

Toward Early Commercialization of the Fast Reactor Cycle, as One of the “Key Technologies of National Importance” —Launch of FaCT Project—

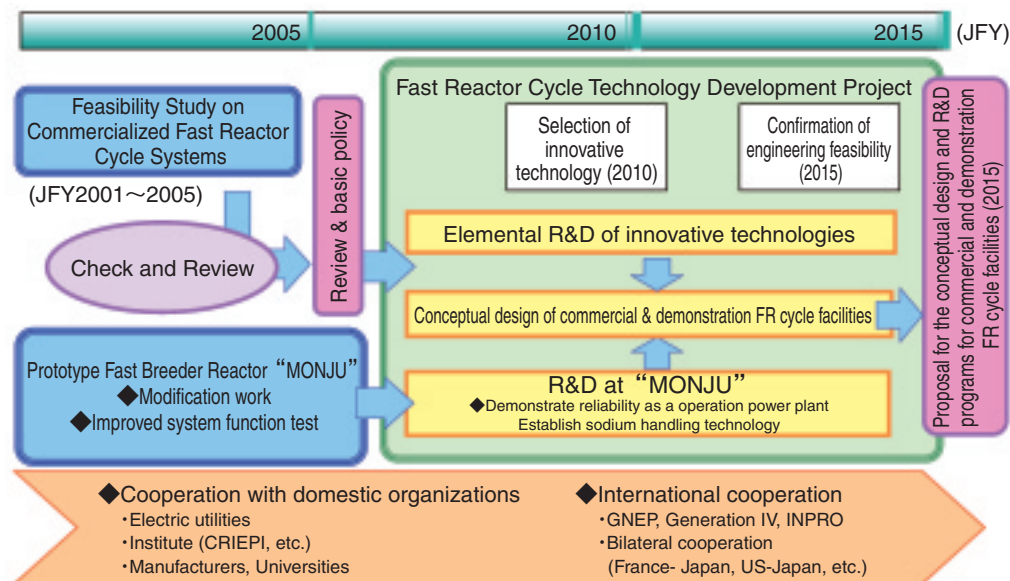


Fig.1-1 Fast Reactor Cycle Technology Development Project

The 2nd phase of the “Feasibility Study on Commercialized Fast Reactor (FR) Cycle Systems” (hereinafter referred to as “FS”) was completed by a Japanese joint project team comprising the Japan Atomic Energy Agency (hereinafter referred to as “JAEA”), electric utilities, and the Central Research Institute of Electric Power Industry at the end of March 2006. This was part of an R&D program aiming to present an appropriate conceptual design for a commercial FR cycle system by 2015. As a result of this FS, we found that the best concept is the combination of a sodium-cooled FR with oxide fuel, advanced aqueous reprocessing, and simplified pellet fuel fabrication, which meet requirements for economical competitiveness, safety, reduction of environmental burden, efficient utilization of nuclear fuel resources, proliferation resistance and technical feasibility.

The FR cycle technology was listed as a one of the “Key Technologies of National Importance” in the “Science & Technology Basic Plan” of Japan. In the previous fiscal year, the R&D program and commercialization of a FR cycle were discussed on a national level as part of a “Framework for Nuclear Energy Policy”. The Committee for Nuclear R&D (a subdivision of the Council for Science and Technology of MEXT) assessed the results of 2nd phase of FS, and discussed the path to an R&D program to commercialize the FR cycle. The committee selected the

above combination as a significant concept with high feasibility for commercialization, and suggested that JAEA should accelerate its development by focusing on the practical application of innovative technology.

We did strategic research in the FS to make our future goal clear, and then changed our R&D emphasis to “Technology Development concentrating on commercialization” by using “MONJU”, “JOYO” and our other recycling facilities, while aggressively pursuing international cooperation, based on the R&D policy of MEXT and the “Basic Policy on Research and Development of FR Cycle Technologies over the Next Decade” of the Japan Atomic Energy Commission. In addition, with the shift from the “concept” to the “actual system”, JAEA changed the project name from FS to “FaCT (Fast Reactor Cycle Technology Development)”. Further, we reviewed the existing organization in order to better promote the FaCT project, and established an executive organization headed by the JAEA president to coordinate between the R&D directorate and the facility site.

Using practical applications of innovative technology and the R&D results obtained at “MONJU”, we will conduct intensive R&D to present by 2015 an R&D program for conceptual design and realization of a commercial and demonstration FR cycle facility, as shown in Fig.1-1.