Item A-31: RHR Shutdown Requirements (Rev. 1)

DESCRIPTION

The safe shutdown of a nuclear power plant following an accident not related to a LOCA has been typically interpreted as achieving a "hot-standby" condition (i.e., the reactor is shut down, but system temperature and pressure are still at or near normal operating values). Considerable emphasis has been placed on the hot- standby condition of a power plant in the event of an accident or abnormal occurrence. A similar emphasis has been placed on long-term cooling, which is typically achieved by the RHR system. The RHR system starts to operate when the reactor coolant pressure and temperature are substantially lower than their hot-standby condition values.

Even though it may generally be considered safe to maintain a reactor in a hotstandby condition for a long time, experience shows that there have been events that required eventual cooldown and long-term cooling until the reactor coolant system was cold enough to perform inspection and repairs. For this reason, the ability to transfer heat from the reactor to the environment after a shutdown is an important safety function for both PWRs and BWRs. It is essential that a power plant be able to go from hot-standby to cold-shutdown conditions (when this is determined to be the safest course of action) under any accident conditions.

This issue was originally identified in NUREG-0371[1] and was later determined to be a USI.

CONCLUSION

This USI was RESOLVED in May 1978 with the issuance of SRP[2] Section 5.4.7. Only those plants expected to receive operating licenses after January 1, 1979 were affected by the resolution.

[1] NUREG-0371, "Task Action Plans for Generic Activities (Category A)," U.S. Nuclear Regulatory Commission, November 1978.
[2] NUREG-0800, "Standard Review Plan for the Review of Safety Analysis Reports for Nuclear Power Plants," U.S. Nuclear Regulatory Commission, (1st Ed.) November 1975, (2nd Ed.) March 1980, (3rd Ed.) July 1981.