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September 21, 2009

SVPLTR #09-0044

U. S. Nuclear Regulatory Commission
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Dresden Nuclear Power Station, Unit 3
Renewed Facility Operating License No. DPR-25
NRC Docket No. 50-249

Subject: 30-Day Response on Inadvertent Control Rod Withdrawal

Reference: Letter from K. West (U.S. NRC) to C. Pardee (Exelon), "Dresden Nuclear Power Station, Unit 3 Inadvertent Control Rod Withdrawal, 05000249/2009009," dated August 19, 2009

The purpose of this correspondence is to submit Exelon Generation Company, LLC (Exelon) comments on a number of facts, which directly impacts the preliminary finding discussed in the referenced letter and provides a brief discussion on the corrective actions taken. The Nuclear Regulatory Commission (NRC) cited a finding and provided Exelon an opportunity to discuss its position in a regulatory conference or in writing on the docket. As discussed with Mark Ring (NRC) in a phone call with Tim Hanley (Exelon) on August 31, 2009, Exelon is not requesting a regulatory conference.

The referenced letter discusses a preliminary finding that is categorized as having low to moderate safety significance (i.e., White). The NRC concluded that deficiencies surrounding the inadvertent withdrawal of three control rods, although the event itself did not result in an inadvertent local criticality or fuel rod damage, it did demonstrate a lack of questioning attitude, acceptance to not follow established procedures, poor coordination of activities, and inadequate evaluation of operating experience for the event that occurred on November 3, 2008 at Dresden Nuclear Power Station (DNPS), Unit 3.

Exelon does not dispute the significance of the event. We also agree that the significance of the event is driven by human performance of its DNPS operations personnel at the time of the event. The operating crew should have prevented this event and their performance is disappointing.

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To ensure the decision determining safety significance is made with all the latest information, Exelon chooses to provide the following information to clarify two portions of the inspection report and communicate actions taken to address the performance gaps identified in the inspection report.

Exelon provides the following clarifying information.

- During the event, the affected control rods initially drifted in (i.e., up into the reactor vessel) prior to drifting out (i.e., down out of the reactor vessel). Limitations of plant instrumentation make it impossible to conclusively determine the quantity of rods that drifted in during the event. However, based on the most recent data available, there is no evidence that more than 5 rods drifted in. Based on the premise of 5 rods drifting in, it is not feasible for more than 3 rods to have drifted out, as the actual control rod drive header pressure would not have been adequate to cause a rod to drift out until the third-to-last rod was isolated.
- Very specific conditions would be required in order for inadvertent localized criticality to have occurred during the event. Based on the outage schedule, normal reactor temperature band, the limited number of rods that could drift out, etc., it is extremely unlikely that localized criticality could have occurred at DNPS.

As noted above, Exelon believes the operating crew could have prevented this event and their performance was below expectations. The initial root cause analysis of the inadvertent control rod withdrawal event was subsequently reopened to address Operations performance. Additionally, Exelon performed a second root cause targeted to address the Operations Department apparent cyclic performance over a two year time period. The issues identified in those root causes parallel the findings in the referenced letter including lack of questioning attitude and poor coordination of activities.

Exelon concurs that a lack of questioning attitude contributed to the event based on findings in the first root cause. A mindset existed at DNPS that the isolation of a system always results in placing the system in a safe condition. This mindset caused the poor coordination of the activities between the control room personnel and the field activities that was based on the decision of the Work Execution Center (WEC) operations supervisor to perform the discretionary steps contained in procedure DOP 0500-05, "Discharging CRD Accumulators with Mode Switch in Shutdown or Refuel;" specifically to hydraulically isolate all the HCU accumulators by closing the insert and withdrawal valves concurrent with an operating CRD pump. That decision was made without the knowledge of control room personnel and led to the poor coordination described in the referenced letter. This knowledge based decision was performed without a peer check, which may have identified the operational risk.

Exelon provides the following summary of significant corrective actions taken to address this event.

- Exelon's inadvertent control rod withdrawal root cause report concluded that review of SEN 264, "Unplanned BWR Control Rod Withdrawals While Shutdown," found that the SEN was applicable to DNPS, however, not all procedures were properly identified for revision. Based on this event and events at other Exelon stations that

also identified inadequate review of operating experience (OPEX), Exelon initiated substantial fleet wide changes to its OPEX Program. This improved program uses a graded 3-tier approach for reviewing and implementing lessons learned from SOERs, SERs/SEs, INPO Topical Reports, NRC Information Notices, Vendor Notices and other industry operating experience (OE) to ensure the proper actions are taken in response to industry events.

- Procedure OP-DR-108-101-1002, "Operations Department Standards and Expectations," was revised to add a section for Knowledge Based Decisions Guidance. This includes the requirement to obtain a peer check and Shift Manager review of knowledge based decisions directed by procedure.
- Procedure OP-AA-117-1001, "Operations Refueling Outage Readiness and Execution," was revised to add a section for Outage Main Control Room communications. Specifically, it requires that Operations Department personnel authorizing work or tests from outside the MCR are to ensure the details of the work or test are briefed with the MCR personnel if it meets identified criteria.
- For refueling outages, activities that could impact reactivity management were identified in the schedule to require prior control room authorization.
- A case study addressing the technical and human performance aspects of the Root Cause for the Inadvertent Rod Withdrawal was presented in Licensed Operator – Continuing (LO-C) /Non-Licensed Operator – Continuing (NLO-C) Training Cycle during the 2nd quarter of 2009.
- The LO-C/NLO-C cycle included a training session facilitated by the Operations Director or Shift Operations Supervisor (SOS). The session focused on discussion of teamwork, technical understanding and seeking input when uncertain. A case study of the Cyclic Performance Root Cause findings was also reviewed.
- Operations department held several off-site alignment meetings with Operations senior managers to focus on staff expectations and teamwork.
- All operations procedures were screened for knowledge based decisions and a schedule created to modify by year's end each identified procedure to require a documented peer check for each knowledge based decision.

In conclusion, Exelon agrees with the NRC conclusion that deficiencies surrounding the inadvertent withdrawal of three control rods demonstrated a lack of questioning attitude, poor coordination of activities, and inadequate evaluation of operating experience for the DNPS Unit 3 event. Exelon has initiated actions to address these deficiencies and will continue to improve DNPS performance.

There are no regulatory commitments contained in this letter.

Should you have any questions concerning this letter, please contact Ms. Marri Marchionda, Regulatory Assurance Manager, at (815) 416-2800.

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Respectfully,

A handwritten signature in black ink, appearing to read "Tim Hanley". The signature is written in a cursive style with a large initial "T" and "H".

Tim Hanley
Site Vice President
Dresden Nuclear Power Station

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