U.S. NUCLEAR REGULATORY COMMISSION
APPROVED OMB NO. 3150–0104
EXPIRES 8/31/85

LICENSEE EVENT REPORT (LER)

FACILITY NAME (1)	DOCKET NUMBER (2)	PAGE (3)
Dresden Nuclear Power Station, Unit 2	0 5 0 0 0 2 3 7	1 OF 0 3

TITLE (4)

Violation of Core Thermal Power Limit Due to Miscalibrated Feedwater Flow Transmitter

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 2	1 7	8 6	8 6	0 0 4	0 0	0 3	1 7	8 6	N/A	0 5 0 0 0

OPERATING MODE (9)	N
POWER LEVEL (10)	1 0 0

THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR § (Check one or more of the following) (11)

20.402(b)	20.406(c)	50.73(a)(2)(iv)	73.71(b)
20.406(a)(1)(i)	50.36(c)(1)	50.73(a)(2)(v)	73.71(c)
20.406(a)(1)(ii)	50.36(c)(2)	50.73(a)(2)(vii)	OTHER (Specify in Abstract below and in Text, NRC Form 366A)
20.406(a)(1)(iii)	X 50.73(a)(2)(i)	50.73(a)(2)(viii)(A)	
20.406(a)(1)(iv)	50.73(a)(2)(ii)	50.73(a)(2)(viii)(B)	
20.406(a)(1)(v)	50.73(a)(2)(iii)	50.73(a)(2)(x)	

LICENSEE CONTACT FOR THIS LER (12)

NAME	TELEPHONE NUMBER	
		AREA CODE
Mark Wagner, Lead Nuclear Engineer (X-544)		8 1 5 9 4 2 - 2 9 2 0

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

CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NPRDS		CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NPRDS	
X	S J	F I T	G 0 8 0	Y							

SUPPLEMENTAL REPORT EXPECTED (14)		EXPECTED SUBMISSION DATE (15)	MONTH	DAY	YEAR
X YES (If yes, complete EXPECTED SUBMISSION DATE)	NO		0 4	1 8	8 6

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

On February 17, 18, 19 and 20, Unit 2 operated an average 0.44% above the license thermal power limit for 41 hours. A maximum power overshoot of 1.52% was obtained on February 18th at 1338 hours. The power overshoot can be attributed to the 2C reactor feedpump flow transmitter (GEMAC model #553), which was found to be out of calibration on February 24th. The transmitter either drifted out of calibration or it may have been jarred out of calibration by station personnel. On 2/24/86 the transmitter was calibrated in accordance with station procedure DIP 600-1 and work request #50919.

In order to preclude recurrence of this event, a work request (#51353) has been issued to install a protective barrier around the feedwater flow transmitter. Further corrective actions are currently being considered. A supplemental report will be issued when a final decision has been made.

This was determined to be an isolated event because the errant transmitter had been previously calibrated on January 31st. The safety significance of the overpower event was minimal because, during the incident, greater than 10 percent margin existed on all fuel related Technical Specification limits. In addition, considering the conservatism inherent with the flow biased power scram setpoints, the scram function was not seriously jeopardized had a power transient occurred. This is the first occurrence of this type at Dresden.

IE22

NRC Form 366A
(9-83)

LICENSEE EVENT REPORT (LER) TEXT CONTINUATION

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TEXT (If more space is required, use additional NRC Form 366A's) (17)

On February 17, 18, 19 and 20, Unit 2 operated an average of 0.44% above the license thermal power limit for 41 hours. A maximum overshoot of 1.52% was obtained on February 18th at 1338 hours. The following time spans found the overpower condition on the dates mentioned above. Although the total time listed below exceeds 41 hours, it should be noted that the core thermal power occasionally drifted below the licensed limit during these time spans.

Date	Time Period
2/17/86	1113 - 1600
	2000 - 2150
2/18/86	0820 - 2400
2/19/86	0000 - 2400
2/20/86	0000 - 0030

The overpower event was traced to the 2C reactor feedwater (EIIS Code SJ) pump flow transmitter. The following sequence of events led to the power overshoot.

On February 12, 1986 at 1900 hours, the 2C reactor feedwater pump was started to replace the 2B reactor feedwater pump which was placed out-of-service due to seal damage. With both the 2A and 2C reactor feed pumps operable, Unit 2 was placed on a normal return load ramp to full power starting from 45 percent rated core thermal power. Prior to the feedwater pump changeover, operating with the 2A and 2B combination, the generator output associated with rated thermal power was 825 megawatts electric. However, with the 2A and 2C combination, generator loads in excess of 825 megawatts electric were noted on February 17, 18, 19 and 20. On February 20th, due to seal damage, the 2C reactor feedwater pump was placed out-of-service.

During the course of the investigation, to determine the cause of the megawatt electric output discrepancy, it was decided to check the calibration of the three feedwater flow transmitters because of their large impact on calculated core thermal power. The 2C feedwater flow transmitter output was discovered to be non-conservative. On February 24, 1986, the Instrument Mechanics calibrated the 2C feedwater flow transmitter in accordance with DIP 600-1 and work request #50919. The as found calibration data was evaluated to determine the magnitude of the core thermal power overshoot. The errant transmitter was producing a signal that was approximately 1.5 milliamps non-conservative, which translates to a calculational error in reactor power equal to 36 megawatts thermal. Using this value, operating data was assessed to determine the extent and duration of the power overshoot on the days mentioned above. Furthermore, the overpower was confirmed to be an isolated incident because the 2C feedwater flow transmitter was last calibrated on January 31st in accordance with DIP 600-1 and work request #50547. Between this date and February 12, 1986, the 2C feedwater pump was used only for five hours at approximately 65 percent power.

In order to preclude recurrence of this event, a work request (#51353) has been issued to install a protective barrier around the feedwater flow transmitter. The work was completed on March 11, 1986. A similar work request (#51356) was issued for Unit 3. Work is expected to be completed before the Cycle 10 startup. Further corrective actions are currently considered. A supplemental report will be issued when a final decision has been made.

(Continued)

NRC Form 366A
(9-83)

LICENSEE EVENT REPORT (LER) TEXT CONTINUATION

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TEXT (If more space is required, use additional NRC Form 366A's) (17)

The safety significance of the overpower condition was minimal for several reasons. First, greater than 10 percent margin existed on all fuel related Technical Specifications throughout the duration of the overpower event. Furthermore, Exxon Nuclear assumes a 1.76 percent standard deviation in feedwater flow when evaluating various potential plant transients. This value bounds the 1.44 percent error generated by the 2C feedwater flow transmitter. In addition, the Exxon design base accident analysis assumes that the loss of coolant accident initiates at 102 percent power. This bounds the power levels obtained during the overpower condition. Finally, considering the conservatism applied to the flow biased power scram setpoints, the scram function was not seriously degraded. This is the first incident of this type at Dresden Station.

March 17, 1986

DJS Ltr #86-197

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

Licensee Event Report #86-004-0, Docket #050237 is being submitted as required
by Technical Specification 6.6, NUREG 1022 and 10 CFR 50.73 (a)(2)(i)(B).

D.J. Scott
Station Manager
Dresden Nuclear Power Station

DJS/kjl

Enclosure

cc: J.G. Keppler, Regional Administrator, Region III
     File/NRC
     File/Numerical

IE22
1/1