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

WILLIAM O. PARKER, JR.
VICE PRESIDENT
STEAM PRODUCTION

TELEPHONE: AREA 704
373-4083

July 17, 1979

Mr. James P. O'Reilly, Director
U.S. Nuclear Regulatory Commission
Region II
101 Marietta Street, Suite 3100
Atlanta, GA 30303

Re: Oconee Unit 1
Docket No. 50-269

Dear Mr. O'Reilly:

Please find attached Reportable Occurrence Report RO-269/79-19. This report is being submitted pursuant to Oconee Nuclear Station Technical Specifications 6.2 and 6.6.2.1.b(2), which concerns operation in a degraded mode permitted by a limiting condition for operation, and describes an incident which is considered to have no significance with respect to its effect on the health and safety of the public.

Very truly yours,

William O. Parker, Jr. By WRM

William O. Parker, Jr.

SRL/sch

Attachment

cc: Director, Office of Management Information
and Program Control

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DUKE POWER COMPANY
Oconee Unit 1

Report Number: RO-269/79-19

Report Date: July 17, 1979

Occurrence Date: June 17, 1979

Facility: Oconee Unit 1, Seneca, South Carolina

Identification of Occurrence: Excessive Quadrant Power Tilt

Conditions Prior to Occurrence: 15% Full Power

Description of Occurrence:

At 0850 on June 17, 1979, at a level of 15% full power during an increase in power following a reactor trip, an alarm was received indicating that the power tilt in the Y-Z and Z-W quadrants exceeded the error-adjusted steady-state limit of 3.59%. Pursuant to Oconee Nuclear Station Technical Specification 3.5.2.4, at approximately 1245 the Nuclear Overpower Trip Setpoints based on flux and flux/flow/imbalance were reduced. Power escalation continued, and by 1510 on June 17, at a power level of 40% full power, all quadrant tilts were below the error-adjusted steady-state limit.

Apparent Cause of Occurrence:

A review of the performance log subsequent to the occurrence revealed that from 0300 to 0900 on June 17 there was a mismatch in cold leg temperatures of approximately 3 to 4^{o}F. This mismatch resulted in a slight excess in the power produced in the two quadrants fed by the lower-temperature cold legs. The quadrant tilt was still observed after 0900 as a result of differing xenon conditions between the quadrants due to the temperature-induced tilt. The temperature difference was due to the automatic control of the steam generators to maintain minimum level. At very low power levels, there is no compensation for differences in cold-leg temperature. When the power level increases such that the steam generators are no longer controlled on minimum level, the temperature difference disappears.

Analysis of Occurrence:

Technical Specification 3.5.2.4 requires that when the quadrant power tilt exceeds the steady-state limit, either the tilt must be reduced to within the limit within two hours, or the overpower trip setpoints based on flux and flux/flow/imbalance must be reduced within four hours by 2% thermal power for each 1% tilt in excess of the steady-state limit. Since the power level was already well below the cutoff level, the only action required was the decrease in the overpower trip setpoint. This reduction is a preventive measure taken to compensate for any adverse core conditions which might result from the quadrant tilt. Although all actions required by Technical Specifications were taken, the quadrant tilt did constitute operation in a degraded mode permitted by a limiting condition for operation. Therefore, this incident

Analysis of Occurrence (cont'd)

must be reported pursuant to Technical Specification 6.6.2.1.b(2), although it was of no significance with respect to safe operation of the unit, and the health and safety of the public were not affected.

Corrective Action:

As required by Technical Specifications, the overpower trip setpoints were lowered within the four-hour limit. As the power level was increased, feedwater was automatically controlled to eliminate the temperature difference, and the quadrant tilt disappeared.

NRC FORM 366 (7-77)

U. S. NUCLEAR REGULATORY COMMISSION

LICENSEE EVENT REPORT

EXHIBIT A

CONTROL BLOCK: | | | | | | | (1) (PLEASE PRINT OR TYPE ALL REQUIRED INFORMATION)

0 1 | S C N E E 1 (2) | 0 0 - 0 0 0 0 0 - 0 0 (3) | 4 1 1 1 1 (4) | | (5)

LICENSEE CODE | LICENSE NUMBER | LICENSE TYPE | CAT

CON'T 0 1 REPORT SOURCE L (6) | 0 5 0 0 0 2 6 9 (7) | 0 6 1 7 7 9 (8) | 0 7 1 7 7 9 (9)

DOCKET NUMBER | EVENT DATE | REPORT DATE

EVENT DESCRIPTION AND PROBABLE CONSEQUENCES (10)

0 2 On June 17, 1979, the quadrant power tilt for two quadrants exceeded the error-
0 3 adjusted steady-state limit for approximately six hours. The nuclear over-
0 4 power trip setpoints were reduced as required by Technical Specifications.
0 5 The incident was of no significance with respect to safe operation of the unit
0 6 and the health and safety of the public were not affected.
0 7
0 8

0 9	SYSTEM CODE	CAUSE CODE	CAUSE SUBCODE	COMPONENT CODE	COMP. SUBCODE	VALVE SUBCODE
	I A (11)	X (12)	Z (13)	I N S T R U (14)	E (15)	Z (16)

(17) LER/RO REPORT NUMBER	EVENT YEAR		SEQUENTIAL REPORT NO.		OCCURRENCE CODE	REPORT TYPE		REVISION NO.
	7 9	—	0 1 9	/	0 3	L	—	0

ACTION TAKEN	FUTURE ACTION	EFFECT ON PLANT	SHUTDOWN METHOD	HOURS (22)	ATTACHMENT SUBMITTED	NPRD-4 FORM SUB.	PRIME COMP. SUPPLIER	COMPONENT MANUFACTURER
E (18)	E (19)	Z (20)	Z (21)	0 0 0 0	Y (23)	N (24)	L (25)	Z 9 9 9 (26)

CAUSE DESCRIPTION AND CORRECTIVE ACTIONS (27)

1 0 The quadrant tilt was the result of a slight cold-leg temperature mismatch
1 1 due to controlling the steam generator at minimum level at low power. Start-
1 2 up level control will be monitored during the next unit startup to assure
1 3 proper calibration and operation.
1 4

1 5	FACILITY STATUS	% POWER	OTHER STATUS (30)	METHOD OF DISCOVERY	DISCOVERY DESCRIPTION (32)
	C (28)	0 1 5 (29)	NA	A (31)	Operator Observation

1 6	ACTIVITY RELEASED	CONTENT OF RELEASE	AMOUNT OF ACTIVITY (35)	LOCATION OF RELEASE (36)
	Z (33)	Z (34)	NA	NA

PERSONNEL EXPOSURES

1 7	NUMBER	TYPE	DESCRIPTION (39)
	0 0 0 (37)	Z (38)	NA

PERSONNEL INJURIES

1 8	NUMBER	DESCRIPTION (41)
	0 0 0 (40)	NA

LOSS OF OR DAMAGE TO FACILITY (43)

1 9	TYPE	DESCRIPTION
	Z (42)	NA

PUBLICITY

2 0	ISSUED	DESCRIPTION (45)	NRC USE ONLY
	N (44)	NA	

NAME OF PREPARER S. R. Lewis PHONE: (704) 373-8285