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AUTH.NAME AUTHOR AFFILIATION
PARKER,W.O. DUKE POWER CO.
RECIP.NAME RECIPIENT AFFILIATION
DENTON,H.R. OFFICE OF NUCLEAR REACTOR REGULATION
REID,R.W. OPERATING REACTORS BRANCH 4

SUBJECT: FORWARDS PROPOSED TECH SPECS REV RE LIMITING CONDITONS FOR OPERATION & SURVEILLANCE REQUIREMENTS.

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WILLIAM O. PARKER, JR.
VICE PRESIDENT
STEAM PRODUCTION

TELEPHONE: AREA 704
373-4083

May 25, 1979

Mr. Harold R. Denton, Director
Office of Nuclear Reactor Regulation
U. S. Nuclear Regulatory Commission
Washington, D. C. 20555

Attention: Mr. R. W. Reid, Chief
Operating Reactors Branch #4

Re: Oconee Nuclear Station
Docket Nos. 50-269, -270, -287

Dear Sir:

In a letter dated May 18, 1979, the NRC requested that appropriate Technical Specifications for Limiting Conditions for Operation and for Surveillance requirements relating to design and procedural changes which have been completed in compliance with the provisions of the May 7, 1979 Commission Order be provided to the Staff. In this regard and pursuant to 10CFR50, §50.90, the attached proposed revision to the Oconee Nuclear Station Technical Specifications is provided.

Specification 3.4 has been revised to reflect present emergency feedwater system alignment as well as the future emergency feedwater system alignment upon installation of two motor driven emergency feedwater pumps on each. Also, a condition requiring that the control of emergency feedwater be independent of the Integrated Control System has been added. Specification 3.5.1 has been revised to reflect the addition of the control grade anticipatory reactor trip. Appropriate surveillance requirements have been included in Table 4.1-2 of Specification 4.1 for both of these system modifications. My letter of May 21, 1979 provided a proposed Oconee Nuclear Station Technical Specification revision relating to changes in setpoints for high pressure reactor trip and PORV actuation.

This proposal is considered to consist of one Class III license amendment and is being made at the request of the NRC. Accordingly, no license fees are provided.

Very truly yours,

William O. Parker, Jr.

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RLG:scs
Attachment

WILLIAM O. PARKER, JR., being duly sworn, states that he is Vice President of Duke Power Company; that he is authorized on the part of said Company to sign and file with the Nuclear Regulatory Commission this request for amendment of the Oconee Nuclear Station Technical Specifications, Appendix A to Facility Operating Licenses DPR-38, DPR-47, and DPR-55; and that all statements and matters set forth therein are true and correct to the best of his knowledge.

William O. Parker, Jr., Vice President

Subscribed and sworn to before me this 25th day of May, 1979.

Notary Public

My Commission Expires:

February 15, 1982

OCONEE NUCLEAR STATION

Proposed Technical Specification Revision

Pages
3.4-1
3.4-2
3.4-3
3.5-5
4.1-9

3.4 SECONDARY SYSTEM DECAY HEAT REMOVAL

Applicability

Applies to the secondary system requirements for removal of reactor decay heat.

Objective

To specify minimum conditions necessary to assure the capability to remove decay heat from the reactor core.

3.4.1 Emergency Feedwater System

(This specification will be applicable only upon completion of the installation of motor-driven emergency feedwater pumps on all units.)

The reactor shall not be heated above 350°F unless the following conditions are met:

a. Three emergency feedwater pumps and associated flow paths shall be operable with two motor-driven pumps and one steam-driven pump capable of being powered from an operable steam supply system.

b. If one emergency feedwater pump is inoperable then, restore it to operable status within 72 hours. Otherwise, the unit shall be in a hot shutdown condition within an additional 12 hours and below 350°F in another 12 hours.

3.4.2 The 16 steam system safety valves shall be operable.

3.4.3 A minimum of 72,000 gallons of water per operating unit shall be available in the upper surge tank, condensate storage tank, and hotwell.

3.4.4 The emergency condenser circulating water system shall be operable as per Specification 4.1.

3.4.5 The controls of the emergency feedwater system shall be independent of the Integrated Control System.

3.4.6 Interim Emergency Feedwater System

(This specification is applicable until motor-driven emergency feedwater pumps are installed on all units whereupon Specification 3.4.1 shall apply.)

a. Steam-driven emergency feedwater pumps shall be operable and aligned through the interconnected feedwater header to supply water to the steam generator auxiliary feed headers. With one reactor / two reactors / three reactors above 350°F, at least two / three / three steam-driven emergency feedwater pumps and associated flow paths shall be operable.

b. If the number of emergency feedwater pumps operable is one less than the above, then restore the pump to operable status within 72 hours. Otherwise, place one unit in a hot shutdown condition within an additional 12 hours.

Bases

The feedwater system and the turbine bypass system are normally used for decay heat removal and cooldown above 250°F. Feedwater makeup is supplied by operation of a hotwell pump, condensate booster pump and a main feedwater pump.

The Emergency Feedwater (EFW) System assures sufficient feedwater supply to the steam generators of each unit, in the event of loss of the main Feedwater System, to remove energy stored in the core and primary coolant. The EFW System is designed to provide sufficient secondary side steam generator heat sink to enable cooldown from reactor trip at power operation down to cold shutdown conditions.

The EFW System is designed to start automatically in the event of loss of both main feedwater pumps or low feedwater header pressure. The EFW System will supply sufficient feedwater for approximately five-hour cooldown at a flowrate of at least 720 gpm to enable the Reactor Coolant System to reach conditions at which the decay heat removal system may be operated.

As an interim measure, until the completion of the installation of two motor-driven emergency feedwater pumps per unit, three 150% steam-driven EFW pumps are aligned to provide flow to a cross connect header which supplies feedwater to both steam generators of each of the three units. Although the capacity of each EFW pump is 1080 gpm, only 720 gpm per unit is required to enable safe and orderly cooldown of the reactor coolant system.

Two motor-driven emergency feedwater pumps will be (are) installed in each unit in addition to the steam-driven emergency feedwater pump. The motor-driven pumps are powered from diverse emergency power supplies.

Sufficient redundancy and valving are provided in the design of the EFW piping system with isolation and cross-connections allowing the system to perform its safety-related function in the event of a single failure coincident with a secondary pipe break and the loss of normal station auxiliary AC power.

All automatic initiation logic and control functions are independent from the Integrated Control System (ICS).

Normally, decay heat is removed by steam relief through the turbine bypass system to the condenser. Condenser cooling water flow is provided by a siphon effect from Lake Keowee through the condenser for final heat rejection to the Keowee Hydro Plant tailrace. Decay heat can also be removed from the steam generators by steam relief through the main steam relief valves.

The minimum amount of water in the upper surge tank and condensate storage tank is the amount needed for 11 hours of operating per unit. This is based on the conservative estimate of normal makeup being 0.5% of throttle flow. Throttle flow at full load, 11,200,000 lbs/hr., was used to calculate the operation time. For decay heat removal the operation time with the volume of water specified would be considerably increased due to the reduced throttle flow.

The total relief capacity of the 16 steam system safety valves is 13,105,000 lbs/hr.

REFERENCE

FSAR, Section 10.

TABLE 3.5.1-1
INSTRUMENTS OPERATING CONDITIONS (Cont'd)

	Functional Unit	(A) Minimum Operable Analog Channels	(B) Minimum Degree of Redundancy	Operator Action If Conditions Of Column A and B Cannot Be Met
	b. Manual Pushbutton	2	1	Bring to hot shutdown within 12 hours (3)
15.	Turbine Stop Valves Closure	2	1	Bring to hot shutdown within 12 hours (f)
16.	Loss of Main Turbine, Loss of Feedwater, Reactor Trip	1	0	Restore in 4 hours or bring to hot shutdown within additional 12 hours. (g)

(a) For channel testing, calibration, or maintenance, the minimum number of operable channels may be two and a degree of redundancy of one for a maximum of four hours.

(b) When 2 of 4 power range instrument channels are greater than 10% rated power, hot shutdown is not required.

(c) When 1 of 2 intermediate range instrument channels is greater than 10^{-10} amps, hot shutdown is not required.

(d) Single loop operation at power (after testing and approval by the NRC) is not permitted unless the operating channels are the two receiving Reactor Coolant Temperature from operating loop.

(e) If minimum conditions are not met within 48 hours after hot shutdown, the unit shall be in the cold shutdown condition within 24 hours.

(f) One operable channel with zero minimum degree of redundancy is allowed for 24 hours before going to the hot shutdown condition.

(g) Required only when reactor is greater than 20% reactor power.

Table 4.1-2
MINIMUM EQUIPMENT TEST FREQUENCY

	Item	Test	Frequency
1.	Control Rod Movement (1)	Movement of Each Rod	Monthly
2.	Pressurizer Safety Valves	Setpoint	50% Annually
3.	Main Steam Safety Valves	Setpoint	25% Annually
4.	Refueling System Interlocks	Functional	Prior to Refueling
5.	Main Steam Stop Valves (1)	Movement of Each Stop Valve	Monthly
6.	Reactor Coolant System Leakage (2)	Evaluate	Daily
7.	Condenser Cooling Water System Gravity Flow Test	Functional	Annually
8.	High Pressure Service Water Pumps and Power Supplies	Functional	Monthly
9.	Spent Fuel Cooling System	Functional	Prior to Refueling
10.	High Pressure and Low Pressure Injection System (3)	Vent Pump Casings	Monthly and Prior to Testing
11.	Control Grade Reactor Trip Loss of Main Turbine, Loss of Feedwater	Functional	Monthly
12.	Emergency Feedwater Pump Automatic Start Feature	Functional	Annually

(1) Applicable only when the reactor is critical.

(2) Applicable only when the reactor coolant is above 200°F and at a steady-state temperature and pressure.

(3) Operating pumps excluded.