Exelon Generation
4300 Winfield Road
Warrenville, IL 60555

www.exeloncorp.com

Exelon Nuclear

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

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: Request for Additional Information Regarding Quad Cities Nuclear Power Station, Units 1 and 2, Response to Generic Letter 2003-01, "Control Room Habitability"

Reference:

1. Letter from M. P. Gallagher (Exelon Generation Company, LLC and AmerGen Energy Company, LLC) to U. S. NRC, "Exelon/AmerGen 180-day Response to Generic Letter 2003-01, 'Control Room Habitability'," dated December 9, 2003

2. Letter from J. F. Williams (U. S. NRC) to C. M. Crane (Exelon Generation Company, LLC), "Quad Cities Nuclear Power Station, Units 1 and 2 – Request for Additional Information Related to Generic Letter 2003-01, 'Control Room Habitability' (TAC Nos. MB9845 and MB9846)," dated January 25, 2007

NRC Generic Letter (GL) 2003-01, "Control Room Habitability," requested confirmation that licensees' control rooms meet the applicable habitability regulatory requirements and that control room habitability systems are designed, constructed, configured, operated, and maintained in accordance with the facility's design and licensing bases. Exelon Generation Company (EGC), LLC, responded to this GL for Quad Cities Nuclear Power Station (QCNPS), Units 1 and 2, in Reference 1. In Reference 2, the NRC requested additional information related to the design, operation, and performance of the QCNPS Control Room Heating Ventilation and Air Conditioning subsystems. The attachment to this letter provides EGC's response.

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

Respectfully,

Patrick R. Simpson

Patrick R. Simpson
Manager – Licensing

Attachment: Response to Request for Additional Information

ATTACHMENT
Response to Request for Additional Information

NRC Introduction to Request for Additional Information

Generic Letter (GL) 2003-01 requested confirmation that your facility's control room meets the applicable habitability regulatory requirements and that the control room habitability systems are designed, constructed, configured, operated, and maintained in accordance with the facility's design and licensing bases. GL 2003-01, Item 1a, requested that you confirm that the most limiting unfiltered inleakage into your control room envelope is no more than the value assumed in your design basis radiological analyses for control room habitability.

In your December 9, 2003 (Agencywide Document Access and Management System Accession No. ML033560302), response, you stated that in the event of a loss-of-coolant accident (LOCA), Train "B" is operated and its supply of outside air is filtered by the air filtration unit. You further stated that during a LOCA, Train "B" the heating, ventilation, and air conditioning (HVAC) system will operate. A review of your updated final safety analysis report (UFSAR) (Rev. 6, 10/2001) stated that in the event of a LOCA, Train "A" or Train "B" is operated and its supply of outdoor air is filtered by an air filtration unit.

In your December 9, 2003, response, you also stated that the tested unfiltered inleakage for Train "A" is 297 cubic feet per minute (cfm) (222 +/- 75), which is more than the unfiltered inleakage of 260 cfm assumed in your LOCA radiological analysis. You further stated that the tested inleakage for Train "B" was 88 CFM (88 +/-74) which was less than that value. Since your response to GL 2003-01 was submitted, an amendment was issued for Quad Cities Nuclear Power Station, Units 1 and 2 (Quad Cities) to adopt alternate source term methodology which increases the assumed unfiltered inleakage from 260 cfm to 400 cfm which now bounds the previous tracer gas test results for both Train "A" and Train "B".

In your December 9, 2003 response, you infer that Train "B" is redundant to Train "A" by stating that "...Quad Cities committed to install a redundant control room HVAC system (Train "B")." You further state that Train "A" is non-safety related and that Train "B" is safety related.

Based on the above, we are requesting that you provide the following additional information:

Request 1

The reason why your response to Generic Letter 2003-01 differed from the information contained in your UFSAR. Since your UFSAR states that Train "A" or Train "B" can be operated during a LOCA, explain why in your response to Quad Cities GL 2003-01, you only indicated that Train "B" would operate during a LOCA.

Response 1

The QCNPS UFSAR Section 6.4.3, "System Operational Procedures," indicates that either Train "A" or Train "B" can be operated during a design basis accident. This information reflects a basic design feature of the Control Room Emergency Ventilation (CREV) system; either Train "A" or Train "B" has the capability of being aligned to the common Air Filtration Unit to provide filtered air to the control room envelope.

UFSAR Section 6.4.2.2, "Ventilation System Design," further indicates that Train "B" was installed to comply with NUREG-0737, Item III.D.3.4, "Control Room Habitability

Requirements." Train "B" upgraded the CREV system by providing a safety-related train to be used following postulated design basis accidents. Train "B" is normally in a standby condition and is initiated following a design basis accident. Train "B" is safety-related, capable of being powered by the on-site emergency power source, and includes a safety-related cooling source (i.e., cooling provided by the Residual Heat Removal Service Water system). The CREV design upgrade was approved by the NRC in a letter from D. B. Vassallo to D. L. Farrar, "Resolution of NUREG-0737, Item III.D.3.4, Control Room Habitability," dated May 17, 1983.

Train "A" remains consistent with the original CREV design as non-safety related and provides control room ventilation during normal (i.e., non-emergency) operation. While either train is capable of being used following a design basis accident, only Train "B" is credited to support the control room envelope, and only Train "B" is required operable to meet the Technical Specification (TS) operability requirements in TS 3.7.4. This is reflected in TS Bases 3.7.4 and in station procedures, which specify the use of Train "B" during normal or emergency conditions while Train "A" is limited to normal operation.

Request 2

An explanation of how you concluded that "the most limiting measured unfiltered inleakage is bounded by the value assumed in the QCNPS design basis radiological analyses for control room habitability" when the tracer gas test results for Train "A" were higher than that assumed value and your UFSAR states that Train "A" or Train "B" can be operated during a LOCA.

Response 2

As noted in the response to Request 1, the CREV system at QCNPS includes two trains. Train "A" is nonsafety-related and was installed as part of the original plant design. Train "B" is safety-related and was installed in response to NUREG-0737. Train "B" includes a safety related cooling source and can be powered by the on-site emergency power source. Only Train "B" is required operable by Technical Specifications. For these reasons, the Train "B" is credited during accident conditions. No credit is given to Train "A" for providing filtered air to the control room envelope; therefore, the original radiological assessments (i.e., pre-alternative source term (AST) amendment) bound the measured inleakage from Train "B".

Inleakage measurements are obtained for both Train "A" and Train "B" to ensure preventative maintenance practices are effective and also to minimize inleakage to the control room envelope during the initial 40 minutes of an accident when Train "A" may be in operation. Note that inleakage measurements were taken on both trains in September 2006. Train "A" inleakage was 71 $\pm$ 32 scfm and Train "B" inleakage was 50 $\pm$ 30 scfm. Both trains' inleakage results are well within 260 scfm and the AST limit of 400 scfm. These results demonstrate the preventative maintenance program at QCNPS has been effective. As part of the implementation of the approved AST amendment, the control room inleakage values are being revised in the UFSAR.