

Solicitation of entities to implement with subsidies “Subsidy to Project of Decommissioning and Contaminated Water Management (Project of Upgrading Approach and System for Retrieval of Fuel Debris and Internal Structures)” in the FY2014 Supplementary Budget

Regarding Project Contents

June 30, 2015

 **MITSUBISHI RESEARCH INSTITUTE, INC.**

Management Office for the “Project of Decommissioning and Contaminated Water Management”

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Project contents

1. Purpose of project
2. Outline of project
3. Solicited subsidized entities, implementation scope and cooperation among entities
4. Project contents

1. Purpose of project

In this project, the projects which will support development of technologies contributing to decommissioning and contaminated water management of Fukushima Daiichi Nuclear Power Station of Tokyo Electric Power Company will be conducted based upon the “Mid-and-Long-Term Roadmap towards the Decommissioning of TEPCO's Fukushima Daiichi Nuclear Power Station”, so that the decommissioning and contaminated water management of Fukushima Daiichi Nuclear Power Station can be implemented smoothly and the level of science and technology in Japan can be enhanced.

2. Outline of project

In order to retrieve fuel debris and internal structures in the process of decommissioning of Fukushima Daiichi Nuclear Power Station, the following projects were implemented last year:

- ① Development of technology for retrieval of fuel debris and internal structures mainly focusing on the technology deploying submerged approach;
- ② Conceptual study of innovative approach for fuel debris retrieval and feasibility study including the approach deployed in air; and
- ③ Consideration of feasibility of the elemental technologies supporting the above-mentioned item ② (cutting and dust collection technology, as well as visual imaging technology and measurement technology).

The Mid-and-Long-Term Roadmap stipulates that fuel debris retrieval approaches of each unit will be determined in around two years. Based upon the Nuclear Damage Compensation Facilitation Corporation (NDF)'s "Strategy plan", in this project, the following items shall be implemented for the following three approaches, i.e. the submerged approach, the in-air top-access approach and the in-air side-access approach as fuel debris retrieval approaches

- Organization of plant information for selection of the approach for retrieval of fuel debris and internal structures
- Consideration of approach, system and equipment for retrieval of fuel debris and internal structures
- Planning of the development of the retrieval system and equipment

3. Solicited subsidized entities, implementation scope and cooperation among entities

	Project Scope	Cooperation between entities
Entity of comprehensive proposal	<ul style="list-style-type: none"> As a general rule, to implement all of the items, (1) (2) (3) and (4) 	<ul style="list-style-type: none"> At the commencement of the project, to establish the comprehensive plan (of consideration conditions, upgrading target) including approaches to be considered by entities of partial proposal To organize the entire results of the considerations of the approaches including the results from entities of partial proposal
Entity of partial proposal	<ul style="list-style-type: none"> To implement item (2) for one of the following three approaches: i.e. the submerged approach, the in-air top-access approach and the in-air side-access approach To implement [3] through [10] of item (4) 	<ul style="list-style-type: none"> To assist the entity of comprehensive proposal so that they can establish the entire plan and report the result through sharing information on consideration conditions, targets of upgrading, feasibility of the approaches, etc. To discuss the adoptability of feasibility of approaches in the future (including technical matching, dealing with commercial issues and IP) with entity of comprehensive proposal, and report the result in interim report and results report

4. Project contents

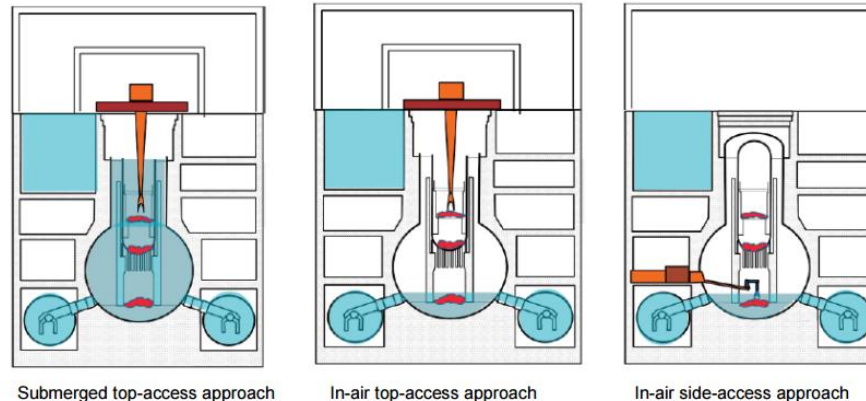
- (1) Organization of plant information for selection of the approach for retrieval of fuel debris and internal structures

The up-to-date information and data of the plants, etc. necessary for selection of the approach for retrieval of fuel debris and internal structures must be organized.

This item is to be implemented by **entity of comprehensive proposal.**

4. Project contents (continued)

(2) Consideration of approach, system and equipment for retrieval of fuel debris and internal structures



The following items are to be implemented for the submerged top-access approach, the in-air top-access approach and the in-air side-access approach.

i Consideration of feasibility of different approaches

ii Conceptual consideration of system

iii Consideration of design of retrieval equipment

Entity of comprehensive proposal	Entity of partial proposal
To implement the following items i), ii) and iii) for every three approach	To implement items i), ii) and iii) for one of the three approaches

4. Project contents (continued)

i) Consideration of feasibility of different approaches

Consideration of feasibility of different approaches and comprehensive consideration must be conducted. Entity of comprehensive proposal must consider the feasibility of all three 4 approaches and implement comprehensive consideration in collaboration with entities of partial proposal. Entities of partial proposal must consider the feasibility of one of the three approaches, and offer the necessary information for feasibility of the approach to the entity of comprehensive proposal.

① Consideration of detailed steps of an approach

Consideration of detailed steps of an approach, clarification and organization of challenges and risks, and consideration of response to them must be conducted. This item must include the seven points described in the “Guidelines for applying”.

② Consideration of large equipment needed for the approach

Consideration of weight and dimensions of large equipment such as cell, platform, crane, etc. which can influence soundness of the building, and consideration of feasibility of accommodating each equipment and system must be conducted.

③ Establishment of the plan for realization of the approach

Development of a plan for realization of the approach and a plan of the necessary technologies must be conducted for the approach to the subject of study.

4. Project contents (continued)

ii) Conceptual consideration of system

Conceptual design of the system must be conducted for the judgment of feasibility of the three approaches. Entity of comprehensive proposal must consider all three approaches. Entities of partial proposal must consider one of the three approaches.

① Consideration of safety of the whole system

Points to be considered from the viewpoint of safety of the whole system for the fuel debris retrieval approach (extraordinary events to be supposed and their countermeasures) must be established.

② **Consideration of feasibility of the system**

Consideration of feasibility which covers all of the system composing the fuel debris retrieval approach must be conducted. This consideration must include confirmation of the 5 situation of PCV repair and include the contents which can enable foreseeing the feasibility. The contents of the consideration must include the items described in the “Guidelines for applying”.

③ **Planning of system consideration**

System consideration plan for realization of the approaches must be established for the approach to the subject of study. The plan must include necessary development plan.

4. Project contents (continued)

iii) Consideration of design of retrieval equipment

Design and development planning of retrieval equipment (Refer to the Figure) must be conducted for each of the three approaches. Entity of comprehensive proposal must consider all three approaches. Entities of partial proposal must consider one of the three approaches.

① Design of retrieval equipment

Design for upgrading of the equipment which cuts fuel debris and retrieves them must be conducted for each of the three approaches. Consideration must be done from the four viewpoints described in the “Guidelines for applying”.

② Planning of development of retrieval equipment

Development plan of equipment until commencement of activities for fuel debris retrieval must be established based upon the design for the approach to the subject of study. The plan must include test planning of development of constituent elements of the equipment.

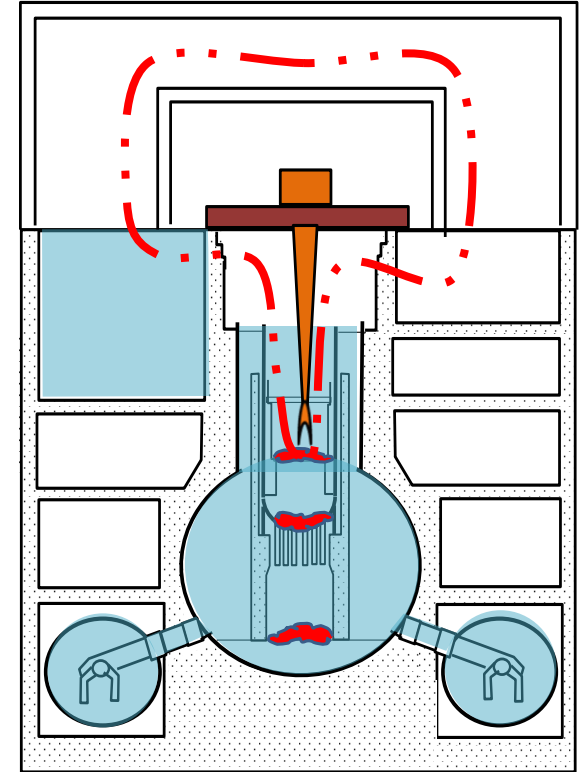


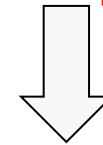
Image of the target area of design of fuel debris retrieval equipment of submerged approach

4. Project contents (continued)

In considerations of the approach, system and equipment of i) through iii), the following conditions must be observed.

- The considerations done by the entity of comprehensive proposal and ones by the entities of partial proposal must be implemented under the equal-footing consideration conditions and upgrading targets.
- The consideration must be done in accordance with the up-to-date on-site situation of each unit.
- The consideration must be conducted in accordance with the Mid-and-Long-Term Roadmap.

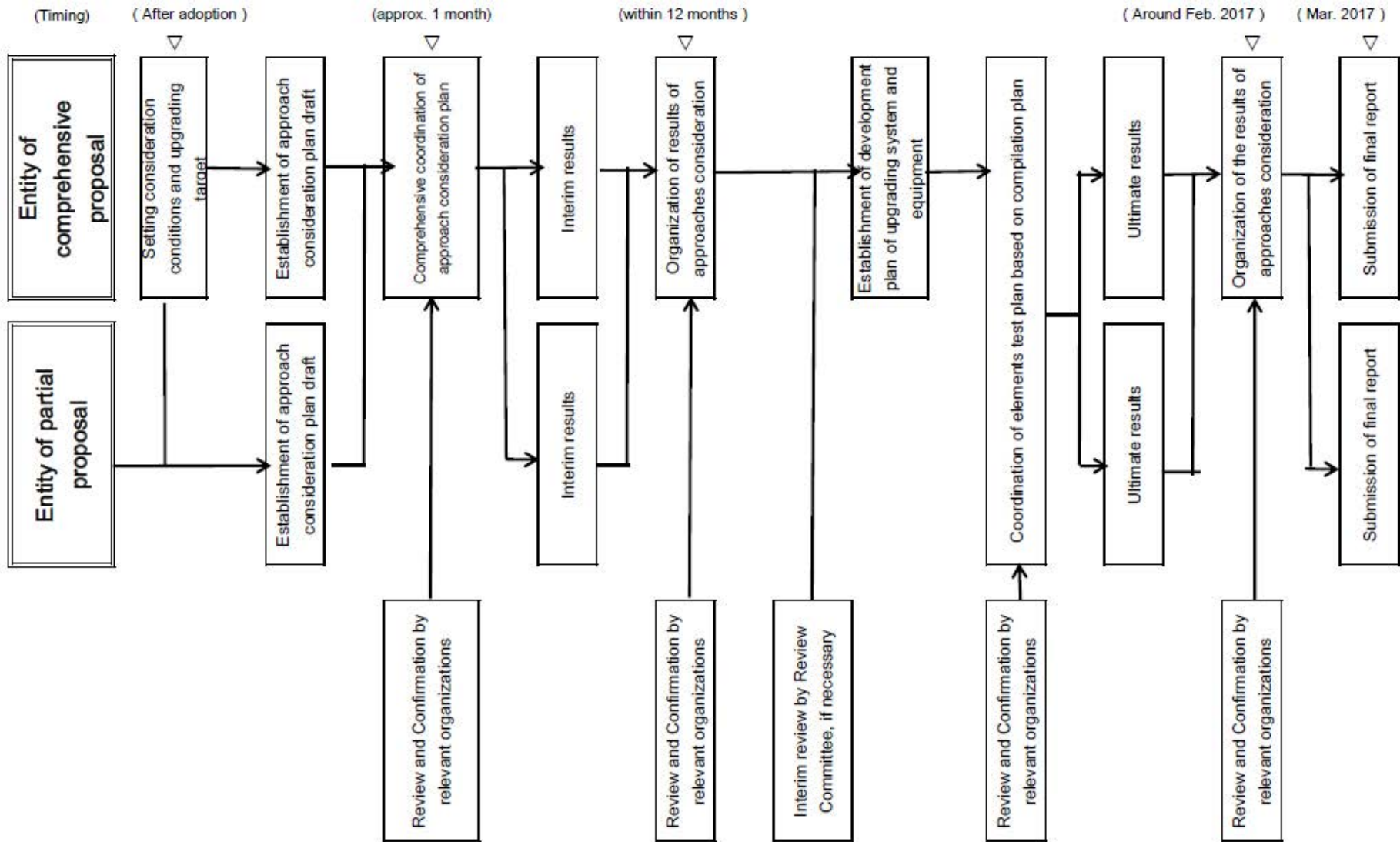
Therefore, these considerations are to be implemented according to the **check and review procedure which the relevant organizations apply in review and confirmation of the important progress of the steps.**



NDF will form opinions on such subjects as the consideration conditions and upgrading target and judgments of moving forward to the next phase, in consultation with METI/ANRE, TEPCO and if necessary, experts.

In the process of evaluation and confirmation by the review committee and the concerning organizations, they might establish alternative options, reconsideration of the conditions, etc.

4. Project contents (continued)



4. Project contents (continued)

(3) Planning of the development of the retrieval system and equipment

Research for technology of remote operation activities, cutting, barrier, prevention of dust dispersion, etc. must be implemented. Furthermore, comprehensive evaluation of the results of each item in (2) must be conducted, followed by clarification and organization of challenges and risks at each retrieval work step. After that, development plan of the system and equipment for retrieval of fuel debris and internal structures must be conducted.

This item shall be implemented by **entity of comprehensive proposal.**

4. Project contents (continued)

(4) Operation of research and development

- ① Human resource development in the middle and long term
- ② Gathering domestic and overseas wisdom
- ③ Clarification of tests conditions and specifications for development
- ④ Definition of criterion for judgment of degree of objective achievement
- ⑤ Cooperation with decommissioning activities and other research and development
- ⑥ Research management
- ⑦ Work management at Fukushima Daiichi Nuclear Power Station, etc.
- ⑧ Progress report
- ⑨ Enhancement of outreach
- ⑩ Preparation of other options

Items exclusively
for the entity of
comprehensive
proposal

4. Project contents (continued)

Regarding Technology Readiness Level (TRL)

Regarding TRL referred to in ③ and ④, please use the one defined in the “Guidelines for applying”.

In the item ④, comprehensible criterion which can be a measure for the judgment of objective achievement of the project must be defined using numerical values, etc. as detailed as possible. Furthermore, it must be presented that which level the criteria corresponds with from the viewpoint of technical maturity.

Table Technology Readiness Level (TRL)

Level	Definition corresponding to fuel debris retrieval	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

Project term, project scheme, etc.

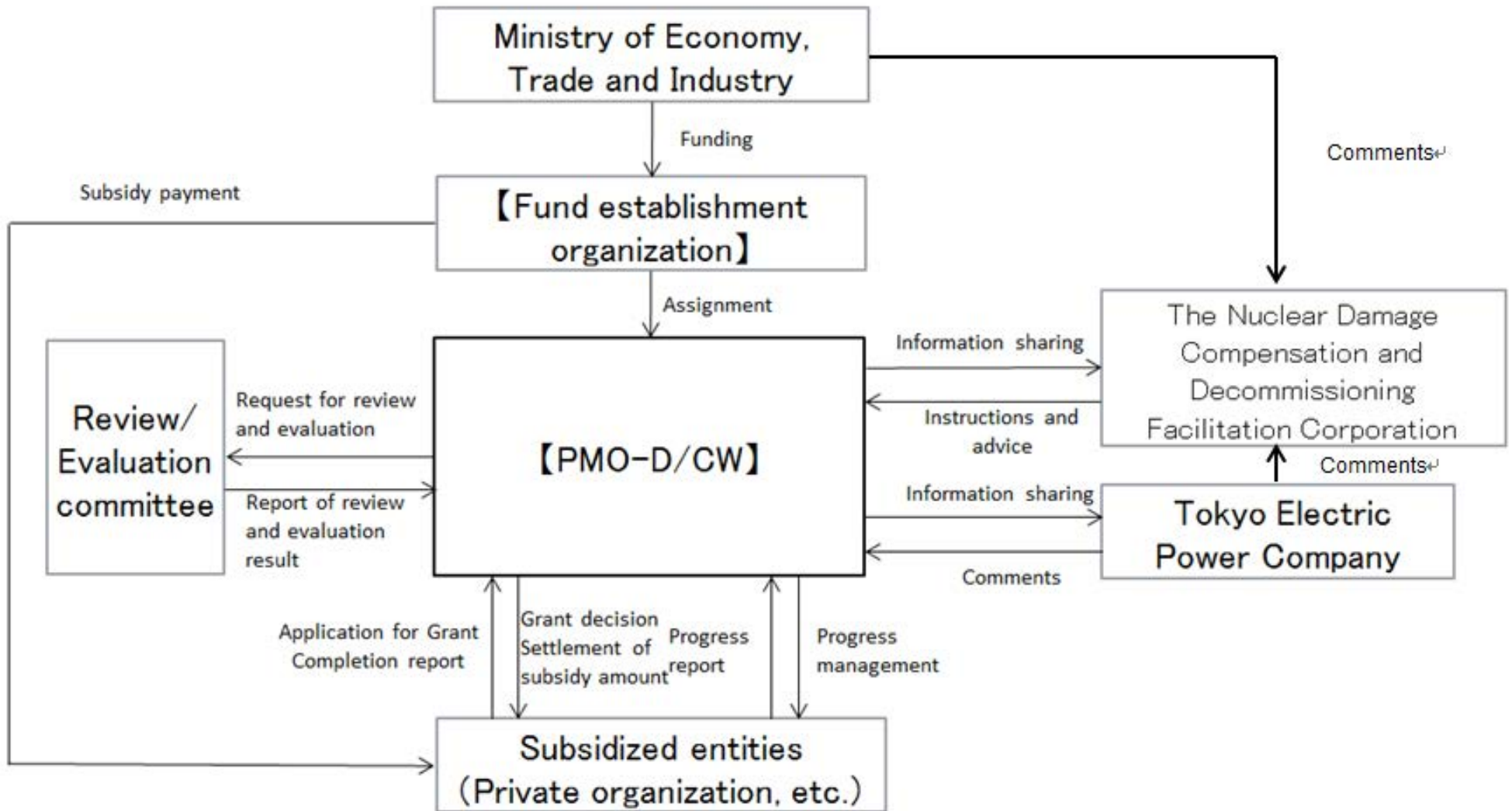
1. Project term
2. project scheme
3. Application requirements
4. Requirements for subsidy grant

1. Project term

Day of grant decision ~ March 31, 2017

- The research and development are supposed to be continued until the FY 2016.
- If you participate in this project as an entity of partial proposal, you have to submit a grant application the contents of which are until the interim results and implement your project accordingly; and further continuation of your project shall be determined by the concerned organizations based upon their review and evaluation of your interim results.
- Further continuation of the subsidized projects after the FY 2017 shall be judged in consideration of the results of the research and development, budgetary situation of Government, etc. comprehensively.

2. Project scheme



3. Application requirements

The private companies, etc. satisfying all of requirements (1) to (8) shown below are qualified to apply for the subsidies. Applications from consortia are 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 reassign the entire work to another legal entity.)

- (1) Possessing the organization for properly conducting the relevant subsidized 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 and Contaminated Water Management” and “Subsidized Project Administration Manual”. With regard to overseas entities, being able to prepare the evidenced documents in Japanese or English, and present them in Japanese territory on demand from the PMO.
<http://en.dccc-program.jp/files/20150623man.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) Admitting that the results obtained through this project can be utilized by TEPCO, etc. 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 compensation, etc. in spite of receiving the request.
- (8) In order to make sure of the above-mentioned item, preventing a situation where the results from this project are not able to be utilized for measures for decommissioning and contaminated water management at the Fukushima Daiichi NPS by ceding the above-mentioned condition in (7) 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 (7), the concerned parties must solve it by their own responsibility.

4. Requirements for subsidy grant

(1) Number of proposals to be adopted: More than one

(2) Subsidy rate and amount

Settled amount calculated in JPY

Comprehensive proposal:

Upper limit: 1,500,000,000 JPY (Project budget: 1,500,000,000 JPY)

Partial proposal:

Upper limit: 500,000,000 JPY (Project budget: 500,000,000 JPY)

The contents of the project, amount of the subsidy, etc. will ultimately be settled only after coordination with PMO.

4. Requirements for subsidy grant (continued)

(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 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. For this reason, the account ledgers, receipts and other documents are necessary for supporting all the expenses. All the expenses will be strictly inspected and the expenses are strictly evaluated. Thus, the expenses not meeting the conditions mentioned above may be rejected.

Application Procedure

1. Forms of application documents
2. Submission of application documents
3. Points of attention in preparation and submission of application documents
4. Explanation on dealing with information

1. Forms of application documents

- You have to work out the following four documents:
 - Form 1 Application form
 - Form 2 Outline of Subsidy Project
 - Form 3 Certificate of Conformance
 - Form 4 Input / Output information
 - Other documents
 - Outline of Corporation or Organization (such as brochure, etc.)
 - The financial results, and statement of revenues and expenses (for the last year)
 - The articles of association or the act of endowment
 - Other supporting documents
- You can download the formats from our website.
- The language you use must be either Japanese or English.

1. Forms of application documents (continued)

Form 1 Application form

- Applicant
 - ✓ Company/Organization Name (of the leading company of the consortium)
 - ✓ Representative (Full Name and Title)
 - ✓ Address
- The seal or signature of the representative is necessary.
- Contact
 - ✓ Contact Person (Full Name)
 - ✓ Section/Department
 - ✓ Title
 - ✓ Phone number
 - ✓ E-mail
- Exhibit

You have to fill in the items 1. through 9. **However, you can omit 7. and 8. by replacing it with the contents of Form 2.**

7. Allocation amount of the costs for the subsidy 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. The income and expenditure budget 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. The income and expenditure budget of the Subsidized Project” of the Form 2, “Brief explanation of subsidized project”.

1. Forms of application documents (continued)

Form 2 Outline of Subsidy Project

1. The implementation plan for the Subsidized Project
 2. Plan of the income and expenditure of the Subsidized Project
 3. Financial basis and management structure
- You have to work it out appropriately referring to the remarks, annex and reference documents.
 - "II. Distribution of Costs of (2) Expenditures of 2. Plan of the income and expenditure of the Subsidized Project " must be described as detailed as possible as stated, "Describe in this sheet or other separate sheets the name of the goods, unit price, man-hour, etc. as basis for the calculation."
 - The following items are admitted as one of the project costs.
 1. Expenses for raw materials, 2. consumables,
 3. design/fabrication/processing, 4. facility/equipment,
 5. goods purchase, 6. research, 7. outsourcing, 8. travel,
 9. remunerations, 10. rent/depreciation, 11. other necessities

1. Forms of application documents (continued)

Form 3 Certificate of Conformance to Qualification Requirements

You have to demonstrate that you can meet application requirements (1) through (8) stipulated in the “Guidelines for applying”.

- (1) Possessing the organization for properly conducting the relevant subsidized 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 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 the “Subsidized Project Administration Manual”.
- (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) Admitting that the results obtained through this project can be utilized by TEPCO, etc. 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 compensation, etc. in spite of receiving the request.
- (8) In order to make sure of the above-mentioned item, preventing a situation where the results from this project are not able to be utilized for measures for decommissioning and contaminated water management at the Fukushima Daiichi NPS by ceding the above-mentioned condition in (7) 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 (7), the concerned parties must solve it by their own responsibility

• If you have some documents to be attached, please fill in the column “Verification, etc.” and write the name of the attached document.

1. Forms of application documents (continued)

Form 4 Input/Output information

Clarify how results could contribute to decommissioning activities and other research and development, and positively cooperate with other organizations. At the commencement of the project, input/output information must be coordinated with other projects, comprehensive proposals and partial proposals among entities in a timely manner; and it must be shared with PMO and the concerned organizations.

For this purpose, input/output information must be prepared as a part of the application documents using Form 4.

- Through communication of necessary information and available information between the entity of comprehensive proposal and the entity of partial proposal, the following points must be realized:
 - ✓ Coordination of consideration plan of the approaches or of development plan of the system and equipment
 - ✓ Smooth progress of research and development conducted by both the entity of comprehensive proposal and the entity of partial proposal; and
 - ✓ Improvement of results of each project
- Through input/output information exchange among the projects, the following points must be realized:
 - ✓ Optimization of the entire projects for the decommissioning
 - ✓ Clarification of division of roles in the comprehensive plan

2. Submission of application documents

- Submission of application documents

Midday of Tuesday, July 21, 2015 (Japan time)

- Submission documents

- Form 1 Application form
- Form 2 Outline of Subsidy Project
- Form 3 Certificate of Conformance
- Form 4 Input / Output information
- Other documents

Other than Form 1 through 4, outline of corporation or organization, the financial results and statement of revenues and expenses, the articles of association or the act of endowment and other supporting documents must be submitted.

2. Submission of application documents (continued)

■ How to submit application documents

- The application documents must be submitted via hand-carry, mail, email, etc.
- If you submit the documents via hand-carry or mail, please submit 15 hard copies using A4 format.
- Other than the hard copies, you have to submit a CD-R of the electronic data.
- Application email address is as following: dr-apply-ai@mri.co.jp
- We don't accept documents via FAX.
- The deadline must be observed strictly.
- If there are faults in the documents, the proposal is disqualified.

Questions are to be sent to the following address: hairo26-2nd-ml@mri.co.jp

3. Points of attention in preparation and submission of application documents

The following points must be taken care of in working out and submission of application documents. If there are some deficits regarding these points, your proposal might be disqualified.

【 Working out of application documents 】

- Basic items of the application form and the outline of project must necessarily be met. Whether or not the basic items are met is to be judged through description of necessary items in the application documents. You are advised to make sure if all of the basic items of “Criteria for reviewing proposals and allocation of points” are filled in in the application form and the outline of project.
- Please confirm that the project costs do not exceed the upper limit (1.5 billion JPY for a comprehensive proposal, 500 million JPY for a partial proposal) and that the project term terminates before March, 2017.
- The proposal must sufficiently be feasible with regard to the financial basis and technical experiences of the entity.
- Please make sure whether or not your proposal is in accordance with the purpose and prerequisites of the project by going over the “Guidelines for applying”.

【 Submission of application documents 】

- Please observe the deadline and method of submission stipulated in the “Guidelines for applying”.

4. Explanation on dealing with information

- The contents of the proposals are not to be released; they are shared exclusively with METI, NDF, TEPCO, the fund establishment organization, and Management Office.
- Irrespective of the above mentioned condition, the title and outline of the adopted proposals can be released.
- The input/output information is to be shared with the entity of comprehensive proposal and the entity of partial proposal.

Reviewing method and its criteria

1. Reviewing method
2. Reviewing criteria

1. Reviewing method

- The reviewing is to be conducted as following:
 1. Management Office is to conduct paper screening of the application documents.
 2. Proposals without deficiencies and which meet basic criteria are to be confirmed and evaluated of their paper screening by the review committee, consisting of experts.
 3. The applicants passing the paper screening are required to implement a presentation for the review committee. (The schedule is to be notified after the deadline of application.)
 4. Besides presentation, hearings and on-site investigation might be conducted and supplementary documents might be required if necessary.
 5. Adopted proposals are to be decided with a comprehensive judgment of the result of the paper screening (if any), presentation, and hearings and on-site investigation (if any).

2. Reviewing criteria

- In the paper screening, the following description is to be evaluated.
 - Project purpose, project details and implementation method, implementation schedule, implementation scheme, project cost, financial basis and management system for implementation of project, technical contents
- Proposals are to be evaluated in accordance with “Criteria for reviewing proposals and allocation of points for items to be reviewed” and “Table of the Criteria for Technical Examination and Allotment of Points”.
 - All of the “Criterion for the basic points” of the “Criteria for reviewing proposals and allocation of points” must be filled in; proposals lack of these contents are disqualified.
 - All of the “Criterion for the additional points” of the “Criteria for reviewing proposals and allocation of points” are to be evaluated based upon the contents of the proposal.
 - “Basic points” of “Table of the Criteria for Technical Examination and Allotment of Points” are the items which must necessarily be met.
 - If a proposal does not meet “Basic points” of “Table of the Criteria for Technical Examination and Allotment of Points”, its “Additional points” will not be evaluated.

Contact

Mitsubishi Research Institute, Inc.

Management Office for the “Project of Decommissioning
and Contaminated Water Management”

URL : <http://en.dccc-program.jp/>

Email : hairo26-2nd-ml@mri.co.jp

