



**UNITED STATES
NUCLEAR REGULATORY COMMISSION**
REGION III
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September 18, 2017

Mr. Bryan C. Hanson
Senior VP, Exelon Generation Co., LLC
President and CNO, Exelon Nuclear
4300 Winfield Road
Warrenville, IL 60555

**SUBJECT: NOTICE OF ENFORCEMENT DISCRETION (NOED) FOR DRESDEN NUCLEAR
POWER STATION, UNIT 3, NOED 17-3-001**

Dear Mr. Hanson:

By letter dated September 14, 2017, (ADAMS Accession No. ML17261B164), Exelon Generation Company, LLC (EGC) requested that the U.S. Nuclear Regulatory Commission (NRC) to not enforce compliance with the actions required in for Dresden Nuclear Power Station (DNPS), Unit 3, Technical Specification (TS) 3.1.7, "Standby Liquid Control (SLC) System," Required Action C.1, which required Unit 3 to be placed in Mode 3 (i.e., Hot Shutdown) at 7:31 am. Central Daylight Time (CDT) on September 13, 2017. As discussed during the NOED conference call, if the SLC System could not be made operable during the requested enforcement discretion period, DNPS, Unit 3, would be required to be placed in Mode 3 at or before 6:31 p.m. CDT on September 14, 2017.

Your letter documented information previously discussed with the NRC in a telephone conference on September 12, 2017, at 4:15 p.m. CDT. The principal NRC staff members who participated in the telephone conference are listed in the Enclosure. The staff determined that the information in your letter requesting the Notice of Enforcement Discretion (NOED) was consistent with your oral request.

Your staff requested that a NOED be granted pursuant to the NRC's policy regarding exercise of discretion for an operating power reactor, set out in Section 3.8 of the Enforcement Policy, and that the NOED be effective for an additional 35 hours (until 6:31 p.m. CDT on September 14, 2017, for entering Mode 3). This letter documents our telephone conversation on September 12, 2017, when we orally granted this NOED request. We understand that the condition causing the need for this NOED was corrected and Dresden Unit 3 exited from TS Required Action 3.1.7 Condition B.1 and from this NOED at 8:35 p.m. CDT on September 12, 2017.

Summary: During an Equipment Operator round at 1:30 a.m. CDT on September 10, 2017, sodium pentaborate crystallization (B-10) build-up under piping insulation on SLC discharge piping was identified with no active leak. The boron crystals appeared dry and residual. DNPS determined that there were no mechanical joints in the vicinity and no active leak present, and Unit 3 SLC was determined to be operable.

During subsequent inspection and examination of the SLC pipe at 11:31 a.m. CDT on September 12, 2017, DNPS identified a flaw in a pipe fitting on the 304 stainless steel SLC common discharge pipe and a weep-type leak was identified with the pump in operation. As a result of this discovery, DNPS determined that the Code Class 2 pressure boundary was not intact. Technical Requirements Manual Section 3.4.a, Condition B, "Structural Integrity," was entered and required the system to be isolated. Both DNPS Unit 3 SLC subsystems were declared inoperable in accordance with TS 3.1.7. At 11:31 a.m. CDT on September 12, 2017, Unit 3 entered an eight-hour clock in accordance with TS 3.1.7, Condition B. Without enforcement discretion, Unit 3 was required to be shutdown (Mode 3) at 7:31 a.m. CDT on September 13, 2017, in accordance with TS 3.1.7, Condition C.

Based on materials of construction, operational history, and a visual inspection, DNPS determined that the most-likely cause of the through-wall leak was a manufacturing defect on a forged fitting. A repair plan was developed using American Society of Mechanical Engineers (ASME), Section XI, 2007 Edition, including Addenda through 2008 requirements. The required time to implement the repair and associated post-repair testing was estimated to be an additional 35 hours.

While the SLC System would be unavailable during the repair period, DNPS stated that the repair action would not result in a different unnecessary transient that would affect radiological health and safety of the public for the following reasons:

- SLC is a backup reactivity control system; the primary means of shutting down the reactor with Reactor Protection System (RPS) remain Operable. Other backup features are also operable including the Alternate Rod Insertion (ARI) and the ATWS Recirculation Pump Trip systems. Additionally DNPS procedure DEOP 0500-01, "Alternate Standby Liquid Injection," provides a method for injecting pentaborate through alternate injection path while the normal injection source is unavailable.
- The SLC System is not an initiator of any analyzed design basis accident. Therefore, the NOED does not increase the probability of a plant transient (i.e., does not increase the likelihood of an ATWS precursor).
- Compensatory actions were implemented to further minimize risk including protection of key systems and deferring operational and elevated risk activities.
- A risk assessment determined there was a negligible increase in radiological risk to the public.
- If the SLC System cannot be made operable during the requested enforcement discretion period, Unit 3 will be placed in Mode 3 operation on or before 6:31 p.m. CDT on September 14, 2017. If unexpected conditions are discovered during the SLC discharge piping inspections that cannot be addressed within the enforcement discretion period, DNPS will terminate the discretionary period and Unit 3 will be shutdown in a deliberate and controlled manner.

Your staff indicated that the calculated increase in Incremental Conditional Core Damage Probability (ICCDP), using the zero maintenance probability model, from the NOED extension was $1.7\text{E}-08$. You indicated that the increase in Incremental Conditional Large Early Release Probability (ICLERP) was $9.7\text{E}-09$. These values are less than the $5\text{E}-7$ and $5\text{E}-8$ guidance thresholds, respectively, in Inspection Manual Chapter 0410, "Notices of Enforcement Discretion."

Your staff stated that the noncompliance would not create undue risk to public health and safety, in that (1) it did not involve a significant increase in the probability or consequences of a previously evaluated accident scenario; (2) it did not create the possibility of a new or different kind of accident from those previously evaluated; (3) it did not involve a significant reduction in a margin of safety; and (4) it would not result in any significant changes in the types or quantities of effluents released from the facility. The DNPS Plant Operations Review Committee (PORC) approved submission of the NOED request prior to the verbal request for an NOED.

In consultation with the NRC Resident Inspection staff on site at the Dresden Nuclear Power Station, the NRC verified your staff's oral assertions, including the likely cause and compensatory measures. NRC staff also independently evaluated your staff's estimates for ICCDP and ICLERP.

On the basis of the NRC staff's evaluation of the request, we concluded that granting this NOED is consistent with the NRC's Enforcement Policy and staff guidance and would have no adverse impact on public health and safety or the environment. Therefore, as communicated orally to your staff at 5:46 p.m. CDT on September 12, 2017, we exercised enforcement discretion to not enforce compliance with TS 3.1.7 Required Action C.1 requirements that Dresden Nuclear Power Station, Unit 3, be in Mode 3 by 7:31 a.m. CDT on September 13, 2017. Unit 3 Mode 3 entry was extended by 35 hours required by TS 3.1.7, Condition C, to allow completion of repair on the SLC system. The additional period provided by the NOED expired at 6:31 p.m. CDT on September 14, 2017.

Your staff subsequently informed the NRC that DNPS completed repairs to the Unit 3 SLC system such that the condition causing the need for this NOED was corrected at 8:35 p.m. CDT on September 12, 2017.

In addition, as discussed during the telephone conference on September 12, 2017, you provided with your September 14 written request additional information to support your position that follow-up Technical Specification amendment was not necessary. In a letter dated November 10, 2009 (i.e., Accession No. ML093140516), Exelon Generation Corporation (EGC) submitted a license amendment request (LAR) that proposed a revision to TS 3.1.7 that extended the Completion Time (CT) for Required Action B.1 from 8 hours to 72 hours. In developing the technical basis for this LAR, EGC utilized the guidance in Regulatory Guide 1.174, "An Approach for Using Probabilistic Risk Assessment In Risk-Informed Decisions on Plant-Specific Changes to the Licensing Basis."

On November 10, 2010, during a teleconference between NRC Division of Operating Reactor Licensing personnel and EGC, the NRC indicated that the LAR could not be approved based on the information provided by EGC. The NRC documented the reasons in a letter dated January 6, 2011, (i.e., Accession No. ML103420021). The NRC's concerns regarding the approval of an extension to the CT for TS 3.1.7, RA B.1 were related to defense-in-depth actions associated with the inoperability of all TS-required SLC subsystems. EGC and DNPS concluded that the circumstances today are basically unchanged from those existing in 2009 and 2010.

As stated in the NRC Enforcement Policy, enforcement action may be taken to the extent that violations were involved for the root cause that led to the noncompliance for which this NOED was necessary.

Sincerely,

/RA/

Patrick Loudon, Director
Division of Reactor Projects

Docket No. 50-249
License No. DPR-25

Enclosure:
List of Participants

cc: Distribution via LISTSERV®

Letter to Bryan Hanson from Patrick Loudon dated September 18, 2017

SUBJECT: NOTICE OF ENFORCEMENT DISCRETION FOR DRESDEN NUCLEAR POWER
STATION, UNIT 3, NOED 17-3-001

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