



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

January 5, 2012

Mr. Michael P. Gallagher  
Vice President License Renewal Projects  
Exelon Generation Company, LLC  
200 Exelon Way  
Kennett Square, PA 19348

SUBJECT: REQUESTS FOR ADDITIONAL INFORMATION FOR THE REVIEW OF THE  
LIMERICK GENERATING STATION LICENSE RENEWAL APPLICATION  
(TAC NOS. ME6555, ME6556)

Dear Mr. Gallagher:

By letter dated June 22, 2011, Exelon Generation Company, LLC submitted an application pursuant to 10 *Code of Federal Regulation* Part 54 (10 CFR Part 54), to renew the operating licenses for Limerick Generating Station, for review by the U.S. Nuclear Regulatory Commission (NRC or the staff). The staff is reviewing the information contained in the license renewal application and has identified, in the enclosure, areas where additional information is needed to complete the review.

These requests for additional information were discussed with Christopher Wilson, and a mutually agreeable date for the response is within 45 days from the date of this letter. If you have any questions, please contact me at (301) 415-3733 or e-mail [Robert.Kuntz@nrc.gov](mailto:Robert.Kuntz@nrc.gov).

Sincerely,

A handwritten signature in black ink, appearing to read "R. Kuntz", written over a horizontal line.

Robert F. Kuntz, Senior Project Manager  
Projects Branch 1  
Division of License Renewal  
Office of Nuclear Reactor Regulation

Enclosure:  
Requests for Additional Information

cc w/encl: See next page

LIMERICK GENERATING STATION  
LICENSE RENEWAL APPLICATION (LRA)  
REQUESTS FOR ADDITIONAL INFORMATION (RAI)

**RAI 2.1-1**

Background

10 CFR 54.4, "Scope," states, in part,

- (a) Plant systems, structures and components within the scope of this part are;
- (1) Safety-related systems, structures, and components which are those relied upon to remain functional during and following design-basis events (as defined in 10 CFR 50.49 (b)(1)) to ensure the following functions:
    - (i) The integrity of the reactor coolant pressure boundary;
    - (ii) The capability to shut down the reactor and maintain it in a safe shutdown condition; or
    - (iii) The capability to prevent or mitigate the consequences of accidents which could result in potential offsite exposures comparable to those referred to in 10 CFR 50.34(a)(1), 10 CFR 50.67(b)(2), or 10 CFR 100.11, as applicable.

Issue

During the scoping and screening methodology audit, performed on-site September 19-23, 2011, the staff reviewed the license renewal application and license renewal implementing documents and had discussions with the applicant to determine the applicant's approach for identifying safety-related structures, systems and components (SSCs) included within the scope of license renewal in accordance with 10 CFR 54.4(a)(1). The staff determined that the applicant had used the "Q" field in the component database (CRL) to identify safety-related SSCs within the scope of license renewal in accordance with 10 CFR 54.4(a)(1). However, the applicant's procedure (CC-MA-304) used to populate the "Q" field in the CRL, refers to 10 CFR Part 100 as opposed 10 CFR 50.67 (Limerick Generating Station (LGS) is an alternate source term plant such that 10 CFR 50.67 is applicable).

Request

Provide a description of the process used to evaluate components or systems to be included within the scope of license renewal in accordance with 10 CFR 54.4(a)(1)(iii). Perform a review of this issue and indicate if the review concludes that use of the scoping methodology precluded the identification of SSCs which should have been included within the scope of license renewal in accordance with 10 CFR 54.4(a). Describe any additional scoping evaluations performed to address the 10 CFR 54.4(a)(1)(iii) criteria. List any additional SSCs included within the scope as a result of your efforts, and list those structures and components for which aging management reviews were conducted or any additional information related to material and environment combinations. For each structure and component, describe the aging management programs, as applicable, to be credited for managing the identified aging effects.

## RAI 2.1-2

### Background:

10 CFR 54.4, "Scope," states, in part,

- (a) Plant systems, structures and components within the scope of this part are;
- (1) Safety-related systems, structures, and components which are those relied upon to remain functional during and following design-basis events (as defined in 10 CFR 50.49 (b)(1)) to ensure the following functions:
    - (i) The integrity of the reactor coolant pressure boundary;
    - (ii) The capability to shut down the reactor and maintain it in a safe shutdown condition; or
    - (iii) The capability to prevent or mitigate the consequences of accidents which could result in potential offsite exposures comparable to those referred to in 10 CFR 50.34(a)(1), 10 CFR 50.67(b)(2), or 10 CFR 100.11, as applicable.
  - (2) All nonsafety-related systems, structures and components whose failure could prevent satisfactory accomplishment of any of the functions identified in (a)(1)(i), (ii), or (iii) of this section.
  - (3) All systems, structures, and components relied on in safety analyses or plant evaluations to perform a function that demonstrates compliance with the Commission's regulations for fire protection (10 CFR 50.48), environmental qualification (10 CFR 50.49), pressurized thermal shock (10 CFR 50.61), anticipated transients without scram (10 CFR 50.62), and station blackout (10 CFR 50.63).

### Issue

During the scoping and screening methodology audit, the staff reviewed the license renewal application, license renewal implementing documents and applicable sections of the LGS UFSAR. The staff determined that several plant systems discussed in the LGS UFSAR are not identified in the LRA. Discussions with the applicant indicated that systems nomenclature had been organized to correspond with the system information contained in NUREG-1801, "Generic Aging Lessons Learned (GALL) Report."

### Request

Provide a description of the process used to identify systems to be included within the scope of license renewal in accordance with 10 CFR 54.4(a) and provide a discussion on the process used to identify systems listed in the UFSAR with system names discussed in the GALL Report. Perform a review of this issue and indicate if the review concludes that use of the scoping methodology precluded the identification of systems, structures, and components (SSCs) which should have been included within the scope of license renewal in accordance with 10 CFR 54.4(a). Describe any additional scoping evaluations performed to address the 10 CFR 54.4(a) criteria. List any additional SSCs included within the scope as a result of your efforts, and list those structures and components for which aging management reviews were conducted or any additional information related to material and environment combinations. For each structure

and component, describe the aging management programs, as applicable, to be credited for managing the identified aging effects.

### **RAI 2.1-3**

#### Background

10 CFR 54.4, "Scope," states, in part:

(a) Plant systems, structures and components within the scope of this part are –

- (1) Safety-related systems, structures, and components which are those relied upon to remain functional during and following design-basis events (as defined in 10 CFR 50.49 (b)(1)) to ensure the following functions:
  - (i) The integrity of the reactor coolant pressure boundary;
  - (ii) The capability to shut down the reactor and maintain it in a safe shutdown condition; or
  - (iii) The capability to prevent or mitigate the consequences of accidents which could result in potential offsite exposures comparable to those referred to in 10 CFR 50.34(a)(1), 10 CFR 50.67(b)(2), or 10 CFR 100.11, as applicable.
- (2) All nonsafety-related systems, structures and components whose failure could prevent satisfactory accomplishment of any of the functions identified in (a)(1)(i), (ii), or (iii) of this section.

#### Issue

During the scoping and screening methodology audit, performed on-site September 19-23, 2011, the staff reviewed the license renewal application, license renewal implementing documents and applicable sections of the UFSAR. The staff determined that although the LRA shows the auxiliary boiler building is in scope for an (a)(2) intended function due to its proximity to the reactor enclosure and its location above the auxiliary boiler pipe\_tunnel (which contains SR pipe), the adjacent lube oil building, also located above the auxiliary boiler pipe tunnel, is not included within the scope of license renewal.

#### Request

The staff requests that the applicant perform a review of this issue and provided a discussion and basis for not including the nonsafety-related lube oil building, located above the auxiliary boiler pipe tunnel, within the scope of license renewal in accordance with 10 CFR 54.4(a)(2). Indicate if the review concludes that use of the scoping methodology precluded the identification of systems, structures, and components (SSCs) which should have included within the scope of license renewal in accordance with 10 CFR 54.4(a)(2). Describe any additional scoping evaluations performed to address the 10 CFR 54.4(a)(2) criteria. List any additional SSCs included within the scope as a result of your efforts, and list those structures and components for which aging management reviews were conducted or any additional information related to

material and environment combinations. For each structure and component, describe the aging management programs, as applicable, to be credited for managing the identified aging effects.

#### **RAI 2.1-4**

##### Background

LRA Section 2.1.5.2 states nonsafety-related SSCs attached to safety-related SSCs are in the scope of license renewal for 10 CFR 54.4(a)(2) up to the first seismic (or equivalent) anchor past the safety-related/non-safety related interface.

LRA Section 2.0, "Scoping and Screening Methodology for Identifying Structures and Components Subject to Aging Management Review, and Implementation Results," states that the scoping and screening methodology is consistent with the guidelines presented in NEI 95-10, "Industry Guidelines for Implementing the Requirements of 10 CFR Part 54 - The License Renewal Rule," Revision 6.

NEI 95-10 defines equivalent anchor as a combination of restraints or supports such that the nonsafety-related piping and associated structures and components attached to safety related piping is included in scope up to a boundary point that encompasses at least six supports (two in each of three orthogonal directions).

##### Issue

During the scoping and screening methodology audit, the staff reviewed the license renewal application, license renewal implementing documents, license renewal drawings and applicable sections of the UFSAR. During the review of the applicants drawing and discussions with the applicant, the staff determined that when the applicant could not identify the required supports to develop an equivalent anchor (six in total) prior to a branch connection in the nonsafety-related pipe attached to safety-related SCs, the applicant did not consistently identify the remaining required supports on all branch connections. Specifically, the applicant stated that in some cases the branch lines and supports are included within the scope of license renewal and other cases are not included within the scope of license renewal.

##### Request

Perform a review of this issue and provide a discussion and the basis for the position of not including nonsafety-related pipe, attached to safety-related SCs, up to and including the first anchor or bounding condition, within the scope of license renewal in accordance with 10 CFR 54.4(a)(2). Indicate if the review concludes that use of the scoping methodology precluded the identification of systems, structures, and components (SSCs) which should have been included within the scope of license renewal in accordance with 10 CFR 54.4(a)(2). Describe any additional scoping evaluations performed to address the 10 CFR 54.4(a)(2) criteria. List any additional SSCs included within the scope as a result of your efforts, and list those structures and components for which aging management reviews were conducted or any additional information related to material and environment combinations. For each structure and component, describe the aging management programs, as applicable, to be credited for managing the identified aging effects.

## **RAI 2.1-5**

### Background

LRA Section 2.1.3.3, "10 CFR 54.4(a)(2) Scoping Criteria," states the following:

The basis document describes the LGS approach to scoping of nonsafety-related systems with a potential for physical or spatial interaction with safety-related SSCs. LGS chose to implement the preventive option as described in NEI 95-10. The basis document provides appropriate guidance to assure that license renewal scoping for 10 CFR 54.4(a)(2) met the requirements of the license renewal rule and NEI 95-10.

LRA Section 2.1.5.2 states non-safety related SSCs attached to safety-related SSCs are in the scope of license renewal for 10 CFR 54.4(a)(2) up to the first seismic (or equivalent) anchor past the safety-related/non-safety related interface.

NEI 95-10, Appendix F states the following:

For non-safety SSCs directly connected to safety-related SSCs (typically piping systems), the non-safety piping and supports, up to and including the first equivalent anchor beyond the safety/non-safety interface, are within the scope of license renewal per 54.4(a)(2).

### Issue

During the scoping and screening methodology audit staff reviewed the applicant's implementing procedure that describes the process used to identify nonsafety-related SSCs, whose failure could potentially impact the performance of the intended function of safety-related SSCs, for inclusion within the scope of license renewal. The staff determined that the applicant's implementing procedure, when discussing nonsafety-related pipe directly attached to safety-related SCs, does not require that a portion of the nonsafety-related pipe (and applicable anchors or bounding conditions on the nonsafety-related side of the interface) be included within the scope of license renewal. Instead, the implementing procedure allows for an anchor directly at the nonsafety-related/safety-related interface, or close to the interface (on the safety-related side of the interface) to be used as the last anchor within the scope of license renewal.

### Request

The staff requests that the applicant perform a review of this issue and provide a discussion and basis for the use of an implementing procedure that does not require including nonsafety-related pipe, attached to safety-related SCs, up to and including the first anchor or bounding condition, beyond the nonsafety-related/safety-related interface, within the scope of license renewal in accordance with 10 CFR 54.4(a)(2). Indicate if the review concludes that use of the scoping methodology precluded the identification of systems, structures, and components (SSCs) which should have included within the scope of license renewal in accordance with 10 CFR 54.4(a)(2). Describe any additional scoping evaluations performed to address the 10 CFR 54.4(a)(2) criteria. List any additional SSCs included within the scope as a result of your efforts,

and list those structures and components for which aging management reviews were conducted or any additional information related to material and environment combinations. For each structure and component, describe the aging management programs, as applicable, to be credited for managing the identified aging effect.

## **RAI 2.1-6**

### Background

LRA Section 2.1.5.2 states that nonsafety-related SSCs attached to safety-related SCs are in the scope of license renewal for 10 CFR 54.4(a)(2) up to the first seismic (or equivalent) anchor or bounding condition past the safety-related/nonsafety-related interface. LRA Section 2.1.5.2 also states: (1) for fluid-filled nonsafety-related with the potential for spatial interaction it is assumed that nonsafety-related SSCs within these structures may be located in proximity to safety-related SSCs and included within the scope of license renewal and (2) there may be selected rooms within the structure that do not contain any safety-related components within the room.

### Issue

During the scoping and screening methodology audit, the applicant stated that if the first anchor or bounding condition was determined to be beyond the area of potential spatial interaction for spray or leakage within the structure or room (space), the portion of nonsafety-related pipe, attached to a safety-related SC, included within the scope of license renewal was continued outside the space, up to and including an identified anchor or bounding condition. However, the applicant stated that if the anchor or bounding condition was within the space, the applicant included the pipe up to the boundary of the space, but did not specifically identify the anchor or bounding condition. The staff was not able to determine the process used by the applicant to confirm that an anchor or bounding condition existed within a space, if an anchor or bounding condition was not specifically identified.

### Request

Perform a review of this issue and provide a discussion on the process used to verify that an anchor or bounding condition exists within the area of potential spatial interaction or nonsafety-related pipe attached to safety-related SCs, and therefore no additional pipe, anchors or bounding conditions needed to be included within the scope of license renewal outside the area of potential spatial interaction. Indicate if the review concludes that use of the scoping methodology precluded the identification of systems, structures, and components (SSCs) which should have included within the scope of license renewal in accordance with 10 CFR 54.4(a)(2). Describe any additional scoping evaluations performed to address the 10 CFR 54.4(a)(2) criteria. List any additional SSCs included within the scope as a result of your efforts, and list those structures and components for which aging management reviews were conducted or any additional information related to material and environment combinations. For each structure and component, describe the aging management programs, as applicable, to be credited for managing the identified aging effects.

## **RAI 2.1-7**

### Background

10 CFR 54.4, "Scope," states, in part, that plant systems, structures and components within the scope of this part [includes] all nonsafety-related systems, structures and components whose failure could prevent satisfactory accomplishment of any of the functions identified in (a)(1)(i), (ii), or (iii) of this section [10 CFR 54.4].

### Issue

During the scoping and screening methodology audit, performed on-site September 19-23, 2011, the staff noted that the applicant identified containment boundaries in the scope of license renewal, including the ceiling of the suppression pool. The staff also noted that there is abandoned nonsafety-related structural and miscellaneous steel (including the Q-deck) attached to the safety-related diaphragm slab. The applicant had determined not to include the abandoned nonsafety-related structural and miscellaneous steel within the scope of license renewal.

### Request

The staff requests that the applicant perform a review of this issue and provide a discussion and basis for the position of not including abandoned nonsafety-related structural and miscellaneous steel, attached to the safety-related structures, within the scope of license renewal in accordance with 10 CFR 54.4(a)(2). Indicate if the review concludes that use of the scoping methodology precluded the identification of systems, structures, and components (SSCs) which should have included within the scope of license renewal in accordance with 10 CFR 54.4(a)(2). Describe any additional scoping evaluations performed to address the 10 CFR 54.4(a)(2) criteria. List any additional SSCs included within the scope as a result of your efforts, and list those structures and components for which aging management reviews were conducted or any additional information related to material and environment combinations. For each structure and component, describe the aging management programs, as applicable, to be credited for managing the identified aging effects.



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Vice President License Renewal Projects  
Exelon Generation Company, LLC  
200 Exelon Way  
Kennett Square, PA 19348

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Sincerely,

*/RA/*

Robert F. Kuntz, Senior Project Manager  
License Renewal Branch RPB1  
Division of License Renewal  
Office of Nuclear Reactor Regulation

Enclosure:  
Requests for Additional Information  
cc w/encl: Listserv  
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Letter to M. Gallagher from R. Kuntz dated January 5, 2012

SUBJECT: REQUESTS FOR ADDITIONAL INFORMATION FOR THE REVIEW OF THE  
LIMERICK GENERATING STATION LICENSE RENEWAL APPLICATION  
(TAC NOS. ME6555, ME6556)

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