

METI Proposes Development of Original Japanese Next-generation LWRs

On August 9, the Agency for Natural Resources and Energy (ANRE), part of the Ministry of Economy, Trade and Industry (METI), held the second meeting of its Nuclear Power Subcommittee, established under the Electric Utility Industry Subcommittee of its Advisory Committee for Natural Resources and Energy. The purpose of the meeting was to discuss the development of original Japanese-made next-generation light water reactors (LWRs) – the initiative for which should be taken by manufacturers – and measures for the training of engineers and technicians engaged in the maintenance of nuclear power plants (NPPs). It also approved proposed revisions to the Specified Radioactive Waste (HLW) Final Disposal Program, the revision of which is required, by statute, every five years.

At the meeting, ANRE explained its vision of the direction of technological development of LWRs in the future. Noting the importance of nuclear technology having a characteristic “nationality,” ANRE said that “Japan should develop and maintain its own original nuclear technology.” It stressed the need to have a development project aimed at the construction and operation of NPPs.

ANRE predicted that the construction of new plants would remain sluggish domestically – at the pace of one plant every several years – and that declines would be faced by manufacturers’ sales, research expenditures and the number of engineers and technicians. On the other hand, there is expected to be an increase in demand starting around the year 2030, to replace those plants currently in operation. But it would be difficult, ANRE said, for the electric power companies to lead the development of reactors, in part because of the deregulation of the electric power market. It also concluded that overseas markets, in places such as the United States and China, are expected to expand during the same period, while domestic demand would remain low.

In anticipation of that, ANRE noted that it was important for both the public and private sectors in Japan to make concerted efforts to carry out technological development, under the initiative of manufacturers, considering not only the situation in domestic demand (expected to increase from 2030 or so), but overseas demand. ANRE proposed that the government, electric power companies and manufacturers arrive at a shared vision for the future, issue a focused medium- and long-term strategy for technological development, and initiate a feasibility study on the development of next-generation Japanese LWRs.

Specifically, in order to commence construction around 2025, with commissioning around 2030, it said that development should be completed by about 2015. Assuming it takes a decade or so for development, ANRE said a few years would be needed for the feasibility study as well, starting this fiscal year.

In the feasibility study, ANRE said that following points, among others, deserve consideration: (1) the needs of domestic and overseas markets; (2) “promotable” technology to help Japan lead the world market; (3) types and output of reactors to be developed; (4) actual roles of manufacturers, electric power companies and the government; and (5) participation by overseas manufacturers.

As key points in the development, it noted that the range of the standard reactors to be developed should be narrowed down to “two or so,” and that development and safety research should be carried out in parallel, with results promptly reflected in safety regulations. The two standard reactor types, ANRE said, would “not necessarily be PWR and BWR” – leaving some room for the possibility (taking into account exports and other factors) that large and mid-size reactors of a specific reactor type could become the standard.

Various comments were made by subcommittee members. One person said that “designs

allowing us to achieve rationalization of safety regulation are necessary,” and another said that “if electric power companies will not commit themselves, we will end up with nothing more than a ‘paper reactor.’”

The next meeting is scheduled for September 28.

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