

ENCLOSURE

RESPONSE TO RAI QUESTION SEVEN -  
LTOP PROTECTION SETPOINTS  
OCONEE NUCLEAR STATION, UNITS 1, 2 AND 3

7. Question:

Administrative control of reactor coolant system pressures are necessary for Babcock and Wilcox plants to assure that the operator has at least ten minutes available to mitigate the most limiting LTOP event assuming the only one PORV fails. These controlled limits should be specified in plant TS to assure that the plant will be operated within analyzed conditions. Provide revised TS that specify these limits.

Response:

On January 11, 1999, Messrs. LM Olshan (NRC), C Liang (NRC) and RC Douglas (Duke) agreed on the TS location and content needed to address the above question.

Per the agreement, Duke commits to modify the Technical Specification Bases for LTOP to include the controlling limits required to provide  $\geq 10$  minutes for operator action to mitigate the most limiting LTOP event. These controlling limits are the:

1. First three administrative limits previously provided in Duke's December 17, 1998 response to RAI question 4;
2. Methodolgy for deactivating High Pressure Injection (HPI) and the Core Flood Tanks (CFT); And,
3. RCS vent path area capable of mitigating the most limiting event.

The TS Bases will be modified to incorporate the above items as a part of the TS amendment implementation.

A sample of the proposed LCO section of Improved TS Bases B 3.4.12 (LTOP System) with the above limits is provided on the following pages. (The changes are indicated by a bar in the right margin). In the event the amendment will be first implemented in Current Technical Specification (CTS) format, these controlling limits will also be included in the CTS Bases for LTOP.

ENCLOSURE

RESPONSE TO RAI QUESTION SEVEN

LTOP System  
B 3.4.12

BASES

---

LCO

The LCO requires an LTOP System OPERABLE with a limited coolant input capability and a pressure relief capability. The LCO requires HPI to be deactivated and the CFTs to be isolated. For pressure relief, it requires the pressurizer coolant at or below a maximum level and the PORV OPERABLE with a lift setting  $\leq$  the LTOP limit.

The PORV is OPERABLE when its block valve is open, its lift setpoint is set at  $\leq$  460 psig and testing has proven its ability to open at that setpoint, and power is available to the PORV control circuits.

An RCS vent path capable of mitigating the most limiting LTOP event has a minimum equivalent diameter of 1-3/32 in, which is equal to the inner throat diameter of the PORV.

Implementation of the following administrative controls assure that  $\geq$  10 minutes are available for operator action to mitigate an LTOP event:

1. RCS pressure:
  - < 330 psig when RCS temperature  $\leq$  220 °F
  - < 430 psig when RCS temperature > 220 °F and  $\leq$  325 °F
2. Pressurizer level is maintained within the following limits:
  - a. RCS pressure is > 100 psig:
    - $\leq$  220 inches when RCS temperature  $\leq$  325 °F

(continued)

---

ENCLOSURE

RESPONSE TO RAI QUESTION SEVEN

LTOP System  
B 3.4.12

BASES

LCO

(continued)

- b. RCS pressure is  $\leq 100$  psig:
- $\leq 310$  inches when one or more HPI pumps are running, and when RCS temperature  $\geq 150$  °F and  $\leq 220$  °F
  - $\leq 380$  inches while filling or draining the RCS when RCS temperature  $\leq 160$  °F and no HPI pumps are running
3. Makeup flow is restricted to  $\leq 90.1$  gpm for all three units by a travel stop on HP-120 (makeup control valve).
4. Core Flood Tank(s) are isolated as required by the LCO by closing the appropriate isolation valve(s) (either CF-1 and/or CF-2), tagging open the valve breaker(s), and tagging the valve(s) in the closed position.
5. The HPI safety injection flowpaths must be deactivated.
- a. Deactivation of Train A of HPI is accomplished by either:
- 1) Closing and deactivating valve HP-26 by tagging open the valve breaker and tagging the valve handwheel in the closed position, closing valve HP-410 and tagging the valve switch in the closed position.
  - 2) Deactivating all HPI pumps aligned at A HPI train and tagging the pump breakers open.
- b. Deactivation of Train B of HPI is accomplished by either:
- 1) Closing and deactivating valve HP-27 by tagging open the valve breaker and tagging the valve handwheel in the closed position, closing valve HP-409 and tagging the valve switch in the closed position.
  - 2) Deactivating all HPI pumps aligned to B HPI train and tagging the pump breakers open.