July 16, 1992

Docket No. 50-313

Mr. Neil S. Carns
Vice President, Operations ANO
Entergy Operations, Inc.
Route 3 Box 137G
Russellville, Arkansas 72801

Dear Mr. Carns:

SUBJECT: PEAK CLAD TEMPERATURE LIMIT: BASES CHANGE - ARKANSAS NUCLEAR ONE, UNIT 1 (TAC NO. M83148)

By letter dated March 30, 1992, you submitted a revision to the Technical Specification (TS) Bases regarding the peak clad temperature limit. The Commission has incorporated this revision into the Arkansas Nuclear One, Unit 1 TS Bases. The revision changes the bases of TS 3.3 to state that one train of emergency core cooling will protect the core and limit the peak clad temperature to less than 2200°F (the previous statement used 2300°F). 10 CFR 50.46(b)(1) states that the calculated maximum fuel element cladding temperature shall not exceed 2200°F.

The NRC staff has reviewed the changes to the facility and concurs that the Bases of TS 3.3 should be changed to make the peak clad temperature limit consistent with 10 CFR 50.46(b)(1). The revisions to the Bases of TS 3.3 are acceptable to the staff.

Sincerely,

Original signed by:

Thomas W. Alexion, Project Manager
Project Directorate IV-1
Division of Reactor Projects - III/IV/V
Office of Nuclear Reactor Regulation

cc: See next page

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OFC	LA:PD4-1	I:PD4-1	PM:PD4-1	D:PD4-1
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UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555

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Sincerely,

Thomas W. Alexion

Thomas W. Alexion, Project Manager
Project Directorate IV-1
Division of Reactor Projects - III/IV/V
Office of Nuclear Reactor Regulation

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FACILITY OPERATING LICENSE NO. DRP-51

DOCKET NO. 50-313

Replace the following page of the Appendix "A" Technical Specifications with the attached attached page. The revised page is identified by a revision date and contains a vertical line indicating the area of change.

REMOVE PAGE	INSERT PAGE
39	39

370,100 gallons of borated water are supplied for emergency core cooling and reactor building spray in the event of a loss-of-coolant accident. This amount fulfills requirements for emergency core cooling. Approximately 16,000 gallons of borated water are required to reach cold shutdown. The original nominal borated water storage tank capacity of 380,000 gallons is based on refueling volume requirements. Heaters maintain the borated water supply at a temperature to prevent crystallization and local freezing of the boric acid. The boron concentration is set at a value that will maintain the core at least 1 percent $\Delta k/k$ subcritical at 70°F without any control rods in the core. The concentration for 1% $\Delta k/k$ subcriticality is 1609 ppm boron in the core, while the minimum value specified in the borated water storage tank is 2270 ppm boron.

Specification 3.3.2 assures that above 350°F two high pressure injection pumps are also available to provide injection water as the energy of the reactor coolant system is increased.

Specification 3.3.3 assures that above 800 psig both core flooding tanks are operational. Since their design pressure is 600 ± 25 psig, they are not brought into the operational state until 800 psig to prevent spurious injection of borated water. Both core flooding tanks are specified as a single core flood tank has insufficient inventory to reflood the core.(1)

Specification 3.3.4 assures that prior to going critical the redundant train of reactor building emergency cooling and spray train are operable.

The spray system utilizes common suction lines with the low pressure injection system. If a single train of equipment is removed from either system, the other train must be assured to be operable in each system.

Reference 6 provides an assessment of the impact of level indicator instrument error on the allowed NaOH tank level variation. Note that the indicated level variation of 34.0 + 1.0/-0.8 feet includes an allowance for instrument loop error.

When the reactor is critical, maintenance is allowed per Specification 3.3.5. Operability of the specified components shall be based on the results of testing as required by Technical Specification 4.5 The maintenance period of up to 24 hours is acceptable if the operability of equipment redundant to that removed from service is demonstrated within 24 hours prior to removal. Exceptions to Specification 3.3.6 permit continued operation for seven days if one of two BWST level instrument channels is operable or if either the pressure or level instrument channel in the CFT instrument channel is operable.

In the event that the need for emergency core cooling should occur, functioning of one train (one high pressure injection pump, one low pressure injection pump, and both core flooding tanks) will protect the core and in the event of a main coolant loop severance, limit the peak clad temperature to less than 2200°F and the metal-water reaction to that representing less than 1 percent of the clad.

The service water system consists of two independent but interconnected, full capacity, 100% redundant systems, to ensure continuous heat removal.(4)

One service water pump is required for normal operation. The normal operating requirements are greater than the emergency requirements following a loss-of-coolant accident.