REGULATORY INFORMATION DISTRIBUTION SYSTEM (RIDS)

ACCESSION NBR:8104280234 DOC.DATE: 81/04/17 NOTARIZED: YES DOCKET #
FACIL:50-269 Oconee Nuclear Station, Unit 1, Duke Power Co. 05000269
50-270 Oconee Nuclear Station, Unit 2, Duke Power Co. 05000270
50-287 Oconee Nuclear Station, Unit 3, Duke Power Co. 05000287
AUTH.NAME AUTHOR AFFILIATION
PARKER,W.O. Duke Power Co.
RECIP.NAME RECIPIENT AFFILIATION
DENTON,H.R. Office of Nuclear Reactor Regulation, Director
STOLZ,J.F. Operating Reactors Branch 4

SUBJECT: Application to amend Licenses DPR-38,DPR-47 & DPR-55, revising certain allowed degraded conditions of Tech Spec 3.4,Justification encl.

DISTRIBUTION CODE: A001S COPIES RECEIVED:LTR 40 ENCL 40 SIZE: 6+5
TITLE: General Distribution for after Issuance of Operating License

NOTES:AEOD,Ornstein:1cc. 05000269
AEOD,Ornstein:1cc 05000270
AEOD,Ornstein:1cc 05000287

	RECIPIENT ID CODE/NAME		COPIES LTTR	COPIES ENCL	RECIPIENT ID CODE/NAME		COPIES LTTR	COPIES ENCL
ACTION:	ORB #4 BC	04	13	13				
INTERNAL:	D/DIR,HUM FAC	08	1	1	DIR,DIV OF LIC		1	1
	I&E	06	2	2	NRC PDR	02	1	1
	OELD	11	1	0	OR ASSESS BR	10	1	0
	RAD ASMT BR		1	1	REG FILE	01	1	1
EXTERNAL:	ACRS	09	16	16	LPDR	03	1	1
	NSIC	05	1	1				

w/check
$ 4,800.00

APR 29 1981

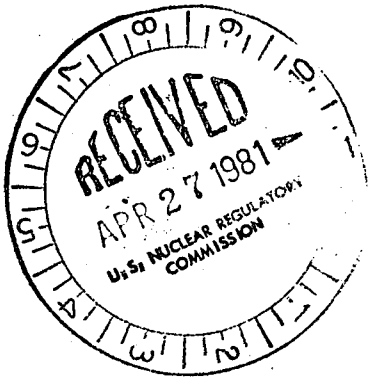
TOTAL NUMBER OF COPIES REQUIRED: LTTR 41 ENCL 39

DUKE POWER COMPANY
POWER BUILDING
422 SOUTH CHURCH STREET, CHARLOTTE, N. C. 28242

WILLIAM O. PARKER, JR.
VICE PRESIDENT
STEAM PRODUCTION

April 17, 1981

TELEPHONE: AREA 704
373-4083



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

Attention: J. F. Stolz, Chief
Operating Reactor Branch #4

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

Dear Sir:

Pursuant to 10 CFR 50, §50.90, please find attached a proposed revision to the Oconee Nuclear Station Technical Specifications which revises certain allowed degraded conditions of Specification 3.4. The justification for this request is provided in Attachment 1 which is based on recent heat balance calculations performed and backed up by applicable transient analyses. The proposed change is provided in Attachment 2.

Inasmuch as this request affects a Limiting Condition for Operation and an allowed degraded mode, it is respectfully requested that this request be promptly reviewed and expeditiously approved.

Pursuant to 10 CFR 170, this request has been determined to consist of one Class III license fee and two class Class I license fees. Accordingly, please find enclosed a check in the amount of $4,800.

Very truly yours,

William O. Parker, Jr.

RLG/mwk
Attachment

A001
S
40/46
w/check
4,800.00

8104280234 P

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 revision to 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 17th day of April, 1981.

Notary Public

My Commission Expires:

September 20, 1984

DUKE POWER COMPANY
OCONEE NUCLEAR STATION

ATTACHMENT 1

JUSTIFICATION

The Emergency Feedwater System (EFW) serves as a backup to the Feedwater/Condensate System for supplying feedwater to the steam generators when normal feedwater delivery is interrupted or unavailable, thereby maintaining the heat sink capabilities of the steam generators. The EFW system, as designed, is capable of delivering sufficient feedwater to remove decay heat and reactor coolant pump heat including the assumption of the worst single failure in the system.

The EFW system consists of one turbine driven pump capable of delivering to both steam generators (1080 gpm at 1065 psia total flow while feeding both SG's or 880 gpm at 1065 psia while feeding only one SG), and two motor driven pumps (450 gpm each at 1065 psia) each aligned to one steam generator. The EFW pumps will automatically start, following a loss of both main feedwater pumps as detected by a loss of discharge pressure on both main feedwater pumps and/or a loss of hydraulic oil pressure on the control valves of both main feedwater pumps, in addition to manual actuation.

The EFW system is provided with sufficient feedwater sources to enable cooldown of the Reactor Coolant System to temperatures where a switch over to the Decay Heat Removal (DHR) System for long term decay heat removal is accomplished.

The plant transient which requires the highest Emergency Feedwater System flow, and as such constitutes the design basis transient, is the loss of main feedwater transient. This transient combines the highest heat load, decay heat plus reactor coolant pump heat, with the minimum heat sink due to the instantaneous loss of both main feedwater pumps. A discussion of the demand on the EFW system for each transient follows.

(1) Loss of Main Feedwater - Those transients which result in losing feedwater delivery from the Feedwater/Condensate System are classified as a loss of main feedwater. This initiating event causes a turbine and reactor trip and automatically starts the EFW pumps. Since the reactor coolant pumps remain on, the control valves modulate to control steam generator level at two feet. The transient requires feedwater to be delivered at a rate sufficient to remove decay heat and reactor coolant pump heat. One motor driven emergency feedwater pump delivering 450 gpm at a steam generator pressure of 1065 psia will provide adequate heat removal capacity.

(2) LMFW w/Loss of Offsite AC Power - This transient is the result of a station blackout condition. The loss of offsite AC power causes the reactor to trip, the turbine to trip, and the condensate booster pumps and hotwell pumps to trip and cause a loss of main feedwater. The emergency feedwater pumps are actuated on the main feedwater pump trip. Since the reactor coolant pumps have tripped, steam generator level control increases the level setpoint to 50%

on the operating range to promote the natural circulation mode of heat removal. The emergency feedwater control valves open to allow full system flow until the controlling level is attained. Feedwater requirements are determined by core decay heat removal demand. One MDEFWP can deliver sufficient feedwater to meet the demand.

(3) LMFW w/Loss of Onsite and Offsite AC Power - This transient is similar to Case 2 with the additional assumption that the onsite emergency AC power sources have been lost. This results in the loss of the motor driven emergency feedwater pumps. The transient requires the turbine driven emergency feedwater pump to deliver sufficient feedwater to remove core decay heat. The TDEFWP has sufficient capacity to meet the heat removal demand.

(4) Plant Cooldown - In addition to providing sufficient heat removal capacity immediately following a transient, the requirements for plant cooldown from full power operation to RCS temperatures where switchover to the Decay Heat Removal System can be accomplished has been determined. All heat sources have been included. The average hourly EFW flowrate to meet cooldown rates of $100^{\circ}F/hr.$ and $50^{\circ}F/hr.$ down to the switchover temperature of $250^{\circ}F$ are given below.

	Cooldown Rate	
Time	$100^{\circ}F/hr.$	$50^{\circ}F/hr.$
0-1 hr	547 gpm	480 gpm
1-2 hr	464	390
2-3.3 hr	430	-
2-3 hr	-	354
3-4 hr	-	344
4-5 hr	-	331
5-6 hr	-	325
6-6.6 hr	-	320

Cooldown of the RCS is a manual function controlled by the operator such that the EFW flow is throttled to obtain the cooldown rate desired and within Technical Specification and administrative limits.

(5) Turbine Trip - A turbine trip transient causes a reactor trip. The reactor trip initiates the ICS to control steam generator level at the minimum level so that the main feedwater pumps are runback. With the main feedwater pumps in an untripped condition, there is no requirement for the EFW system to function.

(6) Main Steam Isolation Valve Closure - This transient, similar to the turbine trip, does not trip the main feedwater pumps so that the EFW system is not required.

(7) Main Feedwater Line Break - For a main feedwater line break upstream of the isolation check valve, the transient would have the same response as a loss of main feedwater. A break downstream of the check valve will cause the steam generator to blow down, but will be less severe than a steam line break transient due to less feedwater being delivered to the steam generators. The demand on the EFW system would be for decay heat and reactor coolant pump heat removal via the unaffected steam generator. One MDEFWP has sufficient capacity to perform this function.

(8) Steam Line Break - A steam line break transient is primarily an overcooling transient. Only after the overcooling has been turned around and after isolation of the affected SG, the need for heat removal by the intact SG arises. Since the EFW system is capable of delivering to either steam generator, the heat removal demand on the EFW system can be met by one MDEFWP or the TDEFWP in the event the MFW system is unavailable.

(9) Small Break LOCA - For small break loss of coolant accidents, feedwater is required to remove the decay heat and reactor coolant pump heat which is not relieved through the break. The analyses submitted in "Evaluation of Transient Behavior and Small Reactor Coolant System Breaks in the 177-FA Plant," May 7, 1979, required a minimum flow rate of 300 gpm. One MDEFWP has the necessary capacity.

(10) The above transients bound EFW system performance requirements for all transients.