection system was shifted from "prescriptive" to "without notice" and "audit-type" inspection.

< Example of achievements on the regulatory reform >

(1) Establishment of the quality assurance and maintenance management alignments (since October 2003)
(2) Introduction of periodic licensee's inspection system (since October 2003)
(3) Legislation of the periodic safety review (since October 2003)
(4) Competency enhancement program of government inspectors (since December 2003)

< Introduction of New Inspection System >

Functional Enhancement of the Nuclear Safety Commission
(Receive quarterly report, expansion of investigation authority)

Minister of Economy Trade and Industry

NISA

Fitness-for-safety inspection

Pre-service inspection and
Periodic inspection

JNES

Pre-service inspection and Periodic inspection other than those by NISA

Review of
licensee's inspection alignment
(Periodic safety management review)

Licensees

QA System ISO9000 series

Clear definition in Fitness-for-safety program

Maintenance management

Periodic Safety Review (Once per ten years)

- Especially important inspections among the inspection items which directly confirm the functions of "reactor shutdown", "core cooling", and "containment of radioactive materials"

- Inspections directly confirm the "comprehensive plant performance"

Conventional self-imposed inspection items

Obligation of the periodic licensee's inspection

< Establishment of Quality Assurance & Maintenance Management Alignments >

- Licensees are requested to describe the QA and maintenance management arrangements in their fitness-for-safety programs pursuant to requirements of the Reactor Regulation Act.
- NISA checks licensee's implementation through fitness-for-safety inspections.

Establishment of quality assurance alignment

- **Objective of QA**

  Quality assurance is a process to maintain and improve the quality of fitness-for-safety activities which enables:

  - The licensees to check their fitness-for-safety activities; and
  - The licensees to gain public confidence through making accountability on QA available to the public.

- **Features in QA activities**

  1) Initiatives by the top management,
  2) Based on international QA standards such as ISO9001: 2000,
  3) Continuous improvement in fitness-for-safety activities through repeating Plan-Do-Check-Action cycles, and
  4) Auditing by independent in-house auditing bodies.

- **Legal position**

  1) Description of "QA activities" in the fitness-for-safety programs pursuant to requirements of the Reactor Regulation Act
  2) Confirmation of licensee's implementation through fitness-for-safety inspection

Establishment of maintenance management alignment

- **Objective of maintenance management**
  - Maintenance management is implemented through adequate activities corresponding to safety function and safety significance to maintain the performance, functions and safety level of nuclear power plants.
- **Features in maintenance management activities**

  1) Definition of policies and targets of the maintenance management
  2) Definition of the component/structure classification and scope of maintenance
  3) Development of maintenance programs for facilities and components subject to maintenance
  4) Implementation and assessment of maintenance activities
  5) Implementation of necessary corrective actions such as repairs, replacements and modifications
  6) Assessment and continuous improvement of the maintenance programs

- **Legal position**

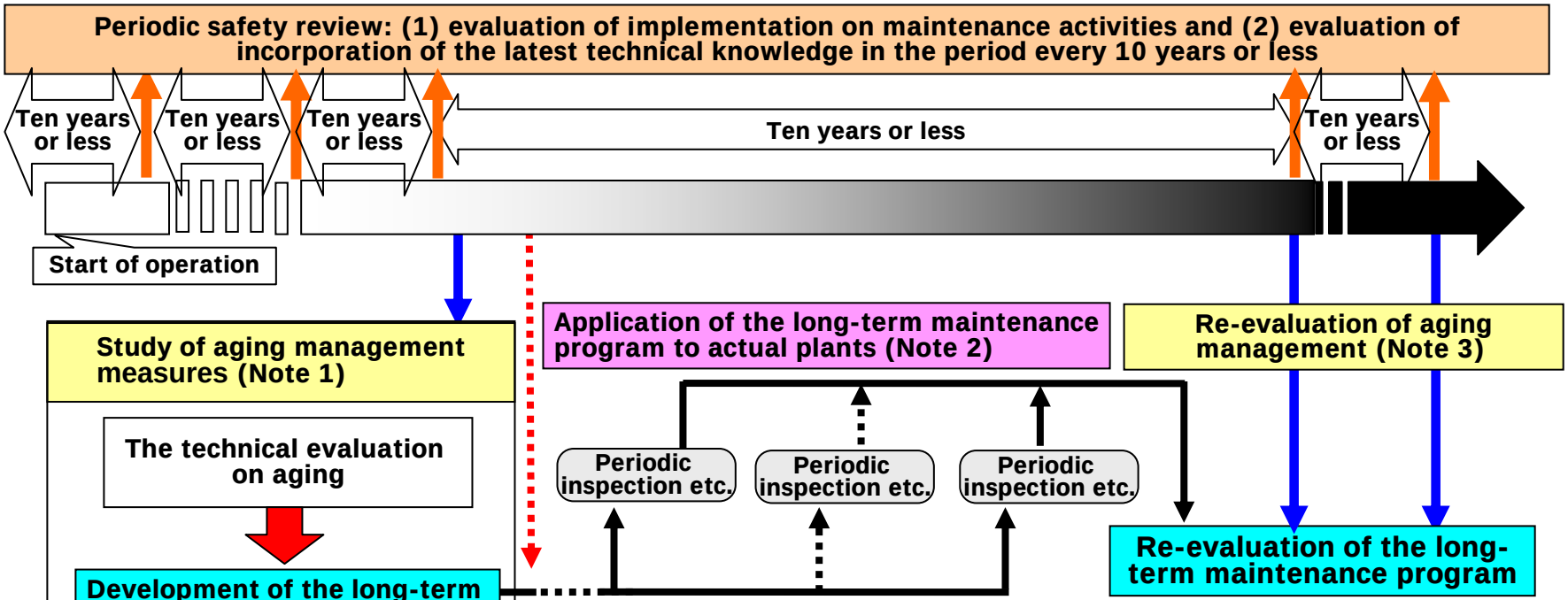
  1) Description of "maintenance management activities" in the fitness-for-safety programs pursuant to requirements of the Reactor Regulation Act
  2) Confirmation of licensee's implementation through fitness-for-safety inspections

[The Comprehensive Check of the Quality Assurance System of the Rokkasho Reprocessing Facility]

- In February 2002, water leakage was confirmed at the spent fuel receiving and storage facility in Japan Nuclear Fuel Ltd., and a lot of inappropriate welding constructions became apparent at the reprocessing facility.
- In June 2003, NISA directed the said company to check its quality assurance alignment.
- In January 2004, the repair work for the inappropriate welding constructions was completed.
- In February and March 2004, a report was submitted by Japan Nuclear Fuel Ltd. NISA evaluated the report and submitted its evaluation results to the comprehensive investigation study group of the subcommittee and the Nuclear Safety Commission. NISA received their consents.
- After that, NISA's evaluation results were explained to the Governor of Aomori Prefecture and the Mayor of Rokkasho Village, as well as Local Assemblies and the Atomic Energy Commission etc.

< Periodic Safety Reviews and Aging Management for Nuclear Power Plants >

- Technical evaluation for aging and the preparation of a long-term maintenance program based on its evaluation results are conducted at the time of a periodic safety review for a plant which has operated for almost 30 years.
- The long-term maintenance program is systematically implemented during periodic inspections conducted after operation of more than 30 years.
- The long-term maintenance program will be re-evaluated at every periodic safety review which is conducted in every 10 years or less.



(Note 1) Study is conducted by within 30 years or less after the start of reactor operation
(Note 2) Feedback to the periodic inspection etc. after operation of 30 years or more
(Note 3) Re-evaluation in the period every 10 years or less

Principle 2: Safety Should be Regulated Effectively by Incorporating the Latest Technical Knowledge

Scientific rationale

- It is important to incorporate the latest scientific knowledge on regulations and to enforce safety regulation with the maximum effectiveness and the efficiency.
- NISA makes efforts to:
  - (1) utilize the professional knowledge from the Independent Administrative Agency, Japan Nuclear Energy Safety Organization (JNES), Japan Atomic Energy Research Institute, and related societies;
  - (2) implement the realistic regulation by collecting data at sites taking advantage of licensee cooperation; and
  - (3) pay attention to the international trends in various codes or standards.

Objectivity

- The framework and standards of safety regulation should be clearly defined in documents.

Fairness

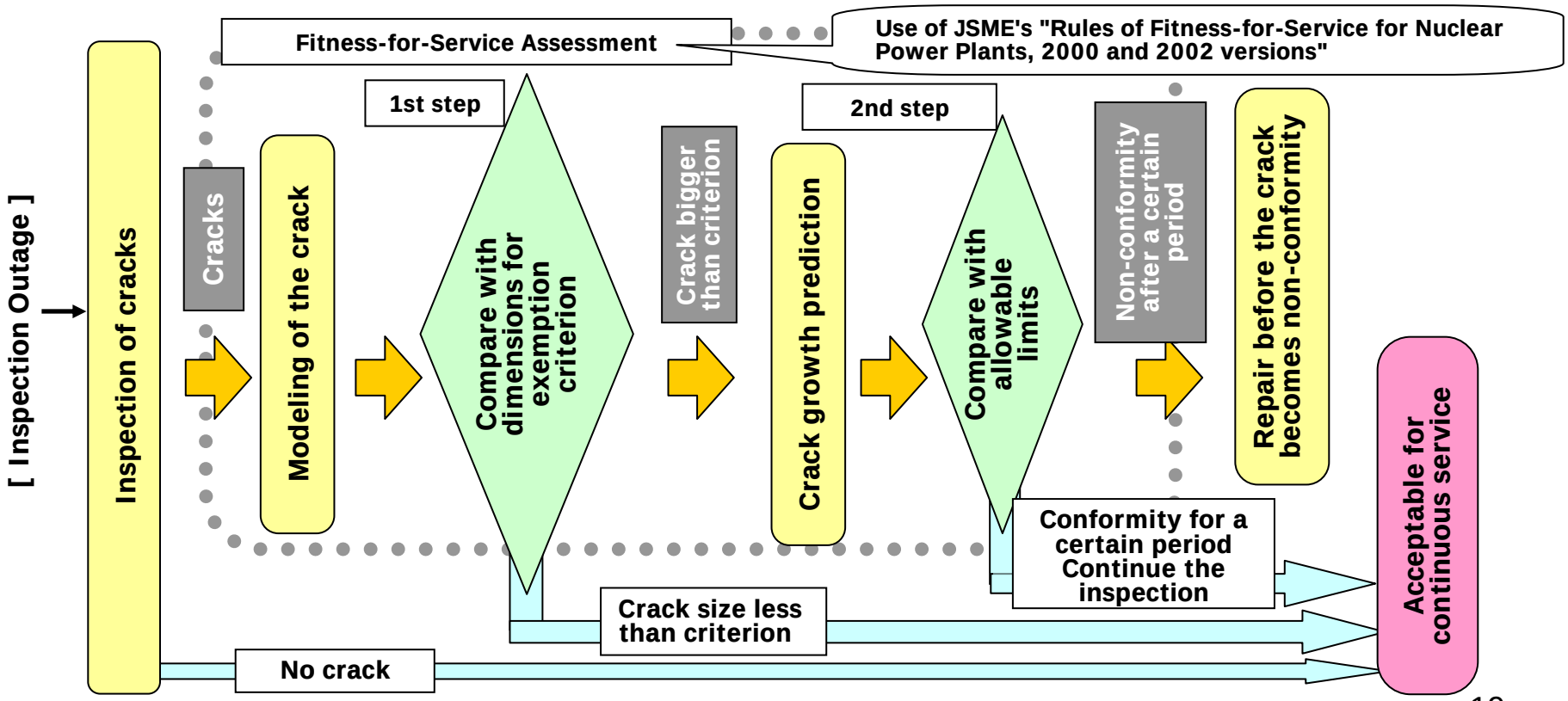
- NISA always behaves with a neutral and fair position, and the Nuclear Safety Commission's oversight process ensures much more fairness.

< Example of the Regulatory Reform >

(1) Introduction of industry codes in the fitness-for-service assessment (Ensuring scientific rationale) (since October 2003)
(2) Clarification of items subject to approval of construction plan and clarification of reporting criteria on accidents, incidents, etc. (Ensuring objectivity) (since October 2003)
(4) Establishment of the Incorporated Administrative Agency, Japan Nuclear Energy Safety Organization (October 2003)
(4) Enhancement of oversight by the Nuclear Safety Commission (Ensuring Fairness) (April 2003)

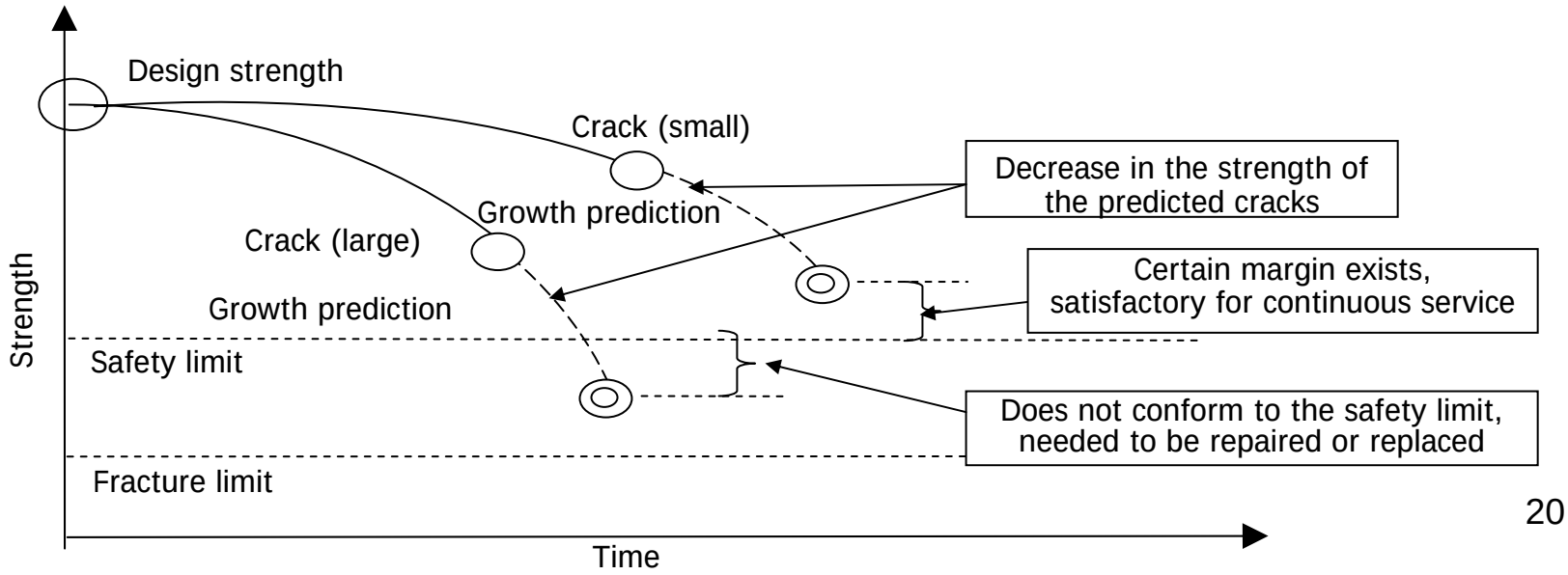
< Procedures for Fitness-for-Service Assessment on Components and Structures >

- Licensees are obliged to conduct fitness-for-service assessment as part of the periodic licensees' inspection and to report the evaluation results to NISA. Methods to evaluate the integrity of components with cracks are clearly defined as a rule.
- Subject components: Components/structures formulating the reactor coolant pressure boundary and core shroud.
- Evaluation methods: As reliable review criteria for fitness-for-service assessment, JSME's "Rules of Fitness-for-Service for Nuclear Power Plants, 2000 and 2002 versions" are used after technical validity evaluation by the Government.

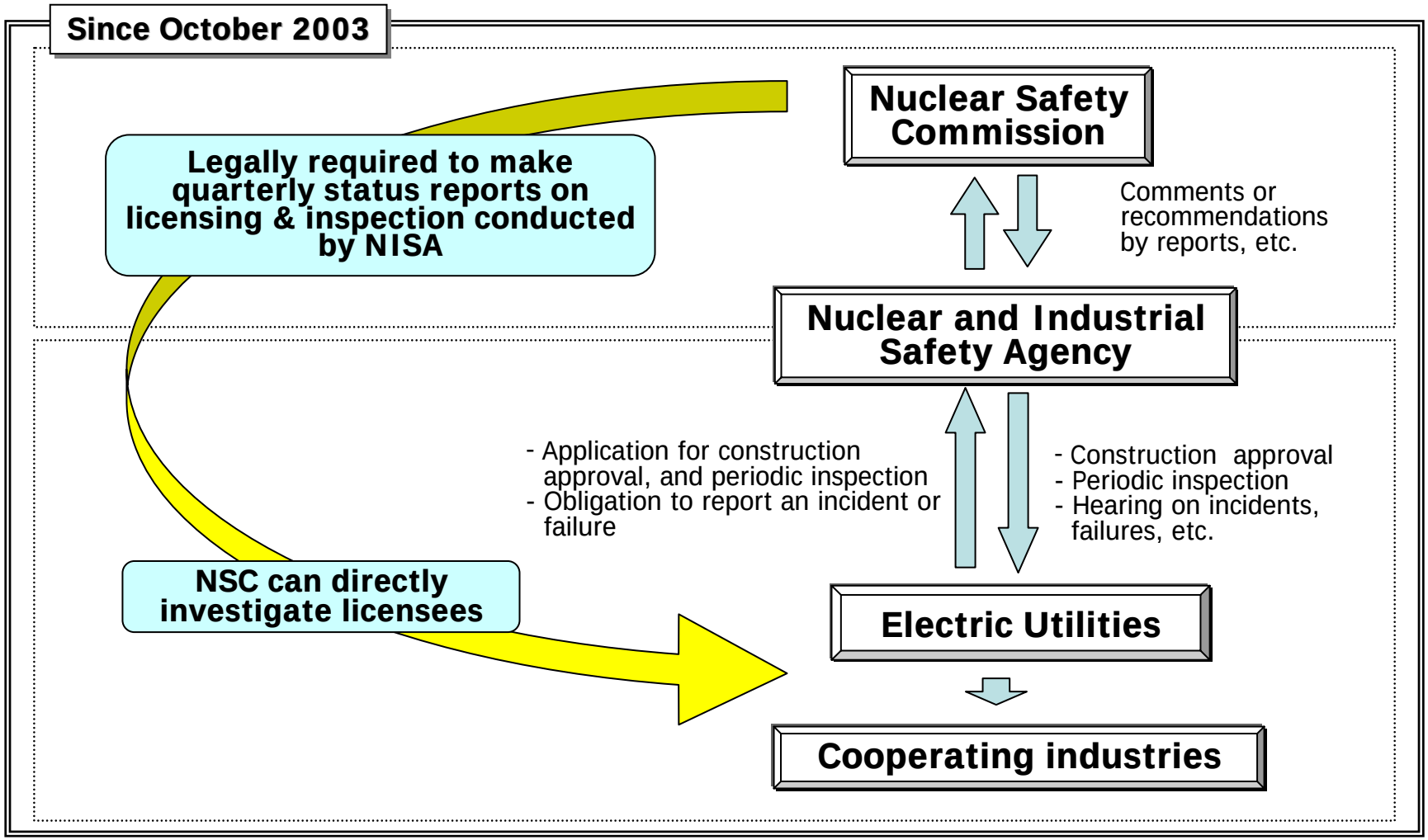


< Technical Background of Fitness-for-Service Assessment for Components and Structures >

- Safety limits are defined with a certain margin to fracture limits of the components / structures.
- Components / structures are designed with an additional margin to the safety limit.
- If any defect (e.g., crack) is generated during the service period, the structural strength of the component / structure decreases. (Solid lines represent actual decrease of the strength.)
- Predict the crack growth for a certain period of time (e.g., 5 years) (growth prediction).
- Decrease in the structural strength is evaluated with engineering approaches for the predicted crack. (1) If the structural strength meets the safety limit, the component / structure is satisfactory for continuous service for the prediction period, and (2) if not, the component /structure must be repaired or replaced.
- Even when the component / structure is satisfactory for continuous service, the crack growth shall be checked (continuous inspection) with a frequency of a certain time period within the predicted period in which the safety level is guaranteed.

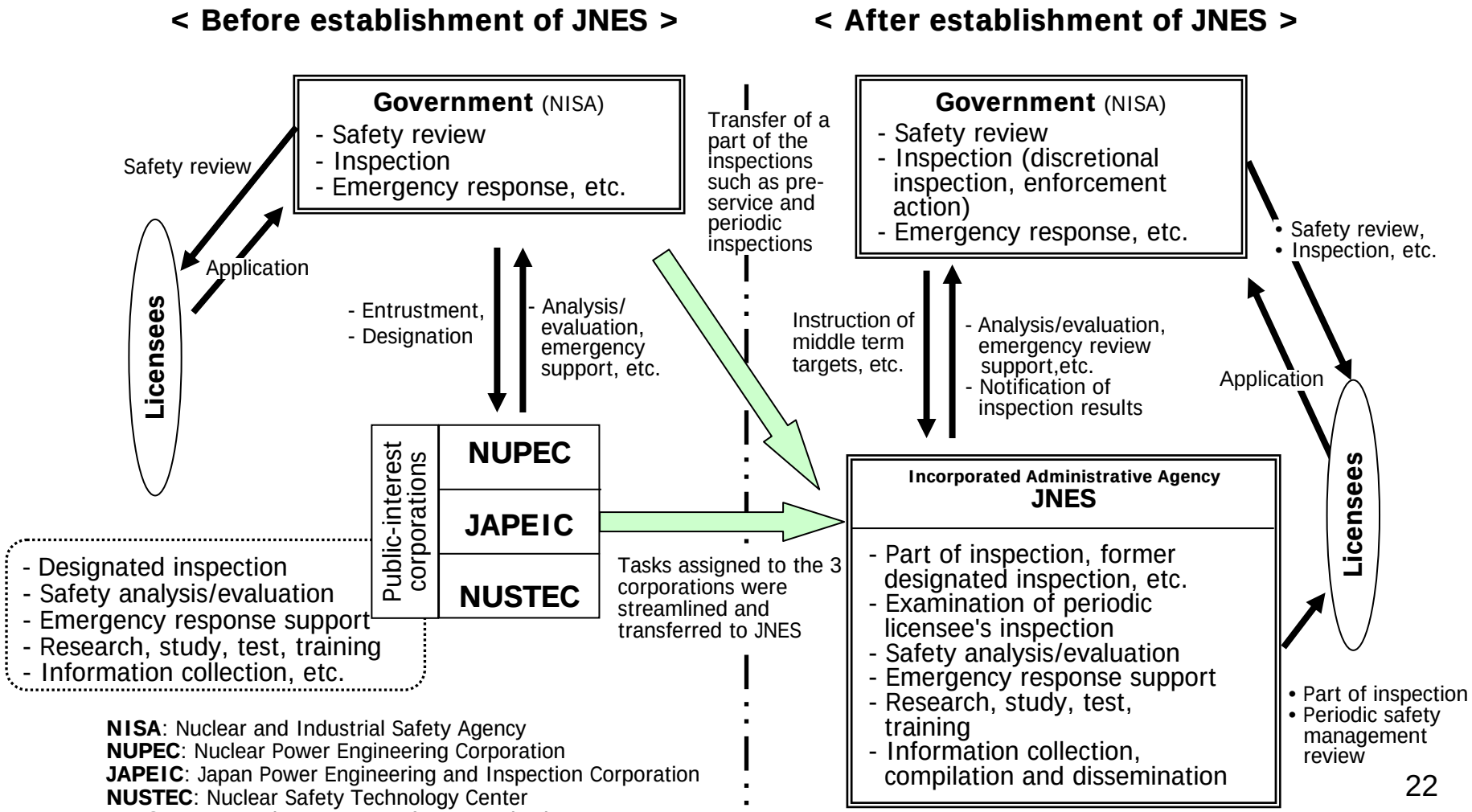


< Enhancement of Oversight Process >



< Establishment of Japan Nuclear Energy Safety Organization (JNES) >

- Inspections of technically expertise portions, such as specifications of materials and components, adequacy of inspection data, conventionally conducted by NISA, were transferred to JNES.
- Authority for enforcement actions remains in NISA even for inspections were conducted by JNES.



NISA: Nuclear and Industrial Safety Agency
NUPEC: Nuclear Power Engineering Corporation
JAPEIC: Japan Power Engineering and Inspection Corporation
NUSTEC: Nuclear Safety Technology Center
JNES: Japan Nuclear Energy Safety Organization

< Staff Alignments in Nuclear Safety Regulation >

Organizational Alignment for Nuclear Safety Regulation in Japan

Regulatory organizations (including the administrative divisions)

- NISA, Ministry of Economy, Trade and Industry about 350 (about 140 at the start of NISA)
  (About 100 are inspectors (about 50 at the start of NISA)
- Ministry of Education, Culture, Sports, Science and Technology about 90
- Nuclear Safety Commission, Cabinet-Office about 110 (about 20 at the start of NISA)

about 550 in total

Supporting organizations for safety regulation

- Incorporated Administrative Agency, Japan Nuclear Energy Safety Organization
  about 430 (including 100 inspectors)
- Japan Atomic Energy Research Institute (Nuclear Safety Research Center)
  about 210

about 640 in total

Note: The numbers shown above are as of the end of FY2004.

As of Nov. 2004

Number of nuclear power plants: 52 units in total
Number of personnel engaged in the nuclear safety: 1,190 in total
About 200 are inspectors

Organizational Alignment for Nuclear Safety Regulation in USA (NRC)

- The Nuclear Regulatory Commission (NRC) keeps about 3,100 personnel including safety research and verification test persons.
- About 340 out of 3,100 are inspectors.

Number of nuclear power plants: 103 units in total
Number of personnel engaged in the nuclear safety: 3,100 in total

< The Allegation System on the Safety of Nuclear Facilities >

1. Overview of the System

- NISA receives an allegation from the employee on the "illegal act" of a licensee, and issues corrective actions such as instruction to the licensee, if necessary, after investigating the allegation.
- NISA investigates the allegation, under the supervision of the Investigating Committee on the Allegation for the Nuclear Facility Safety which consists of external intellectuals, by paying attention to protect the reporter's privacy, making the official announcement as early as possible, collecting the related information and conducting on-site inspection, etc. in accordance with the Act.

  (Note) The key elements for system operation are: (1) protection of petitioner's personal information; (2) standard processing time period of six months; (3) decision by the committee for procedures, contents, and termination of the investigation; and (4) periodic public disclosure of the implementation status etc.

2. The Implementation Status of the System

- The implementation status of the allegation system (as of November 16, 2004) is as follows:

Issues in process	Total issues addressed
6	20

- Examples of issues processed recently
  - The report on reagent solution sealing measure of the reprocessing facility of Japan Nuclear Fuel Ltd. (public disclosure on June 23, 2004)
  - The report on a shipment of substances (goods) from the control zone of the Kashiwazaki-Kariwa NPS of Tokyo Electric Power Co., Inc. (public disclosure on October 19, 2004)
  - The report on the entry into the A area of persons who wore attire for the B area at a nuclear power station of Tokyo Electric Power Co., Inc. (public disclosure on October 19, 2004)

Principle 3. Safety Regulation Should be Clear and Open to the Public

- **Licensee**
  - As the primary responsible organization for nuclear safety, the complete information disclosure and accountability to the public are required.
- **National Government**
  - The National Government is required to explain the principles of the safety regulation, various standards, measures actually taken, and day-to-day regulatory activities from the people's perspective. The National Government also develop standards through deliberations at the subcommittee and by receiving public comments.

< Achievements in the regulatory reform >

(1) Guidance document issuance system (NISA document)
---ensuring transparency of safety regulation (September 2001)

(2) Construction of information collection & supply system including minor events **(NUCIA)**
---enhancement of information disclosure by licensees (October 2003)

(3) Legislation of the periodic safety review (October 2003)

(4) Enhancement of public communication activities by the National Government
---accountability of the National Government (2003)

< Enhancement of the "Public Communication Activities" on the Implementation of the Safety Regulation >

- The FY 2004 budget was appropriated to account for the implementation of the nuclear safety regulation, and the "Nuclear Safety Public Relations and Training Division" was established as the responsible office on April 1st, 2004.
- The "Regional Public Communicator for the Nuclear Safety " was placed in the said division.
- To implement public hearings and public relations activities with consideration of the feeling of the people in Japan in mind.

Nuclear Safety Public Relations and Training Division

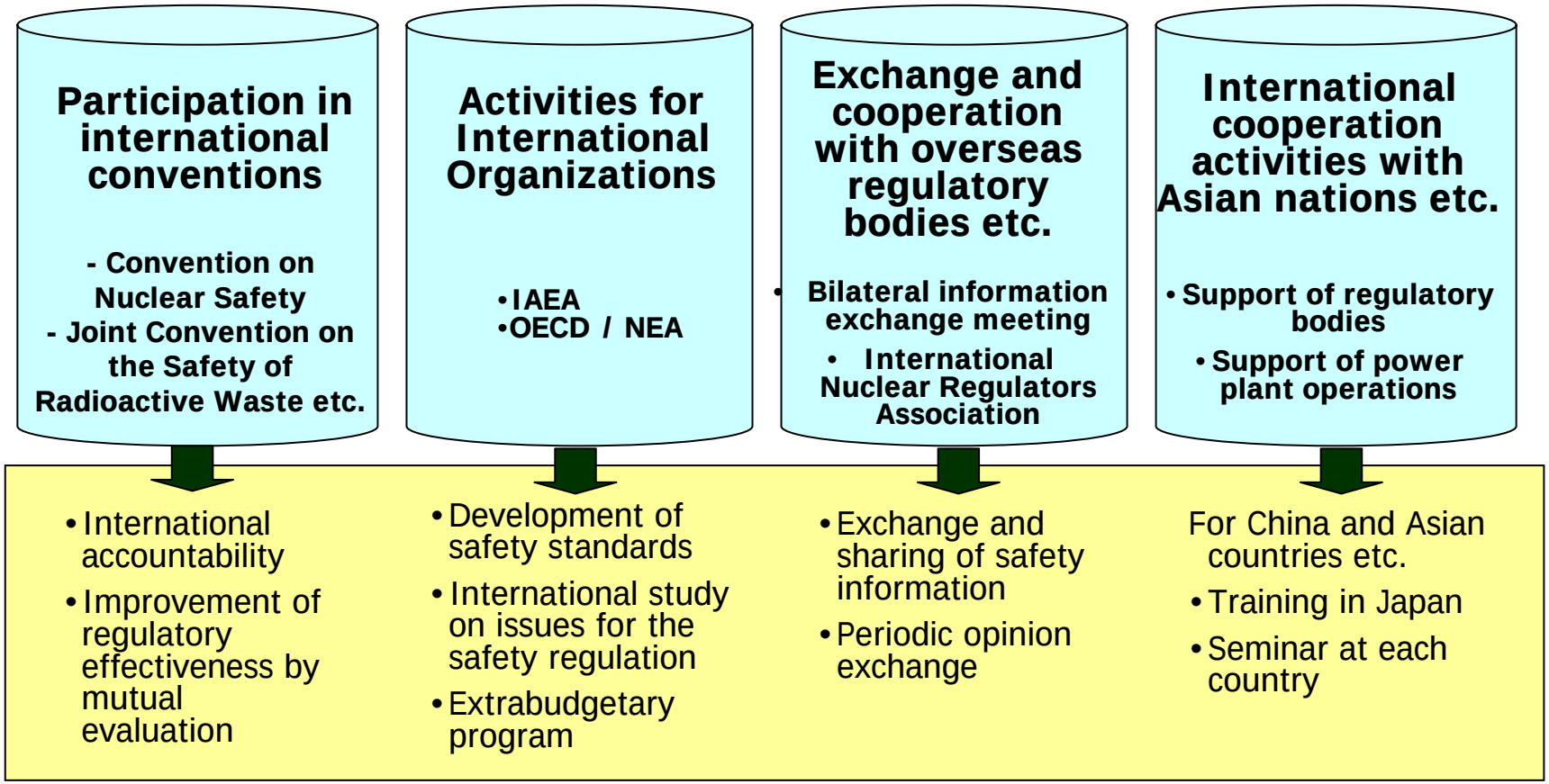
- The Division enhances communications with all the levels of public members as the NISA's contact point of public communication, and receives questions on nuclear safety regulation from the local residents, press, etc.

  < FY 2004 Budget >

  "The Public Communication Project on the Nuclear Safety Regulatory Information" (190 million yen)
  - Periodic issue of newsletters, and distribution to all homes in the site area
  - Information services utilizing a homepage and a deliverable magazine, etc.
- "The Regional Public Relation Official for the Nuclear Safety" conducts appropriate public communications benefiting from tight relations with the local public.
  - A "Regional Public Relation Official for the Nuclear Safety" was assigned to the Kashiwazaki-Kariwa area of Niigata Prefecture on April 1st.
  - Three officials were assigned to the Fukushima Futaba area, the Fukui Wakasa area, and the Aomori Rokkasyo area dated on May 16th.

Principle 4. Initiatives to International Trends

- Information collected from all over the world and international cooperation etc. are required to aim at enhancing the effectiveness of the nuclear safety regulation in Japan.
- As nuclear safety is a generic issue world-wide, international sharing of knowledge and experiences and international cooperation are required.



3. Nuclear Emergency Preparedness and Response

- The nuclear emergency, such as a large amount of radioactive materials release outside the nuclear power plant, should not occur.
- In order to save lives, bodies and properties of the people in Japan even if an emergency arises, NISA is making efforts such as a legislative effort of drills and exercises, readiness for response, etc., to suppress damage to the minimum.
- Besides, incidents are classified into four classes to be able to take mobile actions for an accident or a trouble according to the degree of severity of classes: (1) incident less severe than a trouble; (2) trouble incident; (3) incident more severe than alert Level, and (4) nuclear emergency, which is provided in the "Special Act of Emergency Preparedness for Nuclear Disaster."

< Examples of Nuclear Emergency Preparedness Measures Conducted >

(1) Nuclear emergency response exercises in whichthere is the participation of the Prime Minister, key cabinet ministers, national and local government authorities, licensees, and local residents. (one per year) (since 2000)

(2) Establishment of Off-site Centers near the nuclear power stations (since 2000)

(3) Training for local government staff members, police officers, fire-fighting officials, and self-defense officials (since 2000)

(4) Financial support for preparing emergency networks and materials and equipment for disaster prevention in local governments (2000)

(5) Establishment of an emergency response configuration of NISA, such as the day-shift and night-shift system on 24-hour and 365-day basis. (since 2000)

(6) Research on the accident management (for an accident beyond the design bases safety limit) (since 2000)

4. Security Measures

- Terror attacks occur targeting the Japanese these days, and uneasiness over terrorism is increasing in Japan also.
- Moreover, it became clear that terrorists attempted also to attack nuclear power plants in the terror attacks in the USA, on September 11, 2001. Thus, security for nuclear facilities has now become a big issue.
- In recognition of this, with due consideration for international trends, NISA set out policies to take security measures for lives, bodies, and properties of the public not to be threatened due to the theft of nuclear materials from a nuclear facility or the attack on a nuclear facility.

< Examples of Security Measures Taken >

(1) Enhancement of the cooperation between the security authority and licensees (since October 2001)

(Example) Security activities by special force police units and the Maritime Safety Agency on the patrol vessels on the 24-hour bases.

(2) Enhancement of instruction for licensees to intensify their facility security (since 2001)

(3) Contribution to the international security enhancement activities, such as IAEA's amendment activities on the Convention on the Physical Protection of Nuclear Materials. (since 2001)

(4) Study on nuclear facility protection measures in an emergency

(Legislation for the public protection) (since 2004)

(5) Establishment of the "Office of Physical Protection" in NISA (2004)

(6) Study of the amendment to the "Act for the Regulation on Nuclear Source Material, Nuclear Fuel Material and Reactors" to incorporate provisions of inspection on physical protection.

5. Amendment to the Act for the Regulation of Nuclear Source Material, Nuclear Fuel Material and Reactors (Fiscal Year 2005)

In order to strengthen the nuclear safety regulation, the Act for the Regulation of Nuclear Source Material, Nuclear Fuel Material and Reactors will be amended to reflect:

(1) Intensified protective measures (physical protection measures) for nuclear installations and nuclear material transportation
(2) Clearance rules for sufficiently low activity radioactive wastes.

Intensification of the physical protection measures

- In order to take a credit for the effectiveness of the protective measures in which the design basis threats (DBTs) are established as required by the IAEA guidelines:
  (1) A "**Physical protection inspection**" process and a "**Physical Protection Inspector**" system will be introduced; and
  (2) Requirements will be provided for licensee employees to keep secret those who are in positions to know the DBTs and the physical protection measures (Violation of which is subject to penalty).

Introduction of the clearance system

- Materials such as metal and concrete which are used for nuclear installations and where radioactivity is sufficiently low are regarded as the "ones that are not contaminated by the nuclear fuel materials" through confirmation of the competent minister. By so doing, the materials will be disposed of and recycled as usual waste.

Other matters to be amended

- Development of requirements for decommissioning safety regulations, abolition of authority delegation to the Cabinet Order concerning report gathering, stipulation of reporting obligation of incidents, stipulation of a ban on marine disposal of radioactive wastes, etc.

6. Short-term, Mid-term and Long-term Challenges

Major challenges to be addressed by NISA are:

- Intensification of the aging measures;
- Establishment of the quality assurance alignment during the construction phase;
- Study on the certification system for ultrasonic testing in the context of Performance Demonstration Initiative (PDI) ;
- Promotion of public dissemination on the safety by licensees as well as sharing of safety information and establishment of a utilization system;
- Performance-oriented rulemaking of the technical standards;
- Study on the risk-informed safety regulation;

Major challenges to be addressed by NISA; cont.

- Response to the Nuclear Safety Commission's new safety research programs;
- Study of legislation on high radioactive waste disposal;
- Preparation of regulations on interim storage;
- Preparation of regulations on for fuel reprocessing and fuel fabrication operations;
- Systematization and enhancement of communications with the public;
- Evaluation and enhancement of the regulatory activity in NISA;
- Securing the human resource infrastructure for nuclear safety; and
- Study on the development of regulations processes for TRU wastes and uranium wastes.