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October 26, 1998

JMHLTR: #98-0266

U. S. Nuclear Regulatory Commission  
ATTN: Document Control Desk  
Washington, DC 20555

Subject: Dresden Nuclear Power Station Units 2 and 3 Reply to a Notice of Violation;  
Inspection Report 50-237; 249/98021.  
NRC Docket Nos 50-237 and 50-249

Reference: Geoffrey E. Grant letter to Oliver D. Kingsley, dated September 24, 1998,  
transmitting NRC Inspection Report 50-237; 249/98021 and Notice of  
Violation

The purpose of this letter is to provide the Commonwealth Edison (ComEd) Company's reply to the Notice of Violation transmitted in the referenced letter. Specifically, Technical Specification 3.8.D was violated when an irradiated fuel bundle was moved in the Fuel Pool at a time when the Control Room Ventilation System Refrigeration Control Unit (RCU) was not in service. As a result of this and other recent events involving operators failing to promptly or properly enter appropriate Limiting Conditions for Operation (LCO), corrective measures have been identified to address the global issue of LCO recognition. The following actions were taken to assess and enhance operator knowledge of Technical Specification LCOs:

The event of August 20<sup>th</sup> identified the existence of a Technical Specification knowledge deficiency, which was not previously found during event investigations. To assess LCO knowledge, licensed operating crew personnel were given a written examination from which individual and Operating Team scores were examined. The individual written exam average score was 93%. On a team oral exam each operating crew scored 100%. The team scores of 100%, indicate that defense in depth was needed for error elimination. Consequently, Operations Policy 13, which describes the Operations work control process, was revised to provide additional Senior Reactor Operator (SRO) reviews for emergent work to ensure LCO recognition. Lastly, the Technical Specification examinations identified additional areas for improvement that will be reviewed by the Curriculum Review Committee (CRC) for correction through the Operations Continuing Training Program.

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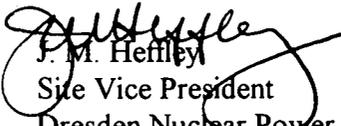
Most of the corrective actions discussed in the attachment are complete. The attachment contains the following commitments for future actions:

- A review of station procedures has been performed to determine those requiring identification of applicable Technical Specification Limiting Conditions for Operation (LCOs) (Complete). Based on this review, additional actions are being tracked for the completion of the procedural revisions. The procedural revisions are currently planned for completion by April 28, 1999. (237-180-98-01201A and 237-180-98-01202A&B)
- Eighty percent of the Licensed Operating Crew Personnel were given a written examination to assess the current level of Technical Specification knowledge. The average score was 93% on the individual Technical Specification examination. Each Operating crew passed with a team score of 100%. The test results will be reviewed for areas of improvement by the Curriculum Review Committee for inclusion into the appropriate Operator Training Programs. The review is tracked by NTS# 237-180-98-01204.

The attachment to this letter provides our reply to the Notice of Violation.

If there are any questions concerning this letter, please refer them to Mr. Frank Spangenberg, Dresden Station Regulatory Assurance Manager, at (815) 942-2920, extension 3800.

Sincerely,

  
J. M. Heffley  
Site Vice President  
Dresden Nuclear Power Station

Attachment

cc: Regional Administrator, NRC Region III  
Senior Resident Inspector, Dresden Nuclear Power Station

RESPONSE TO NOTICE OF VIOLATION  
NRC INSPECTION REPORT  
50-237(249)/98021

**VIOLATION:** (50-237/249-98021)

Dresden Technical Specification 3.8.D, states, in part, that when in OPERATIONAL MODE "\*", with the control room emergency filtration system or the refrigeration control unit (RCU) inoperable, immediately suspend handling of irradiated fuel in the secondary containment.

Contrary to the above, on August 21, 1998, while in operational mode "\*", licensee fuel handling personnel moved a damaged fuel bundle (irradiated fuel) in the secondary containment while the RCU was inoperable.

**REASON FOR THE VIOLATION:**

On August 6, 1998, to facilitate work on Motor Operated Valve (MO) 3-1501-5D, 3D Low Pressure Coolant Injection (LPCI) Suction Valve, and concurrently satisfy the primary containment isolation requirements, the 3-1501-33B, Div II manual Suction Isolation Valve, was manually isolated and taken Out of Service (OOS). A 7-day LCO was entered per Technical Specification 3.5.A.2 action 2b for greater than one Low Pressure Coolant Injection (LPCI) pump being inoperable. However, the Operating Team failed to enter Technical Specification 3.7.M for Suppression Pool Cooling, though it was applicable. A concurrent 7-day LCO was required by the Technical Specifications.

On August 19, 1998, as a result of an Operations concern that packing leakage from the 2/3-5741-48B, Control Room Ventilation System (HVAC) Refrigeration Condensing Unit (RCU) Service Water (SW) Inlet Valve, was getting worse, maintenance repair was moved to an earlier time frame in the work schedule. In spite of the actions taken by the Workweek Scheduler to support the emergent work, the impact of the valve repair on other scheduled work was not thoroughly reviewed. On August 20, 1998, when the working group requested permission to move a damaged fuel bundle (irradiated fuel) in the secondary containment, the Operating Team failed to recognize the applicability of Operational Mode "\*" and granted permission, violating Technical Specification 3.8.D.

In both cases, failure to recognize the Technical Specification entry and the violation of the Technical Specification was self-identified by the licensee, but not until the following day.

The cause of the events 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 concurrent decline in Operator performance specific to LCO Management and Recognition.

For both events, a deviation from the original work schedule/plan occurred. The station process to integrate emergent tasks into the work schedule provided minimal reviews compared to normally scheduled maintenance activities. This required the Operating Team to identify all applicable LCOs to facilitate the short notice changes in maintenance scope, and the overall effect on upcoming scheduled activities.

Regarding the event of August 6<sup>th</sup>, the Unit Supervisor failed to enter the appropriate Containment Cooling LCOs when an OOS boundary was expanded to support added maintenance. The expanded boundary required the closure of the 3-1501-33B LPCI suction valve rendering both the 3C and the 3D LPCI pumps inoperable. The Unit Supervisor, having discussed the issue with the off-going Unit Supervisor, focused the LCO review on the OOS impact on the LPCI (injection) function. This biased his thought process and diminished the effectiveness of the Technical Specification review. Additionally, the licensed individual who verified the LCO was present for the discussion, similarly biasing the LCO review. This lack of independence in the LCO determination and review process caused the missed Technical Specification LCO.

During the second event of August 20<sup>th</sup>, various pre-maintenance reviews were bypassed to support prompt, emergent repair of the Control Room HVAC RCU Inlet Valve. Normally, repair activities are performed utilizing the work scheduling process. Operating Teams review overall work scope, identify conflicts which could challenge continued plant operation, and perform Technical Specification pre-identification without time pressure. Beyond the Operating Team's review, individuals with operational experience in the work planning department enhance the depth of the review through their plant experience. Lastly, Operations personnel in the Out of Service Group pre-identify Technical Specification LCOs. With this emergent task, these additional reviews were bypassed, which placed sole reliance on the Unit Supervisors for accurate Technical Specification identification.

Interviews performed during the investigation identified a knowledge deficiency regarding the applicability of Operational Mode “\*”. Many licensed operations personnel did not recognize that dual mode operation could exist. Technical Specifications identify Operational Modes such as Mode 1 (Power Operation), or Mode 5 (Refueling), with distinct differences which prevent being in two modes simultaneously. Also, Operating Teams recognized Operational Mode “\*” as having applicability to moving irradiated fuel between the reactor and the storage pool, but they failed to understand that fuel moves within the pool constituted entry into Operational Mode “\*”. Many perceived that Mode “\*” pertained to reactor refueling operation, hence, could not exist concurrent with operation in Mode 1. With this knowledge deficiency, on August 20, 1998, when the working group requested permission to move a damaged fuel bundle (irradiated fuel) in the secondary containment, the Operating Team failed to recognize the applicability of Operational Mode “\*” and granted permission, violating Technical Specification 3.8.D.

The Primary Cause was determined to be a lack of prevention-in-depth within station procedures and the work planning/implementation process which unnecessarily challenged the Operations Department in the area of Technical Specification adherence.

Contributing Causes were determined to be a knowledge deficiency in Technical Specification content, and an Organization Breakdown that allowed inadequate work practices in LCO Management and Recognition to continue, failing to prevent repetitive errors.

Previous corrective measures had been implemented to address declining performance in accurate Technical Specification LCO identification. The event of August 6<sup>th</sup> directly challenged previous corrective actions, which stated that independence shall exist between the LCO identifier’s and verifier’s LCO review. Their involvement in a discussion with the off-going Unit Supervisor focused the subsequent LCO review on the OOS effect, biasing their thought process and diminishing the effectiveness of the Technical Specification review. This lack of independence in the LCO determination and review process caused the missed Technical Specification LCO and rendered the previous corrective measure ineffective. The verification by the supervisors did not meet Operations Department standards. This was viewed as a personal performance issue, and the supervisors were counseled by the Operations Department Management. In addition, the lack of prevention-in-depth for emergent task LCO recognition resulted in the over-reliance on the Unit Supervisor’s determination.

Previously performed root causes failed to identify any Technical Specification knowledge deficiency because failures in this area occurred during routine task performance. Recognizing the August 20<sup>th</sup> event as involving a non-routine task, the root cause determination used a detailed barrier analysis that identified the concurrent knowledge and process review deficiencies. For these reasons, the previous corrective measures remained ineffective.

**CORRECTIVE STEPS TAKEN AND RESULTS ACHIEVED:**

Operations Management has implemented a Departmental Improvement Initiative to address global performance weaknesses, which includes the following:

- Operations Policy #13, titled "Operations Support of Work Scheduling and Execution," was revised to include performance of a collegial review of emergent work. This change inserts additional qualified personnel into the emergent task authorization process, to increase defense in depth for the Unit Supervisor to identify, implement, and manage Technical Specification adherence. (Complete) (NTS 237-100-98-0210104)
- The Work Scheduling process was revised to indicate mode changes on the Site Integrated Work Schedule. Mode changes, such as Operational Mode "\*", appear in the Work Schedule and provide a visual cue for increased Technical Specification awareness to the Unit Supervisor. (Complete) (NTS 237-100-98-0210104)
- The Shift Operations Supervisor has set forth expectations for listing "compensatory actions" on the LCO Board located in the Control Room. This information has been distributed through the Daily Orders and an Operations Memo. (Complete) (NTS 237-100-98-0210105)
- Operations has matrixed the Technical Specifications, capturing instances where single systems cross multiple Technical Specification sections. (Complete) (NTS 237-100-98-0210106)
- Eighty percent of the Licensed Operating Crew Personnel were given a written examination to assess the current level of Technical Specification knowledge. The average score was 93% on the individual Technical Specification examination. Each Operating crew passed with a team score of 100%. The test results will be reviewed for areas of improvement by the Curriculum Review Committee for inclusion into the appropriate Operator Training Programs. The review is tracked by NTS# 237-180-98-01204.

**CORRECTIVE STEPS TAKEN TO AVOID FURTHER VIOLATION:**

- A review of station procedures has been performed to determine those requiring identification of applicable Technical Specification LCOs (Complete). Based on this review, additional actions are being tracked for the completion of the procedural revisions. The procedural revisions are currently planned for completion by April 28, 1999. (237-180-98-01201A and 237-180-98-01202A&B)

**DATE WHEN FULL COMPLIANCE WILL BE ACHIEVED:**

Full compliance with the Technical Specifications was achieved on August 21, 1998. Significant actions to prevent recurrence were completed on October 9, 1998.