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May 19, 1995

1CAN059507

U. S. Nuclear Regulatory Commission
Document Control Desk
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Washington, DC 20555

Subject: Arkansas Nuclear One - Unit 1
Docket No. 50-313
License No. DPR-51
Supplement To Technical Specification Change Request Concerning Service Water Flow Rate To The Reactor Building Emergency Cooling System

Gentlemen:

By letter dated May 15, 1995 (1CAN059505) Entergy Operations proposed a change to the Arkansas Nuclear One - Unit 1 (ANO-1) Technical Specifications (TSs) for verifying adequate service water flow to each train of reactor building emergency cooling. The proposed change replaced the specified minimum flow rate of 1200 gpm with a requirement to verify the minimum flow rate based on the ability of the system to remove post-accident reactor building heat loads under the existing system conditions.

Subsequent discussions with the NRC staff on May 18, 1995 have indicated that a specific flow rate value needs to be included in the surveillance requirement to be consistent with the standard technical specifications. Based upon these discussions, the proposed change has been revised to replace the specified minimum flow rate of 1200 gpm with a minimum flow rate of 800 gpm. The conclusions of the no significant hazards consideration determination from the May 15, 1995 submittal remain valid for this proposed TS change.

Entergy Operations requests that the effective date for this change be immediately upon NRC issuance of the amendment. We request that this proposed change be considered under exigent circumstances as described in 10CFR50.91(a)(6) in that failure to act quickly could result in the shutdown of ANO-1.

A001

Very truly yours,

J W Yelverton

JWY/gra
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.**

Juana M. Tapp
Notary Public
My Commission Expires 11-8-2000

OFFICIAL SEAL
JUANA M. TAPP
NOTARY PUBLIC - ARKANSAS
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My Commission Expires: 11 - 8 - 2000

cc: Mr. Leonard J. Callan
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ATTACHMENT

TO

1CAN059507

PROPOSED TECHNICAL SPECIFICATION

AND

RESPECTIVE SAFETY ANALYSES

IN THE MATTER OF AMENDING

LICENSE NO. DPR-51

ENTERGY OPERATIONS, INC.

ARKANSAS NUCLEAR ONE, UNIT ONE

DOCKET NO. 50-313

REVISED DESCRIPTION OF PROPOSED CHANGES

Arkansas Nuclear One - Unit 1 (ANO-1) Technical Specification (TS) Surveillance Requirement (SR) 4.5.2.1.2(a)(1) has been revised to replace the specified minimum flow rate of 1200 gpm with a minimum flow rate of 800 gpm. Also, information has been added to the TS Bases consistent with the changes to SR 4.5.2.1.2(a)(1).

REVISED DISCUSSION OF CHANGE

On May 7, 1995 one of the reactor building emergency cooling fans associated with the green train of the reactor building emergency cooling system tripped. After an unsuccessful attempt to restart the fan, a reactor building entry was made which determined that the fan motor was inoperable and would require extensive repairs or replacement.

With the cooling fan inoperable, the associated cooling unit cannot be credited for cooling purposes and must be considered inoperable. With one cooling unit providing no heat removal capability, the parallel cooling unit has insufficient service water flow to consider the train to be operable. In an effort to maximize the heat removal capability of the train and restore it to an operable condition, the cooling coils associated with the inoperable fan were blind flanged so that the total green train reactor building cooler service water flow passed through the coils of the operable cooling unit. The resultant flow rate is less than the total green train reactor building cooler service water flow because with one cooler blind flanged the flow resistance in that portion of the system is greater. Testing was conducted which verified that flow in the modified configuration was in excess of 1750 gpm through the operable cooling unit. However, when corrected to post-accident service water conditions, less than 1200 gpm would be supplied to the cooler. As discussed in the background section of the May 15, 1995 letter, it is unclear whether the 1200 gpm acceptance criteria in SR 4.5.2.1.2(a)(1) was intended to be verified under post-accident service water conditions. However, it seems clear from the bases of Specification 3.3 that an engineering evaluation could be used to demonstrate that adequate heat removal capability exists with less than the full complement of cooling units.

An engineering evaluation of the temporary configuration of the reactor building coolers was performed. The evaluation concluded that even with less than 1200 gpm, the reactor building cooling train was still capable of removing the required amount of post-accident heat load. Therefore, the minimum flow rate of 1200 gpm specified in the SR is inconsistent with the definition of operability in TS in that the system is still capable of meeting its safety function even though it may not meet the acceptance criteria in the SR. Also, there is no indication in the history of the SR that 1200 gpm was intended to preserve additional margin in the safety analysis.

The engineering analysis also highlighted that the minimum flow rate necessary to ensure adequate post-accident heat removal capability is affected by the current conditions in the reactor building coolers and in the service water system, e.g., service water system supply and return header pressure, fouling on either the service water side or the airflow side of the

cooling coils, anticipated service water temperature, and the number of cooling coils and fans that are in service. Each of these conditions has the potential to change during normal operation of the plant.

Consistent with NUREG 1430, "Standard Technical Specifications for B&W Plants", SR 4.5.2.1.2(a)(1) has been revised to include a minimum service water flow rate of 800 gpm which corresponds to the conservative system configuration of two fans and their associated cooling coils for each train of reactor building emergency cooling. Attached is the engineering calculation which supports this flow rate. Also, to preserve the capability to justify other system configurations consistent with the bases of Specification 3.3.4(a), the bases have been revised to indicate that the minimum flow rate which corresponds to the post-accident heat removal capability for other system configurations may be justified consistent with the bases of Specification 3.3.4(a). These requirements ensure that the heat removal capacity of the reactor building coolers is sufficient to satisfy the safety analysis assumptions.