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

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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	05000237	1 OF 8

TITLE (4)
Supplemental Report to Code Required Inservice 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 Caused By Personnel Error

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 --	01	10	30	97	Dresden Unit 3	05000249
									FACILITY NAME	DOCKET NUMBER

OPERATING MODE (9)	N
POWER LEVEL (10)	000

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)
J. Feigl, IST Coordinator Ext. 2366	(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 Inservice 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. During the follow-up self-assessment of the entire IST program, 3 additional IST Code non-compliance issues were identified: 2 related to check valve inspections, and 1 related seat leakage testing. 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; completed assessment of the IST program, and IST program revisions. The overall safety significance was determined to be minimal. This report is being submitted as a voluntary LER.

PLANT AND SYSTEM IDENTIFICATION:

General Electric - boiling water reactor - 2527 MWt rated core thermal power.

Energy Industry Identification System (EIIS) codes are identified in the text as (XX)and are obtained from IEEE Standard 805-1984, IEEE Recommended Practice for System Identification in Nuclear Power Plants and Related Facilities.

EVENT IDENTIFICATION:

Supplemental Report to Code Required Inservice 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 Caused By Personnel Error

A. PLANT CONDITIONS PRIOR TO EVENT:

Unit: 2(3) Event Date: June 28, 1996 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 Inservice Testing (IST) program failed to meet code testing requirements. No inoperable structure, system or component contributed to this condition.

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 refueling outage D3R13 because it had been improperly grouped and was being inspected on a sampling basis.

The instrument air [LD] 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.

The Isolation Condenser (ISCO)[BL] clean demineralizer check valves, 2(3)-4399-73 were not included in the IST Program for the 'closed' test. Additionally, the HPCI condensate suction check valves, 2(3)-2301-20 were in the IST program for an 'open' test; however, a 'closed' test was not included in the program which is contrary to the code. These inadequacies were identified during the follow-up self-assessment. It was determined that the 2(3)-4399-73 and 2(3)-2301-20 valves perform a safety function in the closed direction, the valves have been added to the IST Program for 'closed' testing. A disassembly and inspection was performed to verify proper closure function.

Seat Leakage Testing

The HPCI inlet drain pot isolation valves 2(3)-2301-29 were identified as performing a safety related function for secondary containment isolation. Since seat leakage testing of these valves was not being performed, the seat leakage tests were added to the IST Program and the appropriate procedures were revised. The 3-2301-29 valve was tested during refuel outage D3R14 and was found satisfactory. The 2-2301-29 valve is scheduled to be leak tested during D2R15. This inadequacy was identified during the follow-up self-assessment.

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, required tests for the 2(3)-4799-530, 2(3)-2301-29, 2(3)-4399-73 and 2(3)-2301-20 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)[BO] 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

ANSI/ASME OM-6, 1988 requires digital instruments to be accurate within +/- 2 percent of the reading and the reference value shall not exceed 70 percent of the calibrated range of the instrument.

The LPCI flow instrumentation calibrated range for computer points C254(354) and C255(355) meet the code requirement of not exceeding 70 percent of the calibrated range of the instrument. However, C254(354) and C255(355) have a procedural calibration tolerance value of +/- 200 gpm (+/- 4 percent) at the IST reference flow of 5000 gpm. The computer points do not meet the ASME Code requirement to be within +/- 2 percent of the reading. A relief request is not required to correct this deficiency.

In addition, although the procedure does not explicitly require that the computer points be used for setting flow rate, the LPCI IST surveillance procedure prefers the use of computer points C354 and C355 for flow rate indication.

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 & -50A, 2(3)-2301-29, 2(3)-4399-73, and 2(3)-2301-20 valves and the IST program inadequacies were not identified. 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. As a result, the 1995 program review was not sufficiently technically reviewed and improvements in the IST program to meet industry standards were not completed.

D. SAFETY ANALYSIS:

Although a required inspection was missed for valve 3-2301-75 during 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 Unit 3 forced outage D3F23 and found to be satisfactory.

Valves 2(3)-4799-530 had been Appendix J, type C, tested every refueling outage and during forced outages D2F27 and D3F23. This assures the valves were performing their containment isolation function. The 2(3)-4799-530 valves were exercised per the IST Code requirements during forced outages D2F27 and D3F23 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 calibration procedure for the LPCI flow instruments (computer points) provided an accuracy that exceeded the Code allowed accuracy limits. However, review of the last LPCI flow instrument's calibration data (prior to the calibration procedure revision to correct accuracy requirement) indicated that the instruments were calibrated to a smaller accuracy than required by the procedure and within the Code required accuracy of +/- 2%. In addition, 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 accuracy, shows that the hydraulic performance of these pumps meet the TS and code requirements. Additionally, quarterly vibration monitoring indicates that these pumps are in good mechanical condition.

The ISCO Clean Demineralized water check valve 2(3)-4399-73, provide clean water to the ISCO shell side. These valves were tested following determination that they should be in the IST program and were found to be in satisfactory condition/ operation. If these valves were not properly closing, a low level could occur in the ISCO shell side. If a low level condition occurred, alarms would initiate, alerting Operations personnel to the condition and station procedures are in place which address Operator actions.

The HPCI condensate suction check valve 2(3)-2301-20 were inspected during forced outage D2F27 and D3F23 and found to be acceptable. If a design basis accident would have occurred the valves would have been able to perform their design function.

Required seat leakage testing of the 2(3)-2301-29 valves had not previously been performed. However, the 3-2301-29 valve was tested during the Unit 3 refueling outage (D3R14), and found to be satisfactory. The 2-2301-29 valve will be tested during the upcoming Unit 2 refueling outage (D2R15). Based on the testing of the 3-2301-29 valve, it is believed that the 2-2301-29 is also in satisfactory condition.

The 2(3)-2301-29 valve, in series with the 2(3)-2301-30 valve, provide the drain path for the HPCI Inlet Drain Pot through a restricting orifice to the main condenser (outside secondary containment). Upon a HPCI system initiation, the 2(3)-2301-29 & -30 valves automatically close and the 2(3)-2301-28 valve opens, automatically diverting condensate to the torus. If the 2(3)-2301-29 valve failed to seat, the maximum flow through the line would be limited by the 0.05 inch diameter Drain Pot restricting orifice. If the restricting orifice were to become blocked, the by-pass valve would provide the drain path through a 1 inch line. This condition's safety significance is bounded by the Plant's accident analysis. The Exclusion Area (EAB) and Low Population Zone (LPZ) thyroid doses would be bounded by the small line primary coolant instrument break outside primary containment in UFSAR Section 15.6.2 because the Inlet Drain Pot line pressure is significantly lower than the reactor pressure used in the analysis.

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

E. CORRECTIVE ACTIONS:

E.1 Engineering Department personnel have received additional training on the IST Program. The training included a review of the regulatory requirements pertaining to the IST Program. (complete)

E.2 An additional self-assessment of the IST Program has been performed. The assessment included development of an IST Program basis document, which was technically reviewed. The IST Program non-compliance conditions identified during the additional self-assessment have been included in this Supplemental LER. (complete)

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. This valve had been previously 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 has been revised to properly group the 2-1501-65B and 3-2301-75 valves. (complete)

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

E.5 The IST program has been upgraded to assure conformance with all code requirements pertaining to PIV extrapolated leakages. (complete)

E.6 The 2(3)-2301-29, 2(3)-4399-73 and 2(3)-2301-20 have been included in the IST program for appropriate testing. (complete)

E.7 The seat leakage test was performed on the 3-2301-29 and found to be satisfactory. (complete)

E.8 The 2(3)-4399-73 and 2(3)-2301-20 valves were disassembled and inspected to verify closure function. (complete)

E.9 The 2-2301-29 valve will be seat leakage tested. (2371809600110151)

Enhancements to the Process

E.10 Dresden Operation Surveillance 1500-10 has been revised to require the use of computer points C254(C354) and C255(C355) during LPCI pump IST. (complete)

E.11 Dresden Instrumentation Surveillance 1500-02 (Unit 2) was revised to include the appropriate code required tolerances for the LPCI flow computer point instrumentation. (complete)

E.12 Dresden Instrumentation Surveillance 1500-18 (Unit 3) was revised to include the appropriate code required tolerances for the LPCI flow computer point instrumentation. (complete)

E.13 DAP 21-03, Processing Plant Design Changes, includes a review by the IST Coordinator for all safety related modifications. (complete)

E.14 DAP 21-16, Alternate Replacement Program, has been revised to require review by the IST Coordinator for all IST Program component changes. (complete)

E.15 DAP 15-06, Preparation Approval and Control of Work Packages and Work Requests, has been revised to require review by the IST Coordinator for IST Program component changes. (complete)

E.16 DAP 14-10, Classification, Procurement, Dedication, Technical Evaluation, and Receiving For New and Replacement Components, Subcomponents, Parts and Material, has been revised to require review by the IST Coordinator for all IST Program component changes. (complete)

E.17 The IST program was revised to require IST program basis document changes to be technically reviewed. (complete)

F. PREVIOUS OCCURRENCES:

None

G. COMPONENT FAILURE DATA:

None