

# Chapter 5

## Light Water Reactor Project

- I. Project Status
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The background features a complex, abstract design. It consists of several overlapping, flowing, organic shapes in various shades of light blue and white, creating a sense of movement and depth. In the lower-left quadrant, there is a grid pattern of small, light blue squares. In the lower-right quadrant, there are several bright, multi-pointed starburst or lens flare effects, adding a futuristic or high-tech feel to the overall composition.

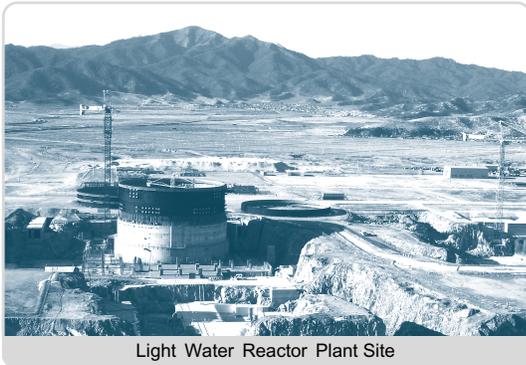
## Light Water Reactor Project

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## I. Project Status

The US-DPRK Agreed Framework was signed on 21 October 1994, and came into effect, aimed at resolving the North Korean (the DPRK's) nuclear standoff at that time, which had been triggered by North Korea's announcement in March 1993 that it would withdraw from the NPT. According to the Agreed Framework, North Korea would be provided with two 1,000 MWe light water reactors (LWRs) in return for freezing and dismantling its nuclear facilities at Yeongbyeon.

Based on the Agreed Framework, South Korea, the United States, and Japan established the Korean Peninsula Energy Development Organization (KEDO) in March 1995, and KEDO and



Light Water Reactor Plant Site

North Korea signed an Agreement on the Supply of LWRs in December that same year. After further negotiations, KEDO and North Korea concluded further protocols on legal issues, privileges and immunities, consular protection, transportation, and communications. KEDO also embarked on preparing detailed measures that were necessary for the commencement of construction of the LWRs. On August 19, 1997, KEDO held a ground-breaking ceremony in Kumho, North Korea.

On November 9, 1998, the Executive Board members of KEDO adopted a resolution on cost sharing for the LWR project. A budget estimate for the project was agreed at US\$4.6 billion. With regard to specific funding for the LWR project, South Korea has agreed to provide 70% of the project's actual cost while Japan has agreed to contribute 116.5 billion yen (approximately \$1 billion). The EU has agreed to contribute 75 million ECU equally over five years to help fulfill KEDO's financial needs, and the U.S. has reconfirmed its commitment to seek funding for the supply of heavy fuel oil to North Korea and for other KEDO needs, as appropriate.

KEDO and the Korea Electric Power Corporation (KEPCO) signed a turnkey contract which became effective on February 3, 2000, for the construction of two 1,000 MWe LWRs. After receiving a construction permit from the North on September 1, 2001, KEDO began excavation work on September 3, 2001. In August 2002, the pouring of the foundations for the first reactor's power block buildings started, and upon its completion, excavation work for the second reactor began. Along with the site preparation, KEDO built roads and bridges, a

breakwater, barge-docking facility, housing, dining and recreational facilities, and established the infrastructure for the supply of electricity.

Before the nuclear issue reemerged in October 2002, KEDO and North Korea concluded 8 out of 13 protocols for implementation of the Supply Agreement, including a protocol on training and on quality assurance and warranties. Moreover, KEDO and North Korea held high-level expert meetings every year since 1998, reaching an agreement on operating a communications network (16 circuits), passenger-cargo ship (once a week), and establishing direct air routes once a week.

While construction work was in progress, North Korea made an unreasonable demand for a wage increase for 200 North Korean workers who were employed at the site and in April 2000, withdrew 100 workers. In response, KEDO employed “substitute” workers from Uzbekistan starting in March 2001.

In accordance with the Protocol on Training, 122 North Korean workers to be in charge of operating and maintaining the power plant and 25 control personnel were trained at South Korean facilities, and 19 senior management officials observed the South Korean facilities.

## II. Temporary Suspension of the Light-water Reactor Project

### 1. Background of the Temporary Suspension

In October 2002, the North Korean nuclear issue reemerged with North Korea's admission that it was pursuing a highly enriched uranium (HEU) program for developing nuclear weapons. As a result, the LWR project, whose progress was closely linked with the resolution of the North Korean nuclear issue, arrived at an important crossroads.

Under these circumstances, the Executive Board of KEDO convened a meeting on November 14, 2002, urging an early resolution of the North Korean nuclear issue. The meeting also concluded that KEDO would suspend heavy fuel oil deliveries unless North Korea undertook “concrete and credible actions” to completely dismantle its HEU program and that progress of other KEDO activities including the LWR project would depend on the resolution of the North Korean nuclear issue.

Moreover, various negotiations with North Korea, including wage increases for North Korean workers, follow-up protocols, as well as a KEDO-organized training program for the operation and maintenance personnel for the light-water reactor plant were all suspended.

At an informal Executive Board meeting held on February 3, 2003, KEDO decided that without progress in the resolution of the North Korean nuclear issue, it would delay the pace of the construction work for the time being in consideration of various problems associated with continuing the LWR project. Without affecting the entire scope of the construction work, KEDO decided to suspend work on the power block, the support facilities of the second reactor containment building (RCB) and installation of the first RCB liner plate, postpone orders on construction materials, and postpone or reduce non-urgent and non-essential construction work.

As there was no substantive progress on resolving the North Korean nuclear issue in the meeting among the United States, China, and North Korea held in Beijing in April 2003 and the first Six-party Talks in August 2003, the Executive Board members developed a shared understanding on the need for a fundamental review on the future of the LWR project.

Thus, the KEDO Executive Board members began active consultations on the future of the LWR project through formal and informal executive board meetings and bilateral meetings. As a result of these consultations, the KEDO Executive Board concluded on November 21, 2003 that it could no longer continue with the LWR project and that it would temporarily suspend the project for one year starting from December 1, 2003.

## 2. Preservation and Maintenance Work during the Suspension

As the temporary suspension of the LWR project became effective on December 1, 2003, progress in all areas of the LWR project, including design, construction and manufacturing, came to a halt. The project, therefore, entered a preservation and maintenance stage, involving making preparations for the possibility of resuming the project in the future.

KEDO has been continuing preservation and maintenance work at the LWR site by installing covers or protective coatings over exposed items, such as reinforcing steel bars and anchor bolts of the power block structures of the reactors. Parts yet to be completed are being preserved and maintained under the principles of quality assurance and cost minimization. For quality assurance and work continuity, certain items are being manufactured up to a certain point and then being preserved.

For the safe preservation and maintenance of the construction site and materials that are being manufactured, KEDO has organized regular inspections for evaluating progress of work and quality of the construction site and manufactured materials. 1,500 workers employed at the site have been withdrawn gradually. In December 2003, the Uzbek workers were withdrawn and in February 2004, all 100 North Korean workers were withdrawn from the site. By

December 2004, about 120 workers remained on the site, including six staff members of KEDO at the Kumho site.

Meanwhile, North Korea has been demanding compensation for losses incurred as a result of the suspension of the KEDO project. In November 2003, North Korea prohibited KEDO from taking construction materials out of the country, and the following month, it notified KEDO of its plan to implement provisional measures of tightening entry and exit control procedures.

During the Executive Director's visit to North Korea and working-level negotiations, KEDO strongly urged North Korea to cancel the provisional measures, claiming that they were unreasonable. The Korean government also made use of important occasions as the inter-Korean ministerial talks and the Inter-Korean Economic Cooperation Promotion Committee meetings to urge North Korea to retract its decision, pointing out how unreasonable its measures were and that they would have a negative effect on inter-Korean economic cooperation. North Korea, however, responded that without proper compensation, it would not reverse its decision. As a result, KEDO embarked on preserving and maintaining about 200 construction materials at a certain location within the construction site.

By the end of November 2003 before the suspension, about 34.5% of the project was completed, which included 21.6% of construction work, 62.3% of general planning, and 42.3% of material purchases. In accordance with the resolution on the division of financial contribution among the Executive Board members, US\$1.5 billion had been spent by the end of December 2004.

### 3. Extending Temporary Suspension for Another Year

When the Executive Board members of KEDO decided to temporarily suspend the LWR project in November 2003, they agreed to consult and decide on the future of the project before the end of the one-year suspension term, while observing the progress being made in the resolution of the North Korean nuclear issue. Believing that the possibility was low for substantive progress in resolving the North Korean nuclear issue before the suspension period expired in November 2004, the Korean government proposed the extension of the temporary suspension for another year and made efforts to persuade and forge agreement among the Executive Board members. As a result, the Executive Board announced in November 2004 that the suspension would be extended for another year, starting from December 1, 2004.