

RAI 6.2-145, Supplemental No. 1, (MFN 07-310, 6/7/07)

Appendix A to Section 6.2.1.1.C of the Standard Review Plan (SRP) states, "The Mark II and Mark III acceptance criteria for both the high and low pressure leakage tests shall be a measured bypass leakage which is less than 10% of the capability of the containment ..."

In response to RAI 6.2-145, GE proposed an acceptance criterion for bypass leakage of 2 cm² (2.16E-03 ft²) (A/√k) and stated that "DCD Tier 2, Revision 3, Subsection 6.2.1.1.5.1 contains additional information from the latest bounding design basis accident calculations that assume a bypass leakage size of 2 cm² (2.16E-03 ft²) (A/√k)."

DCD Tier 2, Rev 3, Section 6.2.1.1.5.1, states that "the bounding design basis accident calculation assumes a bypass leakage of 1 cm² (1.08E-03 ft²), (A/√K). Table 6.2-5 shows these results in acceptable containment pressures. Additional bounding design basis accident calculations show also that with a bypass leakage assumption of 2 cm² (2.16E-03 ft²), (A/√K) the containment pressures continue to be below the design pressure and with a bypass leakage assumption of 14 cm² (1.51E-02 ft²), (A/√K) the containment pressures remain below the ultimate pressure capability of the drywell head (1.204 MPag) (see reference 6.2-6) with ample margin." Reliance on the containment ultimate strength for justification of the acceptance criterion is not acceptable to the staff.

A. It is not clear to the staff whether the design leakage is 1 cm² (1.08E-03 ft²), (A/√K) or 2 cm² (2.16E-03 ft²), (A/√K). Please confirm that the results provided in DCD Tier 2, Rev 3, table 6.2-5 are based on 1 cm² (1.08E-03 ft²), (A/√K) bypass leakage area. If so, please provide the containment peak pressure results using 2 cm² (2.16E-03 ft²), (A/√K) as the assumed bypass leakage, and provide the margin to the containment design pressure.

B. The purpose of the bypass leakage test acceptance criterion is to provide reasonable assurance that the ESBWR bypass leakage area will not exceed the value assumed in the design basis containment peak pressure analysis in between test intervals. GE should propose a bypass leakage test acceptance criteria less than that is less than the design basis assumption for bypass leakage and justify that the selected acceptance criterion will provide reasonable assurance that the plant's bypass leakage area will not exceed the value assumed in the plant's safety analyses during postulated design basis accidents.