

August 3, 2006

Mrs. Mary Korsnick  
Vice President, R. E. Ginna Nuclear Power Plant  
R. E. Ginna Nuclear Power Plant, LLC  
1503 Lake Road  
Ontario, New York 14519

SUBJECT: GINNA NUCLEAR POWER PLANT- NRC TRIENNIAL FIRE PROTECTION  
INSPECTION REPORT 05000244/2006007

Dear Mrs. Korsnick:

On June 23, 2006, the NRC completed a triennial fire protection team inspection at your R. E. Ginna facility. The enclosed report documents the inspection results which were discussed on June 23, 2006, with you and other members of your staff.

The 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.

Based on the results of this inspection, the NRC identified one finding of very low safety significance (Green) that was a violation of NRC requirements. However, because of the very low safety significance and because it is entered into your corrective action program, the NRC is treating this finding as a non-cited violation (NCV) consistent with Section VI.A.1 of the NRC Enforcement Policy. If you contest the NCV in this report, you should provide a response within 30 days of the date of this inspection report, with the basis for your denial, to the Nuclear Regulatory Commission, ATTN: Document Control Desk, Washington, DC 20555-0001 with copies to the Regional Administrator Region I, the Director, Office of Enforcement, United States Nuclear Regulatory Commission, Washington, DC 20555-0001, and the NRC Resident Inspector at the Ginna Nuclear Power Plant.

The enclosed report also documented two noncompliances that were identified by your staff during the NFPA 805 transition period. The NRC is not taking any enforcement actions for these noncompliances because the conditions for these noncompliances meet the four criteria (licensee-identified, compensatory actions have been taken, not likely to have been previously identified by routine licensee efforts, and not willful) of NRC Enforcement Policy, Interim Enforcement Policies, "Interim Enforcement Policy Regarding Enforcement Discretion for Certain Fire Protection Issues (10 CFR 50.48)", and are not associated with a finding of high safety significance.

In accordance with 10 CFR 2.390 of the NRC's "Rules of Practice," a copy of this letter, its enclosure, and your response (if any) will be available electronically for public inspection in the NRC Public Document Room or from the Publicly Available Records (PARS) component of NRC's document system (ADAMS). ADAMS is accessible from the NRC Web site at <http://www.nrc.gov/reading-rm/ADAMS.html> (the Public Electronic Reading Room).

Sincerely,

**/RA/**

John F. Rogge, Chief  
Engineering Branch 3  
Division of Reactor Safety

Docket Nos. 50-244  
License Nos. DPR-18

Enclosure: NRC Inspection Report 05000244/2006007

cc w/encl:

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**SUNSI Review Complete: JFR (Reviewer's Initials)**

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U.S. NUCLEAR REGULATORY COMMISSION

REGION I

Docket Nos. 50-244

License Nos. DPR-18

Report No. 05000244/2006007

Licensee: Constellation Energy, R. E. Ginna Nuclear Power Plant, LLC

Facility: R. E. Ginna Nuclear Power Plant

Location: Ontario, New York

Dates: June 5 - 23, 2006

Inspectors: L. Cheung, Senior Reactor Inspector, DRS  
P. Finney, Reactor Inspector, DRS  
K. Young, Senior Reactor Inspector, DRS  
A. Gaudette, Inspector Trainee, DRP

Approved by: John F. Rogge, Chief  
Engineering Branch 3  
Division of Reactor Safety

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## SUMMARY OF FINDINGS

IR 05000244/2006007 on 06/05 - 23/ 2006, Ginna Nuclear Power Plant; Triennial Fire Protection Team Inspection, Fire Protection.

This report covered a two-week triennial fire protection team inspection by three Region I specialist inspectors and one inspector trainee. One Green non-cited violation (NCV) was identified. The significance of most findings is indicated by their color (Green, White, Yellow, Red) using Inspection Manual Chapter (IMC) 0609, "Significance Determination Process" (SDP). Findings for which the SDP does not apply may be Green or be assigned a severity level after NRC management review. 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. NRC-Identified Findings

#### Cornerstone: Mitigating Systems

Green. The team identified an NCV of license condition 2.C.3 for the failure to implement and maintain in effect all fire protection features. Specifically, Constellation failed to provide the required quarterly training to five fire brigade members in the fourth quarter of 2005, and subsequently failed to remove those personnel from fire brigade duty during the period from January 1, 2006, to the time when those brigade members received their remedial training. Site procedures require that fire brigade members attend quarterly classroom training, and that fire brigade members who fail to attend such training be removed from brigade duties until they attend remedial training. Upon identification of this finding, Constellation removed all five personnel from fire brigade duties until properly trained, initiated a prompt investigation and entered this finding into their corrective action program.

The finding is more than minor because the finding is associated with the Mitigating System cornerstone attribute of protection against external factors and affected the cornerstone objective of ensuring the availability, reliability and capability of systems that respond to initiating events to prevent undesirable consequences. The Assumptions and Limitations of the Fire Protection Significance Determination Process (SDP), IMC 0609, Appendix F, specifically exclude fire brigade issues. As such, IMC 0612, Section 05.04.c, requires NRC management review to determine the significance of this finding. NRC management determined this finding to be of very low safety significance (Green). Fire brigade performance was not significantly affected, given staffing, at times, by members that lacked a single quarter of training, because the entire brigade staff had completed the annual live-fire practice sessions. (Section 1R05.04)

### 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) 71111.05TTP, "Fire Protection." The objective of the inspection was to assess whether Constellation Energy 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 facility. The following fire areas (FAs) were selected for detailed review based on risk insights from the Individual Plant Examination (IPE)/ Individual Plant Examination of External Events (IPEEE):

Fire Area RRA,  
Fire Area CHG,  
Fire Area EDG1B-0,  
Fire Area IBS-1.

The inspection team evaluated the licensee's fire protection program (FPP) against applicable requirements which include plant Technical Specifications, Operating License Condition 2.C.3, NRC Safety Evaluations, 10 CFR 50.48 and 10 CFR 50 Appendix R. The team also reviewed related documents that include the Updated Final Safety Analysis Report (UFSAR) Section 9.5, the Fire Hazards Analysis (FHA) and the Post-Fire Safe Shutdown Analysis.

Specific documents reviewed by the team are listed in the attachment.

### **1. REACTOR SAFETY**

Cornerstones: Initiating Events, Mitigating Systems

#### 1R05 Fire Protection

##### .01 Post-Fire Safe Shutdown From Outside Main Control Room (Alternative Shutdown) and Normal Shutdown

##### a. Inspection Scope

##### Methodology

The team reviewed the safe shutdown analysis, operating procedures, piping and instrumentation drawings (P&IDs), electrical drawings, the UFSAR and other supporting documents to verify that hot and cold shutdown could be achieved and maintained from outside the control room for fires that rely on shutdown from outside the control room. This review included verification that shutdown from outside the control room could be performed both with and without the availability of offsite power. Plant walkdowns were also performed to verify that the plant configuration was consistent with that described in

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the safe shutdown and fire hazards analyses. These inspection activities focused on ensuring the adequacy of systems selected for reactivity control, reactor coolant makeup, reactor decay heat removal, process monitoring instrumentation and support systems functions. The team verified that the systems and components credited for use during this shutdown method would remain free from fire damage.

Similarly, for fire areas that utilize shutdown from the control room, the team also verified that the shutdown methodology properly identified the components and systems necessary to achieve and maintain safe shutdown conditions.

### Operational Implementation

The team verified that the training program for licensed and non-licensed operators included alternative shutdown capability. The team also verified that personnel required for safe shutdown using the normal or alternative shutdown systems and procedures are trained and available onsite at all times, exclusive of those assigned as fire brigade members.

The team reviewed the adequacy of procedures utilized for post-fire shutdown and performed an independent walk through of procedure steps to ensure the implementation and human factors adequacy of the procedures. The team also verified that the operators could be reasonably expected to perform specific actions within the time required to maintain plant parameters within specified limits. Time critical actions which were verified included restoration of AC electrical power, establishing the remote shutdown and local shutdown panels, establishing reactor coolant makeup, and establishing decay heat removal.

Specific procedures reviewed for alternative shutdown, including shutdown from outside the control room included the following:

- C ER-FIRE.1, Alternate Shutdown For Control Complex Fire, Revision 20
- C FRP-4.0, Auxiliary Building Basement, Revision 5
- C FRP-8.0, Intermediate Building Controlled Side Basement, Revision 5
- C ER-FIRE.6, Response To Fire In D/G B Vault, Revision 2
- C O-2.1, Normal Shutdown To Hot Shutdown, Revision 120
- C ER-FIRE.0, CR Response To Fire Alarms and Reports, Revision 6

The team reviewed manual actions to ensure that they could be implemented in accordance with plant procedures in the time necessary to support the safe shutdown method for each fire area. The team verified that the licensee had identified operator manual actions for post-fire safe-shutdown and had plans in place to assess them as part of the plant wide risk evaluation for transition to NFPA 805, Performance-Based Standard for Fire Protection for Light Water Reactor Electric Generating Plants, 2001 Edition. The team also reviewed the periodic testing of the alternative shutdown transfer capability and instrumentation and control functions to ensure the tests are adequate to ensure the functionality of the alternative shutdown capability.

b. Findings

No findings of significance were identified.

.02 Protection of Safe Shutdown Capabilities

b. Inspection Scope

The team reviewed the fire hazards analysis, safe shutdown analyses and supporting drawings and documentation to verify that safe shutdown capabilities were properly protected. Under the NFPA 805 Transition Period inspection procedure, the inspection team is to validate 1 to 3 nonconformances identified in the licensee's transitional assessment of their fire areas. It is noted, as directed by and in accordance with the inspection procedure, that no fire areas have been completely assessed at the time of this inspection.

The team reviewed the licensee procedures and programs for the control of ignition sources and transient combustibles to assess their effectiveness in preventing fires and in controlling combustible loading within limits established in the FHA. A sample of hot work and transient combustible control permits were also reviewed. The team performed plant walkdowns to verify that protective features were being properly maintained and administrative controls were being implemented.

The team also reviewed the licensee's design control procedures to ensure that the process included appropriate reviews and controls to assess plant changes for any potential adverse impact on the fire protection program and/or post-fire safe shutdown analysis and procedures.

b. Findings

No findings of significance were identified.

.03 Passive Fire Protection

a. Inspection Scope

The team walked down accessible portions of the selected fire areas to observe material condition and the adequacy of design of fire area boundaries (including walls, fire doors and fire dampers) to ensure they were appropriate for the fire hazards in the area.

The team reviewed installation/repair and qualification records for a sample of penetration seals to ensure the fill material was of the appropriate fire rating and that the installation met the engineering design.

b. Findings

No findings of significance were identified.

.04 Active Fire Protection

b. Inspection Scope

The team reviewed the design, maintenance, testing and operation of the fire detection and suppression systems in the selected plant fire areas. This included verification that the manual and automatic detection and suppression systems were installed, tested and maintained in accordance with the NFPA code of record and that they would control and/or extinguish fires associated with the hazards in the selected areas. A review of the design capability of suppression agent delivery systems were verified to meet the code requirements for the fire hazards involved. The team also performed a walkdown of accessible portions of the detection and suppressions systems in the selected areas as well as a walkdown of major system support equipment in other areas (e.g. fire protection pumps, Halon and/or CO<sub>2</sub> storage tanks and supply system) as assess the material condition of the systems and components.

The team reviewed electric and diesel fire pump flow and pressure tests to ensure that the pumps were meeting their design requirements. The team also reviewed the fire main loop flow tests to ensure that the flow distribution circuits were able to meet the design requirements.

The team also assessed the fire brigade capabilities by reviewing training and qualification records, and drill critique records. The team also reviewed pre-fire plans and smoke removal plans for the selected fire areas to determine if appropriate information was provided to fire brigade members and plant operators to identify safe shutdown equipment and instrumentation, and to facilitate suppression of a fire that could impact post-fire safe shutdown. In addition, the team inspected the fire brigade's protective ensembles, self-contained breathing apparatus (SCBA), and various fire brigade equipment (including smoke removal equipment) to determine operational readiness for fire fighting.

b. Findings

Introduction. The team identified a Green NCV regarding the training program for onsite fire brigade personnel under Constellation's fire protection program. Specifically, Constellation failed to provide the required quarterly training to five fire brigade members in the fourth quarter of 2005, and subsequently failed to remove those personnel from fire brigade duty during the period from January 1, 2006, to the time when those brigade members received their remedial training.

Description. During the inspection, the team requested quarterly training documents for four randomly selected fire brigade members for calendar year 2005. Ginna's fire brigade training program is executed by covering relative topics over a two-year cycle via quarterly training sessions. Further, Constellation evaluates each fire brigade member's level of knowledge through biannual examinations in the second and fourth quarters of each calendar year. Constellation determined that one of the four randomly-

selected fire brigade members did not receive the quarterly classroom training or evaluation in the fourth quarter of 2005. An extent of condition search resulted in the identification of four additional fire brigade members without objective quality evidence of the fourth quarter training or examinations. Therefore, as a result of the inspection, five fire brigade members were identified as having missed the fourth quarter training and examination.

Site procedure ND-FPP, Fire Protection Program, Revision 10, section 3.2.1, states in part that "the protection of personnel, facilities, structures, systems, and components (SSC) at Ginna Station from hazards due to fire is planned and executed per procedures." Procedure A-202, The Fire Protection Program and Ginna Station Staff Responsibilities for Fire Protection, Revision 21, section 3.6.3, states in part that "training shall be based on NFPA Standard 27.... and conducted at least quarterly for brigade members". NFPA 27-1981, section 4-3, states in part that brigade "members should be required to complete a specified program of instruction as a condition to membership in the brigade". Procedure A-103.9, Fire Brigade Training, Revision 18, section 3.3.1, states that "an individual not attending the required quarterly training shall be removed from brigade duty until such time that the next training session can be attended". Constellation clarified, during the inspection, that "the next training session" meant a "remedial training" which would include an examination for the second and fourth quarter training.

Analysis. The failure to provide training to five fire brigade members and the subsequent failure to remove those personnel from fire brigade duty is a performance deficiency and a finding. The licensee determined that there were three occasions where up to three of the fire brigade members who failed to receive the fourth quarter training in 2005 were on brigade duty (shift) at the same time. Traditional enforcement does not apply since there were no actual safety consequences or potential for impacting the NRC's regulatory function and the finding was not the result of any willful violation of NRC requirements. The finding is more than minor because the finding is associated with the Mitigating System cornerstone attribute of protection against external factors and affected the cornerstone objective of ensuring the availability, reliability and capability of systems that respond to initiating events to prevent undesirable consequences. Additionally, the finding is similar to example 4.h of IMC 0612, Appendix E in that not all fire brigade positions were staffed with appropriately trained (qualified) members. The Assumptions and Limitations of the Fire Protection Significance Determination Process (SDP), IMC 0609, Appendix F, specifically exclude fire brigade issues. As such, IMC 0612, Section 05.04.c, requires NRC management review to determine the significance of this finding. NRC management determined this finding to be of very low safety significance (Green). Fire brigade performance was not significantly affected, given staffing, at times, by members that lacked a single quarter of training, because the entire brigade staff had completed the annual live-fire practice sessions.

This finding is a performance deficiency and has a human performance cross-cutting aspect, because Constellation training personnel failed to ensure that all fire brigade members were adequately trained in accordance with procedural requirements, and

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Constellation management subsequently failed to remove those fire fighting personnel who were not properly trained from fire brigade duty.

Enforcement. License condition 2.C.3 requires that Constellation implement and maintain in effect all fire protection features as approved by the NRC's Fire Protection Safety Evaluation (SE) and SE supplements. Site procedure ND-FPP states in part that "the following documents... are utilized to implement the Fire Protection Program requirements: Ginna Station Procedures." Procedure A-202 requires training be provided at least quarterly to fire brigade members and Procedure A 103.9 requires an individual not attending the required quarterly training be removed from brigade duty until such time that the next training session can be attended. Contrary to the above, Constellation failed to provide the required quarterly training to five brigade members in the fourth quarter of calendar year 2005, and subsequently failed to remove those personnel from fire brigade duty for the period of January 01, 2006, to June 19, 2006, before those brigade members received their remedial training. Upon identification of this finding, Constellation removed all five personnel from fire brigade duties, performed remedial training and evaluated them via examination prior to returning them to duty-eligible status. Further, Constellation initiated a prompt investigation and entered this finding into their corrective action program under CR 2006-2518. This violation is being treated as a Non-Cited Violation, consistent with Section VI.A.1 of the NRC Enforcement Policy. **(NCV 05000244/2006007-01, Missed Fire Brigade Training).**

.05 Protection From Damage From Fire Suppression Activities

a. Inspection Scope

The team performed document reviews and plant walkdowns to verify that redundant trains of systems required for hot shutdown are not subject to damage from fire suppression activities or from the rupture or inadvertent operation of fire suppression systems. Specifically, the team verified that:

- C A fire in one of the selected fire areas would not directly, through production of smoke, heat or hot gases, cause activation of suppression systems that could potentially damage all redundant trains.
- C A fire in one of the selected fire areas (or the inadvertent actuation or rupture of a fire suppression system) would not directly cause damage to all redundant trains (e.g., sprinkler caused flooding of other than the locally affected train).
- C Adequate drainage is provided in areas protected by water suppression systems

b. Findings

No findings of significance were identified.

.06 Alternative Shutdown Capability

a. Inspection Scope

Alternative shutdown capability for the areas selected for inspection utilizes shutdown from outside the control room and is discussed in Section 1R05.01 of this report.

.07 Circuit Analyses

This topic was not inspected for plant in NFPA 805 transition.

.08 Communications

a. Inspection Scope

The team reviewed safe shutdown procedures, the safe shutdown analysis and associated documents to verify an adequate method of communications would be available to plant operators following a fire. During this review the team considered the effects of ambient noise levels, clarity of reception, reliability and coverage patterns. The team also inspected the designated emergency storage lockers to verify the availability of portable radios for the fire brigade and for plant operators. The inspectors also verified that communications equipment such as repeaters, transmitters, etc. would not be affected by a fire.

b. Findings

No findings of significance were identified.

.09 Emergency Lighting

c. Inspection Scope

The team observed the placement and coverage area of eight-hour emergency lights throughout the selected fire areas to evaluate their adequacy for illuminating access and egress pathways and any equipment requiring local operation and/or instrumentation monitoring for post-fire safe shutdown. The team also verified that the battery power supplies were rated for at least an 8 hour capacity. Preventive maintenance procedures and various documents, including the vendors manual and completed surveillance tests were reviewed to ensure adequate surveillance testing and periodic battery replacements were in place to ensure reliable operation of the eight-hour emergency lights and that the emergency lighting units were being maintained consistent with the manufacturer's recommendations and accepted industry practices.

b. Findings

No findings of significance were identified.

.10 Cold Shutdown Repairs

a. Inspection Scope

The team verified that the licensee had dedicated repair procedures, equipment, and materials to accomplish repairs of components required for cold shutdown which might be damaged by the fire to ensure cold shutdown could be achieved within the time frames specified in their design and licensing bases. The inspectors verified that the repair equipment, components, tools and materials (e.g. pre-cut cables with prepared attachment lugs) were available and accessible on site.

b. Findings

No findings of significance were identified.

.11 Compensatory Measures

a. Inspection Scope

The team verified that compensatory measures were in place for out-of-service, degraded or inoperable fire protection and post-fire safe shutdown equipment, systems, or features (e.g., detection and suppression systems and equipment, passive fire barriers, pumps, valves or electrical devices providing safe shutdown functions or capabilities). The team also verified that the short term compensatory measures compensated for the degraded function or feature until appropriate corrective action could be taken and that Constellation was effective in returning the equipment to service in a reasonable period of time.

b. Findings

No findings of significance were identified.

**4. OTHER ACTIVITIES**

4OA2 Identification and Resolution of Problems

.01 Corrective Actions for Fire Protection Deficiencies

a. Inspection Scope

The team verified that the licensee was identifying fire protection and post-fire safe shutdown issues at an appropriate threshold and entering them into the corrective action program. The team also reviewed a sample of selected issues to verify that the licensee had taken or planned appropriate corrective actions.

In addition, the team reviewed condition report CR-2006-002099 which documented a licensee-identified design deficiency that fire induced spurious actions in the control

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circuitry of 480V Bus 14 undervoltage relays could cause the “A” Charging Pump circuit breaker to be in a “tripped” condition, preventing the pump from starting when it is required to be operable for hot shutdown. Since the “A” Charging Pump is the only credited charging pump for post-fire safe shutdown outside the control room, the safe shutdown capability could be impacted. The licensee determined this to be an unanalyzed condition and made an eight-hour notification to the NRC on May 18, 2006. The licensee’s preliminary evaluation indicated that this issue could cause an increase in core damage frequency of approximately 1.2E-07 per year.

Subsequently, during the extent of condition investigation, the licensee also identified (documented in CR 2006-002219) that fire induced spurious actions in the control circuitry of a relay associated with the safety injection signal could also have the same result, and that these spurious actions could also cause the standby auxiliary feedwater pumps (SAFP) to be inoperable. The SAFPs are required for safe shutdown when the auxiliary feedwater pumps or the condensate storage tank are affected by a fire.

The licensee initiated the necessary compensatory actions for correcting these problems by adding steps to three post-fire response procedures to defeat the potential fire induced spurious actions by removing the fuses of alternate DC power supplies to the affected relay control circuits. During the inspection, the team reviewed the following three affected procedures and verified that the necessary steps were incorporated into the procedures:

ER.FIRE.1     Alternate Shutdown For Control Complex Fire, Revision 20  
 ER.FIRE.4     Alternate Shutdown For Battery Room A Fire, Revision 16  
 ER.FIRE.5     Alternate Shutdown For Battery Room B Fire, Revision 18

b. Findings

No findings of significance were identified. No enforcement action is required for the above noncompliances (10 CFR 50, Appendix R, III.G.3 for Charging Pump “A” issue, and 10 CFR 50, Appendix R, III.G.2 for the SAFPs issue) because the conditions of these noncompliances meet the four criteria (licensee-identified, compensatory actions have been taken, not likely to have been previously identified by routine licensee efforts, and not willful) of NRC Enforcement Policy, Interim Enforcement Policies, “Interim Enforcement Policy Regarding Enforcement Discretion for Certain Fire Protection Issues (10 CFR 50.48)”, and are not associated with a finding of high safety significance.

4OA6 Meetings, Including Exit

Exit Meeting Summary

The team presented their preliminary inspection results to Ms. M. Korsnick, Site Vice President, and other members of the site staff at an exit meeting on June 23, 2006. No proprietary information was included in this inspection report.

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## KEY POINTS OF CONTACT

### Licensee Personnel

S. Adams	Manager of Operations
D. Bisailon	Reactor Operator
M. Edelstein	Fire Protection System Engineer
R. Fellows	Senior Reactor Operator
M. Green	Quality Performance Assessment
T. Harding	Licensing Supervisor
D. Holm	Plant Manager
D. Joslin	Communications
S. Kennedy	Emergency Preparedness
M. Korsnick	Vice President, Ginna
T. Laursen	Performance Improvement
B. Leonard	Training Manager
M. Lilley	General Supervisor, Equipment Reliability
M. McGraw	Fire Protection System Engineer
T. O'Conner	Fire Protection Consultant
J. Pacher	General Supervisor, System Engineering
J. Pierce	Fire Protection Consultant
R. Randall	Licensing Director
M. Ruby	Licensing Engineer
J. Sharlow	Operations Fire Protection Specialist
W. Thompson	General Supervisor, Chemistry
R. Whalen	Engineering Manager
S. Wihlen	Fire Marshall
D. Wilson	Principal Engineer, BOP Systems

### NRC

J. Rogge, Chief, Electrical and Fire Protection Branch, Division of Reactor Safety  
K. Kolaczyk, Senior Resident Inspector, Ginna Nuclear Power Plant  
M. Marshfield, Resident Inspector, Ginna Nuclear Power Plant

**LIST OF ITEMS OPENED, CLOSED, AND DISCUSSED**

Opened

None

Open and Closed

05000244/2006007-01	NCV	Missed Fire Brigade Training
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Closed

None

Discussed

None

## LIST OF DOCUMENTS REVIEWED

### Fire Protection Licensing Documents

Fire Protection Program Ginna UFSAR Letter From RGE to NRC	R. E. Ginna Nuclear Power Plant, Revision 3a Sections 7.4 and 9.5 Appendix R Alternative Shutdown System R. G. Ginna Nuclear Power Plant, January 16, 1985
Safety Evaluation Report	SER For Appendix R to 10CFR Part 50, Items III.G.3 and III.L, February 27, 1985
Appendix A to BTP APCS 9.5-1	Guidelines for Fire Protection for Nuclear Power Plants Docketed Prior to July 1, 1976.
NFPA 27-1981 NFPA 600-2005	Private Fire Brigades Standard on Industrial Fire Brigades

### Calculations/Engineering Evaluation Reports

DA-EE-2000-066	Appendix R Conformance Analysis, Rev. 1
DA-ME-98-004	Combustible Loading Analysis, Rev. 4
DA-ME-99-009	Condensate Inventory Requirements for Station Blackout Event, Rev.0
DA-ME-2000-001	City Yard Loop Capability to Supply Cooling Water to EDG, SAFW and Fight Screen House Fire With a Loss of Service Water, Rev. 3
DA-ME-2000-075	Pressurizer Volume Control Tank and RWST Evaluations for Appendix R, Rev. 2
DA-NS-2002-008 FTI 32-5009845-00	Operator Action Time Requirement Evaluation, Rev. 4 Approval of FTI Calculation 32-5009845-00 Ginna Safe Shutdown RELEPS Analysis, September 26, 2001
NSL-4976-DA002 PCR 2005-0034 PCR 2005-0010	Determination of Internal Flood Zones and Sources, Rev. 0 Fire Harden "B" S/G Level Indication (EPU), Rev.0 ADFCS I/O Power Supply Back-Up Provision and Cooling Upgrade, Rev.0
DA-ME-2003-018	Replacement of Appendix R Fire Barrier in the "B" Diesel Generator Vault, Rev.1
DA-ME-1998-004 DA-ME-2000-040	Combustible Loading Analysis, Rev.4 City Water Yard Loop X-Tie to Fire Yard Loop Hydraulic Calculation, Rev.1

### Procedures

A-54.7:1	Fire Protection Tour
AP-CVCS.3	Loss of All Charging Flow
AP-IA.1	Loss of Instrument Air, Rev. 18
CME-50-02-52/EG1A1	Corrective Maintenance Procedure: Westinghouse 480V Air Circuit Breaker, Type DB-75 Emergency Generator Breaker A Bus 14, Position 18C, Rev. 02

CPI-APPX-R-SR-32	Calibration of Appendix R Source Range, N32R
EOP ATT-11.2	Attachment Diesel Air Compressor, Rev. 5
ER-D/G.2	Alternate Cooling For Emergency D/G, Rev. 16
ER-FIRE.0	CR Response To Fire Alarms and Reports, Rev. 6
ER.FIRE.6	Response To Fire In D/G B Vault, Rev. 2
FRP-4.0	Auxiliary Building Basement, Rev. 5
FRP-8.0	Intermediate Building Controlled Side Basement, Rev. 5
IP-CAP-1	GINNA Station Interface Procedure: Condition Reporting, Rev. 24
O-2.1	Normal Shutdown To Hot Shutdown, Rev. 120
O-6.11	Surveillance Requirement/Routine Operations Check Sheet, Rev. 146
O-9.3	NRC Immediate Notification, Rev. 55
SC-3.15.15	Emergency Fire Equipment Inventory and Inspection, Rev. 84
ND-FPP	Fire Protection Program, Rev.10
A-202	The Fire Protection Program and Ginna Station Staff Responsibilities for Fire Protection, Rev.20, Rev.21
A-103.9	Fire Brigade Training, Rev.18
A-905	Open Flame, Welding and Grinding Permit (Hot Work Permit), Rev.34
FPS-16	Bulk Storage of Combustible Materials and Transient Fire Loads, Rev.9
O-6.11	Surveillance Requirement / Routine Operations Check Sheet, Rev.144
A-54.7	Fire Protection Tour, Rev.29
FPS-1	Fire Barrier Control Procedure, Rev.9
FPS-2	GINNA Station Fire Barrier Penetration Seal Program, Rev.4
FPS-2.3	Temporary Fire Barrier Penetration Seals Program, Rev.4
M-56.3	Permanent Fire Barrier Penetration Seal Installation / Repair, Rev.26
PT-13.1	Annual Fire Pump Insurance Surveillance Test, Rev.34
PT-13.4.20	Flood Valve Testing - Suppression System #S09 Relay Room SE Manual Deluge, Rev.19
PT-13.4.21	Flood Valve Testing - Suppression System #S10 Relay Room W Manual Deluge, Rev.21
PT-13.4.22	Flood Valve Testing - Suppression System #S11 Relay Room NE Manual Deluge, Rev.24
QCIP-44	Fire Barrier Inspection (Method and Acceptance), Rev.12
SC-3.16.2.8	Fire Signaling System Maintenance, Rev.????
SC-3.15.5	Emergency Fire Equipment Inventory and Inspection, Rev.84
SC-3	Site Contingency Plan - SC-3 Fire Emergency Plan, Rev.38
SC-3.1	Fire Emergency General Information, Rev.20
SC-3.1.1	Fire Alarm Response (Fire Brigade Activation), Rev.17
SC-3.4.0	Fire Assessment and Subsequent Actions, Rev.22
SC-3.4.1	Fire Brigade Captain and Control Room Personnel Responsibilities, Rev.37
IP-RDM-3	GINNA Records, Rev.13

Completed Tests/Surveillances

O-6.11	Surveillance Requirement/Routing Operations Check Sheet, Rev. 146, Completed March 2006
SC-3.15.15	Emergency Fire Equipment Inventory and Inspection, Rev. 84, Completed 4/10/06, 5/9/06, 5/31/06 and 6/2/06
FPS-2.1	Control and Verification of UFSAR and/or 10CFR50 Appendix R Fire Barriers, Rev.6, 09/14/05, 11/28/05
FPS-7	Velocity Flush of the Fire Water System, Rev.9, 05/12/06 and Rev.5, 10/25/02
M-56.1	Establishment of Temporary Fire Seals, Rev.27, 04/21/06
PT-13.11	Gamewell Zone Smoke Detector Testing Zones Z01 (Aux. Base. East), Rev.20, 12/15/04
PT-13.11.26	Testing of Smoke Detection Zone Z-44 Relay Room Annex, Rev.???, 01/10/06
PT-13.11.6.1	Testing of Smoke Detection Zone Z38D1 Intermediate Building - South Basement, Rev.0, 05/11/06
PT-13.4.29	Halon System Testing Relay Room / Computer Room (S08), Rev.24, 08/15/05
PT-13.4.33	Station Halon Systems Bottle Weighing and S08 (Relay Room and Computer Room) Air Flow Test, Rev.24, 04/25/05
PT-13.1	Annual Fire Pump Insurance Surveillance Test, Rev.32, 12/21/05 and Rev.31, 12/20/04
PT-13.11.2	Gamewell Zone Smoke Detector Testing Zones Z20 ("A" D/G Vault), Z21 ("B" DG Vault). Rev.17, 05/17/05
PT-13.10	Fire System Spray Nozzle Air Flow Test for S05, S06, S09, S10, S11, S14, S17 and S29, Rev.17, 12/08/05
P201504	ECAD Testing on "A" EDG Cables

Quality Assurance (QA) Audits and System Health Reports

FPP-05-01-G	Fire Protection Report Audit, August 2, 2005
SA 2006-0005	Fire Program, March 23, 2006
Audit FPP-05-01-G	Fire Protection, completed 08/02/05
SA 2006-0005	Fire Program Assessment Report, completed 03/23/06

SQUA-2004-0013-MPH  
SQUA-2004-0142-ENB  
SQUA-2005-0050-EMG

Drawings

21488-0100	Fire Barrier Arrangement Sheet Fire, Smoke and Pressure Barrier Plan View El.253'6", Rev.10
21488-0111	Fire Barrier General Arrangement Sheet Diesel Generator Room B West and South Walls Penetrations Location Floor El.253'6", Rev.5
33013-2559	Fire Response Plan Control Building, Rev.8
33013-1993 Sh.2	Fire Service Water Header "B", Rev.9
33013-1537	1B Diesel Generator Cable Vault Appendix "R" Cable Chase Fire Barrier, Rev.4
33013-1242	Fire Protection Relay and Multiplexer Rooms, Rev.5
33013-1989	Fire Service Water Plant Systems, Rev.22
22013-2539	AC System Plant Load Distribution One Line Diagram, Rev.13
33013-2543	Fire Response Plan Auxiliary Building Plan - Basement Floor El.253'8", Rev.2
33013-2544	Fire Response Plan Turbine Building Plan - Basement Floor El.253'6", Rev.9
33013-2545	Fire Response Plan Containment Structure & Intermediate Bldg. Plan - Intermediate Floor El. 253'3", Rev.8
33013-2559	Fire Response Plan Control Building Plan Views, Rev.8
21946-0445	Standby Auxiliary Feedwater Pump C Control Schematic
33013-1736	Diesel Generator A Control Schematic, Rev. 14
21946-0650	TDAFW Pump Steam Supply Valve MOV-3504A Control Schematic, Rev. 8
21946-0651	TDAFW Pump Steam Supply Valve MOV-3505A Control Schematic, Rev. 7
21946-0054	480V Bus 14 PT and UV Relays Control Schematic, Revision 5
21946-0055	480V Bus 16 PT and UV Relays Control Schematic, Revision 6
21946-0445	Standby Auxiliary Feedwater Pump C Control Schematic, Revision 6
21946-0446	Standby Auxiliary Feedwater Pump D Control Schematic, Revision 5
10909-34	Bus 14 and Bus 16 Undervoltage Control, Revision 4
10905-54, Sh 1	Undervoltage Scheme, Bus 14 Elementary Wiring Diagram, Undervoltage Scheme Bus 14, Revision 11
10905-54, Sh 2	Auxiliary Relay Rack Elementary Wiring Diagram, Revision 15
10905-54, Sh 3	PT and UV Relays, Bus 14, Elementary Wiring Diagram, Revision 13
21498-511	Appendix R Instrument Panels Wiring diagram, Rev.6
11302-0381	Steam Generator A Pressure Loop PT-482 Inst Loop Wiring Diagram, Rev.1
11302-0382	Steam Generator B Pressure Loop PT-483 Inst Loop Wiring Diagram, Rev.2
11302-0359	Steam Generator A Level Loop LT-460 Inst Loop Wiring Diagram, Rev.1

11302-0371	Steam Generator B Level Loop LT-470 Inst Loop Wiring Diagram, Rev.1
11302-0323	Pressurizer Level Loop LT-433 Inst Loop Wiring Diagram, Rev.1
10905-0445	Standby Auxiliary Feedwater Pump C Elementary Wiring Diagram, Rev. 6
10905-0446	Standby Auxiliary Feedwater Pump D Elementary Wiring Diagram, Rev. 5

#### Pre-Fire Plans

Fire Response Plan FRP-4.0	Auxiliary Building Basement, Rev.5
Fire Response Plan FRP-8.0	Intermediate Building Controlled Side Basement, Rev.5
Fire Response Plan FRP-19.0	Relay Room/Multiplex Room/Annex Room, Rev.8
Fire Response Plan FRP-25.0	Diesel Generator Room B and Vault, Rev.6

#### Piping and Instrumentation Diagrams (P&IDs)

33013-1234	Condensate Storage (CDST), Rev. 31
33013-1237	Auxiliary Feedwater (FW), Rev. 52
33013-1238	Standby Auxiliary Feedwater (FW), Rev. 24
33013-1258	Reactor Coolant Pressurizer (RC), Rev. 24
33013-1260	Reactor Coolant (RC), Rev. 25
33013-1265, Sh. 1	Chemical & Volume Control System Charging, Rev. 11
33013-1265 Sh.2	Auxiliary Building Chemical & Volume Control System Charging, Rev. 17
33013-1237	Auxiliary Feedwater, Revision 52

#### Fire Brigade Documents

Fire Area/Zone Analysis for Fire Areas/Zones ABI/IBS-1, CC/RR, CHG/- and EDG1B/-

#### Fire Brigade Drills

Fire Brigade Drills for calendar years 2004, 2005 and 2006

#### Fire Brigade Training

Fire Brigade Training documents

Fire Brigade Qualification documents

2<sup>nd</sup> Quarter 2006 Fire Brigade Member Examinations

#### Operator Safe Shutdown Training

Appendix R Composite Operator Time/Motion Study, May 16, 2006

RER22C Site Contingencies, Appendix R - Alternative Shutdown, Rev. 8

Job Performance Measures (JPMs)

JC012.007 Locally Trip Reactor And Turbine, Rev. 5  
 JC039.003 Locally Operate The ARVs, Rev. 9  
 JC061.005 Reset TDAFW Pump Turbine Trip/Throttle Valve, Rev. 7  
 JC079.001 Startup and Align Diesel Driven Air Compressor, Rev. 8  
 JR004.009 Take Local Manual Control of Charging Pump, Rev. 6  
 JR039.001 Locally Close MSIV's, Rev. 10  
 JR061.008 Open TDAFW Pump Supply Valves, Rev. 8  
 JR062.006 Locally Operate 480 VAC Breakers, Rev. 9  
 JR064.004 EDG Locally Per ER-FIRE.1 With No Faults, Rev. 15

Hot Work and Ignition Source Permits

HWP 06-50  
 HWP 06-51  
 HWP 06-52  
 HWP 06-53  
 HWP 06-54  
 HWP 06-55

Transient Combustible Evaluations

TCP 06-26  
 TCP 06-27  
 TCP 06-28  
 TCP 06-29  
 TCP 06-30

Fire Barriers

Penetration Seal Database  
 Temporary Fire Barrier I-590-P  
 Temporary Fire Barrier D-41-P  
 Fire Barrier Permit 06-03, 05/02/06  
 Fire Barrier Permit 06-13, 06/01/06  
 Spec IBD23A-703, IBD23 Style A Curtain Type Static Fire Dampers, 2003

Miscellaneous Documents

Ginna Station EPU Licensing Report Fire Protection, December 2005  
 Ginna Station EPU Licensing Report Risk Evaluation of EPU, December 2005  
 Emergency Lighting Service Manual for ALC-X Series I, AS Series I, ED Series I VTD-D1140-4201 Revision 000 VM#D1140-0377 Tab 2  
 Spectron Series AS-BC/BX Series I Self Contained Emergency Lighting Units AS-80 BCI, AS-160 BCI, 12 AS-160 BCI, 12 AS-200 BXI, GMMEL-SD4 Instructions for Installation, Operation, Service

Dual-Lite Spectron Series Emergency Lighting Equipment Series: ALC-X-I, AS-BC/BX-1, AS-I,  
 EDC-X-I, EDN-I Instructions for Installation, Operation, Maintenance  
 Equipment History Report: 52/EG1A1, 52/EG1A2, 52/EG1B1, 52/EG1A2  
 Equipment History Report: 52/SWP1A, 52/SWP1B  
 Equipment History Report: 52/CHP1A, 52/CHP1B  
 Equipment History Report: 52/SWP1C  
 Audit FPP-05-01-G, Fire Protection, completed 08/02/05  
 Self Assessment SA 2006-0005, Fire Program Assessment Report, completed 03/23/06  
 SQUA-2004-0013-MPH  
 SQUA-2004-0142-ENB  
 SQUA-2005-0050-EMG  
 Fire Protection Program Transition Plan  
 Fire Protection Program Impairment Tracking System  
 Test Gauge Calibration Data sheet, 06/21/06

#### Condition Reports

2003-1376	2003-1478	2003-2227	2003-3333	2004-0104	2004-0190	2004-1691
2004-1878	2004-2663	2004-3178	2005-0712	2005-3158	2005-3179	2005-3188
2005-4462	2005-4501	2005-4737	2005-4739	2005-4928	2005-5139	2005-5308
2005-6217	2006-0785	2006-0891	2006-0905	2006-0941	2006-0962	2006-0956
2006-1040	2006-1363	2006-2368	2003-2785	2005-0682	2003-2994	2005-3190
2004-0010	2005-3191	2005-3190	2005-4936	2005-0616	2005-5119	2006-0883
2006-2375*	2006-0889	2006-2412*	2006-0941	2006-2409*	2006-0957	2006-2406*
2006-1618	2006-2407*	2006-2356*	2006-2366*	2006-2367*	2006-2363*	2006-2380*

#### Work Orders

20002696  
 20505059  
 20505098

**LIST OF ACRONYMS USED**

AC	Alternating Current
CFR	Code of Federal Regulations
CO <sub>2</sub>	Carbon Dioxide
CR	Condition Report
DC	Direct Current
DRS	Division of Reactor Safety
FA	Fire Area
FHA	Fire Hazards Analysis
FPP	Fire Protection Program
FZ	Fire Zone
IMC	Inspection Manual Chapter
IP	Inspection Procedure
IPE	Individual Plant Examination
IPEEE	Individual Plant Examination of External Events
IR	Inspection Report
NCV	Non-cited Violation
NFPA	National Fire Protection Association
NRC	Nuclear Regulatory Commission
PARS	Publicly Available Records
P&ID	Piping and Instrumentation Drawing
SAFP	Standby Auxiliary Feedwater Pumps
SCBA	Self Contained Breathing Apparatus
SDP	Significance Determination Process
SE	Safety Evaluation
SSC	Structures, Systems, and Components
UFSAR	Updated Final Safety Analysis Report