

RS-15-141

10 CFR 50.90

June 24, 2015

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

Clinton Power Station, Unit 1
Facility Operating License No. NPF-62
NRC Docket No. 50-461

Subject: Response to Request for Additional Information Regarding License Amendment Request to Revise Technical Specification 5.5.2, "Primary Coolant Sources Outside Containment"

- References:**
- (1) Letter from Patrick R. Simpson (Exelon Generation Company, LLC) to U.S. NRC, "License Amendment Request to Revise Technical Specification 5.5.2, 'Primary Coolant Sources Outside Containment'," dated November 17, 2014
 - (2) Letter from Blake Purnell (U.S. NRC) to Bryan C. Hanson (Exelon Generation Company, LLC), "Clinton Power Station, Unit 1 – Request for Additional Information Regarding License Amendment Request to Revise Technical Specification 5.5.2, 'Primary Coolant Sources Outside Containment' (TAC No. MF5291)," dated March 24, 2015
 - (3) Letter from Patrick R. Simpson (Exelon Generation Company, LLC) to U. S. NRC, "Response to Request for Additional Information Regarding License Amendment Request to Revise Technical Specification 5.5.2, 'Primary Coolant Sources Outside Containment'," dated April 21, 2015
 - (4) Letter from Blake Purnell (U. S. NRC) to Bryan Hanson (Exelon Generation Company, LLC), "Clinton Power Station, Unit 1 – Request for Additional Information Regarding License Amendment Request to Revise Technical Specification 5.5.2, 'Primary Coolant Sources Outside Containment' (TAC No. MF5291)," dated April 24, 2015

In Reference 1, Exelon Generation Company, LLC, (EGC) requested, in accordance with 10 CFR 50.90, "Application for amendment of license, construction permit, or early site permit," NRC approval of a proposed revision to the interval for performance of the integrated leak tests required by Technical Specification (TS) 5.5.2, "Primary Coolant Sources Outside Containment." Specifically, the proposed change would revise the current frequency for integrated leak testing of "at refueling cycle intervals" to "at least once per 24 months." The

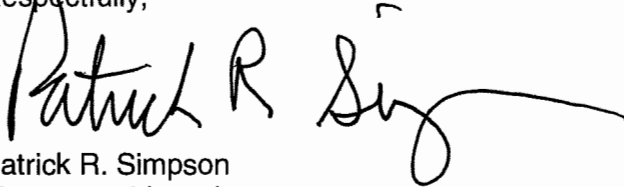
proposed change would also add a statement that allows the specified frequency for the integrated leak testing to be met if the testing is performed within 1.25 times the interval specified in TS 5.5.2.

In Reference 2, the NRC requested that EGC provide additional information to support their review of the subject amendment request (i.e., Reference 1). The response to these requests was provided in Reference 3. As documented in Reference 4, the NRC has determined that additional information is required to support their review. The requested information is provided in the attachment to this letter.

Based on discussions between Blake Purnell and Timothy Byam, it was agreed that EGC would provide the requested information to the NRC on or before June 19, 2015. Following receipt of Reference 4, it was determined that additional time was required to prepare the response to this RAI. Therefore, based on discussions between Eva Brown (NRC) and Timothy Byam on June 18, 2015, it was agreed that the response would be provided by June 24, 2015.

This letter contains no new regulatory commitments. If you have any questions concerning this letter, please contact Timothy A. Byam at (630) 657-2818.

Respectfully,

A handwritten signature in black ink, appearing to read "Patrick R. Simpson", with a long horizontal flourish extending to the right.

Patrick R. Simpson
Manager – Licensing
Exelon Generation Company, LLC

Attachment: Response to Request for Additional Information

cc: NRC Regional Administrator, Region III
NRC Senior Resident Inspector – Clinton Power Station
Illinois Emergency Management Agency – Division of Nuclear Safety

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Response to Request for Additional Information

In a letter from Blake Pumell (U.S. NRC) to Bryan Hanson (Exelon Generation Company, LLC), "Clinton Power Station, Unit 1 – Request for Additional Information Regarding License Amendment Request to Revise Technical Specification 5.5.2, 'Primary Coolant Sources Outside Containment' (TAC No. MF5291)," dated April 24, 2015, the following request for additional information was provided.

By application dated November 17, 2014 (Agencywide Documents Access and Management System (ADAMS) Accession No. ML 14321A882), Exelon Generation Company, LLC (the licensee) submitted a request to revise Technical Specification (TS) 5.5.2, "Primary Coolant Sources Outside Containment," for Clinton Power Station (CPS), Unit 1. The reason for the request is to support the CPS transition from 2-year to 1-year refueling cycles. Currently, TS 5.5.2 requires that an integrated leak test be performed on each system subject to TS 5.5.2 at refueling cycle intervals or less. The proposed change would require this test to be performed at least once per 24 months. The U.S. Nuclear Regulatory Commission staff is reviewing the application and has determined that the additional information below is needed to complete its review.

NRC RAI 1:

Provide the integrated leak test data for each system under TS 5.5.2 for the last two outages, including the test acceptance criterion, test pressure, as-found and as-left test leakage rate, and failed components.

EGC Response:

Exelon Generation Company, LLC (EGC) performs leak testing at Clinton Power Station (CPS) in accordance with CPS Procedure 1019.07, "Leakage Reduction and Monitoring Program." This procedure provides the steps necessary to implement and administer the leak reduction and monitoring program implemented at CPS under Technical Specification (TS) 5.5.2. In accordance with TS 5.5.2, this program is designed to reduce leakage to as low as practical levels from those portions of systems outside containment that could contain highly radioactive fluids during a serious transient or accident. Under the direction of CPS 1019.07, for each system specified in TS 5.5.2, a visual leakage inspection is performed with the respective system in operation per the applicable operating procedure or surveillance procedure. With each respective system operating at operating pressure, a walkdown of the system is performed to look for any leakage from the system. Each component in the system is observed for leakage. Any leakage observed is quantified, documented, and an Issue Report is generated. Since no repairs are conducted, the as-found and as-left leakage values are the same. Some of this testing is done with the reactor at power and certain systems are tested during a refueling outage. The interval between tests has typically been about 24 months. This interval was consistent with the refueling cycle interval.

CPS Procedure 1019.07 defines the acceptance criteria for this leak testing as:

- Liquid leakage shall be reduced to, and maintained at as low as practical levels.
- Steam leakage and gas leakage shall be reduced to and maintained as low as practical.
- 5 gpm Total Emergency Core Cooling System (ECCS) Leakage to Secondary Containment with a 2.5 gpm administrative limit on Total ECCS Leakage to Secondary Containment.

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- Leaks identified are triggered to be inspected again on a quarterly basis using this procedure until leaks are repaired.

The requested leak test data for the last two performances is provided in the following table.

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<u>System</u>	<u>Test Date</u>	<u>As-Left Leakage</u>	<u>Failed Components</u>
Low Pressure Core Spray	01/21/2014	None	N/A
	10/28/2011	None	N/A
High Pressure Core Spray	04/17/2014	3 dpm 5 dpm	Leak at valve 1E22F035 Leak at valve 1E22F378A
	04/19/2012	None	N/A
Residual Heat Removal ('A' Train)	04/25/2014	None	N/A
	04/23/2012	None	N/A
Residual Heat Removal ('B' Train)	09/11/2014	1 dpm	Near packing of valve 1E12F024B
	09/10/2012	10 dpm	Packing leak on valve 1E12R570I
Residual Heat Removal ('C' Train)	09/12/2014	None	N/A
	09/12/2012	None	N/A
Residual Heat Removal ('A' Shutdown Cooling Train)	05/10/2015	None	N/A
	10/23/2013	None	N/A
Residual Heat Removal ('B' Shutdown Cooling Train)	04/28/2015	None	N/A
	10/08/2013	Minor wetting	Accumulation only around valve stem of 1E12F024B
Reactor Core Isolation Cooling	10/29/2014	None	N/A
	11/20/2012	None	N/A

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System	Test Date	As-Left Leakage	Failed Components
Suppression Pool Makeup	12/29/2014	None	N/A
	01/03/2013	None	N/A
Combustible Gas Control ('A' Train)	02/23/2015	None	N/A
	03/01/2013	None	N/A
Combustible Gas Control ('B' Train)	02/06/2015	None	N/A
	05/13/2013	None	N/A
Containment Monitoring	03/05/2014	None	N/A
	03/06/2012	None	N/A
Hydrogen/Oxygen Monitoring (Division 1)	01/06/2007	None	Note: Division 1 abandoned – no testing since 2007
Hydrogen/Oxygen Monitoring (Division 2)	04/14/2015	Unacceptable	Note: No current testing since system is isolated and will not be used post-accident
Post-Accident Sampling (RHR 'A' Shutdown Cooling)	05/10/2015	None	N/A
	10/23/2013	None	N/A
Post-Accident Sampling (RHR 'B' Shutdown Cooling)	04/28/2015	None	N/A
	10/08/2013	None	N/A
Post-Accident Sampling (RHR 'A' Suppression Pool Cooling)	04/25/2014	None	N/A
	04/23/2012	None	N/A
Post-Accident Sampling (RHR 'B' Suppression Pool Cooling)	09/11/2014	None	N/A
	11/20/2012	None	N/A

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As documented in the table above, currently the only system outside containment that has an unacceptable leak rate is the Division 2 Hydrogen/Oxygen Containment Monitoring System. Direction for use of the Division 2 Hydrogen/Oxygen Monitoring System was removed from procedures in September 2011 and there are currently no procedural requirements to utilize this system post-accident. The containment penetration is isolated by valves that are operable and have been satisfactorily tested during local leak rate testing. EGC intends to permanently abandon this system in place.

For those systems with identified leakage, issue reports were generated to monitor or repair the identified leaks. As required by TS 5.5.2, the leakage from the remaining respective systems was quantified and controlled to minimize the leakage from those portions of systems outside containment that could contain highly radioactive fluids during a serious transient or accident to levels as low as practicable.

NRC RAI 2:

Provide justification why the proposed "Refueling Only Outage" will not significantly impact the leakage pathways and associated leakage rates for each system under TS 5.5.2.

EGC Response:

As stated in Reference 1, starting in the spring of 2015, following the startup from refueling outage C1R15, CPS began annual operating cycles, with annual refueling outages. The C1R15 refueling outage was a traditional refueling outage consisting of both refueling activities and maintenance activities (i.e., "refueling/maintenance outages"). In May 2016, refueling outage C1R16 will focus primarily on refueling activities with minimal maintenance activities (i.e., "refueling only outages") performed. With this alternating pattern between refueling only outages and refueling/maintenance outages, the interval between refueling/maintenance outages will be 24 months. EGC intends to continue performing the TS 5.5.2 leak testing on a 24 month frequency either during power operation or during the refueling/maintenance outages. This is equivalent to performing the tests at the current refueling cycle interval (i.e., every 24 months) and will ensure this testing is consistent with other similar surveillance requirements in the Technical Specifications. This will allow CPS to maintain a minimal amount of testing during the refueling only outage and still maintain the same level of quality and safety by continuing the 24 month frequency that the primary coolant sources outside containment have historically been leak tested at during the refueling/maintenance outage. In addition, by performing these leak tests on a 24 month frequency, the availability of the safety systems tested will continue to be maintained.

As noted above, EGC intends to perform minimal maintenance activities during the refueling only outages. This means that few systems will be taken out of service during these outages. Testing during these outages will be minimized and no additional potential for increasing leakage will be introduced. The systems have performed well over the years with little or no leakage identified. There is no basis to conclude the leakage from these systems will increase significantly during the cycle between the refueling only outages and the refueling/maintenance outages since the systems will not be operated any differently than they have in the past. The proposed change will allow EGC to continue testing the respective systems for leakage on the same frequency they are currently tested at.

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