



SEP 28 2015

L-2015-254
10 CFR 50.54(f)

U. S. Nuclear Regulatory Commission
Attn: Document Control Desk
Washington, DC 20555-0001

Turkey Point Units 3 and 4
Docket Nos. 50-250 and 50-251

Response to NRC Request for Information Pursuant to 10 CFR 50.54(f) Regarding Recommendation 9.3 of the Near-Term Task Force Review of Insights from the Fukushima Dai-Ichi Accident, Emergency Preparedness – Phase 2 Staffing Assessment

References:

- (1) NRC Letter, Request for Information Pursuant to Title 10 of the Code of Federal Regulations 50.54(f) Regarding Recommendations 2.1, 2.3, and 9.3, of the Near-Term Task Force Review of Insights from the Fukushima Dai-Ichi Accident, dated March 12, 2012, ML12053A340.
- (2) FPL letter, M. Kiley (FPL) to NRC (L-2012-208), "60-Day Response to NRC Letter, 'Request for Information Pursuant to Title 10 of the Code of Federal Regulations 50.54(f) Regarding Recommendations 2.1, 2.3, and 9.3 of the Near-Term Task Force Review of Insights from the Fukushima Dai-ichi Accident,' dated March 12, 2012," Accession No ML12144A158, May 10, 2012.
- (3) FPL Letter, M. Kiley (FPL) to NRC (L-2012-247) Clarification of 60-Day Response to March 12, 2012 10 CFR 50.54(f) Request for Information, dated June 05, 2012, ML12172A288.
- (4) NEI 12-01, "Guideline for Assessing Beyond Design Basis Accident Response Staffing and Communications Capabilities," Revision 0, dated May 2012, ML12110A204.
- (5) NRC Letter, "U.S. Nuclear Regulatory Commission Review of NEI 12-01, 'Guideline for Assessing Beyond Design Basis Accident Response Staffing and Communications Capabilities,' Revision 0, dated May 2012," dated May 15, 2012, ML12131A043.
- (6) FPL Letter, M. Kiley (FPL) to NRC (L-2013-151), "Response to NRC Request for Information Pursuant to 10 CFR 50.54(f) Regarding Recommendation 9.3 of the Near-Term Task Force Review of Insights from the Fukushima Dai-Ichi Accident, Emergency Preparedness – Phase 1 Staffing Assessment," dated April 26, 2013, ML

On March 12, 2012, the NRC staff issued Reference 1 to all power reactor licensees and holders of construction permits in active or deferred status. Enclosure 5 of Reference 1 contains the specific Requested Actions, Requested Information, and Required Response associated with Recommendation 9.3 for Emergency Preparedness - Staffing. In accordance with 10 CFR 50.54(f), addressees were requested to submit a written response to the information requests within 90 days.

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In accordance with Reference 1, Enclosure 5, Florida Power and Light Company (FPL) submitted for Turkey Point Units 3 and 4, an alternative course of action for performing the requested actions and providing the requested information (Reference 2). Enclosure 1 of Reference 2 described the alternative course of action and schedule for responding to the Emergency Preparedness – Staffing, Requested Information.

By Reference 3, FPL provided clarification of the Turkey Point Units 3 and 4 outage dates noted in the Reference 2 response.

The Reference 4 guideline was developed by the Nuclear Energy Institute (NEI) for the performance of communications and staffing assessments associated with a response to a beyond design basis external event. This NEI guideline was endorsed by the NRC in Reference 5. Reference 6 provided the FPL Turkey Point Phase 1 Staffing Assessment Report.

The Enclosure to this letter provides the FPL Turkey Point Units 3 and 4 Phase 2 Staffing Assessment Report, which was developed in accordance with the guidance of Reference 4. As discussed in the Enclosure, FPL determined that the implementation of the Diverse and Flexible Mitigation Capability (FLEX) strategies does not require changes to the Turkey Point Emergency Plan.

The Enclosure also contains the non-Safeguards Information (SGI) Turkey Point responses to staffing assessment questions related to use of security personnel during a beyond design basis event. The SGI response is submitted under a separate transmittal protected in accordance with 10 CFR 73.22, "Protection of Safeguards Information: Specific Requirements."

If you have any questions or require additional information, please contact Mr. Mitch Guth, Licensing Manager at 305 246-6698.

I declare under penalty of perjury that the foregoing is true and correct.
Executed on September ~~28~~ 2015

Sincerely,



Thomas Summers
Site Vice President
Turkey Point Nuclear Plant

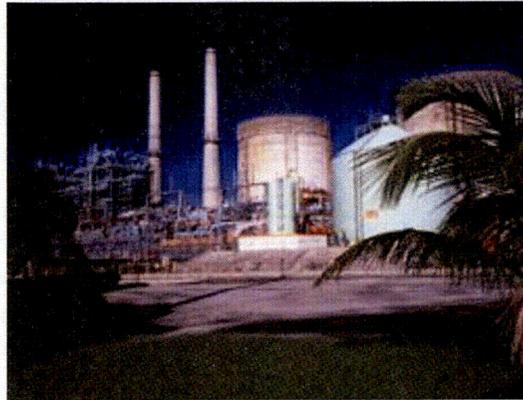
Attachment
Enclosure

cc: USNRC Regional Administrator, Region II
USNRC Project Manager, Turkey Point Nuclear Plant
USNRC Senior Resident Inspector, Turkey Point Nuclear Plant

Enclosure

Fukushima
NEI 12-01 Phase 2
Staffing Assessment Report

TURKEY POINT NUCLEAR PLANT UNITS 3 AND 4



FUKUSHIMA RESPONSE

NEI 12-01 PHASE 2

STAFFING ASSESSMENT REPORT

SEPTEMBER 24, 2015

Prepared:  Date: 9/24/15
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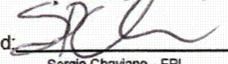
Owner Approved:  Date: 9/28/15
Sergio Chaviano - FPL

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Introduction

This report documents the results of an assessment of the capability of Turkey Point Units 3 & 4 (PTN) minimum on-shift staff and augmented Emergency Response Organization (ERO) to respond to a beyond design basis external event (BDBEE). The analysis was performed in parallel with the PTN FLEX validation process to identify potential issues with FLEX strategies, resource staffing, and human factors. The assumptions for the scenario are based on accepted industry guidance and postulate that the BDBEE involves a large-scale external event that results in:

- A. an extended loss of AC power (ELAP)
- B. an extended loss of the ultimate heat sink (UHS)
- C. an impact to all units (all units are in operation at the time of the event)
- D. impeded access to the units by off-site responders as follows:
 - 0 to 6 hours post event – No site access. (Initial Phase)
 - 6 to 24 hours post event – Limited site access. Individuals may access the site by walking, personal vehicle or via alternate transportation capabilities (e.g., private resource providers or public sector support).(Transition Phase)
 - 24+ hours post event – Improved site access. Site access is restored to a near-normal status and/or augmented transportation resources are available to deliver equipment, supplies, and large numbers of personnel.(Final Phase)

The assessment was performed using guidance in NEI 12-01, “Guideline for Assessing Beyond Design Basis Accident Response Staffing and Communication Capabilities” and NEI 12-06, “Diverse and Flexible Coping Strategies (FLEX) Implementation Guide” to determine the response of on-shift and augmented resources to an Extended Loss of Power (ELAP) incident affecting all units at a site.

The assessment addresses Phase 2 of the analysis applicable to implementation of FLEX strategies for prolonged loss of offsite power applicable to multi-unit sites during the initial and transition phases of the event using the methodology, process and documentation of NEI 10-05, “Assessment of On-Shift Emergency Response Organization Staffing and Capabilities.”

FLEX Support Guidelines (FSGs) and Emergency Operating Procedure (EOP) revisions were reviewed for staffing requirements in accordance with NEI 12-01, page 4, Section 1.3.1.2:

“In accordance with the Order, each licensee must develop new strategies for mitigating the effects of beyond-design-basis external events. To ensure accurate results, the staffing assessment for response functions related to NNTF Recommendation 4.2 must be based on actions delineated in the procedures and guidelines developed in response to the Order. Once the site-specific actions associated with the new response strategies are defined (e.g., down to the procedure or guideline step level), the staffing needed to perform these actions can be assessed with the necessary level of accuracy.”

The assessment considers required actions performed during the Initial and Transition Phases of an ELAP (first 24 hours). Evaluation of the first 24 hours of response is acceptable in accordance with NEI 12-01, page 13, Section 3.1 and NEI 12-06, page 59, Section 12.1:

“It is recognized that, following successful implementation of Transition Phase coping strategies, there is a third phase characterized by the ability to cope indefinitely; this is referred to as the Final Phase. The Final Phase would involve the use of equipment and consumables transported to the site from offsite locations, including ongoing replacement and replenishment as needed. The demands placed upon the ERO during this phase are not significantly different than those associated with Transition Phase coping; therefore, this phase is not included in a staffing assessment.”

“On-site resources will be used to cope with the first two phases of the casualty for a minimum of the first 24 hours of the event.”

Staffing Assessment Process Overview

The NEI 12-01 Phase 2 Staffing Assessment was developed in parallel with the PTN FLEX Validation and Verification (V&V) process to ensure consistency between both efforts. The staffing assessment also addressed the ability of the on-shift staff to perform any required emergency response functions prior to the delayed arrival of the augmented Emergency Response Organization (ERO).

The Phase 2 staffing assessment requires that the ELAP scenario be evaluated based on the minimum staffing in the Emergency Plan (NEI 12-01) and the supplemental staff allowed by the minimum administrative staffing procedures (NEI 12-06). Turkey Point Radiological Emergency Plan, Table 2-2a, Rev 61, documents the approved minimum Emergency Plan on-shift staff. Table 1 below summarizes the available personnel, including shared resources for a multi-unit event, used for performance of the NEI 12-01 Phase 2 staffing assessment.

Table 1 Turkey Point Nuclear Plant Minimum On-Shift Staffing

Turkey Point Nuclear Plant On-Shift Staffing Capabilities	
Position	On-shift
Shift Manager (SRO)	1
Unit Supervisor (SRO) ^{Note 1}	2
Reactor Operator (RO)	3
Shift Technical Advisor (STA) ^{Note 4}	1
Nuclear Operator/Senior Nuclear Plant Operator (SNPO)	2
Nuclear Operator/Nuclear Turbine Operator (NPO)	2
Assistant Nuclear Plant Operator (ANPO)	1
Radiation Protection Technician	1
Rad/Chemistry Technician	1
Fire Brigade ^{Note 2}	3
Security ^{Note 3}	Sec Plan
Total:	17

- Note 1: Shift Communicator is an assigned responsibility of a shift SRO.
- Note 2: The table includes the Operations Field Supervisor as Fire Brigade Leader and two Nuclear Systems Operators (NSO)
- Note 3: For the purposes of FLEX response, Security personnel are included in the staffing study. Security personnel participated in Validation and Verification of appropriate FSGs. A description of the planned use of affected Security Officers to support implementation of designated FLEX strategies is provided as an Appendix to this report.
- Note 4: The STA is an additional on-shift SRO.

Phase 2 Staffing Assessment Details

The Phase 2 staffing assessment for PTN was conducted in parallel with the PTN FLEX Validation and Verification process using the guidance of NEI 12-01, NEI 12-06 and NEI 10-05. Following the integrated review of Validation and Verification activities, the FLEX team conducted the final review of the staffing plan.

The following personnel were present to complete the final review.

Table 2 Staffing Analysis Team

Personnel (Position/Title)	Organization/Department
Sergio Chaviano	FLEX Team Leader
Joe McGuiness	FLEX V&V Leader
Richard Tucker	SRO/Operations/FLEX Lead
Paul Banaszak	Engineering FLEX Lead
Adam Law	Operations FLEX V&V Lead
Bruce Beisler	Engineering FLEX V&V Lead
Duane Hutchinson	Radiation Protection
Brad Scott	Chemistry
Don Harker	Energy Compliance Consultants
Dave Stobaugh	Energy Compliance Consultants
Nikki Knapp	Energy Compliance Consultants

Assumptions

The extended loss of AC power (ELAP) event was evaluated using the following assumptions, consistent with NEI 12-01, NEI 12-06 and applicable assumptions from NEI 10-05.

NEI 12-01 - Assumptions for Staffing Assessment:

1. A large-scale external event occurs that results in:
 - all on-site units affected
 - extended loss of AC power
 - impeded access to the units
2. Initially, all on-site reactors are operating at full power and are successfully shut down.
3. A Hostile Action directed at the affected site does not occur during the period that the site is responding to the event.
4. The event impedes site access as follows:
 - A. Post-event time: 6 hours – No site access. This duration reflects the time necessary to clear roadway obstructions, use different travel routes, mobilize alternate transportation capabilities (e.g., private resource providers or public sector support), etc.
 - B. Post-event time: 6 to 24 hours – Limited site access. Individuals may access the site by walking, personal vehicle or via alternate transportation capabilities (e.g., private resource providers or public sector support).
 - C. Post-event time: 24+ hours – Improved site access. Site access is restored to a near-normal status and/or augmented transportation resources are available to deliver equipment, supplies and large numbers of personnel.
5. On-shift personnel are limited to the minimum complement allowed by the site emergency plan. Additional administrative staff are designated as supplemental to the emergency plan minimum staff
6. All equipment credited in current coping strategies remains available for use.

NEI 10-05 - Applicable Assumptions:

7. On-shift personnel can report to their assigned response locations within timeframes sufficient to allow for performance of assigned actions.
8. The on-shift staff possesses the necessary Radiation Worker qualifications to obtain emergency dosimetry and to enter Radiologically Controlled Areas (but not high, locked high or very high radiation areas) without the aid of a Radiation Protection Technician.
9. Personnel assigned to the major response area of Plant Operations & Safe Shutdown meet the requirements and guidance established by NRC regulations and are able to satisfactorily perform the functions and tasks necessary to achieve and maintain safe shutdown. Staff performance within this area is not evaluated as part of this assessment, unless a role/function/task from another major response area is assigned as a collateral duty.
10. On-site security organization: Performance of this function is regularly analyzed through other station programs and will not be evaluated here, unless a role or function from another major response area is assigned as a collateral duty.
11. Individuals holding the position of Radiation Protection Technician or Chemistry Technician are qualified to perform the range of tasks expected of their position.
12. The task of making a simple and brief communication has minimal impact on the ability to perform other assigned functions/tasks, and is therefore an acceptable collateral duty for all positions. This assumption does not apply to emergency notification to an Offsite Response Organization (ORO) or the NRC.
13. The task of performing a peer check has minimal impact on the ability to perform other assigned functions/tasks, and is therefore an acceptable collateral duty for all positions.
14. The analyzed events occur during off-normal work hours at a time when augmented ERO responders are not at the site (e.g., during a backshift, weekend or holiday). For purposes of this analysis, and consistent with NEI 12-01 assumption #4, 360 minutes (6 hours) will be used as the time period for the conduct of on-shift ERO response actions.

NEI 12-06 Assumptions

15. Prior to the event the reactor has been operating at 100 percent rated thermal power for at least 100 days or has just been shut down from such a power history as required by plant procedures in advance of the impending event. (Severe weather, tornado, hurricane, etc.)
16. At the time of the postulated event, the reactor and supporting systems are within normal operating ranges for pressure, temperature, and water level for the appropriate plant condition. All plant equipment is either normally operating or available from the standby state as described in the plant design and licensing basis.
17. No specific initiating event is used. The initial condition is assumed to be a loss of off-site power (LOOP) at a plant site resulting from an external event that affects the off-site power system either throughout the grid or at the plant with no prospect for recovery of off-site power for an extended period. The LOOP is assumed to affect all units at a plant site.
18. All installed sources of emergency on-site ac power and SBO Alternate ac power sources are assumed to be not available and not imminently recoverable.
19. Cooling and makeup water inventories contained in systems or structures with designs that are robust with respect to seismic events, floods, and high winds, and associated missiles are available.
20. Normal access to the ultimate heat sink is lost, but the water inventory in the UHS remains available and robust piping connecting the UHS to plant systems remains intact. The motive force for UHS flow, i.e., pumps, is assumed to be lost with no prospect for recovery.
21. Fuel for FLEX equipment stored in structures with designs which are robust with respect to seismic events, floods and high winds and associated missiles, remains available.

22. Permanent plant equipment that is contained in structures with designs that are robust with respect to seismic events, floods, and high winds, and associated missiles, are available.
23. Other equipment, such as portable AC power sources, portable back up DC power supplies, spare batteries, and equipment for 50.54(hh)(2), may be used provided it is reasonably protected from the applicable external hazards per Sections 5 through 9 and Section 11.3 of this guidance.
24. Installed electrical distribution system, including inverters and battery chargers, remain available provided they are protected consistent with current station design.
25. No additional events or failures are assumed to occur immediately prior to or during the event, including security events.
26. On-site staff is at site administrative minimum shift staffing levels per Section 2 of this guidance. All personnel on-site are available to support site response.

Plant Specific Assumptions

27. Plant Instrument Air is not available during the assessment period.
28. RCS makeup will be required within 24 hours. Initial RCS makeup and boration is provided by injecting the accumulators. The charging pumps provide subsequent RCS makeup and boration.
29. Station batteries-The 125V DC and 120V Vital AC buses remain available for 21 hours after deep load shed. However, the 480 Volt Diesel Generators are online and providing power prior to hour 8.¹
30. The radio repeater system is not available. Talk-around channel is available.
31. Plant public address system is unavailable.
32. In the most restrictive case, only one Condensate Storage Tank is available with 233,075 gallons. It will provide feed to the turbine driven feed pumps for approximately 12 hours.²
33. Initial actions to stage hoses and nozzles within the Spent Fuel Pool Building are actions are required within 2.7 hours. Establishing SFP cooling is not required before 24 hours.³
34. The DC Inverter and Control Rooms do not exceed design temperature limits for 12 hours.⁴
35. Fire Protection System is not available during the assessment period.
36. All equipment credited in current coping strategies remains available for use.
37. During the ELAP, plant personnel are able to enter the RCA without processing through the RP Control Point.
38. Security requirements maybe relaxed and managed during the ELAP conditions consistent with regulatory guidance and the Security Plan.
39. The EOF is located approximately 26 miles from the site and is available as a staging facility. The EOF has a back-up electrical generator.

¹ June 2015 Draft FIP page 20

² Ibid page 67

³ Ibid page 43

⁴ Ibid page 63

Methodology

The assessment of on-shift staffing was performed using NEI 12-01, NEI 12-06 and NEI 10-05 in parallel with PTN's FLEX Validation and Verification process. FLEX Support Guidelines requiring implementation during the first six hours of an ELAP were evaluated through timed walkthroughs. Staffing levels used during the walkthroughs are incorporated into the Phase 2 Staffing Analysis. A team of subject matter experts separately evaluated FSGs that were not part of the V & V process for required staffing levels and implementation timelines.

Energy Compliance Consultants, LLC modified NEI 10-05 forms to document the results of the analysis. Each on-shift position in the Emergency Plan and any additional supplemental administrative on-shift position was entered in Appendix 1, Table 1. For position titles with more than one position holder, a unique sequential number was assigned to each position. The site emergency plan reference that describes the requirement for the position to be on-shift was then entered into column 3 of Appendix 1, Table 1. Using only the on-shift positions entered in the table, the following Appendix 1 tables were completed by entering the shift position that fills a described role, or performs a specific function or tasks:

- Table 2 – Minimum Operations Crew Necessary to Implement ONOPs, EOPs and FSGs
- Table 2A – Procedural Implementation Timeline of activities corresponding to Table 2
- Table 3 – Firefighting (not applicable for this event analysis)
- Table 4 – Radiation Protection & Chemistry Time Line of Activities
- Table 5 – Emergency Plan Implementation
- Table 5A – E-Plan Implementation Timeline

Following completion of each of the above tables, each on-shift position assigned to the associated table was located on Appendix 1, Table 1. For each position, the table number and associated line number was then entered in column 4, "Role in Table#/Line#". If the associated task required additional actions, a "Yes" was placed in the last column and the additional action recorded in the results section of this report.

Specific site procedures and FLEX V&V results referenced during assessment of this postulated event are provided in Table 2A. Personnel resources needed to perform initial and transition phase response actions identified from the EOP, ONOP, or FSG procedures during the FLEX V&V were reviewed and documented. The team determined when other on-shift resources, such as the RP, Chemistry Technician, Security, would be required and identified the time required to perform their expected emergency plan functions. This information was documented on the applicable tables in Appendix 1 of this report. Finally, the on-shift resources and their actions were summarized in the tables using the NEI 10-05 documentation process in Appendix 1, Table 1.

Security Considerations

Security personnel will be used as a supplemental resource since they are available and on site at the time of the event. This will ensure that all strategies are implemented in the required period and mitigate the potential consequences of the event. See the Security Appendix for more details.

Security support would be necessary during Phase 1 and Phase 2 (Initial Phase and Transition Phase). Planned mitigation strategies require the use of Security Officers to perform duties unrelated to their assigned roles. Security responsibilities include debris removal, moving FLEX Equipment into position, and supporting the assembly of electrical cable and hose-runs.

The staffing assessment has verified that the designated security personnel do not have non-security-related task assignments that would prevent them from performing their mitigating strategy implementation duties (i.e., no assigned collateral duties). Response training for security personnel will be developed and provided in accordance with the guidance contained in NEI 12-06.

Security personnel will be supporting implementation of the following event mitigation procedures and guidelines if only minimum staffing is available in Phase 1:

- a. Damage Assessment and Debris Removal
- b. 0-FSG-99 Attachment 3/18 Staging, Installation, Operation and Re-Energizing Unit 3/4 480V Buses with FLEX 480V Diesel Generator
- c. 0-FSG-99 Attachment 4-Well Pump Functional and Providing Water to Surviving CST

The site is not considering the use of security personnel for other beyond design basis events that are not characterized by the conditions outlined within the guidance document.

Notwithstanding the uncertainties associated with a beyond-design-basis event, the estimated duration for use of security personnel is bounded by the moment at which the senior licensed operator in the Control Room determines that an event has occurred, or plant condition are present, which will require implementation of FLEX Support Guidelines and the arrival of the augmented ERO staff. Allowing for some margin in the arrival times of ERO personnel, and the need to do job briefings and turnovers, the release of security personnel from mitigating strategy duties should occur during the period of approximately 6 to 12 hours after the initiating event.

The actions that will allow for dismissal of security personnel from duties associated with implementation of mitigating strategies would be the arrival of a sufficient number of augmented ERO personnel. Once dismissed, security personnel may resume their normal duties. Appropriate procedures and guidelines will contain instructions to the effect that, absent an overriding safety consideration, security personnel will receive priority consideration for mitigating strategy duty relief by the augmented ERO.

The use of security personnel was determined via a tiered approach to minimize the impact to security response capability. The selection of personnel considered assigned functions and potential impacts to the protective strategy. The assignments were made such that security personnel with the least impact to the protective strategy were reassigned first. The assignments shown in Figure 1 reflect the selection rationale – least to greater impact.

Strategy Resource Loading

V&V or analysis each FSG was conducted, the evaluation determined the resources needed and estimated duration of each task associated with the strategy. Adequate margin for all tasks was demonstrated during the analysis. FSGs for contingency actions or beyond 24 hours were excluded from the analysis. Per Figure 1 and Table 1, the NSO abbreviation as used in Table 3 and Table 4 includes the NSO, SNPO, NPO and ANPO designations.

Table 3 FSG Staffing Assessment Conducted During V&V Walkdown

FSGs Number	FSG Name	Staffing Required	Staffing Source
0-FSG-99	Attachment 2, Preparation of Unit 3 480V Load Centers and MCCs to Receive FLEX Power	1 NSO	On-Shift Minimum Staff
0-FSG-99	Attachment 3, Staging, Installation, Operation and Re-Energization of Unit 3 480V Buses with FLEX 480V DG	1 FS 3 NSO 2 SEC 1 CT	On-Shift Minimum Staff
0-FSG-99	Attachment 4, Staging, Installation and Operation of the FLEX Well Pump	1 FS 2 NSO 2 SEC 1 CT	On-Shift Minimum Staff
0-FSG-99	Attachment 9, FLEX Well Water to Charging Pump Oil Coolers	2 NSO	On-Shift Minimum Staff
0-FSG-99	Attachment 17, Preparation of Unit 4 480V Load Centers and MCCs to Receive FLEX Power	1 NSO	On-Shift Minimum Staff
0-FSG-99	Attachment 18, Staging, Installation, Operation and Re-Energization of Unit 4 480V Buses with FLEX 480V DG	1 FS 3 NSO 2 SEC	On-Shift Minimum Staff
0-FSG-04	ELAP DC Bus Load Shed	2 NSO	On-Shift Minimum Staff
0-FSG-05	ATTACHMENT 4 Initial SFP Hose Routing	2 NSO	On-Shift Minimum Staff
0-FSG-06	Alternate CST Makeup	2 NSO	On-Shift Minimum Staff
0-FSG-99	Attachment 5, Unit 3 RCS Inventory / Boration Control	2 NSO	ERO
0-FSG-99	Attachment 10, Refueling Plan for Diesel Powered FLEX Equipment	1 NSO 1 MM 2 ERO	ERO
0-FSG-99	Attachment 19, Unit 4 RCS Inventory / Boration Control	2 NSO	ERO
0-FSG-99	Attachment 1, Response To AFW Pump Trip	1 NSO	ERO
0-FSG-99	Attachment 7, Manual Operation of Unit 3 Steam Dump to Atmosphere (SDTA) Valves	1 NSO or 1 IC	ERO
0-FSG-99	Attachment 20 Manual Operation of Unit 4 Steam Dump to Atmosphere (SDTA) Valves	1 NSO or 1 IC	ERO

Table 4 FSG Staffing Assessment Conducted by SMEs

FSGs Number	FSG Name	Staffing Required	Staffing Source
0-FSG-05	Initial Assessment And Flex Equipment Staging	1 RO 3 NSO 3 SEC	On-Shift Minimum Staff
0-FSG-03	Alternate Low Pressure Feedwater	2 RO 2 NSO 2 MM	ERO
0-FSG-11	Alternate SFP Makeup And Cooling	2 NSO	ERO
0-FSG-11	ATTACHMENT 1 Staging, Installation And Operation Of The FLEX SFP Pump	5 ERO 1 NSO 1 RP	ERO
0-FSG-99	Attachment 8, Staging, Installation And Operation Of The 6KW DG Sets	1 ERO	ERO
3-FSG-01	Alternate RCS Inventory Control	1 RO 1 NSO	ERO
3-FSG-08	Alternate RCS Boration	1 RO 1 NSO	ERO
3-FSG-09	Low Decay Heat Temperature Control	1 RO 1 NSO	ERO
3-FSG-10	Passive RCS Injection Isolation	1 RO 1 NSO	ERO
4-FSG-01	Alternate RCS Inventory Control	1 RO 1 NSO	ERO
4-FSG-08	Alternate RCS Boration	1 RO 1 NSO	ERO
4-FSG-09	Low Decay Heat Temperature Control	1 RO 1 NSO	ERO
4-FSG-10	Passive RCS Injection Isolation	1 RO 1 NSO	ERO

Appendix 1 - Staffing Tables

NEI 12-01 Phase 2 Analysis Non-Hurricane BDBEE

Position	Designation	Assignment
Shift Manager	SM	Shift Manager/Emergency Director
Unit Supervisor	SRO1	Unit 3 Shift Supervisor/Shift Communicator
Unit Supervisor	SRO2	Unit 4 Shift Supervisor/Shift Communicator
Shift Technical Advisor	STA	Shift Technical Advisor
Field Supervisor	FS	Fire Brigade Leader
Reactor Control Operator	RO1	Unit 3 Operator At Controls (OATC)
Reactor Control Operator	RO2	Unit 3&4 Balance of Plant (BOP)
Reactor Control Operator	RO3	Unit 4 Operator At The Controls (OATC)
Senior Nuclear Plant Operator	SNPO1	Auxiliary Building Inside (I/S 105)
Senior Nuclear Plant Operator	SNPO2	Auxiliary Building Outside (O/S 105)
Nuclear Plant Operator	NPO1	Unit 3 Turbine Deck Operator (NPO 105)
Nuclear Plant Operator	NPO2	FB Member/Unit 4 Turbine Deck Operator (FBM1)
Assistant Nuclear Plant Operator	ANPO1	FB Member/ANPO (FBM2)
Nuclear Systems Operator	NSO1	FB Member/ (FBM3)
Nuclear Systems Operator	NSO2	FB Member/ (FBM4)

Other On-Shift Assignments Used During Analysis

Position	Designation	Assignment
RP Technician	RP1	RP Support, Operations Support
Rad/Chemistry Technician	CT1	Chemistry Sampling & Analysis/Dose Assessment, Operations Support
Security	SEC1	Debris Removal, Equipment Transport, Other as assigned by Operations personnel
Security	SEC2	Debris Removal, Equipment Transport, Other as assigned by Operations personnel
Security	SEC3	Debris Removal, Equipment Transport; Other as assigned by Operations personnel

Extended Loss of all AC Power (ELAP) non-Hurricane BDBEE
NEI 10-05 TABLE 1 – On-shift Positions Turkey Point

Line	On-shift Position	Emergency Plan Reference	Role in Table#/Line#	Action Required?*
1.	Shift Manager (SM)	Turkey Point Nuclear REP Table 2-2a, Rev 61	T2/L1 T5/L1 T5/L2 T5/L3 T5/L5	No
2.	Unit Supervisor – U3 (SRO1)	Turkey Point Nuclear REP Table 2-2a, Rev 61	T2/L2	No
3.	Unit Supervisor – U4 (SRO2)	Turkey Point Nuclear REP Table 2-2a, Rev 61	T2/L3 T5/L6 T5/L7 T5/L8 T5/L9 T5/L12	No
4.	Shift Technical Advisor (STA)	Turkey Point Nuclear REP Table 2-2a, Rev 61	T2/L4	No
5.	Field Supervisor/Fire Team Leader (FS)	Turkey Point Nuclear REP Table 2-2a, Rev 61	T2/L5	No
6.	Reactor Operator – U3 OATC (RO1)	Turkey Point Nuclear REP Table 2-2a, Rev 61	T2/L6	No
7.	Reactor Operator – U3&4 BOP (RO2)	Turkey Point Nuclear REP Table 2-2a, Rev 61	T2/L7	No
8.	Reactor Operator – U4 OATC (RO3)	Turkey Point Nuclear REP Table 2-2a, Rev 61	T2/L8	No
9.	Senior Nuclear Plant Operator (SNPO1)	Turkey Point Nuclear REP Table 2-2a, Rev 61	T2/L9	No
10.	Senior Nuclear Plant Operator (SNPO2)	Turkey Point Nuclear REP Table 2-2a, Rev 61	T2/L10	No
11.	Nuclear Plant Operator (NPO1)	Turkey Point Nuclear REP Table 2-2a, Rev 61	T2/L11	No
12.	Nuclear Plant Operator (NPO2)	Turkey Point Nuclear REP Table 2-2a, Rev 61	T2/L12	No
13.	Assistant Nuclear Plant Operator (ANPO1)	Turkey Point Nuclear REP Table 2-2a, Rev 61	T2/L13	No
14.	Assistant Nuclear Plant Operator (NSO1)	Turkey Point Nuclear REP Table 2-2a, Rev 61	T2/L14	No
15.	Assistant Nuclear Plant Operator (NSO2)	Turkey Point Nuclear REP Table 2-2a, Rev 61	T2/L15	No
16.	RP Technician (RP1)	Turkey Point Nuclear REP Table 2-2a, Rev 61	T2/L17	No

Line	On-shift Position	Emergency Plan Reference	Role in Table#/Line#	Action Required?*
17.	Chemistry Technician (CT1)	Turkey Point Nuclear REP Table 2-2a, Rev 61	T2/L18	No
18.	CAS Operator (SEC4)	Turkey Point Nuclear REP Table 2-2a, Rev 61	T5/L14	No
19.	Security Shift Supervisor (SEC5)	Turkey Point Nuclear REP Table 2-2a, Rev 61	T2/L17 T5/L5	No

Notes: OATC – Operator At The Controls
 BOP – Balance Of Plant
 * Action Required- Used to document any JTA or TMS needed to qualify personnel for EP duties

NEI 10-05 TABLE 2 - Plant Operations & Safe Shutdown
Two Units - One Control Room
Minimum Operations Crew Necessary to Implement
ONOPs ,EOPs and FSGs,

Line	Generic Title/Role	On-Shift Position	Task Performance Validation*
1.	Shift Manager	Shift Manager (SM)	Operator/FLEX Training
2.	Shift Supervisor	Unit Supervisor – U3 (SRO1)	Operator/FLEX Training
3.	Shift Supervisor	Unit Supervisor – U4 (SRO2)	Operator/FLEX Training
4.	Shift Technical Advisor	Shift Technical Advisor (STA)	Operator/FLEX Training
5.	Field Supervisor	Field Supervisor/FTL (FS)	Operator/FLEX Training
6.	Reactor Operator (OATC)	Reactor Operator – U3 OATC (RO1)	Operator/FLEX Training
7.	Reactor Operator (BOP)	Reactor Operator – U3&4 BOP (RO2)	Operator/FLEX Training
8.	Reactor Operator (OATC)	Reactor Operator – U4 OATC (RO3)	Operator/FLEX Training
9.	Auxiliary Operator	Senior Nuclear Plant Operator (SNPO1)	Operator/FLEX Training
10.	Auxiliary Operator	Senior Nuclear Plant Operator (SNPO2)	Operator/FLEX Training
11.	Auxiliary Operator	Nuclear Plant Operator (NPO1)	Operator/FLEX Training
12.	Auxiliary Operator	Nuclear Plant Operator (NPO2)	Operator/FLEX Training
13.	Auxiliary Operator	Assistant Nuclear Plant Operator (ANPO1)	Operator/FLEX Training
14.	Auxiliary Operator	Assistant Nuclear Plant Operator (NSO1)	Operator/FLEX Training
15.	Auxiliary Operator	Assistant Nuclear Plant Operator (NSO2)	Operator/FLEX Training

Notes: See Table 2A for AOP/EOP/FSG actions

Other (non-Operations) Personnel Necessary to Implement
ONOPs, EOPs, and FSGs

Line	Generic Title/Role	On-Shift Position	Task Performance Validation
16.	Security Supervisor	Security Shift Supervisor(SEC5)	Security/FLEX Training
17.	RP Technician	RP Technician (RP1)	RP/FLEX Training
18.	Chemistry Technician	Rad/Chemistry Technician (CT1)	Chemistry/FLEX Training
19.	Security	Security Guard (SEC1)	Security/FLEX Training
20.	Security	Security Guard (SEC2)	Security/FLEX Training
21.	Security	Security Guard (SEC3)	Security/FLEX Training

Notes: See Table 2A for AOP/EOP/FSG actions
 *Task Performance Validation- Identifies how personnel gain EP proficiency

Procedure	Task	Resource	0-10	10-20	20-30	30-40	40-50	50-60	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
3/4 - EOP-ECA-0.0	Commence RCS Cooldown 2 CST will start cooldown hour 4 1 CST available cooldown not before hour 9	RO1 RO3 2 NSO or 2 IC									X (2 CST)						X (1 CST)														
3/4 - EOP-ECA-0.0	Check Plant Conditions • ELAP in Progress • SG depressurization to 220 psig –	RO1 RO3					X																								
3/4 - EOP-ECA-0.0	Control S/G SDTA	RO1 RO3															X Intermittent Post Cooldown														
3/4 - EOP-ECA-0.0	Check SI Signal Status, Phase A and CNMT and CR Vent Isolation SINGLE UNIT ELAP ONLY	RO1 RO3					X																								
0-FSG-04	0-FSG-4 Attachment 1 & 2 – ELAP DC Load Shed	NPO1 NPO2					X																								
0-FSG-05	0-FSG-5 Attachment 1 – Initial ELAP Inspection – Field Actions (20 to 30 Minutes)	RO1 SNPO1 SNPO2 NSO1						X																							
0-FSG-05	Damage Assessment and Debris Removal	SEC1 SEC2 SEC3							X																						
0-FSG-05	Security Measures For Area Access (Notification)	SEC5					X																								
0-FSG-05	0-FSG-05 Attachment 3 Setup FLEX Equipment – Route Hoses to 3/4 SFP	SNPO2 NSO2							X																						
0-FSG-99 Attachment 4	Preparation of Unit 3 480V Load Centers and MCCs to Receive FLEX POWER	NPO1 NPO2								X																					
0-FSG-99 Attachment 3	Staging, Installation, Operation and Re-Energization of Unit 3 480V Buses with FLEX 480V DG	FS SNPO2 ANPO1 NSO1 NPO1 CT1 SEC1 SEC2									X																				
0-FSG-99 Attachment 2	Staging, Installation and Operation of the FLEX Well Pump	SNPO1 SNPO2 NSO2 CT1 SEC1 SEC2 SEC3										X																			

NEI 10-05 TABLE 3 – Firefighting

Line	Performed By	Task Analysis Controlling Method
1.	N/A	N/A
2.	N/A	N/A
3.	N/A	N/A
4.	N/A	N/A
5.	N/A	N/A

Notes: Not required by scenario – Fire Brigade members available to support BDBEE response actions.

NEI 10-05 TABLE 4 – Radiation Protection & Chemistry

Line	Position Performing Function/Task	Performance Time Period After Event Initiation													
		Minutes						Hours							
		0-10	10-20	20-30	30-40	40-50	50-60	2	3	4	5	6	7	8	9
1.	In-Plant Survey On-Shift Position: RP1			X											
2.	Out of Plant Survey On-Shift Position: RP1			X											
3.	Personnel Monitoring On-Shift Position:			X											
4.	Job Coverage On-Shift Position:														
5.	Offsite Radiological Assessment On-Shift Position:														
6.	Other Site-Specific RP – Describe: On-Shift Position:														
7.	Chemistry function/task #1 – Describe: Support FLEX 480V U3 D/G Activities On-Shift Position:									X					
8.	Chemistry function/task #2 – Describe: Support FLEX Well Pump Activities On-Shift Position:										X				

Notes: RP1 directed to survey main steam lines per EOP Guidance

 Estimated task completion and duration time

NEI 10-05 TABLE 4 – Radiation Protection & Chemistry

Line	Position Performing Function/Task	Performance Time Period After Event Initiation (hours)													
		11	12	13	14	15	16	17	18	19	20	21	22	23	24
1.	In-Plant Survey On-Shift Position: ERO														
2.	Out of Plant Survey On-Shift Position: ERO														
3.	Personnel Monitoring On-Shift Position:														
4.	Job Coverage On-Shift Position: ERO														
5.	Offsite Radiological Assessment On-Shift Position: ERO														
6.	Other Site-Specific RP – Describe: On-Shift Position:														
7.	Chemistry function/task #1 – Describe: On-Shift Position: ERO														
8.	Chemistry function/task #2 – Describe: On-Shift Position: ERO														

Notes: Augmented resources available to support actions after T=6 hours – no actions identified requiring minimum staffing support.

 Estimated task completion and duration time

NEI 10-05 TABLE 5 – Emergency Plan Implementation

Line	Function/Task	On-Shift Position
1.	Declare the Emergency Classification Level (ECL)	SM
2.	Approve Offsite Protective Action Recommendations	SM
3.	Approve content of State/local notifications	SM
4.	Approve extension to allowable dose limits	N/R
5.	Notification and direction to on-shift staff (e.g., to assemble, evacuate, etc.)	SM SEC5
6.	ERO notification	SRO2
7.	Complete State/local notification form	SRO2
8.	Perform State/local notifications ^{Note 1}	SRO2
9.	Complete NRC event notification form	SRO2
10.	Activate ERDS ^{Note 2}	N/A
11.	Offsite radiological assessment	RP1
12.	Perform NRC notifications ^{Note 1, 3}	SRO2
13.	Perform other site-specific event notifications (e.g., INPO, ANI, etc.) ^{Note 3}	N/A
14.	Personnel accountability	SEC4

Notes: EAL – SS1 (Site Area Emergency); SG1 (General Emergency)

Note 1 – On-site Notifications to State/local agencies and NRC performed using satellite communications equipment installed in the control room.

Note 2 – ERDS capability is unavailable due to BDBEE impact on communications infrastructure.

Note 3 – NRC Communications and other site-specific notifications assumed by EOF personnel once staffed and activated.

N/R – Not Required

N/A – Not Applicable

See Table 5A for E-Plan implementation timeline

Table 5A - E-Plan Implementation Timeline

Function/Task	On-shift Position	Time from Event Initiation (minutes)															
		3	6	9	12	15	18	21	24	27	30	35	40	45	50	55	60
Declare the Emergency	SM	x											x				
Approve Offsite PARs	SM																x
Approve State/Local Notification Form	SM						x										x
Approve extension to allowable dose limits	N/R																
Notification and direction to on-shift staff (e.g., to assemble, evacuate, etc.)	SM SEC5					x											
ERO notification	SRO2					x											
Complete State/local notification form	SRO2					x										x	
Perform State/local notifications ^{Note 1}	SRO2							x									x
Complete NRC event notification form	SRO2											x					
Activate ERDS ^{Note 2}	N/A																
Offsite radiological assessment	RP1																
Perform NRC notifications ^{Note 1, 3}	SRO2												x				
Perform other site-specific event notifications (e.g., INPO, ANI, etc.) ^{Note 3}	N/A																
Personnel accountability	SEC4					x											

Notes: **Note 1** – On-site Notifications to State/local agencies and NRC performed using satellite communications equipment installed in the control room.
Note 2 – ERDS capability is unavailable due to BDBEE impact on communications infrastructure.
Note 3 – Initial NRC notification performed by site. Continuous NRC Communications and other site-specific notifications assumed by EOF personnel once staffed and activated.
N/R – Not Required
N/A – Not Applicable

 Site Area Emergency declaration action completion time
 General Emergency declaration action completion time
 Estimated task completion and duration time

Security Appendix

Turkey Point Responses to Staffing Assessment Questions Related to Use of Security Personnel During a BDB Event Response

Considerations for the industry analysis to address expanded activation using security personnel:

1. How has the site evaluated the use of on-shift personnel (excluding security) to address staffing and the movement of equipment for a beyond design basis event in phases 1, 2, and 3 mitigating strategies?

Turkey Point Response:

The site has evaluated the use of on-shift personnel (excluding security) to address staffing and the movement of equipment for a beyond design basis event in phases 1, 2 and 3 mitigating strategies in accordance with the NRC staff-endorsed guidance contained in NEI 12-01, *Guideline for Assessing Beyond Design Basis Accident Response Staffing and Communications Capabilities*.

NOTE – The Mitigating Strategies Order and NRC JLD-ISG-2012-01 refers to Phases 1, 2 and 3 as the Initial Phase, Transition Phase and Final Phase, respectively.

2. All apparent immediate actions taken to address the condition without the use of security (e.g., the exhaustive use of other site personnel).
 - a.) How is “immediately” defined for the use of security personnel to support the site event?

Turkey Point Response:

Immediately is defined as the moment at which the senior licensed operator in the Control Room determines that an event has occurred, or plant condition are present, which will require implementation of FLEX Support Guidelines (e.g., deployment of Initial Phase and/or Transition Phase mitigating strategies).

- b.) What are the other actions that may be taken before using 10 CFR 73.55(p)?

Turkey Point Response:

Through implementation of the appropriate procedures and guidelines, Control Room operators will select the appropriate mitigating strategies for responding to the post-event plant conditions, and direct the performance of the in-field/plant actions necessary to implement these strategies. Consistent with the goal of protecting public health and safety, implementation of strategies will utilize the on-site staff in such a way as to ensure that equipment retrieval, placement and operation occurs within the timeframes necessary to maintain safety functions.

Turkey Point Responses to Staffing Assessment Questions Related to Use of Security Personnel During a BDB Event Response

3. Is the site considering the use of security personnel for other beyond design basis events that are not characterized by the conditions outlined within the guidance document? If so, what are these events and the associated rationale for using security personnel?

Turkey Point Response:

No; the site is not considering the use of security personnel for other beyond design basis events that are not characterized by the conditions outlined within the guidance document.

4. Technical information concerning why the use of security personnel would address the condition.

Turkey Point Response:

The use of security personnel would address the condition because their availability as a response resource to the Control Room will help ensure that mitigating strategies are implemented within the timeframes necessary to maintain safety functions. Such implementation will preclude or minimize offsite radiological consequences, and thus contribute to the protection of public health and safety.

Security personnel will be supporting implementation of the following event mitigation procedures and guidelines:

- 0-FSG-05, INITIAL ASSESSMENT AND FLEX EQUIPMENT STAGING

5. If security is used to meet staffing requirements and the placement of equipment, what phase(s) would require their support?

Turkey Point Response:

Security support would be necessary during Phase 1 and Phase 2 (Initial Phase and Transition Phase).

6. The rationale concerning the use of security personnel:

- a.) How many security personnel are necessary to support the event?

Turkey Point Response:

Three (3) security personnel are necessary to support the event.

**Turkey Point Responses to Staffing Assessment Questions
Related to Use of Security Personnel
During a BDB Event Response**

b.) What security requirements in part or total are impacted by the use of the security personnel?

Turkey Point Response:

The below *Staffing Assessment Table* represents the response to part 1 of consideration 6b. Part 2, *Safeguards Document Table*, is submitted separately as Safeguards Information.

Staffing Assessment Table

<i>Position</i>	<i>Mitigating Strategy Duty</i>
<i>Auxiliary Responder #1</i>	<i>Operate pre-staged heavy equipment and perform debris removal. May also include assisting plant Operations with deployment of FLEX equipment as necessary.</i>
<i>Auxiliary Responder #2</i>	<i>Operate pre-staged heavy equipment and perform debris removal. May also include assisting plant Operations with deployment of FLEX equipment as necessary.</i>
<i>Auxiliary Responder #3</i>	<i>Operate pre-staged heavy equipment and perform debris removal. May also include assisting plant Operations with deployment of FLEX equipment as necessary.</i>

Turkey Point Responses to Staffing Assessment Questions Related to Use of Security Personnel During a BDB Event Response

c.) What is the estimated duration for the use of security personnel?

Turkey Point Response:

Notwithstanding the uncertainties associated with a beyond-design-basis event, the estimated duration is bounded as stated below.

- As noted earlier, the “start time” is the moment at which the senior licensed operator in the Control Room determines that an event has occurred, or plant condition are present, which will require implementation of FLEX Support Guidelines (e.g., deployment of Initial Phase and/or Transition Phase mitigating strategies).
- With respect to the “end time,” it is anticipated that the augmented ERO staff should be able to access the site at around 6 hours following the event. Allowing for some margin in the arrival times of ERO personnel, and the need to do job briefings and turnovers, the release of security personnel from mitigating strategy duties should occur during the period of approximately 6 to 12 hours after the initiating event.

d.) What are the duties that will be assigned to security personnel?

Turkey Point Response:

See response to question 6b, above. The staffing assessment has verified that the designated security personnel do not have non-security-related task assignments that would prevent them from performing their mitigating strategy implementation duties (i.e., no assigned collateral duties). Response training for security personnel will be developed and provided in accordance with the guidance contained in NEI 12-06.

e.) What actions will be required to restore security to its normal posture?

Turkey Point Response:

The actions that will allow for dismissal of security personnel from duties associated with implementation of mitigating strategies would be the arrival of a sufficient number of augmented ERO personnel. Once dismissed, security personnel may resume their normal duties.

Appropriate procedures and guidelines will contain instructions to the effect that, absent an overriding safety consideration, security personnel will receive priority consideration for mitigating strategy duty relief by the augmented ERO.

**Turkey Point Responses to Staffing Assessment Questions
Related to Use of Security Personnel
During a BDB Event Response**

7. Is the use of security personnel conducted via a tiered approach to minimize impact to security response capability? Use of security personnel should be sequenced such that security personnel whose reassignment will adversely impact security the least are reassigned first. (E.g., use security personnel who are performing administrative functions before those who are implementing the protective strategy.)

Turkey Point Response:

Yes; the use of security personnel was determined via a tiered approach to minimize the impact to security response capability. The selection of personnel considered assigned functions and potential impacts to the protective strategy. The assignments were made such that security personnel with the least impact to the protective strategy were reassigned first. The assignments shown in the Table above (response to question 6b) reflect the selection rationale – least to greater impact.