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February 24, 1993

2CAN029306

U. S. Nuclear Regulatory Commission
Document Control Desk
Mail Station P1-137
Washington, DC 20555

Subject: Arkansas Nuclear One - Unit 2
Docket No. 50-368
License No. NPF-6
Technical Specification Change Request
HPSI Single Pump Flow Requirements

Gentlemen:

Attached for your review and approval is a proposed change to Technical Specification (TS) 4.5.2h, single pump flow requirements for the ANO-2 High Pressure Safety Injection (HPSI) system. The proposed change modifies the flow test acceptance criteria for a single pump from a minimum of 196 gpm for each injection leg to a total flow of 570 gpm, excluding the highest injection leg's flow rate. The revised flow rate is the value used in the current accident analysis and is consistent with the Technical Specification Bases.

In accordance with 10CFR50.91(a)(1), Entergy Operations has evaluated the proposed change with the criteria in 10CFR50.92(c) and has determined that this change involves no significant hazards consideration. The bases for this determination are attached.

We request that the effective date for this change be upon NRC issuance of amendment.

Very truly yours,

JWY/mmg
Attachments

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A001
1/1

cc: Mr. James L. Milhoan
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STATE OF ARKANSAS)
) SS
COUNTY OF POPE)

Affidavit

I, J. W. Yelverton, being duly sworn, subscribe to and say that I am Vice President, Operations ANO for Entergy Operations, that I have full authority to execute this affidavit; that I have read the document numbered 2CAN029306 and know the contents thereof; and that to the best of my knowledge, information and belief the statements in it are true.

J. W. Yelverton

J. W. Yelverton

SUBSCRIBED AND SWORN TO before me, a Notary Public in and for the County and State above named, this 24th day of February, 1998.

M. Jane Davidson

Notary Public

My Commission Expires:

4-24-2002

M. JANE DAVIDSON
Notary Public
POPE COUNTY, ARKANSAS
Commission Expires 4-24-2002

ATTACHMENT

PROPOSED TECHNICAL SPECIFICATION

AND

RESPECTIVE SAFETY ANALYSES

IN THE MATTER OF AMENDING

LICENSE NO. NPF-6

ENTERGY OPERATIONS, INC.

ARKANSAS NUCLEAR ONE, UNIT TWO

DOCKET NO. 50-368

DESCRIPTION OF PROPOSED CHANGE

The proposed change to ANO-2 Technical Specification 4.5.2h, High Pressure Safety Injection (HPSI) system surveillance requirements for verifying adequate flow following system modification, would change the flow test acceptance criteria to be consistent with existing accident analyses input conditions. Additionally, consistent with other issued CE Plant Technical Specifications (e.g. Waterford 3), this proposed change modifies the flow test acceptance criteria for a single pump from a minimum value for each injection leg to a total flow value, which excludes the highest injection leg's flow rate. Also, the Bases has been changed to indicate that the acceptance criteria specified in the surveillance requirements for HPSI single pump flow, HPSI differential pressure and LPSI differential pressure does not account for instrument error.

BACKGROUND

ANO-2 Technical Specification 4.5.2h requires that a flow balance test be conducted on the HPSI injection lines whenever the system is modified such that the system flow characteristics have been altered. This test is to assure that adequate flow can still be delivered to the reactor vessel consistent with the accident analyses. The current flow acceptance value stated in this specification is 196 gpm for each injection leg. This value was selected during the initial development of the Technical Specifications and was intended to be consistent with the original accident analyses. These analyses were revised in 1987 to assume a lower HPSI flow in support of a Technical Specification change request (Amendment 86) which modified the HPSI pump differential pressure acceptance criteria. It was noted at that time that the HPSI injection flow could be reduced based on the new analyses, but no change was requested. Figure 1 provides a comparison of the pump performance data used for the Technical Specification before and after Amendment 86. Table 1 provides the data used to produce the reduced flow curve. In 1991, the ANO Design Configuration Documentation (DCD) Project identified the need to modify the acceptance criteria to be consistent with the revised accident analyses.

DISCUSSION

An engineering evaluation has been performed to verify the required HPSI flow necessary to support current accident analyses. The required depressurized reactor coolant system (RCS) total HPSI flow is 760 gpm. The worst case response for a Large Break Loss of Coolant Accident would be for the injection leg with the highest flow to deliver to the broken cold leg. This would require that 75% of the total flow (.75*760) or 570 gpm be delivered by the remaining three (3) injection legs. Therefore, the system acceptance criterion should be 570 gpm delivered by the sum of flows in the three (3) least flow lines rather than the current value of 196 gpm per line.

The proposed change will still assure that the total flow meets or exceeds that needed for the accident analyses. By specifying a single value consistent with the limiting safety analysis, the change will remove the requirement for unnecessarily extending system testing to exactly balance the line flows.

DETERMINATION OF NO SIGNIFICANT HAZARDS

An evaluation of the proposed change has been performed in accordance with 10CFR50.91(a)(1) regarding no significant hazards consideration using the standards in 10CFR50.92(c). A discussion of those standards as they relate to this amendment request follows:

Criterion 1 - Does Not Involve a Significant Increase in the Probability or Consequences of an Accident Previously Evaluated.

The proposed change to the surveillance requirements for a post modification HPSI system flow test maintains the requirement to verify the current accident analyses values (as approved in Amendment 86) for HPSI flow and does not change the current level of protection provided to the reactor core by the HPSI system. Hardware changes have not been made to the system which could increase the probability or consequence of any accident within the current design basis. Therefore, the proposed change does not involve a significant increase in the probability or consequences of an accident previously evaluated.

Criterion 2 - Does Not Create the Possibility of a New or Different Kind of Accident from any Previously Evaluated.

The HPSI system will continue to provide adequate flow into the RCS for the design basis events. No system hardware changes have been made which could have an adverse impact on this capability. Therefore the acceptance criteria changes will not create the possibility of a new or different kind of accident from any previously evaluated.

Criterion 3 - Does Not involve a Significant Reduction in the Margin of Safety.

The proposed change does not involve any hardware change and thus does not change the capability of the HPSI system to deliver sufficient flow to accomplish its design basis function. The basis for the Surveillance Requirement is to ensure that the system provides an acceptable level of total ECCS flow equal to or greater than that assumed in the accident analyses. The revised specification will still require demonstration of adequate total HPSI flow following system modification consistent with the current accident analyses. Since the system will continue to provide the same flow, the change does not involve a significant reduction in the margin of safety.

Based on the above evaluation it is concluded that the proposed Technical Specification change does not constitute a significant hazards consideration.

TABLE 1

RCS Pressure vs. HPSI Delivered Flow

RCS Pressure (psia)	Flow (gpm)
1321	0
1308	50
1284	100
1248	150
1201	200
1142	250
1071	300
990	350
899	400
800	450
692	500
577	550
456	600
327	650
191	700
46	750
31	755
22	758
14.7	760

FIGURE 1 : ANO-2 HPSI DELIVERY CURVE

BEFORE AMENDMENT 86 VS. AFTER AMENDMENT 86