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Dresden Nuclear Power Station
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February 16, 1994

GFSLTR 94-0054

U.S. Nuclear Regulatory Commission
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Licensee Event Report 94-003, Docket 50249 is being submitted as required by Technical Specification 6.6, NUREG 1022 and 10 CFR 73(a)(2)(i)(B).

for 2-16-94
Gary F. Spedl
Station Manager
Dresden Station

GFS/JW/maf

Enclosure

cc: J. Martin, Regional Administrator, Region III
NRC Resident Inspector's Office
File/NRC
File/Numerical

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LICENSEE EVENT REPORT (LER)

Form Rev 2.0

Facility Name (1)	Docket Number (2)	Page (3)
Dresden Nuclear Power Station, Unit 3	0 5 0 0 0 2 4 9	1 of 0 4

Title (4)

Reactor Vessel level Instrumentation Found Outside of Technical Specification Limits Due to Setpoint Drift

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)
0 1	1 9	9 4	9 4	--- 0 0 3	--- 0 0	0 2	1 6	9 4	N/A	
									N/A	

OPERATING MODE (9)	N	THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10CFR (Check one or more of the following) (11)					
POWER LEVEL (10)	0 7 4	20.402(b)	20.405(c)	50.73(a)(2)(iv)	73.71(b)		
		20.405(a)(1)(i)	50.36(c)(1)	X 50.73(a)(2)(v)	73.71(c)		
		20.405(a)(1)(ii)	50.36(c)(2)	50.73(a)(2)(vii)	Other (Specify in Abstract below and in Text)		
		20.405(a)(1)(iii)	50.73(a)(2)(i)	50.73(a)(2)(viii) (A)			
		20.405(a)(1)(iv)	50.73(a)(2)(ii)	50.73(a)(2)(viii)(B)			
		20.405(a)(1)(v)	50.73(a)(2)(iii)	50.73(a)(2)(x)			

LICENSE CONTACT FOR THIS LER (12)

NAME	TELEPHONE NUMBER
	AREA CODE
Nicos Digrindakis, System Engineering Ext.3584	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	A D	L I S	Y 0 1 9	Y					

SUPPLEMENTAL REPORT EXPECTED (14)		Expected Submission Date (15)	Month	Day	Year
	Yes (If yes, complete EXPECTED SUBMISSION DATE)	X NO			

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

On January 19, 1994, at 1340 hours, with Unit 3 at 74% rated core thermal power, while performing Dresden Instrument Surveillance (DIS) 0500-03, Contact 7/8 of Emergency Core Cooling System (ECCS) Initiation Level Indicating Switch 3-263-72B failed to trip on a low Reactor Water Level signal. Level Indicating Switch (LIS) 3-263-72B Contact 7/8 is part of the Core Spray System 2 and Automatic Depressurization System (ADS) -59 inch initiation one out of two twice logic. The necessary redundant switches were available during this event allowing both systems to remain operable. The contacts were readjusted and tested satisfactorily using DIS 0500-03. The Safety Significance of this event is minimal since the redundant switches that make up the one out of two twice logic were available throughout this event. This event is not isolated. For the years 1992 and 1993, the ECCS initiation contacts of LIS 2(3)-263-72A(B)(C)(D) have been found to be out of their adminstrative calibration limit (in a non-conservative direction per DIS 0500-03) during their monthly surveillance tests a total of 54 times. Twenty-nine (29) of these events were outside of the Technical Specification surveillance limit.

PLANT AND SYSTEM IDENTIFICATION:

General Electric-Boiling Water Reactor-2527 MWt rated core thermal power.

Nuclear Tracking System (NTS) tracking code number for this LER is 249-180-94-00300.

EVENT IDENTIFICATION:

Reactor Vessel level Instrumentation Found Outside of Technical Specification Limits Due to Setpoint Drift.

A. CONDITIONS PRIOR TO EVENT:

Unit: 3 Event Date: 1/19/94 Event Time: 1340

Reactor Mode: N Mode Name: Run Power Level: 74%

Reactor Coolant System Pressure: 1000 psig

B. DESCRIPTION OF EVENT:

On January 19, 1994, at 1340 hours, with Unit 3 at 74% rated core thermal power, while performing DIS 0500-03, Reactor Water Level ECCS Initiation Indicating Switch Calibration, LIS 3-263-72B Contact 7/8 did not trip. LIS 3-263-72B Contact 7/8 is part of the Core Spray System 2 and Automatic Depressurization System (ADS) -59 inch initiation one out of two twice logic. The necessary redundant switches were available during this event allowing Core Spray and ADS systems to remain operable. The contacts were readjusted and tested satisfactorily using DIS 0500-03. The Safety Significance of this event is minimal since the redundant switches that make up the one out of two twice logic were available throughout this event.

C. APPARENT CAUSE OF EVENT:

This report is being submitted in accordance with 10CFR50.73 (a)(2)(v), which requires the reporting of any event or condition that alone could have prevented fulfillment of the safety function of structures or systems that are needed to mitigate the consequences of an accident. Although this case was a single setpoint drift, it is indicative of a generic problem that could have resulted in the failure of more than one switch and thereby cause one or more systems to fail to fulfill their safety function.

The Core Spray and ADS systems -59 inch reactor level initiation logic is made up of a one out of two twice logic array. The logic is such that a failure of one contact would not prevent the systems from receiving a -59 inch initiation signal.

In this event, the 7/8 Contacts on LIS 3-263-72B failed to trip on receipt of a low level signal during the monthly instrument surveillance test. The switch contacts are required to trip before reaching the -59 inch (+84 inch above top of active fuel) setting. The apparent cause of this is setpoint drift. The cause of the setpoint drift is not known at this time.

A historical review indicated that setpoint drift failures have occurred a number of times. For the years 1992 and 1993, the ECCS

initiation contacts of LIS 2(3)-263-72A(B)(C)(D) have been found to be out of their adminstrative calibration limit (in a non-conservative direction per DIS 0500-03) during their monthly surveillance tests a total of 54 times. Twenty-nine (29) of these events were outside of the Technical Specification surveillance limit.

D. SAFETY ANALYSIS OF EVENT:

Because the redundant switches of the one out of two twice initiation logic were available during this event, the Core Spray and ADS systems would have initiated automatically once the reactor level reached -59 inches. Thus, the safety significance of LIS 3-263-72B Contacts 7/8 failing to trip is considered minimal in this case.

E. CORRECTIVE ACTIONS:

The immediate corrective action readjusted and tested LIS 3-263-72B per DIS 0500-03.

The Site Engineering Department will determine if it is feasible to replace the Yarway switches with a Rosemount Analog Trip System by 7/1/94 (237-180-93-03102).

A Technical Specification change has been submitted to change the required setpoint from 84 (+4/-0) inches of water differential pressure to ≥84 inches of water differential pressure (237-200-89-02203).

A review of procedure DIS 0500-03 will be performed to determine if the as found procedure steps can be enhanced by 9/1/94 (237-180-93-03103).

Unit 2 LIS switches 2-263-72A(B)(C)(D) were replaced during D2R13 and Problem Identification Report (PIR) 3-92-116 committed to replace the switches for the Unit 3 -59 inch initiation logic 3-263-72A(B)(C)(D). Initial indications are that the new switches on the Unit 2 Yarways may be more susceptible to setpoint drift than the existing switches on the Unit 3 Yarways. As a result, the switch replacement for Unit 3 has been put on hold pending an engineering evaluation of the Unit 2 switches.

Due to the chronic failures of Yarway switches, an action plan to address setpoint drift will be developed by 2/28/94 by the Site Engineering (237-180-93-03101). Site Engineering will perform an operability evaluation in accordance with Commonwealth Edison Procedure QE-40.1 to determine the impact of setpoint drift on the ability of the Yarway level indicating switches to perform their safety function and report the conclusions by 2/28/94 (249-180-94-00301).

F. PREVIOUS OCCURRENCES:

For the years 1992 and 1993, the ECCS initiation contacts of Yarway Level Indicating Switches 2(3)-263-72A(B)(C)(D) have been found to be out of their adminstrative calibration limit (in a non-conservative direction per DIS 0500-03) during their monthly surveillance tests a total of 54 times. Twenty-nine (29) of these events were outside of the Technical Specification surveillance limit.

Non-conservative ECCS initiation out-of-calibration events for the past two years are listed below:

Instrument No	1992 Events	1993 Events
LIS 2-263-72A	8	3 (2)
LIS 2-263-72B	4	4 (1)
LIS 2-263-72C	0	7
LIS 2-263-72D	0	0
TOTALS	12	14 (3)

Instrument No	1992 Events	1993 Events
LIS 3-263-72A	1	4
LIS 3-263-72B	11	8
LIS 3-263-72C	1	3
LIS 3-263-72D	0	0
TOTALS	13	15

Note: Of the 54 non-conservative out-of-calibration events above, twenty-nine (29) were outside the Technical Specification surveillance limit, including three (3) failures of the contact to trip at any level input provided during the surveillance.

The following Licensee Event Reports (LERs) have been issued for out-of-calibration and failure-to-trip events for the past two years:

LER/Docket Numbers	Event
93019/050237	Yarway Level Indicating Switch 2-263-72B Contacts 3/4 Failed to Operate
93031/050237	Yarway Level Indicating Switch 2-263-72C Found Out of Tech Spec Tolerance
93001/050249	Unit 3 Yarway Level Indicating Switch Found Out of Tech Spec Tolerance

G. COMPONENT FAILURE DATA:

Manufacturer	Nomenclature	Model Number	Mfg. Part Number
Yarway	Level Switch	4418C	DS551