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

December 14, 2010

Mr. Michael J. Pacilio
President and Chief Nuclear Officer
Exelon Nuclear
4300 Winfield Rd.
Warrenville, IL 60555

SUBJECT: LIMERICK GENERATING STATION, UNITS 1 AND 2; OYSTER CREEK NUCLEAR GENERATING STATION – EMERGENCY ACTION LEVEL SCHEME CHANGE TO NEI 99-01, REVISION 5 (TAC NOS. ME3037, ME3038, AND ME3039)

Dear Mr. Pacilio:

By letter dated December 22, 2009 (Agencywide Documents Access and Management System (ADAMS) Accession No. ML100050503, Document is not publically available), Exelon Generation Company (Exelon) submitted a request for Nuclear Regulatory Commission (NRC) review and approval of revisions to the Emergency Plan (EP) Emergency Action Levels (EALs) for the subject plants. The proposed EP changes would incorporate EALs based on the NRC-endorsed methodology in Nuclear Energy Institute (NEI) 99-01, Revision 5, "Methodology for Development of Emergency Action Levels," dated February 22, 2008 (ADAMS Accession No. ML080450149). The NRC staff has reviewed the request and has identified that additional information is necessary to complete its review. The NRC staff requests that you address the questions in the enclosed request for additional information.

The draft questions were sent via facsimile on November 16, 2010 (ADAMS Accession No. ML103210508), to Mr. Richard Gropp of your staff, to ensure that the questions were understandable, the regulatory basis for the questions was clear, and to determine if the information was previously docketed. On December 1, 2010, Mr. Gropp indicated that Exelon would be able to respond by January 21, 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 request for approval under the provisions of 10 CFR 2.108.

If you have any questions please do not hesitate to contact me at (301) 415-2481.

Sincerely,

G. Edward Miller, Project Manager
Plant Licensing Branch I-2
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation

Docket Nos. 50-352, 50-353, and 50-219

Enclosure: Request for Additional
Information

cc: Distribution via ListServ

REQUEST FOR ADDITIONAL INFORMATION

LIMERICK GENERATING STATION, UNITS 1 AND 2

OYSTER CREEK NUCLEAR GENERATING STATION

REQUEST FOR APPROVAL OF REVISIONS TO

EMERGENCY PLAN EMERGENCY ACTION LEVELS

DOCKET NOS. 50-352, 50-353, AND 50-219

By letter dated December 22, 2009 (Agencywide Documents Access and Management System (ADAMS) Accession No. ML100050503), Exelon Generation Company (Exelon) submitted a request for Nuclear Regulatory Commission (NRC) review and approval of revisions to the Emergency Plan (EP) Emergency Action Levels (EALs) for the subject plants. The proposed EP changes would incorporate EALs based on the NRC-endorsed methodology in Nuclear Energy Institute (NEI) 99-01, Revision 5, "Methodology for Development of Emergency Action Levels," dated February 22, 2008 (ADAMS Accession No. ML080450149). To complete its review, the NRC staff requests responses to the following request for additional information.[1] Please note that a number of the questions request a justification for a deviation from the wording in NEI 99-01, Revision 5. When responding to these questions, you may propose to revise the wording in accordance with the endorsed guidance in lieu of providing the requested justification.

1. Please provide the missing EAL Basis Document pages (Oyster Creek, 3-8 through 3-26; Limerick 3-9 through 3-29), or provide justification as to why it has not been included with your submittal.

2. The paragraph from Section 3.1 that begins with "EALs are for unplanned events..." differs from the standard EAL scheme (Section 3.9) of the endorsed guidance – Revision 5 to Nuclear Energy Institute (NEI) 99-01. Specifically, a statement that "EALs are for unplanned events" was introduced. Additionally, the statement regarding the potential for planned or unplanned evolutions to result in an EAL threshold being exceeded was omitted, while the statement that these don't result in an EAL declaration was retained. Please provide a justification for the changes in wording.

3. Sections 3.9 "Emergency Action Levels," 3.10 "Treatment of Multiple Events and Classification Level Upgrading," and 3.11 "Emergency Classification Level Downgrading," from the endorsed EAL guidance contain important information necessary to understand the intent of the guidance. Please provide justification as to why the information has not been incorporated.

[1] Questions 9 and 11 are applicable only to Oyster Creek

Enclosure

4. The following definitions are intended to be site-specific so as to prevent confusion with classification, as indicated in endorsed guidance. Please provide the site-specific definitions rather than the generic definition provided in the approved development guidance:

    - Containment Closure
    - Protected Area
    - Vital Area

5. Please provide the definition for Independent Spent Fuel Storage Installation (ISFSI) as this is a term used with the site-specific EAL document and is defined in Revision 5 to NEI 99-01, which the submittal is based upon. Additionally, as discussed in RAI 4, please ensure that this definition contains site-specific information in addition to what is included in the standard wording.

6. The proposed definition of "Civil Disturbance" includes a minimum number of five participants. In the development of NEI 99-01, Revision 5, the specific number of people required to constitute a civil disturbance was removed, recognizing that the number of persons involved is not as important as the activities they are involved in. Please provide a justification for defining a minimum number of participants.

7. For EAL RS1, the following paragraph from the endorsed guidance is not considered to be developmental and is annotated improperly in the endorsed EAL development guidance. This information provides insight into why this EAL was chosen versus others, and may be germane to subsequent revisions to the EALs under 10 CFR 50.54(q). Please justify its omission from the EAL scheme:

    > While these failures are addressed by other Initiating Conditions (IC), this IC provides appropriate diversity and addresses events which may not be able to be classified on the basis of plant status alone. It is important to note that for the more severe accidents the release may be unmonitored or there may be large uncertainties associated with the source term and/or methodology.

8. For EAL RG1, the following paragraph from the approved guidance is not considered to be developmental and is annotated improperly in the endorsed EAL development guidance. This information provides insight into why this EAL was chosen versus others and may be germane to subsequent revisions to the EALs under 10 CFR 50.54(q). Please justify its omission from the EAL scheme:

    > While these failures are addressed by other ICs, this IC provides appropriate diversity and addresses events which may not be able to be classified on the basis of plant status alone. It is important to note that for the more severe accidents the release may be unmonitored or there may be large uncertainties associated with the source term and/or methodology.

9. (Oyster Creek Only) For EAL RS1, the technical basis information for EAL #1 states, "Amp readings for the Main Stack RAGEMS HRM instrument are read on Panel 1R (MCR) or locally." EALs are required to be based upon information readily available to Main Control Room (MCR) personnel. As such, local indications do not suffice to ensure timely EAL classification. Please revise to remove "or locally" from the technical basis for this EAL, or provide further justification ensuring the ability to classify in a timely manner.

10. For EALs RA1 and RU1, the IC states, "Radiological Effluent Technical Specifications/ODCM [Offsite Dose Calculation Manual]." Please verify that the wording aligns with the title of the facilities' document.

11. (Oyster Creek Only) For EAL RU2, please explain how the EAL #2 threshold, "...or valid upscale reading," can suffice for this EAL. Criteria in endorsed guidance (Section 3.8, 2nd paragraph) states, "For those conditions that are easily measurable and instrumented, the boundary is likely to be the EAL (observable by plant staff, instrument reading, alarm setpoint, etc) that indicates entry into a particular emergency classification level." Please explain how the time it takes to determine if an upscale reading is based upon instrument failure or based upon a saturated radiation element can be acceptable for timely EAL classification, or remove the statement "or valid upscale reading."

12. The endorsed guidance for EAL AA3 (equivalent to RA3 for Oyster Creek and Limerick) directs declaration of an alert upon detection of dose rate greater than 15 mR/hr in <u>any</u> of areas listed in a site-specific table. For the proposed RA3, the wording of "Dose rate **> 15 mR/hr** in areas requiring continuous occupancy (Table R3) to maintain plant safety functions" is ambiguous as to whether an elevated dose rate in any or all of the locations in the table requires declaration of the EAL. Additionally, since the Central Alarm Station is the primary location for control of security-related functions, it is unclear why the Secondary Alarm Station has been added to Table R3. The original intent of this list was to include the primary locations for accomplishing a function. Please justify the wording of the EAL threshold and contents of Table R3.

13. For EAL RU3, this EAL corresponds to SU4 in endorsed guidance, which specifically has this EAL as part of the Systems Malfunction Category, not as part of the Abnormal Rad Levels/Radiological Effluent Category. Using an appropriate category is important to ensure timely classification. Please provide a justification as to why you have categorized Fuel Clad degradation in the Abnormal Rad Levels/Radiological Effluent Category versus Systems Malfunction Category.

14. Please justify why the Fission Product Barrier Matrix Table has not been included.

15. For Fission Barrier threshold RC2.C, please explain the inclusion of "Indications of RCS [Reactor Coolant System] leakage in the drywell." While the basis statement indicates that this is to discriminate between an actual loss of RCS barrier and shine from failed Fuel Clad with an intact RCS barrier, it is unclear how this determination will be made. Additionally, it is unclear how making this determination will be performed in a timely

manner. Please provide a justification for allowing this discriminating factor and for how indications of RCS leakage can be identified in a timely manner.

16. For EALs MU2, MU3, MU4, MU5, MU8, MU9, MU10, MA2, MA5, MA8, MS8, and MG8, the endorsed guidance has these EALs in their own unique table (and category) and with their own unique IC designation, for EALs applicable in Cold/Refuel Operating Modes. Please provide a justification for this deviation.

17. For EAL MU7, the endorsed guidance for this EAL states, "However, a relief valve that operates and fails to close per design should be considered applicable to this IC if the relief valve cannot be isolated." The submittal states, "Relief valve operation should be excluded from this EAL." Please justify why the remainder of the detailed information related to relief valve operation is not included with this EAL.

18. For EAL MU8, please justify why the entire paragraph related to relief valve operation is not included with this EAL.

19. For EAL MU10, the list of communication options for offsite communications must be limited to communication systems that can readily perform required notifications for licensee event classification and protective action recommendations to State and local response agencies, as well as the NRC. Please provide documentation that supports the conclusion that the stated list of offsite communication systems can perform as expected.

20. For EAL HU3 (EAL #2), the proposed wording includes the addition of the words, "resulting in damage to permanent structure or equipment directly associated with plant operations." Please justify the inclusion of this caveat into the EAL, including how timely declaration of the EAL is possible if verification of damage is required prior to declaration. Additionally, HA3 uses the EAL defined term VISIBLE DAMAGE, while HU3 uses "damage." Please clarify the difference in these two terms and explain why the EAL defined term was not used in HU3.

21. For EAL HA4:

    a. The endorsed EAL development guidance (EAL HU1, #5) states, "Site specific occurrences affecting the protected area." In addition, the basis section of the endorsed guidance states, "This EAL addresses other site specific phenomena (such as hurricane, flood, or seiche) that can also be precursors of more serious events." Please provide documentation to support your apparent conclusion that no additional hazards are applicable to your site.

    b. The submittal states, "The phrase "in plant" is meant to include buildings and structures associated with plant operations and to rule out buildings or structures such as warehouses, administrative buildings or bullet resistant enclosures (BRE), which would not be a precursor of potential degradation of level of safety." This statement is not in the endorsed guidance and the staff cannot determine if this statement is acceptable for use as the submittal did not clearly state why this was

needed, nor did the submittal document the impact this statement has on timely EAL classification. Provide additional justification for the deviation.

22. For EAL HU4, the submittal states, "The phrase "in plant" is meant to include buildings and structures associated with plant operations and to rule out buildings or structures such as warehouses, administrative buildings or bullet resistant enclosures (BRE), which would not be a precursor of potential degradation of level of safety." This statement is not in the endorsed guidance and the staff cannot determine if this statement is acceptable for use as the submittal did not clearly state why this was needed, nor did the submittal document the impact this statement has on timely EAL classification. Provide additional justification for the deviation.

23. For EAL HA5, the submittal contained deviations without sufficient justification to reach a conclusion as to their acceptability. Please provide additional justification for the following deviations to support that they do not negatively impact the timeless of EAL classification:

    a. The 3rd paragraph added, "A precautionary area evacuation for the purpose of atmospheric testing does not warrant declaration until test results are obtained. However, declaration should not be delayed for atmospheric testing after an inadvertent actuation of installed Cardox fire suppression systems, or for gas releases that result in personnel ill effects from exposure."

    b. The submittal deleted the 2nd and 3rd paragraphs from the approved EAL guidance which state:

        > Declaration should not be delayed for confirmation from atmospheric testing if the atmosphere poses an immediate threat to life and health or an immediate threat of severe exposure to gases. This could be based upon documented analysis, indication of personal ill effects from exposure, or operating experience with the hazards.
        >
        > If the equipment in the stated area was already inoperable, or out of service, before the event occurred, then this EAL should not be declared as it will have no adverse impact on the ability of the plant to safely operate or safely shutdown beyond that already allowed by Technical Specifications at the time of the event.

24. For EAL HU5, the 4th paragraph in the submittal added, "A precautionary area evacuation for the purpose of atmospheric testing does not warrant declaration until test results are obtained. However, declaration should not be delayed for atmospheric testing after an inadvertent actuation of installed Cardox fire suppression systems, or for gas releases that result in personnel ill effects from exposure." Please provide additional justification to support the conclusion waiting for test results would not impact the timeliness of an EAL declaration.

25. For EAL HU7, the endorsed guidance has this ISFSI-specific EAL as a stand-alone EAL. Your submittal proposes to incorporate this EAL into one of the pre-existing categories.

Please justify this deviation. This justification for deviation from the endorsed guidance should address why the Hazards Category was chosen and why the use of this category will not cause an unnecessary delay in classification (i.e., explain why the Abnormal Radiation category is not more appropriate).

If you have any questions please do not hesitate to contact me at (301) 415-2481.

Sincerely,

/ra/

G. Edward Miller, Project Manager
Plant Licensing Branch I-2
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation

Docket Nos. 50-352, 50-353, and 50-219

Enclosure: Request for Additional Information

cc: Distribution via ListServ

DISTRIBUTION:
PUBLIC
RidsNrrLAABaxterResource
RidsNrrDorlLpl1-2Resource
JAnderson, NSIR
RidsAcrsAcnw_MailCTRResource
LPLI-2 R/F
MNorris, NSIR
DJohnson, NSIR
RidsNrrDorlPMLimerickResource
RidsNrrPMOysterCreekResource
RidsRgn1MailCenterResource
RidsOgcRpResource

ADAMS Accession No.: ML103120332 ***Concurred on draft questions**

OFFICE	LPL1-2/PM	LPL1-2/PM	LPL1-2/LA	NSIR/ORLT /BC	LPL1-2/BC
NAME	GEMiller	PBamford (w/comment)	ABaxter (BClayton for)	JAnderson *	HChernoff
DATE	12/14/10	12/9/10	12/9/10	11/16/10	12/14/10

OFFICIAL RECORD COPY