UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555-0001

March 10, 2011

Mr. Michael J. Pacilio
President and Chief Nuclear Officer
Exelon Generation Company, LLC
4300 Winfield Road
Warrenville, IL 60555

SUBJECT: PEACH BOTTOM ATOMIC POWER STATION, UNITS 2 AND 3 - REQUEST FOR ADDITIONAL INFORMATION REGARDING LICENSE AMENDMENT REQUEST RELATED TO LIQUID NITROGEN STORAGE (TAC NOS. ME4131 AND ME4132)

Dear Mr. Pacilio:

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, Units 2 and 3. The proposed change would revise TS Surveillance Requirement (SR) 3.6.1.3, "Primary Containment Isolation Valves," 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, December 16, 2010, and January 26, 2011 (ADAMS Accession Nos. ML102310079, ML103410398, and ML110280103, respectively). The NRC staff has reviewed the request and supplements submitted by the licensee and determined that additional information is needed as set forth in the Enclosure.

The draft questions were sent to Mr. Richard Gropp, of your staff, to ensure that the questions were understandable, the regulatory basis for the questions were clear, and to determine if the information was previously docketed. On February 25, 2011, Mr. Gropp indicated that the licensee will submit a response by March 25, 2011. Please note that if you do not respond to this letter by the agreed-upon date or provide an acceptable alternate date in writing, we may reject your application for amendment under the provisions of Title 10 of the *Code of Federal Regulations*, Section 2.108.

If you have any questions, please contact me at (301) 415-3204.

Sincerely,

John D. Hughey

John D. Hughey, Project Manager
Plant Licensing Branch I-2
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation

Docket Nos. 50-277 and 50-278

Enclosure:
As stated

cc w/encl: Distribution via ListServ

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, December 16, 2010, and January 26, 2011 (ADAMS Accession Nos. ML102310079, ML103410398, and ML110280103, respectively). The NRC staff has reviewed Exelon's submittal and supplements and determined that additional information, as described below, is needed to complete the review.

In its August 16, 2010, response, Exelon provided 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. On page 17, of calculation PM-375, note 1, the licensee states, in part, that the stroke time for the vacuum breaker valves is 10 seconds. However, 8 seconds is used for the demand calculation based on the assertion that 8 seconds will provide more conservative required total nitrogen flow demand to operate the valves. However, if demand is equal to the flow rate multiplied by the time duration, then utilizing a longer stroking time provides a more conservative total demand estimate.

RAI-04: The NRC staff requests that the licensee provide an explanation for why an 8 second, as opposed to a 10 second, stroking time would provide a more conservative estimation for total nitrogen demand.

On page 16, of Calculation PM-375, the licensee states that, following a loss-of-coolant accident (LOCA), the 18-inch purge and vent valves close and only their associated boot seals remain pressurized. Page 19 of the calculation lists 12, 18-inch, valves as having boot seals. In contrast, page 20 cites both operating units as having 16, 18-inch, valves between them and that the valves are stroked 10 times.

RAI-05.a: The NRC staff requests that the licensee identify which valves, from which units under each condition (LOCA, safe shutdown), have boot seals that require SGIG.

RAI-05.b: The NRC staff requests that the licensee identify the required nitrogen demand for the boot seals.

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RAI-05.c: The NRC staff requests that for the valves with boot seals, the licensee state which valves stroke, the associated total stroking demand, and the basis for the number of strokes required.

RAI-05.d: The NRC staff requests that the licensee identify the total required nitrogen to support the SGIG function for inflating and maintaining valve boot seal for each unit for the 7-day post-accident period.

The NRC staff conducted an on-site audit at PBAPS on January 13, 2011. One aspect of the audit consisted of a review of the station drawings depicting the valves supported by the SGIG system, and verifying that those valves were accounted for in calculation PM-375. Calculation PM-375 determined the amount of nitrogen required to meet a 7-day requirement. The PBAPS station drawings reviewed during the audit showed 18 valves were supported by SGIG system. However, the calculation states that SGIG supports only 17 valve stations.

The licensee's assumptions for calculation PM-375 are that one unit is in a LOCA and one is in safe shutdown both coincident with station loss of offsite power. On page 10 of the calculation, the licensee states, in part, that the nitrogen demand for the unit in safe shutdown is based solely on system leakage and leakage through cross-tie check valves between SGIG and the Instrument Air system. In contrast, on page 20 of the calculation, the licensee credits both units as consuming nitrogen via boot seals.

RAI-06.a: The NRC staff requests that the licensee identify which valves are supported by SGIG, specific to which unit condition (i.e. LOCA or safe shutdown).

RAI-06.b: The NRC staff requests that the licensee identify the number of strokes required and the nitrogen demand to support the function of the valves identified in RAI-06.a.

RAI-06.c: The NRC staff requests that the licensee identify the total required nitrogen to support the SGIG function for cycling the required valves for each unit for the 7-day post-accident period.

Calculation PM-375, page 4, states: "1) The number of strokes necessary to the critical valves post-LOCA was estimated to be ten (10) times." The licensee uses this assumption to establish the required amount of air for the SGIG supported valves to perform their function. However, the licensee does not provide a basis for the number of strokes.

RAI-07: The NRC staff requests that the licensee provide the basis for the number of strokes.

Calculation PM-375, refers to containment emergency vent system valves being supplied by the SGIG system upon loss of normal instrument air. However, in Section 3 of the submittal dated June 25, 2010, the licensee states that the SGIG supports only three system functions:

1. Containment atmospheric control (CAC) system purge and vent valves.
2. Containment atmospheric dilution (CAD) valves.
3. Torus-to-secondary containment vacuum breaker valves.

RAI-08: The NRC staff requests that the licensee justify the exclusion of the function to supply air to the containment emergency vent system valves, and identify any effect on the quantity of nitrogen required to support the required 7-day period.

Currently, the licensee has the CAD system lined up to take suction from the same tank that SGIG uses to provide the backup instrument air for the post accident 7-day supply. Current operating procedures allow operations to use the nitrogen in the CAD tank to control the containment environment. The low level alarm in the CAD tank annunciates at 36 inches. However, if the tank level is below 38.5 inches there is insufficient volume in the tank to support the CAD system and still retain the required volume in the tank to support SGIG for the 7-day period. The licensee proposes a TS limit of 22 inches for the CAD system to only account for SGIG usage.

RAI-09.a: The NRC staff requests that the licensee address whether the alarm setpoint is adequate to prevent inadvertent usage of the nitrogen in the CAD tank while retaining a sufficient quantity of nitrogen to support the SGIG function.

RAI-09.b: The NRC staff requests that the licensee list and describe the controls regarding nitrogen over-usage that exist to ensure that an adequate quantity of nitrogen remains in the CAD tank to support the 7-day period.

March 10, 2011

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President and Chief Nuclear Officer
Exelon Generation Company, LLC
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John D. Hughey, Project Manager
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ADAMS Accession No.: ML110601101

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