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CENG
a joint venture of
Constellation Energy EDF

February 27, 2014

U.S. Nuclear Regulatory Commission
Washington, DC 20555-0001

ATTENTION: Document Control Desk

SUBJECT: **Calvert Cliffs Nuclear Power Plant, Units 1 and 2**
Renewed Facility Operating License Nos. DPR-53 and DPR-69
Docket Nos. 50-317 and 50-318
R.E. Ginna Nuclear Power Plant
Renewed Facility Operating License No. DPR-18
Docket No. 50-244
Nine Mile Point Nuclear Station, Units 1 and 2
Renewed Facility Operating License Nos. DPR-63 and NPF-69
Docket Nos. 50-220 and 50-410

February 2014 Six-Month Status Report in Response to March 12, 2012 Commission Order Modifying Licenses with Regard to Requirements for Mitigation Strategies for Beyond-Design-Basis External Events (Order Number EA-12-049)

REFERENCE: (a) NRC Order Number EA-12-049, Order Modifying Licenses with Regard to Requirements for Mitigation Strategies for Beyond-Design-Basis External Events, dated March 12, 2012 (ML12054A735)

On March 12, 2012, the Nuclear Regulatory Commission (NRC) issued Order EA-12-049 (Reference a) to Constellation Energy Nuclear Group, LLC (CENG) for Calvert Cliffs Nuclear Power Plant, LLC (CCNPP) , R.E. Ginna Nuclear Power Plant, LLC (Ginna), and Nine Mile Point Nuclear Station, LLC, (NMPNS) Units 1 (NMP1) and 2 (NMP2). Reference (a) requires submission of a status report at six-month intervals following submittal of the overall integrated plan. Attachments (1) through (4) provide the 6-Month Status Reports for CCNPP, Ginna, NMP1, and NMP2, respectively. These reports update the milestone accomplishments since the submittal of the last status report, including any changes to the compliance method, schedule, or need for relief and the basis, if any.

This letter contains no new regulatory commitments.

A151
NRR

If there are any questions regarding this submittal, please contact Bruce Montgomery, Manager-Nuclear Safety and Security, at 443-532-6533.

I declare under penalty of perjury that the foregoing is true and correct. Executed on February 27, 2014.

Sincerely,

Mary G. Korsnick

Mary G. Korsnick

MGK/STD/EMT/bjd

Attachments:
(1) CCNPP 6-Month Status Report (February 2014) for Mitigation Strategies for Beyond-Design-Basis External Events
(2) Ginna 6-Month Status Report (February 2014) for Mitigation Strategies for Beyond-Design-Basis External Events
(3) NMP1 6-Month Status Report (February 2014) for Mitigation Strategies for Beyond-Design-Basis External Events
(4) NMP2 6-Month Status Report (February 2014) for Mitigation Strategies for Beyond-Design-Basis External Events

cc:
NRC Project Manager, Calvert Cliffs
NRC Project Manager, Ginna
NRC Project Manager, Nine Mile Point
W. M. Dean, NRC
J. A. Kratchman, NRC
Resident Inspector, Calvert Cliffs
Resident Inspector, Ginna
Resident Inspector, Nine Mile Point
S. Gray, DNR

ATTACHMENT (1)

CCNPP 6-MONTH STATUS REPORT (FEBRUARY 2014)

FOR MITIGATION STRATEGIES FOR

BEYOND-DESIGN-BASIS EXTERNAL EVENTS

Constellation Energy Nuclear Group, LLC
February 27, 2014

1 Introduction

The Calvert Cliffs Nuclear Power Plant, LLC (CCNPP) Overall Integrated Plan (OIP) was submitted to the Nuclear Regulatory Commission (NRC) in February 2013 (Reference 1), documenting the diverse and flexible strategies (FLEX) in response to NRC Order Number EA-12-049 (Reference 2). Subsequently, a supplement to the CCNPP OIP for FLEX was submitted to the NRC in March 2013 (Reference 3). This attachment provides an update of milestone accomplishments since the last status report, including any changes to the compliance method, schedule, or need for relief/relaxation and associated basis (if applicable).

CCNPP developed an Interim Action Implementation Schedule as part of an Assessment of Communications during an Extended Loss of AC Power (ELAP) (Reference 4). A commitment was made in Reference 4 to include the status of the implementing actions identified in Section 4.12 of CCNPP's communications assessment as part of the six-month status reports prepared pursuant to Section IV.C.2 of NRC Order EA-12-049. The updated status of the communications assessment interim actions is provided in Section 8.

Since the submittal of the last status report in August 2013 (Reference 6), CCNPP FLEX has progressed with engineering analysis and calculations that support the mitigating strategies while making some refinements to modification concepts. However, no significant changes to the mitigation strategies or planned modifications in support of the mitigation strategies have occurred. Procurement of debris removal and FLEX Phase 2 equipment is progressing. Work with the Strategic Alliance for FLEX Emergency Response (SAFER) has continued with an onsite review of the CCNPP local staging area, primary and alternate delivery routes, delivery methods to the proposed onsite laydown areas, and initiation of the SAFER Response Plan (Playbook) preparation.

By letter dated December 17, 2013, the NRC issued to CENG the Calvert Cliffs Nuclear Power Plant, Units 1 and 2 – Interim Staff Evaluation Relating to Overall Integrated Plan in Response to Order EA-12-049 (Mitigation Strategies) (TAC Nos. MF 1142 and MF 1143) (Reference 7). The Interim Staff Evaluation (ISE) contains open and confirmatory items for which CENG will provide clarifying or additional information in six-month status reports in order for the NRC to determine that the issues are on a path to satisfactory resolution.

2 Milestone Accomplishments

The following milestones have been completed since the development of the OIP (References 1 and 3), and are current as of January 17, 2014:

- Performed exploratory fluid system walk downs in support of pending modifications for FLEX strategies during spring 2013 Refueling Outage (RFO). (8/2013)
- Performed exploratory electrical system walk downs in support of pending modifications for FLEX strategies during spring 2013 RFO. (8/2013)
- Performed preliminary site walk downs in support of FLEX equipment deployment and storage strategies. (8/2013)
- Submitted the first six-month FLEX status report. (8/2013).

3 Milestone Schedule Status

Table 1 provides an update to Attachment 2-1 of the CCNPP OIP (Attachment 4 - References 1 and 3). It provides the activity status of each item, and whether the expected completion date has changed. The dates are planning dates subject to change as design and implementation details are developed. Any changes to the indicated target completion dates will be reflected in subsequent 6-month status reports.

The revised milestone target completion dates do not impact the Order implementation date.

Walk-throughs or demonstrations encompassing all FLEX equipment points of connection/tie-ins for Phase 2 and Phase 3 strategies will be performed as presented in Table 1. A detailed schedule for walk-throughs or demonstrations, including individual target dates, has not been developed.

Table 1
Status of CCNPP FLEX OIP Milestones

Milestone	Target Completion Date	Activity Status	Revised Target Completion Date
Submit 60 Day Status Report	October 2012	Complete	
Submit Overall Integrated Implementation Plan	February 2013	Complete	
Commence Engineering and Design	November 2013	Started	U-2: October 2013 U-1: October 2014
Commence Procurement of Equipment	June 2015	Started	U-2: January 2015 U-1: January 2016
Commence Installation of Equipment	March 2016	Not Started	
Submit 6-Month Status Report	August 2013	Complete	
Develop Modifications	October 2013	Started	U-2: September 2014 U-1: July 2015
Develop Strategies/Contract with the Regional Response Center (RRC)	November 2013	Complete	
Perform Staffing Analysis	January 2014	Not Started	May 2014
Submit 6-Month Status Report	February 2014	Complete	

Table 1
Status of CCNPP FLEX OIP Milestones

Milestone	Target Completion Date	Activity Status	Revised Target Completion Date
Complete Engineering and Design	March 2014	Started	U-2: August 2014 U-1: June 2015
Create Maintenance and Testing Procedures	June 2014	Not Started	December 2014
Submit 6-Month Status Report	August 2014	Not Started	
Procedure Changes Training Material Complete	September 2014	Started	December 2014
Develop Training Plan	November 2014	Started	April 2014
Submit 6-Month Status Report	February 2015	Not Started	
Issue FLEX Support Guidelines (FSG)	March 2015	Not Started	U-2: January 2015 U-1: January 2016
Unit 2 Modification Implementation Outage *	April 2015	Not Started	March 2015
Walk-throughs or Demonstrations	Unit 2: March 2015 Unit 1: March 2016	Not Started	
Implement Training	June 2015	Not Started	U-2: April 2014 U-1: April 2015
Submit 6-Month Status Report	August 2015	Not Started	
Complete Procurement of Equipment	August 2015	Not Started	U-2: September 2014 U-1: September 2015
Submit 6-Month Status Report	February 2016	Not Started	
Unit 1 Modification Implementation Outage*	April 2016	Not Started	March 2016
Submit 6-Month Status Report	August 2016	Not Started	

Table 1
Status of CCNPP FLEX OIP Milestones

Milestone	Target Completion Date	Activity Status	Revised Target Completion Date
Full compliance with EA-12-049 is achieved	November 2016	Not Started	
Submit Completion Report	December 2016	Not Started	

*(Full compliance after second listed refueling outage)

4 Changes to Compliance Method

Changes were made to the information provided in the OIP that do not change the compliance method with Nuclear Energy Institute (NEI) 12-06 (Reference 5).

The following is a list of the open items from the OIP or the NRC's ISE that have been added, deleted or completed, and of coping strategies that have been changed from the last six month status report with an explanation of the changes:

A. OIP Open Items

1. **General Integrated Plan Elements Pressurized Water Reactor (PWR)**

   Open Item 10: Determine the location of the CCNPP local staging area, primary and alternate delivery routes, and delivery methods to the proposed onsite laydown areas.

   This open item is **complete**. On December 3 and 4, 2013, a team from the SAFER visited CCNPP as part of their rehearsal of concept support to utilities. The SAFER team visited the location of the CCNPP local staging area, primary and alternate delivery routes, and delivery methods to the proposed onsite laydown areas. No issues were found with the proposed location, delivery routes, and delivery methods.

2. **General Integrated Plan Elements Pressurized Water Reactor (PWR)**

   Open Item 12: Define criteria for the local staging area by June 2013.

   This open item is **complete**. SAFER defined the criteria for local staging area in RRC-01, SAFER Response Plan, Rev. 01 Chapters 5 and 8.

3. **General Integrated Plan Elements Pressurized Water Reactor (PWR)**

   Open Item 13: Establish a suitable local staging area for portable FLEX equipment to be delivered from the RRC to the site.

This open item is **complete**. The following staging areas for portable FLEX equipment to be delivered from the [Regional Response Center] RRC to CCNPP were selected:

a. West Road at CCNPP
b. Owner Controlled Area parking lot
c. Walmart Parking Lot in Dunkirk, Maryland
d. Baltimore-Washington International (BWI) Airport

4. **Maintaining Core Cooling, PWR Installed Equipment Phase 1**

Open Item 18: Perform engineering analyses to confirm that CCNPP maintains an adequate level of Shutdown Margin (SDM) for a [Reactor Coolant System] RCS cooldown to 350°F, to cover a period of at least 72 hours.

This open item is **complete**. The analyses show that the cycle-independent established time for which a cooldown to 325°F could be performed without boration while maintaining reactivity more negative than -1000 pcm (per cent mille) is 32 hours following reactor trip. Beyond 32 hours, boration is required in order to provide confidence that the reactor remains shut down by more than 1000 pcm.

5. **Maintaining Core Cooling, PWR Installed Equipment Phase 1**

Open Item 22: Implement a design change to install reliable local level indicators on all of the water storage tanks located in the 11, 12 and 21 [Condensate storage tank] CSTs, 11 [Demineralized water storage tank] DWST, and 11 and 12 [Pretreated water storage tank] PWSTs.

This open item was **deleted**. A design change will no longer be implemented. A hand-held thermographic measurement instrument will be used to measure the water levels in the tanks.

6. **Maintaining Core Cooling, PWR Installed Equipment Phase 2**

Open Item 29: Perform an analysis to determine that there is sufficient decay heat generated for [Turbine Driven Auxiliary Feedwater] TDAFW operation 36 hours after shutdown.

This open item is **complete**. The analysis concluded that there is sufficient decay heat to support 72 hours of operation.

7. **Maintaining Core Cooling, PWR Installed Equipment Phase 2**

Open Item 32: Install a design change to add makeup and pump suction hose connections for FLEX pump connection to 12 CST.

This open item was **deleted**. Instead of the previously proposed design change, a tool consisting of a specifically designed hose bonnet with "T" isolation valves and hose connections will be installed in place of the 12 CST demineralized water makeup line check valve bonnet when needed. The check valve is located adjacent to the tank inside the concrete enclosure. The tool will be stored in the enclosure.

8. **Maintaining Core Cooling, PWR Installed Equipment Phase 2**

   Open Item 35: Install design change to add 4" hose connections to the Reactor Coolant Waste Receiver Tanks (RCWRTs) and Reactor Coolant Waste Monitor Tanks (RCWMTs).

   This open item was **deleted**. There are several sources of cooling water available at CCNPP that can be used during an ELAP. It is therefore not cost-beneficial to modify the Reactor Coolant Waste Receiver Tanks (RCWRTs) and RCWMTs by adding hose connections in order to increase an already large number of cooling water sources.

9. **Maintaining Core Cooling, PWR Portable Equipment Phase 3**

   Open Item 48: Provide modified 4160 VAC breakers for direct RRC [Diesel generator] DG connection for use in place of the normal 4160 VAC breakers in service for [Low Pressure Safety Injection] LPSI Pump and [Saltwater] SW Pump power supplies.

   This open item was **deleted**. No physical modification to 4160 VAC breakers will be required. The connections will utilize existing Class 1E 4160 VAC equipment.

10. **Maintaining Containment, PWR Installed Equipment Phase 3**

    Open Item 54: Install hose connections on the Service Water (SRW) supply and return lines to the [Containment Air Cooler] CAC for connection to a RRC portable heat exchanger.

    This open item was **deleted**. The Containment Pressure and Temperature Response Evaluation concluded that containment cooling will not be needed in Phase 3. Additionally, a Phase 3 modification to the SW Cooling Systems on Units 1 and 2 will be implemented for a modified 36" diameter pipe header flange with RRC large flow, low pressure hose connection to be available in Phase 3 for restoration of one header of SW cooling system per unit such that service water (SRW) cooling can be restored for cooling to the CAC System.

11. **Safety Functions Support, PWR Installed Equipment Phase 1**

    Open Item 69: Investigate changing Appendix R lighting batteries to a longer life battery or new battery technology to lengthen the duration of lighting available in vital areas of the plant.

    This open item was **deleted**. On-shift individuals and members of the Emergency Response Organization will be issued hardhat mounted lights ("miners" lights). Therefore, there is no longer a need to investigate changing Appendix R lighting batteries.

12. **Safety Functions Support, PWR Installed Equipment Phase 1**

    Open Item 72: Procure six (6) portable diesel generator powered exterior lighting units with 30 [foot] ft. masts and a minimum 400,000 lumens.

    This open item is **complete**. The portable diesel generator-powered exterior lighting units have been purchased and are at CCNPP.

13. **Safety Functions Support, PWR Installed Equipment Phase 1**

    Open Item 73: Change Appendix R lighting from incandescent to LED to lengthen the duration of lighting available in vital areas of the plant.

    This open item was **deleted**. On-shift individuals and members of the Emergency Response Organization will be provided with hardhat mounted lights ("miners" lights). Therefore, there is no longer a need to change Appendix R lighting from incandescent to LED.

14. **Safety Functions Support, PWR Installed Equipment Phase 1**

    Open Item 77: Purchase one wheeled and one tracked vehicle with bucket/blade and grapple of sufficient size and load handling capacity to remove debris.

    This open item is **complete**. Two frontloaders (Bobcats), one wheeled and one tracked vehicle with bucket/blade and grapple of sufficient size and load handling capacity to remove debris were purchased.

15. **Safety Functions Support, PWR Installed Equipment Phase 3**

    Open Item 93: Install connection points on Class 1E 4KV Buses for the RRC 4KV portable DG.

    This open item was **deleted**. A procedure will be developed for connecting the 4160 VAC RRC DG to Class 1E 4160VAC buses.

B. ISE Open Items and Confirmatory Items

1. **ISE Confirmatory Item 3.2.1.2.A – The [Reactor Coolant Pump] RCP seal initial maximum leakage rate should be greater than or equal to the upper bound expectation for the seal leakage rate for the ELAP event discussed in the [Pressurized-Water Reactor Owner's Group] PWROG white paper addressing the RCP seal leakage for [Combustion Engineering] CE plants. If the RCP seal leakage rate used in the plant-specific ELAP analysis is less than upper bound expectation for the seal leakage rate discussed in the white paper, justification should be provided.**

   This item is **complete**. The modeling of a 15 gpm per RCP leakage rate represents an upper bound expectation for the ELAP event. Each controlled bleed-off (CBO) line from the RCPs has a flow limiting check valve set to actuate at a flow rate of 10 to 15 gpm. Therefore, by assuming 15 gpm through each check valve, the maximum RCP seal leakage flow is assumed. Additionally, this combined flow of 60 gpm must pass through the common CBO line. It is conservatively assumed that there has been no isolation of the CBO in the PWROG analysis, which is in line with the fact that CCNPP does not have the capability to isolate CBO.

2. **ISE Confirmatory Item 3.2.1.9.D – The licensee provided an open item, to perform engineering analysis to determine that there is sufficient decay heat generated for TDAFW operation 36-hours after shutdown and that the TDAFW pumps can operate reliably provided there is greater than 65 [pounds per square inch – absolute] psia steam pressure in one of the [Steam Generators (S/Gs)].**

This item is **complete**. The analysis concluded that there is sufficient decay heat to support 72 hours of operation.

5 Need for Relief/Relaxation and Basis for the Relief/Relaxation

CCNPP expects to comply with the Order implementation date and no relief/relaxation is required at this time.

6 Open Items from Overall Integrated Plan and Draft Safety Evaluation

Table 2 provides a summary of the open items documented in the OIP and those added in a subsequent six month status report and the status of each item. Explanations for added, deleted and completed items are provided in Section 4.

Table 3 provides a summary of the open items and confirmatory items documented in the NRC's CCNPP ISE (Reference 7) and the status of each item.

Table 2
Status of CCNPP FLEX OIP Open Items

CCNPP OIP Open Items	Status
1. Add margin to design FLEX components and hard connection points to address future requirements as re-evaluation warrants. Portable FLEX components will be procured commercially	Started (2/2014)
2. Implement a design change to install permanent protected FLEX equipment connection points	Started (2/2014)
3. Evaluate deployment strategies and deployment routes to ensure they are assessed for and address applicable hazards impact.	Started (2/2014)
4. Develop a process for implementation of exceptions for the site security plan or other (license/site specific – 10CFR50.54X) requirements of a nature requiring NRC approval will be communicated in a future 6 month update following identification.)	Not Started
5. Define implementation routes upon finalizing a location or locations for FLEX equipment storage location(s).	Started (8/2013)
6. Evaluate requirements, options, and develop strategies to provide reasonably protected storage on site for the FLEX portable equipment.	Started (8/2013)
7. Design and build a protected storage location or locations for the FLEX equipment. Ensure the design meets the requirements of NEI 12-06.	Started (8/2013)
8. Identify analysis needed to develop or support mitigating strategies.	Started (8/2013)
9. Provide an administrative program governing the FLEX deployment strategy, marking of setup locations, including primary and alternate pathways, maintaining the pathways clear, and clearing the pathways.	Not Started
10. Determine the location of the CCNPP local staging area, primary and alternate delivery routes, and delivery methods to the proposed onsite laydown areas.	**Complete** (2/2014)
11. Determine schedule for when RRCs will be fully operational.	**Complete** (8/2013)
12. Define criteria for the local staging area by June 2013.	**Complete** (2/2014)
13. Establish a suitable local staging area for portable FLEX equipment to be delivered from the RRC to the site.	**Complete** (2/2014)

CCNPP OIP Open Items	Status
14. Develop site specific SAFER Response Plan (playbook) for delivery of portable FLEX equipment from the RRC to the site.	Started (2/2014)
15. Implement a design change to replace the 1 ft. diameter wheel with a 3 ft. wheel on each Atmospheric Dump Valve (ADV) chain operator.	Started (2/2014)
16. Evaluate the feasibility of the WCAP-17601-P recommendation to install a remotely operated RCP CBO return line isolation valve.	**Deleted** (8/2013)
17. Develop a procedure or FSG to perform an early cooldown and depressurization as recommended by WCAP-17601-P.	Started (8/2013)
18. Perform engineering analyses to confirm that CCNPP maintains an adequate level of Shutdown Margin (SDM) for an RCS cooldown to 350°F, to cover a period of at least 72 hours.	**Complete** (2/2014)
19. Implement a design change to re-power the [Safety Injection Tank] SIT level and pressure indicators from a vital 120 VAC instrument bus.	Started (2/2014)
20. Implement a design change to install new leak-tight SIT vent Solenoid Valves (SV) that will allow the vent line pipe caps to remain off.	**Deleted** (8/2013)
21. Original open item text: Implement design changes to install "plug and play" protected hose connections for the portable alternate [Auxiliary Feedwater] AFW pump to AFW on the exterior of the Auxiliary Building west wall with piping run to the 27 ft. East penetration Rooms to connect to the AFW to S/G headers. Modified open item text: Utilize flexible hose to connect a FLEX pump to a newly installed, dedicated hose connections (one per unit) located on the motor driven AFW pump cross-connect lines on the 5 ft. elevation of the Auxiliary Building.	Started (2/2014)
22. Implement a design change to install reliable local level indicators on all of the water storage tanks located in the 11, 12 and 21 CSTs, 11 DWST, and 11 and 12 PWSTs.	**Deleted** (2/2014)
23. Perform an analysis to determine the necessary scope of the DC load shedding strategy.	Started (2/2014)
24. Implement a design change to clearly identify the set of DC load breakers that will either be left energized or load shed by identifying the selected breakers by their unique numbers and load title.	Started (2/2014)
25. Implement a procedure or FSG to perform the DC load shedding.	Started (8/2013)
26. Complete a time-motion study to validate that DC load shedding can be accomplished on each unit in one (1) hour.	Not Started
27. Implement a design change to install an 8-hour Uninterruptible Power Supply (UPS) on the Mansell RCS Level Monitoring System.	Started (2/2014)
28. Perform engineering analyses and develop strategies for providing RCS make-up and core cooling while in Modes 5 and 6, for all possible RCS conditions, following an ELAP. The analysis should determine the FLEX pump capacity needed to provide adequate flow in all RCS conditions.	Started (2/2014)
29. Perform an analysis to determine that there is sufficient decay heat generated for TDAFW operation 36 hours after shutdown.	**Complete** (2/2014)
30. Implement a design change to provide dedicated hose connections and piping to the Safety Injection System.	Started (2/2014)
31. Develop a procedure or FSG to mimic the AFW makeup strategy described in ERPIP-611, Attachment 1.	Started (8/2013)
32. Install a design change to add makeup and pump suction hose connections for FLEX pump connection to 12 CST.	**Deleted** (2/2014)

CCNPP OIP Open Items	Status
33. Install a design change to replace the 2-½ inch hose connections with 4 inch hose connections at 11 and 21 CSTs, 11 DWST, and 11 and 12 PWSTs.	**Deleted** (8/2013)
34. Install a design change to add hose connections at 11 and 21 Refueling Water Storage Tanks (RWT) for makeup and suction for the FLEX pumps.	Started (2/2014)
35. Install design change to add 4" hose connections to the Reactor Coolant Waste Receiver Tanks (RCWRTs) and Reactor Coolant Waste Monitor Tanks (RCWMTs).	**Deleted** (2/2014)
36. Perform an analysis to determine the survivability of the wells as a long-term source of make-up water. Analysis should include any modifications needed to improve the survivability of the associated Well Water System piping and to provide 480 VAC power to the well pumps.	Started (2/2014)
37. Perform an analysis to determine the long-term effect on the S/Gs from use of water from the [Ultimate Heat Sink] UHS as a cooling medium.	Started (2/2014)
38.Perform an analysis to determine station battery coping time with DC load shedding. Analysis should consider battery age, battery performance without battery room ventilation, and load and load duration prior to completion of DC load shedding.	Started (2/2014)
39. Track the completion of ECP-11-000293 and -000294, the Reserve Battery distribution system modification that is currently in progress.	Started (8/2013)
40. Develop and implement procedures to supply power to critical instrumentation using primary and alternate methods.	Started (8/2013)
41. Perform an analysis to determine that the assumed load capacity of the FLEX 480 VAC DG is sufficient to provide power to the selected loads.	Started (2/2014)
42. Implement a design change to connect a FLEX 480 VAC Diesel generator to either of the A or B train 480 VAC load centers on each unit to provide power to the battery chargers and other critical AC equipment.	Started (2/2014)
43. Implement a design change to provide direct connection of a portable 100 kW diesel generator to reactor [Motor Control Centers] MCCs 104 or 114 and 204 or 214 to provide power to the inverter backup bus (which can power the 120VAC vital bus), the SIT Outlet [Motor Operated Valves] MOVs, and the AFW Pump Room Vent Fans.	Started (2/2014)
44. Implement a design change to install connection points, conduit, cabling, and transfer switches locally at battery chargers to provide for direct connection from the FLEX 480 VAC DGs.	**Deleted** (8/2013)
45. Perform an analysis to determine the feasibility of the S/G "batch" feeding strategy.	Not Started
46. Implement a procedure to connect a 4160 VAC RRC DG to either of the A or B Train 1E 4160 VAC Buses on each unit to provide power for Phase 3.	Started (2/2014)
47. Develop procedures or FSGs for repower vital 4160 VAC Class 1E buses from RRC FLEX 4KV DGs.	Not Started
48. Provide modified 4160 VAC breakers for direct RRC DG connection for use in place of the normal 4160 VAC breakers in service for LPSI Pump and SW Pump power supplies.	**Deleted** (2/2014)
49. Implement a design change to power containment dome and reactor cavity temperatures instrumentation from a vital 120 VAC instrument bus.	Started (2/2014)
50. Perform an analysis to determine containment temperature and pressure response over a period of 72 hours. Perform analysis with and without RCS cooldown and with and without restoration of containment air cooling.	**Complete** (8/2013)
51. Implement a design change to install a hose connection on the A-Train and B-Train [Containment Spray] CS headers in the Auxiliary Building.	**Deleted** (8/2013)
52. Purchase additional special check valve bonnets and store them inside each [Emergency Core Cooling System] ECCS Pump Room.	Not Started

CCNPP OIP Open Items	Status
53. Perform an analysis to determine the feasibility of providing Containment cooling with CAC Units using an alternate cooling water strategy.	**Deleted** (8/2013)
54. Install hose connections on the Service Water (SRW) supply and return lines to the CAC for connection to a RRC portable heat exchanger.	**Deleted** (2/2014)
55. Implement a design change to install reliable wide range spent fuel pool (SFP) level instrumentation in accordance with NRC Order EA-12-051.	Started (8/2013)
56. Implement a design change to provide a 6" hose connection to each RWT.	Started (2/2014)
57. Implement a design change to provide dedicated hose connections to the SFP Cooling system.	Started (2/2014)
58. Develop and implement procedures or FSGs that include the SFP Cooling FLEX makeup flow path.	Started (8/2013)
59. Develop procedures or FSGs that mimic the ERPIP-612 sections for SFP makeup and SFP spray.	Started (8/2013)
60. Implement a design change to install reliable wide range SFP fuel pool level instrumentation in accordance with NRC Order EA-12-051	**(Duplicate item)** **See Item # 55**
61. Perform an analysis to determine the Control Room temperature response over a period of 72 hours.	Started (2/2014)
62. Perform an analysis to confirm that TDAFW Pump room air temperature remains below 130°F over 72 hours of pump operation.	**Complete** (8/2013)
63. Develop primary and alternate strategies for ventilating the TDAFW Pump Room.	**Complete** (8/2013)
64. Perform an analysis to confirm the [Probable Maximum Precipitation] PMP event maximum flood height will not impact the operation of TDAFW or preclude access to the room.	**Complete** (8/2013)
65. Perform an analysis to determine the possible effects of Beyond Design Basis External Events (BDBEEs) on the Turbine Building structure and the potential effect on access to the TDAFW Pump Room.	Started (2/2014)
66. Develop an alternate access strategy for access into the TDAFW Pump Room.	Started (8/2013)
67. Perform an analysis to determine the temperature profile over 72 hours in the area around ADV enclosures.	Started (2/2014)
68. Perform an analysis to determine the Cable Spreading Room temperature response over a period of 72 hours.	Started (2/2014)
69. Investigate changing Appendix R lighting batteries to a longer life battery or new battery technology to lengthen the duration of lighting available in vital areas of the plant.	**Deleted** (2/2014)
70. Procure battery operated hardhat mounted lights ("miners" lights) for on-shift and Emergency Response Organization (ERO) personnel.	Not Started
71. Procure a sufficient quantity of hand-held battery operated lanterns for on-shift and ERO personnel.	Not Started
72. Procure six (6) portable diesel generator powered exterior lighting units with 30 ft. masts and a minimum 400,000 lumens.	**Complete** (2/2014)
73. Change Appendix R lighting from incandescent to LED to lengthen the duration of lighting available in vital areas of the plant.	**Deleted** (2/2014)
74. Implement a design change to install a protected, backup power supply capable of 24 hours of operation, for the Plant Public Address system. This includes backup power for the individual building speaker network amplifiers.	Started (2/2014)

CCNPP OIP Open Items	Status
75. Implement a design change to modify the 800 MHz Radio System to provide protection from external hazards, transmitter and antennas protected from seismic, wind, and wind-driven missiles, including back-up power supply capable of 24 hours operation for the system and repeaters, or install an alternative communication system in lieu of the 800 MHz Radio system.	Started (2/2014)
76. Implement a design change to modify the Fixed Dedicated Satellite Phone System to provide protection from external hazards, and transmitter and antennas protected from seismic, wind, and wind-driven missiles, including back-up power supply capable of 24 hours operation for the system.	Started (2/2014)
77. Purchase one wheeled and one tracked vehicle with bucket/blade and grapple of sufficient size and load handling capacity to remove debris.	**Complete** (2/2014)
78. Purchase the portable equipment needed to outfit CCNPP Fire Engine 171 for debris removal.	**Deleted** (8/2013)
79. Implement a design change to install a protected alternate means of accessing the UHS for all BDBEEs, including installing necessary modifications to meet required deployment times. The strategy must also address how debris in the UHS will be filtered / strained and how the resulting debris will effect core cooling.	Started (2/2014)
80. Develop strategies for use of the Control Room and Cable Spreading Room Appendix R Ventilation System during an ELAP.	Started (2/2014)
81. Perform an analysis to evaluate hydrogen buildup in the battery rooms during charging and the long term room temperature profiles.	Not Started
82. Perform an analysis to determine the Switchgear Room temperature response under the above scenario and assuming various 480 VAC load center and 4160 VAC bus loadings over a period of 72 hours.	Started (2/2014)
83. Perform an analysis to verify the above strategy will provide sufficient air flow to vent steam from the SFP Area.	Started (2/2014)
84. Evaluate the cost of draining 21 Fuel Oil Storage Tank (FOST) and 1A DG FOST and refilling with ultra low sulfur (<15 ppm) diesel fuel oil.	Started (2/2014)
85. Implement a design change to install dedicated FLEX hose connections on 21 FOST, 1A DG FOST, and the 1B, 2A, and 2B DG fuel oil Y-strainers.	Not Started
86. Provide a permanent, fully protected diesel FOST for refueling the FLEX diesel-driven equipment.	Not Started
87. Perform an analysis of the fuel consumption rate for all of the FLEX equipment that could be in operation during an ELAP for a period of 72 hours to determine a conservative refueling interval.	Started (2/2014)
88. Develop strategies to reduce the transport time for fuel oil loading and delivery.	Started (8/2013)
89. Purchase the consumables that should be stocked to support at least 24 hours of site operation independent of offsite support.	Not Started
90. Provide a procedure governing the maintenance and distribution of the consumables that will be stocked to support at least 24 hours of site operation independent of offsite support.	Not Started
91. Develop a strategy to protect onsite consumables for use after a BDBEE.	Not Started
92. Develop equipment operating procedures or FSGs, considering vendor technical manual operating procedures, for each of the pieces of portable FLEX equipment that will be procured.	Not Started
93. Install connection points on Class 1E 4KV Buses for the RRC 4KV portable DG.	**Deleted** (2/2014)
94. Develop procedures or FSG for each of the RRC based strategies and for operation of the equipment provided by the RRC.	Not Started

Table 3
Status of CCNPP Interim Staff Evaluation (ISE) Open and Confirmatory Items

ISE Open Items	Status
1. **ISE Open Item 3.2.1.1.A** – The licensee will need to perform a plant specific analysis of RCS cooling and inventory control. If the CENTS code is used, the value of flow quality at the upper region of [Steam Generator] SG tubes for the condition when the RCS makeup pump is required to inject water into the RCS will also need to be submitted, and the licensee should confirm that CENTS is not used outside of any ranges of applicability discussed in the white paper addressing the use of CENTS (e.g., prior to the reflux boiling initiation). If other codes are used for the ELAP analysis, the licensee will need to justify the acceptance of the codes for this use.	Not Started
2. **ISE Open Item 3.2.1.1.B** – The licensee's plan for analysis for core and containment cooling is still under development and CENG will identify additional analysis to support the mitigating strategies. The subjects of the analyses are: maintaining core cooling (e.g., confirm shutdown margin during cooldown, DC load shedding, and adequate steam pressure for TDAFW pump operation), containment temperature and pressure response for containment cooling, and various safety functions regarding ventilation and cooling systems (e.g., for the main control room, TDAFW pump room, cable spreading room, battery rooms, switchgear rooms and the SFP area). Review of these analyses is needed to confirm acceptability of the mitigating strategies.	Started (2/14)
3. **ISE Open Item 3.2.1.8.A** – During the audit process, the licensee informed the NRC staff of its intent to abide by the Pressurized-Water Reactor Owners Group (PWROG) generic approach regarding boric acid mixing discussed in Section 3.2.1.8 of this report; however, the NRC staff concluded that the August 15, 2013, position paper was not adequately justified and that further information is required.	Started (2/2014)

ISE Confirmatory Items	Status
1. **ISE Confirmatory Item 3.1.1.1.A** – On page 8 of the Integrated Plan, the licensee specified that Phase 2 FLEX components will be stored at the site in a location or locations such that they are reasonably protected and that no one external event can reasonably fail the site FLEX capability. Provision will be made for multiple sets of portable on-site equipment stored in diverse locations or through storage in structures designed to reasonably protect from applicable external events. FLEX equipment storage location(s) have not been selected.	Started (2/2014)
2. **ISE Confirmatory Item 3.1.1.1.B** – The licensee will provide the specific protection requirements described in NEI 12-06 for the applicable hazard.	Started (2/2014)
3. **ISE Confirmatory Item 3.1.1.4.A** – The licensee has not yet identified the local staging area or described the methods to be used to deliver the equipment to the site for all hazards. The licensee will develop a playbook which will provide the detail necessary to ensure the successful delivery of the portable FLEX equipment from the RRC to the local staging area and from the local staging area to the site.	Started (2/2014)

ISE Confirmatory Items	Status
4. **ISE Confirmatory Item 3.1.2.2.A** – The licensee identified two open items; one regarding evaluating deployment strategies and deployment routes to ensure they are assessed for and address applicable hazards impact. The second was to provide an administrative program governing the FLEX deployment strategy, marking of setup locations, including primary and alternate pathways, maintaining the pathways clear, and clearing the pathways.	Started (2/2014)
5. **ISE Confirmatory Item 3.1.2.2.B** – Regarding the open items noted in 3.1.2.2.A, evaluations are needed to assure that connection points for portable equipment remain viable for the flooded condition, and that the effects of the maximum storm surge or probable maximum hurricane should be considered in evaluating the adequacy of the baseline deployment strategies.	Not Started
6. **ISE Confirmatory Item 3.1.2.2.C** – The licensee specified that primary access to the UHS is via the openings in the [Circulating Water] CW Discharge Structure (plant outfall). An alternate UHS location has not been established; however the licensee has identified an open item to implement a design change to install a protected alternate means of accessing the UHS for all BDBEEs, including installing necessary modifications to meet required deployment times. The strategy must also address how debris in the UHS will be filtered and/or strained and how the resulting debris will affect core cooling.	Started (2/2014)
7. **ISE Confirmatory Item 3.1.3.2.A** – The licensee specified that CCNPP currently has a varied array of wheeled vehicles, e.g., forklifts, small tractors, and a backhoe, that could be used for debris removal. However, the licensee did not specify if this equipment would be protected from high wind and other hazards.	Started (2/2014)
8. **ISE Confirmatory Item 3.1.4.2.A** – The licensee did not address procurement requirements to ensure that the FLEX equipment can be operated in extreme hot or cold temperature environments or how hot or cold temperatures will affect manual actions.	Started (2/2014)
9. **ISE Confirmatory Item 3.1.4.2.B** – Deployment of FLEX equipment has not been addressed for conditions of snow, ice and extreme cold. The current screening omits a discussion of deployment of FLEX equipment for hazards due to ice blockage or formation of frazil ice on the UHS.	Started (2/2014)
10. **ISE Confirmatory Item 3.2.1.2.A** – The RCP seal initial maximum leakage rate should be greater than or equal to the upper bound expectation for the seal leakage rate for the ELAP event discussed in the PWROG white paper addressing the RCP seal leakage for CE plants. If the RCP seal leakage rate used in the plant-specific ELAP analysis is less than upper bound expectation for the seal leakage rate discussed in the white paper, justification should be provided.	**Complete** (2/2014)
11. **ISE Confirmatory Item 3.2.1.5.A** – The licensee has not provided sufficient analyses to confirm instruments are reliable and accurate in the containment harsh conditions with high moisture levels, temperature and pressure during the ELAP event.	Started (2/2014)
12. **ISE Confirmatory Item 3.2.1.6.A** – The following references used as basis for several sequence of events (SOE) Action Time constraints were not available for review: CCN0012-17-STUDY-001, and CCNPP FLEX Strategy Table Top.	Started (2/2014)
13. **ISE Confirmatory Item 3.2.1.6.B** – The licensee has not completed final analysis regarding validation of the action times reported in the Sequence of Events, including any SOE changes that may result from ongoing evaluations for; RCP seal leakage, plant specific CENTS analysis, and any revised battery load shed analysis.	Started (2/2014)

ISE Confirmatory Items	Status
14. **ISE Confirmatory Item 3.2.1.7.A** –The Generic Concern related to the shutdown and refueling modes, required clarification of CCNPP's approach to demonstrate that the strategies can be implemented in all modes. During the audit, the licensee informed the NRC of their plans to abide by this generic resolution. The implementation of these plans is identified as Confirmatory Item 3.2.1.7.A.	Started (2/2014)
15. **ISE Confirmatory Item 3.2.1.9.C** – During the audit process, the licensee stated that it will provide revised analyses as detailed engineering evaluations are performed for each Phase 3 FLEX component and modification strategy.	Not Started
16. **ISE Confirmatory Item 3.2.1.9.D** – The licensee provided an open item, to perform engineering analysis to determine that there is sufficient decay heat generated for TDAFW operation 36-hours after shutdown and that the TDAFW pumps can operate reliably provided there is greater than 65 psia steam pressure in one of the SGs.	**Complete** (2/2014)
17. **ISE Confirmatory Item 3.2.2.A** – The licensee did not discuss the impacts of salt/brackish water on the structures and components of the SFP system, and the fuel. During the audit process the licensee specified that they will perform an analysis to determine the effects of salt/brackish water on the structures and components (including instrumentation) of the SFP system and the stored fuel.	Started (2/2014)
18. **ISE Confirmatory Item 3.2.2.B** – The licensee will perform an analysis to verify that the proposed strategy for SFP ventilation will provide sufficient air flow to vent steam from the SFP area, in order to determine whether natural air circulation is sufficient, or forced ventilation provided by FLEX equipment will be required.	Started (2/2014)
19. **ISE Confirmatory Item 3.2.3.A** – The licensee specified that an analysis of the Containment response during the ELAP event indicated that the Containment would not require additional cooling. During the audit, the licensee provided a document entitled "CCNPP Containment Analysis" that was based on the GOTHIC code, however, the tabulated results did not match those transmitted in the August 2013 6-month update.	Started (2/2014)
20. **ISE Confirmatory Item 3.2.4.1.A** – Charging Pump Room ventilation is provided by the non-safety related Auxiliary Building Supply and Exhaust Ventilation System. An evaluation will be performed to determine if the Charging Pumps can meet their mission time without room ventilation.	Started (2/2014)
21. **ISE Confirmatory Item 3.2.4.2.A** – The licensee identified an open item to perform an analysis to determine the Control Room temperature response over a period of 72 hours.	Started (2/2014)
22. **ISE Confirmatory Item 3.2.4.2.B** – The licensee identified an open item to develop strategies for use of the Control Room and Cable Spreading Room Appendix R Ventilation System during an ELAP.	Started (2/2014)
23. **ISE Confirmatory Item 3.2.4.2.C** – The licensee identified an open item to perform an analysis to evaluate hydrogen buildup in the battery rooms during charging and room temperature profiles.	Not Started
24. **ISE Confirmatory Item 3.2.4.2.D** – The licensee identified an open item to perform an analysis to determine the Switchgear Room temperature response following the reenergizing of buses and assuming various 480 VAC load center and 4160 VAC bus loadings over a period of 72 hours.	Started (2/2014)

ISE Confirmatory Items	Status
25. **ISE Confirmatory Item 3.2.4.2.E** – The West Electrical Penetration Rooms will begin to heat up after the Reactor motor control centers (MCC) are re-energized from the FLEX 480 VAC DGs, therefore, they will need to be evaluated for limiting temperatures for equipment survivability.	Started (2/2014)
26. **ISE Confirmatory Item 3.2.4.4.A** – On page 56 of the Integrated Plan, the licensee identified five open items to; 1) investigate changing Appendix R lighting batteries to a longer life battery or new battery technology to lengthen the duration of lighting available in vital areas of the plant, 2) procure battery operated hardhat mounted lights ("miners" lights) for on-shift and emergency response organization (ERO) personnel, 3) to procure a sufficient quantity of hand-held battery operated hardhat lanterns for on-shift and ERO personnel, 4) to procure six (6) portable diesel generator powered exterior lighting units with 30 ft. masts and a minimum 400,000 lumens, and 5) to change Appendix R lighting from incandescent to LED to lengthen the duration of lighting available in vital areas of the plant.	Started (2/2014)
27. **ISE Confirmatory Item 3.2.4.4.B** – The NRC staff reviewed the licensee communications assessment and has determined that the assessment for communications is reasonable, and the analyzed existing systems, proposed enhancements, and interim measures will help to ensure that communications are maintained. Confirmation that upgrades to the site's communications systems have been completed will be accomplished at a later date.	Started (2/2014)
28. **ISE Confirmatory Item 3.2.4.5.A** – The licensee has not completed its evaluation of the primary and alternate access points	Not Started
29. **ISE Confirmatory Item 3.2.4.6.A** – The licensee has identified an open item to perform an analysis to determine the temperature profile over 72 hours in the area around the Atmospheric Dump Valve enclosures.	Started (2/2014)
30. **ISE Confirmatory Item 3.2.4.6.B** – The licensee identified an open item to perform an analysis to determine the Cable Spreading Room temperature response over a period of 72 hours.	Started (2/2014)
31. **ISE Confirmatory Item 3.2.4.6.C** – The licensee identified two open items to perform an analysis to determine the possible effects of BDBEE on the Turbine Building structure and the potential effect on access to the TDAFW Pump Room, and to develop an alternate access strategy for access into the TDAFW Pump Room.	Started (2/2014)
32. **ISE Confirmatory Item 3.2.4.8.A** – The medium voltage 4160VAC generators and the low voltage 480VAC 800kW generators that will arrive from the RRC will have protective devices as specified in AREVA document 51-9199717-000. An evaluation will be performed to verify the internal protection is adequate to protect the 1E buses.	Started (2/2014)
33. **ISE Confirmatory Item 3.2.4.8.B** – One 480VAC/675KVA diesel generator set will be deployed for each unit to connect to one vital 480 VAC Load Center on that unit. The 480VAC/125KVA diesel generators are intended as an alternate strategy to connect to one of two vital reactor MCCs on each unit. The supplied reactor MCC can be cross-connected to the redundant train reactor MCC on that unit. An evaluation to validate the intended use of these diesel generators is pending.	Started (2/2014)
33. **ISE Confirmatory Item 3.2.4.9.A** – The licensee identified Open items to perform an analysis of the fuel consumption rate for all of the FLEX equipment that could be in operation during an ELAP for a period of 72 hours to determine a conservative refueling interval, and to develop strategies to reduce the transport time for fuel oil loading and delivery.	Not Started

ISE Confirmatory Items	Status
34. **ISE Confirmatory Item 3.2.4.10.A** – On page 19 of the Integrated Plan, the licensee identified Open Items: to implement a design change to clearly identify the set of [DC] load breakers that will either be left energized or load shed by identifying the selected breakers by their unique numbers and load title; to implement a procedure or FSG to perform the [DC} load shedding; and to complete a time-motion study to validate that DC load shedding can be accomplished on each unit in one hour.	Started (2/2014)
35. **ISE Confirmatory Item 3.2.4.10.B** – Maintenance of vital 125 VDC power will include aligning the Reserve Battery to one of the four vital 125 VDC buses via bus work and disconnects that are currently being installed under an existing plant modification. This action will extend the coping time for one vital 125 VDC bus to greater than 20 hours. The licensee needs to provide a copy of the analysis/calculations which shows aligning the Reserve Battery to one of the four 125VDC buses can extend the coping time for one vital 125 VDC bus to greater than 20 hours.	Started (2/2014)
36. **ISE Confirmatory Item 3.4.A** – The licensee's plans for the use of off-site resources conform to the minimum capabilities specified in NEI 12-06 Section 12.2, with regard to the capability to obtain equipment and commodities to sustain and backup the site's coping strategies. The licensee did not address the remaining minimum capabilities of Section 12.2.	Not Started

7 Potential Draft Safety Evaluation Impacts

There are no potential impacts to the Draft Safety Evaluation identified at this time.

8 Communications Assessment Interim Actions Status

Table 4 provides a listing of the implementing actions documented in the Assessment of Communications during an ELAP (Reference 4). It provides the status of each action, and whether the expected completion date has changed. The dates are planning dates subject to change as design and implementation details are developed.

Table 4
Status of CCNPP Communications Assessment Interim Actions

Communications Assessment Implementing Actions	Target Completion Date	Status	Revised Target Completion Date
Fixed Satellite Phone System and Antennas			
1. Determine the status of existing fixed satellite phone system and antennas in terms of suitability of being "reasonably protected."	12/31/2013	**Complete** (2/2014)	
2. Install additional antennas as necessary to support the use of fixed satellite phones at all locations.	8/31/2014	Not Started	
North Service Building and Switchyard House			
1. Determine whether or not the North Service Building (NSB) and Switchyard House are "reasonably protected."	12/31/2013	**Complete** (2/2014)	
Portable Satellite Phones			
1. Stage satellite phones		**Complete** (8/2013)	
2. Stage batteries and chargers in the applicable ERO Facilities.	10/31/2013	**Complete** (2/2014)	
3. Update work instructions for portable satellite phone inventory.	10/31/2013	**Complete** (2/2014)	
4. Develop/update preventive maintenance and testing procedures for portable satellite phones, batteries and chargers.	12/31/2013	**Complete** (2/2014)	
5. Include information on portable satellite phone locations and usage in procedures.	12/31/2013	**Complete** (2/2014)	
6. Procure and install a high power UPS or similar modification providing backup power for the battery chargers for portable satellite phones.	12/31/2014	Started	
Fixed Satellite Phones			
1. Procure and install fixed satellite phones, additional antennas and uninterruptable power supplies for the Technical Support Center (TSC)/Operations Support Center (OSC), Emergency Operations Facility (EOF), and Joint Information Center (JIC).	12/31/2014	Not Started	
2. Update work instructions for fixed satellite phone inventory		**Complete** (8/2013)	
3. Develop/update preventive maintenance and testing procedures for fixed satellite phones.		**Complete** (8/2013)	

Table 4
Status of CCNPP Communications Assessment Interim Actions

Communications Assessment Implementing Actions	Target Completion Date	Status	Revised Target Completion Date
4. Include information on fixed satellite phone locations and usage in procedures.		**Complete** (8/2013)	
5. Determine the acceptability of the backup UPS in its present location. Relocate higher, if necessary.	8/31/2014	Not Started	
6. Provide instructions for use at every fixed satellite phone location.		**Complete** (8/2013)	
Communication with ORO Facilities			
1. Provide each Offsite Response Organization (ORO) identified in Section 4.0 of the Communications Assessment with instructions for proper storage and rotation of satellite phone batteries.	10/31/2013	**Complete** (2/2014)	
Portable Generators			
1. Develop portable generator fueling plan to ensure ability to provide power for a minimum of 24 hours.	8/31/2015	**Complete** (2/2014)	
2. Develop procedures to maintain and test the portable generators.	12/31/2013	**Complete** (2/2014)	
3. Update work instructions to inventory portable generators and ensure adequate volume of fuel.	12/31/2013	**Complete** (2/2014)	
4. Develop preventive maintenance procedure for portable generators fuel supply.	12/31/2013	**Complete** (2/2014)	
5. Procure additional generators as required to support FLEX and communications strategies.	6/30/2014	Started	
6. Determine a process for relocating portable generators to the appropriate locations to power the necessary equipment.	Startup 2015 RFO Unit 2	Not Started	
Plant Paging (Announcement) System			
1. Provide a battery backed power source for the Tellabs Peripheral Equipment and the Power Block Amplicenters or otherwise modify the paging system to attain battery backed operation in the event of a loss of all AC power at the site.	Startup 2015 RFO Unit 2	Not Started	

Table 4
Status of CCNPP Communications Assessment Interim Actions

Communications Assessment Implementing Actions	Target Completion Date	Status	Revised Target Completion Date
2. Revise ERPIP 3.0, Immediate Actions, to provide guidance to the Shift Manager on how to implement back-up site announcements if the Site Paging system is not functional.	12/31/2013	**Complete** (2/2014)	
3. Revise ERPIP 750, Security, to provide specific guidance on how to execute the public address announcements if the plant paging system is not functional.	12/31/2013	**Complete** (2/2014)	
4. Revise ERPIP-B.1, Equipment Checklist, to add necessary bull horns to support back-up method for site announcements.	12/31/2013	**Complete** (2/2014)	
Training			
1. Evaluate training needs specific to the use of, portable and fixed satellite phones, radios and implementation of back-up methods for site announcements during an extended loss of AC power event.	11/30/2014	Not Started	
2. Develop and implement training on the use of portable generators.	Startup 2015 RFO Unit 2	Not Started	
Portable Radios			
1. Procure and install a high power UPS or similar modification providing backup power for the radio system repeaters	Startup 2015 RFO Unit 2	Not Started	
2. Complete estimates of portable radio battery life and purchase additional batteries as necessary based on an estimate of minimum talk time to ensure 24 hours of operation.	10/31/2013	Started (8/2013)	December 2014

9 References

The following references support the updates to the OIP described in this attachment.

1. Letter from M. G. Korsnick (CENG) to Document Control Desk (NRC), Overall Integrated Plan for Mitigation Strategies for Beyond-Design-Basis External Events, dated February 28, 2013.
2. NRC Order Number EA-12-049, Order to Modify Licenses with Regard to Requirements for Mitigation Strategies for Beyond-Design-Basis External Events, dated March 12, 2012.

3. Letter from M. G. Korsnick (CENG) to Document Control Desk (NRC), Supplement to Overall Integrated Plan for Mitigation Strategies for Beyond-Design-Basis External Events, dated March 8, 2013.

4. Letter from M. G. Korsnick (CENG) to Document Control Desk (NRC), Response to NRC Letter on Technical Issues for Resolution Regarding Communication Submittals Associated with Near-Term Task Force Recommendation 9.3, dated February 22, 2013.

5. NEI 12-06, Diverse and Flexible Coping Strategies (FLEX) Implementation Guide, dated August 2012.

6. Letter from E. D. Dean (CENG) to Document Control Desk (NRC), Calvert Cliffs Nuclear Power Plant, Units 1 and 2- Six-Month Status Report in Response to March 12, 2012 Commission Order Modifying Licenses with Regard to Requirements for Mitigation Strategies for Beyond-Design-Basis External Events (Order Number EA-12-049), dated August 27, 2013 (ADAMS Accession No. ML 13254A278)

7. Letter from J. S. Bowen (NRC) to J. A. Spina (CENG), Calvert Cliffs Nuclear Power Plant, Units 1 and 2 – Interim Staff Evaluation Relating to Overall Integrated Plan in Response to Order EA-12-049 (Mitigation Strategies) (TAC Nos. MF 1142 and MF 1143), dated December 17, 2013.

ATTACHMENT (2)

GINNA 6-MONTH STATUS REPORT (FEBRUARY 2014)

FOR MITIGATION STRATEGIES FOR

BEYOND-DESIGN-BASIS EXTERNAL EVENTS

Constellation Energy Nuclear Group, LLC
February 27, 2014

1 Introduction

The R.E. Ginna Nuclear Power Plant, LLC (Ginna) Overall Integrated Plan (OIP) was submitted to the Nuclear Regulatory Commission (NRC) in February 2013 (Reference 1), documenting the diverse and flexible strategies (FLEX), in response to NRC Order Number EA-12-049 (Reference 2). Subsequently, a supplement to the Ginna OIP for FLEX was submitted to the NRC in March 2013 (Reference 3). This attachment provides an update of milestone accomplishments since submittal of the last status report, including any changes to the compliance method, schedule, or need for relief/relaxation and associated basis (if applicable).

Ginna developed an Interim Action Implementation Schedule, as part of an Assessment of Communications during an Extended Loss of AC Power (ELAP) (Reference 4). A commitment was made in Reference 4 to include the status of the implementing actions identified in Section 4.12 of Ginna's communications assessment as part of the six-month status reports prepared pursuant to Section IV.C.2 of NRC Order EA-12-049. The updated status of the communications assessment interim actions is provided in Section 8.

Since submittal of the last status report in August 2013 (Reference 5), Ginna FLEX strategy implementation has progressed with some engineering analysis and calculations that support the mitigation strategies and the modification concepts have been refined. As a result of the 10 CFR Part 21 report regarding the Westinghouse low leakage Reactor Coolant Pump (RCP) seals, Ginna no longer intends to utilize low leakage RCP seals for its beyond-design-basis external event mitigation strategies. Ginna is currently working on its revised strategy that will account for the need for additional RCS borated makeup for RCS inventory control and to maintain subcriticality. The revised strategy will provide the basis for the assumed RCP seal leakage for the Model 93 RCPs which are installed at Ginna. Ginna expects to have the related strategies determined for the August 2014 submittal.

Work with the Strategic Alliance for FLEX Emergency Response (SAFER) has continued with review of proposed supporting equipment specifications and participation on committees that have been assembled to identify and provide specific needs.

2 Milestone Accomplishments

The following milestone(s) have been completed since the development of the OIP (References 1 and 3), and are current as of January 17, 2014.

- Six month integrated plan progress report submitted 3Q2013

3 Milestone Schedule Status

Table 1 provides an update to Attachment 2 of the Ginna OIP (Attachment 1 - References 1 and 3). It provides the activity status of each item, and whether the expected completion date has changed. The dates are planning dates subject to change as design and implementation details are developed. Any changes to the following target completion dates will be reflected in subsequent 6-month status reports.

The revised milestone target completion dates do not impact the order implementation date.

Walk-throughs or demonstrations encompassing all FLEX equipment points of connection/tie-ins for Phase 2 and Phase 3 strategies will be performed as presented in Table 1. A detailed schedule for walk-throughs or demonstrations, including individual target dates, has not been developed.

Table 1
Status of Ginna FLEX OIP Milestones

Milestone	Target Completion Date	Activity Status	Revised Target Completion Date
Commence Engineering and Design	July 2013	Started	December 2014*
Commence Procurement of Equipment	July 2013	Started	September 2015*
Commence Installation of Equipment	July 2013	Started	November 2015*
Submit 6-Month Status Report	August 2013	Complete	
Develop Strategies/Contract with the Regional Response Center (RRC)	November 2013	Started	March 2015 *
Submit 6-Month Status Report	February. 2014	Complete	
Complete Engineering and Design	March 2014	Started	December 2014 *
Create Maintenance and Testing Procedures	June 2014	Started	December 2014 *
Submit 6-Month Status Report	August. 2014	Not Started	
Procedure Changes Training Material Complete	September. 2014	Not Started	March 2015 *
Develop Training Plan	November 2014	Not Started	
Submit 6-Month Status Report	February 2015	Not Started	
Issue FLEX Support Guidelines	April. 2015	Not Started	November 2015 *
Perform Walk-throughs or Demonstrations	May 2015	Not Started	
Provide onsite and augmented staffing assessment considering functions related to Near-Term Task Force (NTTF) Recommendation 4.2.	May 2015	Not Started	
Implement Training	June 2015	Not Started	
Submit 6-Month Status Report	August. 2015	Not Started	
Complete Procurement of Equipment	September 2015	Not Started	
Full compliance with EA-12-049 is achieved	Fall 2015	Not Started	

Table 1
Status of Ginna FLEX OIP Milestones

Milestone	Target Completion Date	Activity Status	Revised Target Completion Date
Submit Completion Report	December 2015	Not Started	

* Change since submittal of last six month status report.

4 Changes to Compliance Method

Changes were made to the information provided in the OIP that do not change the compliance method with Nuclear Energy Institute (NEI) 12-06 (Reference 6).

The following is a list of the open items from the OIP that have been added, deleted or completed, and of coping strategies that have been changed from the last six month status report with an explanation of the changes. Additional details on how Ginna's OIP complies with the guidance in NEI 12-06 are also provided:

1. An assessment to ensure consideration of NEI-12-06, Section 5.3.2, consideration 4, has been performed for all current strategies. There is currently no planned movement or deployment of equipment that specifically requires electrical power, such that consideration for a power supply strategy is required. Any such movement of gates, doors, fences, etc. will and can be performed by manual action.

2. Large internal flooding sources that are not seismically robust were evaluated for SEP topic IX-3 (Reference 7), and were reevaluated during IPEEE reviews as part of the Seismic Walkdowns (Reference 8). Failure of non-seismically qualified tanks in the Auxiliary Building could cause flooding in the Auxiliary Building subbasement where the Residual Heat Removal pumps are located. If a seismic event occurs while in lower modes, then Residual Heat Removal will be implemented in Phase 2. In this scenario, the water would be pumped from the subbasement to gain access to the Residual Heat Removal connections. Adequate resources (personnel and equipment) and time are allotted for this activity. The Intermediate Building, Standby Auxiliary Feedwater Building, Standby Auxiliary Feedwater Building Annex, Containment and Control Building do not have non-seismically qualified water sources that could cause internal flooding following a seismic event.

3. Ginna is not impacted by failure of a not seismically robust downstream dam. Ginna is located on the South shore of Lake Ontario. Lake Ontario water levels are regulated by the Moses-Saunders power dam in Massena, NY. Levels currently range from 245.0 ft to 246.7 ft (IGLD85) (Reference 9). Prior to dam construction, the water level ranged from 242.6 ft to 249.3 ft (IGLD85). Failure of the Robert-Saunders Moses power dam would not have an adverse effect on the Ginna FLEX strategy.

4. FLEX equipment was purchased commercial grade that would be transportable and inherently rugged. Power Prime Pumps (Flex Pumps) are currently in use at FRAC sites and oil fields worldwide and subject to extreme conditions. The maximum temperature observed for the site region has been 100°F. From the John Deere Operators manual section, "Operating in Warm temperature Climates – John Deere engines are designed to operate using glycol base engine coolants." From the Cummins Operators Manual (100 KW D/G) – if operation in high temperature environments is anticipated, increase the frequency of coolant level checks. Neither of these sections place any limits on operation with high temperatures. The "N" designated "Flex Pump" will be stored in an environmentally controlled building. Designated N+1 equipment will be stored in a structure that will protect the equipment from weather hazards. The buildings will ensure reliable starting of equipment under extreme weather conditions.

5. The decay heat model for existing thermal hydraulic analyses that are used to support mitigation strategies at Ginna will depend on the engineering / current licensing basis requirements in effect at the time of the analysis. Generally, conservatisms are applied for assumed decay heat values, but in all cases, the decay heat model assumptions are provided.

   For new thermal hydraulic analyses performed specifically for FLEX, the decay heat model in Updated Final Safety Analysis Report (UFSAR) Chapter 6 will be used: The ANS Standard 5.1 has been used for the determination of decay heat energy in the Loss of Coolant Accident (LOCA) Mass and Energy (M&E) release model for the Ginna Extended Power Uprate (EPU) Program. This standard was balloted by the Nuclear Power Plant Standards Committee (NUPPSCO) in October 1978 and subsequently approved. The official standard was issued in August 1979. UFSAR Table 6.2-4 lists the decay heat curve used in the Ginna EPU Program M&E release analysis. Significant assumptions in the generation of the decay heat curve for use in the LOCA M&E release analysis include the following:

   - The decay heat sources considered are fission product decay and heavy element decay of U-239 and Np-239
   - The decay heat power from fissioning isotopes other than U-235 is assumed to be identical to that of U-235
   - The fission rate is constant over the operating history of maximum power level
   - The factor accounting for neutron capture in fission products has been taken from ANSI/ANS-5.1 1979
   - The fuel has been assumed to be at full power for 10^8 seconds
   - The total recoverable energy associated with one fission has been assumed to be 200 MeV/fission
   - Two sigma uncertainty (two times the standard deviation) has been applied to the fission product decay

   Based upon NRC staff review, Safety Evaluation Report of the March 1979 evaluation model, use of the ANS Standard 5.1 decay heat model was approved for the calculation of mass and energy releases to the containment following a LOCA.

   In the NRC Safety Evaluation (SE) Related to Extended Power Uprate at R.E. Ginna Nuclear Power Plant (ML061380249), the NRC noted that Ginna has also used American Nuclear Society (ANS) Standard 5.1 with a 2σ uncertainty band and other assumptions that maximize the decay heat added to the coolant, and as noted in Section 2.6.3 of this SE, the licensee uses the ANS 5.1 decay heat model with a 2σ uncertainty band included. This is conservative and acceptable.

6. The direct current (dc) load profile (in table format) with the required loads for the mitigation strategies to maintain core cooling, containment, and spent fuel pool cooling is documented in Design Analysis DA-EE-2001-028, Vital Battery 8 Hour Capacity (Reference 10), which is referenced in the March 8, 2013 OIP submittal and is available on the ePortal (eDocs) site.

7. The loads that the operators will shed from the dc busses are specified in ECA-0.0, Loss of All AC Power (Reference 11), and ATT-8.0, Attachment DC Loads (Reference 12). The timeline for shedding the DC loads was documented in the March 8, 2013 OIP and should be completed within 30 minutes. DA-EE-2001-028 documents that the DC load reductions in procedures ECA-0.0 (describes loads in the Control Room) and ATT-8.0 (with locations and load descriptions) were applied to the Battery A load calculations, and therefore are necessary and sufficient to ensure adequate capacity of Battery A for an 8-hour station blackout event. DA-EE-2001-028, Attachment 3, lists the loads removed from Battery A. Battery B is shown to have adequate capacity for an 8-hour station blackout event even without procedural load reductions. The analysis is conservative because it applies 50% of the calculated load reduction to Battery A, and only during period 3. 50% of the calculated load reduction is conservatively small such that the load reduction may take place any time in the first half of period 3, which is 467 minutes long. ECA-0.0, ATT-8.0, and DA-EE-2001-028 were referenced in the March 8, 2013 OIP submittal and are available on the ePortal (eDocs) site. The functions that are lost as a result of load shedding are listed in the procedures ECA-0.0 and ATT-8.0. The current load shedding does not impact defense-in-depth or redundancy as these loads do not impact mitigation strategy equipment or instrumentation available after an ELAP event

8. The minimum dc bus voltage required to ensure proper operation of all required electrical equipment is 108.6 V. This ensures that devices supplied by the batteries have adequate voltage levels after accounting for line losses between the battery terminals and the devices (Technical Specification Basis B.3.8.6, Battery Cell Parameters; Reference 13). Design Analysis DA-EE-99-047, 125 VDC System Loads and Voltages (Reference 14), provides a detailed analysis supporting this minimum voltage number.

9. Through analysis, Ginna has identified that a modification to qualify containment pressure instrumentation for a Tornado Missile event is no longer necessary. Ginna will proceduralize using hand-held instruments to take local readings of containment pressure. These measurements will be taken utilizing containment pressure transmitters located in the Auxiliary Building intermediate level. The structure is SC-I, flood protected and the intermediate level is protected from the effects of tornado winds and missiles.

10. For non-safety-related installed equipment that will be used in the mitigation strategies, Ginna will be installing a 1 MW Standby Diesel Generator (D/G) along with a 160,000 Gallon Condensate Storage Tank (CST). Although installed in a Seismic / Tornado and Flood proof structure, the 1 MW D/G will be classified as non-safety. The tank will also be classified as non-safety (connection points and piping penetrations will be protected by design or orientation). It will be seismically mounted and provide a suction source to the two safety related Standby AFW Pumps. During an ELAP, the 1 MW D/G will be started and use manual transfer switches to provide power to the two safety related SBAFW Pumps, which will then provide feed water to the steam generators. Ginna will also be installing a non-safety high pressure positive displacement charging pump with power being supplied by the 1 MW D/G through a breaker on its associated load center. The charging pump will be installed in the existing STBY Auxiliary Feedwater Building, which is safety related. The suction source is still under development at this time and when determined, updated in a future 6-month update.

New Open Item 74: Any additional non-safety equipment will be identified and evaluated for suitability in the mitigation strategies.

11. The new CST, TCD05, is a 160,000 gallon, flat bottom, stainless steel de-ionized water tank and meets the definition of robust in accordance with the guidance in NEI 12-06 as follows:

- Seismic: The tank is anchored to a caisson foundation which has been seismically evaluated using a time history analysis scaled to Ginna's safe-shutdown earthquake (SSE). The extracted floor response spectra was then utilized to seismically qualify the tank in accordance with API-650. The tank is therefore qualified to the SSE and is seismically robust.
- External Flooding: When filled, the tank is not buoyant. Tank discharge will be routed to flood protected areas. There are no flood induced failure mechanisms. The tank is robust with regards to external flooding.
- High Wind: In accordance with calculation 175180-000-SP-CL-00001 (Reference 15), the tank has been evaluated for external wind load of 132 miles per hour (mph). This wind speed meets the current design basis tornado wind speed for Ginna. The tank is robust with regards to high winds.
- Tornado Missile: In accordance with calculation 12574-1 (Reference 16), the tank is qualified to withstand the current design basis missile suite. Nozzles will be provided localized protection from tornado missiles from barriers and surrounding buildings. The tank is robust with regards to tornado missiles.
- Extreme Cold: The tank is provided with insulation and a tank heater located in the new enclosure building. The tank temperature will be continuously maintained. The tank heater will also be capable of being fed from the new 1 MW D/G during a loss of power. The tank is robust with regards to cold temperatures.
- Snow: In accordance with calculation 175180-000-SP-CL-00001 (Reference 15), the tank has been evaluated for a snow load of 84 pounds per square foot (psf) (Corresponds to ground snow load of 100 psf). This exceeds the design basis ground snow load of 40 psf. The tank is robust with regards to postulated snowfall.

12. The normal water source for the Turbine Driven Auxiliary Feedwater (TDAFW) pump is the Condensate Storage System. However, the Condensate Storage System and the TDAFW pump are not considered "robust" as defined in NEI 12-06 for protection from seismic and tornado events. Therefore, Ginna plans to install a new robust CST and 1 MW D/G to power the Standby Auxiliary Feedwater (SAFW) pumps to provide cooling water to the Steam Generators (S/Gs) in the event that the TDAFW pump and CST are lost. The bounding strategy assumes that no switchover occurs, but rather that the Auxiliary Feedwater flow is stopped as a result of the event. The FLEX strategy credits the Control Room instrumentation showing Steam Generator Level and Pressure instrumentation as available, since they are powered by the Safety Related Batteries. The new D/G is manually started from the Standby Auxiliary Feedwater (SBAFW) Building Annex (currently under construction). The currently installed SBAFW Pumps are manually realigned to take suction from the new CST and manually realigned to be fed power from the new D/G. The SBAFW pump flow is manually controlled using a local throttle valve to maintain S/G level as directed by the local operator from the Control Room. The new CST has local level indication and the SBAFW pumps have local pressure indication.

- In the event Beyond Design Basis External Event (BDBEE) conditions completely destroy the TDAFW/CST:
    i. Instrumentation to switch injection from TDAFW/CST system to new CST/SAFW system, will remain operational as follows:

1. Instrumentation for the new D/G and CST is local and is powered from the new D/G.
2. Control Room instrumentation is safety-related (SR), redundant and powered by SR DC batteries.
3. Communications equipment will be stored in a robust protected location.

ii. Switchover function will be accomplished in a timely manner:
1. Modes 1 through 4, and Mode 5 Loops Filled timeline (Draft), shows restart of flow to the Steam Generators within approximately 37 minutes. Steam Generator dryout is conservatively estimated to occur at 35 minutes and existing procedures and analysis support refill of dry Steam Generators.
2. The switchover function will be carried out manually at the new SBAFW Building Annex, having communications with the Control Room.

iii. Injection to S/Gs will be sufficient to prevent fuel damage:
1. These SBAFW pumps are the same pumps, with the same capacity, as are currently used in the Ginna accident analysis to ensure that sufficient flow will be provided to the Steam Generators to prevent fuel damage.
2. Steam generator level and pressure information will be provided to personnel in the Annex to make adjustments to the injection flow rate, if needed.

iv. The new SBAFW Building Annex is being designed to be a robust structure per NEI 12-06 and will be accessible following BDBEE phenomena.

v. The switchover function is fail-safe:
1. The mechanical alignment for switchover is manual valves, the electrical alignment to the new D/G is a manual disconnect, and
2. The function logic, software, hardware, related piping, valves, systems, structures and components (SSCs), and system water level instrumentation to support the switchover function, either manually or automatically, are safety related and are qualified for all potential ELAP events including seismic, tornado/high winds, flooding and missiles.
3. S/G Pressure and Level indications are SR. The existing SBAFW pumps, motor and piping are SR. The new D/G, Electrical, pipe and CST are not SR but are being designed to meet all the requirements of NEI 12-06. They will be able to operate following an SSE, Probable Maximum Flood (PMF), or a Design Basis Tornado Missile.

13. Qualification of the RWST and how it meets the definition of robust in accordance with NEI 12-06 is described as follows:

The refueling water storage tank (RWST), TSI01 is a flat bottom, stainless steel tank located in the Auxiliary Building, a Safety-Related, Seismic Category (SC) I structure.

- Seismic: The tank is located in a SC-I structure. The tank is evaluated within DA-CE-95-125 (Reference 17) and is shown to withstand design basis SSE loadings.
- External Flooding: The tank is located within the Auxiliary Building. The Auxiliary Building is flood protected to withstand external flood events. The tank is not susceptible to external flooding events.
- High Winds: The tank is located within the Auxiliary Building. The Auxiliary Building structure is evaluated to withstand the effects of external wind loads developed by design basis tornado wind. The structure utilizes backdraft dampers (Tornado dampers) in order to eliminate the effects of differential pressure associated with design-basis tornado (UFSAR Section 3.3.5.7, Reference 18). The RWST was subsequently evaluated for wind pressure effects due to a tornado (UFSAR Section 3.3.3.3.1).

- Tornado Missile: In accordance calculation 428-4824-034-1C (Reference 19), the tank is qualified to withstand the current design basis missile suite. There are no exposed nozzles that could cause the tank to drain if struck by a tornado missile.
- Extreme Cold: The tank is located within the Auxiliary Building, which has minimum allowable temperature of 50°F per UFSAR Table 3.11-1 (Reference 18). Ginna is currently completing a GOTHIC calculation for extreme minimum temperature of the Auxiliary Building. This calculation will be completed by June 2014.
- Snow: The tank is located within the Auxiliary Building which has been evaluated for 40 psf design basis ground snow loadings. The tank is not susceptible to snow loads.

14. Rather than using the RWST as an indefinite source of water for Phase 3 boron control/RCS injection, the bounding strategy for supplying an indefinite source of water of Phase 3 Boron control/RCS injection is the new CST. To refill the CST any existing source of demineralized water on site will be preferentially used until the RRC water treatment system arrives. The bounding FLEX scenario will deploy a FLEX diesel driven portable pump with hard suction hose to pull suction from the Discharge Canal and discharge hose connected to refill the CST within 8 hours if required. Bags of boron are available to mix with this clean water for borated reactivity control. If required, the RRC delivered pump capability will provide a backup to the on-site FLEX pumps.

15. The bounding strategy for supplying an indefinite source of water of Phase 3 containment cooling will be to deploy a diesel driven portable pump provided by the RRC with a hard suction hose to pull suction from the Discharge Canal and with the discharge hose connected to the Containment Recirculation Fan Cooler (CRFC) supply side, outside of Containment, via a fire hose type connection. Existing safety-related discharge piping will return CRFC discharge water back to the Lake.

16. Ginna intends to comply with the NRC endorsement of the following applicable generic concerns:

- Battery Life (ML13241A188)
- Shutdown / Refueling Modes (ML13267A382)
- Maintenance and Testing (ML13276A224)
- Boron Mixing (ML13276A183)

Note: The MAAP and CENTS computer codes are not applicable to Ginna.

17. General Integrated Plan Elements

Open Item 3: Exceptions for the site security plan or other (license/site specific – 10 CFR 50.54x) requirements of a nature requiring NRC approval will be communicated in a future 6-month update following identification.

This item is **complete.** This plan defines strategies capable of mitigating a simultaneous loss of all alternating current (ac) power and loss of normal access to the ultimate heat sink resulting from a beyond-design-basis event by providing adequate capability to maintain or restore core cooling, containment, and SFP cooling capabilities at all units on a site. Though specific strategies are being developed, due to the inability to anticipate all possible scenarios, the strategies are also diverse and flexible to encompass a wide range of possible conditions. These pre-planned strategies developed to protect the public health and safety will be incorporated into the unit emergency operating procedures in accordance with established EOP change processes, and their impact to the design basis capabilities of the unit evaluated under 10 CFR 50.59. The

plant Technical Specifications contain the limiting conditions for normal unit operations to ensure that design safety features are available to respond to a design basis accident and direct the required actions to be taken when the limiting conditions are not met. The result of the beyond-design-basis event may place the plant in a condition where it cannot comply with certain Technical Specifications, and, as such, may warrant invocation of 10 CFR 50.54(x) and/or 10 CFR 73.55(p).
Reference: Task Interface Agreement (TIA) 2004-04, "Acceptability of Proceduralized Departures from Technical Specifications (TSs) Requirements at the Surry Power Station," (TAC Nos. MC4331 and MC4332)," dated September 12, 2006. (Accession No. ML060590273).

18. General Integrated Plan Elements

Open Item 8: Define criteria for the local RRC staging area by June 2013.

This item is **complete.** Criteria are identified in the "SAFER Response Plan Document," (Reference 20) in Sections 5 and 8.

19. Maintain Core Cooling & Heat Removal (S/Gs Available; Modes 1-4 and Mode 5 with Loops Filled)

Open Item 13: Perform an analysis to determine the time to restore feed to a S/G if only one S/G was able to be supplied with feedwater after a trip and then feed is lost to that one S/G. This is to account for the reduction in water available for heat removal.

This item has been **deleted**. The strategy is to feed both S/Gs. This analysis is not needed.

20. Maintain Core Cooling & Heat Removal (S/Gs Available; Modes 1-4 and Mode 5 with Loops Filled)

Open Item 22: Develop and implement procedures to refill the new CST from an alternate water source prior depleting the usable volume (approximately 24 hours after the event).

This item is **revised** to state "**Develop and implement procedures to refill the new CST from an alternate water source prior depleting the usable volume (approximately 15 hours after the event).**" The CST will not have a 24 hour usable capacity for all BDBEEs.

21. Maintain Core Cooling & Heat Removal (S/Gs Available; Modes 1-4 and Mode 5 with Loops Filled)

Open Item 26: Implement a design change to provide a sustainable source of nitrogen and/or air to the Power Operated Relief Valves (PORVs) to protect RCS Integrity during a BDBEE while in Mode 4 or Mode 5, loops filled.

This item is **revised** to state "**Implement a strategy to provide a sustainable source of nitrogen and/or air to the Power Operated Relief Valves (PORVs) to protect RCS Integrity during a BDBEE while in Mode 4 or Mode 5, loops filled.**"

A design change is not necessary to provide a sustainable source of nitrogen and/or air to the PORVs.

22. Maintain Core Cooling & Heat Removal

Open Item 28: Ensure RRC can supply D/Gs capable of powering vital bus loads.

This item is **complete.** AREVA Document: 51-9199717-001, "Regional Response Center Generic and Site-Specific Equipment," (Reference 21) documents that the RRC can supply a Medium Voltage Generator (4160 V) and a Low Voltage Three-Phase Generator (480 V).

23. Maintain RCS Inventory Control / Long Term Subcriticality (Modes 1-4 and Mode 5 with Loops Filled)

Open Item 31: Implement a design change to install low leakage Reactor Coolant Pump (RCP) seals. The new seals need to be able to withstand T_{hot} for an extended period of time.

This item is **deleted**. As a result of the 10 CFR Part 21 report regarding the Westinghouse low leakage RCP seals, Ginna no longer intends to utilize low leakage RCP seals for its BDBEE mitigation strategies. Ginna is currently working on its revised strategy that will account for the need for additional RCS borated makeup for RCS inventory control and to maintain subcriticality. The revised strategy will provide the basis for the assumed RCP seal leakage for the Model 93RCPs which are installed at Ginna. Ginna expects to have the related strategies determined for the August 2014 submittal.

24. Maintain RCS Inventory Control / Long Term Subcriticality (Modes 1-4 and Mode 5 with Loops Filled)

Open Item 32: Perform an analysis to validate that a FLEX Boric Acid Storage Tank (FBAST) with a boron concentration of at least 2750 parts per million (ppm) and no more than 3050 ppm, and containing a minimum usable volume of 7000 gallons, is sufficient to maintain the reactor subcritical at Beginning of Life (BOL) or End of Life (EOL) conditions with Tave at or near no-load Tave, and at EOL conditions with a cooldown to 350°F. (Analysis must be bounding for current and future cycles.)

This item is **deleted**. As a result of the 10 CFR Part 21 report regarding the Westinghouse low leakage RCP seals, Ginna no longer intends to utilize low leakage RCP seals for its BDBEE mitigation strategies. Ginna is currently working on its revised strategy that will account for the need for additional RCS borated makeup for RCS inventory control and to maintain subcriticality. The revised strategy will provide the basis for the assumed RCP seal leakage for the Model 93RCPs which are installed at Ginna. Ginna expects to have the related strategies determined for the August 2014 submittal.

25. Maintain RCS Inventory Control / Long Term Subcriticality

Open Item 34: Design and implement the capability to inject blended borated water into the RCS using an inline blender, at the required flow rate with margin, once an analysis determines the RCS makeup requirement for Mode 5, loops not filled and pressurizer manway not removed.

This item is **revised** to state "**Implement a strategy to batch mix boron in the FBAST**." To implement this strategy the new CST will be hard piped to the FBAST to provide gravity feed refill capability. A ladder / stairway access will allow manual addition of dry chemical with

mixing occurring by either an electric mixer or a pump sparger recirculation system within the tank. The boric acid source will be dry chemical in the new structure.

26. Maintain Core Cooling & Heat Removal (S/Gs Not Available; Modes 5 & 6)

Open Item 44: Perform a boron mixing analysis for the effects on RCS boron concentration by providing unborated water to the refueling cavity via the transfer canal from the Auxiliary Building to Containment.

This item is **deleted**. This method will not be used to provide makeup to the refueling cavity.

27. Maintain Core Cooling & Heat Removal (S/Gs Not Available; Modes 5 & 6)

Open Item 47: Implement a design change to install permanent connection point for Instrument Air to Containment.

This item is **revised** to state "**Implement a strategy to provide a connection point for Instrument Air to Containment.**"

A design change is not necessary to provide instrument air to containment.

28. Maintain Containment

Open Item 49: Perform an analysis to determine the containment pressure profile during an ELAP / Loss of Ultimate Heat Sink (LUHS) event, after the low leakage RCP seal technology is chosen, and determine the mitigating strategies necessary to ensure the instrumentation and controls in containment which are relied upon by the Operators are sufficient to perform their intended function.

This item is **revised** to state "**Perform an analysis to determine the containment pressure profile during an ELAP / Loss of Ultimate Heat Sink (LUHS) event and determine the mitigating strategies necessary to ensure the instrumentation and controls in containment which are relied upon by the Operators are sufficient to perform their intended function.**"

As a result of the 10 CFR Part 21 report regarding the Westinghouse low leakage RCP seals, Ginna no longer intends to utilize low leakage RCP seals for its BDBEE mitigation strategies. Ginna is currently working on its strategy that will account for the higher RCP seal leakage into containment. Ginna expects to have the related strategies determined for the August 2014 submittal.

29. Maintain Spent Fuel Pool Cooling

Open Item 54: Implement a design change to install a protected makeup connection to the Spent Fuel Pool (SFP) cooling piping to provide makeup to the SFP that exceeds SFP boil-off and provide a means to supply SFP makeup without accessing the SFP walkway.

This item is **revised** to state "**Implement a strategy to provide for a protected makeup connection to the Spent Fuel Pool (SFP) cooling piping to provide makeup to the SFP that exceeds SFP boil-off and provide a means to supply SFP makeup without accessing the SFP walkway.**"

A design change is not necessary to implement this strategy.

30. Maintain Spent Fuel Pool Cooling

Open Item 58: SFP Water Level instrument numbers will be provided upon detailed design completion.

This item is **complete**. The SFP Water Level instrument numbers are:

- LI-310, SFP Wide Range Level Indicator (Northeast Channel)
- LI-311, SFP Wide Range Level Indicator (Southeast Channel)

31. Safety Functions Support

Open Item 64: Implement a design change to install a protected primary and secondary means of accessing the Ultimate Heat Sink (UHS) for all BDBEEs, and install necessary modifications to meet required deployment times. This must also address how debris in the UHS or other raw water sources will be filtered / strained and how the resulting debris will effect core cooling.

This item is **revised** to state "**Implement a strategy for accessing the UHS for all BDBEEs and to meet required deployment times. This must also address how debris in the UHS or other raw water sources will be filtered / strained and how the resulting debris will effect core cooling.**"

A design change will not be necessary for accessing the UHS.

32. Safety Functions Support

Open Item 65: Implement a design change to provide for transferring diesel fuel from the D/G A and D/G B Fuel Oil Storage Tanks (FOSTs) to a fuel transfer vehicle.

This item is **revised** to state "**Implement a strategy to provide for transferring diesel fuel from the D/G A and D/G B Fuel Oil Storage Tanks (FOSTs) to a fuel transfer vehicle.**"

A design change will not be necessary for transferring diesel fuel from the D/G A or D/G B FOSTs to a fuel transfer vehicle.

33. Safety Functions Support

Open Item 71: Table 3 lists Phase 3 Response Equipment / Commodities that are being considered for pre-staging at an offsite location. These include:

- **Radiation Protection Equipment**
- **Commodities – Food, Potable Water**
- **Diesel Fuel**
- **Heavy Equipment – Transportation, Debris Removal**
- **Boric Acid**
- **Portable Lighting**
- **Portable Toilets**

This item is **deleted**. There are no plans to pre-stage commodities at an offsite location. Diesel fuel will be provided by the RRC for initial start and test of RRC provided equipment. Portable lighting will be provided by the RRC as generic equipment to the site and also to staging area C. Equipment transportation will be provided from RRC to staging area C and from staging area C to staging area B.

5 Need for Relief/Relaxation and Basis for the Relief/Relaxation

Ginna expects to comply with the order implementation date and no relief/relaxation is required at this time.

6 Open Items from Overall Integrated Plan and Interim Safety Evaluation

Table 2 provides a summary of the open items documented in the OIP and those added in a subsequent six month status report, and the status of each item. Explanations for added, deleted and completed items are provided in Section 4.

Table 3 will provide a summary of the open items documented in the Ginna Interim Staff Evaluation (ISE) and the status of each item following the issuance of the ISE.

Table 2
Status of FLEX OIP Open Items

Ginna OIP Open Items	Status
1. Implement a design change to install permanent protected FLEX equipment connection points. (also see OI 23)	Started (8/2013)
2. Provide for onsite storage of Phase 2 FLEX components that is protected against external events by design or location. Implement a design change to provide a protected storage location for transportation (equipment and fuel) and debris removal equipment. Evaluate deployment strategies and deployment routes for hazards impact. Evaluate requirements and options and develop strategies related to the storage onsite of the FLEX portable equipment. Establish deployment routes from FLEX equipment storage locations to connection points. Develop a strategy and purchase equipment to respond to events that may require debris removal such as following a flood, tornado, or snow storm. Develop a strategy to move FLEX equipment, including providing reasonable protection from a BDBEE.	Started (2/2014)

Table 2
Status of FLEX OIP Open Items

Ginna OIP Open Items	Status
3. Exceptions for the site security plan or other (license/site specific – 10 CFR 50.54x) requirements of a nature requiring NRC approval will be communicated in a future 6-month update following identification.	**Complete** (2/2014)
4. Develop and implement procedures to commence feeding the steam generators (S/Gs) from Standby Auxiliary Feedwater (SAFW) powered by the new SAFW Diesel Generator (D/G) and taking suction from the new Condensate Storage Tank (CST) prior to reaching 5 ft in the existing CST.	Not Started
5. Develop and implement a FLEX method / procedure to refill the new SAFW CST prior to losing suction.	Not Started
6. Develop and implement a program and/or procedure to keep FLEX equipment deployment pathways clear or with identified actions to clear the pathways.	Not Started
7. Determine schedule for when RRCs will be fully operational.	**Complete** (8/2013)
8. Define criteria for the local RRC staging area by June 2013.	**Complete** (2/2014)
9. Establish a suitable local staging area for portable FLEX equipment to be delivered from the RRC to the site.	Started (2/2014)
10. Develop site specific playbook for delivery of portable FLEX equipment from the RRC to the site.	Started (8/2013)
11. Perform an analysis to determine the diesel driven portable high pressure pump upper and lower head requirements to provide for a minimum of 215 gpm to a S/G without causing Reactor Coolant System (RCS) pressure to decrease to the point where nitrogen will be injected from the SI Accumulators, assuming suction is directly from the Ultimate Heat Sink (UHS).	Not Started
12. Develop and implement procedures to close Safety Injection (SI) Accumulator injection valves or vent the SI Accumulators prior to nitrogen injection into the RCS.	Not Started
13. Perform an analysis to determine the time to restore feed to a S/G if only one S/G was able to be supplied with feedwater after a trip and then feed is lost to that one S/G. This is to account for the reduction in water available for heat removal.	**Deleted** (2/2014)
14. Implement the design change to install the 1 MW SAFW D/G, 160,000 gallon Condensate Storage Tank (CST), and enclosure meeting the reasonable protection requirements of NEI 12-06.	Started (8/2013)

Table 2
Status of FLEX OIP Open Items

Ginna OIP Open Items	Status
15. Develop and implement procedures to feed S/Gs using a SAFW Pump powered by the new SAFW D/G and taking suction on the new 160,000 CST. Revise procedures to direct Operators to manually establish makeup to the S/Gs via this flow path if the Turbine Auxiliary Feedwater (TDAFW) Pump fails to deliver water to the S/Gs.	Not Started
16. Implement a design change to protect a S/G Atmospheric Relief Valve (ARV) from Tornado Missiles to address reactor core cooling and heat removal using a high capacity portable diesel driven pump.	Not Started
17. Perform an analysis to demonstrate adequate manpower, communications capability, and habitability for local operation of the S/G ARVs. If this cannot be demonstrated, implement a design change to provide for ARV control from the Control Room for seismic and tornado missile events.	Started (8/2013)
18. Develop and implement procedures/administrative controls to ensure that the new CST maintains a minimum usable volume at all times.	Not Started
19. Perform an analysis or implement a design change to qualify S/G Pressure instrumentation for a Tornado Missile event.	Started (2/2014)
20. Identify instrumentation and develop procedures to take field readings of necessary parameters, including (Pressure Indicator) PI-430 and (Level Indicator) LI-427.	Started (8/2013)
21. Implement a strategy to connect a portable air compressor at a location/ configuration to support ARV operation.	Not Started
22. Develop and implement procedures to refill the new CST from an alternate water source prior depleting the usable volume (approximately 15 hours after the event).	**Revised** (2/2014) Not Started
23. Implement a design change as part of the installation of the new CST to install a mechanical connection that will allow the tank to be refilled from a portable diesel driven pump.	Started (8/2013)
24. Perform an analysis to establish plant conditions in Phase 1 that will allow diesel driven high capacity portable pump to be utilized as soon as plant resources are available to provide defense in depth for maintaining an adequate heat sink should SAFW fail.	Started (2/2014)
25. Implement a design change to install a new isolation valve upstream of the FLEX connection to S/G B in case a tornado missile impacts a section of unprotected piping between the SAFW Building and the connection point.	Not Started

Table 2
Status of FLEX OIP Open Items

Ginna OIP Open Items	Status
26. Implement a strategy to provide a sustainable source of nitrogen and/or air to the Power Operated Relief Valves (PORVs) to protect RCS Integrity during a BDBEE while in Mode 4 or Mode 5, loops filled.	**Revised** (2/2014) Started (2/2014)
27. Develop and implement procedures to provide guidance for water solid S/G cooldown using FLEX equipment.	Not Started
28. Ensure RRC can supply D/Gs capable of powering vital bus loads.	**Complete** (2/2014)
29. Implement a design change to provide connections to 480 Volt vital busses to be able to connect to RRC supplied D/Gs.	Not Started
30. Ensure RRC can supply a water processing unit.	Started (8/2013)
31. Implement a design change to install low leakage Reactor Coolant Pump (RCP) seals. The new seals need to be able to withstand T_{hot} for an extended period of time.	**Deleted** (2/2014)
32. Perform an analysis to validate that a FLEX Boric Acid Storage Tank (FBAST) with a boron concentration of at least 2750 parts per million (ppm) and no more than 3050 ppm, and containing a minimum usable volume of 7000 gallons, is sufficient to maintain the reactor subcritical at Beginning of Life (BOL) or End of Life (EOL) conditions with T_{ave} at or near no-load T_{ave}, and at EOL conditions with a cooldown to 350°F. (Analysis must be bounding for current and future cycles.)	**Deleted** (2/2014)
33. Implement a design change to convert the existing SAFW Test Tank to the FBAST with a permanent connection to the new pre-staged high pressure pump and connection(s) for a portable diesel driven pump.	Not Started
34. Implement a strategy to batch mix boron in the FBAST. (also see OI 39)	**Revised** (2/2014) Not Started
35. Implement a design change to install a pump capable of pumping 22 gallons per minute (gpm) of borated water into the RCS at 2235pounds per square inch gage (psig), or 70 gpm at 1500 psig, from the new FBAST with discharge piping connected to the Charging header.	Started (8/2013)
36. Develop and implement procedures to initiate RCS boration prior to commencing RCS cooldown to provide margin to prevent re-criticality.	Not Started
37. Implement a design change to connect a portable diesel engine driven high pressure pump to the FBAST and the Charging line, which is capable of pumping 20 gpm of borated water from the FBAST to the RCS at 2235 psig.	Not Started
38. Ensure the RRC will supply boric acid for use with the inline blender.	Started (2/2014)

Table 2
Status of FLEX OIP Open Items

Ginna OIP Open Items	Status
39. Perform an analysis to determine minimum RCS makeup flow sufficient for simultaneous core heat removal and boron flushing for Mode 5, loops not filled and pressurizer manway not removed. (also see OI 34)	Started (2/2014)
40. Perform an analysis to determine the transition point from gravity fill of the refueling cavity to when forced makeup is required.	Not Started
41. For Mode 5, Loops Not Filled, and Pressurizer Manway Not Removed, RCS Heat Removal will be by RCS Bleed and Feed. Items under consideration are: • Establish RCS feed path using low pressure pump capable of [To Be Determined] gpm at > 50 psig and a maximum discharge pressure of 410 psig to the RCS. • Establish sufficient RCS bleed path (PORVs, Reactor Head Vents) • Implement a strategy to provide a connection point for Instrument Air to Containment (OI 47) • Establish feed to available S/Gs Partial strategy for consideration - Fill available S/Gs to provide limited heat sink function and additional time before boiling of the coolant occurs. Existing procedural guidance for Water Solid S/G Cooldown provides guidance that can be modified for use with a high flow portable diesel driven pump to maintain the limited heat sink function. • If Water Solid S/G Cooldown is effective to maintain core cooling and heat removal, secure RCS Bleed and Feed and maintain Pressurizer Level.	Started (2/2014)
42. Perform an analysis to determine RCS vent path requirements for Mode 5 with PORV vent path.	Started (2/2014)
43. Develop and implement procedures to makeup to the refueling cavity from the new CST, UHS, or FBAST to maintain refueling cavity level and boron concentration.	Not Started
44. Perform a boron mixing analysis for the effects on RCS boron concentration by providing unborated water to the refueling cavity via the transfer canal from the Auxiliary Building to Containment.	**Deleted** (2/2014)
45. Evaluate the viability of feed and bleed for available S/Gs to provide a limited heat sink function and additional time before boiling of the coolant occurs as a parallel mitigating strategy during Modes 5 & 6. This analysis must address reflux condensation and its potential effects on reactor shutdown margin.	Started (2/2014)
46. Implement a design change to establish provisions for refilling the FBAST with borated water.	Not Started

Table 2
Status of FLEX-OIP Open Items

Ginna OIP Open Items	Status
47. Implement a strategy to provide a connection point for Instrument Air to Containment.	**Revised** (2/2014) Started (2/2014)
48. Perform an evaluation to determine a method for recirculation cooling of the RCS if the Auxiliary Building Sub-basement is flooded by Tornado Missiles damaging non-protected tanks on the Auxiliary Building Operating Floor.	Started (2/2014)
49. Perform an analysis to determine the containment pressure profile during an ELAP / Loss of Ultimate Heat Sink (LUHS) event and determine the mitigating strategies necessary to ensure the instrumentation and controls in containment which are relied upon by the Operators are sufficient to perform their intended function.	**Revised** (2/2014) Started (2/2014)
50. Perform an analysis of the containment function to determine the mitigating strategy acceptance criteria for an ELAP / LUHS event.	Not Started
51. Implement a strategy to determine containment pressure after a Tornado Missile event.	Revised (8/2013) Started (2/2014)
52. Develop the Phase 3 strategy after the containment pressure analysis is completed as described in Maintain Containment, PWR Portable Equipment Phase 2.	Not Started
53. Ensure the RRC will provide additional portable pumps and equipment to spray water into containment or supply water to the Containment Recirculation Fans / Coolers.	Started (2/2014)
54. Implement a strategy to provide for a protected makeup connection to the Spent Fuel Pool (SFP) cooling piping to provide makeup to the SFP that exceeds SFP boil-off and provide a means to supply SFP makeup without accessing the SFP walkway.	**Revised** (2/2014) Started (2/2014)
55. Provide the necessary connecting hoses and/or equipment to work with existing pumps and water sources for filling the SFP.	Started (2/2014)
56. Revise ER-SFP.2 to provide multiple strategies for establishing a diverse means of SFP makeup for at least 30 hours without offsite supplies.	Not Started
57. Perform an analysis to determine if a vent pathway from the SFP is needed for steam and condensate to minimize the potential for steam to cause access and equipment problems in the Auxiliary Building. (also see OI 62)	Started (2/2014)
58. SFP Water Level instrument numbers will be provided upon detailed design completion.	**Complete** (2/2014)

Table 2
Status of FLEX OIP Open Items

Ginna OIP Open Items	Status
59. Ensure the RRC will provide additional portable pumps and equipment to: • provide water from the UHS to the Standby SFP Heat Exchanger to remove heat from the SFP cooling system with the Standby SFP Recirculation Pump; or • provide water to SFP Heat Exchanger A to remove heat from the SFP Cooling System with the Standby SFP Recirculation Pump or SFP Pump A, or • provide a heat exchanger and equipment to provide cooling for the SFP.	Started (8/2013)
60. Implement a design change to install connection points needed to supply the battery chargers from the 1 MW D/G.	Started (2/2014)
61. Implement a design change to install connection points needed to supply the battery chargers from a 100 kW D/G.	Started (2/2014)
62. Perform GOTHIC calculations consistent with NUMARC 87-00, *Guidelines and Technical Bases for NUMARC Initiatives Addressing Station Blackout at Light Water Reactors*, to determine the effects of a loss of HVAC during an ELAP for the following areas: • Intermediate Building, TDAFW Pump and ARV/ (Safety Valve (SV) areas • Auxiliary Building, Refueling Water Storage Tank (RWST) area • Battery Rooms, Relay Room, and Control Room • Standby Auxiliary Feedwater Building	Started (8/2013)
63. Perform an analysis to evaluate the Battery Room low temperature for an ELAP event, assuming -16°F air temperature to determine if, and when, Battery Room heating is required.	Started (2/2014)
64. Implement a strategy for accessing the UHS for all BDBEEs and to meet required deployment times. This must also address how debris in the UHS or other raw water sources will be filtered / strained and how the resulting debris will effect core cooling.	**Revised** (2/2014) Started (2/2014)
65. Implement a strategy to provide for transferring diesel fuel from the D/G A and D/G B Fuel Oil Storage Tanks (FOSTs) to a fuel transfer vehicle.	**Revised** (2/2014) Started (2/2014)
66. Perform an analysis to provide a basis that the Offsite D/G FOSTs are reasonably protected from BDBEEs.	Not Started
67. Develop the strategy to transfer fuel from protected fuel storage locations to FLEX equipment.	Not Started
68. Develop strategies to provide for emergency lighting to support Operator actions after a BDBEE.	Started (2/2014)
69. Develop a strategy to protect onsite consumables for use after a BDBEE.	Started (2/2014)

Table 2
Status of FLEX OIP Open Items

Ginna OIP Open Items	Status
70. Develop and implement procedures to establish battery room ventilation within 72 hours of the event to prevent exceeding the unacceptable hydrogen concentration limit of 2%, once the GOTHIC analysis has been completed as discussed in Phase 2.	Not Started
71. Table 3 lists Phase 3 Response Equipment / Commodities that are being considered for pre-staging at an offsite location. These include: • Radiation Protection Equipment • Commodities – Food, Potable Water • Diesel Fuel • Heavy Equipment – Transportation, Debris Removal • Boric Acid • Portable Lighting • Portable Toilets	**Deleted** (2/2014)
72. Install wide range SFP level instrumentation in accordance with NRC Order EA-12-051.	Started (8/2013)
73. Implement a strategy to provide cooling water to the RHR Heat Exchangers using a portable diesel driven pump.	Started (2/2014)
74. Any additional non-safety equipment will be identified and evaluated for suitability in the mitigation strategies	Started(2/2014)

Table 3
Status of Interim Safety Evaluation (ISE) Open and Confirmatory Items

ISE and Confirmatory Open Items	Status
None	

7 Potential Interim Safety Evaluation Impacts

There are no potential impacts to the Interim Safety Evaluation as this time.

8 Communications Assessment Interim Actions Status

Table 4 provides a listing of the implementing actions documented in the Assessment of Communications during an ELAP (Reference 4). It provides the status of each action, and whether the expected completion date has changed. The dates are planning dates subject to change as design and implementation details are developed.

Table 4
Status of Communications Assessment Interim Actions

Communications Assessment Implementing Actions	Target Completion Date	Status	Revised Target Completion Date *
Fixed Satellite Phone System and Antennas			
1. Determine the status of existing fixed satellite phone system and antennas in terms of suitability of being "Reasonably protected"	12/31/2013	**Complete** (8/2013)	
2. Install additional antennas as necessary to support the use of additional fixed satellite phones at all onsite locations (Control Room, Technical Support Center (TSC), and Operational Support Center (OSC)).	8/31/2014	Not Started	
NAB, TSC and Service Buildings			
1. Determine whether or not the Nuclear Assurance Building (NAB), TSC and Service Building are "reasonably protected."	12/31/2013	**Complete** (2/2014)	
Portable Satellite Phones			
1. Stage portable satellite phones	Complete	**Complete** (2/2013)	
2. Stage portable satellite phone batteries and chargers in the applicable Emergency Response Organization (ERO) Facilities.	10/31/2013	**Complete** (2/2014)	
3. Update work instructions for portable satellite phone inventory.	10/31/2013	**Complete** (2/2014)	
4. Develop/update preventive maintenance and testing procedures for portable satellite phones, batteries and chargers.	12/31/2013	**Complete** (2/2014)	
5. Include information on portable satellite phone locations and usage in procedures.	12/31/2013	**Complete** (2/2014)	

Table 4
Status of Communications Assessment Interim Actions

Communications Assessment Implementing Actions	Target Completion Date	Status	Revised Target Completion Date *
6. Stage off-site portable off-site satellite phones.	12/31/2013	**Complete** (2/2014)	
7. Procure and install a high power UPS or similar modification providing backup power for the battery chargers for portable satellite phones.	12/31/2014	Not Started	
Fixed Satellite Phones			
1. Procure and install fixed satellite phones, additional antennas, and uninterruptable power supplies for the TSC/OSC, Control Room, Emergency Operations Facility (EOF), Joint Information Center (JIC), and Wayne and Monroe Counties Emergency Operations Centers (EOCs) and Warning Points (WPs). Include the capability to power the portable satellite phone battery chargers.	12/31/2014	Not Started	
2. Develop/update preventative maintenance and testing procedures for fixed satellite phones.	8/31/2014	Not Started	
3. Include information on fixed satellite phone locations and usage in procedures.	12/13/2013	**Complete** (2/2014)	
4. Provide instructions for use of fixed satellite phones at each location.	12/31/2014	Not Started	

Table 4
Status of Communications Assessment Interim Actions

Communications Assessment Implementing Actions	Target Completion Date	Status	Revised Target Completion Date *
Communication with ORO Facilities			
1. Provide each Offsite Response Organization (ORO) identified in Section 4.3 of the Communications Assessment with instructions for proper storage and rotation of satellite phone batteries.	8/31/2013	**Complete** (2/2014)	
Portable Generators			
1. Develop portable generator fueling plan to ensure ability to provide power for a minimum of 24 hours.	12/31/2013	**Complete** (2/2014)	
2. Develop procedures to maintain and test the portable generators.	12/31/2013	**Complete** (2/2014)	
3. Update work instructions to inventory portable generators and ensure adequate volume of fuel.	12/31/2013	**Complete** (2/2014)	
4. Develop preventive maintenance procedure for portable generators fuel supply.	12/31/2013	**Complete** (2/2014)	
5. Determine a process for relocating portable generators to the appropriate locations to power the necessary equipment.	12/31/2013	**Complete** (2/2014)	
Training			
1. Evaluate training needs specific to the use of portable and fixed satellite phones, and radios during an ELAP event.	10/31/2015	Not Started	
2. Develop and implement training on the use of backup generators.	10/31/2015	Not Started	

Table 4
Status of Communications Assessment Interim Actions

Communications Assessment Implementing Actions	Target Completion Date	Status	Revised Target Completion Date *
3. Revise EPIP-1-18 as described in Section 4.11 of Reference 4 Brief appropriate personnel on the contents of this procedure.	10/31/2013	**Complete** (2/2014)	
APC Back-UPS ES 750			
1. Determine whether APC Back-UPS ES 750 is high enough above ground elevation in the On-Site Telephone Building to be protected from flooding.	12/31/2013	**Deleted** (2/2014) UPS ES 750 does not exist at Ginna, nor does a telephone building. This implementing action was created in error.	
Portable Radios			
1. Procure and install a high power UPS or similar modification providing backup power for the radio system repeaters.	10/31/2015	Not Started	
2. Complete estimates of portable radio battery life and procure additional batteries as necessary based on an estimate of minimum talk time to ensure 24 hours of operation.	10/31/2013	**Complete** (2/2014)	

Note:
* There are no changes to target completion dates. However, the column labeled Revised Target Completion Date is reserved for future use.

9 References

The following references support the updates to the OIP described in this attachment.

1. Letter from M. G. Korsnick (CENG) to Document Control Desk (NRC), Overall Integrated Plan for Mitigation Strategies for Beyond-Design-Basis External Events, dated February 28, 2013.
2. NRC Order Number EA-12-049, Issuance of Order to Modify Licenses with Regard to Requirements for Mitigation Strategies for Beyond-Design-Basis External Events, dated March 12, 2012.

3. Letter from M. G. Korsnick (CENG) to Document Control Desk (NRC), Supplement to Overall Integrated Plan for Mitigation Strategies for Beyond-Design-Basis External Events, dated March 8, 2013.
4. Letter from M .G. Korsnick (CENG) to Document Control Desk (NRC), Response to NRC Letter on Technical Issues-for Resolution Regarding Communication Submittals Associated with Near-Term Task Force Recommendation 9.3, dated February 22, 2013.
5. Letter from E. D. Dean (CENG) to Document Control Desk (NRC), Six-Month Status Report to March 12, 2012 Commission Order Modifying Licenses with Regard to Requirements for Mitigation Strategies for Beyond-Design-Basis External Events (Order Number EA-12-049), dated August 27, 2013.
6. NEI 12-06, Diverse and Flexible Coping Strategies (FLEX) Implementation Guide, dated August 2012.
7. SEP Topic IX-3 (NUREG 0821, Integrated Plant Safety Assessment SEP Final Report, December 1982)
8. Letter from M. G. Korsnick (CENG) to Document Control Desk (NRC), R. E. Ginna Nuclear Power Plant, Response to 10 CFR 50.54(f) Request for Information, Recommendation 2.3, Seismic, dated November 27, 2012 (ML12347A104); Attachment 1: Seismic Walkdown Report, Section 7 IPEEE Vulnerabilities Resolution Report
9. Circular 1311, Lake-Level Variability and Water Availability in the Great Lakes, U.S. Geological Survey, Wilcox, Douglas A., Thompson, Todd A., Booth, Robert K., and Nicholas, J.R., 2007.
10. DA-EE-2001-028, Vital Battery 8 Hour Capacity, Revision 1
11. ECA-0.0, Loss of All AC Power, Revision 3800
12. ATT-8.0, Attachment DC Loads, Revision 7
13. Technical Specification Basis, Revision 68
14. DA-EE-99-047, 125 VDC System Loads and Voltages, Revision 1
15. 175180-000-SP-CL-00001, Design Calculations for (1) 36' Diameter x 34'-9" High DRT, Revision 0001 (Proprietary)
16. Calculation 12574-1, Analysis of Tornado Generated Missiles Impacting a Water Storage Tank, Revision 2
17. DA-CE-95-125, Seismic Analysis of Refueling Water Storage Tank, Revision 000
18. UFSAR, Updated Final Safety Analysis Report, Revision 24
19. 428-4824-034-1C, Tornado Missile Impact, Revision 000 (Proprietary)
20. SAFER Response Plan Document, Rev. 01
21. AREVA Document: 51-9199717, Regional Response Center Generic and Site-Specific Equipment, Revision 001

ATTACHMENT (3)

NMP1 6-MONTH STATUS REPORT (FEBRUARY 2014)

FOR MITIGATION STRATEGIES FOR

BEYOND-DESIGN-BASIS EXTERNAL EVENTS

Constellation Energy Nuclear Group, LLC
February 27, 2014

1 Introduction

The Nine Mile Point Unit 1 (NMP1) Overall Integrated Plan (OIP) was submitted to the Nuclear Regulatory Commission (NRC) in February 2013 (Reference 1), documenting the diverse and flexible strategies (FLEX), in response to NRC Order Number EA-12-049 (Reference 2). Subsequently, a supplement to the NMP1 OIP for FLEX was submitted to the NRC in March 2013 (Reference 3). This attachment provides an update of milestone accomplishments since submittal of the last status report including any changes to the compliance method, schedule, or need for relief/relaxation and the basis (if applicable).

NMP1 developed an Interim Action Implementation Schedule, as part of an Assessment of Communications during an Extended Loss of AC Power (ELAP) (Reference 4). A commitment was made in Reference 4 to include the status of the implementing actions identified in Section 4.12 of the NMP1 communications assessment as part of the six-month status reports prepared pursuant to Section IV.C.2 of NRC Order EA-12-049. The updated status of the communications assessment interim actions is provided in Section 8.

Since the submittal of the last status report in August 2013 (Reference 6), NMP1 FLEX has progressed with some engineering analysis and calculations that support the mitigating strategies and the modification concepts have been refined. However, no significant changes to the mitigation strategies or planned modifications in support of the mitigation strategies have occurred. Work with the Strategic Alliance for FLEX Emergency Response (SAFER) has continued with review of proposed supporting equipment specifications and participation on committees that have been assembled to identify and provide specific needs.

By letter dated December 19, 2013, the NRC issued to CENG the Nine Mile Point Nuclear Station, Units 1 and 2 – Interim Staff Evaluation Relating to Overall Integrated Plan in Response to Order EA-12-049 (Mitigation Strategies) (TAC Nos. MF 1129 and MF 1130) (Reference 7). The Interim Staff Evaluation (ISE) contains open and confirmatory items for which CENG will provide clarifying or additional information in six-month status reports in order for the NRC to determine that the issues are on a path to satisfactory resolution.

2 Milestone Accomplishments

The following milestone(s) have been completed since the development of the OIP (References 1 and 3), and are current as of January 17, 2014;

- Refueling Outage (RFO) including walk downs in support of pending modifications for installation for FLEX strategies (8/2013).
- Six month integrated plan progress report submitted (8/2013).

3 Milestone Schedule Status

Table 1 provides an update to Attachment 2 of the NMP1 OIP (Attachment 2 - References 1 and 3). It provides the activity status of each item, and whether the expected completion date has changed. The dates are planning dates subject to change as design and implementation details are developed. Any changes to the following target completion dates will be reflected in subsequent 6-month status reports.

The revised milestone target completion dates do not impact the order implementation date.

Walk-throughs or demonstrations encompassing all FLEX equipment points of connection/tie-ins for Phase 2 and Phase 3 strategies will be performed as presented in Table 1. A detailed schedule for walk-throughs or demonstrations, including individual target dates, has not been developed.

Table 1

Status of NMP1 FLEX OIP Milestones

Milestone	Target Completion Date	Activity Status	Revised Target Completion Date
Submit 60 Day Status Report	October 2012	Complete	
Submit Overall Integrated Implementation Plan	February 2013	Complete	
Refueling Outage	Spring 2013	Complete	
6 Month Integrated Plan Progress Report	August 2013	Complete	
Engineering and Design Completion – Equipment Storage Facility	January 2014	Started	July 2014[1]
6 Month Integrated Plan Progress Report	February 2014	Complete	
Engineering and Design Completion – Portable Equipment Connections	February 2014	Started	August 2014
6 Month Integrated Plan Progress Report	August 2014	Not Started	
6 Month Integrated Plan Progress Report	February 2015	Not Started	
Non-outage Installation – Portable Equipment Connection	March 2015	Not Started	
Validation walk downs complete	March 2015	Not Started	
Portable Equipment Procedures Changes	March 2015	Not Started	
FLEX Training	April 2015	Not Started	
Outage Installation – Portable Equipment Connections	May 2015	Not Started	

Milestone	Target Completion Date	Activity Status	Revised Target Completion Date
Equipment Storage Facility Installation	May 2015	Not Started	
Final Implementation Notification to USNRC	July 2015	Not Started	

Note[1]: Change since submittal of last six month integrated plan status report in August 2013.

4 Changes to Compliance Method

Changes were made to the information provided in the OIP that do not change the compliance method with Nuclear Energy Institute (NEI) 12-06 (Reference 5) and were provided in the last six month status report.

The following is a list of the open items from the OIP or the NRC's ISE that have been added, deleted or completed, and of coping strategies that have been changed from the last six month status report with an explanation of the changes:

1. **General Integrated Plan Elements Boiling Water Reactor (BWR)**

   Open Item 1: Define criteria for the local (25 mile) staging area.

   This open item is **complete**. SAFER issued the SAFER Response Plan (playbook) Revision 1 on August 15, 2013. The SRP contains detailed criteria for staging areas in Chapter 5, "Staging Area Procedure" and Chapter 8, "Requirements and Basis."

2. **Safety Functions Support, BWR Portable Equipment Phase 2**

   Open Item 46: Perform an analysis for long term environmental conditions in NMP1 Battery Rooms during an ELAP and evaluate any actions to mitigate the impact of hydrogen production as required.

   This open item is **complete**. At NMP1, during normal plant operation, the Battery Room ventilation is provided from the Turbine Building ventilation system. The Battery Room ventilation occurs by air flow being drawn through the battery door louvers and room air volume being discharged through the Turbine Building ventilation exhaust ducts located in the room. The Turbine Building ventilation is non-safety related and during an ELAP condition this system is not functional. Therefore during an ELAP, the hydrogen gas will accumulate in the ventilation duct work, which is located above the Battery Rooms, while the batteries are being recharged. To prevent unacceptable hydrogen gas concentrations in the Battery Room ductwork, 3 inch diameter holes are located in the top of the Battery Room exhaust ducts. The exhaust holes are normally closed by dampers and open during a loss of power. The exhaust holes will allow the

hydrogen gas to escape from the duct into the Turbine Building atmosphere. Due to the immense volume of the Turbine Building, the hydrogen concentration will be extremely low (below 1%). This condition had been previously analyzed for the loss of forced ventilation due to loss of offsite power in NMP Calculation S10-H2GAS-HV01, Rev. 00 and Disposition 00A.

Remaining design specifications and requirements and strategy revisions will be determined upon completion of the final design.

No significant coping strategy changes have occurred since the previous six month status update provided on August 28, 2013 (Reference 6). For information, the following minor changes to the coping strategies have been put in place:

- The NMP1 OIP (Reference 3) identified that primary connection points for makeup water would typically exist external to the station buildings. The OIP specifically stated that "...a means to supply spent fuel pool (SFP) makeup without accessing the interior of any building" would be provided (Reference 3; Spent Fuel Pool Cooling Objectives). The plan to provide external connections has been revised and currently involves routing the discharge of the FLEX diesel driven pump into the Reactor Building to a distribution manifold just inside access doors on the ground floor. This manifold will be the central location for directing the primary injection source for the reactor pressure vessel (RPV), SFP and Emergency Condenser (EC) makeup. This change eliminates the need to create new penetrations through the Secondary Containment (Reactor Building) wall.

- The NMP1 OIP (Reference 3) description of the primary connection modification for SFP makeup and preliminary drawings associated with the makeup water capability for the SFP identified that there would be a hard pipe tied into the SFP cooling system return line. This has changed in that the primary injection point for makeup to the SFP will instead be routed to the refueling floor such that it will discharge directly into the SFP. Hard pipe will be routed to the refueling floor and a connection point added. A hose will be connected at that point and be routed to the SFP and secured so that it discharges into the SFP. This change eliminates the need to modify the existing safety related SFP cooling system and utilizes existing floor penetrations in order to run the piping to the SFP and achieve the same result. **For this reason, Open Item 53 in Table 2 has been revised to remove the wording that identified that makeup to the SFP would be connected to the SFP cooling system return line.**

- Preliminary drawings associated with the makeup water capability for the RPV previously depicted a hard piped system from the connection for the portable pump (previously external to the Reactor Building) directly into the Control Rod Drive (CRD) system RPV return line. Current plans include the necessity to install hose between the distribution manifold inside the Reactor Building (see above) and the connection to be located in the same place on the CRD system, eliminating the installation of hard piping between these points. This change eliminates the need to provide hard piping runs in areas that could impede normal access, and does not involve significant ingress to the Reactor Building to accomplish.

5 Need for Relief/Relaxation and Basis for the Relief/Relaxation

NMP1 expects to comply with the order implementation date and no relief/relaxation is required at this time.

6 Open Items from Overall Integrated Plan and Draft Safety Evaluation

Table 2 provides a summary of the open items documented in the OIP and those added in a subsequent six month status report and the status of each item. Explanations for added, deleted and completed items are provided in Section 4.

Table 3 provides a summary of the open items documented in the NRC's NMP1 ISE (Reference 7) and the status of each item.

Table 2
Status of NMP1 FLEX OIP Open Items

NMP1 OIP Open Items	Status
1. Define criteria for the local (25 mile) staging area.	**Complete** (2/2014)
2. Evaluate deployment strategies and deployment routes for hazard impact.	Started (2/2014)
3. Evaluate requirements and options and develop strategies related to the storage on site of the FLEX portable equipment (including lighting tools such as flashlights and batteries) in accordance with the requirements of NEI 12-06.	Started (8/2013)
4. Exceptions for the site security plan or other (license/site specific – 10 CFR 50.54x) requirements of a nature requiring NRC approval will be communicated in a future 6 month update following identification.	Started (8/2013)
5. Determine schedule for when Regional Response Centers (RRC) will be fully operational	**Complete** (8/2013)
6. Perform an analysis to validate the FLEX equipment ability to deliver sufficient flow under all expected conditions. Flow requirements from the dry hydrants will consider Phase 2 requirements.	Started (2/2014)
7. Perform an analysis to validate the FLEX equipment ability to deliver sufficient flow under all expected conditions. Flow requirements from the dry hydrants will consider Phase 3 requirements.	Started (8/2013)
8. Perform calculations and validate assumptions of fuel consumption and replenishment rate to ascertain the time before off-site replenishment is required.	Started (8/2013)
9. Perform an evaluation of the Uninterruptible Power Supply (UPS) strategy and design and implement as required or formalize the use of the small portable gas generators (communication strategies).	Started (2/2014)
10. Perform an evaluation of the redundant power strategy for radio repeaters and design and implement modifications or programmatic changes as required.	Started (2/2014)

NMP1 OIP Open Items	Status
11. Verify plans for the FLEX storage facilities in accordance with NEI 12-06 requirements also accommodate the storage and availability of fuel for the small gas generators.	Started (8/2013)
12. Perform an analysis for feasibility of utilizing the sound powered communications for onsite communications for FLEX strategies.	Started (2/2014)
13. Evaluate required consumables and options for storage and availability during an ELAP and implement programmatic controls to ensure required inventory is maintained.	Not Started
14. Establish deployment routes from FLEX equipment storage location to connection points (including hazard impacts).	Started (2/2014)
15. Establish a suitable local staging area for portable FLEX equipment to be delivered from the RRC to the site. Safer Staging area "C"	Started (8/2013)
16. Establish a suitable local staging area for Phase 3 portable FLEX equipment to be deployed on site. Safer Staging area "B"	Started (8/2013)
17. Provide the necessary storage facilities in order to provide fuel to the transfer pumps during an ELAP event.	Not Started
18. Develop site specific SAFER Response Plan (playbook) for delivery of portable FLEX equipment from the RRC to the site.	Started (8/2013)
19. Develop and implement a program and/or procedures to keep FLEX equipment deployment pathways clear or identify actions to clear the pathways.	Not Started
20. Develop preventive maintenance and testing procedures with frequencies based on Original Equipment Manufacturer (OEM) recommendation and Electric Power Research Institute (EPRI) guidelines for FLEX equipment.	Started (8/2013)
21. Evaluate and implement procedures that direct immediate deployment of Phase 2 equipment during Refueling conditions.	Started (2/2014)
22. Purchase and maintain the required equipment to ensure debris removal capability to re-establish deployment routes and transport FLEX portable equipment during all modes of operation.	Not Started
23. Develop procedures/guidelines to address the criteria in NEI 12-06 to support existing symptom based strategies in the Emergency Operating Procedures (EOPs).	Started (2/2014)
24. Evaluate potential soil liquefaction for Nine Mile Point site considering final storage location of FLEX portable equipment and deployment routes established for this equipment.	Started (8/2013)
25. Evaluate requirements and options and develop strategies related to the storage and transport of the on-site FLEX portable equipment.	Started (2/2014)
26. Evaluate NMP1 containment integrity for Phases 1 through 3 and provide analysis in a future required six month status report. (New Open Item added since original OIP as a result of further considerations of necessary analysis to support FLEX strategies)	**Added** (8/2013) Started

NMP1 OIP Open Items	Status
27. Implement a design change to install a permanent connection point for a portable pump to provide makeup to the Emergency Condensers (ECs). (New Open Item added as a result of strategy changes described in the August 2013 Six Month Update)	**Added** (8/2013) Started
28. Perform an evaluation to ensure that the recirculation pump seal operating conditions are consistent with the referenced vendor test report.	Not Started
29. Perform an analysis of the portable generator to determine it will be capable of supplying all expected battery loads.	Started (2/2014)
30. Perform an analysis to determine the flow/capacity needed for the portable pump from the RRC to adequately supply the Emergency Service Water (ESW) system.	Started (2/2014)
31. Evaluate the connection point for the RRC portable pump to ESW and implement a design change to ensure that the pump can be connected.	Started (2/2014)
32. Evaluate implementation of makeup capability for the Reactor Building Closed Loop Cooling (RBCLC) system expansion tank to support restarting the system in Phase 3.	Started
33. Perform an analysis to determine the containment pressure profile during an ELAP / LUHS event and verify the instrumentation and controls in containment which are relied upon by the operators are sufficient to perform their intended function.	Not Started
34. Perform a site specific analysis to confirm that the containment parameters (temperature, pressure and level) stay below their design limits during Phase 1 following an ELAP.	Not Started
35. Perform analysis to identify the heat load expected during ELAP conditions and the time required to open vents to maintain containment parameters.	Started (2/2014)
36. Perform an analysis to determine when ambient heat losses will be enough to cool the containment with Shutdown Cooling (SDC) in Phase 3.	Started (2/2014)
37. Evaluate a strategy to provide a pathway for steam and condensate or justify why it is not needed (for the refuel floor).	Started (2/2014)
38. Perform an evaluation to determine the effects and required actions for Spent Fuel Pool temperatures expected above design of 140^{0}F during an ELAP.	Started (2/2014)
39. Perform analysis to verify SFP temperature and level after an ELAP event and adequate level for maintaining radiological access to the refuel floor.	Started (2/2014)
40. Perform an analysis of Refuel Floor/SFP area for long term environmental conditions.	Started (2/2014)
41. Perform an analysis of SFP cooling system capability for restoration activities, will be performed considering that the SFP temperatures will be elevated	**Deleted** (8/2013)
42. Evaluate the ELAP/FLEX strategy to cope with the potential pressurization of the refueling floor and to prevent buildup of steam and condensation if required.	Started (2/2014)
43. Perform an analysis to evaluate long term temperature profiles in NMP1 Main Control Room (MCR) under ELAP conditions.	**Deleted** (8/2013)

NMP1 OIP Open Items	Status
44. Evaluate requirements and options and develop strategies to maintain MCR habitability after the long-term MCR temperature profile is developed.	**Deleted** (8/2013)
45. Perform an analysis to validate the mild environment in NMP1 EC Makeup Tank Area during an ELAP (Turbine Building).	**Deleted** (8/2013)
46. Perform an analysis for long term environmental conditions in NMP1 Battery Rooms during an ELAP and evaluate any actions to mitigate the impact of this hydrogen production as required.	**Complete** (2/2014)
47. Perform an analysis of the need for dewatering based on leak rates and flood response capabilities and implement dewatering portable equipment and strategies based on this analysis.	Not Started
48. Implement a design change to install a permanent FLEX 600 VAC diesel generator (DG) connection point to the 600 VAC power board (PB16B) and an alternative connection for the opposite 600 VAC power board (PB17B)	**Deleted** (8/2013)
49. Implement a design change to install a permanent connection point for FLEX portable pump injection through feed water.	Started (8/2013)
50. Implement a design change to install permanent dry hydrants in the intake structure for FLEX portable pump suction.	Started (2/2014)
51. Design and implement a modification that will provide a makeup connection to enable a portable pump to refill the Condensate Storage Tanks (CSTs)	**Deleted** (8/2013)
52. Evaluate and implement a design change to install permanent generator connection points for 4160 VAC.	Started (2/2014)
53. Design and implement a modification that provides for connection of a FLEX portable pump to makeup to the SFP.	Started (2/2014)
54. Develop procedures to implement the connection of a FLEX portable pump to makeup water to the SFP during an ELAP event to include both primary and alternate strategies.	Not Started
55. Revise Station Blackout (SBO) procedures and ELAP procedures, when written, to direct that both EC's are immediately manually placed in service and to manually close Main Steam Isolation Valves (MSIVs) (to conserve RPV inventory).	Not Started
56. Implement necessary administrative controls to ensure that appropriate Meter and Test (M&T) temperature equipment is maintained in the MCR for use.	Not Started
57. Perform time validation of the core cooling injection capabilities when detailed design is complete, implementation procedures are drafted and final storage facility locations are determined for the portable equipment.	Not Started
58. Implement a modification to provide a connection into the CRD return line for a portable diesel pump connection. (New Open Item based on strategy changes described in the August 2013 Six Month Update)	**Added** (8/2013) Started (2/2014)
59. Implement a modification to connect a portable diesel generator and portable battery charger to battery 11 and battery 12. (New Open Item based on strategy changes described in the August 2013 Six Month Update)	**Added** (8/2013) Started (2/2014)

NMP1 OIP Open Items	Status
60. Perform an evaluation in order to identify and implement the capability to provide motive power to restore the SDC system. (New Open Item added subsequent to original OIP submittal and described in the August 2013 Six Month Update)	**Added** (8/2013) Started (2/2014)
61. In Phase 3, a modification to remove water from the torus using RRC supplied equipment will be evaluated and implemented as required. (New Open Item based on strategy changes described in the August 2013 Six Month Update)	**Added** (8/2013) Started (2/2014)

Table 3
Status of NMP1 Interim Staff Evaluation (ISE) Open and Confirmatory Items

ISE Open Items	Status
1. **ISE Open Item 3.1.1.3.A** – Seismic procedural interface consideration NEI 12-06, section 5.3.3, consideration 1, which considers the possible failure of seismically qualified electrical equipment by beyond-design-basis seismic events, was not discussed in the Integrated Plan or during the audit process.	Not Started
2. **ISE Open Item 3.2.1.3.A** – The coping strategies for maintaining core cooling were updated in the August 27, 2013 six-month update. However, the licensee has not yet updated the sequence of events timeline and the discussion of time constraints.	Not Started

ISE Confirmatory Items	Status
3. **ISE Confirmatory Item 3.1.1.1.A** – The design of the storage facility for FLEX equipment is under development. The method selected for protection of equipment during a Beyond-Design-Basis External Event (BDBEE) was not discussed in the Integrated Plan or during the audit process. Also, there was no discussion of securing large portable equipment for protection during a seismic hazard.	Started (2/2014)
4. **ISE Confirmatory Item 3.1.1.2.A** – Deployment routes have not yet been finalized or reviewed for possible impacts due to debris and potential soil liquefaction. Movement of equipment and procedural interfaces during a BDBEE were not discussed in the Integrated Plan or during the audit process.	Started (2/2014)
5. **ISE Confirmatory Item 3.1.1.4.A** – Utilization of offsite resources, the local staging area, and the method to deliver the FLEX equipment to the site were not discussed in the context of impacts of BDBEEs in the Integrated Plan or during the audit process.	Started (2/2014)

ISE Confirmatory Items	Status
6. **ISE Confirmatory Item 3.2.1.1.A** – MAAP benchmarks must be identified and discussed which demonstrate that MAAP4 is an appropriate code for the simulation of an ELAP event.	Started (2/2014)
7. **ISE Confirmatory Item 3.2.1.1.B** – MAAP Analysis-collapsed level must remain above Top of Active Fuel (TAF) and the cool down rate must be within technical specification limits.	Started (2/2014)
8. **ISE Confirmatory Item 3.2.1.1.C** – MAAP4 must be used in accordance with Sections 4.1, 4.2, 4.3, 4.4, and 4. 5 of the June 2013 position paper.	Started (2/2014)
9. **ISE Confirmatory Item 3.2.1.1.D** – MAAP modeling parameters must be identified and justified.	Started (2/2014)
10. **ISE Confirmatory Item 3.2.1.1.E** – The specific MAAP4 analysis case that was used to validate the timing of mitigating strategies in the Integrated Plan must be identified and should be available for review.	Started (2/2014)
11. **ISE Confirmatory Item 3.2.1.2.A** – There was no discussion of the applicability of the assumed recirculation system leakage rates and the recirculation pump seal leakage rates to the ELAP event; the pressure dependence of the leak rates; whether the leakage was determined to be single-phase, two-phase, or steam at the donor cell; and how mixing of the leakage flow with the drywell atmosphere was modeled.	Started (2/2014)
12. **ISE Confirmatory Item 3.2.3.A** – The licensee has yet to evaluate containment integrity for Phases 1 through 3 and provide the finalized analysis for review.	Started (2/2014)
13. **ISE Confirmatory Item 3.2.3.B** – A modification to remove water from the torus in Phase 3 using RRC supplied equipment will be evaluated and implemented as required.	Started (2/2014)
14. **ISE Confirmatory Item 3.2.4.2.A** – Evaluation of the refueling floor SFP area for steam and condensation was not yet completed. Mitigating strategies, including establishing a vent pathway for steam and condensate from the area, were not discussed in the Integrated Plan or during the audit process.	Started (2/2014)
15. **ISE Confirmatory Item 3.2.4.2.B** – A summary of battery performance with elevated or lowered temperatures in the Battery Room due to an ELAP event will be provided in the future update.	Started (2/2014)

ISE Confirmatory Items	Status
16. **ISE Confirmatory Item 3.2.4.4.A** – The restoration of Emergency Lighting in Phase 2, that may be restored when Battery Board 12 is repowered, is currently under evaluation (i.e. battery loading calculation for ELAP). NMP1 will provide a summary of the restoration of Emergency Lighting in a future update.	Started (2/2014)
17. **ISE Confirmatory Item 3.2.4.4.B** – Follow-up of commitments as discussed in the staff analysis (ML 13100A236) for communications assessment is required.	Not Started
18. **ISE Confirmatory Item 3.2.4.6.A** – Licensee to provide calculation and basis for use of extrapolated SBO evaluation for Main Control Room habitability.	Not Started
19. **ISE Confirmatory Item 3.2.4.8.A** – The licensee stated that when the design review of the portable generator protection is completed, the specific details on the protection schemes to protect Class 1E equipment from faults from the portable FLEX equipment will be provided in a future update.	Started (2/2014)
20. **ISE Confirmatory Item 3.2.4.8.B** – The licensee will provide an updated summary of the sizing calculations for the FLEX generators at a future update.	Started (2/2014)
21. **ISE Confirmatory Item 3.2.4.9.A** – The licensee stated that a summary of the refueling strategies for FLEX equipment will be provided when finalized at a future date.	Started (2/2014)
22. **ISE Confirmatory Item 3.2.4.10.A** – The licensee stated that a finalized summary of battery coping time, DC load profile, discussion of loads shed, and minimum DC voltage will be provided in a future update.	Started (2/2014)
23. **ISE Confirmatory Item 3.4.A** – The program or process to request RRC equipment was not discussed in the Integrated Plan or during the audit process.	Started (2/2014)
24. **ISE Confirmatory Item 3.4.B** – Sizing calculations of RRC FLEX equipment and the compatibility of RRC equipment to plant connection points was not discussed in the Integrated Plan or during the audit process.	Started (2/2014)

7 Potential Draft Safety Evaluation Impacts

There are no potential impacts to the Draft Safety Evaluation identified at this time.

8 Communications Assessment Interim Action Implementation Status

Table 4 provides a listing of the implementing actions documented in the Assessment of Communications during an ELAP (Reference 4). It provides the status of each action, and whether the expected completion date has changed. The dates are planning dates subject to change as design and implementation details are developed.

Table 4
Status of NMP1 Communications Assessment Interim Actions

Communications Assessment Implementing Actions	Target Completion Date	Status	Revised Target Completion Date
Fixed Satellite Phones			
1. Determine the status of existing fixed satellite phone system and antennas in terms of suitability of being "Reasonably Protected."	12/31/2013	**Complete** (2/2014)	
2. Install additional antennas as necessary to support the use of fixed satellite phones at all locations. (Emergency Operations Center (EOF) / Joint Information Center (JIC)).	8/31/2014	Not Started	
3. Procure and install fixed satellite phones, additional antennas and uninterruptable power supplies for the Technical Support Center (TSC) / Operational Support Center (OSC), Emergency Operations Facility (EOF), and JIC.	12/31/2014	Not Started	

Communications Assessment Implementing Actions	Target Completion Date	Status	Revised Target Completion Date
4. Develop Standing Order for Interim actions. Standing Order will contain: • Description of the communications equipment purchased for enhancement. • Interim storage location of the equipment until final permanent storage is determined. • Conditions describing when equipment will be used. • Instructions for use of the equipment.	8/31/2013	**Complete** (2/2014)	
5. Determine whether APC UPS 750 is high enough above ground elevation in the On-Site Telephone Building to be protected from flooding.	12/31/2013	**Complete** (2/2014)	
6. Relocate two (2) phones from each Control Room to the TSC/OSC and EOF.	8/31/2014	Not Started	
7. Develop/update preventative maintenance and testing procedures for fixed satellite phones.	8/31/2014	Not Started	12/26/2014 Date changed to be consistent with plans to move/install the fixed satellite phones in all locations
8. Provide instructions for use of fixed satellite phones at each location.	12/31/2014	Not Started	

Communications Assessment Implementing Actions	Target Completion Date	Status	Revised Target Completion Date
9. Include information on fixed satellite phone locations and usage in procedures.	12/31/2013	Started (2/2014)	10/31/2014 Date changed to be consistent with plans to move/install the fixed satellite phones in all locations
Portable Satellite Phones			
1. Stage batteries and chargers in the applicable Emergency Response Organization (ERO) Facilities.	10/31/2013	**Complete** (2/2014)	
2. Update work instructions for portable satellite phone inventory.	10/31/2013	**Complete** (2/2014)	
3. Develop/update preventive maintenance and testing procedures for portable satellite phones, batteries and chargers.	12/31/2013	Started (2/2014)	2/28/2014
4. Include information on portable satellite phone locations and usage in procedures.	12/31/2013	**Complete** (2/2014)	2/14/2014
5. Procure and install a high power UPS or similar modification providing backup power for the battery chargers for portable satellite phones	12/31/2014	Not Started	
Communications with Offsite Response Organizations			
1. Provide Oswego County Emergency Operations Center (EOC) and Oswego County Warning Point (WP) instructions for proper storage and rotation of satellite phone batteries.	10/31/2013	**Complete** (2/2014)	

Communications Assessment Implementing Actions	Target Completion Date	Status	Revised Target Completion Date
Portable Generators			
1. Develop portable generator fueling plan to ensure ability to provide power for a minimum of 24 hours.	12/31/2013	**Complete** (2/2014)	
2. Develop procedures to maintain and test the portable generators.	12/31/2013	**Complete** (2/2014)	1/31/2014
3. Update work instructions to inventory portable generators and ensure adequate volume of fuel.	12/31/2013	**Complete** (2/2014)	1/31/2014
4. Develop preventive maintenance procedure for portable generators fuel supply.	12/31/2013	**Complete** (2/2014)	1/31/2014
5. Determine a process for relocating portable generators to the appropriate locations to power the necessary equipment.	Prior to Startup (S/U) NMP1 RFO 2015	Not Started	
Site Radio System			
1. Procure and install a high power UPS or similar modification providing backup power for the radio system repeaters	Prior to S/U NMP1 RFO 2015	Not Started	
2. Complete estimates of portable radio battery life and procure additional batteries as necessary based on an estimate of minimum talk time to ensure 24 hours of operation.	10/31/2013	**Complete** (2/2014)	
Training			
1. Evaluate training needs specific to the use of portable and fixed satellite phones, and radios during an ELAP event.	Prior to S/U NMP1 RFO 2015	Not Started	
2. Develop and implement training on the use of backup generators.	Prior to S/U NMP1 RFO 2015	Not Started	

9 References

The following references support the updates to the OIP described in this enclosure.

1. Letter from M. G. Korsnick (CENG) to Document Control Desk (NRC), Overall Integrated Plan for Mitigation Strategies for Beyond-Design-Basis External Events, dated February 28. 2013.
2. NRC Order Number EA-12-049, "Order Modifying Licenses with Regard to Requirements for Mitigation Strategies for Beyond-Design-Basis External Events," dated March 12, 2012.
3. Letter from M. G. Korsnick (CENG) to Document Control Desk (NRC), Supplement to Overall Integrated Plan for Mitigation Strategies for Beyond-Design-Basis External Events, dated March 8, 2013.
4. Letter from M. G. Korsnick (CENG) to Document Control Desk (NRC), Response to NRC Letter on Technical Issues for Resolution Regarding Communication Submittals Associated with Near-Term Task Force Recommendation 9.3, dated February 22, 2013.
5. NEI 12-06, Diverse and Flexible Coping Strategies (FLEX) Implementation Guide, dated August 2012.
6. Letter from E. D. Dean (CENG) to Document Control Desk (NRC), Six-Month Status Report in Response to March 12, 2012 Commission Order Modifying Licenses with Regard to Requirements for Mitigation Strategies for Beyond-Design-Basis External Events (Order Number EA-12-049), dated August 27, 2013.
7. Letter from J. S. Bowen (NRC) to J. A. Spina, Nine Mile Point Nuclear Station, Units 1 and 2 – Interim Staff Evaluations Relating to Overall Integrated Plans in Response to Order EA-12-049 (Mitigation Strategies) (TAC Nos. MF 1129 and MF1130), dated December 19, 2013.

ATTACHMENT (4)

NMP2 6-MONTH STATUS REPORT (FEBRUARY 2014)

FOR MITIGATION STRATEGIES FOR

BEYOND-DESIGN-BASIS EXTERNAL EVENTS

Constellation Energy Nuclear Group, LLC
February 27, 2014

1 Introduction

The Nine Mile Point Unit 2 (NMP2) Overall Integrated Plan (OIP) was submitted to the Nuclear Regulatory Commission (NRC) in February 2013 (Reference 1), documenting the diverse and flexible strategies (FLEX), in response to NRC Order Number EA-12-049 (Reference 2). Subsequently, a supplement to the NMP2 OIP for FLEX was submitted to the NRC in March 2013 (Reference 3). This attachment provides an update of milestone accomplishments since submittal of the last status report including any changes to the compliance method, schedule, or need for relief/relaxation and the basis (if applicable).

NMP2 developed an Interim Action Implementation Schedule, as part of an Assessment of Communications during an Extended Loss of AC Power (ELAP) (Reference 4). A commitment was made in Reference 4 to include the status of the implementing actions identified in Section 4.12 of the NMP2 communications assessment as part of the six-month status reports prepared pursuant to Section IV.C.2 of NRC Order EA-12-049. The updated status of the communications assessment interim actions is provided in Section 8.

Since the submittal of the last status report in August 2013 (Reference 6), NMP2 FLEX has progressed with some engineering analysis and calculations that support the mitigating strategies and the modification concepts have been refined. However, no significant changes to the mitigation strategies or planned modifications in support of the mitigation strategies have occurred. Work with the Strategic Alliance for FLEX Emergency Response (SAFER) has continued with review of proposed supporting equipment specifications and participation on committees that have been assembled to identify and provide specific needs.

By letter dated December 19, 2013, the NRC issued to CENG the Nine Mile Point Nuclear Station, Units 1 and 2 – Interim Staff Evaluation Relating to Overall Integrated Plan in Response to Order EA-12-049 (Mitigation Strategies) (TAC Nos. MF 1129 and MF 1130) (Reference 7). The Interim Staff Evaluation (ISE) contains open and confirmatory items for which CENG will provide clarifying or additional information in six-month status reports in order for the NRC to determine that the issues are on a path to satisfactory resolution.

2 Milestone Accomplishments

The following milestone(s) have been completed since the development of the OIP (References 1 and 3) and are current as of January 17, 2014;

- Six month integrated plan progress report submitted (8/2013).

3 Milestone Schedule Status

Table 1 provides an update to Attachment 2 of the NMP2_OIP (Attachment 3 - References 1 and 3). It provides the activity status of each item, and whether the expected completion date has changed. The dates are planning dates subject to change as design and implementation details are developed. Any changes to the following target completion dates will be reflected in subsequent 6-month status reports.

The revised milestone target completion dates do not impact the order implementation date.

Walk-throughs or demonstrations encompassing all FLEX equipment points of connection/tie-ins for Phase 2 and Phase 3 strategies will be performed as presented in Table 1. A detailed schedule for walk-throughs or demonstrations, including individual target dates, has not been developed.

Table 1

Status of NMP2 FLEX OIP Milestones

Milestone	Target Completion Date	Activity Status	Revised Target Completion Date
Submit 60 Day Status Report	October 2012	Complete	
Submit Overall Integrated Implementation Plan	February 2013	Complete	
6 Month Integrated Plan Progress Report	August 2013	Complete	
Engineering and Design Completion – Equipment Storage Facility	January 2014	Started	July 2014[1]
6 Month Integrated Plan Progress Report	February 2014	Complete	
Refueling outage	April 2014	Not Started	
6 Month Integrated Plan Progress Report	August 2014	Not Started	
Engineering and Design Completion – Portable Equipment Connections	November 2014	Started	
6 Month Integrated Plan Progress Report	February 2015	Not Started	
Equipment Storage Facility installation	June 2015	Not Started	May 2015[1]
6 Month Integrated Plan Progress Report	August 2015	Not Started	
Non-outage Installation – Portable Equipment Connection	January 2016	Not Started	
6 Month Integrated Plan Progress Report	February 2016	Not Started	
Validation walk downs complete	February 2016	Not Started	
Portable Equipment Procedures Changes	March 2016	Not Started	
FLEX Training	March 2016	Not Started	

Milestone	Target Completion Date	Activity Status	Revised Target Completion Date
Refueling outage	April 2016	Not Started	
Outage Installation – Portable Equipment Connections	May 2016	Not Started	
Final Implementation Notification to USNRC	July 2016	Not Started	

Note[1]: Change since submittal of last six month integrated plan status report in August 2013.

4 Changes to Compliance Method

Changes were made to the information provided in the OIP that do not change the compliance method with Nuclear Energy Institute (NEI) 12-06 (Reference 5) and were provided in the last six month status report.

The following is a list of the open items from the OIP or the NRC's ISE that have been added, deleted or completed, and of coping strategies that have been changed from the last six month status report with an explanation of the changes:

1. **General Integrated Plan Elements Boiling Water Reactor (BWR)**

   Open Item 1: Define criteria for the local (25 mile) staging area.

   This open item is **complete**. SAFER issued the SAFER Response Plan (playbook) Revision 1 on August 15, 2013. The SRP contains detailed criteria for staging areas in Chapter 5, "Staging Area Procedure" and Chapter 8, "Requirements and Basis."

NRC Order EA-12-050, Issuance of Order to Modify Licenses with Regard to Reliable Hardened Containment Vents has been superseded by Order EA-13-109. Full implementation of Order EA-13-109 is not required for NMP2 until the 2018 refueling outage.

Remaining design specifications and requirements and strategy revisions will be determined upon completion of the final design.

No significant coping strategy changes have occurred since the previous six month status update provided on August 28, 2013 (Reference 6).

5 Need for Relief/Relaxation and Basis for the Relief/Relaxation

NMP2 expects to comply with the order implementation date and no relief/relaxation is required at this time.

6 Open Items from Overall Integrated Plan and Draft Safety Evaluation

Table 2 provides a summary of the open items documented in the OIP and those added in a subsequent six month status report and the status of each item. Explanations for added, deleted and completed items are provided in Section 4.

Table 3 provides a summary of the open and confirmatory items documented in the NRC's NMP2 ISE (Reference 7) and the status of each item.

Table 2
Status of NMP1 FLEX OIP Open Items

NMP2 OIP Open Items	Status
1. Define criteria for the local (25 mile) staging area.	**Complete** (2/2014)
2. Evaluate deployment strategies and deployment routes for hazard impact.	Started (2/2014)
3. Evaluate requirements and options and develop strategies related to the storage on site of the FLEX portable equipment (including lighting tools such as flashlights and batteries) in accordance with the requirements of NEI 12-06.	Started (8/2013)
4. Exceptions for the site security plan or other (license/site specific – 10 CFR 50.54x) requirements of a nature requiring NRC approval will be communicated in a future 6-month update following identification.	Started (8/2013)
5. Determine schedule for when Regional Response Centers (RRCs) will be fully operational.	**Complete** (8/2013)
6. Perform an analysis to validate the FLEX equipment ability to deliver sufficient flow under all expected conditions. Flow requirements from the dry hydrants will consider Phase 2 requirements.	Started (2/2014)
7. Perform an analysis to validate the FLEX equipment ability to deliver sufficient flow under all expected conditions. Flow requirements from the dry hydrants will consider Phase 3 requirements.	Started (8/2013)
8. Perform calculations and validate assumptions of fuel consumption and replenishment rate to ascertain the time before off-site replenishment is required.	Started (8/2013)
9. Perform an evaluation of the Uninterruptible Power Supply (UPS) strategy and design and implement as required or formalize the use of the small portable gas generators (communication strategies).	Started (2/2014)

NMP2 OIP Open Items	Status
10. Perform an evaluation of the redundant power strategy for radio repeaters and design and implement modifications or programmatic changes as required.	Started (2/2014)
11. Verify plans for the FLEX storage facilities in accordance with NEI 12-06 requirements also accommodate the storage and availability of fuel for the small gas generators.	Started (8/2013)
12. Perform an analysis for feasibility of utilizing the sound powered communications for onsite communications for FLEX strategies.	Started (2/2014)
13. Evaluate required consumables and options for storage and availability during an ELAP and implement programmatic controls to ensure required inventory is maintained.	Not Started
14. Establish deployment routes from FLEX equipment storage location to connection points (including hazards impacts).	Started (2/2014)
15. Establish a suitable local staging area for portable FLEX equipment to be delivered from the RRC to the site. SAFER Staging Area "C"	Started (8/2013)
16. Establish a suitable local staging area for Phase 3 portable FLEX equipment to be deployed on site. SAFER Staging Area "B"	Started (8/2013)
17. Provide the necessary storage facilities in order to provide fuel to the transfer pumps during an ELAP event.	Not Started
18. Develop site specific SAFER Response Plan (playbook) for delivery of portable FLEX equipment from the RRC to the site.	Started (8/2013)
19. Develop and implement a program and/or procedures to keep FLEX equipment deployment pathways clear or identify actions to clear the pathways.	Not Started
20. Develop preventive maintenance and testing procedures with frequencies based on Original Equipment Manufacturer (OEM) recommendation and Electric Power Research Institute (EPRI) guidelines for FLEX equipment.	Started (8/2013)
21. Evaluate and implement procedures that direct immediate deployment of Phase 2 equipment during Refueling conditions.	Started (2/2014)

NMP2 OIP Open Items	Status
22. Purchase and maintain the required equipment to ensure debris removal capability to re-establish deployment routes and transport FLEX portable equipment during all modes of operation.	Not Started
23. Develop procedures/guidelines to address the criteria in NEI 12-06 to support existing symptom based strategies in the Emergency Operating Procedures (EOPs).	Started (2/2014)
24. Evaluate potential soil liquefaction for Nine Mile Point site considering final storage location of FLEX portable equipment and deployment routes established for this equipment.	Started (8/2013)
25. Evaluate requirements and options and develop strategies related to the storage and transport of the on-site FLEX portable equipment.	Started (2/2014)
26. Implement a design change to Reactor Core Isolation Cooling (RCIC) that will support operation of the system at elevated Suppression Pool temperatures as identified in GEH 000-0155-1545 (BWROG RCIC Pump and Turbine Durability Evaluation – Pinch Point Study)	Not Started
27. Perform an analysis of long term RCIC Room temperatures (for equipment qualification and habitability) under ELAP conditions considering elevated Suppression Pool and Secondary Containment temperatures.	Started (2/2014)
28. Perform an evaluation of containment structures to identify necessary actions to enable implementation of the strategy with running RCIC with elevated temperatures.	Not Started
29. Perform additional plant specific analysis to verify acceptable Suppression Pool levels during a long term operation of RCIC beginning with suction from the Condensate Storage Tanks (CSTs). Verify containment limitations are not exceeded.	Not Started
30. Perform an analysis to verify acceptable parameters (e.g., Net Positive Suction Head (NPSH) requirements) for RCIC operation with the higher temperatures and anticipated changes in Suppression Pool level.	Not Started
31. Perform an analysis to validate containment vent sizing to maintain Suppression Pool parameters to support RCIC capability.	Started (2/2014)
32. Perform an analysis to identify necessary actions, (e.g., modifications or programmatic changes) to maximize battery coping time to at least 8 hours.	Not Started
33. Evaluate NMP2 containment integrity for Phases 1 through 3 and update calculations.	Not Started

NMP2 OIP Open Items	Status
34. Implement an alternative Containment Cooling strategy, if required, when the analysis of structural temperatures are complete.	Not Started
35. Perform an analysis to determine the containment pressure profile during an ELAP / Loss of Ultimate Heat Sink (LUHS) event and verify the instrumentation and controls in containment which are relied upon by the operators are sufficient to perform their intended function.	Not Started
36. Perform an analysis to determine when ambient heat losses will be low enough such that with Residual Heat Removal (RHR) in a Phase 3 mode of shutdown cooling, venting of the primary containment will no longer be required.	Not Started
37. Perform an analysis to verify assumptions related to an adequate nitrogen supply during ELAP conditions and revise or provide ELAP procedures that optimize Safety Relief Valve (SRV) control during an ELAP condition.	Not Started
38. Perform an analysis to verify the capability of the portable diesel generator (DG) to power all expected loads.	Started (2/2014)
39. Perform an analysis to determine the limiting conditions for an RHR loop to be restarted (e.g., RHR room, seals and fluid temperatures) and adjust the strategy to start in Shutdown Cooling (SDC) based on the results of the analysis.	Not Started
40. Perform a load distribution analysis for safety related equipment restoration utilizing either two RRC DGs paralleled on one 4160 VAC bus or one RRC DG on each safety related bus (i.e., one on Division 1 and one on Division 2).	**Deleted** (8/2013)
41. Perform an analysis to determine the service water cooling water flow needed to accommodate all expected cooling loads and resulting RRC pump size requirement.	**Deleted** (8/2013)
42. Evaluate a strategy to provide a vent pathway for steam and condensate from the SFP or justify why it is not needed.	Started (2/2014)
43. Perform an evaluation to determine the effects and required actions for Spent Fuel Pool temperatures expected above design of 150°F during an ELAP.	Not Started
44. Perform analysis to verify SFP temperature and level after an ELAP event and adequate level for maintaining radiological access to the refuel floor.	Started (2/2014)
45. Perform an analysis to evaluate long term temperature profiles in the NMP2 Main Control Room (MCR) under ELAP condition (Phase 1).	**Deleted** (8/2013)

NMP2 OIP Open Items	Status
46. Perform an analysis for long term environmental conditions in the NMP2 Battery Rooms during an ELAP and evaluate any actions to mitigate the impact of this hydrogen production as required.	Started (2/2014)
47. Evaluate the strategy for repower of select Emergency Lighting loads when the FLEX portable DG reenergizes the 600 VAC bus.	Started (2/2014)
48. Perform an analysis of the light coverage during ELAP conditions and determine if the lighting loads should be re-energized from the non-safety related buses by the RRC FLEX generator.	Started (2/2014)
49. Perform an analysis of the need for dewatering based on leak rates and flood response capabilities.	Not Started
50. Implement a design change to install permanent 4160 VAC buss connection points to be able to connect to the RRC supplied DG, including paralleling capability, as required to connect more than one DG to an electrical bus.	Not Started
51. Implement a design change to receive large capacity RRC pumps to supply the service water distribution header.	Not Started
52. Design and implement a modification that provides for connection of a FLEX portable pump to makeup to the SFP.	Not Started
53. Implement a design change to install connections for FLEX portable pumps to RHR for both RHR 'A' and 'B'.	Not Started
54. Implement a design change to install portable generator connections for 600 VAC primary (2EJS*US1) and alternate (2EJS*US3) busses.	Not Started
55. Revise procedures to provide reactor pressure control direction during an ELAP event.	Not Started
56. Develop and implement procedure direction to ensure that the Main Turbine Hydrogen is vented prior to battery depletion.	Not Started
57. Revise current EOPs to implement EOP actions necessary to support the strategy to terminate emergency depressurization to preserve RCIC operation.	Started (2/2014)
58. Develop and implement procedures to provide direction for re-energizing the Solenoid Operated Valves (SOVs) and ensuring long term pneumatic supply during an ELAP.	Not Started

NMP2 OIP Open Items	Status
59. Develop procedures to implement the connection of a FLEX portable pump to makeup water to the SFP during an ELAP event to include both primary and alternate strategies.	Not Started
60. Develop and implement procedures that provide direction for restoration of SFP cooling during ELAP conditions (Phase 3).	**Deleted** (8/2013)
61. Implement a design change to install permanent dry hydrants in the intake structure for FLEX portable pump suctions.	Not Started

Table 3
Status of NMP2 Interim Staff Evaluation (ISE) Open and Confirmatory Items

ISE Open Items	Status
1. **ISE Open Item 3.1.1.3.A** – Seismic procedural interface consideration NEI 12-06, section 5.3.3, consideration 1, which considers the possible failure of seismically qualified electrical equipment by beyond-design-basis seismic events, was not discussed in the Integrated Plan or during the audit process.	Not Started
2. **ISE Open Item 3.2.3.B** – The licensee has not performed finalized calculations to demonstrate that the assumed timeline is appropriate and that containment functions will be restored and maintained following an ELAP event.	Started (2/2014)
3. **ISE Open Item 3.2.3.C** – Revision 3 to the [Boiling Water Reactor Owner's Group] BWROG Emergency Procedure Guidance (EPG) Severe Accident Guidance (SAG) is a Generic Concern because the BWROG has not addressed the potential for the revised venting strategy to increase the likelihood of detrimental effects on containment response for events in which the venting strategy is invoked. (identified as a 'Significant Concern' in the Notes for this Open Item in the ISE)	Not Started

ISE Confirmatory Items	Status
4. **ISE Confirmatory Item 3.1.1.1.A** – The design of the storage facility for FLEX equipment is under development. The method selected for protection of equipment during a Beyond-Design-Basis External Event (BDBEE) was not discussed in the Integrated Plan or during the audit process. Also, there was no discussion of securing large portable equipment for protection during a seismic hazard.	Started (2/2014)

ISE Confirmatory Items	Status
5. **ISE Confirmatory Item 3.1.1.2.A** – Deployment routes have not yet been finalized or reviewed for possible impacts due to debris and potential soil liquefaction. Movement of equipment and procedural interfaces during a BDBEE were not discussed in the Integrated Plan or during the audit process. Deployment of temporary flood barriers, restocking of supplies in the context of a flood with long persistence, and the potential impact of surface icing were also not addressed.	Started (2/2014)
6. **ISE Confirmatory Item 3.1.1.4.A** – Concerning utilization of offsite resources during a BDBEE, the local staging area and access routes were not discussed in the Integrated Plan or during the audit process.	Started (2/2014)
7. **ISE Confirmatory Item 3.2.1.1.A** – MAAP benchmarks must be identified and discussed which demonstrate that MAAP4 is an appropriate code for the simulation of an ELAP event.	Started (2/2014)
8. **ISE Confirmatory Item 3.2.1.1.B** – MAAP Analysis-collapsed level must remain above Top of Active Fuel (TAF) and the cool down rate must be within technical specification limits.	Started (2/2014)
9. **ISE Confirmatory Item 3.2.1.1.C** – MAAP4 must be used in accordance with Sections 4.1, 4.2, 4.3, 4.4, and 4. 5 of the June 2013 position paper.	Started (2/2014)
10. **ISE Confirmatory Item 3.2.1.1.D** – MAAP modeling parameters.	Started (2/2014)
11. **ISE Confirmatory Item 3.2.1.1.E** – The specific MAAP4 analysis case that was used to validate the timing of mitigating strategies in the Integrated Plan must be identified and should be available for review.	Started (2/2014)
12. **ISE Confirmatory Item 3.2.1.2.A** – There was no discussion of the applicability of the assumed recirculation system leakage rates and the recirculation pump seal leakage rates to the ELAP event; the pressure dependence of the leak rates; whether the leakage was determined to be single-phase, two-phase, or steam at the donor cell; and how mixing of the leakage flow with the drywell atmosphere was modeled.	Not Started
13. **ISE Confirmatory Item 3.2.2.A** – Evaluation of the refueling floor SFP area for steam and condensation was not yet completed. Mitigating strategies were not discussed in the Integrated Plan or during the audit process.	Started (2/2014)
14. **ISE Confirmatory Item 3.2.3.A** – Perform an evaluation of containment structures to identify necessary actions to enable implementation of the strategy with running RCIC with elevated temperatures.	Started (2/2014)

ISE Confirmatory Items	Status
15. **ISE Confirmatory Item 3.2.4.2.A** – The completion and determination of acceptable results for all of the calculations associated with the proposed strategies for ventilation and critical equipment cooling (e.g., RCIC and battery rooms) are required.	Started (2/2014)
16. **ISE Confirmatory Item 3.2.4.4.A** – The potential restoration of a portion of the Emergency Lighting System when Division I 600 Vac Unit Substation 2EJS*US1 (or alternatively Division II 2EJS*US3) is repowered is currently under evaluation. NMP2 will provide a summary of the restoration of Emergency Lighting expected to be restored in a future update.	Not Started
17. **ISE Confirmatory Item 3.2.4.4.B** – Follow-up of communication commitments as discussed in the staff analysis (ML 13100A236) is required.	Not Started
18. **ISE Confirmatory Item 3.2.4.6.A** – Licensee to provide calculation and basis for use of extrapolated station blackout (SBO) evaluation for Main Control Room habitability.	Started (2/2014)
19. **ISE Confirmatory Item 3.2.4.8.A** – The licensee stated that when the design review of the portable generator protection is completed, the specific details on the protection schemes to protect Class 1E equipment from faults from the portable FLEX equipment will be provided in a future update.	Not Started
20. **ISE Confirmatory Item 3.2.4.8.B** – The licensee will provide an updated summary of the sizing calculations for the FLEX generators at a future update.	Not Started
21. **ISE Confirmatory Item 3.2.4.9.A** – The licensee stated that a summary of the refueling strategies for FLEX equipment will be provided when finalized at a future date.	Started (2/2014)
22. **ISE Confirmatory Item 3.2.4.10.A** – The licensee stated that a finalized summary of battery coping time, dc load profile, discussion of loads shed, and minimum dc voltage will be provided in a future update.	Not Started
23. **ISE Confirmatory Item 3.4.A** – The program or process to request RRC equipment was not discussed in the Integrated Plan or during the audit process.	Not Started
24. **ISE Confirmatory Item 3.4.8** – Sizing calculations of RRC FLEX equipment and the compatibility of RRC equipment to plant connection points was not discussed in the Integrated Plan or during the audit process.	Not Started

7 Potential Draft Safety Evaluation Impacts

There are no potential impacts to the Draft Safety Evaluation identified at this time.

8 Communications Assessment Interim Action Implementation Status

Table 4 provides a listing of the implementing actions documented in the Assessment of Communications during an ELAP (Reference 4). It provides the status of each action, and whether the expected completion date has changed. The dates are planning dates subject to change as design and implementation details are developed.

Table 4
Status of NMP2 Communications Assessment Interim Actions

Communications Assessment Implementing Actions	Target Completion Date	Status	Revised Target Completion Date
Fixed Satellite Phones			
1. Determine the status of existing fixed satellite phone system and antennas in terms of suitability of being "Reasonably Protected."	12/31/2013	**Complete** (2/2014)	
2. Install additional antennas as necessary to support the use of fixed satellite phones at all locations. (Emergency Operations Center (EOF) / Joint Information Center (JIC)).	8/31/2014	Not Started	
3. Procure and install fixed satellite phones, additional antennas and uninterruptable power supplies for the Technical Support Center (TSC) / Operational Support Center (OSC), Emergency Operations Facility (EOF), and JIC.	12/31/2014	Not Started	

Communications Assessment Implementing Actions	Target Completion Date	Status	Revised Target Completion Date
4. Develop Standing Order for Interim actions. Standing Order will contain: • Description of the communications equipment purchased for enhancement. • Interim storage location of the equipment until final permanent storage is determined. • Conditions describing when equipment will be used. • Instructions for use of the equipment.	8/31/2013	**Complete** (2/2014)	
5. Determine whether APC UPS 750 is high enough above ground elevation in the On-Site Telephone Building to be protected from flooding.	12/31/2013	**Complete** (2/2014)	
6. Relocate two (2) phones from each Control Room to the TSC/OSC and EOF.	8/31/2014	Not Started	
7. Develop/update preventative maintenance and testing procedures for fixed satellite phones.	8/31/2014	Not Started	12/26/2014 Date changed to be consistent with plans to move/install the fixed satellite phones in all locations
8. Provide instructions for use of fixed satellite phones at each location.	12/31/2014	Not Started	

Communications Assessment Implementing Actions	Target Completion Date	Status	Revised Target Completion Date
9. Include information on fixed satellite phone locations and usage in procedures.	12/31/2013	Started (2/2014)	10/31/2014 Date changed to be consistent with plans to move/install the fixed satellite phones in all locations
Portable Satellite Phones			
1. Stage batteries and chargers in the applicable Emergency Response Organization (ERO) Facilities.	10/31/2013	**Complete** (2/2014)	
2. Update work instructions for portable satellite phone inventory.	10/31/2013	**Complete** (2/2014)	
3. Develop/update preventive maintenance and testing procedures for portable satellite phones, batteries and chargers.	12/31/2013	Started (2/2014)	2/28/2014
4. Include information on portable satellite phone locations and usage in procedures.	12/31/2013	**Complete** (2/2014)	2/14/2014
5. Procure and install a high power UPS or similar modification providing backup power for the battery chargers for portable satellite phones	12/31/2014	Not Started	
Communications with Offsite Response Organizations			
1. Provide Oswego County Emergency Operations Center (EOC) and Oswego County Warning Point (WP) instructions for proper storage and rotation of satellite phone batteries.	10/31/2013	**Complete** (2/2014)	

Communications Assessment Implementing Actions	Target Completion Date	Status	Revised Target Completion Date
Portable Generators			
1. Develop portable generator fueling plan to ensure ability to provide power for a minimum of 24 hours.	12/31/2013	**Complete** (2/2014)	
2. Develop procedures to maintain and test the portable generators.	12/31/2013	**Complete** (2/2014)	1/31/2014
3. Update work instructions to inventory portable generators and ensure adequate volume of fuel.	12/31/2013	**Complete** (2/2014)	1/31/2014
4. Develop preventive maintenance procedure for portable generators fuel supply.	12/31/2013	**Complete** (2/2014)	1/31/2014
5. Determine a process for relocating portable generators to the appropriate locations to power the necessary equipment.	Prior to Startup (S/U) NMP1 RFO 2015	Not Started	
Site Radio System			
1. Procure and install a high power UPS or similar modification providing backup power for the radio system repeaters	Prior to S/U NMP1 RFO 2015	Not Started	
2. Complete estimates of portable radio battery life and procure additional batteries as necessary based on an estimate of minimum talk time to ensure 24 hours of operation.	10/31/2013	**Complete** (2/2014)	
Training			
1. Evaluate training needs specific to the use of portable and fixed satellite phones, and radios during an ELAP event.	Prior to S/U NMP1 RFO 2015	Not Started	
2. Develop and implement training on the use of backup generators.	Prior to S/U NMP1 RFO 2015	Not Started	

9 References

The following references support the updates to the OIP described in this enclosure.

1. Letter from M. G. Korsnick (CENG) to Document Control Desk (NRC), Overall Integrated Plan for Mitigation Strategies for Beyond-Design-Basis External Events, dated February 28. 2013.
2. NRC Order Number EA-12-049, "Order Modifying Licenses with Regard to Requirements for Mitigation Strategies for Beyond-Design-Basis External Events," dated March 12, 2012.
3. Letter from M. G. Korsnick (CENG) to Document Control Desk (NRC), Supplement to Overall Integrated Plan for Mitigation Strategies for Beyond-Design-Basis External Events, dated March 8, 2013.
4. Letter from M. G. Korsnick (CENG) to Document Control Desk (NRC), Response to NRC Letter on Technical Issues for Resolution Regarding Communication Submittals Associated with Near-Term Task Force Recommendation 9.3, dated February 22, 2013.
5. NEI 12-06, Diverse and Flexible Coping Strategies (FLEX) Implementation Guide, dated August 2012.
6. Letter from E. D. Dean (CENG) to Document Control Desk (NRC), Six-Month Status Report in Response to March 12, 2012 Commission Order Modifying Licenses with Regard to Requirements for Mitigation Strategies for Beyond-Design-Basis External Events (Order Number EA-12-049), dated August 27, 2013.
7. Letter from J. S. Bowen (NRC) to J. A. Spina, Nine Mile Point Nuclear Station, Units 1 and 2 – Interim Staff Evaluations Relating to Overall Integrated Plans in Response to Order EA-12-049 (Mitigation Strategies) (TAC Nos. MF 1129 and MF1130), dated December 19, 2013.