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50-364

Alabama Power
the southern electric system

October 11, 1982

Docket No. 50-364

Director, Nuclear Regulatory Regulation
U. S. Nuclear Regulatory Commission
Washington, D. C. 20555

Attention: Mr. S. A. Varga

Joseph M. Farley Nuclear Plant - Unit 2
Pressure Isolation Valve Technical Specification Change Request

Gentlemen:

In letter dated August 10, 1982, Alabama Power Company requested a permanent change to Unit 2 Technical Specification 3/4.4.7.2, which addresses the performance of leak tests on all reactor coolant system pressure isolation valves. That change request would have permanently incorporated the acceptance criteria for Unit 1 Technical Specification 3/4.4.7.3 of 1 to 5 gpm (with certain limitations) into Unit 2 Technical Specification 3/4.4.7.2. Subsequent discussions with the NRC Staff indicate that additional information will be necessary to complete the regulatory review before approval of this permanent change request could be granted. The NRC Staff stated that this regulatory review may consider the results of an ongoing study, undertaken in recognition that the 1-gpm limit of the present technical specification may be overly conservative, in order to determine a more reasonable leakage rate. To preclude the potential delay in the return to power attributed to the stringent 1-gpm acceptance criteria, Alabama Power Company hereby requests a one-time change of Unit 2 Technical Specification 3/4.4.7.2 to modify the acceptance criteria to 3 gpm for reactor coolant isolation valves with a nominal diameter of two inches and 1 to 5 gpm (with certain limitiatons) for reactor coolant isolation valves with a nominal diameter of greater than two inches.

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It is imperative that the leakage acceptance criteria be established prior to shutdown in order that this critical path not be impacted due to the regulatory uncertainty. The initial valve testing is performed on the critical path of the unit outage in order to

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identify valves requiring repair during the outage. After valve repair and re-installation, the valves are then retested for leakage as a part of the critical path of the return to power. If the results of the leak retesting do not satisfy the stringent 1-gpm acceptance criteria, the critical path of the outage may be further impacted due to valve rework, re-installation, retest and the draindown of the reactor coolant system required to repair several of these valves. Therefore, as stated in letter of August 10, 1982, Alabama Power Company requests the proposed technical specification change prior to the Unit 2 first refueling outage scheduled for October 22, 1982.

The difference in acceptance criteria from 1 gpm to 3 or 5 gpm requires a variance in leakage configuration that is negligible, inconsequential, and beyond that which can be affected by reasonable maintenance activities. As an example, the disk of a six-inch check valve would only be elevated from its seat by approximately 0.00004 in. to produce a leak rate of 1 gpm and by approximately 0.00020 in. to produce a leak rate of 5 gpm. To correct small irregularities that produce leak rates between 1 gpm and 3 or 5 gpm, several maintenance and retesting iterations may be necessary. This activity subjects plant personnel to greater radiation exposures, potentially requires draining the reactor coolant system to retest the reworked valve and extends the time before the unit is returned to power. To illustrate this point, in one instance valve maintenance activities required to provide a leakage rate consistent with the stringent 1 gpm acceptance criteria added three days to the critical path of the outage. The valve was repaired on two consecutive occasions in order to resolve a leak that, initially, only slightly exceeded the 1-gpm criteria. One repair actually resulted in a small increase in leakage due to the minute variations of configurations involved. This multiple repair, draindown, and repressurization process to resolve a leak that significantly delayed the return to power was not justified, in Alabama Power Company's judgement, and in addition resulted in personnel exposure exceeding 25 man-rem.

Consequently, Alabama Power Company requests a one-time change of Technical Specification 3/4.4.7.2 to modify the leak test acceptance criteria to 1 to 5 gpm (with certain limitations) for valves with a nominal diameter greater than two inches and to 3 gpm for valves with a nominal diameter of two inches. This one-time change is necessary to preclude the potential for the delay in the return to power from the Unit 2 first refueling outage.

The Unit 1 leak test acceptance criteria of 1 to 5 gpm (under certain limitations), have been proven to be adequate in establishing the pressure retaining capability of the valves. As shown by testing experience at Farley Nuclear Plant - Unit 1, valves that did not satisfy either the acceptance criteria of 1 gpm or 1 to 5 gpm were found to contain the same minor valve seating irregularities causing the valves not to seat completely under low test pressures, and no evidence of impending valve failure has been found using either acceptance criteria.

For valves with a nominal diameter of two inches, the acceptance criteria of 3 gpm is requested based on review of past leak rate data for two-inch valves. This data showed that such valves did not produce leak rates greater than 3 gpm. The 3-gpm acceptance criteria was selected for smaller valves since repair is easier, actual leakage rates have been small, and the ability to meet and maintain lower leakage rates is facilitated. Additionally, acceptance criteria of 3 gpm is below the 5 gpm criteria that has been proven to establish the pressure retaining capability of the valves.

In conclusion, this proposed one-time change to Unit 2 Technical Specification 3/4.4.7.2 (Attachment 1) provides for a high assurance of reactor coolant system integrity through surveillance and testing requirements without unwarranted compromise to the health and safety of the public and needless jeopardizing of the timely return of the unit to power operation. The Plant Operations Review Committee of Alabama Power Company has reviewed this proposed change to the technical specification and has determined that the change does not involve an unreviewed safety question as shown in the attached safety evaluation (Attachment 2). The Nuclear Operations Review Board is scheduled to review these change at the next meeting.

Your response to this proposed one-time technical specification change is requested by October 20, 1982 in order to provide for its incorporation into the plant procedures prior to the unit outage. To facilitate the NRC Staff's evaluation of the reasonable leakage rate for reactor coolant system isolation valves, Alabama Power Company will submit the initial outage test data on valve leakage at Unit 2 one week following the start of the outage (approximately October 30, 1982).

This proposed amendment is designated as Class III for Unit 2 in accordance with 10 CFR 170.22 requirements. Enclosed is a check for $4,000.00 to cover the total amount of fees required.

In accordance with 10 CFR 50.30(c)(1)(i), three signed originals and forty (40) additional copies of the proposed change are enclosed.

Yours truly,

F. L. Clayton, Jr.

FLCJr/MAL:lsh-D9
Attachments
cc: Mr. R. A. Thomas
Mr. G. F. Trowbridge
Mr. J. P. O'Reilly
Mr. E. A. Reeves
Mr. W. H. Bradford

SWORN TO AND SUBSCRIBED BEFORE ME
THIS 11th DAY OF October, 1982

Linda Humber
Notary Public

My Commission Expires:

11-29-82

ATTACHMENT 1

Proposed Unit 2 Technical Specification 3/4.4.7.2

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Revised Unit 2 Technical Specification 3/4.4.7.2

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