

September 8, 2003

LICENSEE: Rochester Gas and Electric Corporation

FACILITY: R.E. Ginna Nuclear Power Plant

SUBJECT: AUDIT REPORT RELATED TO THE LICENSE RENEWAL APPLICATION FOR
R.E. GINNA NUCLEAR POWER PLANT, JUNE 23 – 25, 2003
(TAC NO. MB5222)

The License Renewal and Environmental Impacts (RLEP) Branch conducted an audit at the R.E. Ginna Nuclear Power Plant in Ontario, N.Y. during the period of June 23 through June 25, 2003. The purpose of the audit was to verify the consistency of the applicant's aging management programs (AMPs) and time-limited aging analyses support activities described in the license renewal application (LRA) with the AMPs and time-limited aging analyses evaluations of aging management programs in NUREG-1801, "Generic Lessons Learned (GALL) Report." The NRC audit team examined 28 of the 33 programs that the applicant stated were consistent with GALL. The remaining five AMPs are site specific and were provided to the NRC technical staff (the staff) for review in the LRA and/or in the applicant's responses to final requests for additional information (F-RAI). Concurrent with this audit, the team performed a separate audit of specific issues raised by staff reviewers.

The audit team identified that the Fire Protection Program attributes for parameters monitored/inspected and detection of aging effects were not consistent with GALL as stated in the LRA. In addition, inconsistencies were identified in the Fire Water System Program attributes for detection of aging effects and parameters monitored/inspected. The team concluded that, with the exception of the Fire Protection Program and the Fire Water System Program, the applicant's AMPs were consistent with the GALL Report AMPs with differences/exceptions as stated in the LRA/F-RAIs. The applicant's response to these exceptions to GALL will be reviewed by the staff. Details of the audit are contained in the attached report.

/RA/

Russell J. Arrighi, Project Manager
License Renewal Section A
License Renewal and Environmental Impacts Program
Division of Regulatory Improvement Programs
Office of Nuclear Reactor Regulator

Docket No. 50-244

Attachment: As stated

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The audit team identified that the Fire Protection Program attributes for parameters monitored/inspected and detection of aging effects were not consistent with GALL as stated in the LRA. In addition, inconsistencies were identified in the Fire Water System Program attributes for detection of aging effects and parameters monitored/inspected. The team concluded that, with the exception of the Fire Protection Program and the Fire Water System Program, the applicant's AMPs were consistent with the GALL Report AMPs with differences/exceptions as stated in the LRA/F-RAIs. The applicant's response to these exceptions to GALL will be reviewed by the staff. Details of the audit are contained in the attached report.

/RAI

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License Renewal Section A
License Renewal and Environmental Impacts Program
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NAME	R. Arrighi	M. Jenkins	S. Lee	P.T. Kuo
DATE	8/18/2003	8/28/2003	8/28/2003	9/8/2003

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RLEP RF

R. Arrighi

M. Cora

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W. Borchardt

D. Matthews

F. Gillespie

C. Grimes

RidsNrrDe

E. Imbro

G. Bagchi

K. Manoly

W. Bateman

J. Calvo

P. Shemanski

H. Nieh

H. Walker

S. Black

B. Boger

D. Thatcher

R. Pettis

G. Galletti

C. Li

J. Moore

R. Weisman

M. Mayfield

A. Murphy

W. McDowell

S. Smith (srs3)

S. Duraiswamy

C. Munson

RLEP Staff

R. Clark

B. Platchek (RI)

A. Fernandez (OGC)

M. Kotzalas

U. S. NUCLEAR REGULATORY COMMISSION

NRR/DRIP/RLEP

Docket No: 50-244

License No: DPR-18

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

Facility: R. E. Ginna Nuclear Power Plant

Dates: June 23 - 25, 2003

Auditors: Russell Arrighi, Project Manager
Kenneth Chang, Project Manager
Noel Dudley, Senior Project Manager
Peter Kang, Nuclear Systems Engineer
Ram Subbaratnam, Project Manager

Observer: Samson Lee, Section Chief, NRR/DRIP/RLEP

AUDIT REPORT REGARDING CONSISTENCY WITH GALL
FOR THE R.E. GINNA NUCLEAR POWER PLANT
JUNE 23-25, 2003

The Standard Review Plan for Review of License Renewal Applications for Nuclear Power Plants (NUREG-1800) provides the NRC staff (the staff) guidance for reviewing a license renewal application (LRA). The Standard Review Plan allows an applicant to reference in its LRA the aging management programs (AMPs) described in NUREG-1801, "Generic Aging Lessons Learned (GALL) Report." By referencing the GALL AMPs, the applicant concludes that its AMPs correspond to those AMPs which are reviewed and approved in the GALL Report, and that no further NRC technical staff (staff) review is required. If an applicant credits an AMP for being consistent with a GALL program, it is incumbent on the applicant to ensure that the plant program contains all of the elements of the referenced GALL program. The applicant's determination should be documented in an auditable form and maintained on-site.

The purpose of the NRC audit was to confirm the applicant's determination of consistency between the applicant's AMPs and the AMPs described in the GALL Report. The audit team evaluated each of the 10 attributes of the applicant's AMP claimed to be consistent with GALL against the related attribute of the associated AMP described in the GALL Report. The audit team reviewed the applicant's license renewal aging management program basis documents, the AMPs described in the GALL Report, the applicant's responses to final requests for additional information (F-RAI), and selected implementing procedures. The audit team identified differences between the applicant's AMPs and the associated GALL AMPs. The team reviewed only those differences that may have constituted a deviation from the GALL Report that had not been previously submitted to the staff in the LRA and/or F-RAI responses.

The NRC audit team examined 28 of the 33 AMPs that the applicant stated were consistent with GALL. The remaining five AMPs are site specific and were provided to the staff for review in the LRA and/or in the applicant's responses to F-RAIs.

In addition, concurrent with this audit, the team performed a separate audit of specific issues raised by staff reviewers. The details of the audit finding are provided below.

Audit of Applicants Aging Management Programs:

B2.1.2 ASME Section XI, Subsections IWB, IWC, and IWD Inservice Inspection

In Appendix B, Section B2.1.2 of the LRA, the applicant stated that ASME Section XI, Subsection IWB and IWC, and IWD Inservice Inspection Program is consistent with GALL programs XI.M1, "ASME Section XI Inservice Inspection, Subsections IWB, IWC, and IWD," and XI.M3, "Reactor Head Closure Studs." The audit team reviewed license renewal aging management program basis document LR-IWBD-PROGPLAN, "ASME Section XI, Subsection IWB, IWC, and IWD Inservice Inspection Program," Revision 2.

The audit team identified a difference in the monitoring and trending attribute. The applicant's AMP referenced IWB-2420, "Successive Inspections," as the ASME Code Subsection concerning the frequency of the reexamination of flaw indications, while the GALL AMP references Subsection IWB-2410, "Inspection Program." The audit team reviewed the ASME

code and determined that Subsection IWB-2420 states that acceptable flaw indications are “reexamined during the next three inspection periods listed in the schedule of the inspection program for IWB-2400.” The applicant documented this difference in its corrective action program (corrective action tracking system item number 11315) and clarified the information in the program basis document.

On the basis of its review of this AMP, GALL AMPs XI.M1 and XI.M3, and the associated program basis document, the audit team determined that pending the revision discussed above, this AMP is consistent with the GALL Report.

B2.1.5 Bolting Integrity Program

In Appendix B, Section B2.1.5 of the LRA, the applicant stated that the Bolting Integrity Program is consistent with GALL program XI.M18, “Bolting Integrity.” The audit team reviewed license renewal aging management program basis document LR-BOLT-PROGPLAN, “Bolting Integrity Program,” Revision 0.

The audit team noted that the applicant did not reference NRC Bulletin 82-02 and GL 91-17 under the operating experience attribute as referenced in GALL. The applicant indicated that Bulletin 82-02 and GL 91-17 were utilized and agreed to clarify the operating experience attribute to include these references. The applicant documented this difference in its corrective action program (corrective action tracking system item number 11315) and revised the basis document to include the reference to NRC Bulletin 82-02 and GL 91-17 in the operating experience attribute.

On the basis of its review of this AMP, GALL AMP XI.M18, and the associated program basis document, the audit team determined that this AMP is consistent with the GALL Report.

B2.1.6 Boric Acid Corrosion

In Appendix B, Section B2.1.6 of the LRA, the applicant stated that the Boric Acid Corrosion Program has not been developed, but will be consistent with GALL program XI.M10, “Boric Acid Corrosion.” In response to F-RAI B2.1.6-1, the applicant stated that it had completed enhancements to the Boric Acid Corrosion Program. In response to F-RAI B2.1.6-2, the applicant stated that changes and lessons learned from the David-Besse reactor vessel head event had been incorporated into implementing procedure IP-IIT-7, “Boric Acid Corrosion Monitoring Program,” Revision 1.

The audit team reviewed license renewal aging management program basis document LR-BAC-PROGPLAN, “Boric Acid Corrosion Program,” Revision 0. The program basis document stated that the program was revised to account for boric acid wastage of non-RCS components and to include cable connectors and cable trays as well as other susceptible structures, systems, and components (SSC). The audit team reviewed the implementing procedure IP-IIT-7 and verified that the enhancements had been incorporated.

On the basis of the review of this AMP, GALL AMP XI.M10, the associated program basis document, and the revised implementing procedure, the audit team determined that this AMP is consistent with the GALL Report.

B2.1.13 Fire Protection

In Appendix B, Section B2.1.13 of the LRA, the applicant states that its Fire Protection Program is consistent with GALL program XI.M26, "Fire Protection." The audit team reviewed the license renewal aging management program basis document LR-FP-PROGPLAN, "Fire Protection Program," Revision 0.

In the program basis document, the applicant stated that the parameters monitored/inspected attribute associated with the frequency of halon system test frequencies is an exception to the associated AMP described in GALL. The audit team reviewed the applicant's procedure DA-ME-97-081, "Surveillance Frequency Engineering Evaluation," and confirmed that the program frequency for conducting halon tests is an exception to the GALL Report. The audit team considers this a deviation from the GALL Report identified in the LRA.

In the program basis document, the applicant stated that the detection of aging effects attribute includes exceptions to the GALL AMP related to the qualification of persons performing visual inspections. The audit team noted that this exception to the GALL Report was not identified in the LRA.

The audit team identified differences in the parameter monitored/audited attribute and the monitoring and trending attributes. The applicant's AMP for fire doors identifies a quarterly inspection frequency for fire doors, while the AMP described in the GALL Report identifies a bi-weekly inspection frequency. The audit team considers this difference to be a deviation from the GALL report.

The audit team determined that the Fire Protection Program is consistent with the AMP described in the GALL Report, with the exception of attributes for inspection frequencies of the halon system and fire doors, and the qualification of personnel performing visual inspections. This concern was provided to the applicant as RAI clarification C-RAI B2.1.13. The applicant's response to C-RAI B2.1.13 will be reviewed by the staff.

B2.1.14 Fire Water System

In Appendix B, Section B2.1.14 of the LRA, the applicant stated that its Fire Water System Program is consistent with GALL program XI.M27, "Fire Water System." The audit team reviewed the license renewal aging management program basis document LR-FWS-PROGPLAN, "Fire Water System Program," Revision 0.

In the program basis document, the applicant stated that the parameters monitored/inspected attribute includes exceptions to the GALL AMP related to periodic flow testing of infrequently used loops. The audit team noted that this exception to the GALL Report was not identified in the LRA.

The audit team identified differences in the detection of aging effects attribute. Sprinkler system components are not examined for evidence of microbiological fouling as indicated by GALL. In addition, the GALL recommends visual inspections of yard fire hydrants to be performed every six months, whereas the basis document specifies during windows of opportunities during maintenance activities. The GALL also specifies that fire hydrant flow tests

are performed annually and the basis document specifies on a periodic basis. The audit team considers these differences to be deviations from the GALL Report.

The audit team determined that the Fire Water System Program is consistent with the AMP described in the GALL Report, with the exception of attributes for parameters monitored/inspected, and detection of aging effects. The applicant provided a response to this issue in its August 8, 2003, transmittal. The applicant's response will be reviewed by the staff.

B2.1.18 Inspection of Overhead Heavy Loads

In Appendix B, Section B2.1.18 of the LRA, the applicant stated that the Inspection of Overhead Heavy Loads and Light Load (Related to Refueling) Handling System Program is consistent with GALL program XI.M23, "Inspection of Overhead Heavy Loads and Light Load (Related to Refueling) Handling System." The audit team reviewed the license renewal aging management program basis document LR-0612-PROGPLAN, "Inspection of Overhead Heavy Loads Program," Revision 0.

The audit team identified a difference in the detection of aging effect attribute. The applicant's AMP attribute for detection of aging effects identifies visual inspections, while the GALL AMP identifies visual inspections and functional tests. The audit team determined that information in the program basis document indicates that functional tests of the cranes are required. The applicant placed this item in its corrective action program (corrective action tracking system item number 11315) and revised the basis document to specify the functional test requirement in the detection of aging effect attribute.

On the basis of its review of this AMP, GALL AMP XI.M23, and the associated program basis document, the audit team determined that this AMP is consistent with the GALL Report.

B2.1.21 One-Time Inspection

In Appendix B, Section 2.1.21 the LRA, the applicant stated that the One-Time Inspection Program will be consistent with GALL program XI.M32, "One-Time Inspection." The audit team reviewed the license renewal aging management program basis document LR-OTI-PROGPLAN, "One-Time Inspection Program," Revision 0.

The audit team identified differences in the detection of aging effects attribute. The applicant's AMP inspection includes bounding or lead components most susceptible to aging due to time in service, severity of operating conditions, and operating experience; however, it does not reference components with the lowest design margin as indicated in GALL. In addition, for small bore piping, the program basis document does not state that inspection locations would also be based on NRC Information Notice (IN) 97-46 as stated in GALL.

The applicant documented these differences in its corrective action program (corrective action tracking system item number 11315) and revised the attribute for detection of aging effects to specify that locations for inspection would include lowest design margin and IN 97-46 for determining inspection locations.

On the basis of its review of this AMP, GALL AMP XI.M32, and the associated program basis document, the audit team determined that this AMP is consistent with GALL.

B2.1.26 Reactor Vessel Head Penetration Inspection Program

In Appendix B, Section B2.1.26 of the LRA, the applicant stated that the Reactor Vessel Head Penetration Inspection Program is consistent with GALL program XI.M11, "Nickel-Alloy Nozzles and Penetrations." The audit team reviewed the license renewal aging management program basis document LR-RVH-PROGPLAN, "Reactor Vessel Heads Penetration Inspection Program," Revision 0.

Under the detection of aging effects attribute, the team noted that the applicant cited VT-5, enhanced visual inspection for bare metal, to detect aging effects. The audit team informed the applicant that the VT-5 technique was only proposed to the Code and had not been approved by the staff. The applicant documented this differences in its corrective action program (corrective action tracking system item number 11315) and revised the basis document to eliminate the reference to the VT-5 inspection technique.

The audit team determined that AMP B2.1.26 of the LRA is consistent with AMP XI.M11 described in the GALL Report.

B2.1.28 Reactor Vessel Surveillance Program

In Appendix B, Section B2.1.28 of the LRA, the applicant stated that the Reactor Vessel Surveillance Program is consistent with GALL program XI.M31, "Reactor Vessel Surveillance." The audit team reviewed the ten attributes in the LRA against GALL.

The audit team noted that the scope of program attribute states that the program addresses only upper-shelf energy, whereas GALL also references pressure-temperature limits. The LRA states that other analyses are addressed separately. The team also noted that GALL references NRC RG 1.99 Revision 2, while AMP B2.1.28 fails to mention how RG 1.99 is utilized. The adequacy of this AMP is being reviewed by the NRC staff in response to F-RAI's.

B2.1.31 Steam Generator Tube Integrity Program

In Appendix B, Section B2.1.31 of the LRA, the applicant stated that the Steam Generator Tube Integrity Program is consistent with GALL program XI.M19, "Steam Generator Tube Integrity." The audit team reviewed the license renewal aging management program basis document LR-SGI-PROGPLAN, "Steam Generator Integrity Program," Revision 0, and the supporting references.

The audit team reviewed the scope of the program and compared it with the GALL Report. The team identified that ISI, plugging/repair, leakage monitoring, and inspection frequency were described in the GALL Report and are not specifically addressed under the "scope" of the basis document. The applicant documented this difference in its corrective action program (corrective action tracking system item number 11315) and clarified the scope of the program to include these items.

The team noted that the basis document credits the Water Chemistry Control Program whereas the GALL Report cites TR-105714 and TR-102134 for guidelines under preventive action. This difference is addressed in the AMP audit in the water chemistry section B2.1.37 as acceptable.

The audit team also identified that an applicable plugging/repairing criterion, RG 1.121, or other NRC approved criterion, needs to be identified. Further, since Ginna replaced their steam generators with B&W (not Westinghouse) products, the limits for the life of a tube plug contained in the WCAP reports cited in GALL may not be applicable. Although no guidance is provided for the predictive life of Inconel 690 thermally treated plugs, the applicant does perform visual inspections of S/G plugs every other RFO for leaks in accordance with EPRI guideline TR-107569, "PWR Steam Generator Examination Guidelines." The audit team, in consultation with the NRC technical staff, considers this an acceptable alternative.

The audit team determined that AMP B2.1.31 of the LRA is consistent with AMP XI.M19 as described in the GALL Report.

B2.1.34 Thermal Aging Embrittlement of Cast Austenitic Stainless Steel (CASS)

In Appendix B, Section B2.1.34 of the LRA, the applicant stated that the Thermal Aging Embrittlement of CASS Program is consistent with GALL program XI.M12, "Thermal Aging Embrittlement of CASS." The audit team reviewed the license renewal aging management program basis document LR-CASS-PROGPLAN, "Thermal Aging Embrittlement of CASS Program," Revision 0, and the supporting references.

The audit team noted that the basis document did not commit to the enhanced volumetric examination as required by the GALL. The applicant responded that the inspections were costly both in terms of expense and radiation exposure to implement the enhanced volumetric examination since the wall is too thick. The applicant placed this item in its corrective action program (corrective action tracking system item number 11315) and modified the basis document to reflect an alternative to the volumetric examination by complying with NRC approved ASME Code Case N-481 based on integrity evaluations supplemented by visual examinations.

The audit team determined that AMP B2.1.34 of the LRA is consistent with AMP XI.M12 described in the GALL Report.

B2.1.37 Water Chemistry

In Appendix B, Section B2.1.37 of the LRA, the applicant stated that the Water Chemistry Control Program is consistent with GALL program XI.M2, "Water Chemistry." The audit team reviewed the license renewal aging management program basis document LR-H2OC-PROGPLAN, "Water Chemistry Control Program," Revision 0.

The audit team identified a difference in the scope of program attribute. The applicant credits EPRI TR-105714, Revision 4, and EPRI TR-102134, Revision 5, for its Primary and Secondary Water Chemistry Control Programs, respectively. The GALL AMP credits Revision 3 of both EPRI TR-105714 and EPRI TR-102134. The audit team considered the more recent revisions

of the EPRI reports to meet the intent of the GALL Report, since the revisions of the EPRI reports reference industry standards acceptable to the NRC.

The audit team identified a difference in the parameter monitored/inspected attribute. The GALL AMP identifies the volume control tank as an auxiliary system for which EPRI TR-105714 provides guidance. The applicant did not include the volume control tank in its AMR description because the tank is not subject to an aging management review as indicated on plant drawing number 33013-1265, Revision 9, "Auxiliary Building Chemical Volume and Control System (CVCS)." The NRC staff reviewed this drawing as part of its review of the scoping and screening results presented in the LRA. The audit team determined that since AMPs described in the GALL report pertain only to structures and components subject to an aging management review, exclusion of the volume control tank from the applicant's AMP is acceptable.

On the basis of its review of this AMP, GALL AMP XI.M2, and the associated program basis document, the audit team determined that this AMP is consistent with GALL.

B3.2 Fatigue Monitoring Program

In Appendix B Section B3.2 of the LRA, the applicant states that its Fatigue Monitoring Program (FMP) is consistent with GALL program X.M1, "Metal Fatigue of Reactor Coolant Pressure Boundary." The audit team reviewed the license renewal aging management program basis document LR-FATM-PROGPLAN, "Fatigue Monitoring Program," Revision 0.

Table 4.1 of the program basis document listed component locations monitored by the FMP for Ginna under the headings current licensing basis (CLB) and environmental fatigue (NUREG/CR-6260). It was not clear to the team whether monitoring would be performed for all components (including pressurizer heater well penetrations listed under CLB locations) listed under the headings CLB and environmental fatigue in the basis document. The applicant stated that all locations listed would be monitored and indicated that the basis document would be clarified to state that all components in the table are to be monitored by the FMP.

The team identified that the program basis document indicated that a more rigorous analysis will be utilized to resolve fatigue usage problems on components over the repair or replacement options as approved by GALL. The audit team questioned the applicant whether the other methods to resolve fatigue usage problems were options. The team was informed that all three options would be considered and that the basis document would be clarified to reflect these options.

The audit team also identified that the enhancements identified in Section 7.2, "periodic internal and external assessments of FMP" and Section 7.3, "Review of CUF projection at all locations after two fuel cycles," of the basis document were not listed in the commitment list in Section 8.0 of the basis document.

The applicant documented these enhancements in its corrective action program (corrective action tracking system item number 11315) and clarified the program basis document to include these items. The audit team determined that the FMP is consistent with the AMP described in the GALL Report.

Other Aging Management Programs

The audit team reviewed the following: applicant's AMPs, associated GALL AMPs, associated license renewal aging management program basis documents, applicants' responses to the final requests for additional information (F-RAI), and selected implementing procedures. The audit team determined that these programs were consistent with the GALL Report AMPs with differences/exceptions as stated in the LRA/F-RAIs.

Applicant's Aging Management Program	GALL Aging Management Program	LR-AMP Basis Document and Other Documents Reviewed
B2.1.1, "Aboveground Carbon Steel Tanks Program"	XI.M29, "Aboveground Carbon Steel Tanks"	LR-ATNK-PROGPLAN, Revision 0, "Above Ground Carbon Steel Tanks Program"
B2.1.3,"ASME Section XI, Subsection IWE and IWL Inservice Inspection Program"	XI.S1, ASME Section XI, Subsection IWE Inservice Inspection XI.S2, ASME Section XI, Subsection IWL Inservice Inspection XI.S4, 10 CFR Part 50, Appendix J	LR-IWEL-PROGPLAN ASME Section XI, Subsection IWE, IWL Inservice Inspection, 10 CFR Part 50, Appendix J Program"
B2.1.4,"ASME Section XI, Subsection IWF Inservice Inspection Program"	XI.S3, ASME Section XI, Subsection IWF	LR-IWF-PROGPLAN ASME Section XI, Subsection IWF Program"
B2.1.7, "Buried Pipe and Tanks Inspection Program"	XI.M34, Buried Pipes and Tanks Inspection	LR-BTNK-PROGPLAN, Revision 0, "Buried Piping and Tanks Program"
B.2.1.9, "Closed-Cycle (Component) Cooling Water System Surveillance Program"	XI.M21, Closed-Cycle Cooling Water System	EPRI-TP-107396, CH-PRI-SCH and F-RAI-B2.1.9-1
B2.1.11, "Electrical Cables and Connections Not Subject to 10 CFR 50.49 Environmental Qualification Requirements Program"	XI.E2, "Electrical Cables Not Subject to 10 CFR 50.49 Environmental Qualification Requirements Used in Instrumentation Circuits"	Response to F-RAI B2.1.12

B2.1.15, "Flow-Accelerated Corrosion Program"	XI.M17, "Flow-Accelerated Corrosion"	LR-FAC-PROGPLAN, Revision 0, "Flow-Accelerated Corrosion Program"; EP-3-P-0138, Revision 3, "Erosion/Corrosion Control Monitoring Program;" and SEG-6.0, Revision 0, "Erosion-Corrosion Program Manual."
B2.1.16, "Fuel Oil Chemistry Program"	XI.M30, "Fuel Oil Chemistry"	CH-S-FOIL-PROGPLAN, Revision 0, "Fuel Oil Chemistry Program;" CH-S-FO, Revision 5, "Sampling Fuel Oil;" and CHA-DFOTP, Revision 5, "Diesel Fuel Oil Testing Program."
B2.1.22, Open Cycle Cooling (Service) Water System"	XI.M20, "Open Cycle Cooling Water System"	LR-SWS-PROGPLAN, Revision 0, "Service Water System Program;" SWSOP, Revision 5, "Service Water System Optimization Program Manual."
B2.1.27 Reactor Vessel Internals Program	XI.M16, "Reactor Vessel Internals."	LR-RVI-PROGPLAN, "Reactor Vessel Internals Program," Revision 0.
B2.1.32, "Structures Monitoring Program"	XI.S5, "Masonry Wall Program," XI.S6, "Structures Monitoring Program," and XI.S7, "RG1.127, Inspection of Water-Control Structures Associated with Nuclear Power Plants"	LR-STRM-PROGPLAN, Revision 0, "Structures Monitoring Program"
B3.1 "Environmental Qualification Program"	X.E1, "Environmental Qualification (EQ) of Electrical Components"	LR-EQ-Program, Revision 0, "Environmental Qualification Program"
B3.3 Concrete Containment Tendon Prestress	X.S1, "Concrete Containment Tendon Prestress"	B3.3 in the LRA

Audit Issues Raised by NRR Staff Reviewers:

Inspection Item 1: In a conference call with the applicant on January 15, 2003, the applicant stated that electrical and I&C components located within the plant spaces identified in LRA

Section 2.4.3 do not perform any license renewal intended functions and; therefore, are not included within the scope of license renewal. The staff reviewed the plant spaces (buildings/areas) identified in LRA Section 2.4.3 against information contained in the Ginna UFSAR. The staff did not find any indication in the UFSAR that these spaces contained electrical or I&C components that perform a license renewal intended function.

Resolution: The inspector toured selected structures and components listed in Section 2.4.3 of the LRA, Non-Essential Buildings and Yard Structures, including items (a), (b), (d), (f), (n), (s), and (t), and determined that there are no electrical components in them. Buildings (u) and (e), could not readily be entered because they contained radioactive components.

Inspection Item 2: The scope of program attribute in LRA Section B2.1.11.1 indicates that certain plant buildings/areas not specifically stated to be within scope are used to store cables and connections for Appendix R equipment restoration, and do not have adverse localized environments.

Resolution: The inspector toured two warehouses where the licensee stored cables and connections for appendix R equipment restoration and determined that the licensee controls the environment in the warehouses. The Appendix R electrical equipment is being stored on shelves above the ground. The warehouses also have a rodent prevention program.

Inspection Item 3: LRA Table 3.4-1, item 2, indicates that the Systems Monitoring Program will be used to address loss of material due to wear for elastomers in the ventilation system. Verify that routine plant walkdowns allow for visual inspections of the elastomers that credit this program.

Resolution: The inspector toured various reactor plant spaces and verified that the condition of elastomers in the ventilation system can be assessed during plant tours by visual inspection.

Inspection Item 4: Pipe segment 2-SI-151 on drawing 33013-1261-LR, location C3, between valve 808 and the off-page connector to drawing 33013-1248-LR, is shown as not being within scope of license renewal. This pipe segment is shown as having an open pressure boundary at its interface with an in-scope (off-page) system. Clarify whether the boundary between in-scope and out-of-scope piping is shown correctly on these drawings. If the system boundary is shown correctly, ask the applicant for additional information that justifies terminating an in-scope system in the middle of a piping run at an open pressure boundary.

Resolution: The applicant stated that piping segment 2-SI-151 (downstream of valve 808) on drawing 33013-1261-LR, location C3, is not in-scope as indicated on the plant drawing (drafting error). The boundary for the in-scope pipe segment 2-SI-151 ends at valve 808 which is normally closed. Drawing 33013-1248-LR depicts out of function valve X808 as open. Drawing 2241 note 9b, states that "valves that are out of function are preceded by an "X" and always appear as an open gate valve regardless of the actual valve type." These valves are used for clarifying the interfaces between drawings.

Inspection Item 5: Note 4 of license renewal boundary drawing 33013-1250,1-LR (shown at location G12) states, "the acceptability of valves 4611A and 4612A being normally open has been evaluated by EWR 5168." These valves are shown on that drawing at locations F3 and

D3, respectively. Section 2.3.3.5 of the LRA does not discuss why this approach is acceptable. Provide information to support the basis for this determination. Discuss the steps in the procedures for identifying the locations of breaks, closing the valves, the amount of time required to complete these steps, and the consequences on system inventory if the valves are not closed following a break of the piping that is not subject to an AMR.

Resolution: The inspector reviewed EWR 5168 which concludes that the loss of the system capacity as a result of failure of the loss of the normally open service water drain lines (piping 1 inch diameter) has been calculated and determined to be insufficient in terms of delivered flow. The inspector reviewed abnormal procedures AP-SW.1, "Service Water Leak," and AP-SW.2, "Loss of Service Water," and confirmed that they contain adequate guidance to operators in response to service water leakage and require that the affected piping is isolated and the service water headers split as necessary.

Inspection Item 6: Note 7 of license renewal boundary drawing 33013-1250,2-LR (shown at location H11) states, "the acceptability of valves 3142C and 3142E being normally open has been evaluated by EWR 5168." These valves are both shown on that drawing at location H9. Section 2.3.3.5 of the LRA does not discuss why this approach is acceptable. Provide additional information to support the basis for this determination. Discuss the steps in the procedures for identifying the locations of breaks, closing the valves, the amount of time required to complete these steps, and the consequences on system inventory if the valves are not closed following a break of the piping that is not subject to an AMR.

Resolution: See response to inspection item 5.

Inspection Item 7: In the response to F-RAI 2.3.3.12-1 the applicant stated that after initial construction the sump water boxes were modified to prevent potential back flow of oil into spaces containing safety related equipment. The reason why the entire treated water system discharge path is not subject to AMR lies in the configuration of the flow path. The drainage portion of the system outside the areas of concern is not a closed system. Numerous water boxes that are open to atmosphere exist in the drain system. Should the path to the retention tank be unavailable the water volume simply overflows these water boxes, with ultimate dewatering occurring through flow across the Turbine Building floor into the yard. Consequently the capacity of the interim storage volume can be viewed as infinite. Thus, the entire treated water system discharge piping flow paths are not subject to an AMR, only the piping and components which drain water from the rooms or prevent water from backing up into the rooms, which contain safety related equipment, are within the scope of license renewal.

Verify that the diesel vault sumps can not be degraded by blockage of the drain piping not subject to an AMR and verify that the capacity of the interim storage volume is infinite.

Resolution: The inspector toured emergency diesel rooms "A" and "B" and the turbine building to monitor the condition of the visible drainage system piping. The inspector verified that the discharge piping is not a closed system and that none of the accessible piping appeared damaged. The inspector also verified that the water boxes are open to the atmosphere and any overflows would flow across the turbine building floor thus providing a virtual infinite storage volume. The applicant indicated that the piping up to the waterboxes are within the scope of license renewal.

Inspection Item 8: In the response to F-RAI 2.3.3.13 -2, the applicant stated that the control room radiation monitor system includes specific components on its skid' such as valves, pumps, piping, tubing, flow meter, filter housings and detectors which were evaluated and determined to require aging management review (drawing 33013-1867-LR shows a box around RE-36/37/38, which represents the skid).

Verify that all components on the skid are subject to an AMR.

Resolution: The inspector walked down the control room radiation monitor skid and verified that the skid included: valves, flow meter, filter housing and detectors. The inspector reviewed the applicant's license renewal review tool and verified that the identified components were included in the applicant's review tool (could be traced back to the LRA) and are subject to an AMR.

Inspection Item 9: Related to the response to F-RAI 3.6-2; verify location of anodes, and operability of the cathodic protection system.

Response: The inspector verified that anodes are installed on site; however, based on discussion with applicant personnel, the operability of the anodes has not been tested since 1966 and that the system will not be used in the event of material loss direction of current flow. The applicant indicated that a corrective action report would be initiated in the event of indication of material loss direction of current flow and that the system would be replaced if needed to respond to this condition.

The inspector noted that the applicant is performing rock anchor corrosion testing on a 3-year frequency (repetitive task number P600008) by measuring the voltage gradient across a span of 3 feet at four test sites normal to the rock anchor to determine metal loss. The applicant generated corrective action report 2003-1405 to ensure that this data is formally tracked and trended by the system engineer to monitor the condition of the containment tendons, rock anchors and containment liner.

Inspection Item 10: Draft RAI 2.3.3.5-4 stated that drawing 33013-1250, 2-LR shows that the component cooling water heat exchangers are subject to an aging management review. However, neither Table 2.3.3.2 nor Table 2.3.3.5 of the LRA identify a heat exchanger component exposed to a raw water environment that is subject to an aging management review for the heat transfer intended function.

The applicant responded to staff questions by noting that the information is contained in Table 2.3.3-2 on page 2-103 of the LRA. Table 2.3.3-2 under heat exchanger references Table 3.4-2, Line Number (120). Table 3.4-2, line (120), on page 3-132 of the LRA, lists the environment of heat exchanger as raw water. However, Table 2.3.3-2 lists item (120) in Table 3.4-2 under the pressure boundary passive function and not under the heat transfer passive function.

Verify that the aging management review activities include the heat transfer function for the component cooling water heat exchangers, in particular for the raw water environment.

Response: The applicant noted that the information is contained in Table 2.3.3-3 on page 2-110 of the LRA. Table 2.3.3-3 under heat exchanger references Table 3.4-2 Line Number (145).

Table 3.4-2, line (145), on page 3-137 of the LRA lists the environment as raw water and the AERM as loss of heat transfer. Table 2.3.3-2 on page 2-103 of the LRA references Table 3.4-1 Line Number (16). Table 3.4-1 Line Number (16), on page 3-107 of the LRA identifies aging effect as biofouling.

Inspection Item 11: Draft RAI 2.3.4.3-1 stated that fire hose connections are shown on LR boundary drawing 33013-1238-LR at locations B3 and J3. Similarly, draft RAI 2.3.3.8-6 states that hose connectors are shown on LR boundary drawing 33013-1250, 1-LR at locations C6 and E6; however, none of these hose connectors are shown to be subject to an AMR.

In Section 2.3.3.6 of the LRA, "Fire Protection," the applicant stated 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 are shown on LR boundary drawing 33013-1238-LR at locations B3 and J3. 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 standby auxiliary feedwater pumps in the event of a loss of service water. The hose connectors shown on drawing 33013-1250,1-LR at locations C6 and E6 provide alternative cooling to the diesel generators in the event of a loss of the service water pumps. 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. The draft RAI asked the applicant to justify the exclusion of these hose connections from being subject to an AMR.

The meeting summary dated March 5, 2003, states that the applicant replied that the exclusion of the piping segments was a drafting error and should be within 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. These sections of piping are classified as SC-3.

However, these hose connection nozzles were not specifically added as fire protection devices, but provide a backup cooling supply for the diesel generators and auxiliary feed pumps should the service water system be unavailable due to a seismic event or flood (the Ginna screenhouse is not seismically qualified, and may be susceptible to external floods, fires and high winds). These nozzles were added as a backup for the SW system in response to SEP Topic III-5.B (See NUREG-0821 page 4-11), and are not shown to be within the scope of license renewal on several GINNA license renewal drawings.

Confirm that the hose connections nozzles in question are indeed within the scope of license renewal, and that procedures are in place to use these nozzles to provide a backup cooling supply for the diesel generators in case of loss of service water.

Response: The applicant stated that the hose connection nozzles are within the scope of license renewal as indicated in LRA Section 2.1.5.6 on page 2-12. Section 2.1.5.6 states that all structures and systems that contain components used for fire protection of SSCs important to safety are within the scope of LR.

The inspector reviewed abnormal procedures AP-SW.1, "Service Water Leak," Revision 19, and AP-SW.2, "Loss of Service Water," and confirmed that they contain guidance to use these connections to provide alternate cooling for the diesel generators in the event of loss of service water.

Inspection Item 12: What is the inspection frequency and the acceptance criterion for inspection of fire proofing?

Response: The inspector reviewed procedure FPS-2.1, "Control and Verification of UFSAR and/or 10 CFR 50 Appendix R, Fire Barriers." The stated inspection frequency is every 18 months. The applicant indicated that they perform the inspections every nine months. Procedure QCIP-44, "Fire Barrier Inspection," Revision 10, identifies the acceptance criteria for structural steel fire proofing (Albi-clad 161) as: check accessible surfaces for cracking (no protected steel becomes exposed). Surfaces should appear uniformly coated. For mortar/grout/block (pyrocrete), the acceptance criterion for cracks is less than 1/8 inch wide and less than six inches long in the masonry barrier.

Inspection Item 13: Does the applicant test the thermistor wire? Does the method verify no degradation of internal material? What is the inspection frequency?

Response: The inspector reviewed procedure PT-13.15, "Containment Thermistor Heat Detector Zone Testing - Zones Z08, Z13,, Z14, Z15, and Z16," Revision 16. The procedure requires an operational check of the alarm and pre-alarm by placing an ohm resistor across the terminals to check the alarm detection circuitry. This check is performed every 24 months.

Fire zones outside containment are tested in accordance with procedure PT-13.4.7, "Protomatic Valve Testing Suppression System." This test utilizes a pressure sensor to monitor for degradation. This check is performed every 24 months.

Inspection Item 14: Does the applicant perform surveillance testing of the fire retardant coatings applied to cables? What is the frequency and acceptance criterion?

Response: The cables are inspected in accordance with procedure QCIP-44, "Fire Barrier Inspection," Revision 10. A visual inspection is performed every 18 months and requires inspection for cracks and voids. If an indication is identified, it is entered into the applicant's corrective action program.

Acceptance criterion for cracks in the coatings is up to 1/16 wide, length such that uncovered cables will not exceed 4 square inches. For chipped areas, chip size must not exceed 4 inches. The sum of chips and cracks must not exceed 4 square inches per linear foot of cable tray.

Inspection Item 15: What is the inspection frequency for fire barriers, doors, and penetration seals?

Response: The Technical Requirements Manual (TRM), Revision 19, requires inspections of penetration seals every 18 months. Flammastic coatings are inspected every 9 months. Surveillance of fire doors are performed on a quarterly and annual basis per FPS-15, "Fire Door Identification, Inspection, and Maintenance," Revision 23.

Inspection Item 16: Do suppression system test and inspections comply with NFPA Standards?

Response: The Fire Protection Program, Revision 1, states that the system will conform to provisions of applicable NFPA Codes 13 and 15.

Inspection Item 17: Where are the technical specification requirements?

Response: The requirements for fire protection were removed from plant technical specifications and placed in the UFSAR. These requirements were subsequently removed from the UFSAR and placed in the Technical Requirements Manual. Surveillance requirements are specified in procedure DA-ME-97-081, Revision 1, "Engineering Evaluation of Fire Protection System Inspection and Testing Performance."

R.E. Ginna Nuclear Power Plant

cc:

Kenneth Kolaczyk, Sr. Resident Inspector
R.E. Ginna Plant
U.S. Nuclear Regulatory Commission
1503 Lake Road
Ontario, NY 14519

Regional Administrator, Region I
U.S. Nuclear Regulatory Commission
475 Allendale Road
King of Prussia, PA 19406

Mr. William M. Flynn, President
New York State Energy, Research,
and Development Authority
17 Columbia Circle
Albany, NY 12203-6399

Charles Donaldson, Esquire
Assistant Attorney General
New York Department of Law
120 Broadway
New York, NY 10271

Daniel F. Stenger
Ballard Spahr Andrews & Ingersoll, LLP
601 13th Street, N.W., Suite 1000 South
Washington, DC 20005

Ms. Thelma Wideman, Director
Wayne County Emergency Management
Office
Wayne County Emergency Operations
Center
7336 Route 31
Lyons, NY 14489

Ms. Mary Louise Meisenzahl
Administrator, Monroe County
Office of Emergency Preparedness
1190 Scottsville Road, Suite 200
Rochester, NY 14624

Dr. Robert C. Mecredy
Vice President, Nuclear Operations
Rochester Gas and Electric Corporation
89 East Avenue
Rochester, NY 14649

Mr. Paul Eddy
New York State Department of
Public Service
3 Empire State Plaza, 10th Floor
Albany, NY 12223

Mr. Fred Emerson
Nuclear Energy Institute
1776 I Street, N.W., Suite 400
Washington, DC 20006-3708

George Wrobel
Manager, License Renewal
R.E.Ginna Nuclear Power Plant
1503 Lake Rd.
Ontario, NY 14519

Mr. David F. Wilson
R.E. Ginna Nuclear Power Plant
1503 Lake Rd.
Ontario, NY 14519