



Serial: RNP-RA/01-0113

JUN 28 2001

United States Nuclear Regulatory Commission
Attn: Document Control Desk
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H. B. ROBINSON STEAM ELECTRIC PLANT, UNIT NO. 2
DOCKET NO. 50-261/LICENSE NO. DPR-23

COMMENTS ON PRIORITIZATION OF GENERIC SAFETY ISSUE (GSI) 156.6.1:
"PIPE BREAK EFFECTS ON SYSTEMS AND COMPONENTS INSIDE CONTAINMENT"

Ladies and Gentlemen:

This letter is to provide comments on the staff's prioritization analysis and draft NUREG/CR-6395, "Enhanced Prioritization of Generic Safety Issue 156-6.1 Pipe Break Effects on Systems and Components Inside Containment (Draft)." The request for comments was in a letter dated October 12, 2000. The comment request stated that comments received within 45 days would be considered. In a letter dated December 8, 2000, Carolina Power and Light (CP&L) confirmed the agreement with the NRC staff to extend the comment period to June 30, 2001.

CP&L has reviewed the prioritization analysis and supporting information in draft NUREG/CR-6395. Based on that review, it has been concluded that Event 9 (called Case 1 in the prioritization analysis) accounts for 97% of the estimated offsite dose used in the prioritization assessment. Therefore, the following comments focus on Event 9.

Event 9 is called, "Failure of Non-Leak-Before-Break Reactor Coolant System, Feedwater, or Main Steam Piping Resulting in Pipe Whip or Jet Impingement on Reactor Protection or Instrument & Control Electrical, Hydraulic or Pneumatic Lines or Components and Eventually Resulting in Failure of Mitigation Systems and Core Damage." This event is a combination of pipe break and pipe whip or jet impingement that results in the loss of a safety function such that core damage occurs.

The mean probability of this event is estimated as $7.5E-5$ per reactor-year as presented in the prioritization assessment and draft NUREG/CR-6395. The mean initiating event frequency is estimated as $1.5E-3$ per reactor-year. The mean probability of the pipe break causing a loss of function that leads to core damage is estimated as 5% ($5.0E-2$). This estimate implies that one out of every twenty Reactor Coolant, Main Steam, or Feedwater line breaks inside containment (excluding

large reactor coolant system piping) would result in core damage. This estimate is considered too high, based on substantial diversity in protection and control functions and the capability for operator action during Small Break Loss of Coolant Accident and feedline/steamline break events.

The specific factors used in the analysis for Event 9 are summarized on Page 111 of draft NUREG/CR-6395. Two of the factors, TYPEFRAC and RUPTPROB, are most dependent on plant specific configuration.

TYPEFRAC is estimated in NUREG/CR-6395 as 10% (or 1.0E-1). It is defined as the fraction of Reactor Coolant System, Main Steam, or Feedwater (RCS, MS, or FW) piping that can impact containment instrumentation and control cables from pipe whip or jet impingement. Further evaluation of this parameter would be needed to accurately estimate this factor for H. B. Robinson Steam Electric Plant (HBRSEP), Unit No. 2. Specifically, the length of piping that simultaneously poses a hazard to redundant and diverse features would need to be determined.

RUPTPROB is estimated in NUREG/CR-6395 as 50% (or 5.0E-1). It is defined as the probability of pipe whip or jet impingement resulting in the failure of instrumentation and control cables. This failure must result in a total loss of accident mitigation capability in a manner that would lead to core damage. Accurate estimation of this parameter would require substantial evaluation of diverse automatic protection capability and operator actions.

The combination of these two factors should result in an approximation of the probability of an accident mitigating system failure from a pipe rupture of the RCS, MS, or FW inside containment. As stated previously, a one in twenty chance for core damage after any RCS, MS, or FW line break inside containment is considered to be a substantial overestimation for HBRSEP, Unit No. 2.

In an internal memorandum dated May 1, 2001, the NRC issued the proposed Task Action Plan for Generic Issue 156.6.1, "Pipe Break Effects on Systems and Components Inside Containment." The comments provided above are consistent with the objectives of Task 3.2 of the Task Action Plan.

If you have any questions regarding this matter, please contact Mr. H. K. Chernoff.

Sincerely,



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