(Unofficial Translation)

Guidelines for applying to the “Decommissioning, Contaminated Water and Treated Water Management (Development of Analysis and Estimation Technology for Characterization of Fuel Debris)”

Date: February 28, 2025

Public Interest Incorporated Foundation Nuclear Safety Technology Center

Public Interest Incorporated Foundation Nuclear Safety Technology Center, which is a corporation that establishes and manages a fund for decommissioning, contaminated water and treated water (hereinafter referred to as “Fund Establishment Organization”) solicits entities to implement subsidies for the "Subsidized Project of Decommissioning, Contaminated Water and Treated Water Management (Development of Analysis and Estimation Technology for Characterization of Fuel Debris). Details of the project are stipulated in this Guidelines; furthermore, the procedures for implementation of the project are stipulated in the “Grant Policy for Subsidy for the Project of Decommissioning, Contaminated Water and Treated Water Management”.

1. Purpose of Project

This project aims to support development of technologies contributing to decommissioning, contaminated water and treated water management of the Fukushima Daiichi Nuclear Power Station (hereinafter referred to as “Fukushima Daiichi NPS”) of the Tokyo Electric Power Company Holdings, Incorporated (hereinafter referred to as “TEPCO”) based upon the “Mid-and-Long-Term Roadmap” towards the Decommissioning of the Fukushima Daiichi Nuclear Power Station of Tokyo Electric Power Company Holdings, Incorporated” (hereinafter referred to as “Mid-and-Long-Term Roadmap”) and “The Decommissioning Research and Development Plan for FY 2025” (The 135th meeting of Secretariat of the Team for Decommissioning, Contaminated Water and Treated Water Countermeasures / PMO), so that the decommissioning, contaminated water and treated water management of the Fukushima Daiichi NPS can be implemented smoothly, and that may lead to the improvement of Japan’s science and technology standards.

Please note that this project is implemented under the engineering and project administration activities performed by TEPCO in the Fukushima Daiichi NPS, and the results obtained from this project will be utilized for the engineering activities conducted by TEPCO.

2. Contents of Project

In decommissioning the Fukushima Daiichi NPS, it is necessary that the data and information on fuel debris and deposits, etc. obtained inside of the Primary Containment Vessel (hereinafter

referred to as “PCV”), shall contribute to grasp the properties of fuel debris that exist inside the reactor, by way of conducting the investigation of retrieval, containing and storage, and subsequent processing and disposal, etc. of fuel debris. Also, to ensure that the data and information thus acquired be useful for decommissioning, it is necessary to develop technologies for analyzing fuel debris actually retrieved and samples obtained in the PCV internal investigations, etc. as well as for correctly estimating the fuel debris and surroundings and those conditions expected in the future.

The accident in the Fukushima Daiichi NPS is the unprecedented accident that has ever occurred at the Boiling Water Reactor (hereinafter referred to as “BWR”) in the world. Those reactor cores of Unit 1 through 3 have been damaged. It is presumed that fuel assemblies and the control rods had been melted in the reactor at a temperature higher than normal operation temperature in superheating steam and then they had been flown out from RPV involved surrounding structures. After that water was injected into reactors by fire engines, since the quantity of water having reached into the reactor core remains unknown and seawater was injected, molten material may contain a lot of seawater constituent. In addition, temperature data was not recorded since the electric power failure occurred during the accident. Thus, it is presumed that the chemical composition and structure of the fuel debris are considerably quite complicated and unequal since many substances existed in the area where melting and solidification occurred, and the temperature history was unclear. Many elements are solidly dissolved or precipitated in fuel debris, or encapsulated or dispersed as impurities in the matrix phase, resulting in changes in chemical stability and mechanical characteristics. Even if the chemical composition of fuel debris has been grasped by chemical analysis, its properties vary depending on its chemical form and microstructure, such as oxides. Therefore, it is important to determine the properties of fuel debris comprehensively based on the analysis results of not only chemical composition but also chemical form and crystal structure.

In analyzing fuel debris from the Fukushima Daiichi NPS, which contains many elements and whose properties are unknown, it is necessary to establish a technology and system that have sufficient analytical capability for fuel debris and can evaluate the properties of the fuel debris. To this end, it is necessary to clarify the quantity of data, which enable to appropriate integration of data and information obtained by several institutions. It is important to review the quality of data and information obtained at overseas analysis facilities and to incorporate valuable knowledge on analytical technologies held by overseas research institutes into the analysis of fuel debris at the Fukushima Daiichi NPS to further advance, and to improve the analytical technologies. In addition, since the analysis is performed in parallel with the fuel debris retrieval works, the development of analytical technology for simplified and speed-up detection of fuel components at or near the work site (in-situ) is essential to improve the efficiency and labor saving of the fuel debris retrieval works. Furthermore, based on the above analysis results and the results of investigations so far, it is important for investigations of the decommissioning process to verify the phenomena that occurred

during the accident and to estimate the damage in the reactor and migration behavior of fuel debris inside PCV by simulation analysis and mock-up tests and so on.

For this reason, the technologies mentioned in (1) to (3) below shall be developed.

(1) Development of Analysis and Estimation Technologies for Understanding the Characteristics of Fuel Debris

[1] Analysis of collected fuel debris samples, etc.

In the trial retrieval at the Fukushima Daiichi NPS, understanding the characteristics of the collected fuel debris, as well as the sediments and deposits sampled during the internal investigation of the PCV (Primary Containment Vessel), is crucial for planning the decommissioning process. Particularly, as mentioned above, fuel debris is considered to have an inhomogeneous chemical composition. Therefore, to gain a comprehensive understanding, it is necessary to analyze multiple samples.

- Analysis shall be conducted on fuel debris or deposits, etc. obtained from inside the PCV. In the trial retrieval of fuel debris from Unit 2, the first sample was collected in October 2024 and is currently under analysis. The second sample is scheduled to be collected after March 2025, with analysis planned for this sample as well. The collection of the third and subsequent samples is still under consideration, but if conducted, further analysis shall be carried out accordingly. However, as progress is influenced by factors such as the development and adjustment of internal investigation equipment and the progress of the on-site preparations etc., the details of the analysis shall be reviewed and determined in collaboration with TEPCO, taking into account the work schedule, priority, and results of previous sample analyses.
- The internal investigations of the PCV and assessments of accessibility are being conducted continuously at each unit, during which samples of radioactive microparticles attached to sediment or equipment may be collected. Analysis shall be carried out on these samples. However, in collaboration with TEPCO, the selection of samples for analysis shall be determined by considering factors such as priority, sampling location, and the results of previous sample analyses.
- Samples of fuel debris, PCV sediment, and deposits contain fuel, fission products, and radioisotope materials, emitting strong radiation. Therefore, post-collection analysis shall be conducted at research institutions equipped with hot laboratories that provide shielding and containment functions.
- Analysis shall be conducted on the collected samples described above for various parameters, including radiation spectrometry measurement, mass measurement, visual observation, structural observation, micro observation, elements mapping, crystal structure analysis, chemical composition, and isotope ratios etc. Therefore, these analyses shall be

performed at research institutions equipped with not only these analytical functions but also expertise and technology related to sample preprocessing for analysis and observation. In addition to the above analytical parameters, if any analysis or measurement method can provide valuable data for the decommissioning of the Fukushima Daiichi NPS, the method shall be proposed, and its effectiveness shall be evaluated in collaboration with TEPCO before obtaining the data.

- Non-destructive analysis can be performed repeatedly regardless of the quantity or size of the sample. However, destructive analysis causes sample loss, alteration, or liquefaction, making reanalysis impossible. Additionally, for properties such as density and hardness, analysis may not be feasible to obtain value if the sample quantity or size is too small. Therefore, the priority analysis parameters shall be determined in collaboration with TEPCO before conducting the analysis.
- As target nuclides for determining the radioactive nuclides in the samples, the analysis follows the target nuclides specified in Note *1 below for the interim analysis of solid waste. The radioactivity levels of these nuclides shall be measured accordingly. However, if the sample quantity or size is small, not all of the 30 target nuclides may be present. In such cases, nuclides that fall below the detection limit or remain undetected shall be excluded from the analysis.

*1: Update on the Solid Waste Analysis Plan for the Decommissioning of Fukushima Daiichi Nuclear Power Station (FY2024)
https://www.meti.go.jp/earthquake/nuclear/decommissioning/committee/osensuitaisakuteam/2024/03/03/3-4-2.pdf
(Japanese text only)

[2] Evaluation and review of analysis results

For the future decommissioning of the Fukushima Daiichi NPS, it is necessary to consider the safe and reliable handling of fuel debris at various stages, including retrieval methods, storage and management, as well as treatment and disposal. It is necessary to estimate the properties of fuel debris to be retrieved in the future by comparing the analysis of collected samples with the knowledge of the analysis result of fuel debris and fuel debris simulant generated at nuclear facilities in the past.

- The analysis results shall be compiled from perspectives aligned with the agenda items for use in evaluation and review at the "Fuel Debris Analysis Evaluation and Review Working Group" organized by the Nuclear Damage Compensation and Decommissioning Facilitation Corporation. The agenda is broadly categorized into past analysis results and future analysis items to be acquired. During the working group meetings, the compiled findings shall be presented, followed by a Q&A session.
- The knowledge obtained from the analysis, investigations, and evaluation in (1) [1] and [2] shall be used to estimate the accident progression, to understand the in-reactor conditions,

and to consider safety measures during fuel debris retrieval, temporary storage, waste management, processing and disposal, etc.

[3] Technology development for improving analysis accuracy

For the analysis of fuel debris, it is crucial to verify handling and preprocessing procedures in advance. For example, in chemical composition analysis using inductively coupled plasma mass spectrometry (ICP-MS), it is essential to ensure uniform dissolution of the target sample. It is an effective approach for comparison and verification of analytical methods and enhancement of analysis accuracy to use the fuel debris simulant which has been prepared in advance by mixing and melting unirradiated natural uranium and structural materials (zirconium, iron, concrete, etc.), as a sample. On the other hand, due to the importance of confirming on handling flow during the analysis process, fuel debris simulant is not suitable for analyzing uranium isotope ratios. Additionally, it differs from actual fuel debris in several ways, such as the absence of transuranic elements (e.g., plutonium), fission products, and radioisotope, as well as the lack of background radiation effects. Therefore, before conducting full-scale analysis of actual fuel debris, it is essential to validate the analytical process using test samples with chemical composition and radiation characteristics that closely resemble those of real fuel debris, in terms of improving analysis accuracy.

- For the analysis items of fuel debris, such as chemical form, nuclide/element amounts, structural state/distribution, density, etc. of the analyzed sample, the fuel debris from the Three Mile Island NPS Unit 2 (hereinafter referred to as "TMI-2") shall be analyzed at plural analytical laboratories. Since TMI-2 fuel debris contains fission products/radioisotope and emits strong radiation, analysis shall be conducted in a research institutions equipped with hot laboratories provide shielding and confinement capabilities.
- The analysis of one sample of fuel debris from TMI-2 is currently ongoing. However, since fuel debris is heterogeneous, it is crucial to analyze multiple samples to accumulate data on different chemical compositions, crystal structures, and other characteristics. Meanwhile, the trial retrieval at the Fukushima Daiichi NPS has already commenced, and fuel debris shall be retrieved progressively to be provided as analysis samples. If the third and subsequent fuel debris samples are retrieved from Fukushima Daiichi NPS, priority shall be given to analyzing these samples. In cases where there is a delay in the trial retrieval process, such as the need for further consideration of the sampling locations, the analysis of TMI-2 fuel debris shall be conducted.
- In the case of the TMI-2 accident, temperature history, extent of core damage, and accident progression have been clearly identified, allowing for comparisons with this information. By using the latest analytical technologies that did not exist during the TMI-2 accident, it is possible to accurately compare the similarities and differences with the fuel debris from Fukushima Daiichi NPS, contributing to the estimation of the accident progression process. Furthermore, the insights gained from the analysis of TMI-2 fuel debris are used for

estimating the generation process and progression of fuel debris, as well as for considering safety measures during fuel debris retrieval, storage, and management.

[4] International cooperation to collect knowledge on fuel debris analysis and to improve the accuracy of analysis

In order to develop analytical technologies while utilizing international knowledge, it is important to collect knowledge on fuel debris and fuel debris simulant from various countries etc. and apply it to fuel debris analysis at the Fukushima Daiichi NPS.

- It is necessary to review the analytical items and properties of the fuel debris in the Fukushima Daiichi NPS by comparing with the knowledge from various countries on fuel debris and fuel debris simulant etc.
- Evaluation of the uranium characterization by the fuel debris simulant used other global cooperating R&D shall be conducted under international cooperation. In doing so, along with sharing the result of on-site survey and analyzed results, the cooperative contacts shall be established with international conferences & forums, etc. (for example, TCOFF-2 by the OECD/NEA, etc.) having knowledge on the thermophysical properties of materials. And efforts for technological development shall be pursued while adopting relevant knowledge as necessity arises.

(2) Technology Development for Abbreviated (In-situ) Analysis of Fuel Debris

Through previous internal investigations of the PCV, substances adhering to the surfaces of structural components such as grating and support pillars within the pedestal have been identified. If the amount of fuel contained in these deposits is extremely low or below the detection limit, there will be no risk of reaching criticality, and no criticality countermeasures will be needed during the retrieval and storage of fuel debris. For example, one of the criticality countermeasures is to use a containment vessel with shape control for storage. This requires cutting the object into smaller pieces to fit the containment vessel. By developing an analytical technique that can quickly and simply detect the presence of fuel in the deposits at the work site or nearby, it is possible to confirm that the fuel is below the minimum critical mass. This can help reduce the number of cuts required, improving the throughput of fuel debris retrieval operations. However, since the development of new analytical technologies require a long period of time and significant resources, only analytical technologies for which some basic and fundamental technologies have been established shall be purposed to be applied on-site at the Fukushima Daiichi NPS.

- The focus shall be on confirming the presence or absence of uranium in the analysis samples (qualitative analysis). The detection limit for uranium content or the minimum detectable amount shall be clearly defined in a simple and rapid manner. This will help assess whether the sample can be stored in a containment vessel with criticality countermeasures for

transportation and determine the feasibility of applying this method for pre-screening during the retrieval of fuel debris. The analysis method shall be designed to avoid complex preprocessing, prevent the expansion of contamination or radiation exposure in the surrounding area, and ensure that the analysis does not generate large amounts of waste or liquid effluents.

- In fuel debris retrieval sites, the radiation levels from induced radiation in the target samples or from the surrounding environment are high. Therefore, analytical methods that are unaffected by radiation or have minimal radiation impact shall be selected. Radiation environment analysis shall be conducted, and the radiation resistance of the entire analytical system shall be validated. Verification shall be carried out using spent fuel and fuel debris as the target material, aiming to expand the analytical record and improve its reliability.
- By expanding the research and development and enhancing the analytical track record, analytical data showing the presence of various elements, represented by energy spectra, shall be accumulated. This analytical data shall be used to train artificial intelligence (AI), enabling faster and more efficient data processing. The use of AI shall be explored to improve the accuracy and reliability of data analysis.
- Fuel debris is expected to contain a lot of fission products, zirconium and iron in addition to uranium. The presence of higher amounts of zirconium and iron means that the relative amount of uranium is expected to be low. Even if uranium is below the detection limit, it must still be stored and managed as radioactive waste. To clarify the main materials constituting the waste, the detection of fission products, zirconium, and iron shall be conducted, focusing on improving detection efficiency and verifying their distribution.
- When performing analysis at the work site or nearby, it is expected that the surface of the target material may have contaminants or an oxide film. Since these could lead to incorrect analysis results, a method for simple surface cleaning shall be explored. It shall also be confirmed that the cleaning process does not affect subsequent analysis.
- During fuel debris retrieval operations, it is presumed that water may be poured or sprayed as a dust control measure. For this reason, the target material may be wet on the surface, contain water in internal pores, or be submerged in water during analysis. Therefore, either measures for water resistance and water-repellent treatment of parts of the analytical equipment that may come into contact with water shall be considered, or strategies for drying and removing moisture from the target material.
- The method for transporting the analytical equipment into the reactor building and the miniaturization and portability of the equipment shall be examined to ensure that it is appropriately sized and structured for easy transport. Given that the analytical equipment may become contaminated with radioactive substances due to its use inside the reactor building, it could become waste if it is difficult to remove from the Fukushima Daiichi NPS. To minimize the amount of waste, the equipment shall be designed using materials and

structures that are resistant to radioactive contamination or, if contamination occurs, can be easily decontaminated.

- In general, many analytical devices are precision instruments, whereas on the premises of the Fukushima Daiichi NPS, environmental factors such as dust, sea salt particles, temperature changes associated with seasonal changes, and condensation in winter, affect measurements. Therefore, It is necessary to develop a measure to reduce the influence of environmental factors other than radiation and then it shall be investigated the measures that the analytical devices ensure long-term stable analyses.
- It is necessary to define and evaluate issues and their applicable ranges by conducting the actual analysis and feed the results back to the study of on-site application of the entire device.

(3) Development of Estimation Technologies of Fuel Debris Migration Behavior in PCV, etc.

In the project of "Upgrading Level of Grasping State inside Reactor" (FY2016/2017), an information aggregation chart and an estimation chart of the state inside the reactors have been prepared. After the completion of the project, the analysis on the samples, which were collected during the internal PCV investigation of Units 1 through 3, the on-site survey inside the reactor building had been continuously performed. With consideration of these results, an information aggregation chart and an estimation chart of the state inside the reactors have partly been updated.

To safely retrieve and stably store and manage fuel debris, based on previous achievements, evaluations by accident progression analysis codes, flow simulations, and other methods shall be conducted to confirm that the accident progression process, on-site survey results, and sample analysis results are consistent within acceptable limits. This includes verifying the validity of the estimation chart of the state inside the reactors and fuel debris distribution estimates. Specifically, during the internal investigation of the PCV for Unit 1, it was confirmed that reinforcing bars and the inner skirt, which were inside the pedestal concrete, were exposed. This indicates a different situation than the previously assumed molten core–concrete interaction (MCCI). By estimating and understanding the reactions that occurred during the accident, the extent of concrete damage and the areas affected by thermal influences shall be estimated. Additionally, the characteristics and quantity of fuel debris generated as a result of these reactions shall be understood. The results shall serve as fundamental data to improve safety during the retrieval process and storage/management of the debris. Furthermore, the results of the PCV internal investigation and sample analysis shall be incorporated into the information aggregation chart for each unit and the estimation chart of the state inside the reactors, etc.

- The evaluation of the melting reactions between the fuel and surrounding materials due to decay heat and oxidation reaction heat, as well as the amount of molten material etc., shall

be carried out using accident progression analysis codes. In this evaluation, plant parameters such as the RPV pressure, PCV pressure, at the time of the accident for each unit and the operation status of the emergency cooling system shall fully be considered to improve the reproducibility and consistency of each plant parameter, etc. Particularly, the evaluation shall focus on Units 1 and 3, where the impact of molten core–concrete interaction (MCCI) is believed to be significant.

- In Unit 1, fuel debris that fell into the pedestal has caused molten core–concrete interaction (MCCI), leading to damage and loss of concrete, as well as damage to pipes and equipment within the pedestal. Additionally, reinforcing bars and the inner skirt inside the pedestal are exposed due to some factors. To clarify the phenomena that caused these results and improve the accuracy of the material quantities inside the pedestal, the migration and diffusion behavior of the fuel debris on the pedestal floor shall be reproduced and evaluated using flow simulations. This shall include an examination of the distribution of fuel debris, particularly the areas where the concentration of fuel components is highest.
- The range of concrete damage, the extent of thermal influence, and the process by which high-mobility substances generated by reactions flow out of the pedestal shall be examined and evaluated. Various phenomena shall be considered during the evaluation, such as the lowering of the melting point due to eutectic melting of fuel debris and concrete components, and the inner skirt serving as a heat dissipation path. For Unit 3, the evaluation shall be conducted based on the data obtained from the PCV internal investigation, and the necessity of the analysis shall be considered in collaboration with TEPCO.
- As the Nuclear Regulation Authority, Osaka University, and TEPCO have been also investigating the reproducible testing of concrete damage and deterioration phenomena, the status of their implementation shall be into the evaluation. If additional simulations are deemed necessary, appropriate simulation methods shall be considered. In cases where there is a lack of basic data or material property values needed for the simulation, the possibility of obtaining them through testing shall be explored. As large-scale testing could result in multiple interacting factors that make it difficult to assess the data's dependencies, a method for efficiently and simply obtaining the necessary basic data shall be considered.
- The structure of the reactor building, PCV etc. shall be created using three-dimensional computer graphics (hereinafter referred to as “CG”). The state of damage and fuel debris distribution for each unit based on surveys, analysis, testing etc. shall be visually reflected and updated in the information aggregation charts and the estimation chart of the state inside reactors, etc. using three-dimensional CG., and are considered to be the latest results of the evaluation. For insights obtained from other studies, surveys, evaluations, etc., other than this project, the appropriateness of their inclusion shall be reviewed. Information deemed relevant shall be incorporated into the information aggregation charts and the estimation chart of the state inside reactors, etc. using three-dimensional CG .

・The results of the investigation, such as the information aggregation charts and the estimation chart of the state inside reactors with three-dimensional CG shall be provided for the fuel debris retrieval works. In order to contribute the understanding of the receiver of the information and to efficiently study a fuel debris retrieval method, the estimation chart of the state inside reactors with three-dimensional CG must include the vertical and horizontal cross-sectional views, and the piping and equipment in the PCV shall be detachable.
・The above-mentioned information aggregation chart, the reactor state estimates to be used for updating the estimation chart of the state inside reactors etc., specifications and the results from on-site surveys after accident shall be consistent with the data provided in reference *2 through reference *7.

*2: Estimation of Conditions in RPV and PCV after the Accident at Fukushima Daiichi Nuclear Power Plant
https://www.tepco.co.jp/decommission/information/accident_unconfirmed/pdf/20210719.pdf
https://www.tepco.co.jp/library/movie/detail-j.html?catid=61709&video_uuid=m88yqm90
(Japanese text only)

*3: Results of an investigation on manufacturing methods and manufacturers of reactor vessels, etc.
Search “www.nsr.go.jp/data/000167067.pdf” in the National Diet Library Web Archiving Project (https://warp.da.ndl.go.jp/? Lang=en).

*4: Documents from International Research Institute for Nuclear Decommissioning
https://irid.or.jp/debris/Reference_E.pdf

*5: Information Portal for the Fukushima Daiichi Accident Analysis and Decommissioning Activities
https://fdada.info/en/home2/accident2/

*6: Documents for the Decommissioning, Contaminated Water, and Treated Water Team Meeting and for PMO Meeting
https://www.meti.go.jp/english/earthquake/nuclear/decommissioning/index.html

*7: Documents for the Study Group on the Analysis of the Accident at TEPCO's Fukushima Daiichi Nuclear Power Station
https://www.nsr.go.jp/disclosure/committee/yuushikisya/jiko_bunseki01/index.html
(Japanese text only)

At the start of technology development, TEPCO’s needs shall be considered, and the technology development shall be proceeded after consultation with related parties (the Ministry of Economy, Trade and Industry (hereinafter referred to as “METI”), TEPCO, and the Nuclear Damage Compensation and Decommissioning Facilitation Corporation).

*When preparing the proposal for this project, the results of previous projects listed below shall be taken into account. Please refer to the links for the outcomes. In addition, the project should start subject to publication of the FY2024 result of “Development of Analysis and Estimation Technology for Characterization of Fuel Debris” (FY2023/2024). See below for the link to the results.

<Link to the project results HP for the project ”Upgrading Level of Grasping State inside Reactor” (FY2016/2017)>
https://en.dccc-program.jp/786

<Link to the project results HP for the project ”Development of Analysis and Estimation Technology for Characterization of Fuel Debris” (FY2021/2022)>
https://en.dccc-program.jp/4622
https://en.dccc-program.jp/5126

<Link to the project results HP for the project ”Development of Analysis and Estimation Technology for Characterization of Fuel Debris (Development of Technologies for Enhanced Analysis Accuracy, Thermal Behavior Estimation, and Abbreviated Analysis)”(FY2021/2022)>
https://en.dccc-program.jp/5471

<Link to the project results HP for the project ”Development of Analysis and Estimation Technology for Characterization of Fuel Debris(Development of Estimation Technologies of RPV Damaged Condition, etc.)” (FY2022)>
https://en.dccc-program.jp/5373

<Links to the Project Results HP>
https://en.dccc-program.jp/category/result

3. Operation of research and development

(1) Gathering Domestic and Overseas Wisdom

Projects must be conducted by utilizing Japan and abroad wisdom. In particular, they must consider introducing necessary technologies and knowledge both from Japan and abroad broadly. In case of development of machines and equipment, establishment of common basis of the machines and equipment (utilization of widely used goods and goods which have already been developed, etc.) must be taken into account as much as possible in order to promote reasonable development. Furthermore, the development of evaluation method is important to be confirmed and reviewed objectively by third parties such as academic societies, etc. Hence, such validation must distinctively be placed in the development plan or a milestone.

In implementing the project by introducing Japan and abroad technologies and knowledge, if necessary, the external organization shall be chosen through a solicitation such as a open competitive bidding in a timely manner; and in order to ensure transparency and fulfill accountability, the solicitation information must be published on the website and the link to the information must appear the website of the Management Office for the Project of

Decommissioning, Contaminated Water and Treated Water Management (hereinafter referred to as “PMO”), which is organized by Nuclear Damage Compensation and Decommissioning Facilitation Corporation and Mitsubishi Research Institute, Inc., with the intention to disseminate it widely.

(2) Establishing Decommissioning Industrial Cluster to Fukushima and Innovation Coast Framework Realization

It shall be considered to work with companies, which run business in Hamadori area and other regions in Fukushima prefecture*, in an aim to promote local companies engaged in decommissioning related industry and establish decommissioning industrial cluster to Fukushima.

It shall be also considered to use decommissioning related facilities (e.g. Naraha Center for Remote Control Technology Development of Japan Atomic Energy Agency (mock-up testing facility)), which play a role in Fukushima Innovation Coast Framework.

*Area

Iwaki city, Soma city, Tamura city, Minami Soma city, Kawamata town, Hirono town, Naraha town, Tomioka town, Kawauchi village, Okuma town, Futaba town, Namie town, Katsurao village, Shinchi town, Iitate village

(3) Human resource development for medium and long-term

Efforts need to be made to strengthen the relationship with universities, research organizations, etc. through implementing joint research, etc. from the viewpoint of human resource development in the middle and long-term. Cooperation also needs to be made positively to strengthen the activities which focus on human resource development by the government and related organizations.

(4) Clarification of tests conditions and specifications for development

Consideration of requirement level necessary for implementing decommissioning activities must be done before commencement of elemental tests and equipment design; furthermore, evaluation of to what extent existing technologies can be utilized must be done as quantitatively as possible (Present the current Technology Readiness Level (TRL)). Based upon these, information on the target of the degree of the tests and equipment development compared to the requirement level must be shared in advance between METI, the Fund Establishment Organization (hereinafter, METI and the Fund Establishment Organization are collectively referred to as the "Organizations Concerned".) and PMO, and the test conditions and design specifications must be established.

(5) Definition of criterion for judgment of degree of objective achievement

Comprehensible criteria which can be a measure for the judgment of objective achievement of the project must be defined using numerical values, etc. (Present the current TRL); and they must be validated whether or not the objective will have been achieved at the completion of the project.

Table 1 Definition of Technology Readiness Level (TRL)

Level	Definition corresponding to this project	Phase
7	At the stage of completion of practical utilization	Practical use
6	At the stage of being demonstrated in the field	Field demonstration
5	At the stage of production of prototype with the scale of practical use, and demonstration in a simulated environment such as in a factory, etc.	Demonstration of simulation
4	At the stage of implementation of function tests at the level of trial production as a process of development and engineering	Research for practical use
3	At the stage of proceeding with development or engineering using application or combination of existing experiences. Or at the stage of proceeding with development or engineering based upon elementary data in the area with lack of existing experiences.	Application research
2	At the stage of proceeding with development or engineering in the area nearly without applicable existing experiences, and with setting up the specifications.	Application research
1	At the stage of clarifying elementary contents regarding development or engineering.	Elementary research

(6) Cooperation with decommissioning activities and associated research and development projects

Clarify how the results obtained could contribute to the decommissioning activities and associated research and development projects, and positive cooperation and collaboration with the associated research & development projects shall be conducted. For this purpose, it is necessary to share harmonized input /output information among the associated research and development projects. In order to realize this information sharing, coordination among the entities involved must be done using Form 4 at the commencement of the project and other suitable timings; and it must also be regularly shared and confirmed between organizations concerned and PMO. Furthermore, the information on implementation of the project (such as progress situation, acquired data, challenges, etc.) must be shared with and offered to the organizations concerned and PMO in a timely and appropriate manner. Also, Non-Disclosure Agreement must be concluded among the Subsidized Project Operating Entities, the associated research & development project entities and PMO, if necessary. PMO will conduct the necessary coordination.

(7) Research management

The project must be proceeded with bearing in mind that the achievement goals of the project

(such as the contents of outputs, target schedule, etc.) were established so as to achieve high-rank goals of this project.

Furthermore, it is necessary to create a flexible implementation organization that can reflect the following matters to the project, because understanding about the situation of the inside of PCV and necessary R&D to retrieve fuel debris is still limited, and a great deal of uncertainties remain in respect of the preconditions for research development.

[1] Discussions about the Mid-and-Long-Term Roadmap, discussions at meetings of the Secretariat of the Team for Decommissioning, Contaminated Water and Treated Water Countermeasures, and instructions and advices given by the Agency for Natural Resources and Energy, and so forth.

[2] Discussions concerning the “Technical Strategic Plan for Decommissioning of the Fukushima Daiichi Nuclear Power Station of Tokyo Electric Power Company Holdings, Inc.”, discussions at meetings held by and instructions and advice given by Nuclear Damage Compensation and Decommissioning Facilitation Corporation, and so forth.

[3] Progress management, instructions and advices given by the Fund Establishing Corporation and PMO.

In particular, in order to achieve the project outcome targets, it is important to promptly understand and reflect the current status of Fukushima Daiichi NPS, the progress of TEPCO’s engineering, internal investigation, R&D, on-site working environment improvement such as dose reduction, lowering water level, space availability, etc. It is also important to check whether the prerequisites of the project are satisfied not only at the early stage of the project but also at any time to during the project from the viewpoint of on-site applicability, and to take measures promptly if any issues are found.

Therefore, under the project management of TEPCO, it is required to establish organization to conduct R&D. When grant application, the application shall be made jointly with TEPCO. However, TEPCO does not claim for any expenses for this project. When working at Fukushima Daiichi NPS, etc. for on-site investigation and demonstration test and so on, sufficient coordination shall be made beforehand with TEPCO, management system shall be constructed with understanding the compliance issues and precautions, etc., and appropriate security measures shall be taken.

(8) Progress report

The entity is required to report on the implementation plan, progress situation, project results, etc. upon request of the Fund Establishment Organization and PMO. Specifically, the followings are included.

[1] Interim report meetings and final report meeting: For the purpose of confirming created results, advancing the result on the future and improving on-site applicability, the entity is required to report contents of research and development to committee members and organizations concerned about once in six months.

[2] Meeting of organization concerned: For the purpose of discussion for issues of proceeding projects among organizations concerned and PMO, the entity is required to report implementation plan and progress situation after launched new subsidized project or at key times of project progress.

[3] Project review meeting: For the purpose of confirming whether the plan is for the target established at the start of project, and for confirming and advising on applicability of actual engineering and worksite, the entity is required to report the contents of research and development to organizations concerned and experts designated by PMO about once or twice a year.

[4] Progress report: the entity is required to report project progress by using the example of implementation schedule (Reference Document 2) etc. every end of month.

[5] Report of project outcome: The entity is required to submit final report of project outcome for the specifical outcome of subsidized project. (The report at final report meeting is possible to utilize for this report of project outcome)

[6] Project result report: After the completion of the project, the entity is required to submit project result report.

The information reported to the PMO may be shared among organizations concerned based on the 5. Implementing Scheme considering the non-disclosure information mentioned in “Act on Access to Information Held by Administrative Organs（Act No. 42 of 1999）”.

(9) Enhancement of dissemination of information

Comprehensible explanation to the public regarding the project contents and results is indispensable. The entity is also required to actively cooperate with the government and the organizations concerned for dissemination of information. In addition, any results of the project, which could be made public, should be summarized as a report of project outcome for publication and disclosed as soon as possible after its completion.

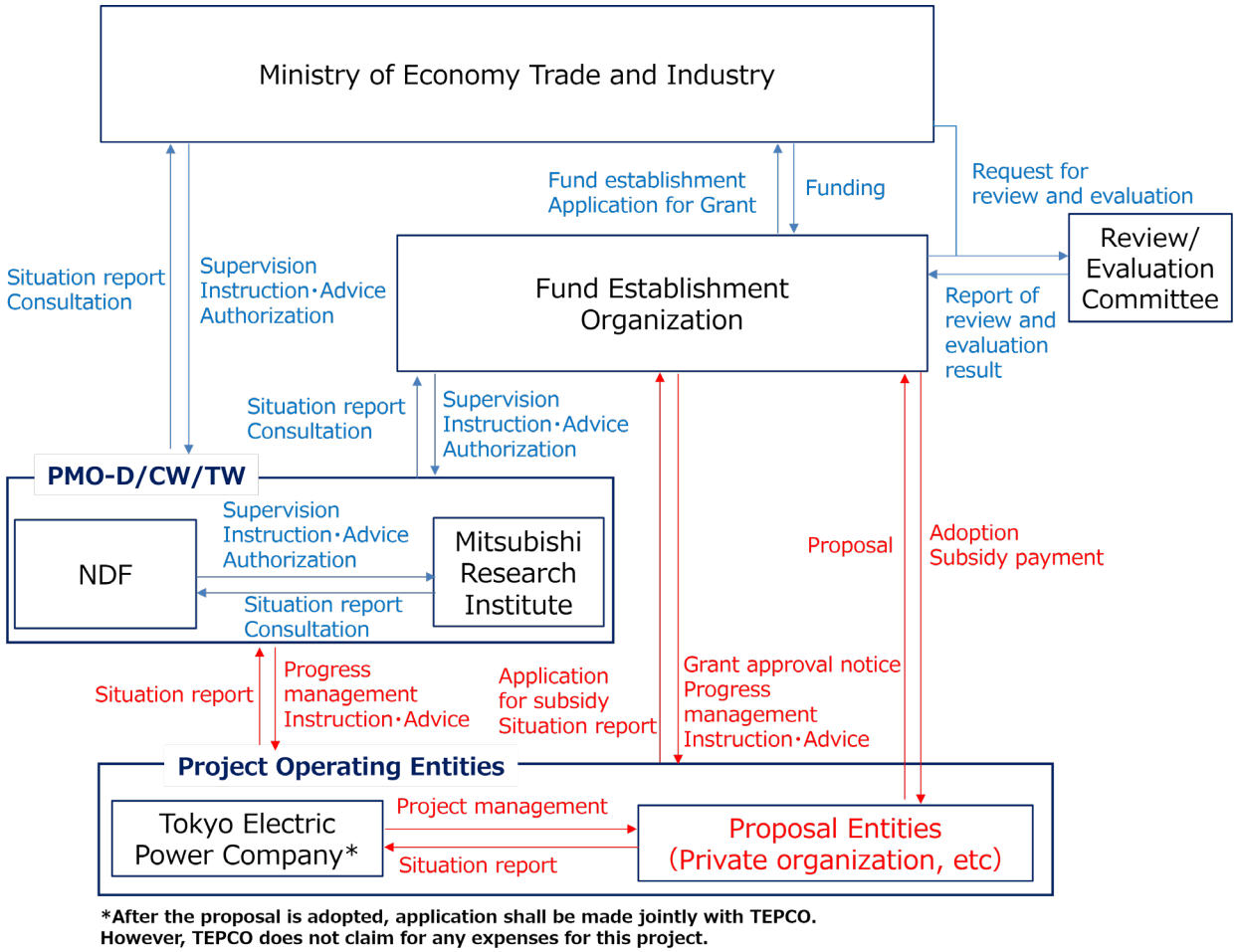
(10) Preparation of other options

Alternative options should be prepared if necessary in advance for the case that the project cannot be proceeded with as planned during the project term. If the alternative options are prepared or revised, the information must be notified to the Fund Establishment Organization via PMO.

4. Project Term

- From the effective day (of the grant) to March 31, 2027

5. Implementing Scheme



***After the proposal is adopted, application shall be made jointly with TEPCO. However, TEPCO does not claim for any expenses for this project.**

6. Application Requirements

The private companies, etc. satisfying all of requirements (1) to (9) shown below are qualified to apply for the subsidies. An application from a consortium is also acceptable. In that case, a managing legal entity must be appointed out of each consortium and submit the project proposal. (Please note that no managing legal entity may commission the entire work to another legal entity.)

(1) Possessing the organization for properly conducting the relevant subsidized project. If the case to subcontract to or jointly implement with a third party a part of the subsidized project, for the creation of project outcome, the appropriate cooperation organization should be established to manage the project.

(2) Having the capacity, knowledge and experience required for conducting the relevant subsidized project.

(3) Having the management foundation required for smoothly conducting the relevant subsidized project and sufficient ability to control the funds and other resources.

(4) Being able to follow the appropriate accounting procedures in accordance with the “Grant Policy for Subsidy for the Project of Decommissioning, Contaminated Water and Treated Water Management” and the “Subsidized Project Administration Manual (*)”. With regard to overseas entities, as a general rule, being able to prepare the evidenced documents in Japanese or English and present them in Japanese territory upon request of the Fund Establishment Organization and PMO.
(*)https://en.dccc-program.jp/files/20230224man.pdf

(5) Not foreseen to be subject to Articles 70 and 71 of the Cabinet Order concerning the Budget, Auditing and Accounting.

(6) Not fulfilling any of the conditions stipulated in the “Guidelines for the suspension of subsidies controlled by the Ministry of Economy, Trade and Industry and the suspension of designation relating to the contracts”. (January 29, 2003, No 1) First column, the second items in Attachment

(7) The applicant must have a compliance system under a self-regulated structure which meets the "Standards for Exporters, etc. to Meet" provided for in Article 55-10 (1) of the Foreign Exchange and Foreign Trade Act. We will confirm this system using (Form 3) "Response to Security Export Controls" when selecting applicants, so please use this form to fill in the required items and submit the required documents.

[Reference] Standards for Exporters, etc. to Meet
Regulations to be observed by parties engaged in export or provision of technology in the course of trade (exporters).
Exporters that do not handle security-sensitive "specified important goods, etc." have a duty to 1) nominate a person responsible for checking goods, etc., and 2) provide guidance to managers and export workers on compliance. Exporters that do handle security-sensitive "specified important goods, etc." have a duty to 1) identify a representative as the responsible person, 2) set out an export control system, 3) set out a procedure for checking regulated/non-regulated goods, 4) set out a procedure for confirming the usage and consumer, and confirm these in accordance with that procedure, and 5) confirm that the goods to be shipped coincide with the confirmed non-regulated goods at the time of shipping.

(8) Admitting that the results obtained through this project can be utilized by TEPCO, etc. to leverage them for Decommissioning, Contaminated Water and Treated Water Countermeasures if they request to do so under the condition that each party is in agreement. Not preventing the utilization by behaviors such as not allowing to use the technology intentionally, asking for unreasonable compensation, etc. in spite of receiving the request.

(9) In order to make sure of the above-mentioned item, preventing a situation where the results from this project are not be able to be utilized for Decommissioning, Contaminated Water and Treated Water Management Countermeasures at the Fukushima Daiichi NPS by ceding the above-mentioned condition in (8) to the successor if the applicant transfers the result to a third party and loses their own right to utilize it accordingly. In the case of a conflict which makes the

applicant unable to make sure of the items in (8), the concerned parties must solve it by their own responsibility.

7. Requirement Conditions for Grant Decision

(1) Number of proposals to be adopted : One proposal or more (including proposals for implementation items (1), (2), or (3) only)

(2) Subsidy rate and maximum amount of subsidy

The subsidy is fixed in JPY.

Maximum amount: 2,000,000,000 JPY

In the case of partial proposals, the maximum amounts of subsidy are as follows:

(1) 1,060,000,000 JPY

(2) 490,000,000 JPY

(3) 450,000,000 JPY

Subsidies are paid in JPY. The contents of the project, amount of the subsidy, etc. will ultimately be settled only after coordination with the Fund Establishment Organization via PMO.

(3) Time of Payment

In principle, the subsidies are paid after the project is completed.

*Please note that cases where the payment (i.e. the payment by estimate) before the completion of the project is permitted are limited.

(4) Confirmation of the amount of payment

The amount to be paid is decided based on the Project Result Report which is submitted by the operating entities after the project is complete as well as the results of the survey at the verification site and/or the office.

The amount to be paid will be the total of the expenses to be covered by the subsidies, which do not exceed the granted subsidy amount and have spent actually. For this reason, the books and evidential documents such as receipts are necessary for supporting all the expenses. All the expenses will be strictly inspected and evaluated. Thus, the expenses not meeting the conditions mentioned above may be rejected.

(5) Grasp the implementation organization at the time of submitting the Project Result Report

Since it is necessary to confirm the implementation organization of the project, when submitting the Project Result Report after the project is completed, as expenses are covered by the subsidy in the case of outsourcing or commissioning contract, the Subsidized Entity must attach the implementation organization document (*) describing the name of the contractors (only for transactions of 1 million yen or more including tax), their relationship with the Subsidized Entity, their address, the contract amount and the contract content.

(*) This document is to be confirmed at the inspection.

"travel expenses", "meeting expenses", "gratuities", "equipment expenses (including rent and hire fees)", "assistant personnel costs (including temporary staffing)" are not eligible.

In the case of subcontracting or recommissioning from the contractors (in the case of subcontracting etc., limited to transactions of 1 million yen or more including tax), please describe their information in the implementation organization document same as above (There is no need to describe the contract amount for sub-subcontracting or re-recommissioning).

[Implementation Organization Document Description Template]

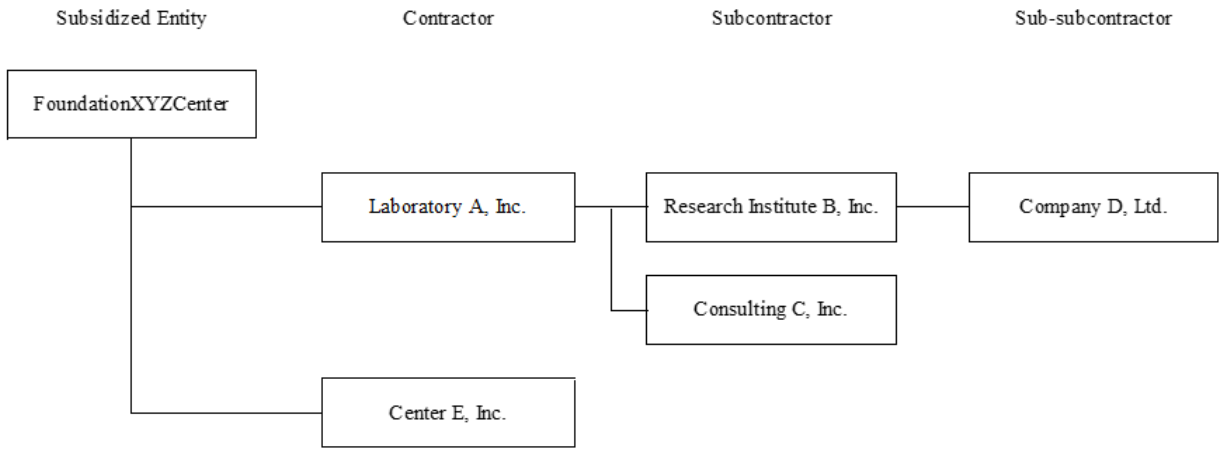
In principle, the implementation organization should be presented in the Organization Table as shown below and include the implementation organization chart. There is no prescribed form if the implementation organization, the name of the contractors, their relationship with the subsidized project operating entity, their address, the contract amount, and the contract content are clearly stated on the document.

Implementation Organization Table (limited to contract of work/service agreement of 1 million yen or more including tax)

Name of Outsourcing/Commissioning Company	Relationship with Subsized Entity	Address	Contract amount (with tax)	Contract content
Laboratory A, Inc.	Contractor	XXX-ku, TokyoXXX	*Using Arabic numerals, show amounts in yen value	*Fill in as detail as possible
Research Institute B, Inc.	Subcontractor (Subcontractor of Laboratory A, Inc.)	Refer to the sample above	Refer to the sample above	Refer to the sample above
Consulting C, Inc.	Subcontractor (Subcontractor of Laboratory A, Inc.)	Refer to the sample above	Refer to the sample above	Refer to the sample above
Company D, Ltd.	Sub-subcontractor (Subcontractor of Research Institute B, Inc.)	Refer to the sample above	No need to fill in (*)	Refer to the sample above
Center E, Inc.	Contractor	XXX-ku, TokyoXXX	*Using Arabic numerals, show amounts in yen value	*Fill in as detail as possible

(*) Company D, Ltd. Is a sub sub subcontractor from the standpoint of the Subsidized Company so there is no need to write the contranct amount.

Implementation Organization Chart (limited to contract of work/service agreement of 1 million yen or more including tax)



8. Application Procedure

(1) Application Period

Commencement: Friday, February 28, 2025

Deadline: By 10:00 AM local time on Wednesday, March 19, 2025

We will not accept any proposals after this deadline.

(2) Information Session

Date and Time: 13:00 – 13:30 on Monday, March 10, 2025

Venue: Web Conference

If you would like to attend the session, please inform the contact point written in “13. Contact” by 12:00 AM local time on Friday, March 7, 2025 via email. After that, we are going to inform you of how to access web conference. The session will be held in Japanese. If you need a interpreter, please make arrangements on your own (You are responsible for the expense). If you need an information session in English, please consult with PMO by the above deadline via email. Please note that there is possibility to limit the number of participants.

When making contact, please title your e-mail “Register for attendance to the information session for ‘Project of Decommissioning, Contaminated Water and Treated Water Management’” and include the “corporate or organization name,” “name of the attendee,” “department,” “phone number,” “e-mail address,” and “subsidized project name to apply” in the main text.

To applicants from the EEA member states:

Private information will be used only in the working related to explanation meetings and will not be distributed to any other organizations. When you have provided us with such information, we assume that we have received it with your clear understanding that you submit it in agreement to the above-said condition.

(3) Application form and other documents to be submitted

[1] Please submit the following documents in person, by mail, or by e-mail. Please title your file “Application for the subsidy program ‘Project of Decommissioning, Contaminated Water and Treated Water Management (Development of Analysis and Estimation Technology for Characterization of Fuel Debris)’”.

- Application form (Form 1)
- Outline of Subsidized Project (Form 2)
- Certificate of Conformance (Form 3）
- Input/ Output information (Form 4)
- Response to Security Export Controls（Form 5）

・Personal Data Processing Consent Form（Form 6）

・Other documents

- Outline of Corporation or Organization (such as a brochure, etc.)
- The financial results, and statement of revenues and expenses (of the last year)
- The articles of association or the act of endowment
- Other supporting documents

* You can describe the application documents in Japanese or English. If you bring them with you or submit them by mail, one CD-ROM must be submitted along with 1 copy using A4 paper. In case that you bring them in person, please inform us of the date beforehand. In case that you submit them by e-mail, please attach 1 copy via email to the email address for application. As a general rule, the file format must be, MS-Word, MS-PowerPoint, MS-Excel or PDF. If you have unavoidable reasons not to be able to use these formats, please contact us.

* If your proposal is adopted, there is a possibility that Input/ Output information will be released to other entities.

[2] All the application documents submitted will not be used for any purposes other than the evaluation in the course of the selection process. Please note that the application documents submitted will not be returned. We take the utmost care to preserve confidentiality. However, if your proposal is adopted, the information except the non-disclosure information (i.e. the personal information, the information detrimental to the legitimate interests of legal entities) may be disclosed under the “Act on Access to Information held by Administrative Organs” (Act No. 42 enacted on May 14, 1999).

To applicants from the EEA member states:

Private information included in application documents will be used only in the evaluation. Therefore, PMO will not distribute such private information to any other organizations besides METI, Fund Establishment Organization, NDF, and Review/Evaluation committee. When you apply for the subsidy program, you must clearly understand the above-said condition and submit Form 6.

[3] The costs spent for issuing the application documents and other documents will not be included in the expenses. Also, the costs spent for issuing those documents will not be compensated for regardless of whether the proposal is adopted or not.

[4] The matters described in your proposal are considered to be the fundamental policies which should be observed during the project. Consequently, please be sure to describe only the matters which are feasible within the budget. Also, please note that even if your proposal is adopted, it may be rejected later on if you make a significant change to it at your discretion.

[5] Appropriateness of the cost breakdown must be shown using supplemental explanation

documents.

(4) Place of submission

The application documents must be delivered to the following address via hand-carry, mail or email, etc. In case that you bring them in person, please inform us of the date beforehand.

Toranomon Building 7th Floor,
1-12 Tranomon 1-chome, Minato-ku,
Tokyo 105-0001, JAPAN
Contact: Fumiya Sato, Kazuhito Yoshida
Email address for submission: hr-apply@mri.co.jp

* Please DO NOT send the application documents via fax. Incomplete documents will be rejected and not subject to evaluation. Therefore, please carefully read and follow the procedures for application to correctly fill out the documents.
* Any application documents submitted after the closing date will not be accepted. If you send the documents by postal mail, they may not be delivered by the designated time on the closing date. Consequently, you are advised to mail them sufficiently ahead of the closing date.

9. Evaluation and Adoption

(1) Method of Evaluation

Applications will firstly be evaluated through paper screening, so that the applicants for the presentation to the review committee can be selected. The review committee is planned to be held in late March 2025. Depending on the capacity of the venue, the number of the participants to the presentation may be restricted. Furthermore, hearings and on-site investigation may be conducted as required; and submission of additional documents may be requested.

(2) Evaluation Criteria

Applications are to be comprehensively evaluated based upon the following criteria. The details of the criteria are described in the “Criteria for reviewing proposals and allocation of points for items to be reviewed”.

[1] Objective, contents, implementation method, and applicability to countermeasures for decommissioning (Including on-site applicability)

・It shall be evaluated whether or not the Project objective corresponds to the project purpose described in the “Guidelines for applying”.

・It shall be evaluated whether or not the contents of the project are consistent with the Project content indicated by the “Guidelines for applying”, and described in detail in consideration of applicability to countermeasures for decommissioning (including on-site applicability).

・It shall be evaluated whether or not the project implementation method is consistent with the objective and contents of the project.

[2] Project Implementation Schedule

・It shall be evaluated whether or not an appropriate project implementation schedule is indicated for the objective and contents of the project.

[3] Project Implementation Organization

・It shall be evaluated whether or not the applicant has an accumulation of indispensable expert knowledge to implement the project as the project implementation organization, and also whether or not the employees to be engaged in the project have an accumulation of indispensable expert knowledge to implement the project, and then whether or not the applicant has ever implemented other similar projects as an organization. Additionally, it shall be also evaluated whether or not it is described that the applicant makes contributions to the revitalizing local economy through the implementation of the project such as working with companies which run business in the Hamadori area and other regions (*) in Fukushima prefecture, or using decommissioning related facilities which play a role in Fukushima Innovation Coast Framework. Moreover, it shall be evaluated whether or not the project implementation organization including the project leader is clearly described, and then it has the implementation ability and the coordination structure to consider/judge the applicability to countermeasures for decommissioning (including on-site applicability).

*Area:
Iwaki city, Soma city, Tamura city, Minami Soma city, Kawamata town, Hirono town, Naraha town, Tomioka town, Kawauchi village, Okuma town, Futaba town, Namie town, Katsurao village, Shinchi town, Iitate village

[4] Project Cost

・It shall be evaluated whether or not the project costs are appropriately allocated to the project objective and contents.

[5] Financial Basis and Management Structure for Implementation of Project

・It shall be evaluated whether or not the applicant has a financial basis and management structure for implementation of the project.

(3) Decision and Announcement of Results

PMO will release the adopted entities on our website, etc. The adopted entities will be notified

of the result.

10. Grant Decision

The project shall be initiated after the adopted entity submits a grant application for the subsidy to the Fund Establishment Organization via PMO and PMO send a notice of grant decision prepared by the Fund Establishment Organization to the applicant in return.

It should be noted that there may be changes in the details, composition and scale of the project as well as its budget between the decision of adoption and grant, as a result of consultation with the Fund Establishing Organization and PMO. Also, please be aware that the grant decision may not be notified if the adopting requirements are not met.

Although subsidized project operating entities may be provided with information required to implement the project after the decision of grant, they may be requested to observe the confidentiality depending on the nature of the information.

Information on the decision of grant of the subsidy (adopted date, the entity adopted (granted), effective date of the grant, corporation number in Japan, value of grant, etc.) will be shown on "gBizINFO"* in principle.

* "gBizINFO" by Ministry of Economy, Trade and Industry is a system, with the start of the 'My Number' system considered, to link a corporation number in Japan to corporation information such as those regarding subsidy and prize-giving. Anybody can execute batch retrieval/browsing in the system. With this system, expansion of new businesses, reduced costs in information acquisition, and more efficient businesses are expected in business enterprises and public offices.
Web address: https://info.gbiz.go.jp (Japanese text only)

11. Allocation of Expenses

(1) Classification of Expenses Covered by Subsidy

The expenses covered by the subsidy shall be those directly required for the implementation of the project and those required for compiling the project results. The specific items are listed below. Please refer to "Reference document 3" for an explanation of each cost items.

Items of Expense	Description
(1) Labor Costs	Expenses for personnel required to implement the subsidized project.
(2) Operating Costs	Expenses for raw materials, consumables, design/fabrication/processing, facility/equipment, goods purchase, research, outsourcing, travel, remunerations, rent/depreciation and other necessities.

(2) Expenses not to be Included in Expenses Covered by Subsidy

・Office supply equipment (furniture such as desks, chairs and bookshelves, office machinery and so forth) with which the applicants should already be provided when considering the nature of the project.

・Expenses for handling accidents and disasters that occurred during the project. (However, cancellation fees incurred by reasons not attributable to subsidized project operating entities may be directly included as an expense. Please consult the person in charge on this matter.)

・Expenses unrelated to the project

(3) Exclusion of Consumption Tax from Expenses Covered by Subsidy

If the national and local consumption taxes (hereinafter referred to as “consumption tax”) are included in the subsidy amount, the applicants shall be requested to submit a report after the settlement of consumption tax amount, according to the Grant Policy for Subsidy.

This is so specified as to demand, at the time of filing an income tax return, that subsidized project operating entities should report and return the amount to which the subsidy has been applied, out of the amount of deduction for taxable purchase, so that the amount for which the subsidy has been allocated out of the amount of deduction for taxable purchase shall not be detained.

However, because the report mentioned above is based on an income tax return that will be filed after the settlement of the subsidy, occasional delinquency in reporting due to lapse of memory has been found. Also, in order to avoid the complicated office procedures that need to be followed by subsidized project operating entities, the consumption tax shall be handled as follows.

When determining the amount of subsidy applied for in the grant application, the consumption tax must be excluded from the expenses covered by the subsidy before calculating the subsidy amount and submitting the application.

However, to avoid hindrance to the implementation of the subsidized project, such subsidized project operating entities as those listed below shall be permitted to include the consumption tax in the expenses covered by the subsidy when calculating the amount of subsidy.

[1] Subsidized project operating entities who are not classified as taxpayers under the Consumption Tax Act

[2] Subsidized project operating entities who are tax-exempt business entities

[3] Subsidized project operating entities who are business providers subject to simplified tax

[4] National or local governments (limited to cases when project is conducted with a special account), or subsidized project operating entities who are corporations listed in the attached Table 3.

[5] Subsidized project operating entities who are using the general account of a national or local government

[6] Subsidized project operating entities who are taxable business providers that choose a refund

of consumption tax, following confirmation of consumption tax and purchase tax deductions, for instance due to a low amount of taxable sales

12. Miscellaneous

(1) Any expenses incurred (including expenses for order placement) before the effective date of the grant shall not be covered by the subsidy program.

(2) In the event that the subsidized project operating entity desires to make a purchase or other contract related to material procurement or involving an occurrence of cost, it shall invite open competitive bidding, as a general rule, from the viewpoint of cost effectiveness. If the subsidized project operating entity desires to transfer part of the subsidized project to a third party or conduct the project in partnership with a third party, it shall in advance make a contract on the implementation and report this to the Fund Establishing Organization via PMO.

(3) Once informed that the decision on grant of the subsidy is made, the subsidized project operating entity shall not change the subsidy budget distribution or the details of the subsidized project nor interrupt or terminate the project without prior approval from the Fund Establishing Organization via PMO.

(4) The subsidized project operating entity shall promptly report the progress of the subsidized project and so on whenever required to do so by the Fund Establishment Organization and PMO.

(5) After the subsidized project is completed (or the project termination is approved), the subsidized project operating entity shall submit a project result report to the Fund Establishing Organization via PMO.

(6) The subsidized project operating entity shall keep accounts on any expenditures for the subsidized project with dedicated account books accompanied by all written evidence in a way that is clearly differentiated from the other accounting to ensure that all incomes and expenditures are meticulously accounted for. The entity shall maintain the account books at least five years after the fiscal year in which the date of completion (or the date of approval for termination) is included so that they can be accessible whenever requested by METI, Fund Establishment Organization and PMO.

(7) With respect to the assets acquired or the utility of which has increased through the subsidized project (hereinafter referred to as "the Acquired Assets, etc."), the subsidized project operating entity shall manage them with due care of a prudent manager even after the completion of the subsidized project, and strive to effectively make use of them in accordance with the purpose of the grant of the subsidy. All applicable Acquired Assets, etc. shall be properly controlled using an Acquired Asset Ledger during the asset disposal restriction period, which will be separately set forth.

(8) If the subsidized project operating entity needs to dispose of (i.e., use, transfer, loan or offer as collateral assets contrary to the purpose of the grant of the subsidy) any Acquired Asset having

a unit price equal to or higher than 500 thousand yen (tax excluded) during the asset disposal restriction period separately set forth, they must obtain prior approval. In this case, the entity shall pay part of or the entire subsidy amount as a general rule. (The maximum payment does not exceed the subsidy amount for the appropriate asset to be disposed of).

(9) After the completion of the subsidized project, the Board of Audit may visit the premises of the subsidized project operating entity for inspection.

13. Contact

Toranomon Building 7th Floor,
1-12 Tranomon 1-chome, Minato-ku,
Tokyo 105-0001, JAPAN
Contact: Fumiya Sato, Kazuhito Yoshida
E-mail: hairo-info@ml.mri.co.jp

* Contact us through e-mail. We regret that no inquiries will be accepted via telephone.

(Form 1)

No. *Leave blank.	

To Public Interest Incorporated Foundation Nuclear Safety Technology Center

Application for the subsidies for the “Project of Development of Analysis and Estimation Technology for Characterization of Fuel Debris”

Applicant	Corporation number (*)	
	Company/Organization Name	
	Representative (Full Name and Title)	
	Address	
Contact	Contact Person (Full Name)	
	Section/Department	
	Title	
	Telephone (Extension, if any)	
	E-mail	

* If a corporation number in Japan has been given, fill in the 13-digit number.
If you are an individual and foreign company, etc., not having it, leave the field as it is.

(Exhibit)

1. Name of the Subsidized Project

2. Objective and contents of the Subsidized Project

＊Describe your own understanding of the background of the project, the purpose of the project and its contents briefly.

3. Scheduled commencement and completion dates of the Subsidized Project

(Scheduled commencement date):

(Scheduled completion date):

4. Entire costs needed for the project JPY

5. Costs subject to subsidy JPY

6. Subsidy amount to be applied for JPY

7. Allocation amount of the costs for the Subsidized Project, costs eligible for the subsidy and subsidy amount to be applied for

The contents are the same as (2) Expenditures, I. Summary table of “2. Plan of the income and expenditure of the Subsidized Project” of the Form 2, “Brief explanation of subsidized project”.

8. Bases for Calculation for the above amount

The contents are the same as (2) Expenditures, II. Distribution of Costs of “2. Plan of the income and expenditure of the Subsidized Project” of the Form 2, “Brief explanation of subsidized project”.

9. If a group is formed to conduct the Project, the names of the group and the member companies

Note 1: The “costs required for the Subsidized Project” refers to the cost required for performance of the relevant project. As a general rule, the amount must be provided after deducting the amount of the national and local consumption taxes.

Note 2: As for the amount of the “Subsidized Costs”, as a general rule, the amount of the “costs required for the Subsidized Project” eligible for the Subsidy must be provided after deducting the amount of the national and local consumption taxes.

Note 3: The “amount of the Subsidy applied for” refers to the amount of the “Subsidized Costs” for which grant of the Subsidy is requested, and the amount limit is the amount of the “Subsidized Costs” multiplied by the Subsidized Ratio (any amount less than 1 JPY shall be rounded down).

Remark: The size of the paper used shall be the Japanese Industrial Standards A4 Format.

(Form 2)

Address

Name (Name of Corporation and Title/Name of Representative Person)

Outline of Subsidized Project

1. The implementation plan for the Subsidized Project (based on the period in above "4. Project Term")

(1) Contents and implementation method of the project

＊(In the case of making a partial proposal in a solicitation where partial proposals are permitted) Provide the implementation items to be proposed.

＊Provide the following information by project content item.

＊Specific implementation contents and method, based on clarification of issues for each objective of research and development

＊Specific implementation content and method for each item of the project content

＊Specific proposal to improve outcome of the project

＊Project location (Address and name of the location)

(2) The implementation schedule

＊Describe the implementation schedule of the project by month for each implementation contents.

＊Describe the implementation procedure in detail. If the stages of the research and development are different (such as design, development, tests, etc.) in each item, describe the difference clearly.

＊If the persons in charge of the research and development (manufactures and subcontractors) are different in each item, describe the organization they belong to clearly so that we can distinctly understand who will actually implement the item.

＊Set the actual targets for achievement of the project purpose as milestones and describe them for each item.

＊In setting the milestones, they must be related to the points where delay of the project is foreseen.

＊In order to prevent delay, alternative options must be described for items with high risk.

＊ Describe major output and input information so that correlation with other projects, comprehensive proposals, partial proposals, etc. can be grasped.

＊As a plan of the interim report, describe the outputs which will have been able to be achieved at the time of the report and further plan.

＊In reporting your progress, show your plan and actual progress in a comprehensible manner. Furthermore, describe the up-to-date situation and further work plan, etc. as a reference.

(3) The project implementation organization

＊Provide the implementation organization chart and the number and role of people who are engaged in the project for each item of the project contents (Annex 1, Annex 2)

＊After clarifying the responsible person for entire project implementation, the project leader (exclusively employed for the project) and sub-leaders responsible for each project item, provide their profile, area of expertise and experience of engagement in similar projects.

＊Describe outsourcing or commissioning, if planned.

＊Describe the name, outline, year, ordering party, etc. of similar projects. If the project was done as your own company's project, state it accordingly.

＊Clearly state the experiences of each participating party if you form a consortium.

＊In case of a large proportion of commissioning and outsourcing, the roles expected and track records of the commissioned and outsourced contractors shall be described as necessary. This can also be submitted as an attachment.

2. Plan of the income and expenditure of the Subsidized Project (based on the period in above "4. Project Term")

(1) Income (Unit: JPY)

Item	Amount
Own fund	
*Bond issuance or borrowing	
Other	
Subsidy	
Total	

*Attach the documents to show the funding plan relating to the relevant bond issuance or borrowing.

(2) Expenditures

I. Summary table (Unit: JPY)

Classification of costs	Costs required for the Subsidized Project	Subsidized Costs	Classification of the cost burden	
			The amount of cost borne by the Subsidized Project Operating Entity	The amount of the Subsidy applied for
Labor Cost				
Operating cost				
Total				

II. Distribution of Costs (provide the details by project item)

＊Describe in this sheet or other separate sheets the name of the goods, unit price, man-hour, etc. as basis for the calculation.

＊If you form a consortium, clearly describe the breakdown of each company or organization.

＊In case of a large proportion of commissioning and outsourcing, a breakdown of expenses by implementation items per subcontractors and outsourced contractors estimated shall be provided as necessary. This can also be submitted as an attachment.

(Unit: JPY)

Type (Example)	The cost required for the Subsidized Project	Subsidized costs	Amount of the Subsidy applied for	Remarks
【Labor Cost】				
・・・				
Sub total				
【Operating Cost】				
Raw material				
Goods purchase				
Outsourcing				
・・・				
Sub total				
Total				

(Note 1) The "cost required for the Subsidized Project" refers to the cost required to perform the relevant project. As a general rule, provide the amount after deducting the amount of the national and local consumption taxes.

(Note 2) As a general rule, provide the "Subsidized Costs", which is eligible for the Subsidy after deducting the amount of national and local consumption taxes in the "cost required for the Subsidized Project".

(Note 3) The "amount of the Subsidy applied for" refers to the amount of the "Subsidized Costs" for which grant of the Subsidy is requested, and the amount limit is the amount of the "Subsidized Costs" multiplied by the Subsidized Ratio (any amount less than 1 JPY shall be rounded down).

Remark: The size of the paper used shall be the Japanese Industrial Standards A4 Format.

3. Financial basis and management structure

＊Describe the outline of your organization; moreover, describe the grounds on which your organization has necessary management basis for smooth implementation of the project as Annex 2.

＊Describe the grounds on which your organization is capable of managing funds, etc. (such as organization and storage of evidence documents for expenditures). Furthermore, describe the scheme of the management of the funds (responsible persons and their roles).

＊If you form a consortium, all of the above-mentioned items must be described regarding every organization.

(Annex 1) The Implementation Organization Chart

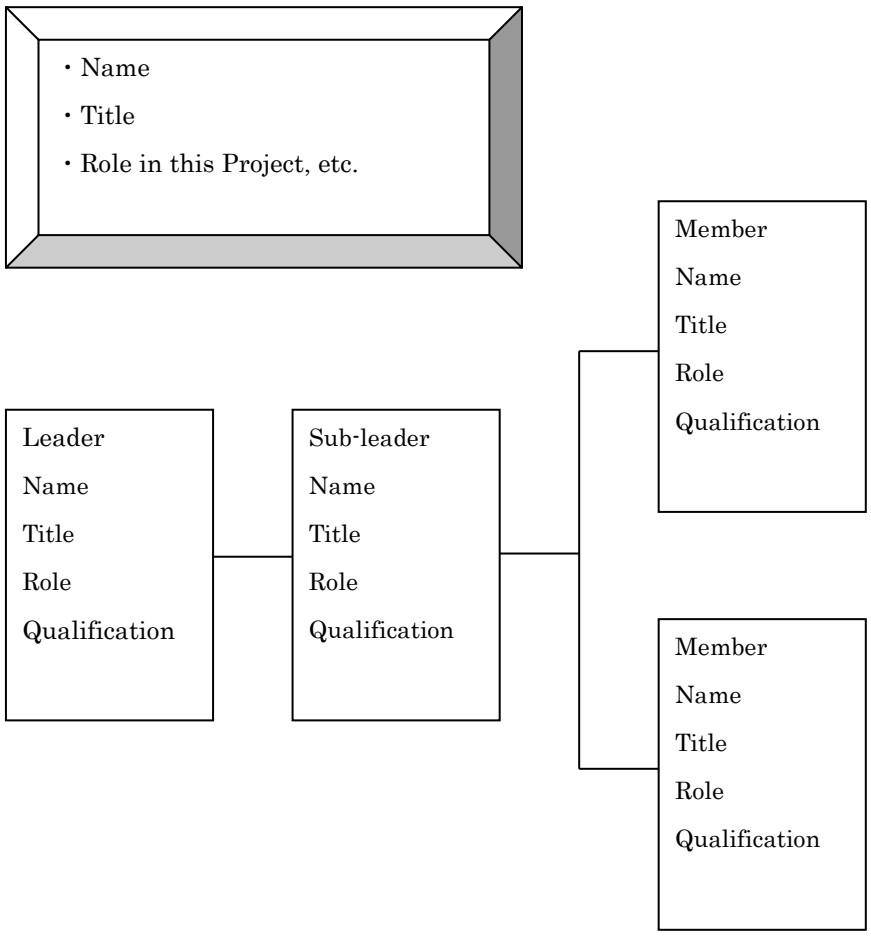
Implementation Organization Chart

Content of the descriptions	• Develop an organization chart to show the framework for implementation of the Project • The names, titles and division of roles of the personnel in charge must be contained in the implementation organization chart • Clarify persons exclusively employed for this project described in this Chart; and describe the career background, expertise, area of specialty at work, qualification associated with the project, and other relevant information must be provided about the key personnel.

Operational Implementation Organization

*A concrete description should be provided by showing an implementation organization chart containing the following information for each project item.

*Specify the name of the contact person in case of a joint application



(Annex 2) Outline of your organization

Note: If you form a team and apply, you must fill in this sheet for every participant.

*Fill in the data of the latest accounting year in non-consolidated base.

<table>
<tr><td>Company name</td><td colspan="5"></td></tr>
<tr><td>Title/name of the representative person</td><td colspan="5"></td></tr>
<tr><td>Contact information</td><td colspan="5">Tel: Fax:
E-mail:</td></tr>
<tr><td>Head office’s address</td><td colspan="5"></td></tr>
<tr><td>Date of establishment</td><td>Date:</td><td>Account closing month</td><td></td><td rowspan="2">Small- or medium-sized company (indicate by a circle if the company is a small- or medium-sized company)</td><td rowspan="2">○ or ×</td></tr>
<tr><td>Capital</td><td>JPY in thousands</td><td>Number of Employees</td><td></td></tr>
<tr><td>Description of business</td><td colspan="5"></td></tr>
<tr><td>Major shareholders (equity ownership)</td><td colspan="2">○○○ (company limited) (60%)
▽□○ (company limited) (30%)
□○○ (company limited) (1%)</td><td colspan="3"></td></tr>
</table>

(The title and name of the person responsible for above information: Head of the XX Department, XX XX(Name))

Please provide the information about all officers in the list below:

Full name	Date of Birth			Gender	Company Name	Title
	Year	Month	Day			
(Example) Taro Keizai	19XX	01	01	M	Keizai Sangyo Co., Ltd.	President & Representative Director

(Note 1) Add the columns as appropriate if the provided columns are not sufficient to provide full information.

(Note 2) Use M for male and F for female in one-byte characters to indicate the gender.

(Note 3) For a joint application or a consortium, provide the information about all officers of each and every member (company or otherwise) of the group.

(Remarks) The size of the paper used shall be the Japanese Industrial Standards A4 Format.

(Other documents)

(1) Outline of the company or organization such as a brochure, etc.
(2) The financial results, and statement of revenues and expenses (for the past one year)
(3) The articles of association or the act of endowment
(4) Other supporting documents (as needed)

(Form 3)

Certificate of Conformance to Qualification Requirements for the Project of Development of Analysis and Estimation Technology for Characterization of Fuel Debris

I confirm that the applicant satisfies the qualification requirements for this subsidized project.

No.	Requirements	Verification, etc.
(1)	Possessing the organization for properly conducting the relevant subsidized project. If the case to subcontract to or jointly implement with a third party a part of the subsidized project, for the creation of project outcome, the appropriate cooperation structure should be established to manage the project.	<State that the applicant satisfies the requirements with reasons in detail ><See Form 2 “1. (3) Project Implementation Organization” when necessary.”>
(2)	Having the capacity, knowledge and experience required for conducting the relevant subsidized project.	<State that the applicant satisfies the requirements with reasons in detail ><See Form 2 “1. (3) Project Implementation Organization” when necessary.”>
(3)	Having the management foundation required for smoothly conducting the relevant subsidized project and sufficient ability to control the funds and other resources.	<State that the applicant satisfies the requirements with reasons in detail ><See Form 2 “3. Financial basis and management structure when necessary.”>
(4)	Being able to implement the project in accordance with all the applicable laws and regulations enacted in Japan, and to follow the appropriate accounting procedures in accordance with ”Grant Policy for Subsidy for the Project of Decommissioning, Contaminated Water and Treated Water Management” and “Subsidized Project Administration Manual”. In addition, for overseas entities, in principle, evidential documents shall be prepared in Japanese or English, and shall be available for presentation in Japan upon request by the Fund Establishing Corporation and PMO. https://en.dccc-program.jp/files/20230224man.pdf	<State that you understand the statement on the left>
(5)	Not foreseen to be subject to Articles 70 and 71 of the Cabinet Order concerning the Budget, Auditing and Accounting.	<State that it does not apply to the applicant>
(6)	Not fulfilling any of the conditions stipulated in the “Guidelines for the suspension of subsidies controlled by the Ministry of Economy, Trade and Industry and the suspension of designation relating to the contracts”.（January 29, 2003, No 1）First column, the second items in Attachment	<State that it does not apply to the applicant>
(7)	Research and development companies which may require approval under the Foreign Exchange Act for any exports and imports should have an establishment of internal compliance program(ICP) under a self-control system about the "standards for exporters, etc. to meet" provided for in Article 55-10 (1) of the Foreign Exchange and Foreign Trade Act.	<Describe meeting this condition in the Form 5>
(8)	Admitting that the results obtained through this project can be utilized by TEPCO Holdings, Incorporated, etc. to leverage them for Decommissioning, Contaminated Water and Treated Water Countermeasures if they request to do so under the condition that each party is in agreement. Not preventing the utilization by behaviors such as not admitting use of the technology intentionally, asking for unreasonable	<State that it is possible>

	compensation, etc. in spite of receiving the request.	
(9)	In order to make sure of the above-mentioned item, preventing the situation that the results from this project are not able to be utilized for measures for decommissioning, contaminated water and treated water management at the Fukushima Daiichi NPS by ceding the above-mentioned condition in (8) to the successor if the applicant hands over the result to a third party and loses their own right to utilize it accordingly. In the case of a conflict which makes the applicant unable to make sure of the items in (8), the concerned parties must solve it by their own responsibility.	<State that you understand the statement on the left>

<Note for Filling out this Form>

In the verification columns, please write the reasons why you verified that the applicant meets the requirements. When filling it out, write “Attachment” if there are any verification documents attached to this form and if not, write “No attachment.”

（Form 4）

Input/Output information on Project of Development of Analysis and Estimation Technology for Characterization of Fuel Debris

＊Please refer to the reference document 1 as an example.

ID	Requested projects	Offered projects	Contents (outline)	Time when the information is necessary	How to use the information	Remarks
				**Influences of delay (if any)*		*Such as measures for the case when you cannot ensure the accuracy, cannot keep the timeline, etc.*

(Form 5)

Response to Security Export Controls on Project of Development of Analysis and Estimation Technology for Characterization of Fuel Debris

<table>
<tr><th colspan="2">Response to Security Export Controls</th></tr>
<tr><td colspan="2">Circle one of the following three options: handled, not handled or not required.</td></tr>
<tr><td>Handled</td><td>Submit relevant documents (export control regulations for security trade)</td></tr>
<tr><td rowspan="2">Not handled</td><td>State the date of submission: Year Month:</td></tr>
<tr><td>State future plans</td></tr>
<tr><td>Not required</td><td>State reasons</td></tr>
</table>

(Form6)

Personal Data Processing Consent Form

Purposes

In compliance with the Act on the Protection of Personal Information, Mitsubishi Research Institute, Inc.(“MRI”) requests your consent to use your personal data to evaluate of proposal.

Data Sharing

MRI may share your personal data with cooperating organizations.

Data Retaining

There are cases in which it is necessary to retain your personal data for the necessary period according to the requirements of Japanese law.

Data Management

MRI will protect your personal data securely, including taking necessary measures to prevent leakage, loss, falsification, etc.

I have understood the above and give my consent to MRI to use my personal data for the above Purposes, and to carry out the above Data Sharing and Data Retaining.	
Your Full name	
Your Signature	
Date	

If you wish to modify your personal data or withdraw this consent after submission, please notify us by email to privacy@mri.co.jp.

Mitsubishi Research Institute, Inc.
10-3, Nagata cho 2-chome, Chiyoda-ku, Tokyo, Japan
privacy@mri.co.jp

PMS000350

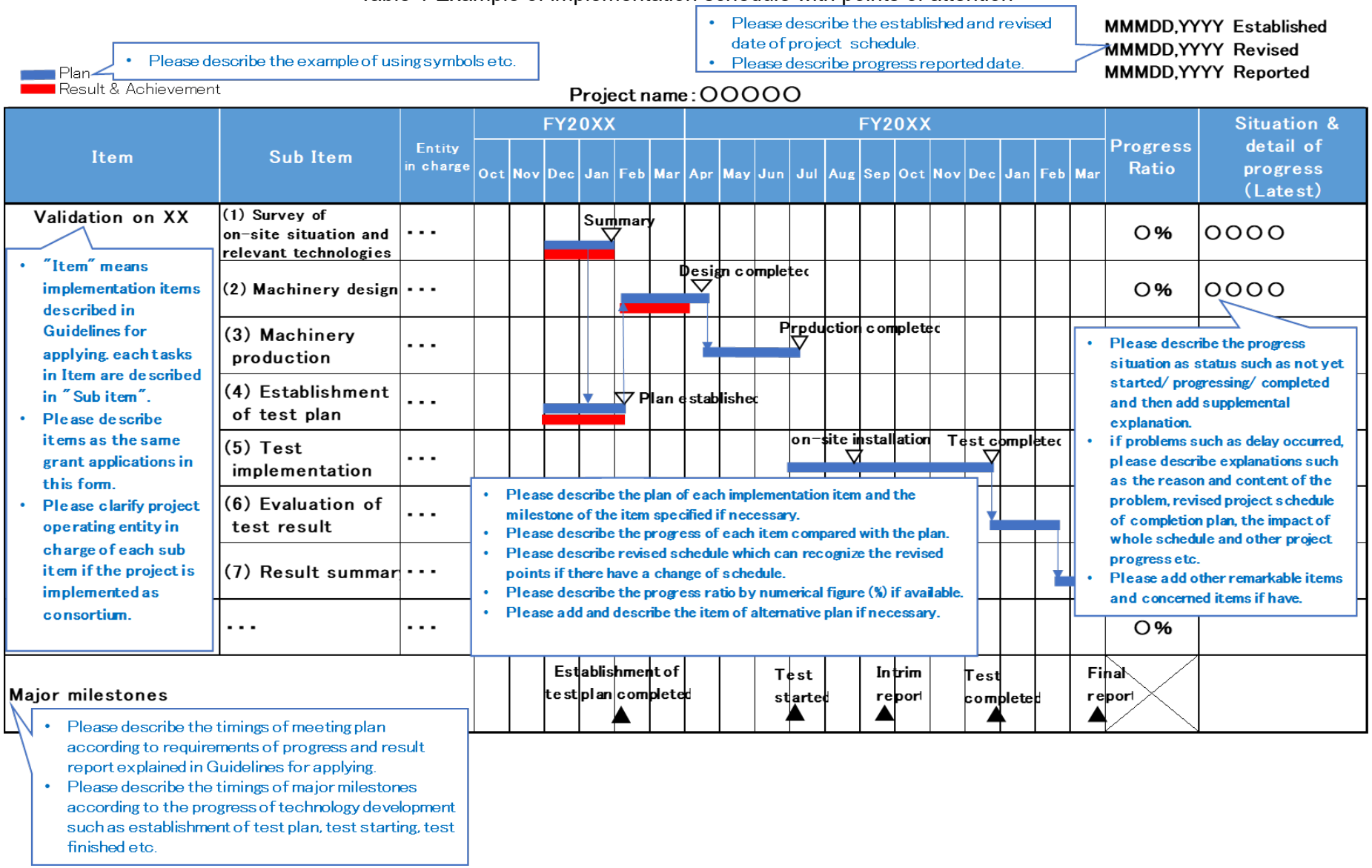
(Reference Document 1)

Table 1 Example of Organization of Input/Output information

ID	Requested projects	Offered projects	Contents (outline)	Time when the project is necessary	How to use the information	Remarks
1_1	Advancement of Fundamental Technologies for Retrieval of Fuel Debris and Internal Structures	Development of Technologies for Containing, Transportation and Storage of Fuel Debris / Development of fuel debris criticality control technology	Size and specification of container and criticality detection device	April 2017	Examination of possibility of fuel debris sampling technology	
1_2						
1_3						
1_4	⋮	⋮	⋮	⋮	⋮	⋮

(Reference Document 2)

Table 1 Example of implementation schedule with points of attention



(Reference document 3)

Regarding Subsidized Cost Items

Regarding the cost items defined in “The Decommissioning, Contaminated Water and Treated Water Management Project Implementation Guidelines”, please refer to the following table.

Cost item	Description	Correspondence with “Subsidized Project Administration Manual”
I. Labor cost	Labor cost for working hours of those engaged in the project.	3. Accounting process on labor cost
II. Operating cost		
Raw material cost	Expenses necessary for purchasing raw material or material necessary for implementing the project ※Here, “raw material” denotes what loses its nature and is used for production or manufacturing of entirely new ones; “material” denotes what does not lose its nature and is a constituent element of produced items or manufactured items only through being put to new application.	7. Accounting procedures regarding supplies expenses
Supplies expense	Cost for the purchase of goods necessary for performing the project but not belonging to raw material cost (however, only those verifiable for the use in the project)	7. Accounting procedures regarding supplies expenses
Design, production and processing costs	The thing which the subsidized entity cannot design, produce or process, or the cost necessary for outsourcing what is appropriate and does not belong to Facility and equipment cost to other entity. (contract for work)	11. Accounting procedures regarding expenses for commission fee/outsourcing cost
Facility and equipment cost	Cost necessary for purchasing, production or installation of facility or equipment necessary for undergoing the project ※The actual contents of the “facility and equipment” shall be “buildings and accompanying facilities”, ”structures” and “machinery and equipment” stipulated in “Ministerial Order regarding depreciable life of depreciable assets, etc.” (Fifteenth Order of Ministry of Finance, 1965).	6. Accounting procedures regarding equipment expenses and rental and hire fees 11. Accounting procedures regarding expenses for commission fee/outsourcing cost
Procurement cost	Cost for the thing which is necessary for undertaking the project and does not belong to facility and equipment cost (at the same time, can be usable more than one year)	6. Accounting procedures regarding equipment expenses and rental and hire fees
Survey cost	The cost for outsourcing to another entity what the subsidized entity cannot survey or analyze by itself or is not suitable to be conducted by the subsidized entity itself (contract for work)	11. Accounting procedures regarding expenses for commission fee/outsourcing cost

Outsourcing cost	Cost for outsourcing to other business operator what subsidized company cannot implement on its own or not appropriate to do so and does not belong to design, production and processing costs, facility and equipment cost or survey cost (contract for work)	11. Accounting procedures regarding expenses for commission fee/outsourcing cost
Travel expenses	Cost for domestic business travels and overseas business travels necessary for performing the project.	4. Accounting process for travel expenses
Gratuities	Gratuities necessary for performing the project (gratuities for external experts who attended meetings, seminars, symposiums, etc., gratuities for giving seminars, writing of drafts, cooperation with research, etc.)	5. Accounting process for meeting expense and rewards ·
Rent and hire	Cost for lease and rental of machinery, equipment and the like necessary for performing the project	6. Accounting procedures regarding equipment expenses and rental and hire fees
Other expenses necessary for undertaking the project	Cost for other expenses necessary for undertaking the project which does not belong to any other items Examples Commission fee: the cost for outsourcing to other entities of the cost for assistant personnel or of the cost for temporary staffing, which cannot be done or what is not appropriate to be done by the subsidized entity	9. Accounting procedures regarding assistant labor costs 10. Accounting procedures regarding other miscellaneous expenses 11. Accounting procedures regarding expenses for commission fee/outsourcing cost, etc.