Outreach Scheme

～Aiming to Link Areas and Projects～

Nuclear Waste Management Organization of Japan (NUMO)

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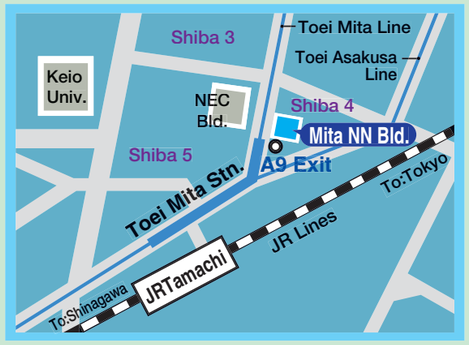

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Contents

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Introduction

“Approach for the Outreach Scheme”

The Nuclear Waste Management Organization of Japan (NUMO) is the designated implementing organization with responsibility for resolving the national task of implementing final disposal of the present generation’s high-level radioactive waste (*). As a first step, NUMO has openly solicited across Japan for volunteers for areas to explore the feasibility of constructing a final repository for high-level radioactive waste .

The co-development of the municipality accepting the disposal project and NUMO’s implementation activities is based on the major premise of obtaining the trust of the local residents. Given this premise, we believe that it is vital to create a better coexistence relationship and have therefore listed the following issues that NUMO must address.

We hope that municipality residents will refer to this information when considering making an application.

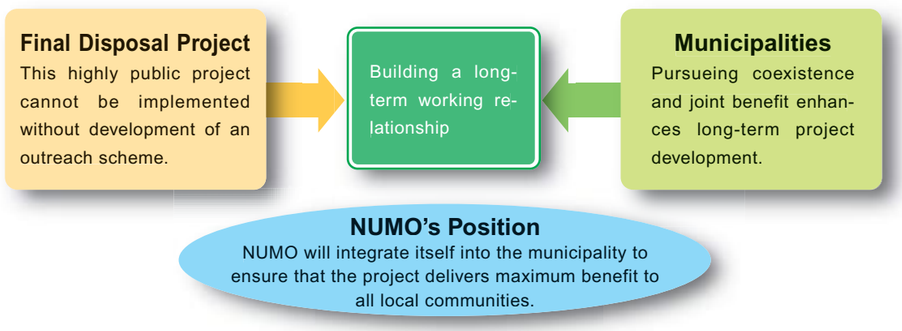
(*) High-level radioactive waste: These materials use the term “high-level radioactive waste,” which is used widely in the nuclear energy sector, in place of the term “specified radioactive waste” referred to in the Specified Radioactive Waste Final Disposal Act. Specifically, it refers to vitrified waste.

1 Aspects of the Disposal Project and Outreach to the Municipality

A repository project is a highly public project, involving the final disposal of high-level radioactive waste produced by nuclear power generation, which play an important role in Japan's energy policy. Compared to the time period for construction and operation of nuclear power plants, final disposal is a long-term procedure, extending over numerous stages, such as investigations (literature surveys, preliminary investigations, detailed investigations), construction of the repository, operation and monitoring.

NUMO believes that the implementation of such a highly public and long-term final disposal project must lead to development in the area that accepts the repository. Furthermore, this development must be in a form that is genuinely desired by the area. Such regional development is vital if the final disposal project is to coexist with the area for more than a century. NUMO believes that building such a relationship represents outreach between the municipality and the implementer of the disposal project.

NUMO will implement final disposal based on the major premise that project will be conducted safely and that information disclosure will ensure transparency of operational activities, resulting in reassurance of local residents. NUMO will devote its efforts to ensuring that the final disposal project leads to regional development, in accordance with the stage of operations. Thinking as a member of the municipality, NUMO will work to make regional conditions desirable by respecting the long-term regional vision and needs.



2 Approach for Outreach Scheme Planning

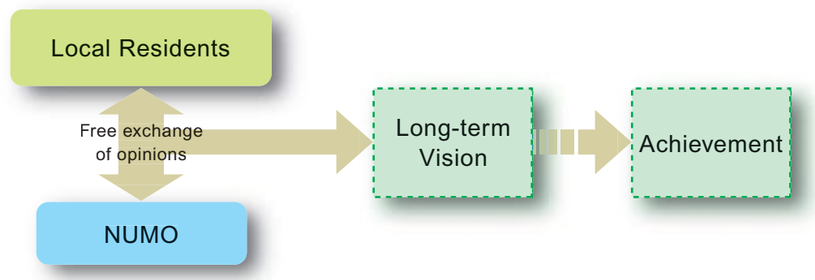
Building an outreach relationship through formulation and implementation of a long-term regional vision

NUMO believes that, in order to build a relationship between the municipality and the activities aimed at regional development, as indicated by the Special Committee Report (*), it is important to establish a system that gives first priority to the area's wishes and thus creates a forum where local residents and NUMO can exchange opinions and hold free discussions.

NUMO supports the establishment of a forum where local residents, including next generations, can discuss their future and make that future take shape through all project steps from investigation to repository closure. In addition, NUMO would like to be involved in formulating the municipality's step-by-step long-term vision and considering ways of linking this vision with the final disposal project, in order to move forward together with the municipality.

In particular, NUMO believes that the following important points require attention.

- Respecting the region's independent long-term vision and needs
  (Refer to Attachment 1: "Examples of outreach scheme measures", p.13)
- Harmony with broad regional development
  (If necessary, coordination with the prefecture's plans)
- Consideration of environmental protection
- Support to preserve regional culture



(*)Special Committee Report: Refer to Attachment 1: "Atomic Energy Commission (AEC) Special Committee on High-Level Radioactive Waste Disposal" (May 29, 1998)

Implementation of the project to ensure sustainable regional development

NUMO will proceed with the implementation of the final disposal project, giving full consideration to the following points with a view to ensuring that maximum economic benefits (see Reference 1) are achieved in the prefecture, including the municipality, over the long-term project.

Transfer of operations headquarters to the municipality

- On receiving an application from a volunteer area, NUMO will establish a contact office where discussions can be held with local residents. In addition, at a later stage, the operations headquarters will be transferred to the area before construction of the repository starts and NUMO staff will live in the siting municipality. We will conduct operations together with the municipality as a member of the same local community.

Promotion of regional employment and utilization of regional industry

- NUMO will actively employ local workers and use related regional industry.

Creation of business opportunities and fostering of companies

- NUMO will create opportunities for businesses in the area, such as supply of the materials necessary for the construction and operation of the repository. We will work to foster companies which serve as the economic base of the area.
- In order to generate understanding of the final disposal project, we will actively "open" the repository. Through having people visit the facilities, we will work to revitalize the municipality's tertiary industry.

Transfer of operational know-how

- We will actively transfer know-how relating to geological disposal technology and management to the municipality, to promote the development of regional industries.

Implementation of activities aimed at promoting mutual understanding

We believe that, from the first steps of investigation, it is of the utmost importance to build a relationship of mutual understanding between the local residents and NUMO. We will maintain transparency of project through public disclosure of information, and will listen to the opinions of the municipality. Through such activities, the municipality and NUMO will share information and thus promote mutual understanding. In order to achieve such a relationship, we are planning the following activities.

Implementation of interaction with the municipality

- We will implement a framework within which NUMO and the municipality can achieve mutual understanding, through direct interaction with the municipality at NUMO's contact office.

Implementation of observation studies in Japan and overseas

- In order to promote understanding of the final disposal project, we will provide opportunities for local residents to observe related facilities in Japan and overseas.

Implementation of interregional events

- Through holding forums and other events on the final disposal project, with the participation of non-residents, we will enhance the interaction between the municipality and external persons, such as people who are interested in NUMO's activities and electric power consumers in general. As part of this process, we will work actively to transmit information about the municipality's industries and culture to the general Japanese public.

Educational and cultural contributions

- In order to deepen the understanding of the final disposal project, NUMO will take a leading role in conducting activities that promote the scientific education of students of the next generation in various areas of science and technology (geology, civil engineering, etc.) related to the final disposal project.

Cooperation in improving the infrastructure of communication facilities

- In order to effectively implement mutual understanding, it is important to have a smooth information exchange with the municipality. We will cooperate in making the necessary improvements to the relevant communication infrastructure.

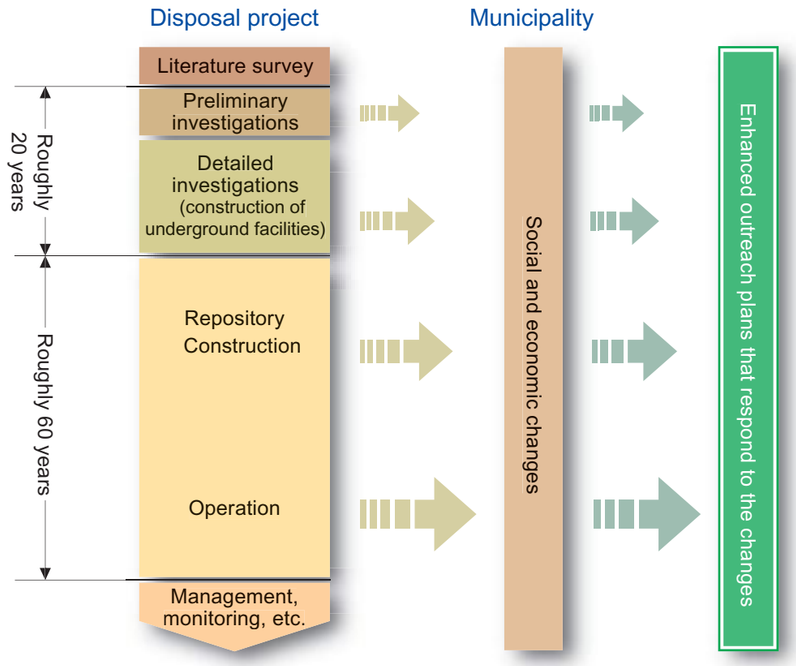
Examples of activities aimed at promotion of mutual understanding

- Participation in regional development activities in the area (e.g. participation in meetings on "how the next generation thinks about the municipality's future", youth groups of various organizations, councils for community building, etc.)
- Cooperation in preserving the municipality's traditional culture and arts
- Cooperation in sales promotion activities for the municipality's specialty products (trade fairs, etc.)
- Holding hands-on science information events for elementary and middle school students
- Conducting tours of overseas nuclear power facilities

Enhancement of outreach plans concurrent with the full start of operations

Final disposal operations differ in each stage of the project, from the start of activities, in particular, through the construction of the underground facilities during the detailed investigations that follow the literature survey and the preliminary investigations, to repository construction and operation extending over roughly 60 years, followed by monitoring. During these stages, it is foreseen that the municipality that accepts the final disposal project will undergo social and economic changes in accordance with these stages.

In order to achieve outreach between the municipality and a final disposal project that includes these steps, NUMO believes that refined plans are needed. These are modified in accordance with the step-by-step changes of the long-term final disposal project, based on the governmental view that more is needed than just the nuclear power plant regional outreach policies.



3 Aiming towards Outreach to the Municipality

NUMO believes that, in order to implement outreach plans drawn up together with the municipality, it is necessary not only for NUMO, but also for the relevant government authorities and electric power companies, to create an integrated outreach scheme.

In collaboration with such relevant organizations, NUMO will make full efforts to secure necessary budgets and adjust various conditions to ensure implementing outreach scheme with respecting the municipality's intentions.

As the first step of the policy for the repository site, the Japanese government has already designated the high-level radioactive waste repository as a facility eligible for the "Regional Acceptance Enhancement Grant for Planning-stage Electric Power Plant" based on the Power Source Grant Program (see Reference 2). NUMO will request an expansion of this policy, based on discussions with local residents. At the same time, NUMO will request further enhanced governmental policies and will confer with the Japanese government accordingly.

Reference 1 Envisaged economic effects associated with construction and operation of the repository

Economic ripple effect in the prefecture with the siting municipality

Local order placements total in the prefecture with the siting municipality

Cumulative total from 2025 to 2084
⇒ Approximately 740 billion yen (approximately 12.3 billion yen per year)

Production inducement effect

Cumulative total of all industries from 2025 to 2084
⇒ Approximately 1.65 trillion yen (approximately 27.5 billion yen per year)

Employment creation effect

Cumulative total of all industries from 2025 to 2084
⇒ Approximately 130,000 workers (approximately 2,200 workers per year)

Breakdown of local order placements total

Local order placements in the prefecture with the siting municipality

Cumulative total from 2025 to 2084
⇒ Approximately 600 billion yen (approximately 10 billion yen per year)

Office costs and NUMO staff personal costs in the prefecture with the siting municipality

Cumulative total from 2025 to 2084
⇒ Approximately 140 billion yen (approximately 2.3 billion yen per year)

Other reference data

Fixed property tax revenue in the siting municipality

Cumulative total from 2025 to 2084
⇒ Approximately 160 billion yen (approximately 2.7 billion yen per year)

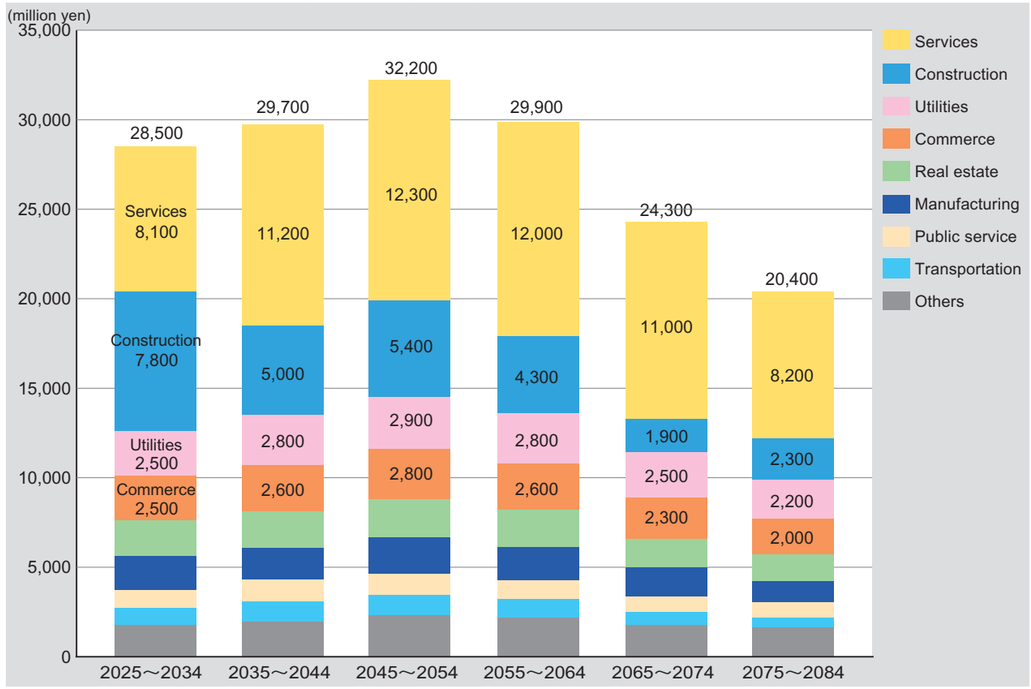
Direct employment related to operations in the prefecture with the siting municipality

Cumulative total from 2025 to 2084
⇒ Approximately 17,000 workers (approximately 280 workers per year)

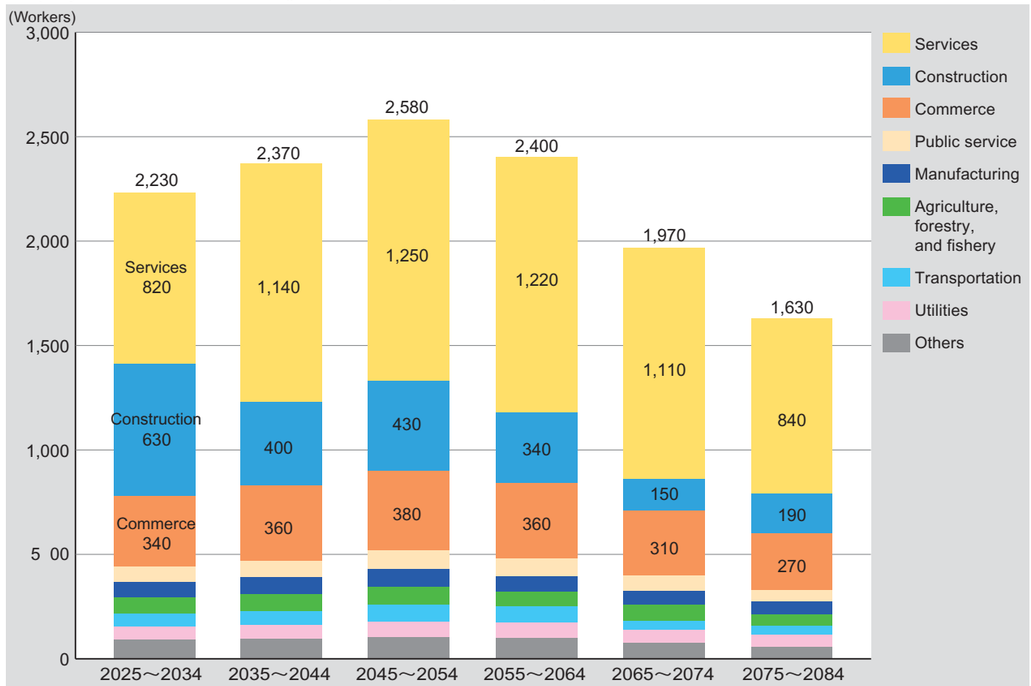
Comments

- These estimates incorporate data used in the total final disposal costs reported to the Nuclear Sub-Committee of the Advisory Committee for Energy in October 2001, and are calculated based on current assumptions.
- These estimates are calculated for the construction and operation steps (2025-2084), which have constant costs and employment. Economic effects will also accompany other steps [e.g. literature survey / preliminary investigations (approximately 10 years): 1.8 billion yen (approximately 180 million yen per year); detailed investigations (approximately 15 years): 71.4 billion yen (4.8 billion yen per year)]
- The fixed property tax is calculated as a tax on fixed property (book price), considered as land, surface facilities and underground facilities (including cases in which these are under the sea bed). The fixed property tax on land is calculated based on the estimated area (10 sq. km) in the total final disposal costs.
- The above production inducement effect and employment creation effect are calculated based on inter-industry relation tables of the prefecture (available at the time of estimation, with the calculation method including similar 39 prefectures), and employ the average values.

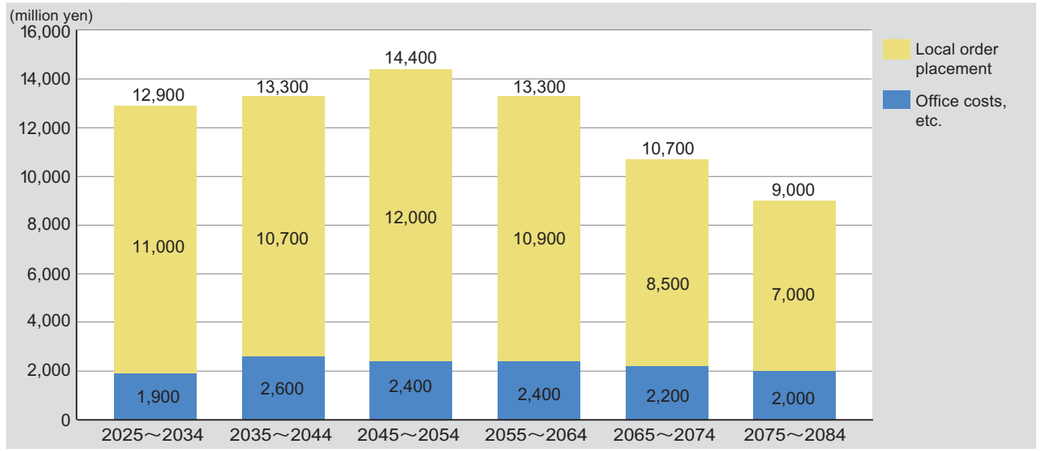
Production inducement effect (yearly average during the period)



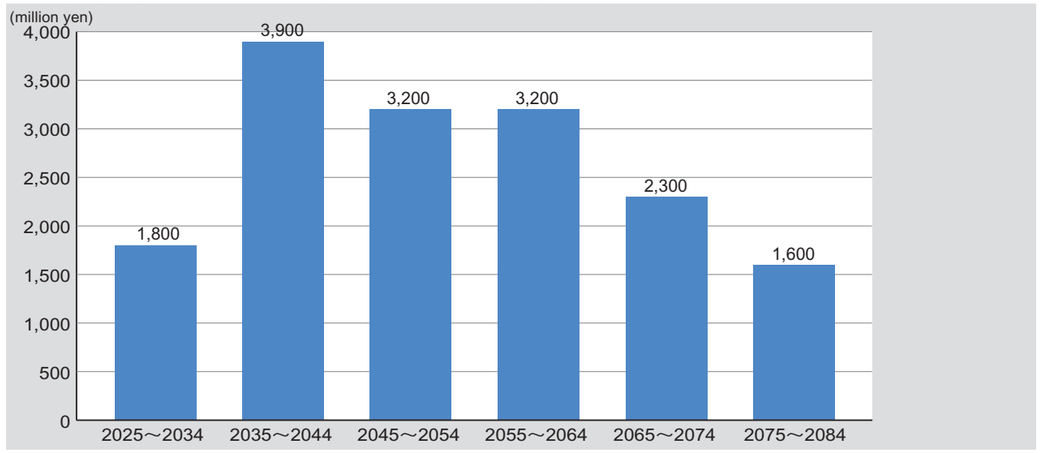
Employment creation effect (yearly average during the period)



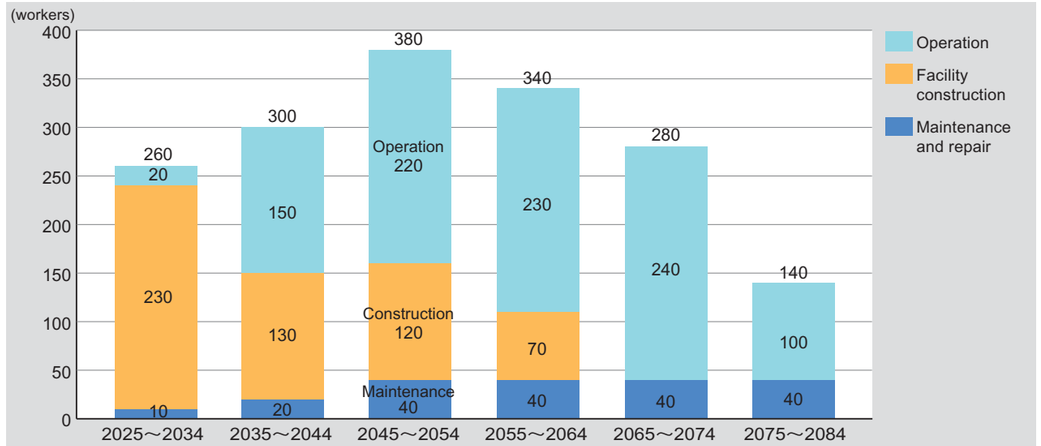
Local order placement total (yearly average during the period)



Fixed property tax revenue (yearly average during the period)

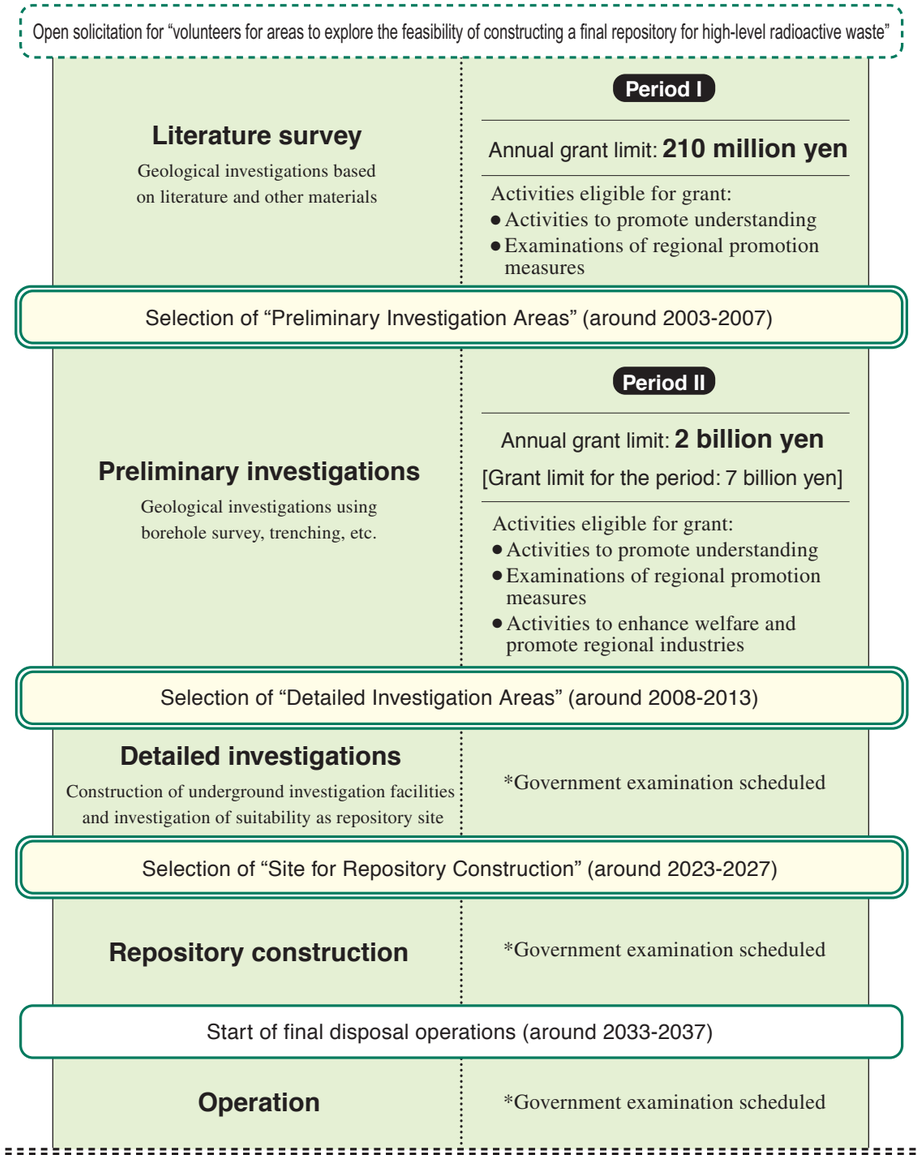


Direct employment related to operations (yearly average during the period)



Since final disposal project is long-term in nature, NUMO recognizes the importance of implementing this project in such a way as to contribute to the realization of the siting area's long-term vision and to lead to the expansion of human and technological exchange and revitalization of the area.

From fiscal year 2002, the Ministry of Economy, Trade and Industry has included "candidate sites for a high-level radioactive waste repository" as being eligible for the "Regional Acceptance Enhancement Grant for Planning-stage Electric Power Plant" of the power source grant program, starting from the stage of the literature survey and preliminary investigation steps.



*NUMO appeals strongly to the government for systematization of the areas scheduled for examination.

(Underlining added by NUMO)

Chapter 3: Outreach with the siting area (*)

We will examine the viewpoint that is necessary to obtain the understanding of the local residents when siting the repository, focusing on the approach of outreach between the disposal project and the siting area. We have considered various opinions from Japanese citizens, ranging from the view that the outreach approach is important to the opinion that outreach in the field of radioactive waste disposal is impossible. Based on these opinions, it is difficult to proceed with a disposal project without achieving a situation where electricity consumers (who will benefit from the disposal project) perceive waste disposal as their own problem, understand the significance of participation and increase their understanding of the siting area. Thus, an important aspect of the future approach is how to promote outreach and collaboration between the siting area and the disposal project, as well as outreach between the siting area and other areas, such as electrical power mass consumption areas.

1. Basic approach

(1) Approach to outreach between the disposal project and the siting area

The disposal project conducted by the implementer must lead to a relationship of harmonious and sustainable outreach with the area's residents, natural environment and industry. In addition, the project must develop the area independently and lead to improved local standards of living and regional revitalization.

In considering such an outreach relationship, it is first of all necessary to respect the independence of the siting area. Outreach measures must not restrict the area or be one-sided. Rather, it is necessary to create a structure in which the area takes the leading role in planning and selecting measures that maximize the characteristics of that area, based on its vision and needs.

It is important that these should not be measures that merely serve as a temporary benefit to the area, but should rather contribute independently to the long-term area's development, based on dynamic and wide-reaching policies.

For outreach with local people, it is vital to reflect local opinions. Moreover, interaction is necessary between the implementer and the local residents. In particular, employment of local workers is important for deepening the sense of community between the implementer and the area. For outreach with local industries, it is important to consider operations that revitalize the local economy and that make positive use of the repository facilities. In addition, given the long-term duration of the disposal project and the wide area covered, we must consider sustainable operations that fit with the area's natural environment.

(2) Repository as an outreach facility

Local residents generally consider a high-level radioactive waste repository as an unwanted facility. It is therefore necessary not only to ensure the safety of the disposal project, but also to construct a facility that is easy for the local residents to accept by means of an outreach relationship between the disposal project and the lifestyle of the area.

(3) Collaboration between the siting area and other areas such as electrical power mass consumption areas

In order to maintain socio-economic equity between the siting area and other areas, it is first of all important for people living outside the siting area to recognize that the disposal project is also their concern. In order to achieve this recognition, it is necessary to conduct bilateral, direct exchange using various methods in order to promote mutual understanding. Local opinion exchange meetings repeatedly presented the same opinion, namely that residents of, for example, electrical power mass consumption areas should deepen their understanding of the residents of the siting area.

(*) Regarding "outreach"

- "The Basic Environment Plan...prescribes four long-term objectives:...these are "closed material cycle", "coexistence", "participation" and "international effort"...so that humans can coexist with nature and living creatures." (Foreword of the Basic Environment Plan, December 1994)
- "The environment is formed by interactions of air, water, soil, living creatures and humans. We must work appropriately to preserve and enhance irreplaceable and valuable nature, restore nature's material cycle and preserve wildlife. In addition to promoting this intelligent approach, we must maintain a healthy ecosystem to ensure the coexistence of nature and humans. This will be achieved through interaction between nature and humans, such as maintenance of places and opportunities for contact with nature." (Long-Term Objectives of the Basic Environment Plan)

(Underlining added by NUMO)

2. Approach towards outreach with the siting area

As the key organization that pursues outreach with the siting area, the implementer should locate its headquarters in the area, employ local workers and pursue interaction with local residents. In addition, it is important to set up a structure that enables the local residents to take a leading role in participation from the planning stage. This allows local opinions to be sufficiently reflected, leading to an understanding of the significance of participation.

Since the government is responsible for waste disposal policy, it must promote the implementation of systems and frameworks which incorporate various outreach measures that take into account the characteristics of the area and of the project, such as the long-term aspect.

The electric power companies must, as producers of waste, cooperate with the implementer during realization of regional outreach measures and be extensively involved.

(1) Regional outreach that reflects the intentions of the area

The approach to regional outreach should reflect the intentions of the area and be in line with the socio-economic characteristics of the area. The siting area should play a leading role in formulating outreach measures, with local residents participating from the planning stages. An approach should also be considered in which the implementer presents several proposed plans, from which the related municipalities can select the one most suited to the region. It is important to establish a system in which related organizations, including the government, the implementer and the electric power companies, provide indirect support, such as promoting human resources and know-how in the area, for the area to play the leading role in planning and selecting outreach measures.

(2) Sustainable regional outreach

Since disposal project is long-term in nature, it is important for outreach measures to provide not only a temporary benefit to the area, but rather to contribute to the area's development over the long-term. Since outreach measures do not simply end with the construction of the actual facilities, it is necessary to examine dynamic and diverse approaches that are in line with the area's characteristics and visions. For example, we should consider setting up a system in which we publicly solicit for activities in the areas of research, environmental conservation and regional promotion, to which the government and implementer provide active support.

In addition, it is important to formulate an integrated concept from the viewpoints of the area's residents, natural environment and industries. In addition, in order to flexibly respond to the socio-economic changes in the area, the system should be set up to allow review of the overall concept at regular intervals.

For outreach measures after closure of the repository, it is also appropriate to discuss methods for maintenance after closure. At present, it is appropriate to discuss outreach measures up to the stage of closure of the repository.

(Reference) Example of outreach scheme measures

As mentioned above, concrete regional outreach measures should be planned with the siting area playing a leading role. However, from the viewpoint of formulating outreach measures that make use of the disposal project characteristics of long-term duration and wide spatial extent, the Special Committee considered the following as examples.

- Research and educational facilities using surface and underground space
- Regional environmental preservation and research, including surrounding areas
- Research and educational facilities aimed at preserving and communicating long-term observations and information
- Research and educational institutes and/or companies providing advanced technology and knowledge

Chapter 2: Reasonable estimates of disposal costs

1. Concept of disposal costs

(1) Concept of, and responsibility for, disposal costs

Nuclear power generation inevitably produces high-level radioactive waste. Considered from the aspect of inter generational equity, it is both necessary and reasonable for the current generation, which is benefiting from nuclear power production, to bear responsibility for the disposal costs of high-level radioactive waste. Similar to the case with other waste, it is necessary to implement measures that are conceivable by the generation that is receiving the benefits of consumption, and to provide for the costs at the stage of power generation.

(2) Status of examination of disposal costs

The March 1987 report of the Electricity Utility Industry Council Electricity Rate System Subcommittee states that "Among the backend costs of nuclear power, in terms of radioactive waste disposal costs, many aspects of the disposal measures are still uncertain and it is difficult to make reasonable estimates of future costs. Thus, we must continue to assess trends in the situation both in Japan and overseas."

The previous chapter discussed the progress of research and development in Japan. As described, the Japan Nuclear Cycle Development Institute are providing a second progress report aimed at demonstrating technical reliability in geological disposal in Japan and presenting the technical basis for selecting potential disposal areas and formulating safety standards. Among these, one key issue was the increase of reliability in the engineered barrier system and disposal facility. Currently, research and development for identifying the design requirements of the disposal facility are underway.

As a consequence of the relevant R&D work, the conclusions of the discussions in the AEC on the disposal concept are gradually leading to reference procedures and conditions for high-level radioactive waste disposal, and a reasonable estimate of disposal-related costs has thus become theoretically possible. Therefore, based on current knowledge, it is appropriate to take the most reasonable estimates and start preparations for securing disposal costs as quickly as possible.

However, design specifications will be further optimized as future R&D proceeds and this should be reflected in the disposal cost estimates in a timely and appropriate manner.

(3) Scope of costs

The scope of costs that require to be secured for high-level radioactive waste disposal should cover the research and development needed for implementation, required for preparatory, the measures for facility operation, monitoring after closure etc.

Since regional outreach is of the utmost importance in siting the high-level radioactive waste repository, the implementer must actively participate as a member of the local community from the outreach measures planning step, with the involvement of the government and electric power companies. The costs required for outreach should be included in the disposal costs. However, it is difficult at present to reasonably estimate these costs. Consequently, the outreach costs should be calculated generally on the basis of the scale of project as part of general maintenance costs and should be included in the disposal costs when concrete measures for outreach at the siting area are decided.

In addition, the implementer should carry out research and developments in the areas of

(1) Construction and operation
(2) Site investigation and
(3) Demonstration of disposal technology,

and include the associated costs in the disposal costs. On the other hand, the government will conduct research and development related to formulation of safety regulations and this will not be included in the disposal costs.