

Status of Dry Storage Projects in Taiwan

ABSTRACT

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Dry storage of spent fuels was chosen as one of the countermeasures to resolve the issue of lacking of the wet storage space (i.e., the spent fuel pools) for the three operating Nuclear Power Plants (NPPs) in Taiwan. In 2005, the state-owned utility, the Taiwan Power Company (TPC) entrusted the Institute of Nuclear Energy Research (INER) for the dry storage project at the Chinshan NPP, in which the spent fuel pools had been re-racked twice and is projected to lose the capability of providing enough spaces for smooth fuel shuffling in the outage scheduled in early 2013.

The project went well in the early stage, the SAR was approved in November 2008, the 25 canisters, the transfer cask, and some handling and auxiliary components were all fabricated domestically by 2010; but the constructions of the storage pad and the concrete casks were postponed due to the suspension of the review and approval processes for the Water & Soil Conservation Plan of the ISFSI site. After a near-four-year delay, the Plan was approved by the local county in September 2010. Major milestones set in the next two years include: completion of the constructions of the pad and the first two concrete casks by May 2012, commencement of the dry run in May 2012, loading of the first two casks (112 spent fuel assemblies) by September 2012, and completion of the 25 cask loading by early 2015.

TPC also initiated the second dry storage project for Kuosheng NPP this year. If everything goes as planned, the first two casks will be loaded before the end of 2014. When the project is completed in 2018, totally 2300 to 2400 assemblies will be loaded.

It is estimated that given a 20-year life extension for the six operating units in Taiwan, at least 600-700 dry storage casks are needed after their decommissions, given other potential solutions (e.g., reprocessing and disposal) are not available before the decommissions.