

Spent Fuel Project Office Interim Staff Guidance - 2

Issue: Fuel Retrievability

§72.122(l) states:

“Retrievability. Storage systems must be designed to allow ready retrieval of spent fuel or high-level radioactive waste for further processing or disposal.”

§72.236(h) states:

“The cask must be compatible with wet or dry spent fuel loading and unloading facilities.”

§72.236(m) states:

“To the extent practicable in the design of the storage casks, consideration should be given to compatibility with removal of the stored spent fuel from the reactor site, transportation, and ultimate disposition by the Department of Energy.”

The basis of 10 CFR 72.122(l) is the Nuclear Waste Policy Act (NWPA) of 1982, §141(b)(1) (C), (51 FR 19108 53 FR 31651). The NWPA required that Monitored Retrievable Storage (MRS) facilities be designed “to provide for the ready retrieval of such spent fuel and waste for further processing and disposal.” In amending Part 72 to permit licensing of an MRS as required by the NWPA, the Commission determined that an independent spent fuel storage installation (ISFSI) must also meet the same criteria.

As utilities shut down reactors, and either plan for or actually start decommissioning, there is an increasing need to move the spent fuel from the reactor spent fuel pool to an ISFSI. These ISFSIs, generally consisting of an array of spent fuel storage casks on the licensee’s site, are licensed or approved under the provisions of 10 CFR Part 72. In practice, the casks are loaded with spent fuel within the existing pool under the provision of 10 CFR Part 50, then the casks are transferred from the spent fuel storage building out to the storage area. As the casks leave the spent fuel building they, and their associated operations and maintenance, transfer to the regulatory provisions of 10 CFR Part 72. After a pool has been emptied of all spent fuel, a utility may, if appropriate and in accordance with the regulations, proceed with immediate decommissioning of the spent fuel pool.

The Nuclear Regulatory Commission (NRC) (and U.S. Department of Energy (DOE)) recognized that “in the interest of reducing radiation exposures, storage casks should be designed to be compatible with transportation and DOE design criteria to the extent practicable . . . to the extent that cask designers can avoid return of the spent fuel from dry cask storage to reactor basins for transfer to a transport cask before moving it off site for disposal” (55 FR 29186). This, and DOE’s development of a multi-purpose canister (MPC) program gave rise to dual purpose (storage and transportation) cask designs. The MPC, containing the fuel, could easily be transferred from a storage system into a transportation cask. With dual purpose designs, fuel no longer must be returned to the reactor spent fuel pool for repackaging. Dual purpose cask designs should have the capability of being prepared for off-site transportation without having to handle individual fuel assemblies or return to a spent fuel pool.

Insofar as a facility in question is used for interim storage, (e.g., not permanent disposal), and as long as the design of the storage system has a method to repackage into a transportation cask for shipment offsite (e.g., designed for decommissioning) for further processing or disposal, a facility meets the requirements of 10 CFR 72.122(l).

Recommendation:

Chapter 1 of the Standard Review Plan (NUREG-1567) should be modified to clearly define that compliance with 10 CFR 72.122(l) is achieved when an applicant's design is found to be in compliance with 10 CFR Part 72. This means all facilities that could be licensed under 10 CFR Part 72 must be designed to allow for ISFSI decommissioning and have only limited license terms. Therefore, an ISFSI considered for a license under Part 72 cannot become a "defacto" repository (i.e. the fuel is retrievable under normal conditions of operation, and therefore, the requirements of 10 CFR 72.122(l), are met).

The staff believes that 10 CFR 72.122(l) applies to normal and off-normal design conditions and not to accidents. ISG-3 discusses the staff's recommendation for post-accident recovery with regard to retrievability.

Approved _____
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