

## Japan Atomic Energy Agency (JAEA) Reporting Conference #1 – Self-reform: Road to Rebirth

The 8th Briefing Session of the Japan Atomic Energy Agency (JAEA) was held in Tokyo on November 26th. The theme of the session was "Self-reform: Road to Rebirth." The session was attended by approximately 400 people. The session began with Shojiro Matsuura, President of JAEA, declaring the JAEA's commitment to reform. Next, JAEA Executive Director Tomohiro Yamano provided a description of specific initiatives being undertaken by JAEA to realize reform. That was followed by a report on application of spintronics to nuclear power development of a global standard exposure dose assessment database, and research and development pertaining to decommissioning of nuclear reactors and addressing the problem of environmental pollution.

This is the first of the two-part series reporting of the briefing session.

## Commitment to Reform

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### Shojiro Matsuura, President of JAEA

"Dealing with the accident at the Fukushima Daiichi Nuclear Power Station of Tokyo Electric Power Company (TEPCO) is the most significant issue that the JAEA is currently involved with. Another is reform of the JAEA itself."

The briefing session was held by JAEA in Tokyo on November 28th. Shojiro Matsuura, President of JAEA, provided the following summary of the issues the organization is currently confronted with.

"The accident is being dealt with from four approaches. One is the establishment of the Nuclear Plant Decommissioning Safety Research Establishment. Here, along with development of new machinery and equipment to safely decommission the Fukushima Daiichi Nuclear Power Station, testing is being conducted to demonstrate whether the developments can actually be put to practical use. The second is coping with environmental pollution by radioactive materials originating from the accident. The center provides advice on site for decontamination activities carried out by local governments and the Ministry of the Environment, conducts research on the radioactive cesium in the environment, provides technical support for assessing the effectiveness of decontamination, and other research and development.

The third approach is research and development primarily by the Fukushima Environmental Safety Center. Research and development pertaining to restoration of the environment is conducted here, and support is provided for the Fukushima Prefectural Center for Environment Creation (tentative name) planned by Fukushima Prefecture. The fourth is research and development pertaining to decommissioning facilities. The JAEA is taking maximum advantage of the human assets and equipment/facilities which already have a good understanding of the characteristics of fuel debris and conduct research and development for disposal of radioactive waste."



"Concerning reform of JAEA, the other most significant issue the organization is facing, we are committed to recreating ourselves through radical restructuring. In response to the responsibilities we have been entrusted with by the people, along with trying to make the largest contribution possible to the community by offering "knowledge and innovations," we will practice "Anzen-do", or the spirit to pursue the integrity of safety, that is to say, achieving safety strictly, comprehensively and sincerely.

President Matsuura also provided the specific contents of reform.

"Weak management and lack of activities to foster a culture of safety are behind the inappropriate management of the operation at Monju and the accident at Japan Proton Accelerator Research Complex (J-PARC). In order to address this, first of all we will establish the strong management by which the objectives of top management are shared at every part of the organization. And in order to provide substance to activities designed to foster a culture of safety, we plan to restructure the organization giving top priority to safety, as well as create and implement an effective activities plan."

"In reference to the Monju, the reform will be achieved with our concerted effort. Specifically, the management system will be revised drastically, and intensive efforts for reform will be made for a period of one year. 'Monju Safety and Reform Council' will be set up to lead the drastic reform, and with PDCA method, discussion will be made on what is necessary in the plan before it is carried out, and the action will be checked and improved. Mr. Sinnzo Saito, who has a strong leadership to carry out through reform, was recruited as head of the Monju from outside, and more than 60 members of JAEA are engaged in this effort."

"I would now like to summarize what we have talked about so far. The primary objectives of the JAEA are to advance scientific technologies, promote industry and secure sources of energy for the future. In order to realize this, we need to gain the trust of the Japanese people by producing results of innovative research and development and making nuclear power facilities safe. The JAEA must demonstrate its capability to do this. In order to demonstrate our ability to get the job done, we will strengthen management, enhance our safety culture, and implement rationalization. This will also include reform of the Monju to enable operation. At the same time, we will seek integrity of safety and will commit ourselves to safety culture enhancement, as well as we are always willing to learn."





Subsequently, JAEA Executive Director Tomohiro Yamano provided a specific description of the initiatives oriented toward reform of the JAEA. The following is a summary of his speech.

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The JAEA has already been involved in various initiatives to bring about reform, but none of them took hold. It's not a question of formality, but rather of how to make them have spirit. Also the safety culture of the organization has been insubstantial. We cannot just modify the system or organization itself, but rather must change awareness and motivation of the entire staff. Rather than becoming obsessed with new things, we are changing the organization to handle ordinary things that are just a matter of common sense.

The accident at the Fukushima Daiichi Nuclear Power Station, on the other hand, has brought nuclear power in Japan to a critical point. The ability of Japan to restore Fukushima has been called into question. We must commit ourselves entirely to this task. We also need to restart operation of existing nuclear power stations after introducing strict safety measures, while securing and developing human resources to deal with nuclear technologies. The JAEA is naturally in the position to take the leading role in supporting a nuclear power industry that stands at a critical juncture. The meaning of existence of the JAEA, however, has actually been called into question. The first step toward reform must be providing the entire staff with this sort of awareness.

So, what sort of change should we seek? The JAEA must be an organization that serves as a model for the practice of safety and must support the foundation for all fields of nuclear power. In easy-to-understand terms, the JAEA should be an organization on which the nuclear power industry can rely. We have therefore established a period for focusing on reform for a period of one year beginning in October 2013 and have been diligently working on them. We must be committed to reform in our own personal environment, rather than from top down.

Now we get into the details.

There was a problem with maintenance administration at Monju. One of the direct causes was the maintenance plan was not workable. We have introduced a system whereby maintenance can be administered by computer. The fact that there was a sort of feeling among a part of staff that due to the shutdown for an extended period of time they were just guarding the facilities and the fact that there was a lack of management at Monju are organizational factors behind the accident. Concerning the problem of J-PARC, we can cite the fact that the occurrence of abnormal states was not sufficiently assumed and the fact that the management systems of the JAEA and High Energy Accelerator Organization (KEK) that operate the facilities jointly were not unified. In addition to this, I think that some of the problems the Power Reactor and Nuclear Fuel Development Corporation (PNC) and Japan Atomic Energy Research Institute (JAERI) had when they were together still hold over till this very day. In terms with fostering a culture of safety, the insufficiency of governance function over the entire organization and the lack of awareness concerning compliance with rules are the problems.

These are summarized in three issues. One is that management is weak. In specific terms, we lacked sufficient awareness and an organizational structure to understand, assess and reflect timely in judgment risks associated with the management of the entire organization in a cross-sectional manner. The second is the vicious cycle of stopgap measures. Concerning safety culture, as a result of overlapping stopgap measures taken each time a problem arose in the past, the work at the site have become complicated with multiple documents to be adhered to. The third is the lack of selection and centralization, which is responsible for having enlarged work.

Before embarking on reform, I reconfirmed the missions of JAEA. The first is to give priority to and invest the organization's entire potential in efforts in handling the disaster at Fukushima. Next is

to return to the awareness that nuclear power involves extremely dangerous material and conduct research for ensuring safety. The third is to reinforce nuclear infrastructure. We must work together with universities and industry to foster human resources and maintain/enhance research and development capabilities. To accomplish this, for example, we should strategically reinforce and share infrastructure. The fourth is research and development of the nuclear fuel cycle, centered on Monju. The fifth is research and development into treatment and disposal of nuclear waste. We need to develop technologies for underground disposal of low-level radioactive waste from hospitals and research facilities as well as technologies for disposal of high-level waste. These five missions are the main pillars of the role of JAEA.

For the reform of JAEA, we must first establish robust management. The current organizational structure that consists of eight Research and Development Directorates and 17 Centers and Institutes will be reorganized into six divisions. By this reorganization functional management will be ensured under each of the heads of divisions. Also, for effective governance, Strategic Planning Office will be set up to serve as a staff office supporting the judgment of the president. These organizational reforms will be started in April in 2014.

The second is ensuring safety and fostering a culture of safety. Awareness that safety is our top priority will be shared by each and every employee. Effectiveness of the efforts made currently will be thoroughly examined and sorted out to develop a workable plan by March 2014. Also the functions of Safety Administration Department will be improved, so that it can better recognize the situation at each site and has strong authorization to conduct supervise inspections of facilities and, if necessary, to make recommendation to the president to issue an order to stop operation of facilities.

The third is rationalization of operations. On what should the JAEA place priority? There has been a movement to restructure research and development corporations by the Ministry of Education, Culture, Sports, Science and Technology. In anticipation of this we will separate and/or transfer projects concerning nuclear fusion or radiation utilization. We will begin to decommission some facilities that have become too old for continued use. We will also review the projects regarding stabilization of high-level liquid remaining at the Tokai reprocessing plant and the underground research projects at Tono and Horonobe.

The fourth is reform of the Monju, which is the focus of this organizational reform. We will tackle it with such determination that this is the last chance for the reform of Monju and continuance of our existence depends on whether we can put the situation of Monju right. We have invested best of our staff, and the president visits the site weekly to raise awareness from the bottom-up while participating in face-to-face discussion among the workers.

The following is a summary of our efforts with Monju reform.

The first thing is to instill an awareness of "safety first" in the entire staff through strong top management. The second is to establish an organization/management system that is capable of autonomous, safe operation and management. The third is to improve management competence so it can accomplish this reliably. The fourth is to restore an organizational environment that can instill the concept of safety first in each and every member of the staff. Fifth is fostering of high level of technical ability and enhanced motivation. This means we must become a "Monju-minded" organization whereby each and every member of the staff takes a personal interest in the power station. We must also create an environment that provides each and every worker with motivation to perform daily tasks with the attitude that the job he is doing is of extreme importance. At the same time, we need to enhance technical capacity at the site. Also, handling down of maintenance technique is important. A proper database containing such information should be created.

The problem at the J-PARC was caused by faulty equipment. This will require work to improve monitoring and prevent leakage of radioactive material. In addition to these physical improvements, the post of assistant director to oversee safety will be established, and staff responsible for the KEK facilities will be permanently stationed there. The trouble-free neutron generator is slated to start in January 2014, followed by the Neutrino Experimental Facility (NEF) in April. We hope that repair work at the Hadron Experimental Facility (HEF), which was the cause of the accident, will be completed by the fall of 2014.

I would now like to give a brief summary of reform. The first element of reform is to instill motivation for the entire staff, especially the younger ones, and exhibit the latent power of the JAEA

confidently in unity. The second is to change to an organization with the spirit and pride to support nuclear power in Japan. The third is to have the JAEA with its diverse assortment of basic facilities collaborate with universities and industry to create new knowledge and foster human resources. The fourth is to change the organization so that each member of the staff is committed to the Monju and strives in daily work with a firm intention to restart the operation, while complying with the rules.