

Activities of Fukushima Support Project

¹ Fukushima Support Project, shinbashidaininakabiru 3F, 2-3-7 shinbashi, Minato-ku, 105-0004, Japan

² The University of Tokyo, 7-3-1 Hongo, Bunkyo-ku, Tokyo, 1123-8654, Japan

³ Toshiba Energy Systems & Solutions Corporations, 4-1 Ukishima-cho, Kawasaki-ku, Kawasaki-shi, 210-0862, Japan

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Thirteen years have passed since the Great East Japan Earthquake and the subsequent accident at Tokyo Electric Power Company's Fukushima Daiichi Nuclear Power Plant (Fukushima Accident). The Fukushima Support Project (PJ), which has been organized in June 2012 as an organization directly connected to the board of directors, Atomic Energy Society of Japan (AESJ) has been collaborating closely with the local community for about twelve years. After a serious accident like the Fukushima accident occurs, the most important thing is to consider how to revitalize the residents affected by the accident and the area outside the site of the nuclear power plant where the accident occurred (off-site). The question is how to revive the residents. As engineers and researchers, we tend to focus only on what happened inside the power plant where the accident occurred, and neglect to respond to the residents and communities most affected. However, it is difficult for each member of AESJ to cooperate in off-site regeneration and reconstruction. This paper introduces the establishment and activities' history of this project in order to understand the significance of this project. In addition, we would like to strongly appeal to concentrating the efforts of all concerned people on the reconstruction of the relevant regions in the future.

In June 2012, the year after the Fukushima accident, the Atomic Energy Society of Japan established the “Fukushima Support Project” as an organization directly connected to the Board of Directors to conduct activities to support the residents of Fukushima. The Fukushima Support Project collaborates closely with the residents of Fukushima and serves as an interface between the residents and the national and prefectural governments. The mission was to carry out

social activities rather than academic activities, which are conventional scientific, technological or academical activities. In other words, we put ourselves in the residents' shoes and disseminate necessary information accurately and clearly as a group of experts. **Figure 1** shows the functions of the Fukushima Support Project. Respond to residents' questions and concerns by providing

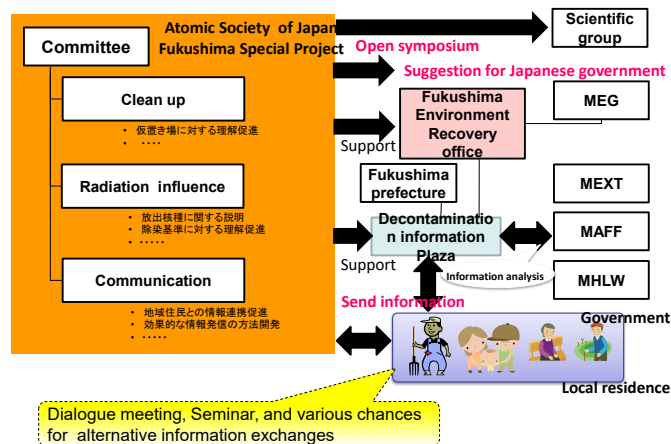


Fig. 1 Functions of the Fukushima Support Project

explanations from their perspective. Statements and activities will be carried out from an independent standpoint. Initially, the implementation period was until the interim storage facility was installed and operational, but activities are still ongoing. Regarding the activities of this PJ immediately after the accident, please refer to previous reports.^{1,2)}

As mentioned in the previous report,²⁾ the “Decontamination Technology Catalog Ver. 1”³⁾ (2011 (October 24, 2016)) was published. In addition, we have

*Corresponding author, E-mail: refujita@snow.ocn.ne.jp

prepared an explanatory material on temporary storage sites of the removed soil based on the Ministry of the Environment's "Guidelines for Storage of Removed Soil (1st edition, December 2011)" and adds recommendations based on the cleanup subcommittee's review, as necessary. "Temporary Storage Site Q&A – Answers to Questions about Temporary Storage Sites for Removed Soil" ⁴⁾ (May 23, 2012) was prepared (both materials are available to the public at the Environmental Remediation Plaza mentioned below).

The recommendations made immediately after the accident were summarized in the previous report²⁾, but five years after the accident and half a year before the policy to lift the evacuation order in areas other than difficult-to-return areas was announced, a report of the meeting was published in the fall of 2016 by Fukushima support Project (Fig. 2). At the conference, six points of view for the future were announced (Atomic Energy Society of Japan "2016 Fall Conference" September 9, 2016).⁵⁾

Publishing the views of the Board of Directors

1. Providing information on individual doses for the purpose of return home
2. Conducting detailed monitoring of difficult-to-return areas, creating dose rate maps, and providing information to local residents and local governments
3. Implementing meticulous decontamination work in the future, taking into account residents' requests
4. Considering rational methods for disposing of soil and waste resulting from decontamination, and specifically indicating to residents how to ensure safety at intermediate storage facilities, which will begin full-scale operation in the future
5. Continue to provide courteous treatment to residents (especially returning residents) and provide accurate information on radiation
6. Taking proactive measures to promote reconstruction

Fig. 2 The views of Board of Directors

IV. Symposium

One of the major missions of the Fukushima Support Project is communication activities. Immediately after the accident, as part of our communication activities, we held a "Safety and Security Forum" (2011) and a "Regional Dialogue Forum to Promote Decontamination" (2012) in collaboration with Fukushima Prefecture. On May 14, 2012, the "1st Regional Dialogue Forum for Promotion of Decontamination" (located at Korasse Fukushima) was held mainly by the Fukushima Support Project, in order to provide easy-to-understand information to Fukushima residents. Since then, Fukushima Support Project has already held 13 symposiums in cooperation with the Ministry of the Environment, Fukushima Prefecture (Fig. 3), and related municipalities. On March 28, 2017, to mitigate reputational damages, for the first time, we held a "Consumer's Guide - What is Fukushima Produced?" event in Tokyo, a major consumption area. However, since April 2017, when evacuation orders were cancelled for areas other than difficult-to-return areas, we believed that a smaller-scale gathering would be more effective than a symposium at Hamadori, and on July 13, 2019, we held a gathering on Hamadori held an exchange event in Tomioka Town in an attempt to convey the voices of returned residents to the town hall ⁵⁾ (Fig. 4).



Fig. 3 Symposium "Forum for Women-Low-Dose Radiation Exposure and Health Effects", August 30, 2014



Issues in Tomioka town

- There is no medical institution
- The traffic support to the SAKURA mall is not convenient.
- The number of returnees does not increase.

Fig. 4 the Exchange event in Tomioka Town⁵⁾

V. Dispatch of Experts to Environmental Regeneration Plaza

In January 2012, the members of the cleanup subcommittee began an activity to promote decontamination in Fukushima Prefecture by dispatching experts on Saturdays, Sundays, and holidays to the Environmental Regeneration Plaza (formerly Decontamination Information Plaza), which is jointly operated by Fukushima Prefecture and the Ministry of the Environment to distribute the information of decontamination, remediation and environment regeneration in Fukushima Prefecture. The members of the cleanup subcommittee have been conducted since the opening on January 25th, 2012 (Fig. 5), and the total number of experts already dispatched has exceeded 1,000. This activity has been conducted continuously with the aim of providing accurate information as experts to residents and other visitors to the Environmental Regeneration Plaza, but members of the cleanup subcommittee dispatched also are a good opportunity to learn about the current information. The various materials created in this project mentioned above are stored and made available to the public here.



Fig. 5 The Environmental Regeneration Plaza

VI. Agricultural Approaches of Remediation Outside of Fukushima Power Plant

Agriculture in Fukushima Prefecture as an agricultural prefecture, was heavily damaged by the Fukushima accident.

However, since there are almost no agriculture-related researchers in the Society, we believe that it is difficult to understand the exact impact on agriculture of the cesium (Cs) released and scattered during the Fukushima accident. Some of Fukushima support members have started to get the actual agriculture data. Therefore, since the year after the accident, we have been collaborating with JA Fukushima Mirai (formerly JA Soma) and conducting rice cultivation trials in rented rice fields in Baba, Minami-soma City. Initially, the soil with concentrations exceeding 10,000 Bq/kg was contaminated, but because the soil in Japanese paddy fields is fertile and clayey, the transfer coefficient from soil to rice was based on overseas values compiled by the International Atomic Energy Agency (IAEA). It was less than 0.01, which is an order of magnitude lower than that, indicating that the transfer of Cs to rice is extremely small. From 2012 to 2018, the change in Cs (Cs137) concentration in brown rice decreased from 1/5 to 1/17.5. We made this finding such as the effect of potassium (K) on changes in Cs concentration.

VII. Cooperation and Support for School Education, etc. in Fukushima Prefecture

In various aspects of educational activities in Fukushima Prefecture, we will cooperate and support initiatives and human resource development for the next generation, who will carry the future, to learn about post-earthquake reconstruction (radiation / environmental impact / waste / decommissioning, etc.). As for our activities, we support the development of students who can approach nuclear technology from an engineering and scientific perspective at the Fukushima College of Technology. Specifically, we are collaborating in the creation of e-learning materials by cooperating with lectures for each grade in an intensive course format which was requested by the Fukushima College of Technology (Fig. 6).

1st year: Basics of nuclear power generation
 2nd year: Basics of radiation
 3rd year: Introduction to decommissioning robots, decommissioning and society
 4th year: Decommissioning engineering
 5th year: General overview of nuclear accidents
 (Example: Nuclear-related classes at Fukushima National College of Technology)

Creating e-learning materials and cooperating

Fig. 6 Fukushima National College of Technology' Curriculum

VIII. Questionnaire Survey Regarding Fukushima Recovery Support Measures⁶⁾

We conducted a questionnaire survey with the aim of clarifying the effects of regional revitalization through national projects by asking residents about their perceptions, evaluations, and expectations regarding reconstruction assistance provided by the national government such as the

Reconstruction Agency. This questionnaire survey has held as the interface between the residents and the national and prefectural governments of Fukushima support Project's mission cooperated with Mitsubishi Research Institute (MRI). The target audience was Fukushima Prefecture residents (people aged 20 to 99, mainly from Hamadori, Fukushima City, and Koriyama City), and the survey was conducted over the Internet from May 25 to May 28, 2021. The number of respondents was 441, 52.8% male and 47.2% female for first come. In terms of age distribution, most men were between 40 and 69 years old, while most women were under 49 years old. As an item of ask about your thoughts on the following support measures (please provide a URL explaining the national measures when asking questions), Select all areas in which you feel you are having an effect (decommissioning measures, exposure dose reduction measures, transportation infrastructure, reputational damage, etc.). If you select "Other," feel free to describe the specific affects you feel.

- Fukushima Innovation Coast Initiative which is a plan to create new industries in the Hamadori region to revive industry for accelerating the reconstruction of Fukushima from the nuclear disaster
- Regeneration acceleration grant
- Strategies to dispel rumors and strengthen risk communication
- Specific reconstruction and revitalization base area reconstruction and revitalization plan
- Fukushima Soso Reconstruction Public-Private Joint Team Support for the self-reliance of disaster-affected businesses which is an organization created with the goal of helping businesses affected by the nuclear accident rebuild their lives, revive and revitalize their businesses, and restore livelihoods and employment
- International Education and Research Center

In addition, we asked them to freely write about the support (measures) necessary for reconstruction and revitalization and the future vision of Hamadori.

The opinions because of the questionnaire survey are as follows. For the future of Fukushima, we would like to aim for an area where young people can settle down, have a safe and secure living infrastructure, and where new industries can be created. Isn't it necessary to move forward with the government's measures so that residents can feel their effects more and live their lives with peace of mind? The numerous issues came up from the questionnaire survey results.

What can you do as a member of the Atomic Energy Society and Atomic Energy Society? What is the role? It is important to consider. As part of the Fukushima Support Project, we would like to work to propose solutions to these issues.

IX. Summary and in the Future

We hope that the activities that we have conducted to date to be close to the residents of Fukushima will be of help in the revitalization and reconstruction of Fukushima. In the future, we would like to cooperate with the regeneration and reconstruction of areas where it is difficult to return and

make efforts to mitigate reputational damage about marine products that have become a problem due to tritiated water. We would like to appeal once again strongly to concentrate the efforts of all concerned people on the reconstruction of Hamadori regions in the future.

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References

- 1) S. Tanaka and R. Fujita, "Start-up of Fukushima Support Project," Atomic Energy Society of Japan, Vol.54, No.10, 640-641 (2012) [In Japanese].
- 2) Fukushima Support Project, "Activities of the Fukushima Support Project and in the future -For the Environment remediation in Fukushima-, ibid, Vol.56, No.3,193-205 (2014) [In Japanese].
- 3) The cleanup subcommittee of Atomic Energy Society of Japan, "Decontamination technology Catalogue Ver.1.0", (2011) [In Japanese].
https://www.aesj.net/document/com-inv-ns-cucom_kank_yoshufuku20110905.pdf
https://www.aesj.net/document/com-inv-ns-cucom_kank_yoshufuku20110905.pdf
- 4) Ibid, "Temporary Storage Site Q&A – Answers to Questions about Temporary Storage Sites for Removed Soil," (2012) [In Japanese].
<https://www.aesj.net/document/com-inv-ns-kariokibaqanda20120514.pdf>
- 5) R. Fujita, N. Takamura and S. Ozawa, "Towards Fukushima reconstruction and revitalization - Looking back on the nine years since the disaster - Fukushima Support Project activities working closely with local communities", Atomic Energy Society of Japan, Vol62, No.8, 55-60 (2020) [In Japanese].
- 6) The report of Questionnaire survey regarding Fukushima recovery support measures, Mar. 2023 (2023) [In Japanese]. [fukushimapj_questionnaire.pdf](#)