March 5, 2003

LICENSEE: Rochester Gas and Electric Corporation (RG&E)

FACILITY: R. E. Ginna Nuclear Power Station

SUBJECT: SUMMARY OF JANUARY 15 AND 21, 2003, TELEPHONE CONFERENCES WITH RG&E CONCERNING RESPONSES TO DRAFT REQUESTS FOR ADDITIONAL INFORMATION PERTAINING TO THE R. E. GINNA (GINNA) LICENSE RENEWAL APPLICATION

The U.S. Nuclear Regulatory Commission staff (the staff) and representatives of RG&E (or the applicant) held telephone conferences on January 15 and 21, 2003, to discuss RG&E's responses to draft requests for additional information (D-RAI) concerning the Ginna license renewal application.

The conference calls were useful in clarifying the intent of the staff's D-RAIs. Several of these D-RAIs were resolved, while the balance will formally be sent to the applicant. The resolution of D-RAIs was based on information available in the license renewal application or in other docketed material.

Enclosure 1 provides a list of the telephone participants. Enclosure 2 contains a listing of the D-RAIs discussed with the applicant, including a brief description on the status of the items. Enclosure 3 documents the basis for resolving or disposing of the D-RAIs that will not be issued as final RAIs to the applicant.

The applicant has had an opportunity to review and comment on this summary.

/***RA***/

Russell Arrighi, Project Manager
License Renewal Section
License Renewal and Environmental impacts Program
Division of Regulatory Improvement Programs
Office of Nuclear Reactor Regulation

Docket No.: 50-244

Enclosures: As stated

cc w/enclosures: See next page

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January 15 and 21, 2003

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Jim Lazevnick	Dave Wilson
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Enclosure 1

CONFERENCE CALL WITH ROCHESTER GAS AND ELECTRIC CORPORATION (RG&E)
R.E. GINNA
LICENSE RENEWAL APPLICATION
DRAFT REQUESTS FOR ADDITIONAL INFORMATION

JANUARY 15 AND 21, 2003

During the January 15 and 21, 2003, conference calls with representatives of RG&E, the NRC staff (the staff) discussed draft requests for additional information (D-RAIs) it had prepared for the R. E. Ginna (Ginna) license renewal application (LRA). The following D-RAIs were discussed during the telephone conference.

2.3 SCOPING & SCREENING RESULTS - MECHANICAL SYSTEMS

D-RAI 2.3 -3

A number of tables in the LRA (for example, see Tables 2.3.3-9 and 2.3.3-10 for containment ventilation and essential ventilation systems, respectively) include the component group "CS Components." Section 3.1.12 of the LRA defines "CS Components" as a generic commodity group that accounts for the presence of external surfaces of carbon steel components which are subject to the effects of aging by potential exposure to borated water leaks. The LRA also states that the normal external operating environment is evaluated with the specific system-identified components. A similar generic commodity group is defined for closure bolting.

The scoping and screening process for license renewal (LR) entails a staff review of individual system components to verify whether all components meeting the requirements of 10 CFR 54.4(a) have been identified by the applicant as being within the scope of LR. Grouping components constructed of the same material and exposed to the same environment (and, therefore, susceptible to the same aging effects) may facilitate the aging management review (AMR) process. However, other component groups identified in the LRA tables list specific component types, some of which are also fabricated from carbon or low-alloy steel. The commodity group "CS Components" may overlap with other components included in other component groups. The staff is, therefore, unable to determine which specific components fall under this grouping.

For each of the systems containing components within the "CS Components" group, clarify how it may be determined that specific system-identified components are part of the "CS Components" commodity group.

Response: Question resolved (refer to Enclosure 3).

D-RAI 2.3.1-1

Pursuant to 10 CFR 50, App. R, Section III O, the reactor coolant pump (RCP) lube oil collection subsystem is designed to collect oil from the RCPs and drain it to a collection tank to prevent a fire in the containment building during normal plant operations. The staff believes that the subsystem and the tank should be within scope requiring aging management. However, it appears that the subject components were not identified in the LRA (Tables 2.3.1-1 or 2.3.3-6); and, therefore, the staff requests the applicant to provide an explanation.

Response: Question resolved (refer to Enclosure 3).

D-RAI 2.3.1 -2

Borated water leakage through the pressure boundary in pressurized water reactors (PWRs), and resulting borated water induced wastage of carbon steel is a potential aging degradation for the components. Reactor vessel head lifting lugs are considered to be such components requiring aging management. However, if the components are currently covered under Boric Acid Wastage Surveillance Program, then it may not require additional aging management. It appears that the subject components were not discussed in the LRA (Table 2.3.1-2), and therefore, the staff requests the applicant to verify whether the components are within the surveillance program; and, if not, to provide an explanation.

Response: RG&E indicated that the question is clear.

D-RAI 2.3.1 -3

The pressurizer surge and spray nozzle thermal sleeves were not identified in the LRA (Table 2.3.1-4) as within the scope of LR. The staff understands that the intended function of the thermal sleeves is to provide thermal shielding to the nozzles (pressure boundary), and that the failure of the sleeves may prevent the nozzles from performing their pressure boundary function during the extended period of operation. As such, thermal sleeves meet the criteria identified in 10 CFR 54.4(a)(2), and, therefore, should be within the scope of LR. Furthermore, the Westinghouse Owners Group has committed in topical report WCAP-14574-A), "license Renewal Evaluation: Aging Management Evaluation for Pressurizers," and the staff has concurred that the pressurizer surge and spray nozzle thermal sleeves are within the scope of LR. However, the staff also understands that an in-scope component may not require an AMR if a time-limited aging analysis (TLAA) was performed for the component, and the result was found to be acceptable for the extended period of operation. Based on the above discussion, the staff requests the applicant to provide the following additional information:

a) On the basis of the reason sited above, include the pressurizer surge and spray nozzle thermal sleeves within scope, or provide an explanation.

b) Was a TLAA performed for the thermal sleeves as an integral part of the nozzles? If so, are the results of the TLAA also applicable to the sleeves (in addition to the nozzles), and are the results acceptable for the extended period of operation?

c) If the answers to (b) are not affirmative, then the staff requests the applicant to submit an AMR for the thermal sleeves which are in-scope components, or justify why an AMR is not required.

d) Are there other thermal sleeves which perform thermal shielding function for pressure boundary components; such as, the return line from the residual heat removal (RHR) loop, and the charging lines and the alternate charging line connections (Refer to Ginna updated final safety analysis report (UFSAR) Section 5.4.3.1.1), which may have been excluded from the scope of LR? If so, identify those thermal sleeves, and justify their exclusion from the scope.

Response: RG&E indicated that the question is clear.

D-RAI 2.3.1 -4

The pressurizer spray head was not identified in the LRA (Table 2.3.1-4) as within the scope of LR. In addition, it was stated in the LRA (Table 3.2-1, pg.3-45) that the pressurizer spray head performs no LR intended functions at Ginna Station. The staff requests the applicant to clarify if the current licensing basis (CLB) for fire protection (FP) complies with certain sections of Appendix R, particularly Section III.G, which provides the requirements for the FP safe shutdown capability. Discuss if the pressurizer spray head and associated piping are credited and relied upon in the FP safe shutdown analysis to bring the plant to cold shutdown conditions within a given time for compliance with Appendix R. If it is credited in the FP safe shutdown analysis, the pressurizer spray head and associated piping would satisfy 10 CFR 50.48, Appendix R requirements, and, therefore, should be included within the scope of LR. The specific intended function of the subject components which meets the 10 CFR 54.4(a)(3) requirements is the spray function (not pressure boundary function), and the particular components which help perform this function are the section of piping and the spray head located inside the pressurizer. The subject components do not have pressure boundary function. The staff believes that with the loss of spray function, it may not be possible to bring the plant to cold shutdown conditions within a given time for compliance with Appendix R, and, therefore, the spray head and associated piping inside pressurizer, and the spray function should be identified as within the scope of LR. Furthermore, the applicant should propose an AMP for the spray head and associated piping inside pressurizer which provides a reasonable assurance that adequate spray function will be maintained during the extended period of operation.

Response: Question resolved (refer to Enclosure 3).

D-RAI 2.3.1 -5

Steam generator (SG) tube plugs were not identified in the LRA (Table 2.3.1-5) as within the scope of LR. The subject components perform pressure boundary function, and, therefore, should be within scope. The staff requests the applicant to confirm that there are no SG tube plugs inside the SGs at Ginna. If there are tube plugs inside the SGs, then the applicant should identify them within scope, and submit an AMR for them.

Response: Question resolved (refer to Enclosure 3).

D-RAI 2.3.2.3 -1

Screen assemblies and vortex suppressors are normally used in the containment sump which provides water for the ECCS recirculation phase, and one of the intended functions is to protect the ECCS pumps from debris and cavitation due to harmful vortex following a loss-of-coolant-accident (LOCA) (Refer to Ginna UFSAR Section 5.4.5.4.3). The subject components were not identified as within scope in Table 2.3.2.-3 of the LRA, which listed component groups for the RHR that require an AMR. Please explain why.

Response: RG&E indicated that the question is clear.

D-RAI 2.3.3.3 -1

Spent fuel pool heat exchanger “B” process monitor skid is shown on LR boundary drawing 33013-1250, 2-LR as having radiation element RE-20B subject to an AMR. Clarify why the components of the spent fuel pool heat exchanger “A” process monitor skid and the associated piping and valves leading to radiation element RE-20A shown on LR boundary drawing 33013-1250, 2-LR at location J6 are not within the scope of LR and subject to an AMR.

Response: RG&E indicated that the question is clear.

D-RAI 2.3.3.3 -2

Section 9.1.2.1.1 of the Ginna UFSAR states that the current criteria for the spent fuel storage system is defined, in part, by Regulatory Guide 1.13. Section C.8 of Regulatory Guide 1.13 states:

A seismic Category 1 makeup system should be provided to add coolant to the pool. Appropriate redundancy or a backup system for filling the pool from a reliable source, such as a lake, river, or onsite seismic Category I water-storage facility, should be provided.

Section 9.1.2.2.1 of the Ginna UFSAR states that water is supplied to the spent fuel pool from the refueling water storage tank (RWST) by the refueling water purification pump. Alternative sources of makeup water are available from the primary water treatment plant and the reactor makeup water tank or the monitor tanks. However, the refueling water purification pump and associated valves and piping to the RWST is shown as not subject to an AMR on LR boundary drawing 33013-1248-LR at location F5. The flow paths to the alternate makeup sources, the primary water treatment plant (location H1), the reactor makeup water tank (location H10) and the monitor tanks are also identified as not subject to an AMR. Justify the exclusion of these piping runs and associated valves which provide the makeup water sources for the spent fuel pool from the scope of LR and being subject to an AMR.

Response: RG&E indicated that the question is clear.

D-RAI 2.3.3.5 -6

Drawing 33013-1250, 1-LR at locations A1-A4 shows that the traveling screens as not being subject to an AMR. The traveling screens perform a coarse filtration function, which protects the service water pumps and other components receiving unfiltered raw water from blockage, and are typically included within the scope of LR due to that intended function. Justify the exclusion of these components from being subject to an AMR in accordance with the requirements of 10 CFR 54.4(a) and 10 CFR 54.21(a)(1).

Response: RG&E indicated that the question is clear.

D-RAI 2.3.3.8 - 6

Hose connectors are shown on LR boundary drawing 33013-1250, 1-LR at locations C6 and E6; however, the hose connectors are not shown to be subject to an AMR. In Section 2.3.3.6 of

the LRA, "Fire Protection," the applicant states that the fire water system can be used as a backup for the service water system supply to the diesel generator lube oil coolers and jacket water heat exchangers via temporary hoses. In Section 3.2.2.1.4 of the Ginna UFSAR it states that fire hose connectors have been provided for the diesel generators and for the standby auxiliary feedwater system to allow safe shutdown operation even in the event of a loss of the service water pumps. Section 3.4.1.1.3 of the Ginna UFSAR states that emergency procedures provide for installation of flood barriers and for connection of the alternative cooling water supply to the diesel generator, assuming service water will be lost as a result of flooding of the screen house. Table 7.4-4 and Section 9.5.5 of the Ginna UFSAR identify the local connection between underground yard fire water hydrant and emergency diesel generator using a fire hose to provide alternative emergency diesel generator cooling. The hose connectors shown on drawing 33013-1250,1-LR at locations C6 and E6 are relied upon to provide the alternative cooling to the diesel generators in the event of a loss of the service water pumps, which may result from a design basis flood. Therefore, these connections should be subject to an AMR. Clarify if the connections in question are in deed those that provide the means of alternative cooling via the fire water system. If so, justify their exclusion from being subject to an AMR in accordance with the requirements of 10 CFR 54.4(a) and 10 CFR 54.21(a)(1).

Response: Question resolved (refer to Enclosure 3).

D-RAI 2.3.3.4 -2

This question was issued and discussed during the November 26, 2002, conference call.

Response: Question resolved (refer to Enclosure 3)

D-RAI Generic HVAC -1

LR boundary drawings for the containment ventilation system (33013-1863-LR) and the essential ventilation systems (33013-1256, 1867, 1868, 1869, 1872, 1873-LR) show both fixed and adjustable louvers at numerous air intake and air exhaust locations. Some of these louvers are identified as being subject to an AMR. In addition, the LRA text discusses the presence of louvers for many of the ventilation systems. Fixed louvers and the housings of the adjustable louvers are passive, long-lived components. Age-related degradation could adversely impact proper ventilation to safety-related components and structures. However, fixed louvers and the housings of adjustable louvers are not listed as component groups from LRA Table 2.3.3-9 or Table 2.3.3-10. Justify the exclusion of the fixed louvers and adjustable louver housings as component groups in LRA Tables 2.3.3-9 and 2.3.3-10.

Response: Question resolved (refer to Enclosure 3).

D-RAI Generic HVAC -2

Several of the LR boundary drawings for the containment ventilation systems (33013-1863-LR and 33013-1866-LR) and for the essential ventilation systems (33013-1256, 1863, 1867, 1869-LR) show access doors at numerous system locations. Many of these locations are shown in cyan as being subject to an AMR. Access doors and associated bolting and gaskets are passive, long-lived components whose failure or degradation with age could adversely

impact the intended function of associated systems to provide a pressure boundary. However, access doors are not listed as a component group in LRA Tables 2.3.3-9 and 2.3.3-10. Justify the exclusion of access doors as a component group from LRA Tables 2.3.3-9 and 2.3.3-10.

Response: Question resolved (refer to Enclosure 3).

D-RAI Generic HVAC -3

The symbol for “air opening” (see “Symbol Legend”, LR boundary drawing 33013-2242, 3, location H4) appears at various air intakes and exhausts on the LR boundary drawings for the containment ventilation system. At many locations, these openings are highlighted to identify them as being subject to an AMR (See, for example, LR boundary drawing 33013-1864-LR, location F8). Since a different symbol has been used for air openings than for louvers, the nature of these air openings (e.g., screens, grillwork) is not clear to the staff. These components are not listed as a component group in LRA Tables 2.3.3-9 and 2.3.3.10. The staff requests that the applicant describe these air openings, through diagrams, textual description, or both, and justify the exclusion of these air openings from LRA Tables 2.3.3-9 and 2.3.3-10.

Response: RG&E indicated that the question is clear.

D-RAI Generic HVAC -4

LR boundary drawings for the containment ventilation system show filters within the LR boundary at various locations. LR boundary drawing 33013-1863- LR shows charcoal filters at locations G3 and D11 and high efficiency particulate air (HEPA) filters at locations A2, A5, A8, and I3. LR boundary drawing 33013-1866-LR shows moderate efficiency filters at locations D2 and D3.

Similarly, LR drawings for the essential ventilation systems show filters within the LR boundary at various locations. LR boundary drawing 33013-1867- LR shows HEPA and charcoal filters at location E3 and a low-efficiency filter at location A8. LR boundary drawing 33013-1869-LR shows low-efficiency filters at locations B3 and D3. However, LRA Tables 2.3.3-9 and 2.3.3-10 do not identify the media for these filters but only their housings.

LRA Section 2.1.7.1 states that, although certain filters are within the scope of LR, they are periodically replaced and, thus, are not subject to a AMR and periodic testing and inspection programs are in place to monitor filter performance such that system intended functions are maintained. Table 2.1-3 of NUREG-1800, under the heading for consumables, states that system filters, which fall within category (d), "are typically replaced based on performance or condition monitoring that identifies whether these components are at the end of their qualified lives and may be excluded, on a plant-specific basis, from AMR under 10 CFR 54.21(a)(1)(ii). The applicant should identify the standards that are relied on for the replacement as part of the methodology description."

Accordingly, the staff requests that the applicant describe the plant-specific monitoring program and the specific performance standards and criteria for replacement of filter media for system filters identified as being within the scope of LR, but not subject to an AMR.

Response: Question to be combined with D-RAI 2.3.3.9 -1.

D-RAI Generic HVAC -5

Cooling coils are shown on LR boundary drawings at the following locations for the containment ventilation system: 33013-1863-LR (locations A1, A4, A7, and I3), 33013-1864-LR (locations E5 and F5), and 33013-1866-LR (location D5). Similarly, cooling coils are shown on LR boundary drawings at the following locations for the essential ventilation systems: 33013-1867-LR (location A9) and 33013-1969-LR (locations B3, D3). In addition, an electric heating coil is shown on LR boundary drawing 33013-1867-LR (location A9).

Cooling coils have the intended function of transferring heat from return air or outside air to the cooling medium for the coil. Heating coils have the intended function of transferring heat to return air or outside air. In addition, both cooling and heating coils have the intended function of providing a pressure boundary.

Cooling coils are included as a component group in LRA Tables 2.3.3-9 and 2.3.3-10, with the listed passive function of providing a pressure boundary. Heating coils are considered as a separate component group in Table 2.3.3-10 with the listed passive function of providing a pressure boundary. Heat transfer, however, is not specified as an intended function for either cooling coils or heating coils in these tables. However, “heat exchangers” are listed as a separate component group in LRA Tables 2.3.3-9 and 2.3.3-10 with the listed passive functions of both heat transfer and pressure boundary. The staff considers both cooling coils and heating coils to be heat exchangers. The above-cited cooling and heating coils appear to be the only heat exchangers shown within the LR boundary on the LR boundary drawings for the containment ventilation and essential ventilation systems. Therefore, it is not clear to the staff what differentiates the “heat exchangers” from the “cooling coils” and ”heating coils” component groups in LRA Tables 2.3.3-9 and 2.3.3-10.

Identify any heat exchangers for all HVAC systems (other than the cooling coils and heating coils) that are within the scope of LR and have not been identified on the LR boundary drawings.

Response: RG&E indicated that the question is clear.

D-RAI Generic HVAC -6

Miscellaneous components such as diffusers, deflectors, turning vanes, test connections, and access doors are typically present in ventilation systems, but are not identified in LRA Tables 2.3.3-9 and 2.3.3-10. These components are both passive and long-lived, and, therefore, should be subject to an AMR. Confirm that these components are not used in the ventilation systems for Ginna, or identify where such components are addressed as being subject to an AMR.

Response: Question resolved (refer to Enclosure 3).

D-RAI 2.3.3.9 -1

LR drawing 33013-1865-LR depicts the containment purge supply unit. This drawing shows that containment isolation at penetration P204 (location F9) is provided by a blind flange with a double O-ring seal. This flange is closed during Modes 1, 2, 3, and 4 and can only be removed during Mode 6 (refueling). The flange and associated O-ring seal, therefore, serve as a containment boundary for Modes 1 through 4 and perform the intended function of providing a pressure boundary. This flange/O-ring seal combination is shown to be within the LR boundary. Flanges are listed as a component group in LRA Table 2.3.3-9; however, O-rings are not explicitly listed.

NUREG-1800, Table 2.1-3, states that O-rings are considered consumable items within "category (a)" and "the applicant would be able to exclude these sub-components using a clear basis." LRA Section 2.1.7.7.1 states that O-rings are consumables that "are considered sub-components of the identified components" (flanges, in this case) "and, therefore, are not subject to their own condition or performance monitoring. Therefore, the AMR for the component has included an evaluation of the sealing materials where it could not be demonstrated that ... the sealing materials are not relied on in the CLB to maintain . . . a pressure envelope for a space." Since the subject O-rings are relied upon to provide a pressure boundary, justify the exclusion of O-rings from LRA Table 2.3.3-9.

Response: Question to be combined with D-RAI Generic HVAC -4.

D-RAI 2.3.3.9 -2

LR boundary drawing 33013-1866-LR shows that the vacuum pump at location G9 is within the LR boundary. However, LRA Table 2.3.3-9 does not include pump casings as a component group. Pump casings are passive long-lived components and provide the LR intended function of a pressure boundary. Justify the exclusion of pump casings from LRA Table 2.3.3-9.

Response: Question resolved (refer to Enclosure 3).

D-RAI 2.3.3.9 -3

LR boundary drawing 33013-1866-LR shows flanged flexible hoses upstream of each of the fifteen containment penetrations indicated for the containment penetration cooling system. The drawing identifies these components as being subject to an AMR. However, flanged flexible hoses are not listed as a component group in LRA Table 2.3.3-9. Justify the exclusion of flexible hoses from LRA Table 2.3.3-9.

Response: RG&E indicated that the question is clear.

D-RAI 2.3.3.10 -1

LR boundary drawing 33013-1256-LR depicts the ventilation systems and components that serve the technical support center (TSC). Section 1.2.3.7 of the UFSAR states that the TSC “is located on the second floor of the all-volatile treatment building and houses the computers and equipment, including emergency power supplies (diesel-generators and batteries), necessary to

provide the staff technical support during an emergency event." However, the only ventilation system components shown to be within the LR boundary are those that provide ventilation to the TSC diesel-generator room, the un-interruptible power supply, and the TSC battery room. (See locations H1,2,3,4; I1,2,3,4,5; J1,2,3,4.)

In order for the staff to confirm that all structures and components (SCs) that serve an intended function that meet the scoping criteria of 10 CFR 54.4(a) have been identified, list the safety-related equipment which relies on these emergency power supplies. Justify the omission of ventilation components serving other areas of the TSC (e.g., the computer rooms) not considered to be within the scope of LR.

Response: NRC staff to clarify question in final RAI.

D-RAI 2.3.3.10 -2

LRA Table 2.3.3-9 ("Containment Ventilation") lists piping and valve bodies as individual component groups while LRA Table 2.3.3-10 ("Essential Ventilation Systems") does not include either group. Verify that no piping or valves in the essential ventilation systems are within the scope of LR and subject to an AMR.

Response: Question resolved (refer to Enclosure 3).

D-RAI 2.3.3.10 -3

Section 7.4 of the UFSAR addresses the alternative shutdown system. The UFSAR states that in case of fire within the control room fire zone, the control room may be evacuated and the plant shut down from alternative shutdown stations located in other areas of the plant. However, systems employed to provide ventilation to the alternative shutdown stations and controls have not been addressed in either the LRA or the UFSAR.

Identify and describe the systems and their components used to provide ventilation to the alternative shutdown stations and identify which components are within the scope of LR and subject to an AMR in accordance with 10 CFR 54.4(a)(1) and (a)(2). Provide textual information as well as diagrams which illustrate the LR boundaries for these systems. If any component considered to be within scope is not already included in one of the component groups in LRA Table 2.3.3-10, the appropriate modifications should be made to the table. If the ventilation systems used to service the alternative shutdown stations are not considered to be within the scope of LR, justify their exclusion.

Response: RG&E indicated that the question is clear.

D-RAI 2.3.3.10 -4

LR boundary drawing 33013-1869-LR depicts the ventilation systems that service the RHR, containment spray, charging, safety injection, and standby auxiliary feedwater pumps. In this drawing, only the ventilation system for the standby auxiliary feedwater pumps is shown to be within the LR boundary.

Two redundant cooling units each are provided for both the RHR pump pit and the charging pump room. Three cooling units, headered into common ductwork, are provided for the safety injection and containment spray pumps. A separate cooling unit is provided for each of the two standby auxiliary feedwater pump rooms. LRA Section 2.3.3.10 states that the fans for these cooling units are supplied by emergency diesel power.

The primary function of the safety injection system is to supply borated water to the RCS to limit fuel rod cladding temperatures in the event of a LOCA. Safety injection is handled by two systems; a low-head system and a high-head system. The low-head system, which is activated for large breaks where there is rapid blowdown and depressurization, utilizes the RHR pumps for borated water injection. The high-head system, which is activated for small breaks, consists of two subsystems, one utilizing the chemical and volume control system charging pumps and the other utilizing the safety injection pumps for borated water injection.

Regarding the containment spray pumps, LRA Section 2.3.3.9 states that two of the containment recirculation fan coolers, plus one containment spray pump, are required to provide sufficient capacity to maintain the containment pressure within design limits after a LOCA or steam line break accident.

All of the pumps listed above are safety-related and are within the scope of LR, in accordance with 10 CFR 54(1), items (i) and (ii). The systems providing ventilation to the area's housing these pumps and associated pump motors have the function of maintaining an acceptable environment for operation of these components under accident conditions. Therefore, the staff considers these ventilation systems to be within the LR boundary.

Justify the exclusion of the ventilation systems servicing the RHR, containment spray, charging, and safety injection pumps from the scope of LR. If the justification is based on analysis, summarize the assumptions made and the resulting conclusions for each of these pumps.

Response: NRC staff to clarify question in final RAI.

D-RAI 2.3.3.10 -5

Section 9.4.9 of the UFSAR states that the engineered safety feature's ventilation and cooling systems include those systems that service equipment required either following an accident or to ensure safe plant shutdown. Included on the provided list of equipment and/or areas serviced by these systems are the relay room and battery rooms, located in the control building. LR boundary drawing 33013-1868-LR, however, shows that the air conditioning systems servicing the relay room and the two battery rooms are not within the LR boundary.

Justify the exclusion of the air conditioning systems servicing the relay room and the battery rooms from the scope of LR and not subject to an AMR.

Response: RG&E indicated that the question is clear.

D-RAI 2.3.3.11 -1

Section 2.3.3.11 of the LRA states the following:

> The principal components of the Cranes, Hoists and Lifting Devices equipment group include the Reactor Head Lifting Device, the Reactor Internals Lifting Device, and the load carrying elements of the Containment Main Crane, the Auxiliary Building Main Crane, and the Spent Fuel and Containment Refueling Bridge Cranes as well as selected jib and monorail hoists. Included are cables, hooks and the moving load bearing elements.

Supply the following information to support the staff review of the LRA:

a) Are all of the "principal components of the Cranes, Hoists and Lifting Devices equipment group" within the scope of LR? If not, identify the components that are within the scope of LR, as delineated in 10 CFR 54.4.

b) Explain which jib and monorail hoists are within the scope of LR.

c) Identify the location (building or structure) for each component (i.e., crane, hoist, jib, monorail hoist, or other lifting device) that is in the “crane” category.

Response: RG&E indicated that the question is clear.

D-RAI 2.3.3.11 -2

Table 2.3.3-11 of the LRA lists "crane" as a component group within the scope of LR and subject to an AMR. The LRA does not define the component group crane. Listing "crane" as the structures and components subject to an AMR does not satisfy the requirement of 10 CFR 54.21(a)(1) because an entire crane is not subject to an AMR. List the structures and/or sub-components of the cranes, hoists, lifting devices, etc. that are within the scope of LR and subject to an AMR.

Response: RG&E indicated that the question is clear.

D-RAI 2.3.3.12 -1

LR boundary drawing 33013-2681-LR shows six sump pumps and connecting piping and valves as being subject to an AMR. The six pumps are in diesel generator (DG) room “A” (location A6), DG room “B” (location A8), the control building ventilation room (location F6), and battery room “A” (location F7). The DG room vault sump pumps discharge to piping that is subject to an AMR. The piping is subject to an AMR; however, does not extend to the discharge canal, the final depository for the discharge flow. The sumps containing the DG “B” floor drain sump pump and the battery room “A” floor drain sump pump gravity drain through ball check valves. The discharge piping that is subject to an AMR extends only to the floor drain outside of the subject room.

It is not clear from the information provided in LR boundary drawing 33013-2681 where the three sump pumps PWT28, PWT29, and PWT30 (at locations B7, E7, and E6, respectively) discharge to, as the sumps all appear to be gravity drained. Clarify where these sump pumps discharge their respective flows.

In each of these cases, the intended system function of preventing flooding would appear to require that the complete discharge piping flow path, up to the final discharge point, be subject to an AMR. An exception could occur where the capacity of an interim storage location is sufficient to hold the maximum flood inventory. Explain why the entire treated water system discharge piping flow paths to a retention tank, or why the discharge canal is not subject to an AMR, or describe how the maximum flood inventory is accommodated.

Response: RG&E indicated that the question is clear.

D-RAI 2.3.3.12 -2

LR boundary drawing 33013-1908,3 at location A3 shows a section of piping between valves 5021 and 5022A as subject to AMR. Clarify if this is a typographical error or justify the open pressure boundaries for this segment of piping.

Response: Question resolved (refer to Enclosure 3).

D-RAI 2.3.3.12-3

Location E8 of LR boundary drawing 33013-1908, 3-LR, shows the floor drain line for battery room “B” as not being within the scope of LR. However, at location E7 of this same drawing, the drainage line from battery room “A” is shown as being within scope. Document the basis for concluding that the floor drain line for battery room “B” is not within the scope of LR, so that the staff may verify compliance with 10 CFR 54.4(a).

Response: NRC staff to clarify question in final RAI.

D-RAI 2.3.3.13 -1

LR boundary drawing 33013-1866-LR, shows piping, pumps, valves, flow elements, fittings, and radiation detectors in the containment ventilation process radiation monitor skid as being subject to an AMR. These components are necessary for the radiation monitoring system to perform the system function of providing process conditions and generating signals for reactor trip and engineered safety features actuation. Monitors included on the skid are the containment gas monitor, containment iodine monitor, and the containment particulate monitor. Piping and associated fittings and valves that transport the material to be monitored from the containment are subject to an AMR only up to the containment boundary. The piping which continues inside containment also appears to be needed for the system to perform its intended function. Discuss why those portions of the piping continuing inside containment (LR boundary drawing 33013-1866-LR, location G11) are not subject to an AMR.

Response: RG&E indicated that the question is clear.

D-RAI 2.3.3.13-2

LR boundary drawing 33013-1867-LR shows the control room radiation monitor skid. The only components shown on this skid are radiation monitors. Confirm that the only components on

these skids are the radiation monitors. If not, identify the other components and justify the exclusion of these components from the scope of LR and being subject to an AMR.

Response: RG&E indicated that the question is clear.

D-RAI 2.3.3.13 -3

Clarify the following:

a) LR boundary drawing 33013-1866-LR, location H9, shows the following components as requiring an AMR: FT-112, PT-111 and DPS-110. On page 2-169 of the LRA, footnote 1 of Table 2.3.3-13 states: Selected instruments were conservatively included within the scope of LR. Consideration was given to the consequences of an instrument housing pressure boundary failure. Where an instrument was unisolable from a pressure source and is of sufficient size that a system function would be degraded should the pressure boundary fail, that instrument is included for LR review.

Is this an instance where footnote 1 of Table 2.3.3-13 applies, or is this a typographical error?

b) LRA Section 2.3.3.13, page 2-168, lists 13 drawings for the radiation monitoring system. Nine of these drawings show components of the radiation monitoring system that are subject to an AMR, and four of the drawings show components of the radiation monitoring system that are not subject to an AMR. There are six drawings: 33013-1231, 33013-1245, 33013-1250, 3, 33013-1278, 2, 33013-1893, and 33013-2287 that the list on page 2-168 identifies as having components subject to an AMR. However, none of the drawings shows radiation monitoring system components requiring an AMR. The list on page 2-168 appears to be correct. For example, according to the list, the radiation monitors on the main steam lines, RE-31 and RE-32, shown on LR drawing 33013-1231, are subject to an AMR, while radiation monitor RE-18 on the liquid waste processing monitor skid shown in LR drawing 33013-1271 is not subject to an AMR. In some cases, the drawings, themselves, indicate that the radiation monitors perform safety significant functions. For example, on drawing 133013-2287-LR, note 2 states that RE-21 performs a safety-significant detection function. However, neither RE-21 nor the connecting piping are shown as requiring an AMR. On drawing 33013-1278, 2-LR, note 3 states that RE-19 and RM-19 combine to perform a safety-significant detection function, yet neither of these is shown as requiring an AMR.

Clarify which information, the list of drawings on page 2-168 or the drawings themselves, is correct.

Response: RG&E indicated that the question is clear.

D-RAI 2.3.3.14 -1

LRA Section 2.3.3.14 states that the circulating water (CW) system performs intended functions within the scope of LR. However, the components of the CW system that perform intended functions are evaluated with the service water and reactor protection systems. Identify these components, the intended functions they perform, and if they are subject to an AMR.

Response: Question resolved (refer to Enclosure 3).

D-RAI 2.3.3.15 -1

At location A9 on LR boundary drawing 33013-1867-LR, the chilled water cooling coil for the control room air handling unit is shown as being within the scope of LR. At location J7 on LR boundary drawing 33013-1920; however, a similar cooling coil is shown as not being within the scope of LR. Clarify whether or not this cooling coil is within the scope of LR, in accordance with 10 CFR 54.4(a).

Response: RG&E indicated that the question is clear.

D-RAI 2.3.3.16 -1

Identify the components of the fuel handling system that comprise the fuel and reactor internals handling tools and control equipment for safety interlocks (including housings and support structures). Discuss whether the fail-safe feature of the spent fuel handling tool, the control rod drive shaft tool, the rod cluster control assembly changing fixture, or other tools used to suspend fuel and reactor internals components above the reactor vessel and spent fuel pool could be compromised by wear, impact damage, or other age-related degradation mechanisms. If so, justify the exclusion of this equipment from the scope of LR and being subject to an AMR.

Response: RG&E indicated that the question is clear.

D-RAI 2.3.4.1 -1

Table 7.4-3 of the Ginna UFSAR identifies nitrogen bottles as a safe shutdown motive force for the atmospheric dump valves, also referred to as atmospheric relief valves (ARVs). Section 10.3.2.5 of the Ginna UFSAR states that "backup supply (to the ARVs) is provided by two non-seismic nitrogen supply systems in the event that a loss of offsite power causes loss of the instrument air system." LR boundary drawing 33013-1231-LR identifies nitrogen bottles, associated tubing, piping, and valves as subject to an AMR. However, Table 2.3.4-1 of the LRA does not list the nitrogen bottles of interest as requiring an AMR. It is noted that the associated tubing, piping, and valves are listed in the table. Since the UFSAR identifies the nitrogen bottles as a power supply for the atmospheric dump valves, and the dump valves are required for safe shutdown, the nitrogen supply is within the scope of LR per 10 CFR 54.4(a) and is subject to an AMR per 10 CFR 54.21(a)(1). Explain the apparent omission of nitrogen bottles from being subject to an AMR. If the nitrogen bottles are considered to be consumable, provide a description of the replacement program.

Response: RG&E indicated that the question is clear.

D-RAI 2.3.4.1 -2

The boundary of the portion of the main steam system that is within the scope of LR and subject to an AMR ends at valves that are shown as normally open (see LR boundary drawing 33013-1232-LR at locations E7 and F7 and 33013-1277, 1-LR, at locations C5 and H5). Failure of the downstream piping may affect the pressure boundary intended function. It is

noted that piping downstream of these valves is classified as non safety-related, and that LRA page 2-19 states:

The LR evaluation markups for a system have typically been extended to the first normally closed manual valve, check valve, or automatic valve that gets a signal to go closed. A normally open manual valve has also been used as a boundary in a few instances where a failure downstream of the valve has no short term effects, can be quickly detected, and the valve can be easily closed by operators to establish the pressure boundary prior to any adverse consequences. However, for station blackout (SBO), Appendix R, high energy line break (HELB), and flooding events, the LR boundaries for a system have been defined consistent with the boundaries established in the CLB evaluations. Those boundaries do not always coincide with an isolation device.

Provide a brief discussion on the steps to be taken during events such as HELBs, station blackout, and fires for closing the valves, the amount of time required to complete these steps, and any other pertinent information to justify an open boundary at these valves.

Response: RG&E indicated that the question is clear.

D-RAI 2.3.4.1 -3

On LR drawing 33013-1232-LR, several lines are shown branching from 24-MS- 600-1 (see locations B6 and E6). However, the branch lines up to a normally closed valve are not shown to be within the scope of LR or subject to an AMR. Failure of these branch lines may affect the pressure boundary intended function of the main steam line. Justify the exclusion of these branch lines from being subject to an AMR.

Response: RG&E indicated that the question is clear.

D-RAI 2.3.4.1 -4

On LR drawing 33013-1231-LR, flanged flexible hose connections are shown to be subject to an AMR (see locations C7 and I7). However, Table 2.3.4-1 of the LRA does not contain an entry for this component type. Clarify if flanged flexible hose connections are considered to be part of the component group, “pipe,” or some other component type listed in Table 2.3.4-1. If not, justify the exclusion of these components from the scope of LR.

Response: RG&E indicated that the question is clear.

D-RAI 2.3.4.1 -5

On LR drawing 33013-1231-LR at location E8, a screwed cap is shown as being subject to an AMR because it serves as a pressure boundary intended function. However, the screwed cap at location I8 is not shown as being subject to an AMR. Clarify if this is a drafting error or if this segment of piping was intentionally shown as not subject to an AMR.

Response: RG&E indicated that the question is clear.

D-RAI 2.3.4.1 -6

Table 2.3.4-1 of the LRA lists “operator” as a component group that requires an AMR. However, the referenced drawings for the main and auxiliary steam systems do not show any valve operators as requiring an AMR. Clarify whether the operator listed in Table 2.3.4-1 is associated with the atmospheric dump or relief valve (valves 3410 and 3411).

Response: RG&E indicated that the question is clear.

D-RAI 2.3.4.2 -1

On LR boundary drawing 33013-1236, 2-LR, flow transmitter FT 466 at location B4 is shown to be subject to an AMR; however, FT 477 at location I4 is not. Additionally, flow transmitters FT 467 at location B1, FT 500 at location C2, FT 503 at location H1, and FT 476 at location I1 are not shown as subject to an AMR. Note 5 on the drawing indicates that these flow transmitters are considered “safety significant” class for pressure boundary considerations. Note 1 to Table 2.3.4-2 of the LRA indicates that selected instruments were conservatively included in the scope of LR if the instrument is unisolable from a pressure source and is of sufficient size that a system function would be degraded should the pressure boundary fail.

Although the transmitters in question appear to be isolable, the instrument line size is not indicated. Briefly discuss the justification for these specific transmitters as not subject to an AMR, that is, whether sufficient time exists to isolate the instruments, the line size is significantly small such that its failure would not degrade the pressure boundary, etc.

Response: RG&E indicated that the question is clear.

D-RAI 2.3.4.2 -2

On license LR drawing 33013-1236, 2-LR, the piping/tubing to temperature element TE 2096 at location A3 is shown as subject to an AMR; however, the piping/tubing to TE 2097 at location J3 is not. Failure of the piping/tubing to TE 2097 could degrade the pressure boundary function of the feedwater line and the performance of this temperature element. Clarify if this is a typographical error, or if this piping/tubing should be subject to an AMR.

Response: Question resolved (refer to Enclosure 3).

D-RAI 2.3.4.2 -3

Clarify why the operator to the main feedwater regulating valve is not subject to AMR, while other operators are included in the scope of LR and subject to an AMR. This operator is credited for isolation in the CLB analysis presented in Section 15.1.1.1 of the UFSAR.

Response: RG&E indicated that the question is clear.

D-RAI 2.3.4.3 -1

Fire hose connections are shown on LR boundary drawing 33013-1238-LR at locations B3 and J3; however, the hose connections are not shown to be subject to an AMR. In Section 2.3.3.6 of the LRA, “Fire Protection,” the applicant states that the fire water system can be used as a backup for the service water system supply to spent fuel pool heat exchanger “A”, the standby spent fuel pool heat exchanger, motor driven auxiliary feedwater pumps, standby auxiliary feedwater pumps, and the diesel generator lube-oil coolers and jacket water heat exchangers via temporary hoses. In Section 3.2.2.1.4 of the Ginna UFSAR it states that fire hose connections have been provided for the diesel generators and for the standby auxiliary feedwater system to allow safe shutdown operation even in the event of a loss of the service water pumps. In Section 10.5.2.3 of the Ginna UFSAR it states that connections to utilize the yard fire hydrant loop have been installed and procedures put in place to use this source if the service water supply from the screen house is lost. The hose connections shown on LR boundary drawing 33013-1238-LR at locations B3 and J3 are relied upon to provide the alternative cooling to the standby auxiliary feedwater pumps in the event of a loss of service water. Therefore, per 10 CFR 54.4(a) and 54.21(a)(1) these connections should be within the scope of LR and subject to an AMR. Justify the exclusion of these hose connections from an AMR.

Response: Question resolved (refer to Enclosure 3).

D-RAI 2.3.4.3 -2

LR boundary drawing 33013-1234-LR shows manways on condensate storage tanks “A” and “B” to be subject to an AMR. However, the manways are not listed in Table 2.3.4–3. Explain why these passive, long-lived components are not included in the subject table.

Response: RG&E indicated that the question is clear.

D-RAI 2.3.4.3 -3

LR boundary drawing 33013-1234-LR shows a 6-inch vent on the top of condensate storage tanks “A” and “B”. A class break is shown in the vent line. The vents are not shown to be subject to an AMR. Failure of the vent could potentially create a vacuum. Explain why the vent is not subject to an AMR, or indicate whether there is an alternate means to provide vacuum protection for this tank.

Response: RG&E indicated that the question is clear.

D-RAI 2.3.4.3 -4

On LR boundary drawing 33013-1234-LR, the boundary for AMR is shown to end at valve 4047 (see location I5). This valve appears to be normally open. It is noted that a piping class change occurs at this valve. The note on page 2-19 of the LRA indicates that normally open manual valves are used as a boundary if failure of the downstream piping has no short term effects, can be quickly detected, and be easily closed by the operators to establish the pressure boundary prior to any adverse consequences. However, the staff is unable to determine which

of these cases apply for this particular valve. Explain why it is acceptable to terminate the LR boundary at this normally open valve.

Response: RG&E indicated that the question is clear.

D-RAI 2.3.4.3 -5

On LR boundary drawings 33013-2285-LR at location D8, and 33013-1238-LR at locations A4 and I4, a level or sight glass is not shown to be subject to an AMR. However, Table 2.3.4-3 of the LRA indicates that a component group "Level Glass" is subject to an AMR. Clarify if this is a typographical error, or justify their exclusion from an AMR.

Response: Question resolved (refer to Enclosure 3).

D-RAI 2.3.4.3 -6

On LR boundary drawing 33013-1237-LR at locations F9, I7, and J8, flow elements are shown to be subject to an AMR; however, the flow element FE 2006 at location I10 is not. This component serves a pressure boundary function. Clarify if this is a typographical error, or justify its exclusion from an AMR.

Response: RG&E indicated that the question is clear.

D-RAI 2.3.4.3 -7

Table 2.3.4-3 of the LRA indicates that a "governor" is subject to an AMR. After review of the various documents and drawings, the staff is unable to identify which "governor" or "governors" are those intended to be subject to an AMR. Clarify which valve governor(s) is/are intended by the component group listed in Table 2.3.4-3. It is noted that there are a few governors which are not shown to be subject to an AMR (see LR boundary drawings 33013-1231-LR, locations D2, C5, I5 and 33013-1236, 2-LR, locations D3 and G3).

Response: RG&E indicated that the question is clear.

D-RAI 2.3.4.3 -8

On LR boundary drawing 33013-1237-LR, Y-strainers at locations C4, G4 and J4 are shown to be subject to an AMR; however, the strainers are not included in Table 2.3.4-3 of the LRA. These components serve a pressure boundary function and are long-lived and passive. Therefore, they should be within the scope of LR and subject to an AMR per 10 CFR 54.4(a) and 54.21(a)(1). Justify the exclusion of the strainers from an AMR.

Response: Question resolved (refer to Enclosure 3).

D-RAI 2.3.4.3 -9

LR boundary drawing 33013-1234-LR depicts a diaphragm within the condensate storage tank. However, the diaphragm is not included as a component in Table 2.3.4-3. The diaphragm

exists to minimize the oxygen content which is an influence in feedwater system corrosion. Explain why the condensate storage tank diaphragm does not require an AMR?

Response: Question resolved (refer to Enclosure 3).

D-RAI 2.3.4.3 -10

In Section 10.5.3.1.4 of the Ginna UFSAR, it states that connections have been provided allowing the use of the yard fire hydrant system to fill the condensate storage tanks as a source of water for the motor driven and turbine driven pumps. The staff could not identify these connections on the LR boundary drawings. Based on the statement in the UFSAR, it appears that the hydrant connections should be within the scope of LR and subject to an AMR. Explain why such connections do not require an AMR.

Response: RG&E indicated that the question is clear.

D-RAI 2.5 -1

Section 2.5 of the LRA indicates that the electrical and I&C components have been screened and evaluated on a plant-wide basis as component commodity groups rather than on a system basis. However, section 2.5 of the application states: Reviewers are cautioned to understand that the system level descriptions presented in this section were not required, needed, or used in the performance of the electrical and I&C components AMR.

This statement appears to conflict with Section 2.1.7.4 of the application that states:
Using these results, component specific scoping may be performed to limit the number of components for which aging management activities are required, or eliminate aging management activities altogether if nothing remains in the material/environment group population.

Identify the components that were eliminated from aging management activities through component specific scoping, and provide the scoping justification for doing it.

Response: Question to be combined with D-RAI 3.7 -2.

D-RAI 2.5 -2

Provide an electrical one-line diagram of the offsite power circuits that are included within the scope of LR. Include on the diagram the electrical and physical location of the component/commodity groups listed in Table 2.5.8-1, Offsite Power.

In addition, list any circuits rated at 4.16 kV or above that are located underground within the scope of LR?

Response: RG&E indicated that the question is clear.

D-RAI 2.5 -3

Section 2.5.8 of the LRA indicates that the 115 kV switchyard (Station 13A) is not included within the scope of LR. In the Ginna design there are two 34.5 kV circuit breakers shown in UFSAR Figure 8.1-1 upstream of station auxiliary (startup) transformers 12A and 12B. State whether both these circuit breakers and their associated control wiring and structures are included within the scope of LR? Identify if the protective devices for transformers 12A and 12B trip these circuit breakers or do they trip the circuit breakers further upstream at Station 13A (the source for transformer 12B) and Station 204 (the source for transformer 12A)? In addition, state whether the Ginna operators use the 34.5 kV breakers shown in the UFSAR figure to isolate the station auxiliary (startup) transformers or do they use the circuit breakers further upstream at Stations 13A and 204?

Response: NRC staff to clarify question in final RAI.

D-RAI 3.4 -1

Section 2.3.3.6 of the LRA identifies fire breaks (fire stops) intended to limit flame propagation along cable tray runs. The AMR addresses these "fire stops" in Table 3.4.2, line numbers 311 through 318. Section 9.5.1.1.2 of the UFSAR references the use of fire retardant cable coatings for some cable concentrations for cables which did not meet IEEE 383 flame spread criteria. These coatings are not referenced as a commodity class in the electrical sections 2.5 and 3.7 of the LRA. Confirm that the fire-retardant cable coatings are in the scope of LR and clarify whether these coatings are included as a part of the AMR for "fire stops."

Response: Question resolved (refer to Enclosure 3).

D-RAI 3.4 -2

10 CFR 50.48, Appendix R, Section O, establishes requirements for oil collection systems on reactor coolant pumps. Section 2.3.3.6 of the LRA references the fire prevention features of oil collection systems. The reactor coolant pump oil collection systems are not addressed either in Section 3.2 on the reactor coolant system or Section 3.4 as part of the fire protection systems. Clarify where in the LRA the AMRs and AMPs for the reactor coolant pump oil collection systems are addressed.

Response: Question resolved (refer to Enclosure 3).

D-RAI 3.7 -1

Section 3.7 of the application, under the heading Environment states that a review of plant design documentation was performed to quantify the environmental conditions to which Ginna Station equipment is exposed. State whether actual temperatures of the electrical equipment areas were measured, and whether walkdowns of these areas performed for LR? If not, how was the design documentation validated, and how were adverse localized environments in the electrical equipment areas identified?

Response: RG&E indicated that the question is clear.

D-RAI 3.7 -2

Section 3.7 of the application, under the heading Environment, states that Ginna has four medium voltage power cables installed in underground duct banks, and it was determined that a failure of these cables would not prevent the satisfactory accomplishment of any intended function. Please identify the loads that these cables power, and provide the rationale used to determine that the failure of the cables would not prevent the accomplishment of any intended function.

Does Ginna have any other underground circuits in the 2 kV or higher voltage range (including 34.5 kV circuits)? If so, please identify the loads that these cables power, and provide the rationale used to determine that the failure of the cables would not prevent the accomplishment of any intended function.

Response: Question to be combined with D-RAI 2.5 -1.

D-RAI 3.7 -3

Statements made in Section 3.7 and Table 3.7-1 of the LRA seem to indicate that for the Electrical Cables and Connections Not Subject to 10 CFR 50.49 Environmental Qualification Requirements Program, all the accessible cable and connections (not just samples) within the identified plant buildings/areas will be visually inspected; and the inspections will include the entire building/area and not be limited to only adverse localized environments within those buildings/areas.

Section 3.7 of the application, under Aging Effects Requiring Management, states that thermal life was not used to determine the scope of components in the Electrical Cables and Connections Not Subject to 10 CFR 50.49 Environmental Qualification Requirements Program. With regard to radiolysis and radiation induced oxidation it's also stated that the results of the review were not used to determine the scope of the components in the Electrical Cables and Connections Not Subject to 10 CFR 50.49 Environmental Qualification Requirements Program. It's further indicated in Section 3.7 that that the non-EQ cable and connection program includes all in-scope, electrical cables and connections within specified plant spaces, and adequately addresses aging effects due to thermal conditions and radiation.

In Table 3.7-1 of the application, under the Item (2) Discussion, it states that all material/environment combinations will be included under the scope of the program using an encompassing approach. In Section B2.1.11; however, under Program Description, it's stated that selected cables and connections from accessible areas (the inspection sample) are inspected and represent, with reasonable assurance, all cables and connections in the adverse localized environments. It's also indicated in Section 3.7, under Environment, that Ginna Station has identified specific plant spaces that may lead to cables exceeding 80% of ampacity due to cable tray fill deratings; and these areas are included in the non-EQ cable and connection program.

It is not clear from the above statements whether the inspections under the Electrical Cables and Connections Not Subject to 10 CFR 50.49 Environmental Qualification Requirements Program will be limited to samples within adverse localized environments, or wether all cables

and connections within the designated buildings/areas will be inspected. If only a sample of all cables and connections are inspected, provide the technical basis for the sample. Indicate whether the sample will include the PVC cables in containment identified in Item (2) of Table 3.7-1.

Response: Question to be combined with D-RAI 3.7 -12.

D-RAI 3.7 -4

Section B2.1.11.1 of the application specifies the inspection program for electrical cables and connectors not subject to 10 CFR 50.49 Environmental Qualification and identifies the plant buildings/areas that the visual inspections will be conducted in. Have any plant buildings/areas containing non-EQ cables and connections been excluded from that list (other than the identified Appendix R equipment storage area)? If buildings/areas have been excluded please identify them and provide the reason for excluding them.

Response: Question resolved (refer to Enclosure 3).

D-RAI 3.7 -5

The discussion in Item (3) of Table 3.7-1 of the application states that external inspection of cables and connectors and their host environments identifies the possibility of thermal aging long before instrument loop adjustments can't compensate for current leakage.

Provide some evidence or operational experience that indicates this statement is true for non-EQ radiation monitoring and nuclear instrumentation cables. Such evidence could be examples of non-EQ radiation monitoring and nuclear instrumentation cables in the field or following accelerated aging tests that exhibited visual signs of thermal aging, even though their associated instrumentation circuits still successfully passed calibration tests with no signal anomalies found.

Response: NRC staff to clarify question in final RAI.

D-RAI 3.7 -6

The discussion in Item (3) of Table 3.7-1 of the application indicates that surveillance, such as calibration, may not be as good a choice as visual inspection to detect aging effects in low signal level instrumentation cable. It states that the predominate cause of non-event driven degradation in cable and connector insulation is thermal aging.

Another potential cause of cable degradation is moisture. Chapter 3 of EPRI report TR-103834-P1-2, "Effects of Moisture on the Life of Power Plant Cables," identifies some water-related problems with instrumentation type circuits. The Operating Experience Summary states that the first problem type, affecting the noise immunity of instrumentation circuits, was due to submergence degrading the jackets of instrumentation and coaxial cables. It would appear from this statement that activities such as checking for increases in signal distortion level or other signal anomalies during the calibration process, would add additional benefit to the calibration surveillance and make it a more effective tool for detecting cable aging effects.

This could be of particular benefit to the highly sensitive radiation monitoring and nuclear instrumentation circuits, on the portion of the cable run that is located in conduit, subject to moisture intrusion, and not capable of being visually checked.

Provide a description of your AMP, in accordance with the requirements of 10 CFR 54.21(a)(3), used to detect cable-in-conduit aging effects that can increase signal distortion level or other signal anomalies in non-EQ radiation monitoring and nuclear instrumentation circuits; or provide justification why such a program is not needed.

Response: RG&E indicated that the question is clear.

D-RAI 3.7 -7

The discussion in Item (1) Electrical Phase Bus of Table 3.7-2 of the application indicates that because a one-time inspection found no aging effects requiring management (AERM), no additional AMPs are required through the period of extended operation. The potential AERMs identified in item (1) for the electrical phase bus appear to all be associated with the insulating components of the bus, and none with the metallic components.

Has the applicant considered oxidation and corrosion of the metallic components, or loosening of the fastener components? For example, oxidation of aluminum electrical connections can be problematic. The oxidation can create a high resistance connection resulting in additional heating at the connection and further oxidation until failure occurs.

With regard to the fasteners, reference 1 to Section 3.7 of the application, Aging Management Guideline for Commercial Nuclear Power Plants, on page 4-38 states:

Circuits exposed to appreciable ohmic or ambient heating during operation may experience loosening related to the repeated cycling of connected loads or of the ambient temperature environment ... Repeated cycling in this fashion can produce loosening of the termination under ambient conditions, and may lead to high electrical resistance joints or eventual separation of the termination from the conductor.

Please provide a description of your AMP, in accordance with the requirements of 10 CFR 54.21(a)(3), used to detect aging effects associated with oxidation and corrosion of metallic components, and loosening of fastener components in the electrical phase bus; or provide justification why such a program is not needed.

Response: RG&E indicated that the question is clear.

D-RAI 3.7 -8

The discussion in Item (2) Switchyard Bus of Table 3.7-2 of the application states:
Plant operating experience reviews show that the activities performed by the Energy Delivery Department on the Switchyard Buses are effective in managing Switchyard Bus components.

It appears that the activities performed by the Energy Delivery Department constitute the makings of an AMP for the switchyard bus that should be included under LR in accordance with

the requirements of 10 CFR 54.21(a)(3). Please describe the ten attributes of the switchyard bus AMP consistent with the guidance provided in Branch Technical Position RLSB-1 of the staff's LR Standard Review Plan (NUREG-1800). Include a discussion in your response addressing the potential for loosening of the fastener components (bolts, washers, nuts, etc.) described in Question 3.7-7 above.

Response: RG&E indicated that the question is clear.

D-RAI 3.7 -9

The discussion in Item (3) High Voltage Insulators of Table 3.7-2 of the application states: Plant operating experience reviews show that the activities performed by the Energy Delivery Department on the High Voltage Insulators are effective in managing Phase Bus components.

It appears that the activities performed by the Energy Delivery Department constitute the makings of an AMP for the high voltage insulators that should be included under LR in accordance with the requirements of 10 CFR 54.21(a)(3). Please describe the ten attributes of the high voltage insulator AMP consistent with the guidance provided in Branch Technical Position RLSB-1 of the staff's LR Standard Review Plan (NUREG-1800).

Response: RG&E indicated that the question is clear.

D-RAI 3.7 -10

Section B2.1.11.7 of the application describes the corrective actions attribute of the Electrical Cables and Connections Not Subject to 10 CFR 50.49 Environmental Qualification Requirements Program. It indicates that all unacceptable visual indications of cable and connection jacket surface anomalies are subject to an engineering evaluation that will consider the age and operating environment of the component.

Will the engineering evaluation consider the potential for moisture in the environment of cables and connections that are found to have jacket surface anomalies? Several aging management references (SAND96-0344, EPRI TR-103834-P1-2, and Aging and Life Extension of Major Light Water Reactor Components edited by V.N. Shaw and P.E. MacDonald) indicate that a moist environment can hasten the failure of circuits that have previously undergone age-related degradation from other means, such as thermal or radiation exposure. If your engineering evaluation does not consider the potential for moisture in the area of degraded cables and connections, please provide the technical basis for why it has been excluded.

Response: RG&E indicated that the question is clear.

D-RAI 3.7 -11

Section 2.1.6 of the application discusses the general process used during the LR Integrated Plant Assessment at Ginna Station for each of six issues the staff has identified in interim staff guidance. The treatment of electrical fuse holders is one of the issues addressed. The final staff position on this issue is under development. In the interim you should provide a

commitment to implement the final staff guidance on this subject at Ginna. Please provide this commitment.

Response: NRC staff to clarify question in final RAI.

D-RAI 3.7 -12

Section A2.1.9 of the application provides the Ginna UFSAR supplement for the Electrical Cables and Connections Not Subject to 10 CFR 50.49 Environmental Qualification Requirements Program. The description of that program indicates that the inspections are made in accessible areas exposed to adverse localized environments. Limiting the inspections to accessible areas exposed to adverse localized environments may not be consistent with discussions in other sections of the Ginna application (see Question 3.7-3 above). If it is not consistent, revise the UFSAR supplement as necessary in order to make it consistent with other sections of the GINNA application.

Response: Question to be combined with D-RAI 3.7 -3.

CONFERENCE CALL WITH ROCHESTER GAS AND ELECTRIC CORPORATION (RG&E)
R. E. GINNA
LICENSE RENEWAL APPLICATION
RESOLUTION OF DRAFT REQUESTS FOR ADDITIONAL INFORMATION

JANUARY 15 AND 21, 2003

During the January 15 and 21, 2003, conference calls with representatives of RG&E, the NRC staff (the staff) discussed draft requests for additional information (D-RAIs) it had prepared for the R. E. Ginna (Ginna) license renewal application (LRA). The following D-RAIs were resolved during the call and will not be issued as a final RAI to the applicant because the information was in the LRA or other docketed material.

D-RAI 2.3 -3

A number of tables in the LRA (for example, see Tables 2.3.3-9 and 2.3.3-10 for containment ventilation and essential ventilation systems, respectively) include the component group "CS Components." Section 3.1.12 of the LRA defines "CS Components" as a generic commodity group that accounts for the presence of external surfaces of carbon steel components which are subject to the effects of aging by potential exposure to borated water leaks. The LRA also states that the normal external operating environment is evaluated with the specific system identified components. A similar generic commodity group is defined for closure bolting.

The scoping and screening process for LR entails a staff review of individual system components to verify whether all components meeting the requirements of 10 CFR 54.4(a) have been identified by the applicant as being within the scope of LR. Grouping components constructed of the same material and exposed to the same environment (and therefore susceptible to the same aging effects) may facilitate the aging management review (AMR) process. However, other component groups identified in the LRA tables list specific component types, some of which are also fabricated from carbon or low-alloy steel. The commodity group "CS Components" may overlap with other components included in other component groups. The staff is therefore unable to determine which specific components fall under this grouping.

For each of the systems containing components within the "CS Components" group, clarify how it may be determined that specific system-identified components are part of the "CS Components" commodity group.

Resolution: The applicant presented the information in the LRA in a manner that is consistent with the GALL report. LRA section 3.1.12, page 3-6, describes the generic component asset carbon steel (CS) and describes what types of components would be classified as CS.

D-RAI 2.3.1 -1

Pursuant to 10 CFR 50, App. R, Section III O, the reactor coolant pump (RCP) lube oil collection subsystem is designed to collect oil from the RCPs and drain it to a collection tank to prevent a fire in the Containment Building during normal plant operations. The staff believes that the subsystem and the tank should be within scope requiring aging management. However, it appears that the subject components were not identified in the LRA (Tables 2.3.1-1 or 2.3.3-6); and therefore, the staff requests the applicant to provide an explanation.

Resolution: The information requested by the staff is contained in Table 2.3.3-6 on page 2-128 of the LRA. Several component groups in the table reference line number (6) of Table 3.4-1 on page 3-103. Line item (6) references components in the RCP oil collection system of fire protection.

D-RAI 2.3.1 -4

The pressurizer spray head was not identified in the LRA (Table 2.3.1-4) as within the scope of LR. In addition, it was stated in the LRA (Table 3.2-1, pg.3-45) that the pressurizer spray head performs no LR intended functions at Ginna Station. The staff requests the applicant to clarify if the current licensing basis (CLB) for fire protection (FP) complies with certain sections of Appendix R, particularly Section III.G, which provides the requirements for the fire protection safe shutdown capability. Discuss if the pressurizer spray head and associated piping are credited and relied upon in the fire protection safe shutdown analysis to bring the plant to cold shutdown conditions within a given time for compliance with Appendix R. If it is credited in the fire protection safe shutdown analysis, the pressurizer spray head and associated piping would satisfy 10 CFR 50.48, Appendix R requirements, and therefore, should be included within the scope of LR. The specific intended function of the subject components which meets the 10 CFR 54.4(a)(3) requirements is the spray function (not pressure boundary function), and the particular components which help perform this function are the section of piping and the spray head located inside the pressurizer. The subject components do not have pressure boundary function. The staff believes that with the loss of spray function, it may not be possible to bring the plant to cold shutdown conditions within a given time for compliance with Appendix R, and therefore, the spray head and associated piping inside pressurizer, and the spray function should be identified as within the scope of LR. Furthermore, the applicant should propose an AMP for the spray head and associated piping inside pressurizer which provides a reasonable assurance that adequate spray function will be maintained during the extended period of operation.

Resolution: The applicant stated that LRA is correct and the pressurizer spray head is not in scope of LR. The pressurizer spray head is not credited and relied upon in the fire protection safe shutdown analysis as indicated in Appendix R.

D-RAI 2.3.1 -5

Steam generator (SG) tube plugs were not identified in the LRA (Table 2.3.1-5) as within the scope of LR. The subject components perform pressure boundary function, and therefore, should be within scope. The staff requests the applicant to confirm that there are no SG tube

plugs inside the SGs at Ginna. If there are tube plugs inside the SGs, then the applicant should identify them within scope, and submit an AMR for them.

Resolution: The information requested by the staff is contained in Table 2.3.1-5 on page 2-57 of the LRA. Table 2.3.1-5 lists the sub-component U-tubes which references line number (15) of Table 3.2-1 on page 3-49. Line item (15) lists the component steam generator tube, repair sleeves, and plugs.

D-RAI 2.3.3.4 -2

The following waste disposal system components are not highlighted on the LR boundary drawings identified below as subject to an AMR, although they are relied upon to contain radiological releases in the event of an accident. Please confirm if these components are subject to an AMR. If not, justify their exclusion.

Drawing	Location	Components
33013-1270, 1	D1-2, E1-2, F1-2	Piping and valves from the aux. building sump to aux building sump tank pumps “A” and “B” to the waste holdup tank aux. building sump tank pumps “A” and “B.”
33013-1272, 1	I4, I5	Containment sump pumps “A” and “B”, piping, and valves from the pumps to penetration P107.
33013-1272, 2	G5-7	Piping run from valve 1731, 1001, and 1073 connected to in-scope piping to waste holdup tank.
	J4	Vertical ball valve 1020C from aux. bldg. sub basement and piping to aux. bldg. sump.
	J2-4	Buried piping from aux. bldg. sump to sump tank.

Resolution: The applicant stated that the LRA is correct. The subject waste disposal system components are not SC-1, SC-2, or SC-3 as indicated on drawings 33013-1270 and 33013-1272, and therefore not in scope of LR. The applicant stated that the components do not serve the intended function of containing radiological releases that could exceed the limits specified in 10 CFR 100. Some components of the waste management system are in scope of LR as a result of SEP Topic 4.25.3, “Flooding Due to Failure of Tanks,” as discussed in NUREG -0821.

D-RAI 2.3.3.8 -6

Hose connectors are shown on LR boundary drawing 33013-1250, 1-LR at locations C6 and E6; however, the hose connectors are not shown to be subject to an AMR. In Section 2.3.3.6 of the LRA, "Fire Protection," the applicant states that the fire water system can be used as a backup for the service water system supply to the diesel generator lube oil coolers and jacket water heat exchangers via temporary hoses. In Section 3.2.2.1.4 of the Ginna UFSAR it states

that fire hose connectors have been provided for the diesel generators and for the standby auxiliary feedwater system to allow safe shutdown operation even in the event of a loss of the service water pumps. Section 3.4.1.1.3 of the Ginna UFSAR states that emergency procedures provide for installation of flood barriers and for connection of the alternative cooling water supply to the diesel generator, assuming service water will be lost as a result of flooding of the screen house. Table 7.4-4 and Section 9.5.5 of the Ginna UFSAR identify the local connection between underground yard fire water hydrant and emergency diesel generator using a fire hose to provide alternative emergency diesel generator cooling. The hose connectors shown on drawing 33013-1250,1-LR at locations C6 and E6 are relied upon to provide the alternative cooling to the diesel generators in the event of a loss of the service water pumps, which may result from a design basis flood. Therefore, these connections should be subject to an AMR. Clarify if the connections in question are in deed those that provide the means of alternative cooling via the fire water system. If so, justify their exclusion from being subject to an AMR in accordance with the requirements of 10 CFR 54.4(a) and 10 CFR 54.21(a)(1).

Resolution: The applicant stated that the exclusion of the piping segments was a drafting error and should be in the scope of LR. Section 2.1.5.6 on page 2-12 of the LRA states that all structures and systems that contain components used for fire protection of SSCs important to safety are within the scope of LR. This section of piping is identified as safety significant in accordance with drawing 33013-1250, 1-LR

D-RAI Generic HVAC -1

LR boundary drawings for the containment ventilation system (33013-1863-LR) and the essential ventilation systems (33013-1256, 1867, 1868, 1869, 1872, 1873-LR) show both fixed and adjustable louvers at numerous air intake and air exhaust locations. Some of these louvers are identified as being subject to an AMR. In addition, the LRA text discusses the presence of louvers for many of the ventilation systems. Fixed louvers and the housings of the adjustable louvers are passive, long-lived components. Age-related degradation could adversely impact proper ventilation to safety-related components and structures. However, fixed louvers and the housings of adjustable louvers are not listed as component groups from LRA Table 2.3.3-9 or Table 2.3.3-10. Justify the exclusion of the fixed louvers and adjustable louver housings as component groups in LRA Tables 2.3.3-9 and 2.3.3-10.

Resolution: The applicant stated that the louver housings are included in the scope of LR as depicted on the applicable boundary drawings. The louver housings doe not have specific equipment identification numbers and are considered to be part of ventilation ductwork. LRA tables 2.3.3-9 and 2.3.3-10 identified ventilation ductwork as in scope of LR. Section 2.1.4 on page 2-5 of the LRA states that components designated as SC-1, SC-2, or SC-3 are classified as safety-related and, as such, are necessarily within the scope of LR. The louvers are classified as either SC-2 or SC-3 as indicated on the referenced LR drawings.

D-RAI Generic HVAC -2

Several of the LR boundary drawings for the containment ventilation systems (33013-1863-LR and 33013-1866-LR) and for the essential ventilation systems (33013-1256, 1863, 1867, 1869-LR) show access doors at numerous system locations. Many of these locations are shown in cyan as being subject to an AMR. Access doors and associated bolting and gaskets are passive, long-lived components whose failure or degradation with age could adversely impact the intended function of associated systems to provide a pressure boundary. However, access doors are not listed as a component group in LRA Tables 2.3.3-9 and 2.3.3-10. Justify the exclusion of access doors as a component group from LRA Tables 2.3.3-9 and 2.3.3-10.

Resolution: The applicant stated that the access doors in the ventilation systems are included in the scope of LR as depicted on the applicable boundary drawings. The access doors are considered to be part of ventilation ductwork. Section 2.1.4 on page 2-5 of the LRA states that components designated as SC-1, SC-2, or SC-3 are classified as safety-related and, as such, are necessarily within the scope of LR. LRA tables 2.3.3-9 and 2.3.3-10 identified ventilation ductwork as in scope of LR.

D-RAI Generic HVAC -6

Miscellaneous components such as diffusers, deflectors, turning vanes, test connections, and access doors are typically present in ventilation systems, but are not identified in LRA Tables 2.3.3-9 and 2.3.3-10. These components are both passive and long-lived, and therefore, should be subject to an AMR. Confirm that these components are not used in the ventilation systems for Ginna, or identify where such components are addressed as being subject to an AMR.

Resolution: The applicant stated that diffusers, deflectors, turning vanes, test connections, and access doors in the ventilation systems are included in the scope of LR as depicted on the applicable boundary drawings. These components are considered to be part of ventilation ductwork. Section 2.1.4 on page 2-5 of the LRA states that components designated as SC-1, SC-2, or SC-3 are classified as safety-related and, as such, are necessarily within the scope of LR. LRA tables 2.3.3-9 and 2.3.3-10 identified ventilation ductwork as in scope of LR.

D-RAI 2.3.3.9 -2

LR boundary drawing 33013-1866-LR shows that the vacuum pump at location G9 is within the LR boundary. However, LRA Table 2.3.3-9 does not include pump casings as a component group. Pump casings are passive long-lived components and provide the LR intended function of a pressure boundary. Justify the exclusion of pump casings from LRA Table 2.3.3-9.

Resolution: The applicant stated that the pump casing is included in section 2.3.3.13, radiation monitoring. Table 2.3.3-13 on page 2-169 of the LRA lists pump casing as a component group.

D-RAI 2.3.3.10 -2

LRA Table 2.3.3-9 ("Containment Ventilation") lists piping and valve bodies as individual component groups while LRA Table 2.3.3-10 ("Essential Ventilation Systems") does not include either group. Verify that no piping or valves in the essential ventilation systems are within the scope of LR and subject to an AMR.

Resolution: The applicant stated that the LRA is correct.

D-RAI 2.3.3.12 -2

LR boundary drawing 33013-1908,3 at location A3 shows a section of piping between valves 5021 and 5022A as subject to AMR. Clarify if this is a typographical error or justify the open pressure boundaries for this segment of piping.

Resolution: The staff was unable to determine the justification for inclusion of this section of piping in the scope of LR in accordance with 10 CFR 54.4(a) and 10 CFR 54.21(a)(1). The applicant stated that the inclusion of this segment of piping was a drafting error and should not be in the scope of LR. This section of piping is not classified as SC-1, SC-2, or SC-3 on drawing 33013-1908, 3.

D-RAI 2.3.3.14 -1

LRA Section 2.3.3.14 states that the circulating water (CW) system performs intended functions within the scope of LR. However, the components of the CW system that perform intended functions are evaluated with the service water and reactor protection systems. Identify these components, the intended functions they perform, and if they are subject to an AMR.

Resolution: This question was asked as part of question D-RAI 2.2 -1 in the November 26, 2002 telephone conference. This applicant indicated that question D-RAI 2.2 -1 was clear.

D-RAI 2.3.4.2 -2

On license LR drawing 33013-1236, 2-LR, the piping/tubing to temperature element TE 2096 at location A3 is shown as subject to an AMR; however, the piping/tubing to TE 2097 at location J3 is not. Failure of the piping/tubing to TE 2097 could degrade the pressure boundary function of the feedwater line and the performance of this temperature element. Clarify if this is a typographical error, or if this piping/tubing should be subject to an AMR.

Resolution: This applicant stated that the LRA is correct. The tubing to TE 2096 is SC-2 since it is part of the containment boundary and is therefore in scope of LR. The tubing to TE 2097 is not part of a containment boundary; it is not classified as SC-1, 2, or 3 and therefore not in scope of LR.

D-RAI 2.3.4.3 -1

Fire hose connections are shown on LR boundary drawing 33013-1238-LR at locations B3 and J3; however, the hose connections are not shown to be subject to an AMR. In Section 2.3.3.6 of the LRA, "Fire Protection," the applicant states that the fire water system can be used as a backup for the service water system supply to spent fuel pool heat exchanger "A", the standby spent fuel pool heat exchanger, motor driven auxiliary feedwater pumps, standby auxiliary feedwater pumps, and the diesel generator lube-oil coolers and jacket water heat exchangers via temporary hoses. In Section 3.2.2.1.4 of the Ginna UFSAR it states that fire hose connections have been provided for the diesel generators and for the standby auxiliary feedwater system to allow safe shutdown operation even in the event of a loss of the service water pumps. In Section 10.5.2.3 of the Ginna UFSAR it states that connections to utilize the yard fire hydrant loop have been installed and procedures put in place to use this source if the service water supply from the screen house is lost. The hose connections shown on LR boundary drawing 33013-1238-LR at locations B3 and J3 are relied upon to provide the alternative cooling to the standby auxiliary feedwater pumps in the event of a loss of service water. Therefore, per 10 CFR 54.4(a) and 54.21(a)(1) these connections should be within the scope of LR and subject to an AMR. Justify the exclusion of these hose connections from an AMR.

Resolution: The applicant stated that the exclusion of the piping segments was a drafting error and should be in the scope of LR. Section 2.1.5.6 on page 2-12 of the LRA states that all structures and systems that contain components used for fire protection of SSCs important to safety are within the scope of LR. Section 2.1.4 on page 2-5 of the LRA states that components designated as SC-1, SC-2, or SC-3 are classified as safety-related and, as such, are necessarily within the scope of LR. This section of piping is classified as SC-3 on drawing 33013-1238-LR.

D-RAI 2.3.4.3 -5

On LR boundary drawings 33013-2285-LR at location D8, and 33013-1238-LR at locations A4 and I4, a level or sight glass is not shown to be subject to an AMR. However, Table 2.3.4-3 of the LRA indicates that a component group "Level Glass" is subject to an AMR. Clarify if this is a typographical error, or justify their exclusion from an AMR.

Resolution: The applicant stated that the exclusion of the sight glass was a drafting error and should be in the scope of LR. LRA table 2.3.4 -3 on page 2-199 is correct. The plant drawings are not considered part of the LRA and are included to aid the staff in the LRA review.

D-RAI 2.3.4.3 -8

On LR boundary drawing 33013-1237-LR, Y-strainers at locations C4, G4 and J4 are shown to be subject to an AMR; however, the strainers are not included in Table 2.3.4-3 of the LRA. These components serve a pressure boundary function and are long-lived and passive. Therefore, they should be within the scope of LR and subject to an AMR per 10 CFR 54.4(a) and 54.21(a)(1). Justify the exclusion of the strainers from an AMR.

Resolution: The applicant stated that the Y-strainers are within scope of LR as depicted on drawing 33013-1237-LR. These components are part of the service water system and included in Table 2.3.3-5 on page 2-121. Section 2.3.5 lists drawing 33013-1237 as a drawing for the service water system.

D-RAI 2.3.4.3 -9

LR boundary drawing 33013-1234-LR depicts a diaphragm within the condensate storage tank. However, the diaphragm is not included as a component in Table 2.3.4-3. The diaphragm exists to minimize the oxygen content which is an influence in feedwater system corrosion. Explain why the condensate storage tank diaphragm does not require an AMR?

Resolution: The information requested by the staff is contained in Table 3.5-2 on page 3-208. Table 2.3.4-3 identifies the component group tank. This item references Table 3.5-2 line number (50). Line number (50) identifies the tank material neoprene.

D-RAI 3.4 -1

Section 2.3.3.6 of the LRA identifies fire breaks (fire stops) intended to limit flame propagation along cable tray runs. The AMR addresses these “fire stops” in Table 3.4.2, line numbers (311) through (318). Section 9.5.1.1.2 of the UFSAR references the use of fire retardant cable coatings for some cable concentrations for cables which did not meet IEEE 383 flame spread criteria. These coatings are not referenced as a commodity class in the electrical sections 2.5 and 3.7 of the LRA. Confirm that the fire-retardant cable coatings are in the scope of LR and clarify whether these coatings are included as a part of the AMR for “fire stops.”

Resolution: The applicant stated that the coatings are within scope of LR and the information requested is contained in Table3.4-2 on page 3-165 of the LRA . Line items (319) through (321) lists fire wrap material.

D-RAI 3.4 -2

10 CFR 50.48, Appendix R, Section O, establishes requirements for oil collection systems on reactor coolant pumps. Section 2.3.3.6 of the LRA references the fire prevention features of oil collection systems. The reactor coolant pump oil collection systems are not addressed either in Section 3.2 on the reactor coolant system or Section 3.4 as part of the fire protection systems. Clarify where in the LRA the AMRs and AMPs for the reactor coolant pump oil collection systems are addressed.

Resolution: The information requested by the staff is contained in Table 2.3.3-6 on page 2-128 of the LRA. Several component groups in the table reference line number (6) of Table 3.4-1 on page 3-103. Line item (6) references components in the RCP oil collection system of fire protection.

D-RAI 3.7 -4

Section B2.1.11.1 of the application specifies the inspection program for electrical cables and connectors not subject to 10 CFR 50.49 Environmental Qualification and identifies the plant buildings/areas that the visual inspections will be conducted in. Have any plant buildings/areas containing non-EQ cables and connections been excluded from that list (other than the identified Appendix R equipment storage area)? If buildings/areas have been excluded please identify them and provide the reason for excluding them.

Resolution: The information requested by the staff is contained in section 2.4.3 on page 2-324 of the LRA.