



Entergy

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July 26, 2001

OCAN070104

U. S. Nuclear Regulatory Commission  
Attention: Document Control Desk  
Washington, D. C. 20555

Subject: Arkansas Nuclear One – Unit 1 and Unit 2  
Docket No. DPR-51 and NPF-6  
Supplement to Amendment Request Concerning Revision to Unit 1  
Technical Specification 3.4.1.3 and Unit 2 TS 3.7.1.3; Use of QCST

Gentlemen:

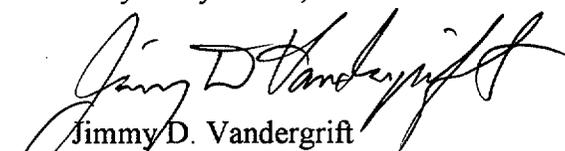
By letters dated January 27, 2000 (OCAN010004), March 1, 2001 (OCAN030101), and June 12, 2001 (OCAN060101), Entergy Operations, Inc (Entergy) proposed a revision to the Arkansas Nuclear One, Unit 1 (ANO-1) Technical Specification (TS) 3.4.1.3 and Unit 2 (ANO-2) TS 3.7.1.3 related to the qualified condensate storage tank (QCST). Entergy proposed the change based on tornado protected portion of the QCST. However, as a result of subsequent conversations with the NRC Staff, Entergy agreed to retain the previous QCST volume requirements in the existing specifications.

Entergy, in this submittal is clarifying the TS Bases to be consistent with the proposed TS changes. The revised markups of the proposed changes to the unit specific Bases are included in Attachment 1. The proposed revisions to the Bases do not affect the no significant hazards considerations previously provided to the NRC.

No additional commitments are contained in this letter beyond those provided in OCAN030101 dated March 1, 2001.

I declare under penalty of perjury that the foregoing is true and correct. Executed on July 26, 2001.

Very Truly Yours,

  
Jimmy D. Vandergrift  
Director, Nuclear Safety Assurance

JDV/dm  
Attachment

A001

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**ATTACHMENT 1**

**TO**

**0CAN070104**

**MARKUP OF TECHNICAL SPECIFICATION BASES**

The T41B condensate storage tank is seismically qualified and a portion of the tank is protected from tornado missiles. The protected volume of water in the tank can provide a source of emergency feedwater (EFW) for both units for at least 30 minutes. Thirty minutes is adequate for the operators to manually switch the EFW suction alignment to the service water system (SWS), if required. The SWS provides the assured source of cooling water.

The TS volume requirements for the condensate storage tank are based on the EFW systems of both units being aligned to T41B simultaneously or only Unit 1 being aligned. The minimum TS volume requirements are sufficient to support several hours of cooling flow for both units. During this time, the need for EFW will be determined. Alignment to available water sources will be performed as necessary to ensure adequate heat removal is maintained. The LCO volume requirements are nominal values. In the conversion of the required volumes to indicated level, instrument uncertainty need not be applied.

The minimum amount of water in tank T41B would be adequate for about 4.5 hours of operation. This based on the estimate of the average emergency flow to a steam generator being 390 gpm. This operation time with the volume of water specified would not be reached, since the decay heat removal system could be brought into operations within 4 hours or less.

A portion of tank T41B is protected from tornado missiles. The protected volume is sufficient to provide a thirty minute supply of water. This thirty minute period is sufficient to allow manual operator action, if required, to transfer suction of the emergency feedwater pumps to service water.

## PLANT SYSTEMS

### BASES

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#### 3/4.7.1.2 EMERGENCY FEEDWATER SYSTEM

The OPERABILITY of the emergency feedwater (EFW) system ensures that the Reactor Coolant System can be cooled down to Shutdown Cooling (SDC) entry conditions from normal operating conditions in the event of a total loss of off-site power.

The EFW system is designed to supply sufficient water to the steam generator(s) to remove decay heat with steam generator pressure at the setpoint of the MSSVs. Subsequently, the EFW system supplies sufficient water to cool the unit to SDC entry conditions, and steam is released through the ADVs.

SR 4.7.1.2.b.1 verifies that each EFW pump's developed head at the flow test point is greater than or equal to this required developed head. This test ensures that EFW pump performance has not degraded during the cycle. Flow and differential head are normal tests of pump performance required by Section XI of the ASME Code. Because it is undesirable to introduce cold EFW into the steam generators while they are operating, this testing is performed on recirculation flow. This test confirms one point that is indicative of pump overall performance. Such inservice tests confirm component OPERABILITY, trend performance, and detect incipient failures by indicating abnormal performance. Performance of inservice testing, discussed in the ASME Code, Section XI, satisfies this requirement. The SR for the turbine driven EFW pump is allowed to be deferred for up to 24 hours after exceeding 700 psia in the steam generators. This allowance will ensure the test is completed within a reasonable period of time after establishing sufficient steam pressure to perform the test.

SR 4.7.1.2.c ensures that EFW can be delivered to the appropriate steam generator, in the event of any accident or transient that generates an EFAS signal. This is assured by demonstrating that each automatic valve in the flow path actuates to its correct position on an actual or simulated actuation signal. The 18 month frequency is based on the need to perform the SRs under the conditions that apply during a unit outage and the potential for an unplanned transient if the SRs were performed with the reactor at power.

SR 4.7.1.2.d ensures that the EFW System is properly aligned by verifying the flow path from the condensate storage tank (CST) to each steam generator prior to entering MODE 2 operation, after more than 30 days below MODE 3. OPERABILITY of the EFW flow paths must be verified before sufficient core heat is generated that would require the operation of the EFW System during a subsequent shutdown. The Frequency is reasonable, based on engineering judgment, and other administrative controls to ensure that flow paths remain OPERABLE. To further ensure EFW System alignment, the OPERABILITY of the flow paths is verified following extended outages to determine that no misalignment of valves has occurred. This SR ensures that the flow path from the CST to the steam generators is properly aligned.

#### ~~3/4.7.1.3 CONDENSATE STORAGE TANK~~

~~The OPERABILITY of the condensate storage tank with the minimum water volume ensures that sufficient water is available to maintain the RCS at HOT STANDBY conditions for one hour with steam discharge to atmosphere with concurrent with total loss of off-site power. The contained water volume limit includes an allowance for water not usable because of tank discharge line location or other physical characteristics.~~

## PLANT SYSTEMS

### BASES

#### 3/4.7.1.3 CONDENSATE STORAGE TANK

The design of the ANO-2 condensate storage system includes two non-seismic condensate storage tanks (2T41A and 2T41B). In addition, ANO-2 is capable of being aligned to the seismically qualified condensate storage tank (T41B). Each of these tanks is designed to provide condensate-grade water to the suction of the emergency feedwater system (EFW) pumps. The service water system (SWS) provides the assured source of water for EFW.

The allowance to align to the non-safety, non-seismically-qualified condensate storage tanks (2T41A and 2T41B) has been retained for operational flexibility. The minimum volume for 2T41A/B is consistent with the original technical specification (TS) requirements. In the event of a failure of one of these tanks in conjunction with an emergency feedwater actuation, EFW pump suction will be automatically re-aligned to draw from the SWS. Should the EFW be aligned to the Unit 1 tank (T41B), the automatic suction re-alignment to SWS may be disabled. Therefore, the OPERABILITY requirements for the service water system - emergency feedwater system isolation valves listed in SR 4.7.1.3.2 do not include the automatic re-alignment to SWS capability when EFW is aligned to T41B.

The T41B condensate storage tank is seismically qualified and a portion of the tank is protected from tornado missiles. The protected volume of water in the tank can provide a source of EFW for both units for at least 30-minutes. Thirty minutes is adequate for the operators to manually switch the EFW suction alignment to the SWS, if required.

The TS volume requirements for the condensate storage tank are based on the EFW systems of both units being aligned to T41B simultaneously or only Unit 2 being aligned. The minimum TS volume requirements are sufficient to support several hours of cooling flow for both units. During this time, the need for EFW will be determined. Alignment to available water sources will be performed as necessary to ensure adequate heat removal is maintained. The LCO volume requirements are nominal values. In the conversion of the required volumes to indicated level, instrument uncertainty need not be applied.