

LICENSEE EVENT REPORT (LER)

FACILITY NAME (1)

Turkey Point Unit 4

DOCKET NUMBER (2)

0 5 0 0 0 2 5 1 1 OF 0 2

PAGE (3)

TITLE (4)

Technical Specification - Moderator Temperature Coefficient

EVENT DATE (5)			LER NUMBER (6)			REPORT DATE (7)			OTHER FACILITIES INVOLVED (8)			
MONTH	DAY	YEAR	YEAR	SEQUENTIAL NUMBER	REVISION NUMBER	MONTH	DAY	YEAR	FACILITY NAMES		DOCKET NUMBER(S)	
									N/A		0 5 0 0 0	
0 6	1 1	8 4	8 4	0 1 2	0 0 0	7 1	0 8	4	N/A		0 5 0 0 0	
THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR 5. (Check one or more of the following) (11)												
OPERATING MODE (9)			20.402(b)			20.405(a)			60.73(a)(2)(v)			73.71(b)
POWER LEVEL (10)			20.405(a)(1)(i)			60.36(a)(1)			60.73(a)(2)(v)			73.71(c)
0 9 1			20.405(a)(1)(ii)			60.36(a)(2)			60.73(a)(2)(vi)			OTHER (Specify in Abstract below and in Text, NRC Form 200A)
			20.405(a)(1)(iii)			60.73(a)(2)(i)			60.73(a)(2)(vii)(A)			
			20.405(a)(1)(iv)			60.73(a)(2)(ii)			60.73(a)(2)(vii)(B)			
			20.405(a)(1)(v)			60.73(a)(2)(iii)			60.73(a)(2)(viii)			

LICENSEE CONTACT FOR THIS LER (12)

NAME

Randy D. Hart, Licensing Engineer

TELEPHONE NUMBER

AREA CODE

3 0 5 2 4 5 - 2 9 1 0

COMPLETE ONE LINE FOR EACH COMPONENT FAILURE DESCRIBED IN THIS REPORT (13)

CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NPROS	CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NPROS

SUPPLEMENTAL REPORT EXPECTED (14)

YES (If yes, complete EXPECTED SUBMISSION DATE)		NO		EXPECTED SUBMISSION DATE (15)	MONTH	DAY	YEAR
		<input checked="" type="checkbox"/>					

ABSTRACT (Limit to 1400 words, i.e., approximately fifteen single-space typewritten lines) (16)

On June 11, 1984, the moderator temperature coefficient (MTC) Technical Specification (TS) was exceeded. The root cause was determined to stem from inadequate procedural guidance to take into account changes in parameters affecting fulfillment of the TS requirement. Immediate corrective actions taken included the following:

- 1) a reduction in reactor power to a level satisfying the TS requirement,
- 2) supervisor discussion with the operators on initiating conditions and significance of the event,
- 3) increased coordination between Operations and Reactor Engineering on determination of xenon and boron concentrations and conditions required for power ascension to 70% and above without exceeding TS,
- 4) verification by Reactor Engineering that conditions on the MTC curve are satisfied, and
- 5) request fuel vendor, Westinghouse, review MTC parameters to see if available margin exists to increase operating flexibility.

Long term corrective actions in progress include investigating possible TS changes and investigating a change in core design philosophy to ensure design parameters meet TS in all operating conditions and a procedure change was made to require Reactor Engineering to evaluate and establish the plant conditions required prior to power ascension to 70% and above. The health and safety of the public were not affected. Similar occurrences: None.

8407130308 840710
PDR ADOCK 05000251
5 PDR

JE22 11

LICENSEE EVENT REPORT (LER) TEXT CONTINUATION

U.S. NUCLEAR REGULATORY COMMISSION

APPROVED OMB NO. 3150-0104

EXPIRES: 9/31/89

FACILITY NAME (1) Turkey Point Unit 4	DOCKET NUMBER (2) 0500025184	LER NUMBER (6)			PAGE (3)		
		YEAR	SEQUENTIAL NUMBER	REVISION NUMBER			
		84	012	00	02	OF	02

TEXT (If more space is required, use additional NRC Form 365A's) (17)

On June 11, 1984, at 10:30 p.m., the Unit 4 reactor was operating at a power level above 70% with a slightly positive moderator temperature coefficient (MTC) which does not comply with Technical Specification (TS) 3.1-2. The root cause was determined to stem from inadequate procedural guidance to take into account the affect of a large change in xenon concentration on the ability to maintain a zero or negative MTC. This resulted in exceeding the TS requirement.

TS 3.1-2 states that with the reactor power greater than or equal to 70% RATED THERMAL POWER, the MTC shall not be more positive than 0 delta K/K/°F. On June 11, 1984, at 2:32 p.m., the unit was returned to service after approximately 15 hours in the hot shutdown condition. Power was increased to just under 70% to hold for chemistry sampling and other verifications. The reactor coolant system (RCS) boron concentration was determined to be 1390 ppm and Bank D control rod drive position at 180 steps withdrawn. Under these conditions, with no significant reduction in xenon concentration allowed, the reactor power could be increased to 100% without violating TS 3.1-2. However, the previous unit shutdown and changes in the xenon production and removal rates that occur during power ascension resulted in the xenon concentration diminishing such that negative reactivity had to be added (i.e., inserting rods, borating) to control reactor power. The problem arose when the ability to add reactivity was limited to the addition of boron, since any insertion of Bank D control rods would have driven the neutron axial flux outside its target band in violation of TS 3.2.6. Thus, boron was added to control reactor power, compensating for the reducing xenon concentration, resulting in exceeding the MTC curve due to a slightly positive MTC.

The initial identification of the problem was made at 9:50 p.m., when chemistry sampling indicated the RCS boron concentration to be 1540 ppm. Power was reduced from 91% to approximately 80% and a back-up sample was requested which verified (1550 ppm) at 10:30 p.m. that the problem existed. Power was reduced below 70% and Reactor Engineering was notified and their assistance requested. Reactor Engineering determined what conditions were required (i.e., xenon build-up, boron concentration, and Bank D rod position) to reach and exceed 70% power without adversely impacting axial flux or MTC requirements. After 8 1/2 hours, the RCS boron concentration was at 1429 ppm which was low enough to allow power to be increased to 70% and above while complying with TS 3.1-2. The ascension to full power recommenced and full power was achieved on June 12, 1984, at 11:00 a.m., with no further problems.

July 10, 1984
PNS-LI-84-236

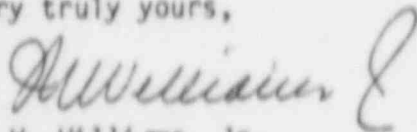
U.S. Nuclear Regulatory Commission
Document Control Desk
Washington, D.C. 20555

Gentlemen:

Re: Reportable Event 84-12
Turkey Point Unit 4
Date of Event: June 11, 1984
Technical Specification-Moderator Temperature Coefficient

The attached Licensee Event Report is being submitted pursuant to the requirements of 10 CFR to provide notification of the subject event.

Very truly yours,



J. W. Williams, Jr.
Group Vice President
Nuclear Energy

JWW/PLP/js

Attachment

cc: J. P. O'Reilly, Region II, USNRC
Harold F. Reis, Esquire
File 933.1 TP

IE-22

11