January 14, 2004

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

SUBJECT: R. E. GINNA NUCLEAR POWER PLANT - TRIENNIAL FIRE PROTECTION INSPECTION REPORT 05000244/2003013

Dear Dr. Mecredy:

On November 21, 2003, the NRC completed a triennial fire protection inspection at your R. E. Ginna facility. The enclosed report documents the inspection findings that were discussed on November 21, 2003, with Mr. Widay, Vice President/ Plant Manager, and other members of your staff. Additional information was provided by your staff, after this date, to address questions the team had concerning the adequacy of some cold shutdown repairs and the combustibility of the control room wall coverings. The team evaluated this information and discussed the results with Mr. Mark Flaherty of your staff on December 31, 2003.

This inspection examined activities conducted under your license as they relate to safety and compliance with the Commission's rules and regulations, and with the conditions of your license. The inspectors reviewed selected procedures and records, observed activities, and interviewed personnel.

This report documents one finding concerning the fire resistance of the cable tunnel escape hatch. This finding has potential safety significance greater than very low significance. We plan to conduct a site visit the week of March 16, 2004, to obtain information required to complete the significance determination process. We will inform you of the results of these activities in subsequent correspondence. This finding did present an immediate safety concern. However, compensatory measures were established while long-term corrective measures are being implemented.

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We appreciate your cooperation. Please contact me at (610) 337-5146, if you have any questions regarding this letter.

Sincerely,

/RA/

John F. Rogge, Chief
Electrical Branch
Division of Reactor Safety

Docket No. 50-244
License No. DPR-18

Enclosure: NRC Inspection Report 05000244/2003013

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U.S. NUCLEAR REGULATORY COMMISSION

REGION I

Docket No:	50-244
License No:	DPR-18
Report No:	05000244/2003013
Licensee:	Rochester Gas and Electric Corporation
Facility:	R. E. Ginna Nuclear Power Plant
Location:	1503 Lake Road Ontario, NY
Dates:	November 3 - 7 and 17 - 21, 2003
Inspectors:	Christopher G. Cahill, Senior Reactor Inspector, DRS (Team Leader) Keith Young, Reactor Inspector, DRS Jennifer Bobiak, Reactor Inspector, DRS Timothy O'Hara, Reactor Inspector, DRS Manan Patel, Reactor Inspector (in training), DRP
Approved by:	John F. Rogge, Chief Electrical Branch Division of Reactor Safety

Enclosure

SUMMARY OF FINDINGS

IR 05000244/2003-013; on 11/3/2003 - 11/21/2003; R. E Ginna Nuclear Power Plant; Triennial fire protection inspection report.

The report covered a two week team inspection by specialist inspectors. The NRC's program for overseeing the safe operation of commercial nuclear power reactors is described in NUREG-1649, "Reactor Oversight Process," Revision 3, dated July 2000.

A. Inspector Identified Findings

Cornerstone: Mitigating Systems

- TBD. The inspectors identified a violation of 10 CFR 50.48 "Fire Protection" having the potential safety significance greater than very low significance because the cable tunnel escape hatch is a non-rated penetration that separates the safety-related cable tunnel area from nonsafety-related transformer yard area. Specifically, the cable tunnel hatch was not designed and located to minimize, consistent with other requirements, the effect of transformer fire and explosion.

  This finding is unresolved pending additional inspection and completion of a significance determination. This finding is greater than minor because it is associated with Fire Protection barrier performance and degraded the ability to meet the cornerstone objective. The team evaluated the ignition frequency, fire barrier capability, manual and automatic suppression capability and post-fire safe shutdown capabilities and determined that the finding has a potential safety significance greater than very low significance. (1R05.02)

B. Licensee Identified Violations

None

Report Details

Background

This report presents the results of a triennial fire protection inspection conducted in accordance with NRC Inspection Procedure (IP) 71111.05, "Fire Protection." The objective of the inspection was to assess whether Rochester Gas and Electric (RG&E) has implemented an adequate fire protection program and that post-fire safe shutdown capabilities have been established and are being properly maintained at the R. E. Ginna Nuclear Power Plant. The following fire zones (FZ) were selected for detailed review based on risk insights from the R. E. Ginna Individual Plant Examination of External Events (IPEEE):

- Cable Tunnel (CT)
- Control Room (CR)
- Turbine Building Basement and DI Trucks (TB-1)
- Battery Room 1A (BR1A)

This inspection was a reduced scope inspection in accordance with the September 22, 2000, revision to IP 71111.05, "Fire Protection." Issues regarding equipment malfunction due to fire-induced failures of associated circuits were not inspected. Criteria for review of fire-induced circuit failures are currently the subject of a voluntary industry initiative. The definition of associated circuits of concern used was that contained in the March 22, 1982, memorandum from Mattson to Eisenhut, which clarified the requests for information made in NRC Generic Letter 81-12.

1. REACTOR SAFETY

Cornerstones: Initiating Events, Mitigating Systems

1R05 Fire Protection (71111.05)

.1 Programmatic Controls (71111.05)

a. Inspection Scope

During tours of the R. E Ginna facility, the team observed the material condition of fire protection systems and equipment, the storage of permanent and transient combustible materials, and control of ignition sources. The team also reviewed the procedures that controlled hot-work activities and combustibles at the site. This was accomplished to verify that the R. E. Ginna facility was maintaining the fire protection systems, controlling hot-work activities, and controlling combustible materials in accordance with their fire protection program.

b. Findings

No findings of significance were identified.

.2 Passive Fire Barriers (71111.05) (71111.23-1 sample)

a. Inspection Scope

During tours of the facility, the team evaluated the material condition of fire walls, fire doors, and fire barrier penetration seals to ensure that the R. E. Ginna facility was maintaining the passive features in a state of readiness.

The team randomly selected three fire barrier penetration seals for detailed inspection to verify proper installation and qualification. The team reviewed associated design drawings, test reports, and engineering analyses. The team compared the observed in-situ seal configurations to the design drawings and tested configurations. Additionally, the team compared the penetration seal ratings with the ratings of the barriers in which they were installed. This was accomplished to verify that the licensee had installed the selected penetration seals in accordance with their design and licensing bases. One temporary modification sample, associated with the installation of a cover over the cable tunnel hatch, was reviewed by the team.

b. Findings

Introduction. A finding was identified in that the cable tunnel escape hatch is a non-rated penetration that separates a safety-related area from a nonsafety-related area. The nonsafety-related area, the main transformer, presents a significant hazard to the safety-related CT area and has a potential safety significance greater than very low significance. This is an unresolved item (URI) pending additional inspection and completion of the significance determination process (SDP).

Description. A severe transformer failure, which is postulated as a credible fire in the Ginna Fire Protection Program, could challenge the CT hatch. Due to the proximity of the hatch with respect to the transformer (approximately 5 ft) a breach of the transformer could result in the spraying of hot or flaming oil into the cable tunnel hatch flood barrier enclosure. The flood barrier is an open-topped metal box approximately 24 inches high. The hatch is constructed of a spring loaded hinged, diamond plate cover. There is no seal between the hatch and the frame and oil could readily flow into the tunnel. The licensee tested the sealing and draining capability of the hatch by pouring approximately 5 gallons of water into the flood barrier. The licensee reported that approximately 3 gallons of water drained into the tunnel. The inspectors noted the residual water in the tunnel after the test. The inspectors observed that water was present on the ceiling, south side number three tray and on the floor (a pool approximately 9 ft wide by 5 ft long). This test was conducted with the hatch drain gutters clean. During previous walk downs on November 6, 2003, the team found the drain gutter were partially obstructed with debris (bird feathers and leaves) which would limit draining of fluids from the drain gutter back to the transformer pit.

With the exception of the CT roof, the structure is below grade. The roof of the cable tunnel is approximately 6 inch thick concrete and portions of the roof runs the length of the transformer yard. The roof is listed as a non-rated barrier in the Fire Protection Program Report (FPPR). The transformer contains about 22,500 gallons of oil. The oil is classified as a Class IIIB combustible liquid. In addition to this hazard, there are also pressurized oil filled power lines in the yard, in proximity to the cable tunnel roof.

Cables inside the CT are installed in trays stacked five high along both walls. The cable types include a mix of power and instrumentation cables. The majority of the cables were purchased and installed prior to the publication of IEEE-383 standard for flame testing. Most cables are insulated by either hypalon or polyvinal chloride (PVC). The cable jacket materials are hypalon, silicone rubber and PVC. A fire in this area causing damage to the electrical cables would require the operators to utilize an alternative shutdown (ASD) methodology to achieve safe shut down (SSD).

The CT fire is equipped with an automatic deluge suppression system. The system was designed and installed to extinguish power cable fires. To accomplish this, the deluge nozzles are focused on the power cables that are located in the upper two trays. The system was not designed to suppress a combustible liquid floor or other tray based fires. The deluge system is actuated by smoke detectors. The area is also equipped with heat detectors that alarm in the control room (CR). Maneuvering within the CT is severely limited, especially during fire fighting activities when fire fighting protective clothing and self contained breathing apparatus (SCBA) would be worn. Visibility would be restricted when fire fighting actions are in progress. The main transformer is equipped with an automatic deluge system. The system is actuated by heat detectors.

The licensee missed several opportunities to identify and correct the deficiency in the fire resistive capability of the cable tunnel hatch. Specifically:

- The evaluation (DA-ME-94-082) for the CT was inadequate. The evaluation only postulated a transformer fire due to an oil spill. It did not consider the large combustible loading of the transformer oil and the fire propagation that could result from a transformer explosion or other catastrophic transformer failure. The evaluation also stated that the nearest transformer was approximately ten feet from the hatch when in fact it is about 5 feet from the hatch. Finally, the evaluation credited the suppression in the cable tunnel without verifying that the system was capable of suppressing an oil based fire and did not consider the challenge in combating two separate fires simultaneously.

- PCR 96-106, “Main Transformer Replacement”, failed to assess the impact on the hatch due to the installation of the new transformer. Specifically, the combustible loading from the transformer oil approximately doubled to 22,500 gallons.

- PCR 98-066, installed the flood barrier around the hatch and did not have an Appendix R/Fire Protection Review. The installation of this barrier would cause a pooling of oil during a transformer failure and challenge the hatch.

The licensee performed an operability evaluation (AR 2003-2994) which provided their rationale for concluding that the CT hatch would not fail as a result of a major transformer failure. The team did not agree with the licensee’s evaluation. Specifically, the evaluation was not based on any detailed engineering or fire scenario analysis of in-situ conditions and did not consider the impact of fire fighting activities in multiple plant areas. Additionally, the evaluation stated that the fluid collection gutter would collect and divert any transformer oil from the hatch area back to the transformer yard area. As described above, this collection feature was tested by the licensee and found to be inadequate. Based on the concerns raised by the team, the licensee initiated interim

compensatory measures, under temporary modification 2003-0027, which installed a cover over the CT escape hatch flood barrier. The licensee initiated AR 2003-2994 and 2003-3006 to evaluate the adequacy of the CT hatch and roof during main transformer fire.

Analysis. The finding adversely impacted the ability of the CT hatch fire barrier to separate a safety-related area from nonsafety-related area that contained a significant hazard. The finding is associated with the mitigating systems cornerstone. The attribute affected is protection from external events, specifically fire. This affects the objective to ensure the availability, reliability and capability of the fire barrier system to respond to the initiating event (fire) to prevent core damage.

The team evaluated this finding with respect to the Phase one screening criteria established in MC 0609, Appendix F. For the CT area, the fire protection scheme identified in figure 4-3, of MC 0609, Appendix F was utilized. Since the finding affected the fixed fire suppression system in the cable tunnel and additionally affected the fire brigade effectiveness in combating the postulated fire scenario the finding required additional screening under Phase 2. The impact on these defense-in-depth elements as well as other factors are described in greater detail below.

The finding was determined to have potential safety significance greater than very low significance utilizing the following assumptions in the MC 0609, Appendix F, Phase 2 analysis:

- The oil filled transformers contains a large amount of combustible liquid and has a high ignition frequency. The team estimated the ignition frequency for a transformer fire that would challenge the hatch to be 1.26E-03/yr. This presents a credible fire scenario.

- The fire barrier (hatch) design is mis-applied or with an indeterminate fire resistance rating and was evaluated as a high degradation.

- The CT automatic deluge system was not designed to suppress a floor based or in-tray oil fire. The system may not supply the required density and coverage to the lower trays and floor. Based on these factors the team considered this to be a high degradation.

- Maneuvering of the fire brigade within the CT is severely limited, especially when SCBAs would be required to be worn. Visibility would be restricted by heavy smoke that can be expected with an oil and electrical cable insulation fire and also when fire fighting actions are in progress. The CT hatch is the credited smoke removal path for CT fires. In the conditions postulated, the hatch would not be available. The lack of venting would result in higher compartment temperatures and thicker smoke layer. Additionally, the fire brigade would face additional challenges in combating a fires in two different fire areas, namely the CT and the transformer yard. Based on these factors the team assigned a high degradation for manual fire fighting outside of the control room.

- A fire in the CT would likely cause damage to the electrical power and instrumentation cables which would require the operators to utilize an ASD

methodology to achieve SSD. This recovery method would correspond to the -1 column in table 5.6, of MC 0609, Appendix F.

- The exposure period for deficiency in the fire endurance of the CT hatch was greater then 30 days.

Based on the preliminary Phase 2 SDP, using these conservative assumptions, the finding was determined to be greater than very low safety significance. However, in order to validate these conservative assumptions a more thorough evaluation needs to be completed to assess such factors as ignition frequency, suppression capability, fire brigade effectiveness and shutdown methods.

Enforcement. Section 50.48 "Fire Protection" of 10 CFR Part 50 requires that each operating nuclear power plant have a fire protection plan that satisfies Criterion 3 of Appendix A.

Appendix A, Criterion 3, states that structures, systems, and components important to safety shall be designed and located to minimize, consistent with other requirements, the probability and effect of fire and explosion.

Contrary to the above, the Cable Tunnel which is a structure important to safety, that contains system, and components important to safety, was not adequately designed to minimize, consistent with other requirements, the effect of fire and explosion. Specifically, the cable tunnel hatch is a non-rated penetration that separates a safety-related area from nonsafety-related area. The nonsafety-related transformer area present a significant hazard to the safety-related Cable Tunnel area. The cable tunnel roof and hatch form a fire area boundaries that were not previously reviewed and approved by the NRC. Additionally, the licensee did not perform an adequate evaluation to demonstrate that the boundaries will withstand the hazards associated with the area and protect important equipment within the fire area from a fire outside the area. Pending determination of the finding's safety significance, this finding is identified as **URI 05000444/2003013-01, Non-Rated Cable Tunnel Hatch**. (AR 2003-2994 and 2003-3006)

.3 Fire Detection Systems (71111.05)

a. Inspection Scope

The team performed a walkdown of the selected fire areas to verify the existence and adequacy of fire detection in the selected fire areas. In addition, the team reviewed completed surveillance procedures to verify the adequacy and frequency of fire detection component testing. This review was performed to ensure that the fire detection systems for the selected fire areas met their design and licensing bases.

b. Findings

No findings of significance were identified.

.4 Fixed Fire Suppression Systems and Equipment (71111.05)

a. Inspection Scope

The team evaluated the adequacy of the automatic deluge systems in the Cable Tunnel and the S24, S25 S26/12 and S27 fixed water suppression systems installed in the Turbine Building basement and de-ionized (DI) trucks by performing system walkdowns, design reviews, and reviews of functional testing. This review was performed to verify that the selected fixed suppression systems met their design and licensing bases.

b. Findings

No findings of significance were identified.

.5 Manual Fire Suppression Capability (71111.05)

a. Inspection Scope

The team walked down selected standpipe systems, hose reels and portable fire extinguishers to determine the material condition of manual fire fighting systems. Fire pump flow and pressure tests were also reviewed by the team to ensure the pumps were meeting design requirements. The team reviewed the pre-fire plans for the target fire areas to verify accuracy of the plans versus the installed fire protection features in the selected fire areas.

The team inspected the fire brigade's protective ensembles, SCBA, portable communications equipment and various other fire brigade equipment to determine material condition and operational readiness of equipment for fire fighting.

The team reviewed fire brigade initial and continuing training course materials to verify appropriate training was being conducted for the station firefighting personnel.

b. Findings

No findings of significance were identified.

.6 Post-Fire Safe Shutdown Emergency Lighting and Communications (71111.05)

a. Inspection Scope

The team observed the placement and aiming of 8-hour emergency lighting units (ELUs) throughout the selected fire zones to evaluate their adequacy for illuminating access and egress pathways and equipment requiring local operation for post-fire safe shutdown. In addition, during the alternate shutdown procedure walk through documented in 1R05.7, the team verified that emergency lights were provided where needed.

b. Findings

No findings of significance were identified.

.7 Alternative Shutdown Capability (71111.05)

a. Inspection Scope

The team reviewed the fire response procedures and emergency operating procedures (EOPs) for the selected fire areas to evaluate the methods and equipment used to achieve hot shutdown following a fire. The team also reviewed piping and instrumentation drawings (PI&D) for post-fire safe shutdown systems to identify required components for establishing flow paths, to identify equipment required to isolate flow diversion paths, and to verify appropriate components were properly evaluated and included in the safe shutdown equipment list. The team also reviewed selected alternate shutdown components and their control circuits to ensure that proper isolation was provided for alternate shutdown capability and performed field walkdowns to evaluate the protection of the equipment from the effects of fires.

Post-fire shutdown procedures for the selected areas were also reviewed to determine if appropriate information was provided to plant operators to identify protected equipment and instrumentation and if recovery actions specified in post-fire shutdown procedures considered manpower needs for performing restorations and area accessibility. The team also reviewed training lesson plans for the alternative shutdown procedures, discussed training with licensed operators, reviewed selected alternate shutdown equipment tests, reviewed the adequacy of shift manning, and evaluated the accessibility of the alternative shutdown operating stations and required manual action locations.

Specific procedures reviewed included ER-FIRE.1, “Alternate Shutdown for Control Complex Fire,” Revision 14, ER-FIRE.2, “Alternate Shutdown for Cable Tunnel Fire,” Revision 11, and ER-FIRE.4, “Alternate Shutdown for Battery Room A Fire,” Revision 12.

A procedure walkdown was performed for procedure ER-FIRE.2, “Alternate Shutdown for Cable Tunnel Fire,” Revision 11. The team observed a licensed operator simulate

the procedural steps and focused primarily on the portion of the procedure associated with achieving stable hot shutdown conditions. The approximate time for critical steps, such as establishing reactor vessel makeup, were noted and evaluated to assess the ability of the operators to maintain plant parameters within procedural limits.

b. Findings

No findings of significance were identified.

.8 Safe Shutdown Capability (71111.05)

a. Inspection Scope

The team reviewed the FPPR, Revision 2, and associated Safe Shutdown Analysis to confirm that the licensee had identified the methods and the structures, systems, and components (SSCs) necessary to achieve hot shutdown and cold shutdown, following postulated fires in the selected risk significant fire zones. The team further reviewed the applicable flow diagrams, instrument drawings and the safe shutdown components list to identify the components required for establishing the specified flow paths and for isolating the flow diversion paths. The team sampled sections of operating procedures associated with shutdown following a fire, to confirm the availability of selected components required for different fire scenarios.

The team verified that the applicable requirements of 10 CFR 50, Appendix R, Sections III.G and III.L for achieving and maintaining safe shutdown were properly addressed. The team verified that systems necessary to assure the safe shutdown functions of reactivity control, reactor coolant makeup, reactor heat removal, and process monitoring were protected within or independent of the selected fire zones. Where deviations from Appendix R requirements were identified, the team verified that the deviations had been approved and that conditions required by the deviations were implemented and being maintained.

b. Findings

No findings of significance were identified.

.9 Safe Shutdown Circuit Analyses (71111.05)

a. Inspection Scope

For the selected fire zones, the team reviewed the RG&E's safe shutdown analysis (SSA) to ensure that at least one post-fire safe shutdown success path, free of fire damage, was available in the event of a fire. This included a review of manual actions required to achieve and maintain hot shutdown conditions and to make the necessary repairs to reach cold shut down within 72 hours. The team also reviewed selected procedures, calculations and observed simulator scenarios to ensure that adequate direction was provided to the operators to perform the necessary manual actions.

Factors, such as timing, access to the equipment, and the availability of procedures, were considered in the team's review. Additionally, the team reviewed applicable system flow diagrams, electrical one line diagrams, control circuit schematic diagrams, instrument loop diagrams, cable tray designations, panel and rack wiring diagrams, operating procedures, preventive maintenance procedures, circuit breaker coordination curves and cable/raceway information to verify that the conclusions of selected sections of the safe shutdown analysis were correct and that the procedures, fire barriers, and systems provided were sufficient to assure post-fire safe shutdown of the plant.

b. Findings

No findings of significance were identified.

4. OTHER ACTIVITIES

4OA2 Identification and Resolution of Problems (71152)

.1 Corrective Actions for Fire Protection Deficiencies

a. Inspection Scope

The team reviewed the fire impairments log, open corrective maintenance work orders for fire protection and safe shutdown equipment, selected corrective action reports for fire protection and safe shutdown issues to evaluate the prioritization for resolving fire protection related deficiencies and the effectiveness of corrective actions. The team also reviewed recent Quality Assurance (QA) Audits, and Engineering Self-Assessments of the fire protection program to determine if the licensee was identifying program deficiencies and implementing appropriate corrective actions.

b. Findings

No findings of significance were identified.

4OA6 Meetings, including Exit

The team presented their preliminary inspection results to Mr. J. Widay, Vice President/ Plant Manager and other members of the R. E. Ginna staff at an exit meeting on November 21, 2003.

ATTACHMENT: SUPPLEMENTAL INFORMATION

ATTACHMENT

SUPPLEMENTAL INFORMATION

KEY POINTS OF CONTACT

Licensee Personnel

J. Widay,	Vice Plant/Plant Manager
S. Adams,	Manager, Quality Assurance
M. Flaherty,	Manager, Licensing
B. Flynn,	Manager, Primary/Reactor Engineering
J. Jackson,	Technical Analysis Engineer
M. Lilly,	Senior Engineer
J. O'Tool,	Superintendent, Fire Brigade Program
J. Pascher,	Manager, I&C/Electrical
R. Ploof,	Manager, Scheduling
B. Popp,	Production Superintendent
J. Traynor,	Senior QA Auditor
C. Vitali,	Senior Fire Protection Engineer
T. White,	Manager, Balance of Plant
D. Wilson,	Licensing Engineer
P. Sidelinger,	Operations
M. Rousell,	Operations STA
T. Harding,	Electrical Engineering

NRC Personnel

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E. Cobey	Senior Reactor Analyst
K. Kolaczyk	Senior Resident Inspector, Ginna Nuclear Power Plant
M. Marshfield	Resident Inspector, Ginna Nuclear Power Plant
M. Salley	Fire Protection Engineer, NRR
D. Frumkin	Fire Protection Engineer, NRR
P. Qualls	Fire Protection Engineer, NRR

LIST OF ITEMS OPENED AND CLOSED

Opened

05000444/2003013-01	URI	Non-Rated Cable Tunnel Hatch

LIST OF DOCUMENTS REVIEWED

Fire Protection Program Documents

R. E. Ginna Nuclear Power Plant Fire Protection Program, Rev. 2
R. E. Ginna Updated Final Safety Analysis, Section 9.5.1, Fire Protection Systems

Calculations and Engineering Evaluations

DA-EE-92-098-01,	Design Analysis Diesel Generator A Steady State Loading Analysis, Rev. 4
DA-EE-93-104-07,	Design Analysis, 480 Volt Coordination and Circuit Protection Study, Rev. 4
DA-EE-93-107-07,	Design Analysis, 4160 Volt Overcurrent Relays Coordination and Circuit Protection Study, Rev. 3
DA-EE-94-054,	Ampacity of Circuits Covered with Hemyc Fire Wrap, Rev. 0
DA-ME-94-082	86-10 Evaluations of Various Issues and IDR 92-0068 Resolution, Rev. 0
DA-ME-94-118-04	Cable Tunnel Smoke Barrier - PENQ-04, Rev. 0
DA-ME-94-118-05	Cable Tunnel Smoke Barrier - PENQ-05, Rev. 0
DA-ME-94-118-06	Cable Tunnel Smoke Barrier - PENQ-06, Rev. 0
DA-EE-97-069,	Sizing of Vital Batteries A and B, Rev. 2
DA-EE-99-066,	DC System Fuse Coordination, Rev. 2
DA-EE-99-068,	Vital Battery Room Hydrogen Analysis, Rev. 2
DA-EE-2000-066,	Appendix R Conformance Analysis, Rev. 1
DA-EE-2001-028,	Vital Battery 8 Hour Capacity, Rev. 0
DA-ME-2000-075,	Design Analysis, Pressurizer, Volume Control Tank and RWST Evaluations of Appendix R, Rev. 0

Piping and Instrument Diagrams (P&ID)

33013-1237,	Auxiliary Feedwater (FW), Rev. 43
33013-1247,	Auxiliary Coolant Residual Heat Removal (AC), Rev. 37
33013-1250,	Station Service Cooling Water, Safety-Related (SW), Sh. 1, Rev. 36
	Station Service Cooling Water, Safety-Related (SW), Sh. 2, Rev. 28
	Station Service Cooling Water, Safety-Related (SW), Sh. 3, Rev. 25
33013-1258,	Reactor Coolant Pressurizer (RC), Rev. 24
33013-1260,	Reactor Coolant (RC), Rev. 23
33013-1261,	Containment Spray (SI), Rev. 24
33013-1262,	Safety Injection and Accumulators (SI), Sh. 1, Rev. 22
	Safety Injection and Accumulators (SI), Sh. 2, Rev. 6
33013-1265,	Chemical and Volume System Charging (CVCS), Sh. 1, Rev. 9
	Chemical and Volume System Charging (CVCS), Sh. 2, Rev. 9

Drawings

D-064-016,	Appendix R Analysis Process Monitoring Evaluation Diagram, Rev. 4
D-064-017,	Appendix R Analysis CVCS Evaluation Diagram, Rev. 3
D-201-015,	Electrical 4160V SWGR Bus Duct Plan and Sections, Rev. 2
03200-0102,	AC Power Distribution Panels
03201-0102,	120V AC Instrument Bus, Rev. 16
03202-0102,	125 VDC Power Distribution System, Rev. 13
10909-51,	DC System Fuse Reverence, ABELIP and IBELIP Panels, Rev. 4
10910-0012A,	Feed To: Safety Injection Pump B, Bus No. 16, Unit No. 12A, Breaker ID: 52/SIP1B, Pump ID: PSI01B, Rev. 3
11302-0176,	Turbine Driven AFW Pump Flow Loop FT-2015A Inst. Loop Wiring Diagram, Rev. 1
11302-0293,	RCS Loop A Hot Leg Temperature Loop TE-409A-2 Inst. Loop Wiring Diagram, Rev. 2
11302-0295,	RCS Loop A Cold Leg Temperature Loop TE-409B-2 Inst. Loop Wiring Diagram, Rev. 1
11302-0308,	RCS Pressure Loop PT-420B Inst. Loop Wiring Diagram, Rev. 1
11302-0360,	Steam Generator A Level Loop LT-460A Inst. Loop Wiring Diagram, Rev. 1
11302-0370,	Steam Generator A Steam Pressure Loop PT-469A, Inst. Loop Wiring Diagram, Rev. 1
21489-504,	Primary Loop RTD Wiring Diagram, Rev. 6
21946-0027A,	4160V Bus 12A-Unit 15 Station Service XFMR 14, Sh. 1 and 2
21946-0027B,	4160V Bus 12B-Unit 17 Station Service XFMR 16, Sh. 1 and 2
21946-0029A,	4160V Bus 12A-Unit 14 Station Service XFMR 18, Sh. 1 and 2
21946-0029B,	4160V Bus 12B-Unit 18 Station Service XFMR 17, Sh. 1 and 2
21946-0071A,	Electrical 4160V Swgr. Bus Duct Plan and Sections, Rev. 2
21946-0073B,	480V Bus 16 - Unit 12A, Safety Injection Pump B, PSI01B (52/SIP1B), Control Schematic, Rev. 4
21946-0239,	Turb. Drvn. Aux. FW DC Lube Oil Pmp. Control Schematic, Rev. 6
21946-0751,	SOV-8619A N2 Arming VLV 8619A Control Schematic, Rev. 1
21946-0751B,	SOV-8619B N2 Arming VLV 8619B Control Schematic, Rev. 1
33013-0652,	480 Volt, Rev. 20
33013-1736,	Diesel Generator A Control Schematic, Sh. 1, Rev. 14
	Diesel Generator A Control Schematic, Sh. 2, Rev. 14
	Diesel Generator A Exciter Cabinet Intercon. Diag., Sh. 3, Rev. 9
	Diesel Generator A Exciter Cabinet Intercon. Diag., Sh. 4, Rev. 6
	Diesel Generator A CT and PT Metering Control Schem., Sh. 5, Rev. 7
	Diesel Generator A Control Panel Layout, Sh. 6, Rev. 14
	Diesel Generator A Control Pnl. Exciter Cabinet Fr. View, Sh. 7, Rev. 4
	Diesel Generator A and B Synch Switch, Sh. 8, Rev. 2
	Diesel Generator A Control Panel Auxiliary Schematic, Sh. 9, Rev. 1
33013-1737,	Diesel Generator B Control Schematic, Sh. 1A, Rev. 4
	Diesel Generator B Control Schematic, Sh. 1B, Rev. 2
	Diesel Generator B Exciter Cabinet Intercon. Diag., Sh. 3, Rev. 6
	Diesel Generator B Exciter Cabinet Intercon. Diag., Sh. 3, Rev. 5

	Diesel Generator B Exciter Cabinet Wiring Diag., Sh. 4, Rev. 5
	Diesel Generator B Exciter Cabinet Control Pnl. Layout, Sh. 5, Rev. 8
	Diesel Generator B Control Panel & Exciter Cabinet Front View, Diag., Sh. 7, Rev. 2
33013-1793,	ABELIP Cabinet Wiring Diagram, Sh. 1, Rev. 2
	ABELIP Cabinet Wiring Diagram, Sh. 2, Rev. 3
33013-1794,	IBELIP Cabinet Wiring Diagram, Sh. 1, Rev. 3
	IBELIP Cabinet Wiring Diagram, Sh. 2, Rev. 5
33013-2093,	Ginna Power Supplies Bus Duct Layout, Sh. 1 and 2, Rev. 5
33013-2539,	AC System Plant Load Distribution, Rev. 6
33013-2612,	PORV Solenoid Valves 8616A, 8616B, 8619A, 8619B, 8620A and 8620B, Rev. 1

Procedures and Completed Surviellances

CME-44-02-MCCA/B,	Westinghouse Motor Control Center A Unit Molded Case Circuit Breaker Maintenance For MCCA/B, Rev. 2
CME-50-02-52/SIP1C2,	Westinghouse, 480V Air Circuit Breaker, Type DB-50, Safety Injection Pump C Supply C2, Bus 14, Position 19A, Maintenance for 52/SIP1C2, Rev. 3, Completed July 14, 2003
CPI-APPX-R-SR-32,	Calibration of Appendix R Source Range, N32R, Rev. 7
CPI-FLO-2015A,	Calibration of The Turbine Driven Auxiliary Feedwater Pump Discharge Flow Loop 2015A, Rev. 10, Completed June 18, 2003
CPI-LT-428A,	Calibration of Pressurizer Level Transmitter LT-428A, Rev. 6, Completed September 19, 2003
CPI-LT-460A,	Calibration of Steam Generator A Wide Range Level Transmitter LT-460A, Rev. 7, Completed September 25, 2003
CPI-LVL-428A,	Calibration of Pressurizer Level Loop 428A Rack Instrumentation, Rev. 4, Completed June 25, 2002
CPI-LVL-460,	Calibration of Steam Generator A Wide Range Level Loop 460 Rack Instrumentation, Rev. 6, Completed October 8, 2002
CPI-PI-4092,	Calibration of Standby Auxiliary Feedwater Pump C Discharge Pressure Indicator, Rev. 7, Completed August 25, 2003
CPI-PRESS-420B,	Calibration of Reactor Coolant System Pressure Channel 420B Rack Instrumentation, Rev. 3, Completed January 6, 2003
CPI-PRESS-469A,	Calibration of Steam Generator A Steam Pressure Loop 469A Rack Instrumentation, Rev. 4, July 1, 2003
CPI-PT-420B,	Calibration of Reactor Coolant System Pressure Transmitter PT-420B, Rev. 6, Completed September 21, 2003
CPI-PT-469A,	Calibration of Steam Generator A Steam Pressure Transmitter PT-469A, Rev. 7, Completed July 1, 2003
CPI-TEMP-409A-2,	Calibration of Reactor Coolant Loop A Hot Leg Temperature 409A-2, Rev. 6, Completed February 6, 2002
CPI-TEMP-409B-2,	Calibration of Reactor Coolant Loop A Cold Leg Temperature 409B-2, Rev. 5, Completed April 3, 2003
ER-FIRE.2,	Alternate Shutdown For Cable Tunnel Fire, Rev. 11
FPS-1	Fire Barrier Control Procedure, Rev. 7

FPS-2	Ginna Station Fire Barrier Penetration Seal Program, Rev.2
FPS-14	Fire Hose Reel, Assembly Inspection and Test, Rev. 2
FPS-15	Fire Door Identification Inspection and Maintenance, Rev 25
FPS-16	Bulk Storage of Combustible Materials and Transient Fire Loads, Rev. 6
FRP-15.0	Cable Tunnel Fire Response Plan Procedure, Rev. 4
FRP-17.0	Battery Room "A" Fire Response Plan Procedure, Rev. 4
FRP-20.0	Control Room Fire Response Plan Procedure, Rev. 3
FRP-21.0	Turbine Building Basement Fire Response Plan Procedure, Rev. 5
GME-45-99-01,	General Maintenance Procedure, Electrical Motor Inspection and Maintenance, Rev. 11
GME-50-02-DB50,	Westinghouse, 480V Air Circuit Breaker, Type DB-50 Maintenance For Type DB-50 Breakers, Rev. 18, Completed July 7, 2003
IP-MTE-1,	Calibration and Control of Measuring & Test Equipment, Rev. 8
M-32.6,	Molded Case Circuit Breaker Bench Test Trip Test, Rev. 10, Completed March 16, 2003
PT-12.1,	Emergency Diesel Generator A, Rev. 112, Completed October 4, 2003 and October 21, 2003
PT-16Q-T-T,	Auxiliary Feedwater Turbine Pump - Quarterly, Rev. 37, Completed September 15, 2003, October 5, 2003, and October 14, 2003
RSSP-2.2,	Diesel Generator Load and Safeguard Sequence Test, Rev. 54, Completed October 11, 2003
RSSP-2.3A,	Diesel Generator Trip Testing, Rev. 12, Completed October 5, 2003
SC-3	Fire Emergency Plan, Rev. 36
SC-3.1	Fire Emergency General Information, Rev. 18
SC-3.1.1	Fire Alarm Response (Fire Brigade Activation), Rev. 14
SC-3.13	Fire Communications, Rev. 11
SC-3.15.7	Inspection of Self-Contained Breathing Apparatus Scott 4.5, Rev. 22
SC-3.15.7.1	Inspection and Service of MSA MMR Breathing Apparatus, Rev. 1
SM-2001-0041,	Installation of Source Range Low Noise Pre-Amplifiers in N-31 and N-32, Rev. 2

Action Reports

2003-1656
2003-2974
2003-2976
2003-2785
2003-2975
2003-2977
2003-2994
2003-2995
2003-3001
2003-3002
2003-3005
2003-3006
2003-3093
2003-3093
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2003-3124
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20300630

Work Orders

20203299
20203366
20203499
20203524
20300034

Miscellaneous Documents

Appendix R, Alternate Safe Shutdown List, November 4, 2003
RG&E Interoffice Correspondence, December 2, 2003 “Power Supply Adequacy for ER-FIRE.1"
TSC Diesel Generator’s Loading Ability During Fire Scenarios
Self Assessment 2003-0004, Fire Response Procedures and Drawings
SQUA-2003-0043-EDK, Fire Protection Systems Barriers and Equipment
SQUA-2002-0023-JMT, Assessment of Fire Protection Implementation for Welding and Grinding in Fire Zone Z22 and S15

LIST OF ACRONYMS USED

ASD	Alternate Shutdown
BRIA	Battery Room 1A
CFR	Code of Federal Regulations
CR	Control Room
CT	Cable Tunnel
DI	De-ionized
DRS	Division of Reactor Safety
ELU	Emergency Lighting Unit
EOP	Emergency Operating Procedure
EREBS	Electrical Raceway Fire Barrier System
FPPR	Fire Protection Program Report
FZ	Fire Zone
IEEE	Institute of Electrical and Electronics Engineers
IP	Inspection Procedure
IPEEE	Individual Plant Examination of External Events
NRC	Nuclear Regulatory Commission
P&ID	Piping and Instrumentation Drawing
PVC	Polyvinal Chloride
QA	Quality Assurance
RG&E	Rochester Gas and Electric
SDP	Significance Determination Process
SCBA	Self-Contained Breathing Apparatus
SSA	Safe Shutdown Analysis
SSC	Structures, Systems, Components
SSD	Safe Shutdown
TBI	Turbine Building Basement and DI Trucks (TB-1)
URI	Unresolved Item