



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

April 17, 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, to renew the operating licenses for Limerick Generating Station, Units 1 and 2, 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 (RAIs) were discussed with Christopher Wilson, and a mutually agreeable date for the response is within 30 days from the date of this letter. If you have any questions, please contact me by telephone at 301-415-3733 or by e-mail at [Robert.Kuntz@nrc.gov](mailto:Robert.Kuntz@nrc.gov).

Sincerely,

A handwritten signature in black ink, appearing to be "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

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 4.1-1.1**

Background

Updated Final Safety Analysis Report (UFSAR) Section 3.9.1.1.8 was referenced in the response to RAI 4.1-1. UFSAR Section 3.9.1.1.8 contains a listing of transients in the main steam isolation valve (MSIV) fatigue analysis. One of these transients included in this section is "Preop @ 100 F/hr" with a limit of 150 cycles.

Issue

The staff noted that the "Preop @ 100 F/hr" transient was not included in LRA Tables 4.3.1-1 and 4.3.1-2; therefore, it is not clear to the staff whether this transient is monitored, needs to be monitored or will be monitored during the period of extended operation.

Request

Clarify if this transient, "Preop @ 100 F/hr," is associated with a transient that is already monitored by the Fatigue Monitoring Program. If not, justify why this transient does not need to be monitored by the Fatigue Monitoring Program.

**RAI 4.3-6.1**

Background

The response to RAI 4.3-6, in letter dated February 29, 2012, discusses the environmental assisted fatigue evaluation for American Society of Mechanical Engineers (ASME) Code Class 1 valves. The applicant's results of the analyzed ASME Code Class 1 valves from this evaluation were also provided as part of the response.

Issue

LRA Sections 4.3.3 and A.4.3.3 were not updated to include the results and description of the evaluation of environmentally assisted fatigue for ASME Code Class 1 valves. Therefore, it is not clear whether these environmental assisted fatigue evaluations are included as part of the 10 CFR 54.21(c)(1)(iii) disposition and are part of the Fatigue Monitoring Program.

Request

Confirm that the environmental assisted fatigue analyses for ASME Code Class I valves are managed by the Fatigue Monitoring program and are included in the disposition in accordance with 10 CFR 54.21(c)(1)(iii) in LRA Section 4.3.3 and A.4.3.3.

If not, justify that LRA Sections 4.3.3 and A.4.3.3 do not need to be updated to include information associated with the environmentally assisted fatigue evaluations for ASME Code Class 1 valves and that they are also managed by the Fatigue Monitoring Program for environmentally assisted fatigue.

#### **RAI 4.3-6.2**

##### Background

Page 15 of 30 in response to RAI 4.3-6, in letter dated February 29, 2012, it states "[t]he RHR shutdown cooling system valves are exposed to transients associated with shutdown cooling operations that are not experienced by the RHR LPCI and core spray injection valves. The RHR LPCI and core spray injection valves are only exposed to transients that are also experienced by the RHR shutdown cooling return valves."

##### Issue

It is not clear what transients are experienced by the RHR SDC valves and by the RHR LPCI and core spray injection valves.

##### Request

Confirm that statements 1 and 2 are true:

- 1) RHR SDC valves experience: (transients associated with shutdown cooling operations) + (transients X, Y, Z...)
- 2) RHR LPCI and core spray injection valves experience: (transients X, Y, Z...)  
**AND**  
RHR LPCI and core spray injection valves DO NOT experience: (transients associated with shutdown cooling operations)

If both statements are not true, clarify what transients are experienced by the RHR SDC valves and by the RHR LPCI and core spray injection valves.

#### **RAI 4.3-9.1**

##### Background and issue

The response to RAI 4.3-9 (Part 1), provided by letter dated February 29, 2012, stated that the revised environmental fatigue analysis evaluates the inside surface location at the clad/base metal interface directly below the limiting outside surface location. This location was selected to represent the wetted internal surface of the forging but takes no credit for the presence of the cladding. Since this location was not originally analyzed for metal fatigue, no ASME Code cumulative usage factor (CUF) value is reported. However, the response revised Table 4.3.3-1 for the ASME Code CUF value for Core Spray Nozzle (Forging) from 0.097 to 0.0016. The response does not explain what the value of 0.0016 represents since the response indicated that no ASME Code CUF value is reported for this location.

The staff also noted that for the core spray piping in Tables 4.3.3-2, the difference in  $F_{en}$  values between Limerick Generation Station (LGS), Units 1 and 2 is substantial. The staff recognized that different nodes are reported. However, the response did not explain the difference in  $F_{en}$ .

Request

1. Explain the ASME Code CUF value of 0.0016 for Core Spray Nozzle (Forging) in Table 4.3.3-1.
2. Explain why the  $F_{en}$  values for the core spray piping are different between LGS, Units 1 and 2.

**RAI 4.3-10.1**

Background and issue

The response to RAI 4.3-10, provided by letter dated February 29, 2012, provided the CUF values for a list of components that have been analyzed for fatigue. The response indicated that the steam dryer, steam dryer support brackets, and control rod guide tube are "exempt." The response did not explain why these three components are exempted in the fatigue analysis.

Request

Clarify why these three components are exempted. As part of the clarification, if applicable, identify the provisions in the ASME Code Section III that allowed the exemption of the required fatigue analysis for these components.

Letter to M. Gallagher from R. Kuntz dated April 17, 2012

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

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