



UNITED STATES  
NUCLEAR REGULATORY COMMISSION  
WASHINGTON, D.C. 20555-0001

August 20, 2015

Mr. Joseph E. Pacher  
Vice President  
R.E. Ginna Nuclear Power Plant  
Exelon Generation Company, LLC  
1503 Lake Road  
Ontario, NY 14519

SUBJECT: R. E. GINNA NUCLEAR POWER PLANT – REPORT OF AUDIT TO SUPPORT  
PROPOSED AMENDMENT TO TRANSITION TO THE NATIONAL FIRE  
PROTECTION ASSOCIATION STANDARD 805 FIRE PROTECTION  
LICENSING BASIS (TAC NOS. MF1393)

Dear Mr. Pacher:

A review team, consisting of U.S. Nuclear Regulatory Commission (NRC) staff and contractors participated in a regulatory audit of the R.E. Ginna Nuclear Power Plant (Ginna). The audit supports the NRC staff's review of the licensee's application for a license amendment for Ginna, dated March 28, 2013 (Agencywide Documents Access and Management System Accession No. ML13093A064), to transition the plant's fire protection licensing basis to Title 10 of the Code of Federal Regulations (CFR) 50.48(c), which endorses with exceptions the National Fire Protection Association (NFPA) Standard 805, "Performance-Based Standard for Fire Protection for Light Water Reactor Electric Generating Plants," 2001 Edition.

Enclosed please find the NRC staff's audit report, documenting completion of the audit. The NRC staff's review of the subject application for amendment is still ongoing.

If you have any questions regarding this matter, please contact me at 301-415-2020 or [Brenda.Mozafari@nrc.gov](mailto:Brenda.Mozafari@nrc.gov).

Sincerely,

A handwritten signature in black ink, reading "Brenda Mozafari", is written over the typed name.

Brenda L. Mozafari, Senior Project Manager  
Plant Licensing Branch I-1  
Division of Operator Reactor Licensing  
Office of Nuclear Reactor Regulation

Docket No. 50-244

Enclosure:  
Audit Report

cc w/enclosure: Distribution via Listserv



UNITED STATES  
NUCLEAR REGULATORY COMMISSION  
WASHINGTON, D.C. 20555-0001

AUDIT REPORT BY THE OFFICE OF NUCLEAR REACTOR REGULATION

EXELON GENERATION COMPANY, LLC

R. E. GINNA NUCLEAR POWER PLANT

PROPOSED AMENDMENT TO TRANSITION TO THE

NATIONAL FIRE PROTECTION ASSOCIATION STANDARD 805

DOCKET NO. 50-244

1.0 INTRODUCTION

A review team, consisting of U.S. Nuclear Regulatory Commission (NRC) staff and contractors from the Southwest Research Institute (SwRI)/Center for Nuclear Waste Regulatory Analyses (CNWRA) participated in a regulatory audit of the R.E. Ginna Nuclear Power Plant (Ginna) located in Ontario, New York, from August 26 - 29, 2013. The regulatory audit supports the NRC staff's review of the licensee's application for license amendment for Ginna, dated March 28, 2013 (Agencywide Documents Access and Management System Accession No. ML13093A064), to transition the plant's fire protection licensing basis to Title 10 of the *Code of Federal Regulations* (CFR) 50.48(c), which endorses with exceptions the National Fire Protection Association (NFPA) Standard 805, "Performance-Based Standard for Fire Protection for Light Water Reactor Electric Generating Plants," 2001 Edition.

2.0 AUDIT OBJECTIVE AND OUTLINE

The purpose of the audit was to gain an understanding of the information needed to support the staff's licensing decision regarding the proposed license amendment and to develop high quality requests for additional information (RAIs), as needed. The information submitted in support of Ginna's proposed license amendment is under final review, and any additional information needed to support the review will be formally requested by the NRC staff using the NRC RAI process.

The audit team consisted of 11 NRC, and 3 CNWRA personnel. Attachment 1 provides the schedules of activities during the audit. Attachment 2 lists audit participants from the NRC, CNWRA, and the licensee.

Enclosure

The audit team held an entrance meeting on Monday, August 26, 2013, with the licensee's audit participants (see Attachment 5 for list of participants). During the remainder of the audit, team members met in smaller groups according to the Audit Plan (distributed at the audit and included as Attachment 4 of this report, with minor editorial corrections). Ginna's staff conducted plant walk-downs focusing on fire protection engineering, safe shutdown, fire probabilistic risk assessment, and fire modeling.

Technical discussions were held focusing on five major areas: fire protection engineering (FPE), safe shutdown (SSD)/circuit analysis (CA), fire probabilistic risk assessment (PRA), fire modeling (FM), and programmatic review.

Attachment 3 contains a list of documents reviewed by the team.

At the conclusion of the audit, the team participated in a summary exit meeting with Ginna personnel on August 29, 2013 (see Attachment 5 for list of participants).

#### Attachments

1. Schedule of Activities
2. List of Audit Participants
3. List of Documents Reviewed
4. Audit Plan
5. Audit Entrance and Exit Meeting Participants

Principal Contributor: Leslie Fields

Date: August 20, 2015

## **Attachment 1**

### **Schedule of Activities**

#### **Monday, August 26, 2013**

- 8:00 am**      Audit team members met onsite at the Constellation Emergency Response Center, established computer connections, and began document reviews
- 8:30 am**      Fire PRA Technical Discussion
- 8:45 am**      Fire Modeling Technical Discussion
- 9:30 am**      Audit entrance meeting  
Plant overview discussions (plant overview presentations were completed the previous week as teleconferenced-presentations)
- 10:00 am**      Technical Presentations: Review of fire probabilistic assessment (PRA), fire modeling in support of fire PRA, NFPA 805 Chapter 3. Started review of radioactive release, recovery actions, non-power operations (NPO), safe shutdown (SSD), nuclear safety capability assessment (NSCA)
- 12:30 pm**      Technical Discussions Continued: fire modeling, radioactive release, SSD, fire PRA, control room abandonment, multiple spurious operations (MSO), recovery actions, NPO, NSCA, fire protection engineering (FPE).
- 3:00 pm**      **Main Control Room** abandonment and PRA
- 4:45 pm**      Licensee Wrap Up
- 5:15 pm**      Adjourn

#### **Tuesday, August 27, 2013**

- 8:00 am**      Fire PRA Technical Discussion
- 8:30 am**      Fire Modeling Technical Discussion
- 10:00 am**      Programmatic Discussion
- 11:30 am**      Ginna plant tour / walk-downs
- 2:30 pm**      RAI Process discussion
- 4:45 pm**      Licensee Wrap Up
- 5:00 pm**      Adjourn

**Wednesday, August 28, 2013**

<b>8:00 am</b>	Fire PRA Technical Discussion
<b>8:30 am</b>	Fire Modeling (FDS Webex)
<b>11:30 am</b>	Site VP meeting
<b>12:00 pm</b>	Technical Discussions continued
<b>1:00 pm</b>	Radiation Release teleconference
<b>2:30 pm</b>	Final draft RAIs discussions with licensees for the following areas Fire Protection Programmatic SSD Fire Modeling
<b>5:00 pm</b>	Licensee Wrap Up
<b>5:15 pm</b>	Adjourn

**Thursday, August 29**

<b>8:00 am</b>	PRA Final reviews and closeout
<b>12:00 pm</b>	PRA review continued from morning sessions
<b>1:30 pm</b>	Audit team debrief meeting
<b>2:00 pm</b>	Audit Exit meeting
<b>2:15 pm</b>	Adjourn

## **Attachment 2**

### **List of Participants**

#### **U.S. Nuclear Regulatory Commission (NRC) Team**

- |                    |     |                       |
|--------------------|-----|-----------------------|
| • Leslie Fields    | NRC | Audit Team Leader     |
| • Alex Klein       | NRC | Branch Chief          |
| • Hossein Hamzehee | NRC | Branch Chief          |
| • Jay Robinson     | NRC | RAI Lead/Programmatic |
| • Harry Barrett    | NRC | SSD/CA                |
| • Naeem Iqbal      | NRC | FM                    |
| • JS Hyslop        | NRC | PRA                   |
| • Daniel O'Neal    | NRC | PRA                   |
| • Mehdi Reisifard  | NRC | PRA                   |
| • Bernard Litkett  | NRC | SSD/CA                |
| • Alayna Pearson   | NRC | FPE                   |

#### **Center for Nuclear Waste Regulatory Analyses (CNWRA) Team**

- |                  |                    |
|------------------|--------------------|
| • Jason Huczek   | Fire Modeling/Lead |
| • Eric Nette     | Fire Modeling      |
| • Robert Fosdick | Programmatic/Lead  |

#### **Ginna Response Team**

- |                     |       |                                 |
|---------------------|-------|---------------------------------|
| • Jared Jackson     | Ginna | Ginna Licensing Supervisor      |
| • Ken Charland      | Ginna | Ginna Licensing                 |
| • Mike Lilley       | Ginna | NFPA 805 Project Mgr            |
| • Jeff Stone        | Fleet | Supervisor or Eng – PRA         |
| • Tom Mogren        | Ginna | Mgr Eng Services                |
| • Richard Everett   | Ginna | G.S. Engineering Services       |
| • Curt Fischer      | Fleet | Monitoring                      |
| • Tom Paglia        | Ginna | Mgr Operations                  |
| • Jay Wells         | Ginna | G.S. Design Engineering         |
| • Steve Kimbrough   | Ginna | PRA                             |
| • Rob Cavedo        | Fleet | PRA                             |
| • Mike Edelstein    | Ginna | Fire Marshall                   |
| • Mary Ellen McGraw | Ginna | FPE                             |
| • Don Dean          | Ginna | Operations SRO                  |
| • David Lovgen      | Ginna | Electrical Engineering/Projects |

- |                   |       |                                 |
|-------------------|-------|---------------------------------|
| • Brian Hunn      | Ginna | Electrical Engineering/Projects |
| • Terri Ryan      | Ginna | Project Analyst                 |
| • John St. Martin | Ginna | NPO/Ops                         |

**R.E. Ginna Contractors**

- |                   |        |                  |
|-------------------|--------|------------------|
| • Shafat Shaon    | Areva  | NSCA/NPO         |
| • Paul Amico      | Hughes | PRA              |
| • Suzanne Loyd    | Hughes | PRA              |
| • Pierre Macharet | Hughes | FRE              |
| • Reene Gambrell  | Hughes | LAR Production   |
| • Eleni Rojhas    | Hughes | Fire Modeling    |
| • Bob Cavalier    | Ginna  | Modifications/PM |

**Industry Representatives**

- |                 |                |
|-----------------|----------------|
| • Jim McQuighan | Calvert Cliffs |
| • Nathan Hall   | Calvert Cliffs |

### **Attachment 3**

#### **List of Documents Reviewed**

1. Ginna Quality Assurance Topical Report
2. NSCA-S1-9089546-001, rev.-001A
3. EOP-AP-CR.1; Control Rm Inaccessibility
4. G1-FSS-F001 Rev 1 (Detailed Fire Modeling)
5. G1-FSS-F002 Rev 1 (Structural Steel)
6. G1-FSS-F003 (Multi-Compartment Screening)
7. G1-FSS-F004 Rev 1 (Fire Scenarios in Main Control Room)
8. G1-FSS-F005 Rev 0 (V and V)
9. 1FJJ28008.000, Rev 003 (R.E. Ginna MCR Abandonment Calculation)
10. CNG-TR-1.01-1000 R01000 (Constellation Energy Nuclear Group Fleet Administrative Procedure – Conduct of Training)
11. CNG-TR-1.01-1014 R00400 (Additional Personnel Training Document)
12. Fire PRA ESP-FIQ-FPRA (Additional PRA Training Document)
13. CNG-FES-020 R0002 (Fire PRA Walkdown Instructions)
14. CNG-FES-021 R0001 (Boundaries in Plant Documentation and Drawings)
15. CNG-FES-023 R00002 (Fire PRA Ignition Frequencies)
16. CNG-FES-024 R00001 (Scoping Fire Modeling)
17. Fire modeling drawings for previously identified walkdown areas.
18. Layout drawings (FPRA Fire Area Depictions) which show fire area/zone boundaries, credited fire protection systems, etc.
19. Fire modeling output visualization (CFAST, FDS) for analysis performed in the MCR and several other fire compartments, as described in the pre-audit questions.
20. 'Virtual Tour' (panoramic photographs) of several fire areas located in the RCA. Photographs were presented in lieu of walking down these compartments.
21. NSCA -51-9089546-001, Rev 001A
22. Ginna Technical Specifications
23. NPO-51-9140371-001; Non-power operations
24. Control Room Inaccessibility; EOP-AP-CR.1
25. Background information for Control Room Inaccessibility; AP-CR.1
26. CNG-OM-1.01-1000, Rev.00501- Outage Management
27. IP-OUT-2,Rev.01800; Outage Risk Management
28. 03202-0102(19), 125 VDC power distribution system one line diagram
29. 33013-0652, Rev.26; 480 VAC one line wiring diagram
30. 33013-0653; 4160 VAC one line wiring diagram
31. NSCA -51-9089546-001, Rev 001A
32. Ginna Technical Specifications
33. NPO-51-9140371-001; Non-power operations
34. Control Room Inaccessibility; EOP-AP-CR.1
35. Background information for Control Room Inaccessibility; AP-CR.1
36. CNG-OM-1.01-1000, Rev.00501- Outage Management
37. IP-OUT-2,Rev.01800; Outage Risk Management
38. 03202-0102(19), 125 VDC power distribution system one line diagram



39. 33013-0652, Rev.26; 480 VAC one line wiring diagram
40. 33013-0653; 4160 VAC one line wiring diagram
41. 33013-2539, Rev.23; AC system plant load distribution
42. AP-RHR.1,Rev.02000; Loss of RHR
43. O-2.2,Rev. 15403; Plant Shutdown from Hot Shutdown to Cold Shutdown
44. EIR-51-9177694-000;NPO Pinch Point Analysis
45. Fire Risk Evaluations (FRE) HAI-0028-0011-002-003, Att. O Yard
46. ER-Fire.0; Control Room Response to Fire Alarms
47. ER-Fire.1; Alternate Shutdown for Control Complex Fire
48. ECA-0.0; Loss of AC power
49. T-35P;Screenhouse supplemental heat, placing in service and removal
50. M-115; Installation and removal of screenhouse gas space heaters
51. CNG-AM-1.01 rev 00100 Equipment Reliability
52. CNG-AM-1.01-1000 rev 00600 Equipment Reliability Process
53. A-202 The Fire Protection Program and Ginna Station Staff Responsibilities for Fire Protection rev 03100
54. CNG-CM-1.01-1003 Design Engineering and Configuration Control rev 00500
55. CNG-CM-1.01-3004 PRA Process for Internal Evaluations
56. CNG-FES-007 Preparation of Design Inputs and Change Impact Screens
57. EP-3-P-0132 Fire Protection Appendix R Conformance Verifications rev 00702
58. Fire Protection Program Report (FPPR) rev 5c
59. G1-UNC-F001 Fire PRA Uncertainty and Sensitivity (UNC) Notebook
60. Quality Assurance Topical Report (QATR) rev 6
61. CNG-PR-3.01-1000 Records Management
62. LTR-RAM-II-12-066, Fire PRA Peer Review Against the Fire PRA Standard Supporting Requirements From Section 4 of the ASME/ANS Standard for Level 1/Large Early Release Frequency Probabilistic Risk Assessments For Nuclear Power Plant Applications For The Ginna Station Fire Probabilistic Risk Assessment
63. HAI 0028-0011-002-003, Rev 1, RE Ginna Nuclear Power Station NFPA 805 Fire Risk Evaluations
64. G1-CF-F001, Rev 1, Fire PRA Notebook Circuit Failures (CF)
65. G1-DA-0000, Rev 2, PRA Data Analysis (DA) Notebook
66. GR-ES-FOO1, Rev 1, Fire PRA Notebook Equipment Selection
67. G1-FQ-F001, Rev 1, Fire PRA Notebook Fire Risk Quantification (FQ)
68. G1-FSS-F003, Rev 1, Fire PRA Notebook (Multi-compartment Screening and Analysis)
69. G1-FSS-F004, Rev 1, Fire PRA Notebook Fire Scenarios in the Main Control Room
70. G1-FSS-F005, Rev 0, Fire PRA Notebook Verification and Validation of the Ginna NFPA 805 Fire Modeling Database
71. G1-HR-0001, Rev 2, Fire PRA Notebook Human Reliability Analysis (HRA)
72. G1-IGN-F001, Rev 2, Fire PRA Notebook Ignition Frequency (IGN)
73. G1-LE-0001, Rev 1, PRA Large Early Release (LE) Notebook
74. G1-QLS-F001, Rev 0, Fire PRA Notebook Qualitative Screening
75. G1-UNC-F001, Rev 1, Fire PRA Notebook Uncertainty and Sensitivity Analysis (UNC)
76. G1-SC-0001, Rev 1, PRA Success Criteria (SC) Notebook

- 77. G1-SF-F001, Rev 1, Fire PRA Notebook Seismic-Fire (SF)
- 78. TR-2010-0006 , Rev 1, Technical Report on Identification& Classification of the Ginna MSO Scenarios using an Expert Panel

## Attachment 4

# **R.E. GINNA NUCLEAR POWER PLANT REGULATORY AUDIT IN SUPPORT OF THE LICENSE AMENDMENT REQUEST TO IMPLEMENT A RISK-INFORMED, PERFORMANCE- BASED FIRE PROTECTION PROGRAM AS ALLOWED BY TITLE 10 OF THE CODE OF FEDERAL REGULATIONS PARAGRAPH 50.48(C) (TAC NO. MF1393)**

## **I. BACKGROUND**

Constellation Energy Nuclear Group Licensee for licensee for the R.E. Ginna Nuclear Power Plant (Ginna) has submitted a license amendment request (LAR) (Reference 1) to change its fire protection program to one based on the National Fire Protection Association (NFPA) standard 805, "Performance-Based Standard for Fire Protection for Light Water Reactor Electric Generating Plants," 2001 Edition, as incorporated into Title 10 of the *Code of Federal Regulations* (10 CFR), Part 50, Section 50.48(c).

The Nuclear Regulatory Commission (NRC) staff's review of the LAR has commenced in accordance with the Office of Nuclear Reactor Regulation's (NRR) Office Instruction LIC-101, "License Amendment Review Procedures." The NRC staff has determined that a Regulatory Audit of the Ginna LAR should be conducted in accordance with NRR Office Instruction LIC-111, "Regulatory Audits," for the staff to gain a better understanding of the licensee's calculations, proposed plant modifications, and other aspects of the LAR.

A regulatory audit is a planned, license or regulation-related activity that includes the examination and evaluation of primarily non-docketed information. A regulatory audit is conducted with the intent to gain understanding, to verify information, and/or to identify information that will require docketing to support the basis of the licensing or regulatory decision. Performing a regulatory audit of licensee information is expected to assist the staff in efficiently conducting its review or gain insights on the licensee's processes or procedures. Information that the NRC staff relies upon to make the safety determination must be submitted on the docket. However, there may be supporting information retained as records under 10 CFR 50.71 and/or 10 CFR 54.37 that, although not required to be submitted as part of the licensing action, would help the staff better understand the licensee's submitted information.

The objectives of this regulatory audit are to:

- Gain a better understanding of the detailed calculations, analyses and bases underlying the NFPA 805 LAR and confirm the staff's understanding of the LAR;
- Identify further information that is necessary for the licensee to submit for the staff to reach a licensing or regulatory decision; this will result in requests for additional information (RAIs);

- Verify that the licensee's planned process for self-approval of fire protection program (FPP) changes will meet the proposed NFPA 805 license condition and quality requirements;
- Establish an understanding of proposed plant modifications necessary to implement NFPA 805; and,
- Verify the implementation of processes or procedures that the licensee committed to as part of NFPA 805 implementation.

## **II. REGULATORY AUDIT BASIS**

The basis of this audit is the licensee's LAR (Reference 1) and the NRC's Standard Review Plan (SRP) Section 9.5.1.2, "Risk-Informed, Performance-Based (RI/PB) Fire Protection" (Reference 2). References 3 through 7 provide additional information that will be used to support the audit.

## **III. REGULATORY AUDIT SCOPE OR METHOD**

The staff will review the licensee's NFPA 805 transition as proposed in the LAR. Key to this effort is the licensee's RI/PB Fire Protection Program (FPP). The staff will review the fundamental FPP elements and minimum design requirements. A sample of fire protection engineering evaluations may be selected for review. In addition, the staff will review, as necessary, the regulatory basis, references, licensing actions, existing engineering equivalency evaluations, and issues that the licensee has deemed "previously approved."

The scope of the review of nuclear safety performance criteria may include both at-power and non-power operational modes, and may require sampling of procedures and other documentation. The compliance by fire area review will, as necessary, include multiple spurious operations, the transition of operator manual actions to recovery actions (RAs), fire protection engineering evaluations, and NFPA 805 deterministic requirements. The audit may also include alternatives to compliance with NFPA 805 if any are identified.

The staff may review a sample of fire risk assessments and plant change evaluations for one or more fire areas, the evaluation of the additional risk of RAs, the licensee's process for self-approving post-transition FPP changes, cumulative risk and combined changes, as well as uncertainty and sensitivity analyses. The review may also include licensee risk-informed evaluations to ensure that defense-in-depth and safety margins have been evaluated.

The staff will also review the licensee's assessment of the technical adequacy of the probabilistic risk assessment (PRA) model used for any risk evaluations required to transition to a RI/PB FPP, including resolution of peer review findings and licensee self-assessments. This effort may include auditing a sample of logic models and calculations in the fire PRA model as well as the Internal Events PRA model. The review will include, as necessary, the licensee's process that has or will be implemented to maintain the quality of the Internal Events and fire PRA models to support self-approval of risk-informed change evaluation after transition is completed.

The scope may also include the licensee's NFPA 805 monitoring program which is to establish and monitor acceptable levels of availability, reliability, and performance of fire protection systems and features relied upon for NFPA 805 compliance. Also, the scope may include, as appropriate, selected plant modifications to confirm they have been appropriately characterized in the LAR. The staff may review the process for controlling compensatory measures to confirm their adequacy while they remain in effect until the modifications are completed.

In addition, the audit may review program documentation, configuration control, and the FPP quality assurance program. The FPP design basis document may be reviewed, as well as other documentation of fire hazards identification and nuclear safety capability assessments. The review may include configuration control of the FPP design basis document, the fire PRA methods and model, and other relevant documentation as necessary. The staff may also review the FPP quality assurance program, and sample fire models and fire model calculations. Plant walkdowns may be performed as necessary to observe features of the licensee's FPP and design elements of building within the power block.

#### **IV. INFORMATION AND OTHER MATERIAL NECESSARY FOR THE AUDIT**

The NRC audit team will require access to licensee personnel knowledgeable regarding the technical aspects of the Ginna LAR. At a minimum, a hardcopy and electronic copy of the following documentation should be available to the audit team:

- Calculational models and supporting documentation for PRA models used in support of the LAR, including peer review history and resolution of peer review findings;
- Calculational models and supporting documentation for fire models used in support of the LAR;
- Procedures that have been modified or developed to transition to NFPA 805;
- Procedures that have been modified or developed to maintain the NFPA 805 licensing basis after transition is completed;
- Documentation of changes made to PRA models in support of change analysis;
- Documentation about PRA configuration control and procedures to support self-approval of risk-informed plant changes after transition;
- Documentation of plant modifications or operational changes identified, screened, and considered (or planned for) during the licensee's transition to NFPA 805;
- Calculations and evaluations used to transition to NFPA 805 such as plant change evaluations, engineering equivalency evaluations, and RA evaluations;
- Plant layout and design drawings of FPP and safe shutdown features; and,
- Other documents, which the licensee deems as necessary to support the NRC staff's audit, outlined under audit activities.

## V. TEAM ASSIGNMENTS

The audit will be conducted by NRC staff from the Office of Nuclear Reactor Regulation (NRR); Division of Risk Assessment (DRA); Fire Protection Branch (AFPB) and the PRA Licensing Branch (APLA) staff knowledgeable in PRA; safe shutdown and circuit analysis, and fire protection engineering. Contractors from the Pacific Northwest National Laboratories and from the Center for Nuclear Waste Regulatory Analysis may be utilized to augment the technical audit team members. NRC staff from other organizations may be assigned to the team as appropriate and others may participate as observers. Observers at the audit may include NRR Program Managers and various Regional Inspectors.

The NRC Audit Team Leader will be Leslie Fields and the NRC Technical Lead will be Harold Barrett. The team leader will conduct daily briefings on the status of the review and coordinate audit activities while on site. The tables below show (1) audit milestones and schedule, and (2) planned audit team composition and their assigned areas for review.

Audit Milestones and Schedule Relative to First Audit Day Onsite		
Activity	Time Frame	Comments
Technical Presentations via GoTo Meetings	8/20/13 – 8/22/13	NRC will host GoTo meeting sessions for up to 3 days, as needed, the week prior to the audit. Licensee is requested to provide overview presentations with important site specific information.
Onsite Audit Kick-Off Meeting	8/26/13	NRC will conduct a brief introduction and scope of the audit.
Onsite Escorted Tour	8/27/13	Tours of risk significant power block areas. 2 <sup>nd</sup> day if needed
End of Day Summary Briefing	8/26/13- 8/29/13	Meet with licensee to provide a summary of any significant findings and requests for additional assistance.
Provide Break-out Areas	8/26/13- 8/29/13	Facilitate discussion between site and staff in different technical areas. Reviewers may need break-out areas the first four days.
Onsite Audit Exit Meeting	8/29/13	NRC will conduct a brief conclusion of the audit.
Audit Summary (see VIII)	10/01/13	To document the audit.

Regulatory Audit Team and Assignments			
SRP 9.5.1.2 Section	Audit Plan Review Areas	Lead	Support
III.1.2	Modifications	Team	Team
III.1.3	Licensee Self-Approval	J. Robinson	R. Fosdick
III.2	Fundamental FPP and Design Elements	A. Pearson	H. Barrett
III.3.1.2	Multiple Spurious Operation	B. Litkett	H. Barrett
III.3.2	Fire Area Compliance	Team	Team
III.3.2	Engineering Evaluations, Previous Approval	Team	Team
III.3.2.2	Fire Modeling	N. Iqbal	J. Huzcek, D. Basu
III.3.2.2	Recovery Actions	Team	Team
III.3.3	Non-Power Operations (NPOs)	Team	Team
III.5.3-5.6	Fire Risk Assessments	D. O'Neal,	M. Reisi-Fard, J. Hyslop,
III.5.1	PRA Technical Adequacy	D. O'Neal,	M. Reisi-Fard, J. Hyslop
III.5.2	DID and Safety Margins	Team	Team
III.6	Monitoring Program	J. Robinson	R. Fosdick
III.7.1-7.3	Documentation, Configuration Control, & Quality	J. Robinson	R. Fosdick
	Plant Walkdowns	As needed	As needed

## VI. LOGISTICS

This regulatory audit is planned for the week of August 26, 2013, and last approximately 4 days. We will reserve a few days the week before, August 20-22, to review technical presentations and general topics that can be conducted via GoTo Meeting. These dates are subject to change based on mutual agreement between the licensee and the NRC. An entrance meeting for this audit will be held on the first day at 9:30 AM and an exit meeting will be held the final audit day at 3:00 PM to provide preliminary feedback to the licensee. The NRC audit leader will provide daily progress to licensee personnel on the second, third, and fourth day of the audit.

The audit will take place at a location agreed upon by the licensee and NRC Audit Leader where (1) the necessary reference material and (2) appropriate analysts will be available to support the review. Because the audit scope includes NRC staff walkdowns of selected fire areas in the power block, the regulatory audit must be conducted in a location that allows for travel to the plant's protected area for escorted access.

## VII. SPECIAL REQUESTS

The audit team will require the following to support the regulatory audit:

- Escorted access to fire areas within the protected area.
- Two printers and six computers with internet access, access to the site portal, and

printing capability. Wired and/or wireless internet access.

- Private conference room(s) to support document review, breakout sessions, and audit team meetings.
- Access to the FPP documentation, including but not limited to: plant drawings depicting fire area boundaries, the Fire Hazards Analysis, Safe Shutdown Analysis, and the internal events PRA and fire PRA.
- Access to licensee personnel knowledgeable in FPP, fire modeling; safe shutdown and circuit analysis; fire PRA and internal events PRA, non-power operations, radiological release analysis, and the NFPA 805 fire protection design-basis document.

## **VIII. DELIVERABLES**

A regulatory audit summary will be issued within approximately 30 days of the completion of the audit. The summary will use the guidance of NRR Office Instruction LIC-111 for content. Since this audit will likely result in formal RAIs for the licensee regarding the LAR, the summary itself is expected to be an internal memorandum from the audit team leader to the responsible supervisors. The summary will be placed in Agencywide Documents Access and Management System (ADAMS) to document the audit.

## **IX. REFERENCES**

1. Letter from Joseph E. Pacher, R. E. Ginna Nuclear Power Plant to the U.S. Nuclear Regulatory Commission, "License Amendment Request Pursuant to 10 CFR 50.90: Adoption of NFPA 805, Performance-Based Standard for Fire Protection for Light Water Reactor Electric Generating Plants (2001 Edition)" March 28, 2013 (ADAMS accession no. ML13093A064).
2. U.S. NRC, Standard Review Plan for the Review of Safety Analysis Reports for Nuclear Power Plants, NUREG-0800, Section 9.5.1.2, "Risk-Informed, Performance-Based Fire Protection Program," (ADAMS accession no. ML092590527).
3. Title 10 Code of Federal Regulations, Part 50, Section 48 (10 CFR 50.48), "Fire Protection."
4. NFPA 805, "Performance-Based Standard for Fire Protection for Light Water Reactor Electric Generating Stations," 2001 Edition.
5. Regulatory Guide 1.205, Rev. 1, "Risk-Informed, Performance-Based Fire Protection for Existing Light-Water Nuclear Power Plants," December 2009 (ADAMS accession no. ML092730314).
6. Nuclear Energy Institute, NEI 04-02, "Guidance for Implementing a Risk-Informed, Performance-Based Fire Protection Program under 10 CFR 50.48(c)," Revision 2, April 2008 (ADAMS accession no. ML081130188).
7. Nuclear Energy Institute, NEI 00-01, Guidance for Post-Fire Safe Shutdown Analysis, Revision 2, May 2009 (ADAMS accession no. ML091770265).



## Attachment 5

**NRC NFPA 805 Audit Entrance Meeting Attendance**

<b>NFPA 805 Audit:</b>	R.E. Ginna Entrance Meeting	
<b>Date:</b>	August 26, 2013	
<b>Time:</b>	9:30am	
<b>US Nuclear Regulatory Commission</b>		
Leslie Fields	Audit Team Leader	
Alex Klein	Branch Chief	
Hossein Hamzehee	Branch Chief	
Jay Robinson	RAI Lead/Programmatic	
Harry Barrett	SSD/CA	
Naeem Iqbal	FM	
JS Hyslop	PRA	
Daniel O'Neal	PRA	
Mehdi Reisifard	PRA	
Bernard Litkett	SSD/CA	
Alayna Pearson	FPE	
<b>Center for Nuclear Waste Regulatory Analyses (NRC Contractors)</b>		
Jason Huczek	Fire Modeling/Lead	
Eric Nette	Fire Modeling	
Robert Fosdick	Programmatic/Lead	
<b>Constellation Energy Nuclear Group (CENG)</b>		
Mike Lilley		
John St. Martin		
Mary Ellen McGraw		
David Lovgren		
Brian Flynn		
Jim McQuighan		
Brian Hunn		
Tom Mogren		
Richard Neild		
Terri Ryan		
Nathan Hall		
Jarred Jackson		
Ken Charland		
Steve Kimbrough		
Rob Cavedo		
Jeff Stone		
Ryan Tennant		
<b>CENG Contractors</b>		
<b>Hughes Associates Inc.</b>		<b>AREVA</b>
Suzanne Loyd		Shafat Shaon
Pierre Macharet		
Paul Amico		
Eleni Rojhas		
Francisco Joglar		

## **NRC Audit Exit Meeting Attendance**

<b>NFPA 805 Audit:</b>	R.E. Ginna Exitcc Meeting	
<b>Date:</b>	August 29, 2013	
	N/A	
<b>Entergy Attendees:</b>	<p>From Exelon (then it was CENG):</p> <p>Mike Lilley John St. Martin Mary Ellen McGraw David Lovgren Brian Flynn Jim McQuighan* Brian Hunn Tom Mogren Richard Neild Terri Ryan Nathan Hall* Jarred Jackson Ken Charland Steve Kimbrough Rob Cavedo Jeff Stone Ryan Tennant Tom Paglia#</p> <p>From AREVA: Shafat Shaon</p> <p>From Jensen Hughes (then it was Hughes Associates Inc): Suzanne Loyd Pierre Macharet Paul Amico Eleni Rojhas Francisco Joglar*</p> <p>*Entrance only #Exit only In addition, Elliott Flick called in for the Exit.</p>	
	<b><i>NFPA 805 Audit Management</i></b> <p>Jim Forehand / Entergy Management Sponsor Keith Smith / Entergy Project Manager George Sleeper / Entergy Technical Supervisor Brian Brogan / Entergy PRA Lead Tom Swiecicki / Entergy Fire Protection Lead Amy Hazelhoff / ENERCON Licensing Lead Colleen VanWagner / CBI ADMIN Lead</p>	<b><i>NFPA 805 PRA Team</i></b> <p>Jeff Voskuil / Entergy PRA Steve Mongeau / Entergy PRA Matt Margol / AREI PRA Frank Yanik / AREI PRA Dave Blanchard / AREI PRA Don Vanover / ERIN PRA Bob White / ERIN PRA Greg Zucal / ERIN PRA</p>

	<b><i>NFPA 805 Fire Protection Team</i></b>  Stephanie Weimer / Entergy Fire Protection Jim Alderink / ENERCON Fire Protection Nate Pratt / Nexus Fire Protection Justin Hamlin / AREI Fire Protection Jeff Quinn / EPM Fire Protection Mike Nordin / BCP Fire Protection Jason LeMaire / EPM Fire Protection John Kneeland / Entergy Fire Protection	<b><i>NFPA 805 Support Team</i></b>  Don Sonnenberg / Entergy Design Engineering Bob Vincent / BCP Project Support Larry Young (ANO)
--	--	--

August 20, 2015

Mr. Joseph E. Pacher  
Vice President  
R.E. Ginna Nuclear Power Plant  
Exelon Generation Company, LLC  
1503 Lake Road  
Ontario, NY 14519

SUBJECT: R. E. GINNA NUCLEAR POWER PLANT – REPORT OF AUDIT TO SUPPORT  
PROPOSED AMENDMENT TO TRANSITION TO THE NATIONAL FIRE  
PROTECTION ASSOCIATION STANDARD 805 FIRE PROTECTION  
LICENSING BASIS (TAC NOS. MF1393)

Dear Mr. Pacher:

A review team, consisting of U.S. Nuclear Regulatory Commission (NRC) staff and contractors participated in a regulatory audit of the R.E. Ginna Nuclear Power Plant (Ginna). The audit supports the NRC staff's review of the licensee's application for a license amendment for Ginna, dated March 28, 2013 (Agencywide Documents Access and Management System Accession No. ML13093A064), to transition the plant's fire protection licensing basis to Title 10 of the Code of Federal Regulations (CFR) 50.48(c), which endorses with exceptions the National Fire Protection Association (NFPA) Standard 805, "Performance-Based Standard for Fire Protection for Light Water Reactor Electric Generating Plants," 2001 Edition.

Enclosed please find the NRC staff's audit report, documenting completion of the audit. The NRC staff's review of the subject application for amendment is still ongoing.

If you have any questions regarding this matter, please contact me at 301-415-2020 or Brenda.Mozafari@nrc.gov.

Sincerely,

/RA/

Brenda L. Mozafari, Senior Project Manager  
Plant Licensing Branch I-1  
Division of Operator Reactor Licensing  
Office of Nuclear Reactor Regulation

Docket No. 50-244

Enclosure:  
Audit Report

cc w/enclosure: Distribution via Listserv

DISTRIBUTION:

PUBLIC  
LPL1-1 Reading File  
RidsNrrDorlDpr

RidsNrrDorlLpl1-1  
RidsNrrLAKGoldstein  
RidsRgn1MailCenter

RidsNrrPMREGinna  
RidsAcrcAcnw\_MailCTR  
LFields, NRR

**ADAMS Accession No.: ML15188A213**

\*By memo of 3/16/15 (Accession No. ML15061A126)

OFFICE	NRR/DORL/LPL1-1/PM	NRR/DORL/LPL1-1/LA	NRR/DORL/LPL1-1/BC
NAME	(PTam for) BMozafari	KGoldstein	BBeasley
DATE	7/24/2015	7/24/2015	8/20/2015
OFFICE	NRR/DRA/APLA/BC	NRR/DRA/AFP/BC	NRR/DORL/LPL1-1/PM
NAME	HHamzehee*	AKlein*	BMozafari
DATE	3/16/2015*	3/16/2015*	8/20/2015

OFFICIAL RECORD COPY