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Summary Report of Peer Review

(Provisional Translation)

Place of Review:	Head Office (Shibadaimon, Minato-ku, Tokyo) Rokkasho Transport Operations Office (Rokkasho-mura, Kamikita-gun, Aomori) Nuclear Fuel Transport Co., Ltd.
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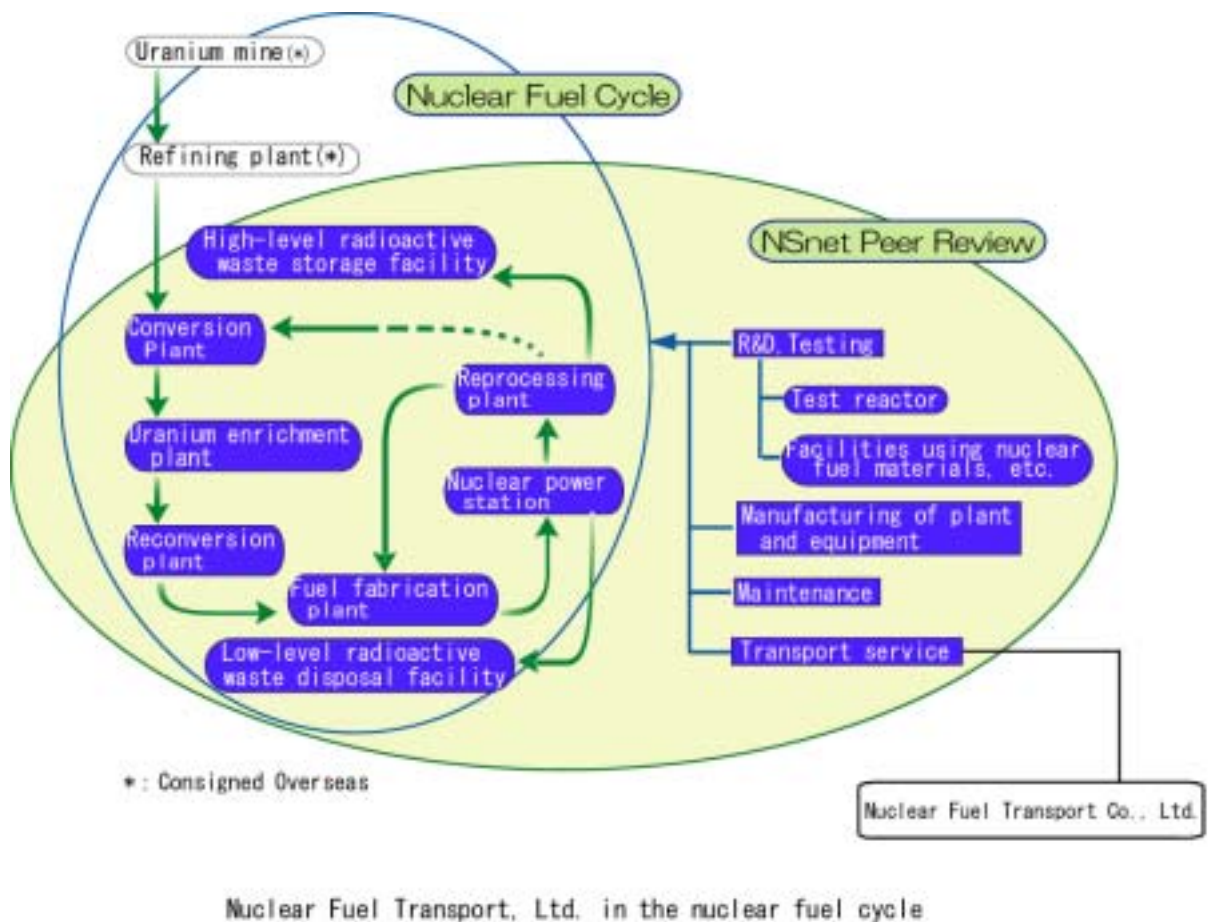
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1. Objectives

The purpose of the NSnet peer review (hereafter referred to as “review”) is to achieve an improvement in the “safety culture” of the entire nuclear power industry by sending review teams of member specialists to member facilities, where they conduct reciprocal evaluations on common nuclear safety subjects among members and share mutual knowledge about the horizontal progress of good practices as well as subjects that have been singled out.

2. Summary of Facility Operations



Nuclear Fuel Transport (hereafter referred to as “NFT”) was founded in April 1973 under its former name, N.T.S. Co., Ltd. with the purpose of transporting spent fuel¹ and other materials. The company changed its name to the current one in June 1986 and, as a specialist in transporting radioactive materials that make up the nuclear fuel cycle, the

company has been building up experience and skills in safe and reliable land and sea transport of nuclear materials such as spent fuel, low-level radioactive wasteⁱⁱ, returned vitrified wasteⁱⁱⁱ, and natural uranium hexafluoride^{iv} (UF₆) and so on.

The Rokkasho Transport Operations Office was settled in April 1992 in the port of Mutsuogawara to plan transport and implement management, thereby establishing a responsible transport system with close relationship with the local community. The transport business of NFT is as outlined below.

- Transporting spent fuel to the reprocessing plant

Using dedicated carriers to transporting by sea spent fuel discharged from nuclear power stations and the like to the port of the Tokai Plant of Japan Atomic Power Company in Tokai-mura, Ibaraki Prefecture and, after unloading at the port, transporting by land to the reprocessing plant of the Power Reactor and Nuclear Fuel Development Corporation (currently, Japan Nuclear Cycle Development Institute).

- Transporting spent fuel to nuclear fuel cycle facilities

Using dedicated carriers to transport by sea spent fuel from nuclear power stations all over Japan to the port of Mutsuogawara, Rokkasho-mura, Aomori Prefecture and, after unloading at the port, transporting by land to the nuclear fuel cycle facilities of Japan Nuclear Fuel Limited (hereafter referred to as “JNFL”).

- Transporting low-level radioactive waste

Using dedicated carriers to transport by sea low-level radioactive waste from nuclear power stations all over Japan to the port of Mutsuogawara, Rokkasho-mura, Aomori Prefecture and, after unloading at the port, transporting by land to the nuclear fuel cycle facilities of JNFL.

- Transporting by land returned vitrified waste and natural uranium hexafluoride

Transporting by land returned vitrified waste and natural uranium hexafluoride from the port of Mutsuogawara to the nuclear fuel cycle facilities of JNFL.

- Related activities

Owning, operating, and leasing equipment and systems for transporting radioactive materials.

NFT has a total of approximately 110 employees, including the president, about two dozens of whom are assigned to the Rokkasho Transportation Operations Office. The Head Office consists of the Transport Department (approximately 20 personnel) in charge of overall coordination of transport policies and plans, the Engineering Department (approximately 20 personnel) in charge of design and maintenance management of systems and equipment, including transport containers, the Safety and Quality Assurance Department, the General Planning Department, the General Affairs Department, and the Accounting

Department. A characteristic of the organization is that employees on loan account for approximately half of all personnel. In addition, the operation and maintenance of carriers and vehicles are supported by multiple cooperating companies.

3. Points of Review

(1) Review Subject

Since a consistent system and activities are being implemented toward the safety control of transportation as a whole, it was decided to review the activities of the entire transportation administration with respect to nuclear safety, including design management, without being limited to on-site operations.

(2) Points of Review

Since transportation is closely related to nuclear power stations and nuclear fuel cycle facilities, the points of review were similar to them. In other words, in view of the starting point of establishing NSnet (the JCO accident^v) and recent trends in connection with nuclear safety, review items were determined by breaking down the five basic viewpoints, including engineering and social safety, according to the features of NFT, and classifying the individual elements identified (see the table below) into: I. Organization/Administration, II. Emergency Measures, III. Education/Training, IV. Design/Transportation/Maintenance Administration, and V. Handling of important Issues.

The results are summarized in “6.2. Items of Review.” Among them, review items on which special emphasis was placed are as shown below.

I. Organization/Administration

- Status of disseminating organizational objectives
- Activities to promote safety culture and improve morality (ethics programs and the system and climate of sincerely accepting opinions from within the organization)

II. Emergency Measures

- Emergency notification, liaison, and cooperating systems

III. Education/Training

- Carrying out education and training, including skill dissemination

IV. Design/Transportation/Maintenance Administration

- Written procedures concerning design, transportation, and maintenance administration, and observation thereof
- Transportation and maintenance plans and management thereof

V. Handling of important Issues

- Activities to ensure a harmonized safety relationship with cooperating companies

(communication with cooperating companies, etc.)

- System to prevent data manipulation (eliminating human factors, etc.)
- Activities to prevent non-compliance, including human factors

In addition, following the issue of manipulating voluntary inspection data at nuclear power stations of Tokyo Electric Power Company (hereafter referred to as the “TEPCO issue”), review was conducted, paying special attention to ethics, communication, data handling, and so forth.

Review was conducted in comparison with best practices of the nuclear industry.

Table: Five Basic Viewpoints and Individual Elements Identified

No.	Viewpoint	Element
1	“Foundation for ensuring safety (including communication with cooperating companies)”	Safety culture is promoted and an effective organization has been established; employee education and training is implemented adequately; effective design, transportation, and maintenance administration is achieved by developing and observing relevant documents and procedures; communication with cooperating companies is promoted appropriately, and so forth.
2	“Relationship with the local community (enhancing measures to prevent accidents)”	Reliable emergency preparations have been made; outreach programs for the local community are being promoted through information disclosure and other public acceptance activities; efforts are being made to create a sense of trust toward nuclear energy, and so forth.
3	“Incorporating working experience into safety improvement”	Past non-compliance instances have been handled appropriately; systems and operating methods have been improved; a system has been established to maintain them continuously, and so forth.
4	“Incorporating and coping with lessons from the JCO accident”	In addition to thoroughly ensuring criticality safety control ^{vi} by means of transport containers, it is fully recognized by workers, and other items applicable to organizational policies and activities, knowledge and skill of employees, employee education, methods for approving and observing work procedures, and so forth
5	“Coping with recent nuclear issues”	Measures are being taken to enhance quality control and prevent human errors in order to cope with data manipulation issues in the inspection of piping welds, spent fuel transport containers, and MOX fuel ^{vii} , how activities are carried out to properly ensure ethics, communication, and data handling in order to cope with the issue of manipulating voluntary inspection data, and so forth.

4. Period and Outline of Review

(1) Date

December 3 (Tue.), 2002 : “Field observations” and so on at the Rokkasho Transport Operations Office.

December 18 (Wed.) to December 20 (Fri.), 2002 : “Document examination” and “interviews” at the Head Office.

(2) Formation of Review Teams

A group : Hitachi, Ltd., The Chugoku Electric Power Co.

B group : Nuclear Development Cor., NSnet

Coordinators: NSnet Office

(3) Fields of Responsibility

A group : Fields of review: organization/operation, emergency measures, education/training and handling of important issues (initiatives for improving corporate trust) Activities to improve the reliability of transport equipment

B group : Fields of review: design/transportation/maintenance administration and handling of important issues (excluding initiatives for improving corporate trust) Activities to improve the reliability of transport equipment

(4) Offices Visited by the Review Team

The review was conducted with respect to the Head Office and the Rokkasho Transport Operations Office to examine the consistency of their systems and activities for the safety control of the entire transport operations, including on-site operations. The Review Team visited the Rokkasho Transport Operations Office mainly to conduct “field observations” (including “examining relevant documents”) and “document examination” and “interviews” were carried out at the Head Office.

5. Schedule of Review

The review was carried out by two groups over a period of four days in total (one day at the Rokkasho Transport Operations Office and three days at the Head Office) according to the schedule shown below.

(1) Schedule at the Rokkasho Transport Operations Office, including field observations

		A Group (Organization/Administration, Emergency Measures, Education/Training, Handling of Important Issues (Partial))	B Group (Design/Transport/Maintenance Administration, Handling of Important Issues)	
12/3 (Tue.)	A M	Greeting, member instruction, checking review items, etc.		
		(Field observations)		
	P M	II. Emergency Measures	• Emergency Measures Room (preparing materials and gear).	On-the-spot (Conducted jointly by A and B groups)
		V. Handling of Important Issues	• On-site labor safety activities and activities for preventing human error	
		I. Organization/ Administration	• Public acceptance activities for the local community	Documents (Conducted jointly by A and B groups)
		IV. Design/Transport/ Maintenance Administration	• Equipment maintenance (cranes)	
		V. Handling of Important Issues	• Human error prevention activities	

(2) Review schedule at the Head Office

		A Group	B Group	
12/18 (Wed.)	A M	Opening (Greetings, Members Introduction, explanation of plant facilities, work summary, etc.)		
		5. Handling of important issues (Activities for Nuclear Safety) [Document Examination]	- Activities to improve the reliability of transport equipment (Handling of data falsification issue) [Document Examination]	4. Design/Transport /Maintenance Administration - Effective transport and maintenance administration [Document Examination]
	1. Organization/ Administration [Document Examination]	- Effective organizational and management (quality assurance system) [Document Examination]		
	P M	1. Organization/ Administration	- Effective organizational and management (excluding quality assurance system) [Document Examination]	4. Design/Transport /Maintenance Administration - Effective design administration [Document Examination]
			< President > [Interviews]	
			- Activities to promote safety culture and improve morality [Document Examination]	5. Handling of important issues (non-compliance prevention activities) - Activities to prevent the recurrence of non-compliance and prevent human errors [Document Examination]
< Manager class > [Interviews]				
12/19 (Thu.)	A M	2. Emergency Measures [Document Examination]	5. Handling of important issues (Activities for Nuclear Safety) - Cooperative activities related to safety with cooperating companies [Document Examination] - Activities to improve the reliability of transport equipment [Document Examination] - Labor safety (including radiation control) [Document Examination] < Responsible persons > [Interviews]	
		1. Organization/ Administration [Interviews]		
		2. Emergency Measures [Document Examination]		
	3. Education/ Training [Document Examination]	- Qualification certification - Planning and implementation (including skill dissemination) [Document Examination]		
P M	Verification of Facts		Verification of Facts	
12/20 (Fri.)	A M	Verification of Facts		
		Closing		

6. Methods and Items of Review

6.1 Methods of Review

The Review was conducted on activities for promoting the improvement of safety in NFT. In the Review, investigation was conducted through observation of field work of NFT, verification of the documents presented, and discussion based on the documents and interviews with the employees. Then, the results were evaluated to select examples of good practices and items to be improved.

During the Review, the Review team appropriately showed useful examples of activities at the reviewer's company. This facilitates nuclear safety culture each other.

6.1.1 Execution of Review

(1) Field observations

For the field observations, direct observations of how activities are actually implemented on the basis of indicated documents were conducted with investigations based on the experience and knowledge of the reviewers.

(2) Document examinations

For the document examination, the review was conducted through requesting necessary relevant documents based on explanations regarding related documents for each review item. Following the plant and field observation, documents related to the observation were required, and more detailed investigations were done.

(3) Interviews

Interviews based on the following objectives were conducted with the President, managers and responsible persons.

- (a) Examining the level of the effort and awareness about the fostering of the safety culture including nuclear safety measures
- (b) Gathering additional information not confirmed in the documentation
- (c) Questions and answers including ones arising from document examination
- (d) Evaluating the level of understanding about the determined items and the responsibility imposed on each member
- (e) Evaluating whether the determined rules are being implemented or whether they are merely carried out in name only.

6.1.2 Standing point to select Good Practices and Suggestions for Improvement

(1) Good Practices

“Information on good practices incorporating appropriate, effective, and unique methods into activities to ensure safety should be widely distributed to the members of the NSnet and the nuclear industry”

(2) Suggestions for Improvement

“After comparing NFT practices with the best in the nuclear industry, suggestions to improve and enhance safety activities should be implemented so as to achieve the highest level of nuclear safety.”

Even if current activities are equal to or higher than general standards in the nuclear industry, there is still room for improvement.

6.2 Items of Review

The Field observations and confirmations, document examinations, and interviews were carried out based on the review items shown below. The results were evaluated and organized in the Itemized Results, and those were summarized as the Main Conclusions.

Section 1: Organization/Administration

The review was conducted to check whether the structure and responsibility of the organization is clear; whether personnel necessary for safe operation are secured; whether activities are carried out to promote safety culture and improve morality giving safety the highest priority at all times (e.g. ethics-related programs, systems and climates that sincerely accept opinions from within the organization, etc.); and whether public acceptance activities for the local community are promoted through open policy to the public.

Review items

- (1) Effective organizational and management
 - a. Organizational composition and responsibility system
 - b. Personnel and working structure
 - c. Setting up goals of the organization
 - d. Leadership of managers
 - e. Creation of a quality assurance system
- (2) Activities to promote safety culture and improve morality
 - a. Concrete activities related to fostering safety culture

- b. Concrete activities related to improving morale
- c. Public acceptance activities for the local community

Section 2: Emergency Measures

NFT is not a nuclear operator under definition of the Special Measures Law for Nuclear Disasters (hereafter referred to as the “Special Measures Law”), and therefore the Special Measures Law is not directly applicable to NFT. However, when a radioactivity level equal to or higher than a value specified by laws and ordinances is detected around a container used for transportation due to a fire or explosion that has occurred during transport outside the premises of the operator, and when radioactive substances have leaked from such container or the probability of such leakage is high, then the nuclear operator owning the subject matter of such transportation must take actions pursuant to the Special Measures Law. NFT with whom transportation is entrusted has the needs to maintain close coordination with nuclear operators at all times. In view of these, the review was conducted to check whether plans and equipment have been prepared and reliable training has been carried out to appropriately cope with emergencies (including any threat of accidents).

Review Items

- (1) Emergency plans
 - a. Drawing up emergency plans
 - b. Establishment emergency organizations (including notification and liaison systems)
 - c. Developing emergency procedures
 - d. Keeping employees well informed
- (2) Emergency facilities, equipment, and resources
 - a. Inspection and maintenance of facilities, equipment, and resources
- (3) Emergency training
 - a. Implementation of training (actual results)

Section 3: Education/Training

Based on the view points that improving technical skills and safety awareness among employees contributes to improving nuclear safety, the Review was conducted to examine whether effective education and training systems have been developed, whether credential certification systems have been introduced, and whether they have been implemented responsibly.

How the accumulation and transfer of technical and skill know-how is incorporated in the education and training system was also included in the Review items.

Review items

- (1) Qualification certification
 - a. Qualification certification system and qualification standards
- (2) Planning and carrying out of education and training
 - a. Planning of education and training
 - b. Carrying out of education and training (Results and evaluation)
 - c. Technical and skill dissemination

Section 4: Design/Transport/Maintenance Administration

With respect to various items concerning design, transport, and maintenance administration, it was examined as to whether a high level of safety is ensured. The review was conducted to check whether an effective administrative system (including employees' knowledge and skills) is in place and whether documents or procedures have been prepared and observed as subjects common to each of the Design, Transport, and Maintenance Departments. In addition, the review specifically focused on design verifications incorporating diverse insights as to design administration and consistency with authorization and approval and reliable work performance as to transport and maintenance administration. It was also examined as to whether safety-related information is shared internally, paying attention to the mechanism and systems in which information concerning problems is communicated at work.

Review Items

- (1) Effective design administration
 - a. Organization of design administration (structure, knowledge and experience of personnel in charge)
 - b. Design administration procedures and observation thereof
 - c. Design verifications
- (2) Effective transport and maintenance administration
 - a. Organization of transport and maintenance administration (structure, knowledge and experience of personnel in charge)
 - b. Transport and maintenance administration procedures and observation thereof
 - c. Equipment maintenance administration
 - d. Planning and administering transport and maintenance work (consistency with authorization and approval, planning and implementing transport and maintenance work, reporting information concerning problems)

Section 5: Handling of Important Issues

Considering the characteristics of the business of NFT, the review was conducted with respect to cooperative activities related to safety with cooperating companies undertaking the operation and maintenance of carrier vessels and vehicles used for transportation as activities to cope with important issues concerning nuclear safety, activities to improve the social reliability of the system to prevent data manipulation, taking advantage of the lessons learned from the issue of manipulating data on neutron shielding materials (resin) in spent fuel transport containers (hereafter referred to as the “Resin Issue”), activities to thoroughly ensure the criticality safety control of transport subjects^{viii}, and so forth.

In addition, the review confirmed the status of improving technologies for upgrading the reliability of transport equipment, such as activities concerning risk evaluation^{ix}.

Furthermore, as to incorporating past non-compliance instances by NFT and other companies, the following were subjected to the review: the systems and results of analyzing, evaluating, promoting the horizontal dissemination of, and preventing the recurrence of non-compliance; and the actual results of examining and coping with human errors in terms of both hardware and software.

Review Items

- (1) Activities for Nuclear Safety
 - a. Cooperative activities related to safety with cooperating companies
 - b. Activities to improve social reliability (coping with the “Resin Issue”)
 - c. Activities to improve the reliability of transport equipment (the criticality safety control of transport subjects (maintaining subcriticality), improving technologies)
 - d. Labor safety (including radiation control)
- (2) Incorporating past non-compliance instances (non-compliance prevention activities)
 - a. Activities to prevent the recurrence of non-compliance
 - b. Activities to prevent human errors

7. Main Conclusions

In summing up this review of NFT, we have not found any item in the nuclear safety field that would lead to a serious accident unless immediate remedies were taken.

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At NFT, it was confirmed that all employees are seriously and honestly endeavoring to

ensure safety, as exemplified by the initiative taken by the President himself, by thoroughly sharing information, building a climate that facilitates effective communication, and promoting compliance. As to nuclear safety, efforts are being made to promote safety culture by expressing “Ensuring Safety” in one of the four “Managerial Principles” serving as fundamental guidelines for corporate conduct, and setting “Giving the highest priority to ensuring safety and endeavoring to improve the level of working quality” as a specific goal on a conscious and behavioral level.

These are also expressed by the President’s message that “we are promoting communication by various methods to create a workplace that facilitates communication and making efforts to correct unreasonable rules on premise that every rule shall be observed.”

It was also confirmed that programs concerning the ethics of engineers are in continuous operation by organizing events on “Review Day” and voluntarily reconfirming various records as part of the activities to ensure safety in response to the TEPCO issue, so as not to allow the lessons learned as the ordering party from the “Resin Issue” to fade with time.

These endeavors can be appreciated because they may contribute to establishing safety culture in which the safety of transport operations in the nuclear fuel cycle continues to be ensured and enhanced.

In the future, NFT is expected to continue its voluntary efforts to further improve its safety culture, rather than being satisfied with the current status.

In addition, it is expected that the results obtained from the review will be disseminated to cooperating companies engaging in on-site work, such as the operation and maintenance of carrier vessels, vehicles, and cranes.

In this review, we have found some good practices that should be introduced not only to other NSnet members, but also widely to the nuclear industry. The good practices are described below.

- Promoting favorable communication both inside and outside the company

As a result of the review, three instances concerning favorable communication were identified as summarized below.

- (1) The top management policy is disseminated and fully recognized at periodic meetings, such as “Managerial Policy Meetings” (twice a month), “General Managers’ Meetings” (once a month), and “MM^x (morning meetings)” (twice a week). In particular, the “MM,” which was included in periodic meetings as a result of the “Resin Issue,” is held every Tuesday and Thursday and has taken root as a forum for communicating various information over a short period of time.

(2) Minutes of “Managerial Policy Meetings,” “General Managers’ Meetings,” “MM,” and so forth are immediately put up on the internal LAN^{xi} (Local Area Network), so that employees can access them to check the status of discussions among departments and the management. In addition, person-to-person communication among employees, including the management, is promoted, as is typified by the periodic publication of the internal journal “Geneneyuso (NFT),” in which the company’s business and employee profiles are featured, and informal workplace gatherings, such as “Meishukai,” which are organized from time to time.

(3) It is useful to promote and improve safety culture for cooperating companies to facilitate diverse communication with cooperating companies by establishing various occasions, such as the-day-before-transportation meetings, safety conferences, the Aomori Transport Safety Promotion Council, and RST (Rokkasho Safety Transport) Meeting^{xii}.

- Implementing a systematic and well-structured credential system

In certifying credentials, General Managers establish “criteria” for each credential, pursuant to which credentials are certified using the “evaluation table” specifying the required level of knowledge/skill/experience and education/training. These “criteria” and “evaluation table” are clearly set forth in the “Credential Certification Instructions” designed for each of the credentials, such as transport designers and inspectors, which are operated in a systematic and well-structured manner.

- Voluntary reconfirmation of the records of the periodic voluntary inspection of transport containers following the TEPCO issue

Following the TEPCO issue, the appropriateness of the records of the periodic voluntary inspection of transport containers was examined. However, it was conducted voluntarily and not under the instruction of the competent authorities and municipalities. These active efforts focusing on safety are appreciated.

- Preventing lessons of the “Resin Issue” from wearing thin by establishing the “Review Day (October 6 every year)”

Efforts are being made to prevent lessons learned through the “Resin Issue” from wearing thin by establishing “Review Day” on October 6 every year (in case of a holiday, before or after that day). Events are organized for almost a full day, including the President’s exemplum lecture, safety lectures, and a training sessions for employees who did not experience the “Resin Issue” (new and transferred employees). In the training session of FY

2002, lectures will be videotaped and recorded for future use when the number of employees who can pass down details of the “Resin Issue” decreases.

The following represent proposals toward the further improvement of NFT safety activities.

- Adding communication of information during times of failures and problems to the PR and Liaison Manual

Appropriate communication of information is required by the local community even in the case of a failure or a problem that does not lead to an emergency. Since failures and problems include diverse significant and insignificant events, it is desirable to add examples of events during times of failures and problems to the “PR and Liaison Manual (for Rokkasho Transport Operations Office),” assuming what kind of information should be communicated to the local community under various circumstances.

- Considering the incorporation of safety and security-related items into internal audits

Currently, internal audits are carried out based on ISO9001^{xiii} standards, in which safety and security-related items are not specified in detail. It is desirable to realize safety and security audits as soon as possible.

- More active utilization of HIYARI-HATTO instances

HIYARI-HATTO instances (near-miss situations which might have led to disaster, but fortunately did not) are handled by putting together opinions from those concerned in each transport as a good and reflexive practice. Certain measures are taken by the department/section assigned as the need arises. However, these practices and measures in relation to HIYARI-HATTO instances are not being fully made use of. Such information includes that which is useful in recognizing risks in addition to knowing whether any countermeasure is available. It is therefore desirable to utilize and disseminate collected information more actively.

Other details concerning this report may be found on the Japanese website.

Annotation

ⁱ Spent fuel: Fuel unloaded from a reactor after being used for a certain period. This spent fuel contains uranium, plutonium (which results from uranium absorbed neutrons), and radioactive substances, such as fission products resulting from the nuclear fission of uranium, etc., and is highly radioactive and has high decay heat from the fission products. Thus, it is stored in spent fuel storage pool to allow radioactivity to decay and for the decay heat to cool down over a period of several years. In Japan, it is a policy to reuse plutonium contained in spent fuel extracted from light water reactors, and this spent fuel is subsequently sent to reprocessing plants. To date, most of such spent fuel has been processed at reprocessing plants in France and the UK. In the future, spent fuel will be reprocessed at the plant constructed in Rokkasho-mura, Aomori Prefecture.

ⁱⁱ Low-level radioactive waste: In a broad sense, this term is used to collectively refer to general radioactive wastes, excluding high-level radioactive waste (primary effluent and solids thereof resulting from reprocessing spent fuel). Here, however, it means, among low-level radioactive waste generated by nuclear power stations, solid or solidified radioactive waste containing low-level nuclides with relatively short half-lives, which can be subjected to shallow geological disposal (meaning to dispose of radioactive waste at a shallow geological stratum with a molding layer of several meters thick as an ultimate natural barrier). To date, this includes solidified waste in which enriched effluent is solidified uniformly with cement and solid filled waste in which miscellaneous solids, including metals, is solidified with cement.

ⁱⁱⁱ Returned vitrified waste: Although some of spent fuel from nuclear power stations is presently reprocessed in Japan, the rest is entrusted to reprocessing companies in France and the UK, and is collected by separating uranium from plutonium for recycling. High-level waste generated by this reprocessing is dispersed and solidified in borosilicate glass and sealed into stainless-steel containers called canisters. This solidified/vitrified waste has been sequentially returned to Japan for controlled storage since 1995 pursuant to the reprocessing entrustment agreements, and is referred to as returned vitrified waste.

^{iv} Natural uranium hexafluoride: Fluoride of natural uranium. Uranium hexafluoride is a solid and clear crystal at normal temperature and under normal pressure. Since it sublimates and turns into gas at 56.5 degrees Celsius, it is used to separate uranium isotopes (uranium enrichment). Although it is relatively stable because it does not react to oxygen or the air, it reacts intensively to water to generate hydrogen fluoride. This hydrogen fluoride is very corrosive and extremely poisonous to a living body. Taking into account the property of natural uranium hexafluoride when transporting it, every possible measure is taken to ensure the fire and shock resistance of transport containers by installing protective gear on the valves and fire-resistant covers.

^v JCO accident : The accident that occurred at JCO Tokai Plant on September 30, 1999.

^{vi} Critical safety control : To ensure safety so that fissile substances must not reach criticality to cause critical accidents in facilities handling fissile substances, such as nuclear fuel processing plants and spent fuel reprocessing plants (excerpted from “Nuclear Dictionary: The Nikkan Kogyo Shimbun Ltd.”)

^{vii} Mixed-Oxide Fuel : Nuclear fuel that contains fissile nuclides composing of two or more types of oxides. Generally, it refers to nuclear fuel mainly composing of uranium oxide and plutonium oxide (excerpted from “Nuclear Dictionary: The Nikkan Kogyo Shimbun Ltd.”)

^{viii} Transport subject: Radioactive substances that are packed (into containers) and transported are referred to as transport subjects. Therefore, transport subjects mean both the transport containers and radioactive substances contained in them.

^{ix} Risk evaluation: Predicting events that may occur in the future that would cause adverse impacts on humans and the environment and examining the level of adverse impacts when they occur (excerpted from the “Nuclear Dictionary: Nikkan Kogyo Shimbun”)

^x MM: Morning Meeting: At NFT, regular meetings have been held twice a week (every Tuesday and Thursday) since the Resin Issue.

^{xi} LAN: Local Area Network. Internal information communication network. Connecting OA equipment distributed to factories and offices to speed up and systematize internal information communication.

^{xii} RST Meeting: Rokkasho Safety Transport Meeting (a meeting unique to NFT). It is a meeting of the Rokkasho Transport Operations Office where the personnel of cooperating companies which undertake loading/unloading and land transportation work hold frank discussions with the personnel of the Rokkasho Transport Operations Office. The meeting is held every four months or so.

^{xiii} ISO9001: An ISO standard prescribing the requirements for quality management systems, which was prescribed by the International Organization for Standardization (ISO). This standard is designed to check whether an organization is equipped with a quality management system necessary for continually supplying products and service that meet customer’s requirements, legal and public regulatory requirements, and whether the implementation of such system is appropriate.