

Comparison Table “Guidelines for the Subsidy Program “Project of Decommissioning and Contaminated Water Management (Research and Development of Processing and Disposal of Solid Waste)”

This table shows the changes from Temporary Translation to Unofficial Translation of the Guidelines for the Subsidy Program “Project of Decommissioning and Contaminated Water Management (Research and Development of Processing and Disposal of Solid Waste). Underlined parts are changed.

Unofficial Translation	Temporary Translation
<p><u>(Unofficial</u> Translation)</p>	<p><u>(temporary</u> translation)</p>
<p><b>Guidelines for applying to the “Project of Decommissioning and Contaminated Water Management (Research and Development of Processing and Disposal of Solid Waste)”</b></p>	<p><b>Guidelines for applying to the “Project of Decommissioning and Contaminated Water Management (Research and Development of Processing and Disposal of Solid Waste)”</b></p>
<p>Date: March 2, 2017 Management Office for the Project of Decommissioning and Contaminated Water Management</p>	<p>Date: March 2, 2017 Management Office for the Project of Decommissioning and Contaminated Water Management</p>
<p>The Management Office for the Project of Decommissioning and Contaminated Water Management (hereinafter called “PMO”) solicits entities to implement subsidies for the "<u>Subsidized Project</u> of Decommissioning and Contaminated Water Management (Research and Development of Disposal <u>and</u> Repository of Solid Waste)". Details of the project are stipulated in these Guidelines; furthermore, the procedures for implementation of the project are stipulated in the “Grant Policy for Subsidy for the Project of Decommissioning and Contaminated Water Management”.</p>	<p>The Management Office for the Project of Decommissioning and Contaminated Water Management (hereinafter called “PMO”) solicits entities to implement subsidies for the "<u>Subsidy Project</u> of Decommissioning and Contaminated Water Management (Research and Development of Disposal/<u>Repository</u> of Solid Waste)". Details of the project are stipulated in these Guidelines; furthermore, the procedures for implementation of the project are stipulated in the “Grant Policy for Subsidy for the Project of Decommissioning and Contaminated Water Management”.</p>

1. Purpose of Project

“No Change”

2. Contents of Project

We shall have “prospect of realization of technologies and their safety for processing and disposal of waste around FY2021”. With this goal, considering the characteristics of the solid waste<sup>1\*</sup> and based on effective understanding of its properties research and studies in order to present processing technologies, disposal concepts and their safety assessment method will be conducted. Development of the technologies will be conducted necessary for the reduction of risks inherent in storage and management of solid waste. By taking the foregoing into account, Technological development will be conducted as outlined below.

The entity whose partial proposal is adopted or whose proposal is partly adopted (hereinafter called the Partial Subsidized Project Operating Entity) will carry out the project based on the analysis and coordination

1. Purpose of Project

2. Contents of Project

We shall have “prospect of realization of technologies and their safety for processing and disposal of waste around FY2021”. With this goal, we will consider the characteristics of the solid waste<sup>2\*</sup> and effectively understand its property based on which we will carry out research and studies in order to present processing technologies, disposal concepts and their safety evaluation. We will also carry out the development of the technologies necessary for the reduction of risks inherent in storage and control of solid waste. By taking the foregoing into account, we will carry out technological development as outlined below.

A participant with a proposal for a portion of the project will be required to carry out its proposed work in the context of an analysis and coordination by the overall project operator by taking into consideration

<sup>1\*</sup> Solid waste: While some of the Secondary Waste from water treatment and rubbles which were generated after the accident may not be classified as waste or radioactive waste as the result of its reuse on the premises, they are included in the “solid waste” referred to herein together with the solid radioactive waste which had been in storage at Fukushima Daiichi Nuclear Power Plant prior to the accident.

<sup>2\*</sup> Solid waste: While some of the post-water treatment waste and rubbles which were generated after the accident may not be classified as waste or radioactive waste as the result of its reuse on the premises, they are included in the “solid waste” referred to herein together with the radioactive waste which had been in storage at Fukushima Daiichi Nuclear Power Plant prior to the accident.

by the Subsidized Project Operating Entity with adopted comprehensive proposal (hereinafter called the Comprehensive Subsidized Project Operating Entity) from the perspectives of the risks involved in the application of the technology and the estimated timing to become it applicable. The Comprehensive Subsidized Project Operating Entity shall be responsible for the implementation of all the below-mentioned items (1) through (4) and shall evaluate and coordinate other Partial Subsidized Project Operating Entities. The Partial Subsidized Project Operating Entity shall be responsible for the implementation of one or any combination of the below-mentioned items (1) through (4).

(1) Understanding of Properties

i) Acquisition, management, etc. of analytical data

[1] Understanding of contamination distribution

Develop a plan of an analysis which will facilitate the storage and management as well as processing and disposal with respect to the rubbles inside and in the vicinity of the buildings (e.g. scattered rubbles and soil), incinerator ash, waste from water treatment (e.g. adsorbents and precipitated sludge generated by multi-nuclide removal system) and contaminated water remaining in the buildings (e.g. the turbine building, main processing building), and, based on the plan, collect and analyze the samples in order to understand the state of contamination and investigate the categorization of the radioactive waste focusing on their nuclide composition.

the risks of adopting its technology as well as the expected time of fruition. It should be noted that the overall project operator is a participant who will carry out all of project items described in (1) to (4). Should there be partial participants, the overall project operator will carry out the analyses and coordination. A partial proposal participant means a participant who will carry out any one, or any combination, of project items (1), (2), (3) or (4).

(1) Understanding of characteristics

i) Acquisition and control of analytical data

[1] Understanding of contamination distribution

Develop a plan of an analysis which will facilitate the storage and control as well as processing and disposal with respect to the debris inside and in the vicinity of the buildings (e.g. scattered rubbles and soil), incinerator ash, post-water treatment waste (e.g. adsorbents and precipitated sludge generated by multi-nuclide removal system) and contaminated water remaining in the buildings (e.g. the turbine building, main processing building), and, based on the plan, collect and analyze the samples in order to understand the state of contamination and study the categorization of the radioactive waste focusing on their nuclide composition.

[2] Development of sampling technology

Investigate methods to be used for the collection of samples of waste from water treatment, such as waste sludge, and high-dose samples inside the nuclear reactor building (e.g. sampling tools, remote sampling). The investigation shall take into consideration a reduction of exposure to radiation during sampling activities and evaluation of the effects of sampling on the environment.

[3] Streamlining of analytical methods

Based on the acquired analytical data and migration behavior of contaminating nuclides, carry out work to explain the contamination mechanism, develop a method by which to evaluate the representativeness of the analytical data, and re-select the nuclides for analysis and facilitate the streamlining of the analytical method therefor.

[4] Management of analytical data

Construct a systematized database which allows for easy updating and searching of the analytical data to be acquired through an understanding of the properties in order to enable the sharing of the waste analysis data; organize and update the waste data by adding the results of the analysis of retained water samples and rubble to be reflected in the waste data.

ii) Improvement of the accuracy of analytical evaluation techniques

Based on the understanding of the factors relating to errors and

[2] Development of sampling technology

Study methods to be used for the collection of post-water treatment waste samples, such as waste sludge, and high-dose samples inside the nuclear reactor building (e.g. sampling tools, remote sampling). The study shall take into consideration a reduction of exposure to radiation during sampling activities and evaluation of the effects of sampling on the environment.

[3] Streamlining of analytical methods

Based on the acquired analytical data and transitional behavior of contaminating nuclides, carry out work to explain the contamination mechanism, develop a method by which to evaluate the representativeness of the analytical data, and re-select the nuclides for analysis and facilitate the streamlining of the analytical method therefor.

[4] Control of analytical data

Construct a systematized database which allows for easy updating and searching of the analytical data to be acquired through an understanding of the characteristics in order to enable the sharing of the waste analysis data; organize and update the waste data by adding the results of the analysis of retained water samples and rubble to be reflected in the waste data.

ii) Improvement of the accuracy of analytical evaluation techniques

Based on the understanding of the factors relating to errors and

variances in the analytical data, evaluate the representativeness of the analytical data while considering the variances in contamination as well as the contamination mechanism which are estimated from the analytical results, and improve the accuracy of the analytical inventory evaluation by incorporating the outcomes thereof.

iii) Compilation of the comprehensive inventory evaluation

Establish a radioactivity inventory by comprehensively evaluating the analytical data, including their uncertainties, of the physical samples and the analytical values estimated using an analytical evaluation technique; establish the procedures to reflect future analytical data for efficient updating of the radioactivity inventory.

iv) Handling of disposal-influencing substances

Based on the findings of field investigations inside and outside Japan with respect to standards for the acceptance of waste, organize approaches to the pre-disposal management system and disposal system with respect to allowable concentrations and contents of the substances which may be mixed with the waste and have an impact on the disposal.

(2) Considerations of pre-disposal management

i) Applicability evaluation based on the characteristics of the solid waste

Evaluate the applicability of solidification technologies (e.g. cement

variances in the analytical data, evaluate the representativeness of the analytical data while considering the variances in contamination as well as the contamination mechanism which are estimated from the analytical results, and improve the accuracy of the analytical inventory evaluation by incorporating the outcomes thereof.

iii) Compilation of the comprehensive inventory evaluation

Establish a radioactivity inventory by comprehensively evaluating the analytical data, including their uncertainties, of the physical samples and the analytical values estimated using an analytical evaluation technique; establish the procedures to reflect future analytical data for efficient updating of the radioactivity inventory.

iv) Handling of disposal-influencing substances

Based on the findings of field investigations inside and outside Japan with respect to standards for the acceptance of waste, organize approaches to the pre-disposal control system and disposal system with respect to allowable concentrations and contents of disposal-influencing substances which may be mixed with the waste.

(2) Considerations of pre-disposal control

i) Applicability evaluation based on the characteristics of the solid waste

Evaluate the applicability of solidification technologies (e.g. cement

solidification technology, high-temperature treatment technology) based on the results of investigations of solidification technologies which have been actually applied to the treatment of radioactive waste.

ii) Investigation and evaluation of storage and management methods suitable for the characteristics of solid waste

[1] Investigation of storage methods for the high-dose waste

Carry out research on the knowledge inside and outside Japan in respect of techniques for the evaluation of hydrogen generation during the storage from high-dose solid waste containing water and the venting requirements for the generated hydrogen, examine the results and present a proposal; consider sorting and storage methods for the rubbles generated during the removal of nuclear fuel debris.

[2] Stabilization technologies for secondary waste from water treatment

Evaluate the applicability of stabilization technologies necessary for the stable storage of the secondary waste from water treatment, including waste sludge, by taking into consideration the consistency with the disposal methods.

iii) Investigation of technologies for waste volume reduction

Research and investigate measurement and evaluation methods for alpha-bearing contamination (i.e. contamination by alpha-bearing

solidification technology, high-temperature treatment technology) based on the results of investigations of solidification technologies which have been actually applied to the treatment of radioactive waste.

ii) Study and evaluation of storage and control methods suitable for the characteristics of solid waste

[1] Study of storage methods for the high-dose waste

Carry out research on the knowledge inside and outside Japan in respect of techniques for the evaluation of hydrogen generation during the storage from high-dose solid waste containing water and the venting requirements for the generated hydrogen, examine the results and present a proposal; consider sorting and storage methods for the rubbles generated during the removal of nuclear fuel debris.

[2] Stabilization technologies for post-water treatment waste

Evaluate the applicability of stabilization technologies necessary for the stable storage of the post-water treatment waste, including waste sludge, by taking into consideration the consistency with the disposal methods.

iii) Study of technologies for waste volume reduction

Investigate and study measurement and evaluation methods for alpha-bearing contamination (i.e. contamination by alpha-bearing

radioactive nuclides) to be applied to a sorting system that facilitates the reduction of waste volume and the classification of waste.

radioactive nuclides) to be applied to a sorting system that facilitates the reduction of waste volume and the classification of waste.

(3) Investigation of disposal concepts and safety assessment techniques suitable for the characteristics of the solid waste

Based on a detailed investigation and evaluation of the disposal methods available inside and outside Japan not only from the technological perspectives but also from institutional aspects, investigate the safety assessment techniques which are suitable for the characteristics of solid waste, including disposal concepts and safety assessment scenarios.

(3) Study of disposal concepts and safety evaluation techniques suitable for the characteristics of the solid waste

Based on a detailed investigation and evaluation of the disposal methods available inside and outside Japan not only from the technological perspectives but also from institutional aspects, study the safety evaluation techniques which are suitable for the characteristics of solid waste, including disposal concepts and safety evaluation scenarios.

(4) Integration of the research and development results

Investigation of the waste stream:

Reflect the outcomes of the investigations described in (1) to (3) to the waste stream (a series of waste management and handling methods from the generation of waste through the stages of storage, processing and disposal), and carry out a comprehensive evaluation of the progress, integrity of the outcomes and the unsolved issues. The evaluation must outline the issues in a manner which will facilitate future research and development.

(4) Integration of the research and development results

Study of the waste stream:

Reflect the outcomes of the studies described in (1) to (3) to the waste stream (a series of waste management and handling methods from the generation of waste through the stages of storage, processing and disposal), and carry out a comprehensive evaluation of the progress, integrity of the outcomes and the unsolved issues. The evaluation must outline the issues in a manner which will facilitate future research and development.

3. Operation of research and development

3. Operation of research and development

<p>“No Change”</p> <p>4. Project Term</p> <ul style="list-style-type: none"> <li>● From the day of grant decision to March 31, 2019</li> </ul> <p><u>In “Outline of Subsidized Project (Form 2)”, please describe both “Implementation Plan” and “Plan of the income and expenditure” for each period; The period from the day of grant decision to March 31, 2018 and the period from April 1, 2018 to March 31, 2019 since the contents of the grant decision would be coordinated considering the National Budget, etc..</u></p> <p>5. Implementing Scheme</p> <p>“No Change”</p> <p>6. Application Requirements</p> <p>The private companies, etc. satisfying all of requirements (1) to <u>(9)</u> shown below are qualified to apply for the subsidies.</p> <p>(1)~(6) “No Change”</p> <p>(7) <u>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)</u></p>	<p>4. Project Term</p> <ul style="list-style-type: none"> <li>● From the day of grant decision to March 31, 2019</li> </ul> <p><u>In Outline of Subsidy Project (Form 2), Please list the implementation plan and plan of income and expenditure. (The period from the day of grant decision to March 31, 2018, the period from April 1, 2018 to March 31, 2019).</u></p> <p>5. Implementing Scheme</p> <p>6. Application Requirements</p> <p>The private companies, etc. satisfying all of requirements (1) to <u>(8)</u> shown below are qualified to apply for the subsidies.</p> <p>(1)~(6)</p> <p>(7) <u>The "standards for exporters, etc. to meet" provided for in Article 55-10 (1) of the Foreign Exchange and Foreign Trade Act provide an establishment of internal compliance program(ICP) under a self control system.</u></p>
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"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)~(9) "No Change"

[Reference] Exporter Compliance Standards

Regulations to be observed by parties commercially engaged in export or technology transfer (exporters). Exporters which do not handle security-sensitive "special important goods, etc." have a duty to 1) nominate a party responsible for checking freight, etc., and 2) comply with the law. Exporters which do handle security-sensitive "special important goods, etc." have a duty to 1) identify an agent as the responsible party, 2) set out an export control system, 3) set out a procedure for non-regulated freight, 4) set out a procedure for confirming the usage and consumer, and confirming these in accordance with that procedure, and 5) confirming that non-regulated freight remains so at the time of shipping.

(8)~(9)

## 7. Requirement Conditions for Grant Decision

“No Change”

## 8. Application Procedure

(1) “No Change”

(2) Information Session

Friday, March 10, 2017 9:00 - 9:30 AM

Venue: Main Conference Room C at Mitsubishi Research Institute, Inc.

Map:[http://www.mri.co.jp/english/profile/locations/map\\_headoffice.html](http://www.mri.co.jp/english/profile/locations/map_headoffice.html)

If you would like to attend the session, please inform the contact point written in “13. Contact” by 12:00 AM on Thursday, March 9 via email. The session will be held in Japanese. If you need a translator, 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 12:00 AM on Thursday, March 9 via email.

(3) Application form and other documents to be submitted

[1] Please submit the following documents as one file. Please title your file “Application for the subsidy program ‘Project of Decommissioning and Contaminated Water Management (Research

## 7. Requirement Conditions for Grant Decision

## 8. Application Procedure

(1)

(2) Information Session

Friday, March 10, 2017 9:00 - 9:30 AM

Venue: Main Conference Room C at Mitsubishi Research Institute, Inc.

Map:[http://www.mri.co.jp/english/profile/locations/map\\_headoffice.html](http://www.mri.co.jp/english/profile/locations/map_headoffice.html)

If you would like to attend the session, please inform the contact point written in “13. Contact” by 12:00 AM on Thursday, March 9 via email. The session will be held in Japanese. If you need a translator, 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 10:00 AM on Friday, January 27 via email.

(3) Application form and other documents to be submitted

[1] Please submit the following documents as one file. Please title your file “Application for the subsidy program ‘Project of Decommissioning and Contaminated Water Management (Research



4. ~6. "No Change"

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 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 Form 2, "Brief explanation of subsidized project".

9. "No Change"

Note 1:~Note 3: "No Change"

Remark: "No Change"

(Form 2 )

Outline of Subsidized Project

(Form 3)~(Form 4)

"No Change"

4. ~6.

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".

9.

Note 1:~Note 3:

Remark:

(Form 2 )

Outline of Subsidy Project

(Form 3)~(Form 4)

(Form 5)

Research and Development of Processing and Disposal of Solid Waste

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

(Reference Document 1)~(Reference document 3)  
"No Change"

(Form 5)

Research and Development of Processing and Disposal of Solid Waste

Response to Security Export Controls	
Circle one of the following three options: handled, not handled or not required.	
Handled	Submit relevant documents (export control regulations for security trade) <u>Date of completion of handling:</u>
Not handled	
	State future plans
Not required	State reasons

(Reference Document 1)~(Reference document 3)