

RS-04-132

September 3, 2004

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

Dresden Nuclear Power Station, Units 2 and 3  
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  
Facility Operating License Nos. DPR-29 and DPR-30  
NRC Docket Nos. 50-254 and 50-265

**Subject:** Additional Information Supporting the Request for License Amendment Related to Application of Alternative Source Term

**Reference:** Letter from P. R. Simpson (Exelon Generation Company, LLC) to U. S. NRC, "Request for License Amendments Related to Application of Alternative Source Term," dated October 10, 2002

In the referenced letter, Exelon Generation Company, LLC (EGC) requested an amendment to the facility operating licenses for Dresden Nuclear Power Station, Units 2 and 3, and Quad Cities Nuclear Power Station, Units 1 and 2. The proposed changes support application of an alternative source term methodology. On page 2 of Attachment A to the referenced letter, the submittal states that EGC is committing to the applicable portions of Nuclear Utilities Management and Resources Council (NUMARC) 93-01, Revision 3.

On August 12, 2004, the NRC requested additional information as to how this commitment would be implemented. The attachment to this letter provides the requested information.

EGC has reviewed the information supporting a finding of no significant hazards consideration that was previously provided to the NRC in Attachment C of the referenced letter. The supplemental information provided in this submittal does not affect the bases for concluding that the proposed license amendment does not involve a significant hazards consideration.

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If you have any questions concerning this letter, please contact Mr. Kenneth M. Nicely at (630) 657-2803.

I declare under penalty of perjury that the foregoing is true and correct. Executed on the 3rd day of September 2004.

Respectfully,



Patrick R. Simpson  
Manager – Licensing

Attachment:  
Response to Request for Additional Information

cc: Regional Administrator - NRC Region III  
NRC Senior Resident Inspector - Dresden Nuclear Power Station  
NRC Senior Resident Inspector - Quad Cities Nuclear Power Station  
Illinois Emergency Management Agency - Division of Nuclear Safety

**ATTACHMENT**  
**Response to Request for Additional Information**

**Request**

On page 2 of Attachment A to the October 10, 2002 letter, the submittal states that Exelon is committing to the applicable portions of Nuclear Utilities Management and Resources Council (NUMARC) 93-01, Revision 3. NUMARC 93-01 requires prompt closure of containment and control of releases from fuel handling accidents (FHA). NUMARC 93-01 states in part that "these prompt methods need not completely block the penetrations nor be capable of resisting pressure, but are to enable the ventilation systems to draw from the postulated FHA such that it can be treated and monitored."

Describe the prompt methods and the degree of closure that will be achieved. How much of an open area to the environment would be permitted? Describe the ventilation systems that would be used to draw the release from the postulated FHA. Specifically, are the ventilation systems engineered safety features systems, do they have carbon adsorber filters and high-efficiency particulate air (HEPA) filters, are they tested in accordance with Regulatory Guide 1.52 or other standards, and do they have sufficient drawing capacity to assure that air flow is from the environment to the containment? Would there be a test to determine that all air flow was into the containment in the event that the Quad Cities or Dresden procedure allows partial closure? Other licensees have provided information on how they intend to meet the recommendations and made specific notation of the requirement in the Technical Specifications to close the containment in the event of an FHA. Does Quad Cities or Dresden have the capability to make a similar commitment?

**Response**

The secondary containment is not unit specific (i.e., both units share a common secondary containment) at both Dresden Nuclear Power Station (DNPS) and Quad Cities Nuclear Power Station (QCNPS). The refuel floor is one open area for both units. Therefore, DNPS and QCNPS cannot relax secondary containment requirements for a single unit. Under the proposed changes, secondary containment is required to be operable when either unit is in Modes 1, 2, or 3; during movement of recently irradiated fuel assemblies in the secondary containment; and during operations with a potential for draining the reactor vessel. The only time that secondary containment would not be required to be operable is when both units were not in the Modes or other specified conditions stated above. This condition occurs very infrequently.

When an open penetration in secondary containment is required (e.g., to facilitate maintenance or testing), DNPS and QCNPS follow specific procedures intended to control this evolution. The procedures require that a person be stationed at the opening with sealing material. This person must be in communication with the control room so that the control room operators can direct the sealing of the penetration, if needed. When the seal is installed a leakage test (e.g., soap bubble test, smoke test, or other approved means) is performed to assure that the seal is airtight. There are no procedural requirements limiting the size of the opening that is allowed.

While performing these procedures, the operators are required to monitor reactor building to outside air differential pressure (i.e., at QCNPS) or Reactor Building Ventilation isolation / Standby Gas Treatment (SBGT) initiation signals (i.e., at DNPS). If the differential pressure is

**ATTACHMENT**  
**Response to Request for Additional Information**

less than 0.10" water vacuum (i.e., at QCNPS) or if the Reactor Building Ventilation isolates / SGBT initiates (i.e., at DNPS), then the penetration must be immediately sealed. Additionally, periodic station surveillances verify that 0.25" water vacuum can be maintained with a specified opening in the Reactor Building.

Both DNPS and QCNPS procedures require that secondary containment be maintained at a negative pressure relative to atmosphere. By maintaining secondary containment at a negative pressure, it can be assured any leakage is directed into the building through an open penetration. If the Reactor Building Ventilation system cannot maintain adequate differential pressure, the SGBT system will be started and/or the penetration would be sealed. No test would be performed to quantify the air in-leakage. As long as a negative differential pressure is maintained, discharge from the reactor building will be through the vent stack.

During normal operation, the Reactor Building Ventilation system provides the required secondary containment differential pressure. This system does not have carbon or HEPA filters. The discharge from the Reactor Building Ventilation system is to the Reactor Building Vent Stack where any release is monitored. This pathway is used for the off-site dose calculation in the Alternative Source Term (AST) submittals. The AST analysis does not rely on the SGBT system to provide any filtering of the effluent from the reactor building.

The existing DNPS and QCNPS administrative and procedural requirements for controlling secondary containment penetrations are comprehensive and ensure the guidelines of NUMARC 93-01, Revision 3 are met. The addition of a reference or notation in the Technical Specifications to dictate manual actions for sealing secondary containment are not warranted. The actions are not needed to comply with the analyzed condition, and do not meet the criteria of 10 CFR 50.36, "Technical Specifications," paragraph (c)(2)(ii), for inclusion in Technical Specifications.