

10 CFR 50.90

RS-10-025
February 5, 2010

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

Dresden Nuclear Power Station, Units 2 and 3
Renewed Facility Operating License Nos. DPR-19 and DPR-25
NRC Docket Nos. 50-237 and 50-249

Quad Cities Nuclear Power Station, Units 1 and 2
Renewed Facility Operating License Nos. DPR-29 and DPR-30
NRC Docket Nos. 50-254 and 50-265

Subject: Supplemental Information Concerning Request for License Amendment to Revise Technical Specification 3.4.5, "RCS Leakage Detection Instrumentation"

- References:
- 1) Letter from J. L. Hansen (Exelon Generation Company, LLC) to U. S. NRC, "Request for License Amendment to Revise Technical Specification 3.4.5, 'RCS Leakage Detection Instrumentation,' to Allow Alternate Method of Verifying Drywell Leakage," dated August 28, 2009
 - 2) Letter from C. Gratton (U. S. NRC) to C. G. Pardee (Exelon Generation Company, LLC), "Dresden Nuclear Power Station, Units 2 and 3, and Quad Cities Nuclear Power Station, Units 1 and 2 - Request for Additional Information Related to Alternate Method of Verifying Drywell Leakage (TAC Nos. ME2148 thru ME2151)," dated January 15, 2010.

In Reference 1, Exelon Generation Company, LLC (EGC) submitted a request to amend Appendix A, "Technical Specifications," (TS) of Renewed Facility Operating License Nos. DPR-19, DPR-25, DPR-29, and DPR-30 for Dresden Nuclear Power Station (DNPS), Units 2 and 3, and Quad Cities Nuclear Power Station (QCNPS), Units 1 and 2, respectively. The proposed amendment revises TS 3.4.5, "RCS Leakage Detection Instrumentation," to support implementation of an alternate method of verifying that leakage in the drywell is within limits.

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In Reference 2, the NRC forwarded a request for additional information concerning the Reference 1 license amendment request. The attachment to this letter provides the supplemental information requested by the NRC.

There are no regulatory commitments in this letter or the attachment.

Should you have any questions or require additional information, please contact Mr. John L. Schrage at (630) 657-2821.

I declare under penalty of perjury that the foregoing is true and correct. Executed on the 5th day of February 2010.

Respectfully,

A handwritten signature in black ink, appearing to read "Jeffrey L. Hansen". The signature is fluid and cursive, with a large loop at the end.

Jeffrey L. Hansen
Manager - Licensing

Attachment: Response to NRC Request for Additional Information, License Amendment Request to Revise Technical Specification 3.4.5, "RCS Leakage Detection Instrumentation"

ATTACHMENT
Response to NRC Request for Additional Information

License Amendment Request to Revise Technical Specification 3.4.5, "RCS Leakage Detection Instrumentation"

NRC Request for Additional Information

"In reviewing the Exelon Generation Company's (Exelon's) submittal dated August 28, 2009 (Agencywide Documents Access and Management System Accession No. ML092400548), that proposes to revise Technical Specification (TS) 3.4.5, "RCS Leakage Detection Instrumentation," to support implementation of an alternate method of verifying that leakage in the drywell is within limits for the Dresden Nuclear Power Station, Units 1 and 2 [2 and 3] (Dresden), and Quad Cities Nuclear Power Station, Units 1 and 2, (Quad Cities), the Nuclear Regulatory Commission staff has determined that the following information is needed in order to complete its review:

Background: Regulatory Guide (RG) 1.45 provides guidance for the design and capabilities of Reactor Coolant System (RCS) leakage detection equipment. Dresden's two drywell sumps meet the criteria of RG 1.45 as stated in the Dresden Updated Final Safety Analysis Report (UFSAR) and license amendment request (LAR). Dresden TS 3.4.4 requires RCS unidentified leakage to be less than 5 gallons per minute (gpm), verified on a 12-hour period. Quad Cities' two drywell sumps also meet the criteria of RG 1.45 as stated in the Quad Cities UFSAR and LAR. Quad Cities TS 3.4.4 requires RCS unidentified leakage to be less than 5 gpm, verified on a 12-hour period.

Issue: Unidentified leakage is collected in the drywell floor drain sump (DWFDS) and must be verified less than 5 gpm on a 12-hour period. In the event that the DWFDS should become inoperable, the proposed alternate method of detecting drywell leakage would allow the DWFDS to overflow into the drywell equipment drain sump (DWEDS), which normally collects only identified leakage. In order to verify the unidentified leakage rate in this configuration, all leakage collected in the DWEDS would be conservatively treated as unidentified leakage. The licensee proposes that this arrangement would be effective for collecting and verifying the unidentified leakage rate as long as the DWFDS was overflowing to the DWEDS. However, the volume of the Dresden DWFDS is 1000 gallons (as stated in the Dresden UFSAR, Section 5.2.5) and the sump would not begin overflowing to the DWEDS until this volume had been filled. Assuming an average unidentified leakage rate of 0.2 gpm and 12 hours of collected leakage before the DWFDS monitoring system was determined to be inoperable, the time to fill the DWFDS would be about 70 hours. Under this time period, the licensee would not be able to verify that unidentified leakage is below the TS limit of 5 gpm because the DWFDS would not overflow to the DWEDS. The Quad Cities UFSAR does not state the volume of Quad Cities drywell sumps in Section 5.2.5, however, the same issue as with the Dresden drywell sumps would apply to the Quad Cities drywell sumps.

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Response to NRC Request for Additional Information

License Amendment Request to Revise Technical Specification 3.4.5, "RCS Leakage Detection Instrumentation"

Request: Provide additional information that would clarify the physical layout or operation of the proposed alternate method of leakage detection and identify the length of time before the DWFDS would overflow to the DWEDS for both Dresden and Quad Cities. Also, provide a justification for any amount of time that the proposed alternate arrangement would not be able to quantify unidentified leakage for both plants."

Exelon Generation Company, LLC Response

The drywell equipment drain sump (DWEDS) at both Dresden Nuclear Power Station (DNPS) and Quad Cities Nuclear Power Station (QCNPS) is located immediately adjacent to the drywell floor drain sump (DWFDS), with the top of both sumps at the same elevation, approximately three feet apart. Exelon Generation Company, LLC (EGC) has verified that the sump configuration and sump volumes for QCNPS Units 1 and 2 and DNPS Unit 2 (i.e., both DWEDS and DWFDS) are equivalent to the DNPS Unit 3 DWFDS and DWEDS sump configuration and volume (i.e., 1000 gallons each).

There are no obstructions between the two sumps to prevent or divert DWFDS overflow from reaching the DWEDS. This was verified at DNPS Unit 3 in August 2008. In the August 28, 2009 license amendment request (LAR), EGC established regulatory commitments to verify that the DNPS, Unit 2 and QCNPS, Units 1 and 2 DWFDS overflows into the DWEDS prior to initial use of the alternate sump monitoring method for the applicable unit.

DNPS and QCNPS Technical Specification (TS) Surveillance Requirement (SR) 3.4.4.1 requires the verification, every 12 hours, that reactor coolant system (RCS) unidentified leakage, total leakage, and unidentified leakage increase are within the specified limits. As described in the August 28, 2009 LAR, if the DWFDS is overflowing into the DWEDS, the DWEDS can be used to measure total leakage (i.e., unidentified plus identified leakage). The resultant value would then be verified to be less than the TS 3.4.4.b unidentified leakage limit of 5 gpm and TS 3.4.4.d unidentified leakage increase limit of 2 gpm within the previous 24 hours.

In order to implement the proposed alternate sump monitoring method, EGC would either manually fill the DWFDS with an external water source or allow unidentified RCS leakage to fill the DWFDS. The use of unidentified RCS leakage to fill the DWFDS would require that:

1. The actual unidentified leakage rate (i.e., as determined by the most recent performance of SR 3.4.4.1) would fill the DWFDS within the TS-required surveillance interval (i.e., 12 hours, as specified in SR 3.4.4.1, plus the 25% allowed by SR 3.0.2, for a total of 15 hours). In this scenario, a minimum unidentified leakage rate of approximately 1.2 gpm would be required to fill the 1000 gallon DWFDS within 15 hours, and
2. The regulatory commitments delineated in the August 28, 2009 LAR (i.e., verification of flow from the DWFDS to the DWEDS, prior to the initial use of the alternate monitoring method for a specific unit) have been satisfied.

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**License Amendment Request to Revise Technical Specification 3.4.5, "RCS Leakage
Detection Instrumentation"**

While utilizing unidentified RCS leakage to fill the DWFDS, existing DWFDS level alarms would continue to provide the ability to detect an emergent and significant increase in the unidentified leakage rate. For example, if unidentified leakage were to increase by 1.0 gpm (i.e., in addition to the 1.2 gpm that is being used to fill the DWFDS), the existing DWFDS level alarm would provide notification of the higher leakage rate within approximately 8 hours, versus the expected 15 hours.

At the maximum allowed unidentified leakage rate of 5 gpm, the DWFDS level alarm would provide this notification within approximately 3 hours. This amount of time is less than the TS Completion Time (CT) for TS 3.4.4, Required Action A.1, "Reduce LEAKAGE to within limits" (i.e., four hours) and the CT for TS 3.4.5, Required Action A.1, "Restore drywell sump monitoring system to OPERABLE status," (i.e., 24 hours for DNPS and 30 days for QCNPS).

Therefore, depending upon the specific operational circumstances, filling of the DWFDS and ensuring flow from the DWFDS to the DWEDS would be established either manually with an external water source, or remotely, using the existing unidentified RCS leakage.