September 28, 2010

MEMORANDUM TO: Harold K. Chernoff, Chief
Plant Licensing Branch I-2
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation

FROM: Peter Bamford, Project Manager ***/ra/***
Plant Licensing Branch I-2
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation

SUBJECT: LIMERICK GENERATING STATION, UNITS 1 AND 2 - ELECTRONIC TRANSMISSION, DRAFT REQUEST FOR ADDITIONAL INFORMATION REGARDING PROPOSED TECHNICAL SPECIFICATION ALLOWED OUTAGE TIME EXTENSIONS TO SUPPORT RESIDUAL HEAT REMOVAL SERVICE WATER (RHRSW) MAINTENANCE (TAC NOS. ME3551 AND ME3552)

The attached draft request for additional information (RAI) was transmitted by electronic transmission on September 28, 2010, to Mr. Glenn Stewart, at Exelon Generation Company, LLC (Exelon). This draft RAI was transmitted to facilitate the technical review being conducted by the Nuclear Regulatory Commission (NRC) staff and to support a conference call (if needed) with Exelon in order to clarify the licensee's submittal. The draft RAI is related to Exelon's submittal dated March 19, 2010, regarding Limerick Generating Station, Units 1 and 2, proposing to extend the Technical Specification (TS) allowed outage time (AOT) for several systems from 72 hours to seven (7) days in order to allow for repairs of the RHRSW system piping. The draft questions were sent to ensure that they were understandable, the regulatory basis was clear, and to determine if the information was previously docketed. Additionally, review of the draft RAI would allow Exelon to evaluate and agree upon a schedule to respond to the RAI. This memorandum and the attachment do not represent an NRC staff position.

Docket Nos. 50-352 and 50-353

Enclosure: As stated

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DRAFT

REQUEST FOR ADDITIONAL INFORMATION

LIMERICK GENERATING STATION, UNITS 1 AND 2

PROPOSED TECHNICAL SPECIFICATION - ALLOWED OUTAGE TIME EXTENSIONS

TO SUPPORT RESIDUAL HEAT REMOVAL SERVICE WATER MAINTENANCE

DOCKET NOS. 50-352 AND 50-353

By letter dated March 19, 2010 (Agencywide Documents Access and Management System (ADAMS) Accession No. ML100810151), Exelon Generation Company, LLC (Exelon, the licensee) submitted a license amendment request (LAR) proposing to extend certain Limerick Generating Station (LGS) Units 1 and 2, Technical Specification (TS) allowed outage times (AOTs). Specifically these AOTs are for the Suppression Pool Cooling (SPC) mode of the Residual Heat Removal (RHR) system, the Residual Heat Removal Service Water (RHRSW) system, the Emergency Service Water (ESW) system, and the A.C. Sources - Operating (Emergency Diesel Generators). The AOTs would be extended from 72 hours to seven (7) days in order to allow for repairs of the RHRSW system piping. The Nuclear Regulatory Commission (NRC) staff has been reviewing the submittal and has determined that additional information is needed to complete its review.

1. The LAR, Attachment 1, compensatory measure 4.2.2.b, provides a listing of the various equipment whose availability is to be verified during the extended AOT.

   Please define “availability” in the above context and state whether this equipment will be immediately available for use if called upon.

2. In the LAR, Attachment 1, Section 4.3.2, “Defense in Depth Philosophy,” under the subtopic for ‘system redundancy’ the submittal describes the capability of the operable train and the compensatory measures to assure the availability of the operable train. But the section does not discuss the subject matter of the subtopic, i.e. system redundancy, independence and diversity.

   Discuss the available systems that may not be operable but do provide some measure of redundancy, independence and diversity and discuss their capability during an extended AOT. Discuss any other systems, safety related or non safety related, which also can provide some measure of redundancy, independence and diversity for an extended AOT.

3. The LAR, Attachment 1, Section 3.0, states that the ESW system is designed to supply cooling water to the following safety related equipment:

   a. RHR motor oil coolers
   b. RHR pump compartment unit coolers
   c. Core spray pump compartment unit coolers

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d. Control room chillers
e. Standby diesel generator heat exchangers
f. Reactor Core Isolation Cooling (RCIC) pump compartment unit coolers
g. High Pressure Coolant Injection (HPCI) pump compartment unit coolers
h. Spent fuel pools (makeup water)

The LAR also states that when the 'A' RHRSW loop is inoperable, the 'A' ESW loop will be declared inoperable and associated components cooled by the 'A' ESW loop will be declared inoperable, as required by LGS TS 3/4.7.1.2, Action a.3. A similar statement can be made for the 'B' RHRSW loop, 'B' ESW loop and associated components cooled by the 'B' ESW loop. Therefore, the above listed components that are cooled by their respective ESW loop are inoperable when the associated ESW loop is inoperable.

The LAR accounts for the inoperability of the RHR motor oil coolers and pump compartment unit coolers, core spray pump compartment unit coolers and diesel generator heat exchangers. However, the LAR does not discuss the effect of inoperability of the ESW loops upon control room chillers, RCIC and HPCI pump compartment unit coolers and spent fuel pool makeup water. Discuss the effect of inoperability of each ESW loop upon the above listed components and whether the associated TSs are, or are not, affected.

4. With 'A' RHRSW subsystem inoperable and drained for maintenance (Unit 2 operating and Unit 1 shutdown), the LAR states in Attachment 1, paragraph 4.1.b, "Even though the ESW system meets single active failure criteria in this alignment, it will not be single passive failure proof. As a result, the ESW system will not meet the requirements of [General Design Criteria] GDC 44…"

   Discuss the single passive failures under consideration that cause the failure to meet GDC 44 requirements.