The 418th Forum on Research Work December 19, 2014

Outlook and Challenges for Nuclear Power Generation in 2015
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Conformity assessment and restart

1. Kagoshima Prefecture and Satsumasendai City have approved the restart of Units 1 and 2 at Kyushu Electric Power Co.'s Sendai Nuclear Power Plant following the Nuclear Regulation Authority's assessment of the units in accordance with the new regulation standards. The NRA may still take some time for screening applications for revisions to relevant construction plans and operation manuals. But the two units are expected to restart around late FY2014 after the screening and pre-operation inspections.
2. The restart of nuclear reactors other than the two Sendai units has also been put on the table. When to restart them depends on the seismic ground motion and the presence or absence of large-scale construction. Of the 18 reactors whose assessment to the new regulation standards is ongoing, screening is expected to make progress for those for which the NRA has approved or is likely to smoothly approve the seismic ground motion. By the end of FY2015 or March 2016, IEEJ expects nine reactors including the two Sendai units to restart.
3. On the other hand, the assessment of applications for revisions to operation manuals and construction plans could be prolonged. Dates for the completion of such assessment are so uncertain that much flexibility is required for assuming such dates. The assessment and the clarification of judgment standards should be more simplified for the future restart of nuclear reactors.
4. At five nuclear power plant sites, faults as well as the reactors' assessment in accordance with the new regulation standards are being assessed. At Japan Atomic Power Co. (JAPC)'s Unit 2 of Tsuruga Nuclear Power Plant, a panel of experts approved a report concluding a fault at the site as active in November 2014. While JAPC has called for continuous discussions on the fault for the reason that technical discussions have been insufficient, the fault problem is set to be considered in the NRA examining reactors' assessment procedures, instead of any expert panel. Whether this change would affect the assessment is attracting attention in regard to fault problems at other nuclear power plant sites.

5. In addition to 20 reactors (including the two Sendai units) subject to applications for conformity assessment, we must pay attention to license renewal applications related to reactors whose service will remain below or surpass 40 years as of 2015. Special inspections, which are required for an application for extending the service beyond 40 years, have already started for Units 1 and 2 of Kansai Electric Power Co.'s Takahama Nuclear Power Plant. Since the extension has some impact on Japan's future nuclear power generation capacity, we must pay attention to the special inspections, as well as developments regarding the construction of Unit 3 at the Shimane Nuclear Power Plant and of the Oma Nuclear Power Plant.

Discussions on positioning nuclear energy over a medium to long term

1. Since the government's Strategic Energy Plan adopted in April 2014 positioned nuclear power generation as "a key base-load power source," the Nuclear Energy Subcommittee of the Advisory Committee for Natural Resources and Energy has been discussing nuclear power generation capacity over a medium to long term. In the past discussions, some members of the panel recommended some quantitative assumptions. One said: "Quantitative assumptions are required for future policy-making. We should indicate the ceiling and bottom of nuclear energy's share of power generation meeting Japan's energy conditions." In 2015, the subcommittee will consider nuclear energy's position in Japan's energy mix and measures for making effective use of nuclear energy on some scale.
2. Nuclear Energy Subcommittee members have also discussed how to maintain technology and human resources for decommissioning nuclear reactors and radioactive waste disposal over a long term for Japan's gradual reduction of its dependence on nuclear energy, expressing hopes on the government's role in creating an environment for relevant research and development and building a mechanism to secure funds required for decommissioning nuclear reactors. In 2015, they are expected to deepen specific discussions on the details of a nuclear reactor decommissioning accounting system.
3. Securing nuclear safety and reconstructing Fukushima are top priority challenges to be tackled. Nuclear business operators have vowed to enhance defense-in-depth measures for securing safety under the recognition that no goal exists for improving safety, while experts have noted that regulators and business operators should build their relations designed for better efforts.
4. Nuclear fuel cycle options and long-term storage of spent nuclear fuels, and high-level radioactive waste disposal plans will remain key challenges to be addressed. The Nuclear Energy Subcommittee has also discussed nuclear projects amid the deregulation of electric utilities. It has considered the significance of the Feed-in Tariff with Contracts for Difference, or FIT-CfD, for diffusing nuclear power generation in the United Kingdom that has taken the initiative in deregulation. Some subcommittee members have called for working out the details of systems for a transitional period at a working group.
5. Meanwhile, nuclear power plant construction is underway in countries where nuclear

energy is required for energy security and global warming prevention. In 2014, Japanese companies agreed with local entities in the United Kingdom, Turkey and other countries for cooperation in nuclear energy in an attention-attracting manner. Also attracting attention in 2015 will be progress in nuclear projects in emerging countries and European and Japanese companies' relevant international expansion.

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