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File No. G9.5, G9.8.6.2

Mr. Harold R. Denton, Director
Office of Nuclear Reactor Regulation
U. S. Nuclear Regulatory Commission
Washington, D.C. 20555

Dear Mr. Denton:

River Bend Station - Unit 1
Docket No. 50-458

Enclosed is additional information to address Safety Evaluation Report (SER) Confirmatory Item #12 (Section 6.2.1.7, Page 6-11). The enclosed results of computer runs used to model the containment pressure following a LOCA steam bypass event justify the use of a 200°F/hr reactor vessel cooldown rate. Since this event does not thermally cycle the reactor vessel nor exceed the containment design pressure, the Emergency Operating Procedures (EOPs) indicate that a 200°F/hr cooldown rate (or operator initiated ADS actuation of 7 SRVs) will be initiated after a pressure of 5 psid (containment to annulus) is reached following a LOCA signal.

The enclosed River Bend Station (RBS) Final Safety Analysis Report (FSAR) page has been revised to include the above referenced analysis and will be incorporated in a future amendment.

Sincerely,

J. E. Booker

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Manager-Engineering,
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JEB/WJR/JWL/je

Enclosure

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capacity by maximizing the containment pressurization from the assumed leakage. The results shown on Fig. 6.2-27 are also based on the following assumptions:

1. The passive heat sinks, summarized in Table 6.2-6, absorb energy from the containment and drywell atmospheres. The UCHIDA[20] convective heat transfer correlation is used.

2. Offsite power is lost and the most limiting single active failure of one onsite standby diesel generator occurs, resulting in the minimum availability of the containment heat removal systems.

3. The one available containment unit cooler is supplied with 95°F standby service water and is operating 10 min after the pipe break.

4. The one available RHR heat exchanger loop is initiated in the suppression pool cooling mode at 30 min after the LOCA.

5. In the most limiting case of a small steam line break, the plant operator identifies the need for a controlled reactor cooldown and initiates the cooldown 10 min after the pipe break at the rate of 200°F/hr.

Two of the three containment unit coolers are engineered safety features and operate automatically 10 min after a high drywell pressure signal (Section 6.2.2.2). However, an analysis was performed which assumed one unit cooler actuated 10 min after the pipe break.

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The drywell and containment pressure transients for a small steam line break with an area of 0.1 sq ft and bypass leakage ($A/\sqrt{K}$) of 1.15 sq ft are shown on Fig. 6.2-27a. The containment design pressure is approached, but not reached.

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To ensure that the drywell conforms to the design bases, a preoperational leak test is conducted at the drywell design internal pressure differential of 25 psid, attained with the drywell internal pressure at 25 psig. The acceptance criterion for this test is that the measured leakage must be less than 10 percent of the leakage corresponding to an equivalent bypass leakage ($A/\sqrt{K}$) of 1.0 sq ft at the design pressure.

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Relative to the time for initiating accelerated reactor cooldown to mitigate steam bypass, additional analyses show that the operators will have at least 20 minutes to perform this function after the containment to annulus differential pressure exceeds 5 psid. With a design steam bypass condition following a LOCA, containment to annulus differential pressure increases to 5 psid in less than 5 minutes. Therefore, additional analyses were conducted assuming either 200°F/hr controlled reactor cooldown or operator initiated ADS actuation (opening 7 SRVs) at 25 minutes based on allowing 5 minutes to reach 5 psid plus 20 minutes for operator response. The analytical results indicate that, for a 0.1 sq. ft. steam break with bypass (A/ k) equal to 1.15 sq. ft. and 200°F/hr cooldown initiated at 25 minutes, the containment to annulus differential pressure reaches 5 psid at 200 seconds and, subsequently, peaks at 14.8 psid at 2856 seconds. Initiating ADS at 25 minutes rather than a controlled 200°F/hr cooldown results in a containment to annulus peak differential pressure of only 11.8 psid at 1682 seconds.