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

February 23, 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, UNITS 1 AND 2, LICENSE RENEWAL APPLICATION (TAC NOS. ME6555 AND ME6556)

Dear Mr. Gallagher:

By letter dated June 22, 2011, Exelon Generation Company, LLC submitted an application pursuant to Title 10 of the *Code of Federal Regulations* 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 by e-mail at Robert.Kuntz@nrc.gov.

Sincerely,

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

Docket Nos. 50-352 and 50-353

Enclosure:
Requests for Additional Information

cc w/encl: Listserv

LIMERICK GENERATING STATION
LICENSE RENEWAL APPLICATION
REQUESTS FOR ADDITIONAL INFORMATION

**RAI 2.2-1**

The scoping criteria are described in Section 2.1 of license renewal application (LRA). LRA Section 2.2, Table 2.2-1, "Scoping Results," provides the results of applying the license renewal scoping criteria to systems, structures, and components (SSCs). The following systems, as described in the Updated Final Safety Analysis Report (UFSAR), could not be located in LRA Table 2.2-1.

| UFSAR Section | System |
|---|---|
| 1.2.4.3.1.7 Plant Monitoring System (PMS) | Plant Monitoring System |
| 7.1.2.1.12 Area Radiation Monitoring System | Area Radiation Monitoring System |
| 7.1.2.1.46 Emergency Response Facility Data System | Emergency Response Facility Data System |
| 9.4.3.2.4 Chemistry Laboratory Expansion | Chemistry Laboratory Air Supply and Exhaust Systems |

Justify the exclusion of the above systems from Table 2.2-1.

**RAI 2.3.3-1**

For the license renewal boundary drawing locations identified in the table below, the staff could not determine the basis for the change in scoping criteria from 10 CFR 54.4 (a)(1) to 10 CFR 54.4 (a)(2).

| Nonsafety-related/Safety-Related Interface Item | License Renewal Boundary Drawing Number & Location | Explanation of Issue |
|---|---|---|
| **2.3.3.17 Process Radiation Monitoring System** | | |
| **a** | LR-M-26 Sheet 4, location H-6 | ½" SST line connected to "Sample B" line. |
| **2.3.3.4 Containment Enclosure Ventilation System** | | |
| **a** | LR-M-78 Sheet 1, locations D-5 thru D-7 and F-5 thru F-7 | At valves 0001A, 0002A, 0003A, 0005A and 0001B, 0002B, 0003B, 0005B. |
| **b** | LR-M-90 Sheet 1, locations D-2, D-4, D-7, E-3, G-4, | Several ¾" lines to vent and 1" drain lines. |

| | | |
|---|---|---|
| **c** | LR-M-90 Sheet 2, Multiple locations | All capped ¾" vent and drain lines. |
| **2.3.3.8 Emergency Diesel Generator System** | | |
| **a** | LR-M-20 Sheets 7 and 13, locations C-3, E-3, E-5, D-5 and E-8 | At valves 1430A, 1406A, 1415A, 1437A, 1413A 1154A, 2430A, 2406A, 2415A, 2437A, 2413A and 2154A. |
| **b** | LR-M-20 Sheets 4 and 10, locations C-3 and C-4 | At valves 1511A, 1510A, 1509A, 2511A, 2510A and 2509A. |
| **c** | LR-M-20 Sheets 5 and 11, locations F-3 and E-5 | At valves 1608A, 1604A, 2608A, and 2604A. |
| **2.3.3.19 Radwaste System** | | |
| **a** | LR-M-61 Sheet 1, locations G-5 and C-5 | At valves 1081 and 1082. |
| **2.3.3.21 Reactor Water Cleanup System** | | |
| **a** | LR-M-44 Sheet 1, Multiple locations | Several (12 locations) 1" capped lines. |
| **2.3.3.22 Safety Related Service Water System** | | |
| **a** | LR-M-51 Sheet 8, location D-5 | At valve 214B. |
| **b** | LR-M-51 Sheet 4, locations D-4 & D-5 | At valve 1141B and ¾" GBB-123 line at valve HV-C 1F103B. |
| **c** | LR-M-13 Sheet 2, location G-5 | At valve 2066A. |
| **d** | LR-M-12 Sheet 1, Multiple locations (35 locations) | Multiple 1" flush, drain and capped lines. |
| **e** | LR-M-11 Sheet 2, Multiple locations (16 locations) | Multiple ¾" flush, drain and capped lines. |
| **f** | LR-M-11 Sheet 3, Multiple locations (17 locations) | Multiple ¾" flush, drain and capped lines. |
| **g** | LR-M-11 Sheet 4, Multiple locations (32 locations) | Multiple ¾" and 1" flush, drain and capped lines. |
| **h** | LR-M-11 Sheet 5, Multiple locations (34 locations) | Multiple ¾" and 1" flush, drain and capped lines. |

| 2.3.3.26 Water Treatment and Distribution (WTD) System | | |
|---|---|---|
| **a** | LR-M-78 Sheet 1, locations D-5 thru D-7 and F-5 thru F-7 | At valves 0001A, 0002A, 0003A, 0005A and 0001B, 0002B, 0003B, 0005B without classification break at SR-NSR interface. |
| **b** | LR-M-90 Sheet 1, Locations D-2, D-4, D-7, E-3, F-4, G-4 | Several ¾" lines to vent and 1" lines to Drain without classification break at the valves where there is a SR-NSR interface. |
| **c** | LR-M-90 Sheet 2, Several locations | All capped ¾" lines to vent and 1" lines to Drain without classification break at the valves where there is a SR-NSR interface. |

Clarify the scoping classification of the pipe lines identified in the above table as within the scope of license renewal based on the criteria in 10 CFR 54.4(a)(2).

**RAI 2.3.3.8-1**

License renewal boundary drawings LR-M-20 Sheets 8 and 14, location F-5, depict ejector casings that are within the scope of license renewal for 10 CFR 54.4(a)(1). However, the ejector casing is not listed in Table 2.3.3-8 as a component type subject to an aging management review (AMR).

Justify the exclusion of the ejector casing component type from LRA Table 2.3.3-8.

**RAI 2.3.3.8-2**

License renewal boundary drawings LR-M-20 Sheets 8 and 14, locations B-4 and D-4, depict turbo charger casings that are within the scope of license renewal for 10 CFR 54.4(a)(1).

However, the turbo charger casing is not listed in Table 2.3.3-8 as a component type subject to an AMR.

Justify the exclusion of the turbo charger casing as component types from LRA Table 2.3.3-8.

**RAI 2.3.3.8-3**

License renewal boundary drawings LR-M-20 Sheets 8 and 14, location F-3, depict exhaust silencer housings that are within the scope of license renewal for 10 CFR 54.4(a)(1). However,

the exhaust silencer housing is not listed in Table 2.3.3-8 as a component type subject to an AMR.

Justify the exclusion of the exhaust silencer component type from LRA Table 2.3.3-8.

**RAI 2.3.3.8-4**

License renewal boundary drawings LR-M-20 Sheets 3 and 9, locations D-3 and D-7, depict flame arrestor housings that are within the scope of license renewal for 10 CFR 54.4(a)(1). However, the flame arrestor housing that is not listed in Table 2.3.3-8 as a component type subject to an AMR.

Justify the exclusion of the flame arrestor housing component type from LRA Table 2.3.3-8.

**RAI 2.3.3.8-5**

LRA Section 2.1.1 states that the in-scope portions of mechanical systems and structures are highlighted in color on the license renewal boundary drawings. For the Emergency Diesel Generator System, the applicant includes the diesel engines within the license renewal scoping boundary.

License renewal boundary drawings LR-M-20 Sheets 3 and 9, location F-5, depict diesel engines 1AG501 and 2AG501 as not being within the scope of license renewal. Although the applicant states in Note 7 that the in-scope fuel oil supply system boundary stops at the fuel injectors of the diesel generator due to the fuel injectors being excluded from aging management review, the license renewal boundary drawings appear to contradict the applicant's methodology for highlighting the in-scope components (the diesel engines) as described in LRA Section 2.1.1.

Justify why the diesel engines depicted on license renewal boundary drawings LR-M-20 Sheets 3 and 9 are indicated as not being within the scope of license renewal.

**RAI 2.3.3.12-1**

License renewal boundary drawings LR-M-10 Sheets 5 and 10, locations H-2 and H-4, depict the 6" JBD-107/207 and 6" JBD-132/232 lines as being within the scope of license renewal based on the criteria in 10 CFR 54.4(a)(2) with continuations to and from license renewal boundary drawings LR-M-10 Sheets 3 and 8. However, the continuations of these lines on license renewal boundary drawings, LR-M-10 Sheets 3 and 8, are depicted as not being within the scope of license renewal.

Clarify the correct scoping classification of these pipe lines.

**RAI 2.3.3.13-1**

On license renewal boundary drawing, LR-M-64 Sheet 1, location G-8, the continuation of the pipe line depicted within the scope of license renewal could not be found in any other license renewal boundary drawings.

Locate the continuation line for the above location. If the continuation line cannot be shown on license renewal boundary drawings, then provide additional information describing the extent of the scoping boundary and verify whether or not there are additional AMR component types between the continuation and the termination of the scoping boundary. If the scoping classification of a section of the piping changes over the continuation, provide additional information to clarify the change in scoping classification.

**RAI 2.3.3.14-1**

LRA Section 2.1 describes the applicant's scoping methodology, which specifies how systems or components were determined to be included in scope of license renewal. The staff confirms the inclusion of all components subject to AMR by reviewing the results of the screening of components within the license renewal boundary.

On license renewal boundary drawing LR-M-59 Sheet 1, location C-6, the applicant depicts Note 5, which states "This piping is included in scope out to the seismic anchor credited for structural support of the safety-related piping located as shown. The nonsafety-related piping beyond this anchor location is not in scope." However, the 1" JCD-109 pipe continues in red, designating the piping as being within the scope of license renewal for 10 CFR 54.4(a)(2), from Note 5 to the end of the pipe and including the drawing continuation marker to drawing LR-M-59 Sheet 2, at location F-1. The continuation marker on Sheet 2 also shows the pipe still in scope for 10 CFR 54.4(a)(2) and has another Note 5, the same as Sheet 1, where the transition is actually made from red to black to indicate the 1" JCD-109 pipe continuation changed to not being in scope for license renewal. For LGS, Unit 2, LRA drawing LR-M-59 Sheet 3, location C-6, the 1" JCD-209 pipe has the same Note 5 and there is an immediate transition from red to black, so the remainder of the pipe up to and including the continuation marker is no longer in scope as the Note 5 indicates. There also is no duplicate Note 5 on Sheet 4.

Clarify why the 1" JCD-109 pipe scope does not agree with Note 5 on LRA drawing LR-M-59 Sheet 1. Also clarify why there are differences in scoping between the 1" JCD-109 pipeline on Sheets 1 and 2 and the 1" JCD-209 pipeline on Sheets 3 and 4.

**RAI 2.3.3.14-2**

License renewal boundary drawing LR-M-59 Sheet 3, location H-6, depicts a line not highlighted within the scope of license renewal. However, the line is connected to a continuation marker from drawing LR-M-42 Sheet 3, location A-3, which depicts the continuation marker to be highlighted green and in scope for 10 CFR 54.4(a)(1).

Clarify the scoping classification of the pipe line.

**RAI 2.3.3.17-1**

License renewal boundary drawings LR-M-26 Sheets 1 and 7, location C-2, and LR-M-26 Sheet 4, location B-7, depict sample chambers in Detail K that are within the scope of license renewal for 10 CFR 54.4(a)(2), but are not listed in Table 2.3.3-17 as a component type subject to an AMR.

Justify the exclusion of the sample chamber component type from LRA Table 2.3.3-17

**RAI 2.3.3.17-2**

License renewal boundary drawing LR-M-26 Sheet 5, location E-3, depicts filter and detector housings in Detail G that are within the scope of license renewal for 10 CFR 54.4(a)(1), but are not listed in Table 2.3.3-17 as a component type subject to an AMR.

Justify the exclusion of the filter and detector housing component types from LRA Table 2.3.3-17.

**RAI 2.3.3.18-1**

License renewal boundary drawings LR-M-23 Sheets 4 and 7, location H-4, depict a continuation line from the feedwater to reactor 10 CFR 54.4(a)(2) pipelines respectively to license renewal boundary drawings LR-M-06 Sheets 3 and 6, location G-8, where the pipeline continuations are shown excluded from scope of license renewal.

Clarify the scoping classification of these pipe lines.

**RAI 2.3.3.22-1**

License renewal boundary drawing LR-M-13 Sheet 2, locations D-2 and E-7,depicts 1½" JBD-419 lines as being within the scope of license renewal based on the criteria in 10 CFR 54.4(a)(2), with continuations to license renewal boundary drawing LR-M-23, Sheet 7. However, the continuations of these lines on license renewal boundary drawing LR-M-23, Sheet 7 are shown as not within the scope of license renewal.

Clarify the scoping classification of these pipe lines.

**RAI 2.3.3.22-2**

License renewal boundary drawing LR-M-13, Sheet 1, locations D-2 and D-4, shows the 1½" JBD-319 lines to be within the scope of license renewal for 10 CFR 54.4(a)(2), with continuations to and from the license renewal boundary drawing LR-M-23, Sheet 4. However the continuations of these lines on drawing LR-M-23, Sheet 4 are shown as not within the scope of license renewal.

Clarify the scoping classification of these pipe lines.

**RAI 2.3.4-1**

For the license renewal boundary drawing locations identified in the table below, the staff could not determine the basis for the change in scoping criteria from 10 CFR 54.4 (a)(1) to 10 CFR 54.4 (a)(2).

| Nonsafety-related/Safety-Related Interface Item | License Renewal Boundary Drawing Number & Location | Explanation of Issue |
|---|---|---|
| **2.3.4.2 Condensate System** | | |
| **a** | LR-M-51 Sheet 1, Multiple locations | At all test connections. |
| **b** | LR-M-52 Sheet 1, Multiple locations | At valves 1F041A, 1F041B, 1021B, 1075A, 1075B, 1076A and 1076B. |
| **c** | LR-M-52 Sheet 2, locations F-3 and G-3 | ¾" SBD-152 drain out of pumps 1AP256 and 1BP256. |
| **d** | LR-M-52 Sheet 3, locations E-7 and F-7 | At valves 2F041A and 2F041B. |
| **e** | LR-M-52 Sheet 4, Multiple locations | At valves 2004, 2023A, 2023B, 2027B, 2027C, 2027D, 2032D, 2066, 2069, 2075A, 2075B, 2076, 2082, 2083, 2084, 2085, 2086, 2087 and 2088. |
| **2.3.4.6 Main Steam System** | | |
| **a** | LR-M-01 Sheet 1, location C-6 | At valve 1030. |
| **b** | LR-M-01 Sheet 3, location A-6 | At valve 2030. |
| **c** | LR-M-41 Sheet 1, location A-6 | At valves 1038 and 1051. |
| **d** | LR-M-41 Sheet 2, locations E-4, D-3, D-1 and G-8 | At valves 1066A, 1067A, 1068A, 1069A, 1070A, 1071A, 1072A, 1073A, 1037, 1040, and 1034E. |
| **e** | LR-M-41 Sheet 4, locations A-6 & B-5 thru D-5 | At valves 2038, 2F082B, 2063 and 2F083A. |
| **f** | LR-M-41 Sheet 5, locations E-4, D-3, D-1 and G-8 | At valves, 2037, 2070, 2034E. |
| **g** | LR-M-49 Sheet 1, Multiple locations | At valves 1F053, 1F082, 1F083, 1F085, 1004, 1005, 1020, 1026, 1042, 1043, 1048A, 1048B, 1048B, 1048D, 1049B, 1049B, 1049B, 1049D, and 1055. |

| | | |
|---|---|---|
| h | LR-M-50 Sheet 1, location G-6 | At valve 1043. |
| i | LR-M-50 Sheet 2, location H-6 | At valve 2043. |
| j | LR-M-55 Sheet 1, Multiple locations | At valves 1F013, 1F015, 1F044, 1F056, 1F065, 1F090, 1F091, 1F092, 1030, 1034, 1036, 1037, 1040, 1041, 1050, 1053, 1054, 1056, 1057, 1066, 1067, 1070A, 1070B, 1070C, 1070D, 1071A, 1071B, 1071C, and 1071D, 1045. |

Clarify the scoping classification of the 10 CFR 54.4(a)(2) pipe lines identified in the above table.

**RAI 2.3.4.3-1**

License renewal boundary drawings LR-M-07 Sheets 1 and 3, location H-2, depict air inlets with screens that are within the scope of license renewal for 10 CFR 54.4(a)(2), but are not listed in Table 2.3.4-3 as a component type subject to an AMR.

Justify the exclusion of the air inlet with screen component type from LRA Table 2.3.4-3.

**RAI 2.3.4.6-1**

On license renewal boundary drawing, LR-M-05 Sheet 1, locations G-3, G-4 and G-6, the continuation of the 1 ½" "Bearing Drain to Oily Waste" pipe from the condenser could not be found on the following license renewal boundary drawings because the drawings were not included in the license renewal boundary drawings package:

- M-19 Sheet 3
- M-19 Sheet 6

Provide the license renewal boundary for the 1 ½" "Bearing Drain to Oily Waste" pipe for the license renewal boundary drawings described above. If the continuation line cannot be shown on these license renewal boundary drawings, then provide additional information describing the extent of the scoping boundary and verify whether or not there are additional AMR component types between the continuation and the termination of the scoping boundary. If the scoping classification of a section of the piping changes over the continuation, provide additional information to clarify the change in scoping classification.

**RAI 2.3.4.7-1**

Drawing LR-M-07 Sheet 2, location F-6, shows in scope pipeline 1" HBD-359, however the continuation on this same drawing at location B-4 shows this pipeline as not in scope.

Clarify the scoping boundary of this pipe section.

**RAI 2.3.4.7-2**

License renewal boundary drawings LR-M-07 Sheets 2 and 4, location E-7, depict drain pipelines 1" HBD-359, and 1" HBD-459 within the scope of license renewal for 10 CFR 54.4(a)(2). However, license renewal boundary drawings LR-M-06 Sheets 2 and 5, location D-8, depict the continuation lines as not being within the scope of license renewal.

Clarify the scoping boundaries for the pipe lines.

Letter to M. Gallagher from R. Kuntz dated February 23, 2012

SUBJECT: REQUESTS FOR ADDITIONAL INFORMATION FOR THE REVIEW OF THE LIMERICK GENERATING STATION, UNITS 1 AND 2, LICENSE RENEWAL APPLICATION (TAC NOS. ME6555 AND ME6556)

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Sincerely,

**/RA/**

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

Docket Nos. 50-352 and 50-353

Enclosure:
Requests for Additional Information

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