

August 20, 2008

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

SUBJECT: REQUEST FOR ADDITIONAL INFORMATION FOR SECTIONS 2.3.3 AND 2.3.4
OF THE THREE MILE ISLAND NUCLEAR STATION, UNIT 1, LICENSE
RENEWAL APPLICATION (TAC NO. MD7701)

Dear Mr. Gallagher:

By letter dated January 8, 2008, AmerGen Energy Company, LLC (AmerGen) submitted an application pursuant to 10 CFR Part 54 to renew the operating license for Three Mile Island Nuclear Station, Unit 1 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. Further requests for additional information may be issued in the future.

Items in the enclosure were discussed with Chris Wilson, of your staff, 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 at 301-415-2878 or e-mail Jay.Robinson@nrc.gov.

Sincerely,

IRAI

Jay Robinson, Sr. Project Manager
Projects Branch 1
Division of License Renewal
Office of Nuclear Reactor Regulation

Docket No. 50-289

Enclosure:
As stated

cc w/encl: See next page

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Office of Nuclear Reactor Regulation

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ADAMS Accession No.: ML082180499

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DATE	08/07/08	07/17/08	08/19/08	8/19/08	8/20/08

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Letter to AmerGen Energy Company, LLC from J. Robinson dated August 20, 2008

DISTRIBUTION:

SUBJECT: REQUESTS FOR ADDITIONAL INFORMATION FOR SECTIONS 2.3.3 AND
2.3.4 OF THE THREE MILE ISLAND NUCLEAR STATION, UNIT 1, LICENSE
RENEWAL APPLICATION (TAC NO. MD7701)

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SLopas

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Unit 1

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Three Mile Island Nuclear Station,
Unit 1

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Three Mile Island Nuclear Station,
Unit 1

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REQUEST FOR ADDITIONAL INFORMATION (RAI)

SECTIONS 2.3.3 & 2.3.4

THREE MILE ISLAND NUCLEAR STATION, UNIT – 1

LICENSE RENEWAL APPLICATION

LRA Section: 2.3.3.4 - Closed Cycle Cooling Water System

RAI#: 2.3.3.4–1

Background:

On license renewal drawing LR-302-175, at locations G-2, F-2, F-3, and F-4, there are five components which appear to be sight flow indicators according to symbol represented on license renewal drawing LR-302-002. These components are highlighted in red, indicating they are in scope for license renewal under 10 CFR 54.4(a)(2) according to Note 1 on license renewal drawing LR-302-003. Typically, this component type “flow indicator” would have a leakage boundary function.

Issue:

Sight flow indicator is not listed in License Renewal Application (LRA) Tables 2.3.3-4 and 3.3.2-4 as a component type with a leakage boundary function.

Request:

Justify the exclusion of the component type “sight flow indicator” from LRA Tables 2.3.3-4 and 3.3.2-4.

RAI#: 2.3.3.4-2

Background:

The following coolers are highlighted on their respective drawings as being in scope for license renewal:

Drawing	Location	Cooler	Description
LR-302-620	C-3,E-7	IC-C-1A,1B	Intermediate coolers
LR-302-620	C-7,D-7, E-7	1A,1B,1C,1D	Reactor coolant pump thermal barrier heat exchangers
LR-302-662	G-4,E-2, G-7	MU-C-3A, MU-C-4A, MU-C-5A	Pump and motor lube oil cooler, make-up and purification system motor air cooler, gear unit oil cooler
LR-302-645	E-5,E-6	DH-P-1A, DH-P-1B	Decay heat removal pumps motor and bearing cooling
LR-302-181	G-8	SS-C-46	TCU unit
LR-302-221	B-8,B-7	SC-C-3A, SC-C-3B	Isolated phase bus duct coolers, A and B

ENCLOSURE

Issue:

The staff noted that these coolers are not specifically listed in LRA Tables 2.3.3-4 and 3.3.2-4 as being subject to an aging management review (AMR).

Request:

Justify the exclusion of the abovementioned coolers from LRA Tables 2.3.3-4 and 3.3.2-4.

LRA Section: 2.3.3.9 - Emergency Diesel Generators and Auxiliary Systems

RAI#: 2.3.3.9-1

Background:

On license renewal drawing LR-302-351, the emergency diesel generator (EDG), air start system, air compressor has a standby diesel engine to drive the compressor in the event of a failure of the motor shown as not included in scope for license renewal. The standby diesel engine includes a tank and lines containing diesel fuel.

In accordance with LRA Section 2.1.5.2, the applicant used the preventive option approach, as described in NEI 95-10, to scope nonsafety-related components with a potential for physical or spatial interaction with safety-related SSCs. Potential spatial interaction is assumed in any structure that contains active or passive safety-related SSCs. Nonsafety-related systems and components that contain water, oil, or steam, and are located inside structures that contain safety-related SSCs, are included in scope for potential spatial interaction under criterion 10 CFR 54.4(a)(2), unless located in an excluded room.

Issue:

The standby diesel engine to the EDG air start compressor includes lines containing diesel fuel. In accordance with the applicant's methodology as described in LRA Section 2.1.5.2, this component should be included in scope under 10 CFR 54.4(a)(2).

Request:

Justify the exclusion of the fluid-filled tank and lines on the standby diesel engine for the EDG air start system air compressor from the scope of license renewal under 10 CFR 54.4(a)(2).

LRA Section: 2.3.3.14 - Instrument and Control Air System

RAI#: 2.3.3.14-1

Background:

On license renewal drawing LR-302-276, the instrument air (IA) system has a two-hour backup instrument air charging compressor. The charging compressor is not included in scope for license renewal. The charging compressor includes an oil pump and piping containing oil that operates up to 1500 psi. This charging compressor is located in the emergency diesel generator (EDG) room, next to the EDG.

Similar to the discussion in RAI# 2.3.3.9-1, nonsafety-related systems and components that contain water, oil, or steam, and are located inside structures that contain safety-related SSCs,

are included in scope for potential spatial interaction under criterion 10 CFR 54.4(a)(2), unless located in an excluded room.

Issue:

The backup instrument air charging compressor includes components containing oil. In accordance with the applicant's methodology as described in LRA Section 2.1.5.2, this component should be included in scope under 10 CFR 54.4(a)(2).

Request:

Justify the exclusion of the backup instrument air charging compressor from the scope of license renewal under 10 CFR 54.4(a)(2).

RAI#: 2.3.3.14-2

Background:

On license renewal drawing LR-302-271, at location D-7, the piping up to a temperature instrument connected to instrument air aftercooler IA-C-1A, is highlighted in green, indicating that it is in the scope of license renewal for 10 CFR 54.4 (a)(1) or (a)(3) criteria according to note on license renewal drawing LR-302-003. On the same license renewal drawing LR-302-271, at location D-6, the piping to a similar temperature instrument connected to instrument air after-cooler IA-C-1B, is not highlighted, indicating that it is not in the scope of license renewal.

Issue:

The IA piping from the instrument air after-cooler IA-C-1B to the temperature sensor is part of the pressure boundary of the IA system and should be included in the scope of license renewal in accordance with 10 CFR 54.4 (a)(1).

Request:

Justify the exclusion of the piping to the temperature instrument connecting to instrument air after-cooler IA-C-1B from the scope of license renewal.

LRA Section: 2.3.3.17 - Liquid and Gas Sampling System

RAI#: 2.3.3.17-1

Background:

On license renewal drawing LR-302-181, at locations F-2 through F-8 and G-7, the primary sampling coolers tube side components are highlighted in red, indicating that they are within the scope of license renewal under 10 CFR 54.4 (a)(2), according to Note 1 on drawing LR-302-003.

On license renewal drawing LR-302-181, at location G-9, the condensate pump sample cooler tube side components are highlighted in red, indicating that they are within the scope of license renewal under 10 CFR 54.4 (a)(2), according to Note 1 on license renewal drawing LR-302-003.

Issue:

Note 3 on license renewal drawing LR-302-181 reads: "The tube side of the Sample Coolers is evaluated for aging management with the LGS System. The shell side of the coolers is evaluated for aging management with the CCCW System." However, LRA Table 2.3.3-17,

Liquid and Gas Sampling System, Components Subject to Aging Management Review, does not list these coolers as subject to an AMR.

Note 4 on license renewal drawing LR-302-181 reads: "The tube side of the Condensate Pump Sample Cooler is evaluated for aging management with the LGS System. The shell side of the cooler is evaluated for aging management with the CCCW System." However, LRA Table 2.3.3-17 does not list this cooler as subject to AMR.

Request:

a) Justify the exclusion of the tube side of the primary sampling coolers from Table 2.3.3-17 as a component subject to an AMR.

b) Justify the exclusion of the tube side of the condensate pump sample cooler from Table 2.3.3-17 as a component subject to an AMR.

RAI#: 2.3.3.17-2

Background:

On license renewal drawing LR-302-182, at locations C-2 and E-2, the chillers are highlighted in red, indicating that they are within the scope of license renewal under 10 CFR 54.4 (a)(2) criteria according to Note 1 on drawing LR-302-003.

Issue:

Note 3 on license renewal drawing LR-302-182 reads: "The tube side and shell side of the Chillers are evaluated for Aging Management with the LGS System." However, LRA Table 2.3.3-17, Liquid and Gas Sampling System, Components Subject to Aging Management Review, does not list these chillers as subject to an AMR.

Request:

Justify the exclusion of the tube side and shell side of the chillers from Table 2.3.3-17 as a component subject to an AMR.

RAI#: 2.3.3.17-3

Background:

On various license renewal drawings, the applicant shows the piping leading up to and out of an enclosure, such as a sampling panel, highlighted in red, indicating that the components are within the scope of license renewal under 10 CFR 54.4 (a)(2) criteria according to Note 1 on drawing LR-302-003. Yet, the piping inside the panel and the panel enclosure walls are not shown as in scope. Examples of this condition can be found on license renewal drawing LR-302-181, at location E-9; the iron sampler housing, the sampling rack just below the iron sampler, and the piping inside these enclosures are all shown in black, not highlighted.

Issue:

The piping in the room up to the sampling rack and iron sampler housing is highlighted in red, indicating it is within the scope of license renewal under 10 CFR 54.4(a)(2). The staff would expect either the internal components or the panel to be included within scope of license renewal.

Request:

Justify the exclusion of the housing panels and their internal piping and components from being in scope for an AMR in accordance with 10 CFR 54.4(a)(2). In addition, provide a general explanation of how piping and components inside enclosures, as illustrated above, are evaluated for inclusion in scope under 10 CFR 54.4(a)(2).

LRA Section: 2.3.3.19 - Open Cycle Cooling Water System

RAI#: 2.3.3.19-1

Background:

On license renewal drawing LR-302-203 at locations C-3 through C-5 and B-3 through B-5, the traveling water screens and auto bar rakes are highlighted in green, indicating that they are within the scope of license renewal under 10 CFR 54.4 (a)(1) or (a)(3) according to Note 1 on license renewal drawing LR-302-003. The traveling water screens and debris bars (bar racks, not the automatic rakes) have a passive intended function of filter. LRA Section 2.3.3.19, Open Cycle Cooling Water System (OCCWS), on page 2.3-139 in the last paragraph, states that the OCCWS System boundary begins at the intake screen and pump house bar racks.

Issue:

The staff noted that, in LRA Table 2.3.3-19, Open Cycle Cooling Water System, Components Subject to Aging Management Review, the traveling water screens and debris bars have not been listed. A review of LRA Section 2.4.8, Intake Screen and Pump House, indicates the traveling water screens and debris bars have also not been included in this building system.

Request:

Justify the exclusion of the components bar racks and traveling screens for the intended function of filter from Table 2.3.3-19.

RAI#: 2.3.3.19-2

Background:

On license renewal drawing LR-302-202 at locations C-5 and D-5, two restricting orifices are highlighted in red, indicating that they are within the scope of license renewal under 10 CFR 54.4 (a)(2) according to Note 1 on drawing LR-302-003.

Issue:

The staff noted that, LRA Table 2.3.3-19, Open Cycle Cooling Water System, Components Subject to Aging Management Review, shows restricting orifices with a pressure boundary function only, indicating they are in scope based on 10 CFR 54.4(a)(1) or (a)(3) criteria. Since the components are highlighted in red, the appropriate function for (a)(2) components would be leakage boundary; however, this function is not included in Table 2.3.3-19 for restricting orifices.

Request:

Justify the exclusion of the leakage boundary function for the restricting orifices from Table 2.3.3-19.

LRA Section: 2.3.3.20 - Radiation Monitoring System

RAI#: 2.3.3.20-1

Background:

On license renewal drawing LR-302-833, sheet 1, location G-7, an isokinetic nozzle (RE-A14) is highlighted in green, indicating it is within the scope of license renewal under 10 CFR 54.4 (a)(1) according to Note 1 on license renewal drawing drawing LR-302-003. The nozzle is associated with the radiation monitor RM-A14 and has an intended function of pressure boundary and direct flow.

Issue:

LRA Table 2.3.3-20, Radiation Monitoring System, Components Subject to Aging Management Review, does not show the nozzle as a component with an intended function of pressure boundary or direct flow.

Request:

Justify the exclusion of the isokinetic nozzle from LRA Table 2.3.3-20.

RAI#: 2.3.3.22-1

Background:

On license renewal drawing LR-302-846, at location D-3, level indicator LI-1007 is highlighted in red, indicating that it is within the scope of license renewal for 10 CFR 54.4 (a)(2) according to Note 1 on drawing LR-302-003. This component type typically includes a sight glass, which would have a leakage boundary function.

Issue:

Sight glass is not listed in Tables 2.3.3-22, Service Building Chilled Water System, Components Subject to Aging Management Review, and 3.3.2-22, Service Building Chilled Water System, Summary of Aging Management Evaluation, as a component type with a leakage boundary function.

Request:

Justify the exclusion of the component type "sight glass" from LRA Tables 2.3.3-22 and 3.3.2-22.

LRA Section: 2.3.3.25 - Water Treatment and Distribution System

RAI#: 2.3.3.25-1

Background:

The staff noted that on license renewal drawing LR-302-162, at location G-1, a vacuum degasifier tank is highlighted in red, indicating that it is within the scope of license renewal for 10 CFR 54.4 (a)(2) according to Note 1 on drawing LR-302-003. This component type "tank" would have a leakage boundary function.

Issue:

LRA Table 2.3.3-25, Water Treatment & Distribution System, Components Subject to Aging Management Review, includes "tank" as a component type and itemizes which tanks are

included; however, the table does not show “tank (vacuum degasifier)” as a component subject to an AMR.

Request:

Justify the exclusion of “tank (vacuum degasifier)” from LRA Table 2.3.3-25.

LRA Section: 2.3.4.4 - Extraction Steam System

RAI#: 2.3.4.4–1

Background:

LRA Section 2.3.4.4, Extraction Steam System, states that the extraction steam system meets 10 CFR 54.4(a)(1) because it is a system that is relied upon to remain functional during and following design basis events.

Issue:

The staff could not identify the 10 CFR 54.4(a)(1) functions provided by the extraction steam system in order to verify the applicant did not omit any components.

Request:

Provide the functions that support the 10 CFR 54.4(a)(1) designation provided by the extraction steam system and identify the components that perform these functions.

LRA Section: 2.3.4.8 - Steam Turbine and Auxiliary Systems

RAI#: 2.3.4.8–1

Background:

On license renewal drawing LR-302-141, at location G-5, a turbine gland seal atmospheric drain tank is highlighted in red, indicating that it is within the scope of license renewal under 10 CFR 54.4 (a)(2) according to Note 1 on drawing LR-302-003. Typically, this component type “tank” has a leakage boundary function.

Issue:

LRA Table 2.3.4-8, Steam Turbine and Auxiliary Systems, Components Subject to Aging Management Review, includes “tank” as a component type and itemizes which tanks are included. However, the table does not show “tank (turbine gland seal)” as a component subject to an AMR.

Request:

Justify the exclusion of the turbine gland seal atmospheric drain tank from LRA Table 2.3.4-8.