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February 9, 1995

TPJLTR 95-0019

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

Licensee Event Report 95-003, Docket 50-237 is being submitted as required by Technical Specification 6.6, NUREG 1022 and 10CFR50.73(a)(2)(i)(B).

Sincerely,

Thomas P. Joyce
Site Vice President
Dresden Station

TPJ/:pt

Enclosure

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

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NRC FORM 366 (5-92) | U.S. NUCLEAR REGULATORY COMMISSION | APPROVED BY OMB NO. 3150-0104 EXPIRES 5/31/95

LICENSEE EVENT REPORT (LER)

ESTIMATED BURDEN PER RESPONSE TO COMPLY WITH THIS INFORMATION COLLECTION REQUEST: 50.0 HRS. FORWARD COMMENTS REGARDING BURDEN ESTIMATE TO THE INFORMATION AND RECORDS MANAGEMENT BRANCH (MNBB 7714), U.S. NUCLEAR REGULATORY COMMISSION, WASHINGTON, DC 20555-0001, AND TO THE PAPERWORK REDUCTION PROJECT (3150-0104), OFFICE OF MANAGEMENT AND BUDGET, WASHINGTON, DC 20503.

FACILITY NAME (1)	DOCKET NUMBER (2)	PAGE (3)
Dresden Nuclear Power Station, Unit 2	05000237	1 OF 7

TITLE (4): Unit 2 Technical Specification Violation During Idle Reactor Recirculation Pump Start Due to Management Deficiency

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 NAME	DOCKET NUMBER
01	10	95	95	-- 003 --	00	02	09	95	None	
									FACILITY NAME	DOCKET NUMBER

OPERATING MODE (9)	N
POWER LEVEL (10)	031

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

	20.2201(b)		20.2203(a)(3)(i)		50.73(a)(2)(iii)		73.71(b)
	20.2203(a)(1)		20.2203(a)(3)(ii)		50.73(a)(2)(iv)		73.71(c)
	20.2203(a)(2)(i)		20.2203(a)(4)		50.73(a)(2)(v)		OTHER
	20.2203(a)(2)(ii)		50.36(c)(1)		50.73(a)(2)(vii)		(Specify in Abstract below and in Text, NRC Form 366A)
	20.2203(a)(2)(iii)		50.36(c)(2)		50.73(a)(2)(viii)(A)		
	20.2203(a)(2)(iv)	X	50.73(a)(2)(i)		50.73(a)(2)(viii)(B)		
	20.2203(a)(2)(v)		50.73(a)(2)(ii)		50.73(a)(2)(x)		

LICENSEE CONTACT FOR THIS LER (12)

NAME	TELEPHONE NUMBER (Include Area Code)
William R. Gideon, Operations Ext. 2300	(815) 942-2920

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

SUPPLEMENTAL REPORT EXPECTED (14)				EXPECTED SUBMISSION DATE (15)	MONTH	DAY	YEAR
X	YES (If yes, complete EXPECTED SUBMISSION DATE).		NO		04	09	95

ABSTRACT (Limit to 1400 spaces, i.e., approximately 15 single-spaced typewritten lines) (16)

On January 10, 1995, at 1051 hours, Unit 2 was operating at 31% rated core thermal power. Preparations to restart 2B Reactor Recirculation Pump, which had been inadvertently tripped at 0829, were in progress. DOP 0202-01, Unit 2 Reactor Recirculation System Startup, and Unit 2 Technical Specification 3.6.H.5. contain conflicting requirements concerning a 145 degree F maximum temperature differential that must be met prior to idle recirculation pump restart. DOP 0202-01 specifies using reactor bottom head metal temperature while TS 3.6.H.5. specifies reactor bottom head drain line coolant temperature. Under existing plant conditions, neither temperature resulted in a differential low enough to allow recirculation pump restart. The operations team decided to use an alternate indication to determine reactor bottom head drain line coolant temperature. This approach was not in strict compliance with TS 3.6.H.5. The 2B pump was restarted using the alternate indication. Subsequent review of this event by station management determined that the restart of the idle recirculation pump under these circumstances constituted a failure to comply with the Technical Specifications. An initial engineering evaluation into this event concluded that the safety significance of this event is considered minimal since the conditions necessary for thermal stratification did not exist at the time of recirculation pump start.

EVENT IDENTIFICATION:

Unit 2 Technical Specification Violation During Idle Reactor Recirculation Pump [AD] Start Due to Management Deficiency.

A. PLANT CONDITIONS PRIOR TO EVENT:

Unit: 2 Event Date: 01/10/95 Event Time: 1051 hours

Reactor Mode: Run Mode Name: Run Power Level: 31%

Reactor Coolant System Pressure: 920 psig

The reactor bottom head drain line was known to be inoperable at the start of the event. Since measurement of the coolant in this drain line is required to meet the Technical Specifications, this material deficiency contributed to the event. There were no other structures, systems or components that were inoperable at the start of the event which contributed to the event.

B. DESCRIPTION OF EVENT:

On January 10, 1995 at approximately 0800 hours, Unit 2 was in steady state operation at 665 MWe. The Instrument Maintenance Department(IMD) was expected to begin work on the 2A Reactor Recirculation Motor-Generator Set (MG set)fluid coupler oil temperature controller. At 0829 hours the Nuclear Station Operator (NSO) received a trip of the 2B Recirculation MG Set on High Oil Temperature (greater than 160 degrees). Actions were promptly taken to control the transient and the reactor was placed in a stable condition by 0900 hours. The trip of the 2B Recirculation MG Set and recirculation pump was caused by IMD personnel working on the 2B fluid coupler oil temperature controller instead of the 2A controller. The root cause and corrective actions associated with the recirculation pump trip are documented in PIR 237-200-95-008.

At 0930 hours, the operations team was preparing to restart the 2B (idle) recirculation pump. Preparation consisted of a Heightened Level of Awareness (HLA) briefing per Dresden Administrative Procedure (DAP) 07-37 containing review of the applicable procedures, review of the Technical Specifications, and assignment of NSOs to watch Feedwater Heater parameters, reactor vessel water level, reactor power, and recirculation system parameters. During restart preparations, the Unit NSO recognized that the requirements of DOP 0202-01, which states that the temperature difference between the reactor bottom head metal temperature and the reactor steam space temperature must be less than 145 degrees F prior to recirculation pump restart, could not be met. The reason for this limit is to minimize the thermal stresses on the penetrations of the bottom head, particularly the Control Rod Drive (CRD) stub tubes. The indicated temperature difference at the time was approximately 158 degrees. Further investigation revealed that the temperature difference prior to the trip of the 2B recirculation pump was 150 degrees. A comparison was made with the Unit 3 bottom head metal temperature reading from the previous evening. The Unit 3 thermocouple was reading approximately 20 degrees higher than the Unit 2 thermocouple, indicating a potential problem with the accuracy of this indication and the appropriateness of it's use as a criteria for pump restart.

Actions were taken by the team to minimize the thermal stress across the CRD stub tube welds. These actions included minimizing CRD flow and maximizing the flow of the operating recirculation pump.

During review of the Technical Specifications prior to the HLA brief, the Shift Manager recognized that the procedure and the Technical Specification specify different temperature indications to be used to evaluate the 145 degree F differential temperature requirement. TS 3.6.H.5 specifies comparison between bottom head drain line coolant temperature and reactor steam space coolant temperature as opposed to the DOP, which compares bottom head metal temperature and reactor steam space coolant temperature. The bottom head drain line coolant temperature indication at the time was reading about 126 degrees, or approximately equal to drywell ambient temperature. In order for this indication to be an accurate indication of drain line coolant temperature, there must be flow in the line. The Shift Manager knew that this line was clogged and that the thermocouple was not a reliable indication of the coolant temperature in the bottom head region of the vessel. Amendment 127 to the Technical Specifications, which added the 145 degree differential temperature requirement, was not implemented until July 19, 1994. Since then, no other idle recirculation pump recoveries have occurred while operating.

Faced with the decision to start the pump in the midst of this procedural uncertainty or shut down the Unit, the team decided to use alternate temperature indication to attempt to meet the requirements of DOP 0202-01 and the Technical Specification. The alternate indication used was active recirculation loop discharge temperature with an 8 degree offset for conservatism (8 degrees being the difference between reactor vessel bottom head metal temperature before and after the pump trip). The use of this alternate indication, when combined with the actions taken earlier to minimize thermal stress across the CRD stub tube welds, was considered by the team to be a conservative approach to meeting the 145 degree F differential requirement of both DOP 0202-01 and the Technical Specification. The team also believed they were following the administrative procedures for procedure adherence, which in some cases allow the procedure to be performed differently than written, although these administrative procedures were not referenced during the event.

An ISEG (Independent Safety Engineering Group) staff member was present in the control room observing the team's recirculation pump start preparation activities. Prior to the recirculation pump start the ISEG engineer questioned the Unit Supervisor as to how the differential temperature requirements of DOP 0202-01 were being met. When the alternate temperature indications were mentioned, the ISEG engineer recommended delaying pump start until an engineering evaluation could be performed. Shift Management considered his recommendation and also considered submitting a temporary procedure change to use alternate indication. It was believed that a temporary procedure change would alter the intent of the existing procedure, which is not allowed for temporary procedure changes. The Unit Supervisor explained to the ISEG engineer the logic the team was using to justify pump start. After this rationale was explained to the ISEG engineer, he did not pursue this line of questioning.

The 2B recirculation pump was restarted at 1051 hrs on 01/10/95.

The participating ISEG engineer brought the event to the attention of senior station management on the afternoon of 01/10/95. Subsequent review of this event by station management determined that the restart of the idle recirculation pump under these circumstances constituted a failure to comply with the Technical Specifications.

C. CAUSE OF EVENT:

This report is being submitted in accordance with 10CFR50.73(a)(2)(i)(b), which requires reporting any operation prohibited by Technical Specifications. Several of the more extensive corrective actions do not have clear time requirements. Progress in addressing these corrective actions will be included in supplemental report(s).

Root Causes

1. Knowledge Deficiency

A knowledge deficiency in that the licensed operators who participated in this event believed that the requirements of the technical specification were being met. The preliminary G.E. analysis concluded that the 145 degree F temperature difference was not exceeded. However, the operators had no way of definitively measuring the temperature of the bottom head drain line coolant prior to starting the recirculation pump. (See corrective actions 2, 3, and 14)

2. Procedural Inadequacy

Low station standards in procedural/technical specifications quality, adherence and change implementation. The acceptance of these standards has resulted in procedures that cannot be followed as written, vague procedural guidance which allows non-compliance with procedures under certain conditions, and at least one procedure that does not satisfy technical specifications requirements. Training on procedural changes consists primarily of a required reading program of questionable effectiveness. (See corrective actions 4, 5, 7, 8, 9, 10, and 15)

3. Judgement Error

Non-conservative decision making by the operations team to restart the 2B pump. The crew recognized that the Technical Specification, applicable procedures, and plant configuration were not in agreement, but used poor judgement in continuing with the restart of the 2B recirculation pump using alternate methods and without pursuing additional guidance. (See corrective actions 1, 2, 4, 7, 11, 12, and 13)

Contributing Causes

1. Material Condition Deficiency

The reactor vessel drain line is clogged, and has been for many years. (See corrective action 6)

2. Inadequate Engineering Support

The engineering evaluation conducted to justify the use of the reactor bottom head metal temperature to meet the requirements of G.E. SIL 251 (the document discussing idle recirculation pump start issues) when the drain line became unavailable was inadequate. (See corrective action 6)

D. SAFETY ANALYSIS:

The safety significance of this event is considered minimal due to the absence of the conditions necessary to create thermal stratification in the reactor bottom head region prior to the restart of the pump. This determination was made with the assistance of General Electric and is documented in J. D. Williams to E.D. Eenigenburg letter dated January 30, 1995 (CHRON # 0305731).

E. CORRECTIVE ACTIONS:

Immediate Corrective Actions

1. The Shift Operations Supervisor informed operating team members via the Operations Orders that the units will be shut down if a recirculation pump trip occurs until there is consistent documentation to support restart of an idle recirculation pump. (This action has been completed)

2. The Unit 2 Operations Manager discussed the event with the Operations Management Team involved and coached them on conservative decision making. The team now understands that the decision to restart the 2B recirculation pump under these circumstances was a non-conservative decision. (This action has been completed)

3. Each Shift Manager and Unit Supervisor has signed a statement that they understand that literal compliance with Technical Specifications is required except under emergency situations defined by 10CFR 50.54(x). (This action has been completed)

4. All-station meetings have been conducted by the station managers concerning the importance of procedural adherence. Discussion included recent instances of procedural non-compliance and the importance of the involvement of each employee in improving station performance in this area. (This action has been completed)

Follow-On Corrective Actions

5. A team is being assembled to review the technical specifications and procedures involving technical specifications with the intent of determining other inconsistencies similar to those existing in this event. In addition, the team will review training conducted on recent technical specification amendments to determine what additional operator training is necessary. (NTS Item #237-180-95-00301)

6. An engineering evaluation is underway to determine how to comply with Technical Specification 3.6.H.5 and G.E. SIL 251 with the drain line clogged, or if compliance is possible in this degraded condition. The findings of this evaluation will be utilized to reconcile the difference between the technical specification and the procedure. (NTS Item #237-180-95-00302)

7. Senior station management will reinforce to the Shift Managers that their primary roles are the overview of plant operations, ensuring compliance with safety requirements and operational standards and reinforcing the importance of conservative decision making. The Shift Managers will be trained on these roles by senior station management and their effectiveness in meeting these expectations will be continuously evaluated. (NTS Item #237-180-95-00303)

8. Station management is committed to enforce a high standard of procedural quality, procedural knowledge, and procedural adherence. A special team is meeting to discuss how best to implement this commitment. Additionally, the team will evaluate how to better process and train on procedures and procedure changes. (NTS Item #237-180-95-00304)

9. The Operations Department Core Team will continue to evaluate and improve operational standards, with emphasis on the importance of conservative decision making. (NTS Item #237-180-95-00305)

10. The Technical Specification amendment review and implementation process will be revised to include an operation readiness review and formal training prior to technical specification implementation to ensure that the proposed amendment is operationally feasible.(NTS Item # 237-180-95-00306).

11. Conservative Decision Making Seminars will be conducted offsite for all Licensed Operators commencing May 3, 1995 to be completed by June 9, 1995. The seminars will discuss the definition of conservative making and the importance of the issue in light of selected operational experience reports, especially SOER 94-01. (NTS Item #237-108-95-00307)

12. Conservative Decision Making Seminars will be conducted by the ComEd BWR VP for all Station Senior Management to be completed by June 9, 1995. The seminars have a format similar to item 10 above. (NTS Item #237-180-95-00308)

13. Simulator Training will be conducted for all Licensed Operators emphasizing Single Loop Operations and utilizing SOER 94-01 recommendations for conservative decision making. Simulator training to be completed by April 28, 1995. (NTS Item #237-180-95-00309)

14. Regulatory Training emphasizing technical specifications, reportability, 10CFR50.54(x) and other pertinent regulatory issues will be provided to all Licensed Operators during an upcoming training cycle. Training to be completed by June 9, 1995. (NTS Item #237-180-95-00310)

15. As a follow on action to Immediate Corrective Action #1, an Operations Standing Order will be in place by 2/15/95 to prohibit restarting an idle recirculation pump while operating. (NTS Item #237-180-95-00311)

F. PREVIOUS OCCURRENCES:

LER/Docket Number Title

05000237/94-018 Unit 3 Reactor Scram on Low Level Due to Programmatic Deficiency and Human Error

The above event identified the existence of low standards in unit operation. The corrective actions for the above event included a reevaluation of operational standards at Dresden. This effort has been effective in many ways, however, this most recent event is an indication of the need for further improvements.

G. COMPONENT FAILURE DATA:

There were no component failures associated with this event.