

Res Reviewed this & final draft 10/01/01

The guidance indicates that CDF increases of 10^{-5} /yr or greater above the baseline should not be allowed for plants with a total baseline CDF between 10^{-5} /yr and 10^{-4} /yr. For plants with a total baseline CDF above 10^{-4} /yr, a CDF increase of 10^{-6} /yr or greater above the baseline should not be allowed. If the CRDM nozzle degradation were to continue unnoticed, the estimated increase in core damage probability would approach the conditional (given MLOCA initiation) core damage probability (CCDP) for a medium LOCA as the CRDM nozzle failure becomes imminent.

A Probabilistic Fracture Mechanics (PFM) study indicated that the cumulative probability of a CRDM nozzle failure was larger than 0.5 after 20 effective full power years of operations at 600° F without inspections, with the event frequency of greater than 1.0×10^{-2} . The frequency was based on a conservative average over 20 years. The study was performed for CRDM nozzle failure, where the parameters for the fracture model were determined by comparison with the data for the Oconee and ANO-1 units and data for the PWSCC of steam generator tubes. The CCDP values for the subject plants are on the order of 5.3×10^{-3} or larger for a medium LOCA, according to the Individual Plant Examination (IPE) study performed for Generic Letter 88-20. Using the above CCDP value of 5.3×10^{-3} and event initiation frequency of 1.0×10^{-2} , the increase in CDF would be at least 5.0×10^{-5} or more. This is well above RG 1.174 guidance value of 10^{-5} /RY for CDF increments that would be considered only when total CDF is shown to be below 1×10^{-4} /RY.

Finally, the fifth principle is not satisfied because the basis for licensee analysis, which indicates risk levels below RG 1.174 numerical guidelines, are based on assumptions that can not be verified without performing the inspections that are adequate to detect the form of degradation being modeled. Therefore, assessment with respect to these safety principles rebuts the assumption that compliance with the regulations in this "special circumstance" is sufficient to provide reasonable assurance for adequate protection of the public health and safety.

D-19