

NRC FORM 366 (4-95)		U.S. NUCLEAR REGULATORY COMMISSION		APPROVED BY OMB NO. 3150-0104 EXPIRES 04/30/98 <small>ESTIMATED BURDEN PER RESPONSE TO COMPLY WITH THIS MANDATORY INFORMATION COLLECTION REQUEST: 50.0 HRS. REPORTED LESSONS LEARNED ARE INCORPORATED INTO THE LICENSING PROCESS AND FED BACK TO INDUSTRY. FORWARD COMMENTS REGARDING BURDEN ESTIMATE TO THE INFORMATION AND RECORDS MANAGEMENT BRANCH (T-6 F33), 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.</small>																														
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FACILITY NAME (1) Dresden Nuclear Power Station, Unit 2			DOCKET NUMBER (2) 05000237		PAGE (3) 1 of 5																													
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POWER LEVEL (10) 099 (099)		<table border="1" style="width:100%; border-collapse: collapse;"> <tr> <td>20.2201(b)</td> <td>20.2203(a)(2)(v)</td> <td>X</td> <td>50.73(a)(2)(i)</td> <td>50.73(a)(2)(viii)</td> </tr> <tr> <td>20.2203(a)(2)(i)</td> <td>20.2203(a)(3)(i)</td> <td></td> <td>50.73(a)(2)(ii)</td> <td>50.73(a)(2)(x)</td> </tr> <tr> <td>20.405(a)(1)(ii)</td> <td>20.2203(a)(3)(ii)</td> <td></td> <td>50.73(a)(2)(iii)</td> <td>73.71</td> </tr> <tr> <td>20.2203(a)(2)(ii)</td> <td>20.2203(a)(4)</td> <td></td> <td>50.73(a)(2)(iv)</td> <td>OTHER</td> </tr> <tr> <td>20.2203(a)(2)(iii)</td> <td>50.36(c)(1)</td> <td></td> <td>50.73(a)(2)(v)</td> <td rowspan="2" style="font-size: 0.8em;">Specify in Abstract below or in NRC Form 366A</td> </tr> <tr> <td>20.2203(a)(2)(iv)</td> <td>50.36(c)(2)</td> <td></td> <td>50.73(a)(2)(vii)</td> </tr> </table>				20.2201(b)	20.2203(a)(2)(v)	X	50.73(a)(2)(i)	50.73(a)(2)(viii)	20.2203(a)(2)(i)	20.2203(a)(3)(i)		50.73(a)(2)(ii)	50.73(a)(2)(x)	20.405(a)(1)(ii)	20.2203(a)(3)(ii)		50.73(a)(2)(iii)	73.71	20.2203(a)(2)(ii)	20.2203(a)(4)		50.73(a)(2)(iv)	OTHER	20.2203(a)(2)(iii)	50.36(c)(1)		50.73(a)(2)(v)	Specify in Abstract below or in NRC Form 366A	20.2203(a)(2)(iv)	50.36(c)(2)		50.73(a)(2)(vii)
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LICENSEE CONTACT FOR THIS LER (12)																																		
NAME Ralph M. Fenili, Operations Staff Analyst			TELEPHONE NUMBER (Include Area Code) ext.: 2917 (815) 942-2920																															
COMPLETE ONE LINE FOR EACH COMPONENT FAILURE DESCRIBED IN THIS REPORT (13)																																		
CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NPRDS																														
SUPPLEMENTAL REPORT EXPECTED (14) YES (If yes, complete EXPECTED SUBMISSION DATE).					EXPECTED SUBMISSION DATE (15) <table border="1" style="width:100%; border-collapse: collapse;"> <tr> <th>MONTH</th> <th>DAY</th> <th>YEAR</th> </tr> <tr> <td> </td> <td> </td> <td> </td> </tr> </table>	MONTH	DAY	YEAR																										
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ABSTRACT (Limit to 1400 spaces, i. e., approximately 15 single-spaced typewritten lines) (16)																																		
<p>On August 19, 1998, as a result of an Operations concern that packing leakage from the 2/3-5741-48B, Control Room HVAC Refrigeration Condensing Unit (RCU) SW Inlet Valve, was getting worse, maintenance repair was "pulled up" in the work schedule. In spite of the actions taken by the Workweek Scheduler, he failed to perform a thorough review of the valve repair impact against other scheduled work activities. As a result, an upcoming fuel move was scheduled to occur while the Control Room ventilation system was OOS for the valve repair. The Unit Supervisor performed the review of Tech Specs to determine the immediate LCO, and had an independent review performed, but failed to recognize that Operational Mode * also applied. At 1300 hours on August 20, 1998, the Fuel Handling Supervisor contacted the Unit Supervisor and permission to move fuel was given. The Unit Supervisor failed to recognize that moving fuel placed the reactor in two Technical Specification operational modes; Mode 1 and Mode *. The next morning, on August 21, 1998, Fuel Handling requested permission to resume movement of the fuel bundle. The Unit Supervisor denied permission, recognizing that a Technical Specification non-compliance had occurred the previous day. The cause of the event was determined to be a lack of prevention in depth within station procedures and the work planning / implementation process, in addition to a knowledge deficiency in Technical Specification content, and a decline in Operator performance specific to LCO Management and Recognition. Operations Management developed and is implementing a Departmental Improvement Initiative to address the global performance weaknesses identified.</p>																																		

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

PLANT AND SYSTEM IDENTIFICATION:

General Electric - Boiling Water Reactor - 2527 MWth rated core thermal power

Energy Industry Identification System (EIIIS) 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:

Fuel Bundle Movement permitted during Control Room Ventilation outage due to programmatic failures within the Work Planning and Execution Process

A. PLANT CONDITIONS PRIOR TO EVENT:

Unit: 2 (3) Event Date: August 20, 1998 Event Time: 1300 CST
Reactor Mode: 1 (1) Mode Name: Run (Run) Power Level: 099 (099)
Reactor Coolant System Pressure: 1000 (1000) psig

B. DESCRIPTION OF EVENT:

1. Event Sequence:

This LER is being submitted pursuant to 10 CFR 50.73(a)(2)(i)(B) which requires the reporting of any operation or condition prohibited by the plant's Technical Specification.

On Wednesday August 19, 1998, as a result of an Operations Department concern that packing leakage from the 2/3-5741-48B, Control Room HVAC [VI] Refrigeration Condensing Unit (RCU) SW Inlet Valve, was getting worse, maintenance repair of the valve was "pulled up" in the work schedule. An Operations Workweek Scheduler was made aware of the change in task priority and performed the appropriate work schedule changes to accommodate repair of the valve. Once the work schedule changes were complete, the Scheduler followed up with the Fix-It-Now (FIN) Team to assure that work packages were being prepared to facilitate the repair. In parallel with the work package preparation, the Operations Out of Service (OOS) Group prepared an OOS to support the valve repair. Prior to leaving for the day, the Workweek Scheduler placed a line item into the Operation's night notes stating the need to have the OOS hung by morning to facilitate the valve repair plan. In spite of the actions taken by the Workweek Scheduler to assure the repair plan would implement smoothly, he failed to perform a thorough review of the valve repair impact on the overall planned work schedule. As a result, the line item for upcoming fuel moves with the Control Room ventilation system OOS went unchallenged.

At 0124 hours on Thursday, August 20, 1998, Operations completed hanging of the OOS for the Control Room HVAC RCU Service Water Inlet valve. Since the isolation point selected for the OOS also isolated Containment Cooling Service Water (CCSW) [CC] to the RCU, Operations entered the appropriate Limiting Condition for Operation (LCO) for an inoperable Control Room Emergency Ventilation System in accordance with Technical

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Specification 3.8.D. The midnight shift Unit Supervisor performed the review of Tech Specs to determine the immediate LCO, having an independent review also performed. The Unit Supervisor completed his review and entered the 30-day LCO electronically into the LCO database. No contingency measures were entered into the appropriate database field. Both Unit Supervisors failed to document that Operational Mode * applied, resulting in their failure to log the contingency measures that no fuel moves should be performed while within this LCO.

Early on the dayshift of August 20, 1998, the Unit Supervisor reviewed the LCO's in effect prior to assuming the shift. The Unit Supervisor did not recognize that the Control Room HVAC RCU LCO was in conflict with the upcoming scheduled fuel bundle move.

At 0800 hours on August 20, 1998, the Workweek Scheduler was requested to overview the Fuel Handling High Level Activity (HLA) briefing. He found the HLA to be performed in accordance with station procedure and communicated this to the Unit Supervisor. The Unit Supervisor prepared for the upcoming fuel moves by reviewing plant conditions and verifying that secondary containment requirements were met. The Unit Supervisor discussed at length the issues associated with moving the damaged fuel bundle, and requested a briefing from the QNE and the Fuel Handling Supervisor before being granted permission to begin work; specifically concerning any problems with the fuel and actions for personal safety.

At approximately 1300 hours, the Fuel Handling Supervisor contacted the Unit Supervisor and permission to move fuel was given. The Unit Supervisor failed to recognize that moving fuel placed the reactor in two Technical Specification operational modes; Mode 1 and Mode *. Through his (and the previous supervisors) failure, the Unit Supervisor permitted work which violated Technical Specification 3.8.D. Action 2 which states, "In OPERATIONAL MODE *, with the control room emergency filtration system or the RCU inoperable, immediately suspend CORE ALTERATION(s), handling of irradiated fuel in the secondary containment and operations with a potential for draining the reactor vessel". During the shift, Fuel Handling performed the fuel bundle move without incident, in accordance with the Nuclear Component Transfer List (NCTL) documentation prepared by the Qualified Nuclear Engineer (QNE).

On August 21, 1998, a new Operating Crew began their day shift rotation. At 0800 hours, Fuel Handling requested permission to resume movement of the fuel bundle, which was denied by the Unit Supervisor recognizing that this activity could not be performed with the Control Room Ventilation inoperable. The Fuel Handling Supervisor and Unit Supervisor discussed that this was a job continuation from the previous day, where another Unit Supervisor had granted permission. From their discussion, the Unit Supervisor recognized that a Technical Specification non-compliance had occurred on the previous day and the appropriate notifications were made.

2. Additional Investigative Information:

During July and August of 1998, as a result of an adverse trend in LCO management by the Operations Department, a station investigation (2372309800800) was initiated. Repetitive errors were determined to be occurring within Operations as a result of (1) Declining Operations Standards of Performance, (2) Inadequate Managerial Style for Effective Change, and (3) Failure to Use Trend Information for Departmental Correction. Operations Department performance graphs were reviewed finding that a precursor trend had been present. With the failure mode for LCO management problems understood, Operations selected specific corrective measures to address the issue of declining departmental performance in the Control Room. Review of Operator performance during this event was found to parallel those failures identified during the adverse trend investigation.

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C. CAUSE OF EVENT:

The Primary Cause was determined to be a lack of prevention in depth within station procedures and the work planning / implementation process (NRC Cause Code E) placing an over-reliance on the Operations Department to identify, implement, and manage Technical Specification adherence. Through this approach, minimal barriers existed to provide additional margin for human error. Examples specific to this event are:

- Many station procedures were found to not support pre-identification of LCOs, i.e. not supporting error prevention.
- The Operations Department does not expect Fuel Handling supervisors to participate in LCO identification.
- Emergent tasks are not added into the daily work schedule resulting in many reviews being bypassed.

A Contributing Cause was determined to be a knowledge deficiency (NRC Cause Code E) in Technical Specification content. Examples specific to this event are:

- Senior Reactor Operator – Limited (SRO-L) continuing training lacks education on balance of plant LCO's having the potential to affect refueling activities, specifically for operational mode "**".
- Interviews identified that some Senior Reactor Operators (SROs) were not aware that the potential for operation in two Technical Specification modes could exist.

A second Contributing Cause was determined to be an Organization Breakdown (NRC Cause Code A) in that repetitive errors were occurring in LCO Management and Recognition as a result of inadequate work practices. Examples of inadequate work practices specific to this event are:

- Various Unit Supervisors failed to recognize that the scheduled fuel moves were in conflict with plant configuration.
- That a large inconsistency was found in the information entered in the listing "compensatory actions" portion of the LCO electronic log. It was determined that vague and unclear expectations existed regarding its use.
- The Workweek Scheduler (SRO licensed individual) failed to perform a cursory review of how the emergent task and associated OOS would impact currently scheduled activities.

D. SAFETY ANALYSIS

The primary function of Secondary Containment is to minimize ground level release of airborne radioactive materials and provide a controlled, elevated release of the building atmosphere under accident conditions, including a refueling accident. Secondary Containment is maintained at a slight negative pressure to assure the potential for ground level release minimization. As part of Secondary Containment is the Standby Gas Treatment System (SBGTS) [BH] which utilized charcoal beds to adsorb radioactive halogens prior to system discharge into the chimney. Design of the system is for manual initiation, or auto-initiation on elevated radiation levels as sensed at the Reactor Building Ventilation or Refueling Floor Ventilation ducts.

Based on the activities surrounding this event, the primary concern would be the potential to achieve criticality during inspection of the damaged fuel bundle, or during cleanup activities, should disassembly of the fuel bundle result in the dispersion of free fuel pellets. Detailed calculation and analysis of these potential risks concluded that minimal potential for this scenario existed.

The second operational concern would be the accidental dropping of the damaged fuel bundle onto the fuel storage racks, resulting in damage to intact fuel assemblies. The depleted fuel stored within the Fuel Pool has had sufficient time to decay since removal from the core, with the only concern for release being the release of radioactive Krypton.

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The Standby Gas Treatment System and Secondary Containment remained operable throughout the event timeframe, assuring that any potential releases from the refueling floor would be routed through the SBGTS charcoal beds, adsorbing the radioactive krypton released from damaged fuel. As a result, minimal potential existed for a ground level radioactive release that could affect Control Room habitability. For these reasons, the nuclear safety significance is evaluated to be minimal.

E. CORRECTIVE ACTIONS:

Operations Management has developed and is currently implementing a Departmental Improvement Initiative to address global performance weaknesses, which include the following:

- Operations Policy #13 revised to include performance of a collegial review of emergent work. (Complete)
- Scheduling process revised to indicate mode changes on the Site Integrated Schedule. (Complete)
- The Shift Operations Supervisor has set forth expectations for listing "compensatory actions" on LCO Board located in Control Room. This information has been distributed through the Daily Orders and an Operations Memo. (Complete)
- A review of Fuel Handling procedures will be performed to determine those requiring identification of Technical Specification LCOs. (2371809801201)
- A review of plant procedures will be performed to determine those requiring identification of Tech Specs. (2371809801202)
- Operations has matrixed the Technical Specifications, capturing where single systems cross multiple Tech Spec sections. (Complete)
- Technical Specification retraining is being performed for all SRO-L and Licensed Operators. (Complete)

D. PREVIOUS OCCURRENCES:

05000237/97-015 Operations fails to enter Drywell Radiation Monitor LCO due to inadequate Pre-job surveillance review.

A Contributing Cause for this event was determined to be a programmatic failure in the methodology for performance of peer checking and review of LCO's. (NRC Cause Code E). The Unit Supervisor's review (peer check) of LCO's did not always entail an entire process review to determine if all LCO's have been identified for a given surveillance, but instead, is usually limited to concurrence that identified LCOs are correct. This corrective measure was ineffective in that the Root Cause performed failed to evaluate the work control process for defense in depth during the LCO identification process.

G. COMPONENT FAILURE DATA:

Not applicable.