

24<sup>th</sup>  
November 2 1993

Docket Nos. 50-313  
and 50-368

Mr. Jerry W. Yelverton  
Vice President, Operations ANO  
Entergy Operations, Inc.  
Route 3 Box 137G  
Russellville, Arkansas 72801

Dear Mr. Yelverton:

SUBJECT: ISSUANCE OF AMENDMENT NOS. 170 AND 153 TO FACILITY OPERATING LICENSE  
NOS. DPR-51 AND NPF-6 - ARKANSAS NUCLEAR ONE, UNITS 1 AND 2  
(TAC NOS. M87145 AND M87146)

The Commission has issued the enclosed Amendment Nos. 170 and 153 to Facility Operating License Nos. DPR-51 and NPF-6 for the Arkansas Nuclear One, Unit Nos. 1 and 2 (ANO-1&2). These amendments consist of changes to the Technical Specifications (TSs) in response to your applications dated July 28, 1993.

The amendments revise the ANO-1&2 TSs for the Emergency Cooling Pond (ECP) to achieve consistency between the ANO-1 and ANO-2 TSs and clarify the point at which the water temperature is verified for the ECP. The applicable Bases have also been revised to reflect the changes and clarify the TSs.

A copy of our related Safety Evaluation is also enclosed. A Notice of Issuance will be included in the Commission's next biweekly Federal Register notice.

Sincerely,

ORIGINAL SIGNED BY:

Roby B. Bevan, Project Manager  
Project Directorate IV-1  
Division of Reactor Projects- III/IV/V  
Office of Nuclear Reactor Regulation

ORIGINAL SIGNED BY:

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

060110

9312130358 931124  
PDR ADOCK 05000313  
P PDR

Enclosures:

- 1. Amendment No. 170 to DPR-51
- 2. Amendment No. 153 to NPF-6
- 3. Safety Evaluation

DISTRIBUTION:

Docket File	R. Bevan (2)	P. Noonan (2)
T. Alexion (2)	G. Hill (4)	OC/LFMB
E. Adensam	J. Roe	ACRS (10)
D. Hagan	T. Stetka	C. Grimes
PD4-1 R/F	NRC/LPDRs	OGC (2)
D. Hagan		

cc w/enclosures:  
See next page

OFC	LA:PD4-1	PM:PD4-1	PM:PD4-1	BC/SPLB	OGC	D:PD4-1
NAME	PNoonan	RBevan	TAlexion	CMcCracken	EHolder	WBeckner
DATE	11/1/93	11/3/93	11/5/93	11/10/93	11/22/93	11/12/93
COPY	YES/NO	YES/NO	YES/NO	YES/NO	YES/NO	YES/NO

OFFICIAL RECORD COPY Document Name: AR87146.amd

**NRC FILE CENTER COPY**

11/24/93

DFD

UP

November 2 1993

Docket Nos. 50-313  
and 50-368

Mr. Jerry W. Yelverton  
Vice President, Operations ANO  
Entergy Operations, Inc.  
Route 3 Box 137G  
Russellville, Arkansas 72801

Dear Mr. Yelverton:

SUBJECT: ISSUANCE OF AMENDMENT NOS. 170 AND 153 TO FACILITY OPERATING LICENSE  
NOS. DPR-51 AND NPF-6 - ARKANSAS NUCLEAR ONE, UNITS 1 AND 2  
(TAC NOS. M87145 AND M87146)

The Commission has issued the enclosed Amendment Nos. 170 and 153 to Facility  
Operating License Nos. DPR-51 and NPF-6 for the Arkansas Nuclear One,  
Unit Nos. 1 and 2 (ANO-1&2). These amendments consist of changes to the  
Technical Specifications (TSs) in response to your applications dated July 28,  
1993.

The amendments revise the ANO-1&2 TSs for the Emergency Cooling Pond (ECP) to  
achieve consistency between the ANO-1 and ANO-2 TSs and clarify the point at  
which the water temperature is verified for the ECP. The applicable Bases  
have also been revised to reflect the changes and clarify the TSs.

A copy of our related Safety Evaluation is also enclosed. A Notice of  
Issuance will be included in the Commission's next biweekly Federal Register  
notice.

Sincerely,

ORIGINAL SIGNED BY:

Roby B. Bevan, Project Manager  
Project Directorate IV-1  
Division of Reactor Projects- III/IV/V  
Office of Nuclear Reactor Regulation

ORIGINAL SIGNED BY:

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

Enclosures:

- 1. Amendment No. 170 to DPR-51
- 2. Amendment No. 153 to NPF-6
- 3. Safety Evaluation

DISTRIBUTION:

Docket File	R. Bevan (2)	P. Noonan (2)
T. Alexion (2)	G. Hill (4)	OC/LFMB
E. Adensam	J. Roe	ACRS (10)
D. Hagan	T. Stetka	C. Grimes
PD4-1 R/F	NRC/LPDRS	OGC (2)
D. Hagan		

cc w/enclosures:  
See next page

OFC	LA:PD4-1	PM:PD4-1	PM:PD4-1	BC/SPLB	OGC	D:PD4-1 w/11/24/93
NAME	PNoonan	RBevan	TAlexion:pk	CMcCracken	EHolder	WBeckner
DATE	11/1/93	11/3/93	11/5/93	11/10/93	11/22/93	11/24/93
COPY	YES/NO	YES/NO	YES/NO	YES/NO	YES/NO	YES/NO



UNITED STATES  
NUCLEAR REGULATORY COMMISSION  
WASHINGTON, D.C. 20555-0001

November 24, 1993

Docket Nos. 50-313  
and 50-368

Mr. Jerry W. Yelverton  
Vice President, Operations ANO  
Entergy Operations, Inc.  
Route 3 Box 137G  
Russellville, Arkansas 72801

Dear Mr. Yelverton:

SUBJECT: ISSUANCE OF AMENDMENT NOS. 170 AND 153 TO FACILITY OPERATING LICENSE  
NOS. DPR-51 AND NPF-6 - ARKANSAS NUCLEAR ONE, UNITS 1 AND 2  
(TAC NOS. M87145 AND M87146)

The Commission has issued the enclosed Amendment Nos. 170 and 153 to Facility Operating License Nos. DPR-51 and NPF-6 for the Arkansas Nuclear One, Unit Nos. 1 and 2 (ANO-1&2). These amendments consist of changes to the Technical Specifications (TSs) in response to your applications dated July 28, 1993.

The amendments revise the ANO-1&2 TSs for the Emergency Cooling Pond (ECP) to achieve consistency between the ANO-1 and ANO-2 TSs and clarify the point at which the water temperature is verified for the ECP. The applicable Bases have also been revised to reflect the changes and clarify the TSs.

A copy of our related Safety Evaluation is also enclosed. A Notice of Issuance will be included in the Commission's next biweekly Federal Register notice.

Sincerely,

Roby B. Bevan, Project Manager  
Project Directorate IV-1  
Division of Reactor Projects- III/IV/V  
Office of Nuclear Reactor Regulation

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

Enclosures:

1. Amendment No. 170 to DPR-51
2. Amendment No. 153 to NPF-6
3. Safety Evaluation

cc w/enclosures:  
See next page

Mr. Jerry W. Yelverton  
Entergy Operations, Inc.

Arkansas Nuclear One, Units 1 & 2

cc:

Mr. Harry W. Keiser, Executive Vice  
President & Chief Operating Officer  
Entergy Operations, Inc.  
P. O. Box 31995  
Jackson, Mississippi 39286

Mr. Jerrold G. Dewease  
Vice President, Operations Support  
Entergy Operations, Inc.  
P. O. Box 31995  
Jackson, Mississippi 39286

Mr. James J. Fisicaro  
Director, Licensing  
Entergy Operations, Inc.  
Route 3 Box 137G  
Russellville, Arkansas 72801

Mr. Robert B. McGehee  
Wise, Carter, Child & Caraway  
P. O. Box 651  
Jackson, Mississippi 39205

Mr. Nicholas S. Reynolds  
Winston & Strawn  
1400 L Street, N.W.  
Washington, D.C. 20005-3502

Mr. Charles B. Brinkman, Manager  
Washington Nuclear Operations  
ABB Combustion Engineering Nuclear Power  
12300 Twinbrook Parkway, Suite 330  
Rockville, Maryland 20852

Mr. Robert B. Borsum  
Licensing Representative  
B&W Nuclear Technologies  
1700 Rockville Pike, Suite 525  
Rockville, Maryland 20852

Admiral Kinnaird R. McKee, USN (Ret)  
214 South Morris Street  
Oxford, Maryland 21654

Senior Resident Inspector  
U.S. Nuclear Regulatory Commission  
1 Nuclear Plant Road  
Russellville, Arkansas 72801

Mr. Michael B. Sellman  
General Manager, Plant Operations  
Entergy Operations, Inc.  
Route 3, Box 137G  
Russellville, Arkansas 72801

Regional Administrator, Region IV  
U.S. Nuclear Regulatory Commission  
611 Ryan Plaza Drive, Suite 1000  
Arlington, Texas 76011

Honorable C. Doug Lunningham  
County Judge of Pope County  
Pope County Courthouse  
Russellville, Arkansas 72801

Ms. Greta Dicus, Director  
Division of Radiation Control and  
Emergency Management  
Arkansas Department of Health  
4815 West Markham Street  
Little Rock, Arkansas 72205-3867



UNITED STATES  
NUCLEAR REGULATORY COMMISSION  
WASHINGTON, D.C. 20555-0001

ENERGY OPERATIONS, INC.

DOCKET NO. 50-313

ARKANSAS NUCLEAR ONE, UNIT NO. 1

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 170  
License No. DPR-51

1. The Nuclear Regulatory Commission (the Commission) has found that:
  - A. The application for amendment by Entergy Operations, Inc. (the licensee) dated July 28, 1993, complies with the standards and requirements of the Atomic Energy Act of 1954, as amended (the Act), and the Commission's rules and regulations set forth in 10 CFR Chapter I;
  - B. The facility will operate in conformity with the application, the provisions of the Act, and the rules and regulations of the Commission;
  - C. There is reasonable assurance: (i) that the activities authorized by this amendment can be conducted without endangering the health and safety of the public, and (ii) that such activities will be conducted in compliance with the Commission's regulations;
  - D. The issuance of this license amendment will not be inimical to the common defense and security or to the health and safety of the public; and
  - E. The issuance of this amendment is in accordance with 10 CFR Part 51 of the Commission's regulations and all applicable requirements have been satisfied.

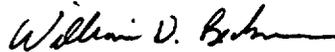
2. Accordingly, the license is amended by changes to the Technical Specifications as indicated in the attachment to this license amendment, and Paragraph 2.C.(2) of Facility Operating License No. DPR-51 is hereby amended to read as follows:

(2) Technical Specifications

The Technical Specifications contained in Appendix A, as revised through Amendment No. 170, are hereby incorporated in the license. The licensee shall operate the facility in accordance with the Technical Specifications.

3. The license amendment is effective as of its date of issuance.

FOR THE NUCLEAR REGULATORY COMMISSION



William D. Beckner, Director  
Project Directorate IV-1  
Division of Reactor Projects - III/IV/V  
Office of Nuclear Reactor Regulation

Attachment:  
Changes to the Technical  
Specifications

Date of Issuance: November 24, 1993

ATTACHMENT TO LICENSE AMENDMENT NO. 170

FACILITY OPERATING LICENSE NO. DPR-51

DOCKET NO. 50-313

Revise the following pages of the Appendix "A" Technical Specifications with the attached pages. The revised pages are identified by Amendment number and contain vertical lines indicating the area of change.

REMOVE PAGES

66a  
110a

INSERT PAGES

66a  
110a

### 3.11 EMERGENCY COOLING POND

#### Applicability

Applies to the emergency cooling pond.

#### Objective

To assure the availability of a sufficient supply of cooling water inventory in the emergency cooling pond.

#### Specification

3.11.1 The emergency cooling pond shall be operable whenever containment integrity is established as required by Specification 3.6.1 with:

1. A minimum contained water volume of 70 acre-feet (equivalent to an indicated water level of 5 feet).
2. An average water temperature of  $\leq 100^{\circ}\text{F}$ .

3.11.2 With the requirements of Specification 3.11.1 not satisfied, be in the hot shutdown condition within 6 hours and in the cold shutdown condition within the following 30 hours.

#### Bases

The requirements of Specification 3.11.1 provide for sufficient water inventory in the emergency cooling pond to mitigate within acceptable limits the effects of a DBA with a concurrent failure of the Dardanelle Reservoir. The minimum water depth takes into account (1) water loss from evaporation due to heat load and climatological conditions, (2) pond bottom irregularities, (3) suction pipe level at the pond and (4) operator action in transferring the service water system from the Dardanelle Reservoir.

The values are based on worst case initial conditions which could be present considering a simultaneous normal shutdown of Unit 1 and emergency shutdown of Unit 2 following a LOCA in Unit 2, using the ECP as a heat sink. The measured ECP temperature at the discharge from the pond is considered a conservative average of total pond conditions since solar gain, wind speed, and thermal current effects throughout the pond will essentially be at equilibrium conditions under initial stagnant conditions.

#### 4.13 EMERGENCY COOLING POND

##### Applicability

Applies to the emergency cooling pond.

##### Objective

To verify the availability of a sufficient supply of cooling water inventory in the emergency cooling pond.

##### Specification

4.13.1 The emergency cooling pond shall be determined operable:

1. At least once per 24 hours by verifying the pond's indicated water level is  $\geq 5$  feet.
2. At least once per 24 hours during the period from June 1 through September 30 by verifying that the pond's average water temperature at the point of discharge from the pond is within its limit.
3. At least once per 12 months by making soundings of the pond and verifying an average depth of 5 feet and that the contained water volume of the pond is within its limit.
4. At least once per 12 months by a visual inspection of the loose stone (riprap) placed on the banks of the pond and of the concrete slab spillway and verifying that the earth portions of the stone covered embankments and the spillway:
  1. Have not been eroded or undercut by wave action, and
  2. Do not show apparent changes in visual appearance or other abnormal degradation from their as built condition.

##### Bases

The requirements of Specification 4.13 provide for verification of a sufficient water inventory in the emergency cooling pond to handle a DBA with a concurrent failure of the Dardanelle Reservoir. This specification ensures that Specification 3.11.1 is met. Monitoring temperature only during the period June 1 through September 30 of each year ensures that, during the hot summer months, the pond temperature limit is not exceeded. During other periods of the year the pond temperature will not have the potential to reach the temperature limit. Soundings are performed to ensure the water volume is within limits and that the indicated level is indicative of an equivalent water volume for accident mitigation. The measured ECP temperature at the discharge from the pond is considered a conservative average of total pond conditions since solar gain, wind speed, and thermal current effects throughout the pond will essentially be at equilibrium conditions under initial stagnant conditions. Visual inspections are performed to ensure any physical degradation is within acceptable limits to enable the ECP to fulfill its safety function. An engineering evaluation shall be performed by a qualified engineer of any apparent changes in visual appearance or other abnormal degradation to determine operability.



UNITED STATES  
NUCLEAR REGULATORY COMMISSION  
WASHINGTON, D.C. 20555-0001

ENTERGY OPERATIONS, INC.

DOCKET NO. 50-368

ARKANSAS NUCLEAR ONE, UNIT NO. 2

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 153  
License No. NPF-6

1. The Nuclear Regulatory Commission (the Commission) has found that:
  - A. The application for amendment by Entergy Operations, Inc. (the licensee) dated July 28, 1993, complies with the standards and requirements of the Atomic Energy Act of 1954, as amended (the Act), and the Commission's rules and regulations set forth in 10 CFR Chapter I;
  - B. The facility will operate in conformity with the application, the provisions of the Act, and the rules and regulations of the Commission;
  - C. There is reasonable assurance: (i) that the activities authorized by this amendment can be conducted without endangering the health and safety of the public, and (ii) that such activities will be conducted in compliance with the Commission's regulations;
  - D. The issuance of this license amendment will not be inimical to the common defense and security or to the health and safety of the public; and
  - E. The issuance of this amendment is in accordance with 10 CFR Part 51 of the Commission's regulations and all applicable requirements have been satisfied.

2. Accordingly, the license is amended by changes to the Technical Specifications as indicated in the attachment to this license amendment, and Paragraph 2.C.(2) of Facility Operating License No. NPF-6 is hereby amended to read as follows:

(2) Technical Specifications

The Technical Specifications contained in Appendix A, as revised through Amendment No.153 , are hereby incorporated in the license. The licensee shall operate the facility in accordance with the Technical Specifications.

3. The license amendment is effective as of its date of issuance.

FOR THE NUCLEAR REGULATORY COMMISSION



William D. Beckner, Director  
Project Directorate IV-1  
Division of Reactor Projects - III/IV/V  
Office of Nuclear Reactor Regulation

Attachment:  
Changes to the Technical  
Specifications

Date of Issuance: November 24, 1993

ATTACHMENT TO LICENSE AMENDMENT NO. 153

FACILITY OPERATING LICENSE NO. NPF-6

DOCKET NO. 50-368

Revise the following pages of the Appendix "A" Technical Specifications with the attached pages. The revised pages are identified by Amendment number and contain vertical lines indicating the area of change. The corresponding overleaf pages are also provided to maintain document completeness.

REMOVE PAGES

3/4 7-16  
B 3/4 7-4

INSERT PAGES

3/4 7-16  
B 3/4 7-4

PLANT SYSTEMS

3/4.7.3 SERVICE WATER SYSTEM

LIMITING CONDITION FOR OPERATION

---

3.7.3.1 At least two independent service water loops shall be OPERABLE.

APPLICABILITY: MODES 1, 2, 3 and 4.

ACTION:

With only one service water loop OPERABLE, restore at least two loops to OPERABLE status within 72 hours or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.

SURVEILLANCE REQUIREMENTS

---

4.7.3.1 At least two service water loops shall be demonstrated OPERABLE:

- a. At least once per 31 days by verifying that each valve (manual, power operated or automatic) servicing safety related equipment that is not locked, sealed, or otherwise secured in position, is in its correct position.
- b. At least once per 18 months during shutdown, by verifying that each automatic valve servicing safety related equipment actuates to its correct position on CCAS, MSIS and RAS test signals.

## PLANT SYSTEMS

### 3/4.7.4 EMERGENCY COOLING POND

#### LIMITING CONDITION FOR OPERATION

---

3.7.4.1 The emergency cooling pond shall be OPERABLE with:

- a. A minimum contained water volume of 70 acre-feet (equivalent to an indicated water level of 5 feet).
- b. An average water temperature of  $\leq 100^{\circ}\text{F}$ .

APPLICABILITY: MODES 1, 2, 3 and 4.

#### ACTION:

With the requirements of the above specification not satisfied, be in at least HOT STANDBY within 6 hours and in COLD SHUTDOWN within the following 30 hours.

#### SURVEILLANCE REQUIREMENTS

---

4.7.4.1 The emergency cooling pond shall be determined OPERABLE:

- a. At least once per 24 hours by verifying the pond's indicated water level is  $\geq 5$  feet.
- b. At least once per 24 hours during the period of June 1 through September 30 by verifying that the pond's average water temperature at the point of discharge from the pond is within its limit.
- c. At least once per 12 months by making soundings of the pond and verifying an average depth of 5 feet and that the contained water volume of the pond is within its limit.
- d. At least once per 12 months by a visual inspection of the loose stone (riprap) placed on the banks of the pond and of the concrete slab spillway and verifying that the earth portions of the stone covered embankments and the spillway:
  1. Have not been eroded or undercut by wave action, and
  2. Do not show apparent changes in visual appearance or other abnormal degradation from their as built condition.

## PLANT SYSTEMS

### BASES

---

#### 3/4.7.1.4 ACTIVITY

The limitations on secondary system specific activity ensure that the resultant off-site radiation dose will be limited to a small fraction of 10 CFR Part 100 limits in the event of a steam line rupture. This dose also includes the effects of a coincident 1.0 GPM primary to secondary tube leak in the steam generator of the affected steam line and a concurrent loss of offsite electrical power. These values are consistent with the assumptions used in the accident analyses.

#### 3/4.7.1.5 MAIN STEAM ISOLATION VALVES

The OPERABILITY of the main steam isolation valves ensures that no more than one steam generator will blowdown in the event of a steam line rupture. This restriction is required to 1) minimize the positive reactivity effects of the Reactor Coolant System cooldown associated with the blowdown, and 2) limit the pressure rise within containment in the event the steam line rupture occurs within containment. The OPERABILITY of the main steam isolation valves within the closure times of the surveillance requirements are consistent with the assumptions used in the accident analyses.

## PLANT SYSTEMS

### BASES

#### 3/4.7.2 STEAM GENERATOR PRESSURE/TEMPERATURE LIMITATION

The limitation on steam generator pressure and temperature ensures that the pressure-induced stresses in the steam generators do not exceed the maximum allowable fracture toughness stress limits. The limitations to 90°F and 275 psig are based on a steam generator RT<sub>NDT</sub> of 30°F and are sufficient to prevent brittle fracture.

#### 3/4.7.3 SERVICE WATER SYSTEM

The OPERABILITY of the service water system ensures that sufficient cooling capacity is available for continued operation of equipment during normal and accident conditions. The redundant cooling capacity of this system, assuming a single failure, is consistent with the assumptions used in the accident analyses.

#### 3/4.7.4 EMERGENCY COOLING POND

The limitations on the emergency cooling pond level and temperature are based on worst case initial conditions which could be present considering a simultaneous normal shutdown of Unit 1 and emergency shutdown of Unit 2 following a LOCA in Unit 2, using the ECP as a heat sink. The indicated ECP level is based on sounding to ensure a minimum contained water volume of 70 acre-feet. These soundings ensure degradation is within acceptable limits such that the indicated level is consistent with the required volume and the pond meets its design basis. The measured ECP temperature at the discharge from the pond is considered a conservative average of total pond conditions since solar gain, wind speed, and thermal current effects throughout the pond will essentially be at equilibrium conditions under initial stagnant conditions. Visual inspections are performed to ensure any physical degradation is within acceptable limits to enable the ECP to fulfill its safety function. An engineering evaluation shall be performed by a qualified engineer of any apparent changes in visual appearance or other abnormal degradation to determine operability.

The limitations on minimum water level and maximum temperature are based on providing a 30 day cooling water supply to safety related equipment without exceeding their design basis temperature and is consistent with the recommendations of Regulatory Guide 1.27, "Ultimate Heat Sink for Nuclear Plants", March 1974.

#### 3/4.7.5 FLOOD PROTECTION

The limitation on flood protection ensures that facility protective actions will be taken in the event of flood conditions.

#### 3/4.7.6 CONTROL ROOM EMERGENCY AIR CONDITIONING/AIR FILTRATION SYSTEM

The OPERABILITY of the control room emergency air conditioning/air filtration system ensures that 1) the ambient air temperature does not exceed the allowable temperature for continuous duty rating for the equipment and instrumentation cooled by this system and 2) the control room will remain habitable for operations personnel during and



UNITED STATES  
NUCLEAR REGULATORY COMMISSION  
WASHINGTON, D.C. 20555-0001

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

RELATED TO AMENDMENT NOS. 170 AND 153 TO

FACILITY OPERATING LICENSE NOS. DPR-51 AND NPF-6

ENERGY OPERATIONS, INC.

ARKANSAS NUCLEAR ONE, UNIT NOS. 1 AND 2

DOCKET NOS. 50-313 AND 50-368

1.0 INTRODUCTION

By letter dated July 28, 1993, Entergy Operations, Inc. (the licensee) submitted a request for changes to the Arkansas Nuclear One, Unit Nos. 1 and 2 (ANO-1&2), Technical Specifications (TSs). The requested changes would revise the ANO-1&2 TSs for the Emergency Cooling Pond (ECP) to achieve consistency between the ANO-1 and ANO-2 TSs and clarify the point at which the water temperature is verified for the ECP. The applicable Bases would also be revised to reflect the changes and clarify the TSs.

2.0 EVALUATION

2.1 Changes to ANO-1 TSs

The mode of applicability has been revised to require ECP operability whenever containment integrity is established. The existing ANO-1 TSs require the service water system to be operable whenever the reactor coolant is at 300 psig or greater, 200 degrees F or greater, and nuclear fuel is in the core. However, the existing TSs do not require the ECP to be operable until the reactor is critical (this is well beyond the heat-up point discussed in the previous sentence). Requiring the ECP portion of the ultimate heat sink to be operable whenever containment integrity is required will ensure that the back-up water source to the Dardanelle Reservoir, the ECP, is available whenever the service water system is required. This change results in a more stringent requirement for ECP operability than the existing TSs, is consistent with the ANO-2 TSs, and is, therefore, acceptable.

The existing required minimum average water depth of the ECP (3 feet) has been revised to a minimum contained water volume of 70 acre-feet (equivalent to an indicated water level of 5 feet), and the existing maximum average water temperature of 105 degrees F has been revised to 100 degrees F. The existing ANO-1 TSs considered only the ANO-1 Design Basis Accident heat load (ANO-2 was in the operating license review stage the last time this TS was revised). Analyses performed in support of the ANO-2 operating license determined that the design basis of the ECP was bounded by a simultaneous normal shutdown of ANO-1 and emergency shutdown of ANO-2 following a Loss-of-Coolant Accident in ANO-2. This resulted in the current ANO-2 TS requirements for a minimum

contained water volume of 70 acre-feet (equivalent to an indicated water level of 5 feet) and a maximum average water temperature of 100 degrees F. This change results in more stringent requirements for ECP operability than the existing TSs, is consistent with the ANO-2 TSs, and is, therefore, acceptable.

The existing surveillance which requires verification, every 24 hours, of an average water depth of at least 3 feet has been revised to an indicated water level of at least 5 feet. The change to 5 feet was discussed above. The change from "average water depth" to "indicated water level" clarifies the TSs. Acceptable average water depth is verified if the indicated level on the level measuring device is greater than 5 feet. This is acceptable since the level measuring device is calibrated to the value obtained in the annual soundings. Also, use of the term "average" could be interpreted as requiring two or more level measurements in order to arrive at an average value. Since the average depth and total contained water volume is verified annually by sounding, and since the level measuring device is calibrated to the sounded average depth, there is no change in intent of the specification. Therefore, this change corrects a possible source of confusion, is consistent with the ANO-2 TSs, and is, therefore, acceptable.

The existing surveillance to verify that the average water temperature is no greater than 105 degrees F at least once per 24 hours during the period from June 1 to September 30, has been revised to verify that the average water temperature is within its limit at least once per 24 hours during the period from June 1 through September 30. The new temperature limit value of 100 degrees F has already been added to the ANO-1 TSs as discussed above, so its removal here just eliminates redundancy. Replacing "to" with "through" removes a possible point of confusion in that one could determine that June 1 and September 30 are not included in the period requiring verification of the ECP's average temperature. Therefore, this change corrects a possible source of confusion, is consistent with the ANO-2 TSs, and is, therefore, acceptable.

The existing surveillance to make annual soundings of the ECP to ensure that the required volume of water is available, has been revised to make annual soundings of the ECP and verify an average depth of 5 feet and a contained water volume within its limit. This change additionally requires that an average depth of 5 feet be verified, is consistent with the ANO-2 TSs, and is, therefore, acceptable.

An additional surveillance has been added to visually inspect the loose stone (riprap) placed on the banks of the pond and of the concrete slab spillway, and to verify that the earth portions of the stone covered embankments and the spillway have (1) not been eroded or undercut by wave action, and (2) do not show apparent changes in visual appearance or other abnormal degradation from their as-built condition. This change results in an additional limit in the ANO-1 TSs, is consistent with the ANO-2 TSs, and is, therefore, acceptable.

The ANO-1 ECP TS Bases have been revised to reflect the changes discussed above. The staff finds that the proposed bases changes clarify the intent of the TSs and are, therefore, acceptable.

## 2.2 Changes to ANO-2 TSs

The surveillance that verifies the ECP's average water temperature, at least once per 24 hours, during the period of June 1 through September 30, has been more precisely defined to specify the point at which the average water temperature is taken. The average water temperature is now specified to be taken at the discharge from the ECP. In the July 28, 1993, application, the licensee states that the ECP analysis assumes the ECP is initially in a stagnant condition in which the solar gain, wind speed, and thermal current effects throughout the ECP are essentially at equilibrium, and, therefore, the average temperature at the point of discharge from the pond is representative of the thermal conditions assumed to exist in the ECP analysis. During a phone call with the licensee on November 3, 1993, the staff requested the licensee to clarify the point that the average temperature at the point of discharge is representative of the thermal conditions assumed in the ECP analysis. The licensee provided the following clarification.

Following a change in meteorological conditions, the bulk of the ECP requires approximately 3 days to reach equilibrium. The edges and surface of the ECP respond first, with the bulk of the ECP responding at a slower rate. As the ECP temperature is measured by detectors mounted in the discharge from the ECP (suction of the service water system), which is located near the edge of the ECP, a change in meteorological conditions resulting in an increase in ECP temperature would be conservatively noted by the temperature detectors prior to the bulk of the ECP reaching equilibrium temperature. ANO conservatively assumes that the bulk temperature of the ECP is equal to the temperature detected near the edge of the ECP at the point of discharge from the ECP. Therefore, assurance is given that on an ECP temperature increase caused by meteorological conditions, the required TS actions would be taken prior to the bulk temperature of the ECP reaching the TS temperature value, preserving the analysis assumptions.

Based on the above, the staff finds that the proposed change is an appropriate and conservative reflection of applicable analysis, is consistent with the ANO-1 TSs, and is, therefore, acceptable.

The ANO-2 ECP Bases have been revised to reflect the change discussed above and provide additional clarification. The staff finds that the proposed bases changes clarify the intent of the TSs and are, therefore, acceptable.

## 3.0 STATE CONSULTATION

In accordance with the Commission's regulations, the Arkansas State official was notified of the proposed issuance of the amendment. The State official had no comment.

## 4.0 ENVIRONMENTAL CONSIDERATION

The amendments change a requirement with respect to installation or use of a facility component located within the restricted area as defined in 10 CFR Part 20 and change surveillance requirements. The NRC staff has determined that the amendments involve no significant increase in the amounts, and no

significant change in the types, of any effluents that may be released offsite, and that there is no significant increase in individual or cumulative occupational radiation exposure. The Commission has previously issued a proposed finding that the amendments involve no significant hazards consideration and there has been no public comment on such finding (58 FR 46228). Accordingly, the amendments meet the eligibility criteria for categorical exclusion set forth in 10 CFR 51.22(c)(9). Pursuant to 10 CFR 51.22(b) no environmental impact statement or environmental assessment need be prepared in connection with the issuance of the amendments.

#### 5.0 CONCLUSION

The Commission has concluded, based on the considerations discussed above, that: (1) there is reasonable assurance that the health and safety of the public will not be endangered by operation in the proposed manner, (2) such activities will be conducted in compliance with the Commission's regulations, and (3) the issuance of the amendments will not be inimical to the common defense and security or to the health and safety of the public.

Principal Contributor: T. Alexion, PD IV-1

Date: November 24, 1993