

4300 Winfield Road Warrenville, IL 60555

630 657 2000 Office

RS-19-108

10 CFR 50.55a(z)(2)

November 12, 2019

U.S. Nuclear Regulatory Commission ATTN: Document Control Desk Washington, DC 20555-0001

> Dresden Nuclear Power Station, Units 2 and 3 Renewed Facility Operating License Nos. DPR-19 and DPR-25 <u>NRC Docket No. 50-237 and 50-249</u>

Subject: Dresden Nuclear Power Station, Units 2 and 3, Fifth Inservice Inspection Interval Relief Request I5R-04, Revision 2

References:

- Letter from P. R. Simpson (Exelon Generation Company, LLC (EGC)) to U.S. NRC, "Supplement to the Dresden Nuclear Power Station Fifth Inservice Inspection Interval Relief Request I5R-04," dated January 24, 2013 (ML13025A161)
- Letter from T. L. Tate (U.S. NRC) to EGC, "Dresden Nuclear Power Station, Units 2 and 3 – Safety Evaluation in Support of Request for Relief Associated with the Fifth 10-Year Inservice Inspection Interval Program (TAC Nos. ME9682, ME9684, ME9685, ME9686, ME9687, ME9688, ME9689, ME9690, ME9691, ME9692, ME9693, ME9694, ME9695, ME9696, and ME9697)," dated September 30, 2013 (ML13260A585)

In Reference 1, EGC submitted Relief Request I5R-04 associated with the fifth Inservice Inspection (ISI) Program interval for Dresden Nuclear Power Station (DNPS), Units 2 and 3. This relief request provided for an alternate frequency for the performance of American Society of Mechanical Engineers (ASME) Boiler and Pressure Vessel Code, Section XI, "Rules for Inservice Inspection of Nuclear Power Plant Components," associated with the system leakage testing of DNPS isolation condenser (IC) piping. Specifically, the relief request proposed an allowance to perform the system leakage tests of IC piping under static conditions for one of three inspection periods during the fifth 10-year ISI interval, with the remaining examinations being performed to coincide with the system in operation at the 60-month Technical Specifications (TS) Frequency during the performance of TS Surveillance Requirement (SR) 3.5.3.4 TS SR 3.5.3.4 verifies the IC system's capability to remove its design heat load. The NRC authorized the use of the proposed alternative in Reference 2.

Recently, EGC evaluated the Frequency at which TS SR 3.5.3.4 is performed. This evaluation determined that the performance of SR 3.5.3.4 at a 120-month frequency in lieu of the 60-month Frequency discussed in References 1 and 2 is appropriate. Therefore, EGC requests to supersede the Reference 1 version of I5R-04 with the version in the attachment to this letter in its entirety.

November 12, 2019 U.S. Nuclear Regulatory Commission Page 2

The system leakage tests for the DNPS IC piping under operability test conditions of TS SR 3.5.3.4 were last performed on November 5, 2013, and October 20, 2016, for Units 2 and 3, respectively. No relevant indications were identified during these tests.

EGC requests approval of this revised relief request by January 31, 2020, to support the performance of the system leakage test of DNPS, Unit 2 IC components beyond the TS SR Frequency described in References 1 and 2, which will reach the limitations of the Frequency allowances of TS SR 3.0.2 in February 2020.

There are no regulatory commitments contained in this submittal.

Should you have any questions concerning this letter, please contact Mr. Mitchel Mathews at (630) 657-2819.

Respectfully,

David M. Gullott Director - Licensing Exelon Generation Company, LLC

Attachment: 10 CFR 50.55a Request Number I5R-04, Revision 2

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

ATTACHMENT 10 CFR 50.55a Request Number I5R-04, Revision 2 Proposed Alternative in Accordance with 10 CFR 50.55a(z)(2) --Hardship or Unusual Difficulty without a Compensating Increase in the Level of Quality and Safety--

1. <u>ASME Code Component(s) Affected:</u>

Code Class:	3
Reference:	WD-2500, Table IWD-2500-1
Examination Category:	D-B
tem Number:	B2.10
Description	Testing Frequency for Isolation Condenser Shell Side and Associated Piping

Component Number:

Unit No.	Drawing	Test Block No.
2	M-28, M-39	2IC01, 2IC02
3	M-359, M-369	3IC01, 3IC02

2. Applicable Code Edition and Addenda:

The Inservice Inspection (ISI) Program is based on the American Society of Mechanical Engineers (ASME) Boiler and Pressure Vessel (B&PV) Code, Section XI, 2007 Edition through the 2008 Addenda.

3. <u>Applicable Code Requirements:</u>

Table IWD-2500-1, "Examination Categories," Examination Category D-B, Item Number D2.10, requires all Class 3 pressure retaining components be subject to a system leakage test with a VT-2 visual examination in accordance with IWD-5220, "System Leakage Test." This system leakage test is to be conducted once each inspection period.

IWD-5221, "Pressure," states that system leakage test shall be conducted at the system pressure obtained while the system, or portion of the system, is in service performing its normal operating function or at the system pressure developed during a test conducted to verify system operability (e.g., to demonstrate system safety function or safety technical specification surveillance requirements).

4. <u>Reason for Request:</u>

In accordance with 10 CFR 50.55a(z)(2), relief is requested on the basis that conformance with the Code requirements imposes hardship without a compensating increase in the level of quality and safety.

The Isolation Condenser (IC) is not normally in service; it is normally in a standby alignment with its shell side vented to the atmosphere through a non-isolable vent line. For inservice inspection purposes, each unit's IC is divided into two test blocks (i.e., Test Blocks 2IC01 and 2IC02 for the Dresden Nuclear Power Station (DNPS), Unit 2, IC

ATTACHMENT 10 CFR 50.55a Request Number I5R-04, Revision 2 Proposed Alternative in Accordance with 10 CFR 50.55a(z)(2) --Hardship or Unusual Difficulty without a Compensating Increase in the Level of Quality and Safety--

upper and lower portions, respectively, and Test Blocks 3IC01 and 3IC02 for the DNPS, Unit 3, IC upper and lower portions, respectively). Figures I5R-04.1 and I5R-04.2 below provide a representation of the upper and lower system leakage test blocks for Unit 2.



Figure I5R-04.1: Unit 2 Isolation Condenser Test Block No. 2IC01

ATTACHMENT

10 CFR 50.55a Request Number I5R-04, Revision 2 Proposed Alternative in Accordance with 10 CFR 50.55a(z)(2) --Hardship or Unusual Difficulty without a Compensating Increase in the Level of Quality and Safety--





The system is normally aligned with the IC shell side water level greater than or equal to six (6) feet in accordance with DNPS, Units 2 and 3 Technical Specifications (TS); however, the shell side water level of the IC is administratively maintained between seven (7) feet and 7.5 feet in accordance with plant procedures.

Exelon Generation Company, LLC (EGC) has previously submitted and received approval to conduct the system leakage test of the IC shell and associated piping during performance of TS SR 3.5.3.4 instead of at the ASME Code-required frequency of once per inspection period. DNPS has historically performed TS SR 3.5.3.4 at a TS Frequency of every 60 months (i.e., during two of the three inspection periods of each DNPS ISI interval) to verify the IC system operability when in service performing its normal operating function. EGC has evaluated the frequency at which SR 3.5.3.4 is

ATTACHMENT 10 CFR 50.55a Request Number I5R-04, Revision 2 Proposed Alternative in Accordance with 10 CFR 50.55a(z)(2) --Hardship or Unusual Difficulty without a Compensating Increase in the Level of Quality and Safety--

performed in accordance with the Surveillance Frequency Control Program (SFCP). This evaluation determined that the performance of SR 3.5.3.4 at a 120-month frequency in lieu of the historical 60-month frequency is appropriate.

The system pressure developed during the performance of this TS SR meets the Code requirements of IWD-5221; however, the TS Frequency of 120-months (i.e., once per ISI inspection interval) does not meet the Table IWD-2500-1 examination frequency requirement of once per inspection period.

Performance of additional IC heat removal capability tests solely for the purposes of performing a system leakage test requires a minimum of a 25% reduction in reactor power to perform the examination. This introduces an unnecessary transient on the affected DNPS reactor and a challenge to station operators. During actuation of the IC, one valve is opened to allow condensate in the IC tube bundle to return back to the reactor vessel. As a result, a volume of relatively cold water is returned to the reactor resulting in an increase in reactor power. In addition, Unit 3 utilizes Reactor Water Cleanup (RWCU) system return piping for the IC condensate return path which requires the RWCU system to be removed from service prior to performing SR 3.5.3.4 and returned to service following the performance of the SR. This is necessary to mitigate the thermal transient on the RWCU piping. Manipulation of the RWCU system does present a small transient to reactor operation and has even resulted in an automatic reactor scram on a low reactor water level signal during the restoration of RWCU system operation on one occasion at DNPS.

During the performance of IC heat capacity testing, dose rates increase up to 100 millirem per hour (mR/hr) (i.e., normal floor dose rates are <5 mR/hr) on the IC floor during the test. This challenges the radiological safety of station personnel during the performance of the VT-2 visual examination while the IC is in service. The total personnel dose received during the performance of the IC system leakage test is typically about 125 millirem.

During the IC heat removal test, shell side water is used to condense reactor steam in the tube bundle. The shell side water volume boils and is exhausted through the IC vent pipe that extends through the Reactor Building wall and discharges to the local atmosphere. For the safety of plant personnel, access to the vicinity of the IC vent must be controlled during the performance of the IC heat capacity tests.

As previously stated, the IC shell cannot be isolated and pressurized to meet IWD-5221 examination pressure requirements when in a standby alignment. Moreover, it would be an abnormal activity to fill the IC to the top simply to achieve a slight increase in static head for the additional system leakage test. As an additional complication, water added to the IC shell to raise level above the normal standby conditions would subsequently have to be drained and processed as radwaste.

In summary, imposing a transient on the reactor plant to accommodate the performance of the IC heat removal capability verification at a greater frequency than required by DNPS TS SR 3.5.3.4 and filling the IC to the top to perform additional system leakage

ATTACHMENT

10 CFR 50.55a Request Number I5R-04, Revision 2 Proposed Alternative in Accordance with 10 CFR 50.55a(z)(2) --Hardship or Unusual Difficulty without a Compensating Increase in the Level of Quality and Safety--

tests, present hardship without a compensating increase in the level of quality and safety.

5. **Proposed Alternative and Basis for Use**

As an alternative, EGC proposes the performance of a system leakage test using a VT-2 visual examination of all DNPS, Units 2 and 3 IC Test Blocks (i.e., Test Blocks 2(3)IC01 and 2(3)IC02) during the performance of TS SR 3.5.3.4, every 120 months (i.e., 10 years). The provisions of SR 3.0.2 are applicable to the SR 3.5.3.4 Frequency; therefore, the Frequency extension allowances of SR 3.0.2, may also be applied to future performances of SR 3.5.3.4, which could also impact the scheduling of future IC system leakage tests.

During inspection periods where TS SR 3.5.3.4 is not performed on a unit's IC, VT-2 examinations will be performed for Test Blocks 2(3)IC02 (i.e., the lower portion of the IC and associated piping). These leakage tests will be performed with IC shell side water level at the normal standby level versus at the normal pressure when the system is in service performing its operating function or at the system pressure developed during a test conducted to verify system operability as discussed in IWD-5221.

EGC proposes that the leakage test of IC Test Blocks 2(3)IC01 (i.e., the upper portion of the IC and associated piping) will only be performed once every inspection interval during the performance of TS SR 3.5.3.4 versus once per inspection period as discussed in Table IWD-2500-1. In the other two inspection periods, a VT-2 examination will be performed for test blocks 2(3)IC02 using the static head pressure associated with the IC level maintained during normal standby conditions.

6. <u>Duration of Proposed Alternative</u>

Relief is requested for the remainder of the Fifth Ten-Year Inspection Interval for DNPS, Units 2 and 3 which commenced on January 20, 2013, and will end on January 19, 2023.

7. <u>Precedents</u>

DNPS, Units 2 and 3 fifth inspection interval Relief Request I5R-04, Revision 1 was authorized in an NRC Safety Evaluation (SE) dated September 30, 2013 (ADAMS Accession No. ML13260A585). I5R-04, Revision 2 utilizes a similar approach as was previously approved.