



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

ENERGY OPERATIONS, INC.

DOCKET NO. 50-382

WATERFORD STEAM ELECTRIC STATION, UNIT 3

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 95  
License No. NPF-38

- I. The Nuclear Regulatory Commission (the Commission) has found that:
  - A. The application for amendment by Entergy Operations, Inc. (the licensee) dated September 16, 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 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-38 is hereby amended to read as follows:

(2) Technical Specifications and Environmental Protection Plan

The Technical Specifications contained in Appendix A, as revised through Amendment No. 95, and the Environmental Protection Plan contained in Appendix B, are hereby incorporated in the license. The licensee shall operate the facility in accordance with the Technical Specifications and the Environmental Protection Plan.

3. This 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  
Office of Nuclear Reactor Regulation

Attachment:  
Changes to the Technical  
Specifications

Date of Issuance: May 9, 1994

ATTACHMENT TO LICENSE AMENDMENT NO. 95  
TO FACILITY OPERATING LICENSE NO. NPF-38  
DOCKET NO. 50-382

Replace 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 areas of change. The corresponding overleaf pages are also provided to maintain document completeness.

REMOVE PAGES

3/4 7-12  
3/4 7-13  
3/4 7-14  
B 3/4 7-4  
-

INSERT PAGES

3/4 7-12  
3/4 7-13  
3/4 7-14  
B 3/4 7-4  
B 3/4 7-4a

## PLANT SYSTEMS

### 3/4 7.3 COMPONENT COOLING WATER AND AUXILIARY COMPONENT COOLING WATER SYSTEMS

#### LIMITING CONDITION FOR OPERATION

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3.7.3 At least two independent component cooling water and associated auxiliary component cooling water trains shall be OPERABLE.

APPLICABILITY: MODES 1, 2, 3, and 4.

#### ACTION:

With only one component cooling water and associated auxiliary component cooling water train OPERABLE, restore at least two trains 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

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4.7.3 Each component cooling water and associated auxiliary component cooling water train 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 SIAS and CSAS test signals.
- c. At least once per 18 months by verifying that each component cooling water and associated auxiliary component cooling water pump starts automatically on an SIAS test signal.

## PLANT SYSTEMS

### LIMITING CONDITION FOR OPERATION (Continued)

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#### ACTION: (Continued)

- e. With a Tornado Watch in effect, and the number of fans OPERABLE within the missile protected area of a DCT less than that required by Table 3.7.3, restore the inoperable fan(s) to OPERABLE status within 1 hour, or be in at least HOT STANDBY within 6 hours and in HOT SHUTDOWN within the following 6 hours.
- f. With more than one fan inoperable and the outside air temperature greater than 70°F, determine the dry bulb temperature at least once every 2 hours. If the temperature is  $\geq 80^\circ\text{F}$ , determine the wet bulb temperature and verify that the minimum fan requirements of Table 3.7-3 are satisfied.

### SURVEILLANCE REQUIREMENTS

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- 4.7.4. Each train of ultimate heat sink shall be determined OPERABLE:
- a. At least once per 24 hours by verifying the average water temperature and water level to be within their limits.
  - b. At least once per 31 days, by verifying that each wet tower and dry tower fan that is not already running, starts and operates for at least 15 minutes.

## PLANT SYSTEMS

### 3/4.7.3 COMPONENT COOLING WATER AND AUXILIARY COMPONENT COOLING WATER SYSTEMS

#### LIMITING CONDITION FOR OPERATION

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3.7.3 At least two independent component cooling water and associated auxiliary component cooling water trains shall be OPERABLE.

APPLICABILITY: MODES 1, 2, 3, and 4.

#### ACTION:

With only one component cooling water and associated auxiliary component cooling water train OPERABLE, restore at least two trains 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

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4.7.3 Each component cooling water and associated auxiliary component cooling water train 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 SIAS and CSAS test signals.
- c. At least once per 18 months by verifying that each component cooling water and associated auxiliary component cooling water pump starts automatically on an SIAS test signal.

## PLANT SYSTEMS

### 3/4.7.4 ULTIMATE HEAT SINK

#### LIMITING CONDITION FOR OPERATION

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3.7.4 Two independent trains of ultimate heat sink cooling towers shall be OPERABLE with each train consisting of a dry cooling tower (DCT) and a wet mechanical draft cooling tower and its associated water basin with:

- a. A minimum water level in each wet tower basin of 97% (-9.86 ft MSL)
- b. An average basin water temperature of less than or equal to 95°F.
- c. Fans as required by Table 3.7-3.

APPLICABILITY: MODES 1, 2, 3, and 4.

#### ACTION:

- a. With one wet mechanical draft cooling tower inoperable due to low water level and/or high average water temperature, restore the wet mechanical draft cooling tower to OPERABLE status within 72 hours or be in HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.
- b. With both wet mechanical draft cooling towers inoperable due to low water level and/or high average water temperature, restore at least one wet mechanical draft cooling tower to OPERABLE status within 1 hour and restore both wet mechanical draft cooling towers to OPERABLE status within 72 hours of initial loss, otherwise be in at least HOT STANDBY within the next 6 hours and COLD SHUTDOWN within the following 30 hours.
- c. With the number of OPERABLE fans less than required by Table 3.7-3 on one DCT/WCT train, restore the number of OPERABLE fans to within the requirements of Table 3.7-3 within 72 hours (except as specified in Action e.), or be in HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.
- d. With the number of OPERABLE fans less than required by Table 3.7-3 on both DCT/WCT trains, restore the number of OPERABLE fans to within the requirements of Table 3.7-3 for 1 DCT/WCT train within 1 hour and comply with ACTION c. (except as specified in ACTION e.), or be in HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.

## PLANT SYSTEMS

### LIMITING CONDITION FOR OPERATION (Continued)

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#### ACTION: (Continued)

- e. With a Tornado Watch in effect, and the number of fans OPERABLE within the missile protected area of a DCT less than that required by Table 3.7.3, restore the inoperable fan(s) to OPERABLE status within 1 hour, or be in at least HOT STANDBY within 6 hours and in HOT SHUTDOWN within the following 6 hours.
- f. With more than one fan inoperable and the outside air temperature greater than 70°F, determine the dry bulb temperature at least once every 2 hours. If the temperature is  $\geq 80^\circ\text{F}$ , determine the wet bulb temperature and verify that the minimum fan requirements of Table 3.7-3 are satisfied.

### SURVEILLANCE REQUIREMENTS

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- 4.7.4. Each train of ultimate heat sink shall be determined OPERABLE:
- a. At least once per 24 hours by verifying the average water temperature and water level to be within their limits.
  - b. At least once per 31 days, by verifying that each wet tower and dry tower fan that is not already running, starts and operates for at least 15 minutes.



TABLE 3.7-3

ULTIMATE HEAT SINK MINIMUM FAN REQUIREMENTS

AMBIENT CONDITION	DRY BULB $\geq$ 90°F OR WET BULB $\geq$ 81°F	80°F $\leq$ DRY BULB < 90°F AND WET BULB < 81°F	DRY BULB < 80°F
Fan Requirements <sup>(1)</sup>	14 DCT*** and 8 WCT	12 DCT*** and 4 WCT*	9 DCT** and 4 WCT*
	OR		
	15 DCT and 7 WCT*		

NOTE: With more than one fan inoperable comply with ACTION f.

(1) All fans of a dry cooling tower section are inoperable if component cooling water is secured to that section.

\* With any WCT fan(s) out-of-service in any cell, covers must be in place on the out-of-service fan(s) or the entire cell (i.e. 4 fans) declared out-of-service.

\*\* With a tornado watch in effect, at least 8 of the DCT fans under the missile protected portion of the DCT shall be OPERABLE.

\*\*\* With a tornado watch in effect, all 9 DCT fans under the missile protected portion of the DCT shall be OPERABLE.

3/4.7.1.4 ACTIVITY

The limitations on secondary system specific activity ensure that the resultant offsite 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 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 safety analyses.

3/4.7.1.5 MAIN STEAM LINE ISOLATION VALVE

The OPERABILITY of the main steam line isolation valves ensures that no more than one steam generator will blow down 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 safety analyses.

3/4.7.2 STEAM GENERATOR PRESSURE/TEMPERATURE LIMITATION

The limitation on steam generator secondary pressure and temperature ensures that the pressure induced stresses in the steam generators do not exceed the maximum allowable fracture toughness stress limits. The limitation to 115°F and 210 psig is based on a steam generator RT<sub>WDT</sub> of 40°F and is sufficient to prevent brittle fracture. Below this temperature of 115°F the system pressure must be limited to a maximum of 20% of the secondary hydrostatic test pressure of 1375 psia (corrected for instrument error). Should steam generator temperature drop below 115°F an engineering evaluation of the effects of the overpressurization is required. However, to reduce the potential for brittle failure the steam generator temperature may be increased to a limit of 200°F while performing the evaluation. The limitations on the primary side of the steam generator are bounded by the restrictions on the reactor coolant system in Specification 3.4.8.1.

3/4.7.3 COMPONENT COOLING WATER AND AUXILIARY COMPONENT COOLING WATER SYSTEMS

The OPERABILITY of the component cooling water system and its corresponding auxiliary component cooling water system ensures that sufficient cooling capacity is available for continued operation of safety-related equipment during normal and accident conditions. The redundant cooling capacity of these systems, assuming a single failure, is consistent with the assumptions used in the safety analyses.

## PLANT SYSTEMS

### BASES

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#### 3/4.7.4 ULTIMATE HEAT SINK

The limitations on the ultimate heat sink level, temperature, and number of fans ensure that sufficient cooling capacity is available to either (1) provide normal cooldown of the facility, or (2) to mitigate the effects of accident conditions within acceptable limits.

The UHS consists of two dry cooling towers (DCTs), two wet cooling towers (WCTs), and water stored in WCT basins. Each of two 100 percent capacity loops employs a dry and wet cooling tower.

Each DCT consists of five separate cells. Cooling air for each cell is provided by 3 fans, for a total of 15 per DCT. The cooling coils on three cells of each DCT (i.e. 60%) are protected from tornado missiles by grating located above the coils and capable of withstanding tornado missile impact. With a Tornado Watch in effect and the number of fans OPERABLE within the missile protected area of a DCT less than that required by Table 3.7-3, ACTION e requires the restoration of inoperable fans within 1 hour or plant shutdown as specified. This ACTION is based on FSAR analysis (subsection 9.2.5.3.3) that assumes the worst case single failure as, 1 emergency diesel generator coincident with a loss of offsite power. This failure occurs subsequent to a tornado strike and 60% cooling capacity of a DCT is assumed available.

Each WCT has a basin which is capable of storing sufficient water to bring the plant to safe shutdown under all accident conditions. Item a of LCO 3/4.7.4 requires a minimum water level in each WCT basin of 97% (-9.86 ft MSL). The bases for this elevation is WCT water evaporation and drift loss calculations, which concluded that during a LOCA 173,930 gallons would be evaporated from one WCT basin. When the WCT basin water level is maintained at -9.86 ft MSL, each basin has a minimum capacity of 174,000 gallons. Each WCT consists of two cells, each cell is serviced by 4 induced draft fans, for a total of 8 per WCT. There is a concrete partition between the cells that prevents air recirculation between the fans of each cell. Covers are required on fans declared out-of-service to prevent air recirculation between fans within a cell.

Table 3.7-3 specifies increased or decreased fan OPERABILITY requirements based on outside air temperature and humidity. Because temperature and humidity are subject to change during the day, ACTION f requires periodic temperature readings to verify compliance with Table 3.7-3 when more than 1 fan is inoperable. When outside air temperature (DRY BULB) is  $\geq 80^{\circ}\text{F}$ , WET BULB readings are necessary to ensure increased OPERABILITY requirements are met when WET BULB  $\geq 81^{\circ}\text{F}$ .

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.

## PLANT SYSTEMS

### BASES

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#### 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. The limit of elevation 27.0 ft Mean Sea Level is based on the maximum elevation at which the levee provides protection, the nuclear plant island structure provides protection to safety-related equipment up to elevation +30 ft Mean Sea Level.

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

The OPERABILITY of the control room air conditioning 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 following all credible accident conditions. The OPERABILITY of this system in conjunction with control room design provisions is based on limiting the radiation exposure to personnel occupying the control room to 5 rem or less whole body, or its equivalent. This limitation is consistent with the requirements of General Design Criterion 19 of Appendix A, 10 CFR Part 50.

Operation of the system with the heaters on for at least 10 hours continuous over a 31-day period is sufficient to reduce the buildup of moisture on the adsorbers and HEPA filters. Obtaining and analyzing charcoal samples after 720 hours of adsorber operation (since the last sample and analysis) ensures that the adsorber maintains the efficiency assumed in the safety analysis and is consistent with Regulatory Guide 1.52.

System design is such that a Control Room Air Handling Unit and Emergency Filtration Unit in opposite trains can be credited for system operability.\* In addition, the function of the heating coils in each Control Room Air Handling train is to provide personnel comfort during normal operation. During emergency conditions low temperatures in the service areas are no concern; therefore, the heaters provide no safety function and are not required for system operability.

#### 3/4.7.7 CONTROLLED VENTILATION AREA SYSTEM

The OPERABILITY of the controlled ventilation area system ensures that radioactive materials leaking from the penetration area or the ECCS equipment within the pump room following a LOCA are filtered prior to reaching the environment. The operation of this system and the resultant effect on offsite dosage calculations was assumed in the safety analyses.

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\*Effective for 6 months beginning August 9, 1988.