DRAFT REQUEST FOR ADDITIONAL INFORMATION REGARDING

LICENSE AMENDMENT REQUEST RELATED TO LIQUID NITROGEN STORAGE

PEACH BOTTOM ATOMIC POWER STATION, UNITS 2 AND 3

DOCKET NOS. 50-277 AND 50-278

By letter to the Nuclear Regulatory Commission (NRC) dated June 25, 2010 (Agencywide Documents Access and Management System (ADAMS) Accession No. ML101790114), Exelon Generation Company, LLC, (Exelon) submitted a request to revise the Technical Specifications (TS) for the Peach Bottom Atomic Power Station, (PBAPS) Units 2 and 3. The proposed change would revise TS Surveillance Requirement (SR) 3.6.1.3.1, "Primary Containment Isolation Valves (PCIVs)," and SR 3.6.1.5.1, "Reactor Building-to-Suppression Chamber Vacuum Breakers," to modify the required level for the liquid nitrogen storage tank. Exelon supplemented the amendment request on August 16, 2010, and on December 16, 2010 (ADAMS Accession Nos. ML102310079 and ML103410398). The NRC staff has reviewed Exelon's submittal and supplements and determined that additional information, as described below, is needed to complete the review.

The NRC staff requested supplemental information by letter dated July 30, 2010 (ADAMS Accession No. ML102110061). The NRC staff limited its request to only the calculations associated with the liquid nitrogen tank level/volume correlation. However, in its August 16, 2010, response, Exelon provided the entire design analysis calculation PM-0375, "To Establish Demand for N_2 for the CAD [containment atmospheric dilution] System and the SGIG [safety grade instrument gas] System for Dual Unit Operation," Revision 4. While the information in the submitted design analysis calculation exceeds the scope of the supplemental information requested by the NRC, the entire calculation does relate to the amendment request under review. The NRC staff has reviewed Exelon's submittal and supplements and determined that additional information, as described below, is needed to complete the review.

Exelon Calculation PM-0375, Revision 4, provides the basis used to establish TS surveillance 3.6.1.3.1 and 3.6.1.5.1 pursuant to Title 10 of the *Code of Federal Regulations* (10CFR) 50.36. 10 CFR 50.36(c)(2) states that a technical specification (TS) limiting condition for operation must be established for any structure, system, or component for operation at the lowest functional capability or performance levels of equipment required for safe operation of the facility. 10 CFR 50.36(c)(3) states that surveillance requirements are requirements relating to test, calibration, or inspection to assure that the necessary quality of systems and components is maintained, that facility operation will be within safety limits, and that the limiting conditions for operation will be met. 10 CFR 50 App B states, in part, that the design control measures shall provide for verifying or checking the adequacy of design, such as by the performance of design reviews, by the use of alternate or simplified calculational methods, or by the performance of a suitable testing program.

Exelon Calculation PM-0375, Revision 4, determined the minimum amount of nitrogen needed for the SGIG system for a seven-day period following a loss of coolant accident (LOCA). The calculation determined the amount of N2 required to account for system leakage for the seven day period would be 80,422 standard cubic feet (scf). However, the calculation bases system

leakage on plant data collected during a year-long test on only a limited portion of the SGIG system. The SGIG system was not in a configuration that represents the system lineup during an accident condition when the SGIG system is providing nitrogen from the CAD tank to safety-related components. Therefore, the NRC staff concludes that Calculation PM-0375 does not accurately represent the entire SGIG system leakage while in the post-LOCA configuration.

The previous revision of Calculation PM-0375 included a margin of only 9,981 scf of nitrogen to account for system leakage. Revision 4 of Calculation PM-0375 increased the margin to 80,422 scf to account for the nitrogen leakage based on the limited testing scope described above. The update to Calculation PM-0375 shows an excessive increase in margin required to account for only a limited portion of system leakage. The portion of the SGIG system not accounted for in the system leakage calculation may require an additional amount of nitrogen above the margin allowed in the calculation.

RAI-02: Provide a suitable method for determining the required amount of nitrogen in the storage tank that would account for leakage of the entire SGIG system while in post-LOCA line-up.

RAI-03: Since the system leakage represents such a significant amount of the required quantity of nitrogen, the NRC staff requests that the licensee either justify how the existing surveillance requirement (i.e. tank level of 22 inches) will assure that future leakage rates will not increase to a point where 22 inches will no longer sustain the SGIG system for the seven day period, or propose new surveillance requirements that meet the requirements of 50.36(c)(3).