



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

January 27, 2010

Mr. Charles G. Pardee
President and Chief Nuclear Officer
Exelon Nuclear
4300 Winfield Road
Warrenville, IL 60555

SUBJECT: BRAIDWOOD STATION, UNITS 1 AND 2, AND BYRON STATION, UNIT NOS. 1 AND 2 - REQUEST FOR ADDITIONAL INFORMATION RELATED TO UPPER CABLE SPREADING ROOM FIRE PROTECTION REQUIREMENTS (TAC NOS. ME0971, ME0972, ME0973, AND ME0974)

Dear Mr. Pardee:

By letter to the Nuclear Regulatory Commission (NRC) dated March 26, 2009, (Agencywide Documents Access and Management System (ADAMS) Accession No. ML090861015), as supplemented by letter dated September 10, 2009 (ADAMS Accession No. ML092540075), Exelon Generation Company, LLC (the licensee), submitted a license amendment request (LAR) to revise the fire protection program to eliminate the requirement for the backup manual carbon dioxide fire suppression system in the upper cable spreading rooms.

The NRC staff is reviewing your LAR, and has determined that additional information is required to complete its review. The specific information requested is addressed in the enclosed Request for Additional Information (RAI). Your staff on has agreed to provide a response to this RAI within 45 days after the date of this letter.

The NRC staff considers that timely responses to RAIs help ensure sufficient time is available for staff review and contribute toward the NRC's goal of efficient and effective use of staff resources. If circumstances result in the need to revise the requested response date, please contact me at (301) 415-1547.

Sincerely,

A handwritten signature in black ink, appearing to read "Marshall J. David".

Marshall J. David, Senior Project Manager
Plant Licensing Branch III-2
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation

Docket Nos. STN-456, STN-457,
STN 50-454, and STN 50-455

Enclosure:
Request for Additional Information

cc w/encls: Distribution via Listserv

REQUEST FOR ADDITIONAL INFORMATION

BRAIDWOOD STATION, UNITS 1 AND 2

AND BYRON STATION, UNIT NOS. 1 AND 2

DOCKET NOS. STN 50-456, STN 50-457

STN 50-454, AND STN 50-455

The Nuclear Regulatory Commission (NRC) staff is reviewing Exelon Generation Company, LLC's (the licensee's) letter dated March 26, 2009, (Agencywide Documents Access and Management System (ADAMS) Accession No. ML090861015), as supplemented by letter dated September 10, 2009 (ADAMS Accession No. ML092540075), which requested a license amendment concerning a change to the fire protection program requirements for Braidwood Station (Braidwood), Units 1 and 2, and Byron Station (Byron), Unit Nos. 1 and 2. The license amendment request (LAR) relates to the removal of the backup manually-actuated carbon dioxide fire suppression systems for the upper cable spreading rooms (UCSRs) at Braidwood and Byron. In addition to the LAR, the NRC staff has reviewed the applicable licensing and regulatory documents, i.e., Braidwood's and Byron's Fire Protection Report (FPR), related safety evaluation reports, and Updated Final Safety Analysis Report.

The NRC staff is continuing its review, and has determined that the following additional information is required to complete its review. The numbering, below, represents a continuation in the numbering in the NRC staff's previous request for additional information (July 22, 2009, ADAMS Accession No. ML091970079).

8. Your letter dated March 26, 2009, Attachment Page 2, states that,

"...Each of the upper cable spreading rooms has an automatically actuated Halon fire suppression system that is designed and tested to provide sufficient Halon 1301 gas to suppress a surface or deep seated cable fire in any of the upper cable spreading rooms. Each of these upper cable spreading rooms is a separate fire area and has been designed and constructed with three-hour fire rated barriers..."

Further, your letter dated March 26, 2009, Attachment Pages 6 and 7, states that,

"...In the event of a design basis fire, the fire would not spread out of the room because of the substantial construction of the walls, floor, and ceiling and penetrations and openings are sealed, except as noted in the fire barrier description within Section 2.3.3 of the Fire Protection Report..."

"...The upper cable spreading rooms are designed and constructed such that they are bounded on all sides, floor and ceiling by three-hour fire rated construction..."

ENCLOSURE

The NRC staff notes that FPR Section 2.3.3.17, "Upper Cable Spreading Area (Fire Zone 3.3B-2)," FPR Section 2.3.3.18, "Unit 1 Upper Cable Spreading Area (Fire Zone 3.3C-1)," and FPR Section 2.3.3.20, "Unit 1 Upper Cable Spreading Area D (Fire Zone 3.3D-1)," discuss details of nonrated penetration seals at Braidwood and Byron. Fire barriers with nonrated penetration seals in the UCSRs could be viewed as compromising defense-in-depth (DID) involving fires in the UCSRs.

Section II, "General Requirements," of Appendix R to Title 10 of the *Code of Federal Regulations*, Part 50, states, in part, that the fire protection program shall extend the DID concept of fire protection in fire areas that are important to safety, with the following objectives:

- (1) Prevent fire from starting.
- (2) Rapidly detect, control, and extinguish.
- (3) Protect structures, systems, and components that are important to safety so that a fire that is not promptly extinguished by the fire suppression activities will not prevent the safe-shutdown of the plant.

The third objective of the DID concept involves spatial separation of combustible materials or isolation of combustible materials by fire-resistant barriers. In particular, fire-rated horizontal and vertical barriers will limit fire spreading from one fire area to another fire area.

The NRC staff requests that the licensee provide a discussion on how the required third objective of fire protection DID will be maintained with nonrated penetration seals in the UCSRs, including an explanation of how spreading of the fire beyond the UCSR would be prevented by the nonrated penetration seals. Provide details of any potential fire propagation paths in the UCSRs.

Also in the response, address the expectation that nonrated penetration seals would not result in Halon 1301 leakage from the area after actuation of the Halon 1301 fire suppression system.

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Sincerely,

/RA/

Marshall J. David, Senior Project Manager
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ADAMS Accession No.: ML100251433

* Date of e-mail

NRR-088

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