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Dresden Generating Station
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ComEd

August 9, 1996

JSPLTR #96-0120

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

Licensee Event Report 96-011, Docket 50-237 is attached and is being submitted as a voluntary LER because portions of the plant In Service Testing (IST) program, although within the requirements of the Technical Specifications, were not being followed to meet identified code testing requirements.

This correspondence contains the following commitments:

1. An additional self assessment of the IST program will be performed. This assessment will include the development of a IST program basis document. Any additional IST program non-compliance issues which are identified will be included in a Supplemental LER at the conclusion of the assessment. (2371809601101)

2. The IST program will be revised to properly group the 2-1501-65B, "LPCI pump minimum flow line check valve" and the 3-2301-75, "High Pressure Coolant Injection gland seal cooling check valve". (2371809601102)

3. The IST program will be revised to include the 2(3)-4799-530, "Instrument Air containment isolation check valves". (2371809601103)

4. The IST program will be upgraded to assure conformance of code requirements for PIV extrapolated leakages. (2371809601104)

5. The appropriate NRC relief, of the LPCI flow instrumentation requirements, will be requested. (2371809601105)

6. Dresden Operation Surveillance 1500-10 will be revised to require the use of computer points C254(C354) and C255(C355) during a LPCI pump IST. (2371809601106)

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7. Dresden Adminstrative Procedure 21-16, Alternate Replacement Program, will be revised to require the review of the IST Coordinator for IST Program component changes. (2371809601107)

8. DAP 15-06, Preparation Approval and Control of Work Packages and Work Requests, will be revised to require the review of the IST Coordinator for IST Program component changes. (2371809601108)

9. DAP 14-10, Classification, Procurement, Dedication, Technical Evaluation, and Receiving For New and Replacement Components, Subcomponents, Parts and Material, will be revised to require the review of the IST Coordinator for IST Program component changes. (2371809601109)

If you have any questions, please contact Pete Holland, Dresden Regulatory Assurance Supervisor at (815) 942-2920 extension, 2714.

Sincerely,

J. Stephen Perry
Site Vice President
Dresden Station

Enclosure

cc: H. Miller, Regional Administrator, Region III
NRC Resident Inspector's Office
Illinois Department of Nuclear Safety

NRC FORM 366 (5-92) U.S. NUCLEAR REGULATORY COMMISSION

APPROVED BY OMB NO. 3150-0104
EXPIRES 5/31/95

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.

LICENSEE EVENT REPORT (LER)

FACILITY NAME (1)	DOCKET NUMBER (2)	PAGE (3)
Dresden Nuclear Power Station, Unit 2	0500237	1 OF 6

TITLE (4)
Code Required In Service Tests (IST) and Extrapolation of Pressure Isolation Valve Leakage Not Performed, and IST Flow Instruments Do Not Meet Code Requirements Due To Related Documents Not Developed or Not Revised

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
06	28	96	96	-- 011 --	00	07	28	96	Dresden, Unit 3	0500249
									FACILITY NAME	DOCKET NUMBER

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

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)	X	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)	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)
P. Garrett, Plant Engineering Ext. 2713	(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
	YES (If yes, complete EXPECTED SUBMISSION DATE).	X NO				

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

On June 28, 1996, a self assessment of the In Service Testing (IST) program was in progress by the IST Coordinator. The self assessment was verifying that IST program requirements are defined and implemented in accordance with ASME Codes, Standards and regulatory requirements. The assessment focused on safety and relief valve testing, check valve inspections, valve seat leakage testing, and test instrumentation. During this self assessment, 4 IST Code non-compliance issues were identified; 2 related to check valves, 1 related to pressure isolation valve (PIV) leakage testing, and 1 related to flow instrument ranges. The cause of the IST Code non-compliance is that the IST program did not fully incorporate the Code requirements due to personnel error. Corrective actions include; continued assessments, and IST program revisions. The overall safety significance was determined to be minimal. This report is being submitted as a voluntary LER.

EVENT IDENTIFICATION:

Code Required In Service Tests (IST) and Extrapolation of Pressure Isolation Valve Leakage Not Performed, and IST Flow Instruments Do Not Meet Code Requirements Due To Related Documents Not Developed or Not Revised

A. PLANT CONDITIONS PRIOR TO EVENT:

Unit: 2(3) Event Date: 6/28/96 Event Time: 1600

Reactor Mode: N(N) Mode Name: Shutdown(Shutdown) Power Level: 0%(0%)

Reactor Coolant System Pressure: 0(0) psig

B. DESCRIPTION OF EVENT:

This report is being submitted as a voluntary LER because portions of the plant In Service Testing (IST) program, although within the requirements of the Technical Specifications, were not being followed to meet identified code testing requirements. No inoperable structure, system or component contributed to not meeting code requirements.

On June 28, 1996, a self assessment of the IST program was in progress by the IST Coordinator. The purpose of the self assessment was to verify program requirements are defined and implemented in accordance with ASME Codes, Standards and regulatory requirements. The assessment focused on safety and relief valve testing, check valve inspections, valve seat leakage testing, and test instrumentation. During this self assessment, 4 IST Code non-compliance issues were identified; 2 related to check valves, 1 related to extrapolation of pressure isolation valve (PIV) leakage, and 1 related to flow instrument ranges.

On July 10, 1996, it was decided by Station Management to report these issues in a voluntary LER.

Check Valves

Generic Letter 89-04, Attachment 1, Position 2 allows check valves to be grouped and inspected on a sampling basis. However, this position requires that all check valves in a sample group be of the same design (manufacturer, size, model number, and materials of construction) and have the same service conditions including valve orientation. One check valve sample group in Unit 3, consisting of two valves, did not meet the Generic Letter 89-04 criteria. The High Pressure Coolant Injection (HPCI)[BJ] gland seal cooling check valves, 3-2301-75 and -50A are different models. Therefore, both these valves should be inspected every outage. The 3-2301-50A valve has been inspected at the proper frequency. However, the 3-2301-75 valve was not inspected during the last refueling outage (D3R13) because it had been improperly grouped and was being inspected on a sampling basis.

The instrument air containment isolation check valves, 2(3)-4799-530, are in the Appendix J Program but are not included in the IST Plan. No leak rate tests were missed because they were Type C tested per Appendix J. However, the instrument air containment isolation check valves, 2(3)-4799-530, perform active safety functions to close. The ASME Code requires that they be exercised quarterly. However, the 2(3)-4799-530 valves have not been exercised quarterly and relief from the quarterly exercising requirements had not been requested.

In addition, the IST program was independently reviewed in 1995 to verify and document that all of the safety related valves and components that should be in the IST program were actually and properly included. During this review, the 2(3)-4799-530 valves were not added to the IST program. Likewise, the improper grouping of the 3-2301-75 and -50A valves was not identified.

Extrapolated PIV leakage

Measured leakage rates for Core Spray [BM] outboard injection PIVs, 2(3)-1402-25A(B), Low Pressure Coolant Injection (LPCI)[BM] injection PIVs, 2(3)-1501-22A(B), 2(3)-1501-25A, and 2(3)-1501-25B have not been extrapolated to functional pressure. The ASME Code allows valves to be tested at less than functional pressure provided higher pressure would tend to diminish valve leakage. However, leakage rates measured at less than functional pressure are required to be mathematically adjusted to the maximum functional differential pressure. The only PIVs that are currently being tested at functional pressure are the Core Spray System injection check valves, 2(3)-1402-9A(B).

Instrumentation Ranges and Accuracy

The LPCI pump IST reference flow value is 5,000 gallons per minute (GPM). The code requires that the flow rate instrument full scale range be no more than three times the test reference value. The preferred indication of Unit 2 and 3 LPCI flow rates are computer points C254(C354) and C255(C355). The full scale indication range of the computer points are 0-20,000 GPM. Also, the test procedures allow the use of 2(3)-FI-1561A and B, which have a full scale indication range of 0-20,000 GPM. These ranges are four times the reference value which is in excess of ASME Code requirements.

The LPCI flow instrument calibration accuracy of the computer points and 2-FI-1561A and B is +/- 1% of full scale. The maximum calibrated instrument error at the reference value is +/- 4%. Per NUREG 1482, Section 5.5.1, the NRC staff would grant relief from the Code instrument accuracy or range requirements provided the combination of the full scale calibrated instrument error and the full scale range would yield an indicated error at the reference value which is less than or equal to +/-6%. However, relief was not requested.

The LPCI flow instruments 3-FI-1561A and B have a maximum calibrated instrument error at the reference value of +/- 8%. Although the LPCI IST surveillance procedure prefers the use of computer points C354 and C355 for flow rate indication, the procedure does not explicitly require that the computer points be used for setting flow rate.

When the IST program was developed, the documentation of the IST program was weak and an IST program basis document was not created, but, the program was within the industry standards and practices at that time. During a subsequent independent review in 1995, the above IST issues were not identified. However, a self assessment process that evaluates various programs and processes within the Engineering department, which is how the IST issues were identified, has been implemented. This helps assure that programs are reviewed and improvements are made when needed.

C. CAUSE OF EVENT:

C.1 Event Root Cause

The cause of the IST Code non-compliance is personnel error (cognitive), NRC cause code A. As a result, the documents and procedures which govern the IST program were not fully revised. When the scope of the program was reviewed in 1995, by a Contract Engineer (non-licensed), the 2(3)-4799-530, 3-2301-75 and -50A valves were not identified for needed changes. In addition, when the program was created the affected valves were not identified by previous IST Coordinators (non-licensed). The specific reason for not including these valves in the IST program could not be determined due to the passage of time and personnel not available for interviews during the investigation.

The contributing cause of the IST Code non-compliance issues is Management/Quality Assurance Deficiency, NRC cause code E.

D. SAFETY ANALYSIS:

Although a required inspection was missed for valve 3-2301-75 during the last refueling outage (D3R13) due to improper grouping, this check valve was inspected during the previous two refueling outages (D3R11 and D3R12). A review of past inspections indicates that this valve has experienced little or no degradation and there are no indications to suspect that this valve is not operable. Valve 3-2301-75 was inspected during the current Unit 3 forced outage and found to be satisfactory.

Valves 2(3)-4799-530 had been Appendix J, type C, tested every refueling outage and during the current forced outages for Units 2 and 3. This assures the valves were performing their containment isolation function. The 2(3)-4799-530 valves were exercised per the IST Code requirements during the current Unit 2 and 3 forced outages and found to be satisfactory.

Although leakage rates for PIVs were not adjusted to functional pressure as required by the ASME Code, their leak tight integrity was verified by Appendix J, Type C, testing each refueling outage. Additionally, system indications and annunciators would alert Operations personnel in the event of significant seat leakage at full functional differential pressure and station procedures are in place which address Operator actions.

The LPCI flow instruments used for pump IST exceeds the full scale range limits of the ASME Code (no more than 3 times reference value) and the Unit 3 LPCI flow instrument exceeds Code allowed accuracy limits. However, past experience shows that degradation has been detected and corrective action has been taken prior to failure of these pumps. A review of the current test data, which was based on the appropriate code range, shows that the hydraulic performance of these pumps meet the Technical Specification and code requirements. Additionally, quarterly vibration monitoring indicates that these pumps are in good mechanical condition.

There was no inoperable structure, system or component which contributed to this event.

Based on the above, the overall safety significance was determined to be minimal.

E. CORRECTIVE ACTIONS:

E.1 Engineering department personnel have received training on the IST program. This training included regulatory requirements of the IST program.

E.2 An additional self assessment of the IST program will be performed. This assessment will include the development of a IST program basis document. Any additional IST program non-compliance issues which are identified will be included in a Supplemental LER at the conclusion of the assessment. (2371809601101)

E.3 A review of the check valve sample groups was performed. The LPCI pump minimum flow line check valve, 2-1501-65B, was identified as being improperly grouped. However, this valve had been inspected during the last refueling outage (D2R14). Additionally, the 3-2301-75 valve was inspected per the IST Code requirements and found to be satisfactory. The IST program will be revised to properly group the 2-1501-65B and 3-2301-75 valves. (2371809601102)

E.4 The 2(3)-4799-530 valves were exercised per the IST Code requirements. They were found to be satisfactory. The IST program will be revised to include the 2(3)-4799-530 valves. (2371809601103)

E.5 The IST program will be upgraded to assure conformance of code requirements for PIV extrapolated leakages. (2371809601104)

E.6 The appropriate NRC relief, of the LPCI flow instrumentation requirements, will be requested. (2371809601105)

Enhancements to the Process

E.7 Dresden Operation Surveillance 1500-10 will be revised to require the use of computer points C254(C354) and C255(C355) during a LPCI pump IST. (2371809601106)

E.8 DAP 21-03, Processing Plant Design Changes, includes a review by the IST Coordinator for safety related modifications.

E.9 DAP 21-16, Alternate Replacement Program, will be revised to require the review of the IST Coordinator for IST Program component changes. (2371809601107)

E.10 DAP 15-06, Preparation Approval and Control of Work Packages and Work Requests, will be revised to require the review of the IST Coordinator for IST Program component changes. (2371809601108)

E.11 DAP 14-10, Classification, Procurement, Dedication, Technical Evaluation, and Receiving For New and Replacement Components, Subcomponents, Parts and Material, will be revised to require the review of the IST Coordinator for IST Program component changes. (2371809601109)

F. PREVIOUS OCCURRENCES:

None.

G. COMPONENT FAILURE DATA:

None.