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May 19, 1995

2CAN059503

U. S. Nuclear Regulatory Commission

Document Control Desk

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Washington, DC 20555

Subject: Arkansas Nuclear One - Unit 2
Docket No. 50-368
License No. NPF-6
Technical Specification Change Request Regarding Allowable Outage Time
Extension For Safety Injection Tanks

Gentlemen:

Attached for your review and approval is a proposed Arkansas Nuclear One-Unit 2 (ANO-2) Technical Specification amendment revising specification 3.5.1 to allow up to 24 hours to restore Safety Injection Tank (SIT) operability if the SIT is inoperable due to level and/or pressure outside prescribed limits. The proposed change would also allow up to 72 hours to restore SIT operability if the SIT is inoperable due to instrument failure. This amendment is a collaborative effort of participating Combustion Engineering Owners Group members based on a review of plant operations, deterministic and design basis considerations, and plant risk, as well as previous generic studies and conclusions drawn by NRC staff and contained within NUREG-1366, "Improvements to Technical Specifications Surveillance Requirements," and NUREG-1432, Revision 0, "Standard Technical Specifications for Combustion Engineering Plants."

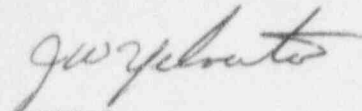
The proposed change has been evaluated in accordance with 10CFR50.91(a)(1) using criteria in 10CFR50.92(c) and it has been determined that this change involves no significant hazards considerations. The bases for these determinations are included in the attached submittal.

Entergy Operations requests that the effective date for this change be within 30 days of NRC issuance of the amendment to allow for distribution and procedural revisions necessary to implement this change. Although this request is neither exigent nor emergency, your prompt review is requested.

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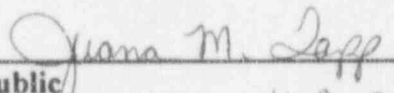
Very truly yours,


JWY/lgm

Attachments

To the best of my knowledge and belief, the statements contained in this submittal are true.

SUBSCRIBED AND SWORN TO before me, a Notary Public in and for Johnson
County and the State of Arkansas, this 19 day of May, 1995.



Notary Public
My Commission Expires 11-8-2000



cc: Mr. Leonard J. Callan
Regional Administrator
U. S. Nuclear Regulatory Commission
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ATTACHMENT

TO

2CAN059503

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 CHANGES

- The allowed outage time (AOT) for a safety injection tank (SIT) determined to be inoperable due to tank level or pressure or both outside prescribed limits has been increased from one hour to 24 hours. The same AOT is applied to a SIT that is inoperable due to its isolation motor operated valve (MOV) in other than the full open position.
- The AOT for a SIT whose level or pressure or both cannot be verified due to malfunctioning instrumentation has been extended to 72 hours.
- The bases have been changed to reflect the proposed changes.

BACKGROUND

The SITs are passive pressure vessels partially filled with borated water and pressurized with a cover gas (nitrogen) to facilitate injection into the reactor vessel during the blowdown phase of a large break loss of coolant accident (LOCA). This action provides inventory to assist in accomplishing the refill stage following blowdown. The SITs also provide reactor coolant system (RCS) makeup for a small break LOCA.

Each SIT is piped into an associated RCS cold leg via an emergency core cooling system (ECCS) line also utilized by high pressure safety injection (HPSI) and low pressure safety injection (LPSI). Each SIT is isolated from the RCS, during full pressure operations, by two series check valves. Each SIT also has a normally deenergized open motor operated isolation valve utilized to isolate the SIT from the RCS during normal cooldown and depressurization evolutions. The SITs are described in the ANO-2 Safety Analysis Report, Chapter 6.3.2.2.2.

The SIT gas pressure and volume, water volume, and outlet pipe size are designed to allow three of the four SITs to inject the inventory necessary to keep clad melt and zirc-water reaction within design assumptions following a design basis LOCA. The design assumes the loss of inventory from one SIT via the LOCA break.

DISCUSSION OF CHANGE

Industry operating experience has demonstrated that many of the causes of SIT inoperability have been diagnosed and corrected within a relatively short period of time, but often longer than the existing one hour AOT. In several cases, the diagnosis of an inoperable SIT has resulted in plant shutdowns. A review of this operating experience, when tempered with current probabilistic safety analysis (PSA) applications, led to questioning the risk differential between application of the current technical specification (TS) action statements, with their attendant transient risks, and an extended AOT with one SIT inoperable.

If a single SIT were to be diagnosed as inoperable due to tank level or pressure or both being outside the limits established in Arkansas Nuclear One-Unit 2 (ANO-2) TS 3.5.1 or due to the associated isolation valve in other than the fully open position, the current action

statement would allow one hour to restore the tank to within limits or fully open the valve. If the action is not completed within one hour, the plant would be required to be placed in hot standby within the following six hours and to less than 700 psia within the following 12 hours. The proposed change to TS would allow 24 hours to restore operability prior to requiring a plant shutdown.

The Combustion Engineering Owners Group (CEOG) "Joint Applications Report for Safety Injection Tank AOT/STI Extension," CE NPSD-994, provides risk calculations associated with an AOT extension from one hour to 24 hours. The results of the analyses indicate that the single and yearly AOT risk contributions resulting from this AOT extension are negligible, and the average core damage frequency (CDF) is virtually unchanged.

A similar risk assessment was performed to evaluate "transition risk." Transition risk represents the risk associated with reducing power and going to hot or cold shutdown following equipment failure. The results of this analysis indicate that the core damage probability (CDP) attributable to transition risk is larger than the CDP associated with continued operation of the plant at power with one SIT inoperable for the proposed AOT. It is the conclusion of this report that SIT maintenance at power for the full proposed AOT is risk beneficial for ANO and all CE pressurized water reactor facilities.

The CEOG report also performed an assessment of the proposed change on large early release scenarios. The assessment of the three classes of events considered for these scenarios concluded that increased unavailability of one SIT will result in a negligible impact on the large early release probability for ANO.

The current ANO-2 TS make no differentiation between a SIT that is inoperable due to actual inventory or gas pressure deficiencies and a SIT whose inventory or gas pressure cannot be verified due to instrumentation malfunction. The proposed change will allow continued operation for up to 72 hours for a single SIT deemed inoperable due solely to malfunctioning level instrumentation or pressure instrumentation. Because this instrumentation provides no safety actuation, it is reasonable to extend the allowable outage time since the SIT is available to perform its safety function during this time even though technically inoperable. This change would result in a negligible change in risk. This proposed change is in accordance with the provisions of NUREG-1366, "Improvements to Technical Specifications Surveillance Requirements" and Generic Letter 93-05 "Line Item Improvements to Reduce Surveillance Requirements for Testing During Power Operation."

The bases section was revised to include the proposed changes.

The surveillance test interval (STI) portion of CE NPSD-994 deals with boric acid concentration sampling surveillance requirements. The change in the STI discussed in the report has already been incorporated in the ANO-2 TS by a previous amendment.

DETERMINATION OF NO SIGNIFICANT HAZARDS CONSIDERATION

An evaluation of the proposed change has been performed in accordance with 10CFR50.91(a)(1) regarding no significant hazards considerations using the standards in 10CFR50.92(c). A discussion of these 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 Safety Injection Tanks (SITs) are passive components in the Emergency Core Cooling System. The SITs are not accident initiators in any accident previously evaluated. Therefore, this change does not involve an increase in the probability of an accident previously evaluated.

SITs were designed to mitigate the consequences of Loss of Coolant Accidents (LOCA). These proposed changes do not affect any of the assumptions used in deterministic LOCA analysis. Therefore, the consequences of accidents previously evaluated do not change.

In order to fully evaluate the effect of the SIT Allowable Outage Time (AOT) extension, probabilistic safety analysis (PSA) methods were utilized. The results of these analyses show no significant increase in the core damage frequency. As a result, there would be no significant increase in the consequences of an accident previously evaluated. These analyses are detailed in CE NPSD-994, Combustion Engineering Owners Group "Joint Applications Report for Safety Injection Tank AOT/STI Extension."

The change pertaining to SIT inoperability based solely on instrumentation malfunction does not involve a significant increase in the consequences of an accident as evaluated and endorsed by the NRC in NUREG-1366, "Improvements to Technical Specifications Surveillance Requirements."

Therefore, this change does not involve an increase in the probability or a significant increase in the consequences of any accident previously evaluated.

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

This proposed change does not change the design, configuration, or method of operation of the plant. Therefore, this change does 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 changes do not affect the limiting conditions for operation or their bases that are used in the deterministic analyses to establish the margin of safety. PSA evaluations were

used to evaluate these changes. These evaluations demonstrated that the changes are either risk neutral or risk beneficial. These evaluations are detailed in CE NPSD-994.

Therefore, this change does not involve a significant reduction in the margin of safety.

Therefore, based upon the reasoning presented above and the previous discussion of the amendment request, Entergy Operations has determined that the requested change does not involve a significant hazards consideration.

PROPOSED TECHNICAL SPECIFICATION CHANGES