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NL-14-132

November 3, 2014

U.S. Nuclear Regulatory Commission
ATTN: Document Control Desk
11555 Rockville Pike
Rockville, MD 20852

SUBJECT: Response to March 12, 2012, Request for Information (RFI) Pursuant to Title 10 of the Code of Federal Regulation 50.54(f) Regarding Recommendations of the Near-Term Task Force (NTTF) Review of Insights from the Fukushima Dia-ichi Accident, Enclosure 5 Recommendation 9.3, Emergency Preparedness – Staffing, Requested Information Items 1, 2, and 6 – Phase 2 Staffing Assessment
Indian Point Energy Center – Units 2 and 3
Docket Nos. 50-247 and 50-286
License Nos. DPR-26 and DPR-64

REFERENCES:

1. NRC letter to Entergy, RFI Pursuant to Title 10 of the Code of Federal Regulations 50.54(f) Regarding Recommendations 2.1, 2.3, and 9.3 of the NTTF Review of Insights from the Fukushima Dai-ichi Accident, dated March 12, 2012 (ML12053A340)

2. Entergy letter to NRC, Entergy's 60-Day Response to the March 12, 2012, Information Request, Action Plan for Completing Emergency Communication and Staffing Assessments, dated May 11, 2012 (NL-12-054)

3. Nuclear Energy Institute (NEI) 12-01, Revision 0, Guideline for Assessing Beyond Design Basis Accident Response Staffing and Communications Capabilities

4. NRC Letter to NEI, dated May 15, 2012, USNRC Review of NEI 12-01, Guideline for Assessing Beyond-Design-Basis Accident Response Staffing and Communications Capabilities, Revision 0, dated May 2012

Dear Sir or Madam:

On March 12, 2012, the NRC issued Reference 1 which included Recommendation 9.3 in Enclosure 5 regarding the specific Requested Actions, Requested Information, and Required Response associated with Emergency Preparedness - Staffing. In accordance with 10 CFR 50.54,

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"Conditions of licenses," paragraph (f), addressees were requested to submit a written response to the information requests within 90 days.

In accordance with Reference 1, Enclosure 5, Entergy Operations Inc. submitted 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 Items 1, 2, and 6. In accordance with Reference 2, Enclosure 1, Attachment 1 to this letter provides the required responses to Items 1, 2, and 6.

Attachment 2 to this letter provides the Indian Point Energy Center (IPEC) Phase 2 Staffing Assessment Report. The IPEC Phase 2 Staffing Assessment Report follows the assessment process methodology described in NEI 12-01, Reference 3, which was endorsed by the NRC, Reference 4.

There are no new commitments being made in this submittal. If you have any questions or require additional information, please contact Mr. Robert Walpole, IPEC Licensing Manager at (914) 254-6710.

I declare under penalty of perjury that the foregoing is true and correct. Executed on November 3, 2014.

Sincerely,

JAV/sp

Attachments: Response to the Requested Information NTTF Recommendation 9.3 Staffing, Requests, 1, 2, and 6

Enclosure: Entergy IPEC Units 2 and 3 NEI 12-01 Phase 2 Staffing Assessment

cc: Mr. Douglas Pickett, Senior Project Manager, NRC NRR DORL
Mr. David Lew, Acting Regional Administrator, NRC Region 1
NRC Resident Inspector
Mr. John B. Rhodes, President and CEO, NYSERDA
Ms. Bridget Frymire, New York State Dept. of Public Service

ATTACHMENT TO NL-14-132

RESPONSE TO THE REQUESTED INFORMATION NTTF RECOMMENDATION 9.3 STAFFING, REQUESTS, 1, 2, AND 6

ENTERGY NUCLEAR OPERATIONS, INC.
INDIAN POINT NUCLEAR GENERATING UNITS NOS 2 AND 3
DOCKET NOS. 50-247 and 50-286

Response to the Requested Information NTTF Recommendation 9.3
Staffing, Requests, 1, 2, and 6

Perform and provide an assessment of the staffing necessary to implement actions that address NRC Order Modifying Licenses with Regard to Requirements for Mitigation Strategies for Beyond-Design-Basis-External-Events (EA-12-049). Refer to Section 3 of the document (Nuclear Energy Institute (NEI) 12-01) for guidance. Develop an implementation schedule for staffing changes and identify changes to the emergency plan.

(1) Requested Item 1

Provide an assessment of the onsite and augmented staff needed to respond to a large scale natural event meeting the conditions described in the Discussion section of Reference 1, Enclosure 5.

The Enclosure to this letter provides the IPEC Phase 2 Staffing Assessment Report conducted pursuant to Reference 2. A detailed timeline was developed based on a tabletop discussion and review of the on-shift response to the postulated beyond-design-basis external event (BDBEE) extended loss of alternating current (AC) power (ELAP). On-shift and augmented staff response was determined based upon the tabletop team members' review of applicable plant procedures and draft diverse and flexible support guidelines (FSGs) for the strategies identified at the time of the assessment. The focus of the timeline was to identify all onsite resources that would be required to execute each task to implement the initial and transition phase FLEX mitigating strategies and the Emergency Plan.

The tables describing the required minimum staffing, task implementation timeline, and NEI 10-05 modified staffing analysis tables for IPEC are included in the IPEC Phase 2 Staffing Assessment Report.

The Phase 2 Staffing Assessment concluded that the current minimum shift staffing is sufficient to execute all required initial and transition phase tasks actions, as well as the Emergency Plan functions, without the assignment of collateral duties that would adversely affect the ability to execute the Emergency Plan functions. Should a change to this conclusion resulting from revisions to strategies or implementation guidance occur it would be documented in the Final Overall Integrated Plan.

This assessment should include a discussion of the onsite and augmented staff available to implement the strategies as discussed in the emergency plan and/or described in plant operating procedures. The following functions are requested to be assessed:

(1a) How onsite staff will move back-up equipment (e.g., pumps, generators) from alternate onsite storage facilities to repair locations at each reactor as described in the order regarding the NRC NTTF Recommendation 4.2.

Portable FLEX equipment stored in the FLEX storage building is planned to be trailer-mounted or on wheels for ease of deployment. Some equipment such as hoses and cables may be stored in cabinets or boxes inside plant buildings that have been analyzed for the BDBEE conditions. Available dedicated vehicles are planned to be utilized for deploying FLEX equipment from the storage location to the staging areas on site. These vehicles would also be used for debris removal.

A FLEX support guideline would be implemented to clear debris to allow for moving and setup of FLEX portable equipment.

In the specific case of a flooding event, it is expected that notice is given well before a flood level approaches either plant grade and/or the magnitude of the probable maximum flood since it is due t o a hurricane. Therefore, it is assumed that at least 24 hours is available for the deployment of FLEX equipment for the flooding scenario. It is also assumed that electrical power and additional station personnel are available during this time.

(1b) It is requested that consideration be given to the major functional areas of NUREG-0654, Table B-1, such as plant operations and assessment of operational aspects, emergency direction and control, notification / communication, radiological accident assessment, and support of operational accident assessment, as appropriate.

The Emergency Plan Minimum Staffing Table shown in Section 4.0 of the IPEC Phase 2 Staffing Assessment Report provides a table showing who is responsible for each of the major functional areas of NUREG-0654 Table B-1 following the BDBEE.

(1c) New staff or functions identified as a result of the assessment.

The assessment did not identify the need for additional on-shift staff or changes to the Emergency Response Organization (ERO) structure. The assessment did not identify any new functions.

(1d) Collateral duties (personnel not being prevented from timely performance of their assigned functions).

The Phase 2 staffing assessment concluded that the current minimum on-shift staff is sufficient to support implementation of the FLEX mitigating strategies on both IPEC Units 2 and 3, as well as the required Emergency Plan actions with no unacceptable collateral duties.

(2) <u>Response to Requested Information Item 2</u>

Provide an implementation schedule of the time needed to conduct the onsite and augmented staffing assessment. If any modifications are determined to be appropriate please include in the schedule the time to implement the changes associated with the Phase 2 staffing assessment.

The Enclosure provides the Phase 2 IPEC staffing assessment for the BDBEE and ELAP, multi-unit event. The Phase 2 staffing assessment was completed October 3, 2014. No modifications were identified in the Phase 2 assessment.

(6) Identify changes associated with the Phase 2 staffing assessment that have been made or will be made to your emergency plan regarding the on-shift or augmented staffing changes necessary to respond to a loss of all AC power, multi-unit event, including any new or revised agreements with offsite resource providers (e.g., staffing, equipment, transportation, etc.).

Staff: The existing on-shift staff is sufficient to implement the Emergency Plan and ELAP strategies at both units during the first 6-hour "no site access" period. No changes to the Emergency Plan on-shift staffing have been identified.

ERO: The existing augmented ERO provides sufficient staffing to fill the 24-hour ERO positions and satisfy the expanded response capability functions defined in NEI 12-01, Table 3.1 and Table 3.2. No changes to the Emergency Plan augmented ERO staffing have been identified.

Agreements: Agreements with offsite resource providers were addressed in the Phase 1 Staffing Assessment submitted April 30, 2013 (NL-13-070). Further review in the Phase 2 assessment determined no new or revised agreements are necessary.

Drills: NEI 12-01 states that a licensee should determine if any changes are necessary to documents describing the emergency response drill and exercise program. No changes to the IPEC Emergency Plan Drill and Exercise Program are being made; however, Entergy is planning to incorporate requirements for drills and exercises involving a BDBEE scenario in accordance with the guidance and implementation schedule of NEI 13-06, Enhancements to Emergency Response Capabilities for Beyond Design Basis Accidents and Events, when issued

ENCLOSURE TO NL-14-132

ENTERGY IPEC UNITS 2 AND 3 NEI 12-01

PHASE 2 STAFFING ASSESSMENT

ENTERGY NUCLEAR OPERATIONS, INC.
INDIAN POINT NUCLEAR GENERATING UNITS NOS 2 AND 3
DOCKET NOS. 50-247 and 50-286

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UNITS 2 AND 3

NEI 12-01 PHASE 2

STAFFING ASSESSMENT

Table of Contents

1.0 EXECUTIVE SUMMARY

Beyond Design Basis External Events (BDBEE) are events initiated by natural phenomena that either exceed the protections provided by design basis features or involve natural phenomena within the design basis in combination with beyond design-basis failures leading to an extended loss of ac power (ELAP) and/or loss of access to the ultimate heat sink (LUHS).

Using the methodology of (Nuclear Energy Institute) NEI 12-01, Guideline for Assessing Beyond Design Basis Accident Response Staffing and Communications Capabilities, this report presents the results of an assessment of the capability of the Indian Point Energy Center (IPEC) on-shift staff and augmented Emergency Response Organization (ERO) to respond to a BDBEE. The assumptions for the NEI 12-01 Phase 2 scenario postulate that the BDBEE involves a large-scale external event that results in:

- an extended loss of AC power
- an extended loss of access to ultimate heat sink
- impact on all units (all units are operating at full power at the time of the event)
- impeded access to the units by off-site responders as follows:
  (1) 0 to 6 Hours Post Event – No site access.
  (2) 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).
  (3) 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.

To conduct the on-shift portion of the assessment, a team of subject matter experts from Operations, Operations Training, Radiation Protection, Chemistry, Security, Emergency Planning and FLEX Project Team personnel performed a tabletop in July 2014. The participants reviewed the assumptions and applied procedural guidance, including applicable draft and approved FLEX Support Guidelines (FSGs) for coping with a BDBEE using minimum on-shift staffing. Particular attention was given to the sequence and timing of each procedural step, its duration, and the on-shift individual performing the step to account for both the task and the estimated time to prepare for and perform the task.

The Phase 2 Staffing Assessment concluded that the current minimum on-shift staffing as defined in the IPEC Emergency Plan is sufficient to support the implementation of the mitigating strategies (FLEX strategies) on Units 2 and 3, as well as the required Emergency Plan action, with no unacceptable collateral tasks assigned to the on-shift personnel during the first 6 hours. The assessment also concluded that the on-shift staffing, with assistance from augmented staff, is capable of implementing the FLEX strategies necessary after the 6 hour period within the constraints. It was concluded that the Emergency response function would not be degraded or lost.

This assessment also concluded that sufficient personnel resources exist in the current IPEC augmented ERO to fill positions for the expanded emergency response functions. Thus, the

ERO resources and capabilities necessary to implement Transition Phase coping strategies performed after the end of the "no site access" 6-hour time exist in the current program.

2.0 INTRODUCTION

The Nuclear Regulatory Commission (NRC) issued a Letter to All Power Reactor Licensees and Holders of Construction Permits in Active or Deferred Status, dated March 12, 2012, *Request for Information Pursuant to Title 10 of the Code of Federal Regulations 50.54(f) Regarding Recommendation 2.1, 2.3, and 9.3, of the Near-Term Task Force Review of Insights from the Fukushima Dai-ichi Accident.* Information requests related to Emergency Planning were contained in Enclosure 5 of the §50.54(f) letter. Enclosure 5 contained two requested actions; one involving performance of a staffing assessment and the other a communications assessment. The communications assessment is independent of the staffing assessment and not included as part of this report. The Phase 2 staffing assessment addresses Requested Information Items 1, 2, and 6 of NTTF Recommendation 9.3. The actions for the staffing assessment are summarized as follows:

> *It is requested that addressees assess their current staffing levels and determine the appropriate staff to fill all necessary positions for responding to a multi-unit event during a beyond design basis natural event and determine if any enhancements are appropriate given the considerations of Near-Term Task Force (NTTF) Recommendation 9.3.*

A two-phased approach was established by the industry to respond to the information requests contained in the §50.54(f) letter associated with staffing. Additionally, NEI developed a technical report (NEI 12-01, *Guideline for Assessing Beyond Design Basis Accident Response Staffing and Communications Capabilities*) that includes the recommended criteria for use in performing the staffing assessment for a BDBEE. The criteria provides for documenting the organizational capabilities that will facilitate simultaneous performance of extended coping capabilities following a BDBEE.

Note – Use of the term ELAP throughout this report also assumes a loss of access to the ultimate heat sink as part of the event. The use of the terms Phases 1, 2, and 3 refers to Initial Phase, Transition Phase and Final Phase respectively as referenced in the Mitigating Strategies Order and NRC JLD-ISG-2012-1.

3.0 SCOPE OF THE ELAP ERO STAFFING ASSESSMENT

All sites with one or more operating units are required to perform a Phase 2 staffing assessment no later than 4 months prior to beginning of the second refueling outage (as used within the context of NRC Order EA-12-049). The Phase 2 assessment considers the staffing necessary to implement actions that address functions related to Fukushima NTTF Recommendation 4.2. Licensees of multi-unit sites have two options for providing the Phase 2 staffing assessment:

- Provide one Phase 2 staffing assessment applicable to all on-site units. This assessment should be provided 4 months prior to the first occurrence of a second refueling outage at the site (i.e., the first "second refueling outage"). This option may be used by sites that will employ essentially identical mitigation strategies for all on-site units.

- Provide two or more Phase 2 staffing assessments as applicable to the different on-site units. Each assessment should be provided 4 months prior to the occurrence of the second refueling outage of the unit to which the assessment is applicable. This option may be used by all sites that will employ different mitigation strategies for on-site units.

IPEC Unit 2 and Unit 3 staffing assessments were performed per the guidance of the first option to conduct one assessment applicable to both units with a submittal date no later than November 3, 2014 based on the Unit 3 FLEX implementation. The intent of this assessment was to perform the following:

1 Evaluate the ability of the on-shift staff to implement Initial Phase coping actions and, consistent with the site access assumption, evaluate Transition Phase actions that must be performed prior to the end of the "no site access" time period.
   - Initial Phase – Implementation of strategies that generally rely upon installed plant equipment.
   - Transition Phase – Implementation of strategies that involve the use of on-site portable equipment and consumables to extend the coping period, and prevent a loss of functions needed for core cooling, containment integrity, and spent fuel pool cooling. Setup for these strategies may be performed prior to the end of the Initial Phase as determined by procedure.

2 Evaluate the ability of the on-shift staff to implement the Station Blackout (SBO) coping strategies in place before ELAP is declared.

3 Evaluate the EOPs and FSGs for responding to an ELAP affecting both units. (Note: Draft FSGs and draft emergency operating procedures revised for FLEX implementation were used.)

4 Evaluate whether the ability of the on-shift staff to perform any required emergency response functions would be degraded or lost prior to the arrival of the augmented ERO.

5 Consistent with the site access assumption, evaluate the ability of the on-shift staff and augmented staff to implement Transition Phase coping strategies performed after the end of the "no site access" time period.

The staffing level determined as a result of the Phase 2 assessment will be verified and validated in the process used to reasonably assure required tasks, manual actions and decisions for FLEX strategies are feasible and may be executed within the constraints identified in the Overall Integrated Plan (OIP) or order EA 12-049. Validation will be performed at a date after the submittal of the staffing assessment report per NEI guidance "FLEX Beyond Design Basis Validation Process" dated 07/18/2014.

4.0 EMERGENCY PLAN MINIMUM ON-SHIFT STAFFING

The IPEC Emergency Plan establishes the licensing basis for the on-shift staffing complement as determined by the staffing assessment performed as part of the overall Emergency Planning rulemaking published in November of 2011. Only personnel required to be on-shift are credited in the Phase 2 Staffing Assessment for the initial 6 hours of the event. The following table indicates the on-shift personnel necessary to perform Initial Phase plant operations and the required emergency planning functions.

Position	NUREG-0654 Functional Area/Tasks U2 staff	NUREG-0654 Functional Area/Tasks U3 staff	On-Shift Staffing U2	On-Shift Staffing U3
Shift Manager (SM)	Emergency Direction and Control/ Safe Shutdown / Assessment of Operational Aspects	Emergency Direction and Control/Safe Shutdown / Assessment of Operational Aspects	1	1
Control Room Supervisor (CRS)	Plant Operations/Safe Shutdown / Assessment of Operational Aspects	Plant Operations/Safe Shutdown / Assessment of Operational Aspects	1	1
Shift Technical Advisor (STA)	Plant System Engineering / Technical Support	Plant System Engineering / Technical Support	1	1
Reactor Operators (RO)	Plant Operations/Safe Shutdown / Assessment of Operational Aspects	Plant Operations/Safe Shutdown / Assessment of Operational Aspects	2	2
Nuclear Plant Operator (NPO)	Plant Operations/Safe Shutdown/Fire Brigade	Plant Operations/Fire Brigade	5	4
Nuclear Plant Operator (NPO)	Communicator / Notifications			1
Chemistry	Chemistry/Offsite Dose Assessment	Chemistry/Offsite Dose Assessment	1	1
Radiation Protection (RP)	Radiological Assessment / In-plant Protective Actions	Radiological Assessment / In-plant Protective Actions	1	1
Nuclear Plant Operator U1	(available for operations/safe shutdown where qualified / other as directed by Emergency Director)		1	
SRO	Fire Brigade Leader for both units (available for plant operations/safe shutdown in non-fire events on unit licensed on and other as directed by the Emergency Director)			1
Security	Access Control and Accountability		Per Security Contingency Plan	

Emergency plan tasks of repair and corrective action, first aid and rescue operations are provided by personnel assigned other functions as allowed by NUREG-0654 Table B-1 and NEI 10-05. The SM provides emergency direction and control of plant operations and assessment of operational aspects.

5.0 PHASE 2 STAFFING ASSESSMENT FOR BDBEE/ELAP

5.1 On-shift Staff Responsibilities

On-shift staff responsibilities and actions assumed in the tabletop are as follows:

- U2 SM assumed the Emergency Director (ED) function
- On-shift Communicator was available to perform off-site notifications
- The (2) CRSs, (2) ROs, (1) FBL SRO, and (10) NPOs were available to perform plant operations to establish and maintain core cooling, spent fuel pool level, and containment integrity as directed by each unit CRS using ECAs, and FSGs.
- Two RP Technicians and two Chemistry Technicians were available to perform their emergency plan functions and other tasks as directed by the Shift Manager in either unit.

  (1) One of the two Chemistry Technicians was responsible for the task of dose assessment should a release occur. Both are qualified and either may be called to the control room to perform the function should a release occur. Otherwise, they were available to perform tasks to implement FLEX as directed by SM/ED.
  (2) One of the two RP techs was available to perform job support, in-plant surveys, and onsite surveys as directed by the SM/RD. Either RP tech could be called upon for the task when needed; otherwise they were available to perform tasks to implement FLEX as directed by the Shift Manager.

- The U3 SM was available to assist the ED with other communications such as contacting the Corporate Duty Manager, or Corporate Emergency Center (CEC) and coordinating request for resources.
- Existing coping strategies do not anticipate the use of Security Officers other than to perform duties related to their assigned security roles. Tasks assigned for FLEX response are consistent with their normal duties such as monitoring and controlling sites access, providing site access for FLEX equipment staging, and providing compensating measures for vital area doors that may need to remain open to facilitate room environmental conditions or staging and operation of FLEX equipment.
- It was assumed that the Emergency Director and Communicator functions and responsibilities remained in the Control Room throughout the duration of this assessment. It is recognized, however, that the augmented ERO would be expected to arrive on-site or at their designated off-site facilities and assume these functions from the Control Room as soon as possible.

5.2 Methodology

- The Phase 2 staffing assessment for response functions related to NTTF Recommendation 4.2 must be based on the actions delineated in the procedures and guidelines developed in response to the Order to ensure accurate results. Once the site specific actions associated with the FLEX implementation response strategies are defined (i.e., down to the procedure or guideline step level), the staffing needed to perform these actions can be assessed with the necessary level of accuracy.

- IPEC Unit 2 procedures were not available at the time of the assessment however; the strategies are similar on both units so all transition strategies identified in the Implementation Plan for both units were considered.
- A tabletop was used to determine what plant actions and emergency plan implementation actions were required based on procedures during an ELAP. In cases where multiple tasks were assigned to an individual, the team evaluated the timing of the tasks to ensure that they could be performed by the individual in series within any specified time constraints. A team of Emergency Planning, Operations, Operations Training, Security, Chemistry, and FLEX Project Team personnel completed the assessment of the on-shift staff's response to a BDBEE and ELAP.
- The guidance of NEI 10-05 was used to determine if the number and composition of the on-shift staff is sufficient to implement the Emergency Plan, Initial Phase actions and, with assistance from augmented staff, implement Phase 2 mitigation strategies and repair or corrective actions intended to maintain or restore the functions of core cooling, containment integrity, and spent fuel pool makeup for both units.
- The guidance of NEI 10-05 was used but the tables were modified to include tasks to implement the FLEX strategies.
- Due to the lead time before Phase 3, it was assumed that offsite equipment would arrive on site and appropriate staff would be available to receive, stage, and operate the equipment. Therefore, the staffing assessment did not consider Phase 3 FLEX strategies.

5.3 NEI 12-01 General Assumptions and Limitations

- A large-scale external event occurs that results in:
  - all onsite units affected
  - extended loss of AC power with simultaneous LUHS
  - impeded access to all units
- Initially, all on-site reactors are operating at full power and are successfully shut down.
- A Hostile Action directed at the affected site does not occur during the period that the site is responding to the event.
- The event impedes site access as follows:

  - Post event time: 0 to 6 hours - No site access. This duration reflects the time necessary to clear road way obstructions, use different travel routes, mobilize alternate transportation capabilities, etc.
  - Post event time: 6 to 24 hours - Limited site access. Individuals may access the site by walking, personal vehicle or via alternate transportation capabilities.
  - 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.

5.4 Other Assumptions for Staffing Assessment

- The result of the beyond-design-basis event may place the plant in a condition where it cannot comply with certain Technical Specifications and/or with its Security Plan, and as such, may warrant invoking 10 CFR 50.54(x) and/or 10 CFR 73.55(p).
- For purposes of assessing augmented staffing, it is assumed that the on-shift staff successfully performs all Initial Phase and any necessary Transition Phase coping

actions during the 0-6 hour period. It is assumed an adequate number of augmented ERO members arrive on site between 6 hours and 24 hours to assist the on-shift staff to successfully implement the appropriate FLEX strategies and FSGs.

Initial Phase – *Implementation of strategies that generally rely upon installed plant equipment.*
Transition Phase – *Implementation of strategies that involve the use of portable equipment and consumables to extend the coping period, and maintain or restore the functions of core cooling, containment integrity, and spent fuel pool cooling.*

- On-shift personnel are limited to the minimum complement allowed by the site emergency plan (i.e., the minimum required number for each required position). This would typically be the on-shift complement present during a backshift, weekend, or holiday.
- Off-site emergency response facilities and staging areas are available, including those located within the 25 mile telecommunications blackout range.

5.5 NEI 12-06 Staffing Assumptions

- The FLEX strategies documented in the event sequence analysis assume:
  - No independent, concurrent events
  - All personnel onsite are available to support site response
  - All reactors on-site initially operating at power, unless site has procedural direction to shut down due to the impending event.

5.6 NEI 10-05 Applicable Assumptions to support Methodology

- On-Shift personnel can report to their assigned response locations within timeframes sufficient to allow for performance of assigned actions.
- The on-shift staff possesses the necessary Radiation Worker qualifications to obtain normal dosimetry and to enter Radiologically Controlled Areas (but not high, locked high or very high radiation areas unless allowed by procedure or Emergency Plan) without the aid of a Radiation Protection Technician.
- Performance of site and protected area access control 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.
- 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. Examples include making a plant page announcement or placing a call for assistance to an offsite resource such as local law enforcement. This assumption does not apply to emergency notification to an Offsite Response Organization (ORO) or the NRC.
- 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. Examples include performing a peer check on a recommended emergency classification or notification form for transmittal to offsite authorities.
- The analyzed event occurs 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).

5.7 Severe Accident Management Guideline (SAMG)

- It was concluded in the Phase 2 Staffing Assessment that the on-shift staff and augmented ERO would not be called upon to perform SAMG activities for the event analyzed for this report. The IPEC FLEX strategy is assumed to be successful to the extent that SAMG entry will not be necessary.

5.8 Assessment of the INITIAL PHASE Coping Strategies and Capability

- The Phase 2 staffing assessment for the Initial Phase actions during the first 6-hours concluded that there were no task overlaps for the activities assigned to the on-shift staff and the ability of the on-shift staff to perform any required emergency response functions were not degraded or lost. Refer to Attachment 1, Phase 2 Staffing Assessment NEI 10-05 Tabletop Data and Attachment 2, IPEC FLEX Implementation Timelines.

5.9 Assessment of TRANSITION PHASE Coping Strategies and Capability

- On-shift Staff Transition Phase Coping Actions (Hours 0 – 6)

  The Transition Phase requires providing sufficient, portable, on-site equipment and consumables to maintain or restore functions until they can be accomplished with resources brought from off site. Actions may include:
  1) Initial Assessment and FLEX Equipment Staging (FSG-005)
  2) DC Load Shed (FSG-004)
  3) Debris removal (FSG-005)
  4) Deploy FLEX Phase 2 Generator, Connect cables and start DG (FSG-005)
  5) Deploy and stage additional FLEX equipment
  6) Alternate AFW/EFW Suction Source (FSG-002)

- Augmented ERO and On-shift Staff Transition Phase Coping Actions

  The following tasks are assumed to be performed by the on-shift and augmented staff after the 6 hour no access period using limited augmented ERO members as shown in Attachment 2.
  1) Long Term RCS Inventory Control (FSG-001)
  2) Makeup to the Spent Fuel Pool (FSG-011)
  3) Alternate Low Pressure Feedwater (FSG-003)
  4) Alternate CST Makeup (FSG-006)
  5) Refuel FLEX equipment (FSG-005)

6.0 AUGMENTED ERO

6.1 ERO Response

- The methods to notify and augment the ERO was identified in *Entergy's 90-Day Response to the March12, 2012 Information Request, Action Plan for Completing Emergency Communication and Staffing Assessments* ((NL-12-075) and in Entergy Letter dated April 30, 2013, *Entergy's Response to the March 12, 2012, Information Request, Enclosure 5, Recommendation 9.3, Emergency Preparedness - Staffing,*

Requested Information items 1, 2, and 6 (Phase 1 Staffing Assessment). (NL-13-70) The Phase 1 Staffing Assessment addressed site access for the augmented ERO.

6.2 Expanded Emergency Response

- The expanded emergency response was identified in the Phase 1 Staffing Assessment submitted in Entergy Letter dated April 30, 2013, *Entergy's Response to the March 12, 2012, Information Request, Enclosure 5, Recommendation 9.3, Emergency Preparedness - Staffing, Requested Information items 1, 2, and 6.*
- The Phase 2 Staffing Assessment revised the expanded emergency response table by including the recommended expanded response described in NEI 12-01 Table 3.2. The revised portion of the expanded response is shown in Attachment 3. The expanded response table and implementation guidance is provided in a FLEX Support Guideline.

7.0 PHASE 2 STAFFING ASSESSMENT CONCLUSION

7.1 Staffing Level

This assessment concluded that the current minimum on-shift staffing as defined in the IPEC Emergency Plan, is sufficient to support the implementation of the ELAP strategies on Units 2 and 3, as well as the required Emergency Plan actions, with no unacceptable collateral duties. The staffing assessment did not identify the need for additional on-shift staff.

The NPOs performed tasks in series when necessary and were able to timely perform all assigned functions. The NPOs performed actions to ensure core cooling, containment integrity, and spent fuel pool makeup. The performance of coping strategies does not impact the ability of the on-shift staff to perform any required emergency response function. Emergency response functions would not be degraded or lost prior to the arrival of the augmented ERO.

The existing on-shift staff and augmented ERO is sufficient to implement existing BDBEE and ELAP strategies on both units simultaneously while continuing to perform required Emergency Planning tasks without unacceptable collateral duties. No change to the on-shift staffing level or augmented ERO is required. The emergency plan will not be changed as a result of the shift staffing assessment. No interim actions have been taken or are planned as a result of the assessment.

7.2 Task Analysis Results

Refer to Attachment 1, Phase 2 Staffing Assessment NEI 10-05 Tabletop Data, and Attachment 2, IPEC FLEX Implementation Timelines, for the analysis of on-shift staffing tasks.

- The task analysis did not identify any unassigned tasks.
- The task analysis did not identify any task overlaps that were performed by the on-shift staff.
- The time to perform the task was best estimate of the assessment team based on operating experience.

7.3 Time Motion Study (TMS) Results

Collateral tasks were not identified, therefore a time motion study was not required. Refer to Attachment 2, IPEC FLEX Implementation Timelines, for the on-shift staffing task timing and sequence analysis results.

7.4 Augmented and Expanded ERO Assessment Results

The existing ERO is sufficient to fill augmented ERO positions and those positions needed to support expanded response positions assigned as necessary if responding to a BDBEE on both units. IPEC has four ERO teams that have been trained to respond to the site.

8.0 REFERENCES

8.1 NEI 12-01, Rev 0, *Guideline for Assessing Beyond Design Basis Accident Response Staffing and Communications Capabilities*

8.2 NEI 10-05, Rev 0, *Assessment of On-Shift Emergency Response Organization Staffing and Capabilities*

8.3 NSIR DPR-ISG-01, *Interim Staff Guidance – Emergency Planning for Nuclear Power Plants*

8.4 NRC Letter to All Power Reactor Licensees and Holders of Construction Permits in Active or Deferred Status, dated March 12, 2012, *Request for Information Pursuant to Title 10 of the Code of Federal Regulations 50.54(f) Regarding Recommendation 2.1, 2.3, and 9.3, of the Near-Term Task Force Review of Insights from the Fukushima Dai-ichi Accident.*

8.5 NRC Order Number EA-12-049, dated March 12, 2012, Order to Modify Licenses with Regard to Requirements for Mitigation Strategies for Beyond-Design-Basis External Events

8.6 Entergy letter (NL-12-054) to the NRC dated May 11, 2012, *Entergy's 60-Day Response to the March 12, 2012, Information Request, Action Plan for Completing Emergency Communication and Staffing Assessments (ML12144A157)*

8.7 Entergy Letter (NL-12-075) dated June 8, 2012, *Entergy's 90-Day Response to the March 12, 2012, Information Request, Action Plan for Completing Emergency Communication and Staffing Assessments (ML12164A566)*

8.8 Entergy Letter (NL-13-070) dated April 30, 2013, *Entergy's Response to the March 12, 2012, Information Request, Enclosure 5, Recommendation 9.3, Emergency Preparedness - Staffing, Requested Information items 1, 2, and 6 (Phase 1 Staffing Assessment)*

8.9 NRC Interim Staff Guidance JLD-ISG-2012-01, Rev. 0, dated August 29, 2012, Compliance with Order EA-12-049, Order Modifying Strategies for Beyond-Design-Basis External Events

8.10 NEI 12-06 Rev. 0, August 2012, *Diverse and Flexible Coping Strategies (FLEX) Implementation Guide*

8.11 IP-RPT-13-00059 Rev 02, *IP3 FLEX Strategy Development*

8.12 Indian Point Energy Center Emergency Plan

9.0. ATTACHMENTS

ATTACHMENT 1	PHASE 2 STAFFING ASSESSMENT NEI 10-05 TABLETOP DATA
ATTACHMENT 2	IPEC FLEX IMPLEMENTATION TIMELINES
ATTACHMENT 3	EXPANDED EMERGENCY RESPONSE TABLE

Attachment 1 Phase 2 Staffing Assessment NEI 10-05 Tabletop Data

Note

NEI-10-05 Tables are modified to include Emergency Plan and FLEX implementation tasks.

1. Accident Summary:

   - A large-scale external event occurs that results in:
     - All on-site units affected
     - ELAP/LUHS
     - Impeded access to the units
   - Initially, both units are operating at full power and are successfully shut down.
   - The event results in a Site Area Emergency based on EAL SS1.1. The event is upgraded to a General Emergency SG1.1 once it has been determined that power cannot be restored before the station blackout coping time will be exceeded.
   - The most limiting hazard for on-shift staffing was used for the assessment. On-shift personnel respond as shown in Attachment 2.

2. Accident Assumptions:

   - The start and load manual actions for Diesel Generators are unsuccessful.
   - Attachment 2 assumptions include:
     - SM/CRS are expected to use available staff to provide periodic relief (if needed) for individuals working in extreme environmental conditions (e.g., high heat areas).
     - Estimated task times include expected pre-job and safety briefings
     - Augmented Chemistry support is available to relieve Chemistry of Dose Assessment at T > 6 hours
   - Assumptions are identified in Section 5.0 of this document.

3. Procedures Reviewed for Accident Response Include:

   - Common Control Room
     IP-EP-115, Emergency Plan Forms
     IP-EP-120, Emergency Classification
     IP-EP-210, Central Control Room
     IP-EP-410, Protective Action Recommendation
   - U2 Procedures
     2-ECA-0.0, Loss of All AC Power
     2-AOP-SFP.1, Loss of Spent Fuel Pit Cooling
   - U3 Procedures
     3-ECA-0.0 Loss of All AC Power
     3-AOP-SFP.1, Loss of Spent Fuel Pool Cooling
   - FLEX Support Guidelines
     FSG-001, Long Term RCS Inventory Control
     FSG-002, Alternate AFW/EFW Suction Source
     FSG-003, Alternate Low Pressure Feedwater
     FSG-004, ELAP DC Bus Load Shed /Management
     FSG-005, Initial Assessment and FLEX Equipment Staging
     FSG-006, Alternate CST Makeup

FSG-011, Alternate SFP Makeup and Cooling
FSG-100, BDBEE / ELAP Emergency Response
FSG-101, EP Communications

NOTE: NEI 10-05 Tables 1-5 shown here are modified to include Emergency Plan and FLEX implementation tasks

IPEC TABLE 1 – ON-SHIFT POSITIONS Multi-Unit ELAP/LUHS				
Line #	**On-shift Position**	**Role in Table # / Line #**	**Unanalyzed Task?**	**Collateral Tasks? (See Attachment 2 for Task sequence & timeline)**
1	U2 SM	T2/L1 T5/L1 T5/L2 T5/L3 T5/L5 T5/L8 T5/L10	No	No
2	U2 CRS	T2/L2	No	No
3	U2STA	T2/L3	No	No
4	U2 RO #1	T2/L4	No	No
5	U2 RO #2	T2/L5	No	No
6	U2 NPO #1	T2/L6	No	No
7	U2 NPO #2	T2/L7	No	No
8	U2 NPO #3	T2/L8	No	No
9	U2 NPO #4	T2/L9	No	No
10	U2 NPO #5	T2/L10	No	No
11	U2 Chemistry	T2a/L24	No	No
12	U2 RP	T4/L1 T4/L2 T2a/L22	No	No (Refer to ATT 2)
13	U3 SM	T2/L11 T5/L14	No	No
14	U3 CRS	T2/L12	No	No
15	U3 STA	T2/L13	No	No

16	U3 RO #1	T2/L14	No	No
17	U3 RO #2	T2/L15	No	No
18	U3 NPO #1	T2/L16	No	No
19	U3 NPO #2	T2/L17	No	No
20	U3 NPO #3	T2/L18	No	No
21	U3 NPO#4	T2/L19	No	No
22	U3 Chemistry	T2a/L25	No	No
23	U3 RP	T4/L4 T2a/L23	No	No (Refer to ATT 2)
24	U1 NPO	T2/L20	No	No
25	Communicator	T5/L6 T5/L9 T5/L13	No	No
26	SRO FBL	T2/L21	No	No
27	Security	T5/L15	No	No

IPEC TABLE 2 - PLANT OPERATIONS & SAFE SHUTDOWN Two Unit – Two Control Room Multi-Unit ELAP/LUHS Operations Crew Available to Implement AOPs, EOPs, SAMGs, or FSGs as Applicable			
Line #	**Generic Title/Role**	**On-Shift Position (Note 1)**	**Task Analysis Controlling Method (Note 2)**
1	Shift Manager	U2 SM	Licensed Operator Training Program
2	Unit Supervisor	U2 CRS	Licensed Operator Training Program
3	Shift Technical Advisor	U2STA	Licensed Operator Training Program
4	Reactor Operator #1	U2 RO #1	Licensed Operator Training Program
5	Reactor Operator #2	U2 RO #2	Licensed Operator Training Program
6	Auxiliary Operator #1	U2 NPO #1	Non-Licensed Operator Training Program
7	Auxiliary Operator #2	U2 NPO #2	Non-Licensed Operator Training Program
8	Auxiliary Operator #3	U2 NPO #3	Non-Licensed Operator Training Program
9	Auxiliary Operator #4	U2 NPO #4	Non-Licensed Operator Training Program
10	Auxiliary Operator #5	U2 NPO #5	Non-Licensed Operator Training Program
11	Shift Manager	U3 SM	Licensed Operator Training Program
12	Unit Supervisor	U3 CRS	Licensed Operator Training Program
13	Shift Technical Advisor	U3 STA	Licensed Operator Training Program
14	Reactor Operator #1	U3 RO #1	Licensed Operator Training Program
15	Reactor Operator #2	U3 RO #2	Licensed Operator Training Program
16	Auxiliary Operator #1	U3 NPO #1	Non-Licensed Operator Training Program
17	Auxiliary Operator #2	U3 NPO #2	Non-Licensed Operator Training Program
18	Auxiliary Operator #3	U3 NPO #3	Non-Licensed Operator Training Program
19	Auxiliary Operator #4	U3 NPO#4	Non-Licensed Operator Training Program
20	Auxiliary Operator	U1 NPO	Non-Licensed Operator Training Program
21	SRO Fire Brigade Leader	SRO FBL	Licensed Operator Training Program

*The Communicator NPO does not perform AOP, EOP, or FSG tasks.

Note 1: During a BDBEE that results in an ELAP/LUHS, all positions, except the SM, STA, and Communicator, are expected to be utilized if available to implement or assist in the implementation of FLEX strategies using Flex Support Guidelines (FSG) under the direction of the Control Room Supervisor and oversight by the Shift Manager.

Note 2: The controlling method put in place when FLEX is implemented will follow the guidance recommended by the industry. Each position will receive the INPO initiated NANTEL Generic Basic FLEX Initial Course. Shift Managers and Control Room Supervisors will also receive the NANTEL Generic Advanced FLEX Training Course. A training plan developed using the systematic approach to training (SAT) process is in place for additional FLEX training.

IPEC Table 2a Other On-shift staff available to perform FLEX implementation tasks (not safe shutdown)			
Line #	**Generic Title/Role**	**On-Shift Position (Note 1)**	**Task Analysis Controlling Method (Note 2)**
22	U2 RP	U2 RP	N/A
23	U3 RP	U3 RP	N/A
24	U2 Chemistry	U2 Chemistry	N/A
25	U3 Chemistry	U3 Chemistry	N/A

Note 1: During a BDBEE that results in an ELAP/LUHS, these positions may to be utilized, if available, to assist in the implementation of FLEX strategies using FSGs under the instructions of Operations.

Note 2: The controlling method put in place when FLEX is implemented will follow the guidance recommended by the industry. Each position will receive the INPO initiated NANTEL Generic Basic FLEX Initial Course.

Fire Brigade (No firefighting activities included in this accident.).
Staff filling fire brigade positions is shown in the minimum staffing table in Section 4.0.

IPEC TABLE 3 – FIREFIGHTING Multi-Unit ELAP/LUHS		
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

IPEC TABLE 4 – RADIATION PROTECTION AND CHEMISTRY Multi-Unit ELAP/LUHS																		
LINE	Position Performing Function / Task	Performance Time Period After Event (hours)*																
		0-.5	.5-1.0	1.0-2.0	2.0-3.0	3.0-4.0	4.0-5.0	5.0-6.0	6.0-7.0	7.0-8.0	8.0-9.0	9.0-10.0	10.0-11.0	11.0-12.0	12.0-13.0	13.0-14.0	14.0-15.0	15.0-16.0	16.0-24.0
1	In-Plant Survey: RP	As directed by SM*																
2	On-site Survey: RP	As directed by SM*																
3	Personnel Monitoring:																	
4	Job Coverage: RP	As directed by SM*																
5	Offsite Rad Assessment: *(Included in Table 5)*																	
6	Other site specific RP (describe):																	
7	Chemistry Function task #1 (describe)																	
8	Chemistry Function task #2 (describe)																	

*The team determined there are no time sensitive RP or Chemistry tasks and that task performance is directed and prioritized by the Shift Manager. The time RP or Chemistry is directed to perform a task and the amount of time taken to complete tasks are estimated. No Chemistry samples are taken due to the loss of power to the equipment necessary to analyze samples. No fuel damage or release is anticipated since core cooling, containment integrity, and spent fuel pool makeup are maintained. RP and Chemistry are available to assist with staging and setup of FLEX equipment when not performing dose assessment, surveys, or job support. Both Chemistry Technicians are qualified to perform dose assessment. RP Technicians may perform RP tasks at either unit.

IPEC TABLE 5 – EMERGENCY PLAN IMPLEMENTATION Multi-Unit ELAP/LUHS			
Line#	**Function / Task**	**On-Shift Position**	**Task Analysis Controlling Method**
1	Declare the emergency classification level (ECL)	U2 SM	Emergency Planning Training Program / EP Drills
2	Approve Offsite Protective Action Recommendations	U2 SM	Emergency Planning Training Program / EP Drills
3	Approve content of State/local notifications	U2 SM	Emergency Planning Training Program
4	Approve extension to allowable dose	N/A	N/A
5	Notification and direction to on-shift staff (e.g., to assemble, evacuate, etc.)	U2 SM	Licensed Operator Training Program / Emergency Planning Training Program
6	ERO notification	Communicator	Emergency Planning Training Program
7	Abbreviated NRC notification for DBT event	N/A	N/A
8	Complete State/local notification form	U2 SM	Emergency Planning Training Program
9	Perform State/local notifications	Communicator	Emergency Planning Training Program
10	Complete NRC event notification form	U2 SM	Licensed Operator Training Program
11	Activate ERDS	(Note 1)	N/A
12	Offsite radiological assessment	(Note 2)	N/A
13	Perform NRC notifications	Communicator	Emergency Planning Training Program
14	Perform other site-specific event notifications (e.g., Duty Plant Manager, INPO, ANI, etc.)	(Note 3)	Licensed Operator Training Program
15	Personnel Accountability	Security	Security Training Program / EP Drills

Note 1: ERDS at both units normally operates 24/7 and therefore does not require specific actions to activate the system. It is recognized, however, that the BDBEE is assumed to result in the loss of normal communication paths for ERDS. If ERDS capability is lost, critical information would be communicated directly to the NRC over other communication paths, such as satellite phones.

Note 2: U2 (U3) Chemistry will report to the U2 (U3) Control Room to assist the SM/ED as directed and be available for offsite radiological assessment if needed. A release is not anticipated since core cooling, spent fuel pool cooling and containment integrity are maintained during the 24 hour period. If no release is expected, the SM is expected to direct Chemistry to assist with FLEX strategy implementation.

Note 3: The SM will not make these communications. The Duty Plant Manager will report to the site or the staging area and is responsible for other site specific event notifications.

ATTACHMENT 2 IPEC FLEX IMPLEMENTATION TIMELINES

Timeline

It is assumed on-shift staff will be relieved after +6 hours as personnel are able to access the site. The relief staff will continue the tasks for the job position as shown. The intent of this table is to identify the job position, tasks, and estimated timeline to complete the Emergency Plan, initial phase and transition phase tasks and to demonstrate that no collateral duties have an adverse impact on implementing the Emergency Plan or FLEX strategies.

Unit	POSITION	TIME	TASK	Collateral Duty?
U2	Shift Manager	(1) T=0 – 15 min (2) 15- 30 min (3) T=1 hr. (4) 1 – 1.5 hr. (5) 3 – 4 hr. (6) All other times and until EOF/AEOF is operational	(1) Assess event, declare SAE and assume ED function (2) Approve NMF & Direct communicator to make notifications / Direct SAE evacuation & accountability (3) Declare ELAP (4) Call SAFER / Direct Security to enable FLEX equipment access/ED responsibilities (5) Declare GE / Develop PAR / Direct notifications (6) Perform oversight and ED responsibilities / Continues SM oversight after relieved as ED	No
U2	Control Room Supervisor	(1) T=0 – 1.0 hr. (2) 1 – duration	(1) Direct immediate plant actions for SBO (2) Direct EOP and ELAP actions / Direct debris removal and staging of FLEX equipment	No
U2	Shift Technical Advisor	(1) T=0 – 1 hr. (2) 1 – 1.5 hr. (3) 2 – until mode 5 entered	(1) Technical Support / Plant monitoring and assessment / contact Con-Ed for availability of power (2) Assessment for FLEX per FSG-005 Att. 1 (3) Technical Support / Plant monitoring and assessment	No
U2	Reactor Operator #1	(1) T=0 – 0.5 hr. (2) 0.5 – 3 hr. (3) 3 – duration	(1) Immediate plant actions (2) Coordinate plant cooldown with NPO#3 (3) Plant monitoring	No

Unit	POSITION	TIME	TASK	Collateral Duty?
U2	Reactor Operator #2	(1) T=0 – 1 hr. (2) 1 – 1.5 hr. (3) 1.5 – 3.5 hr. (4) 3.5 – 4 hr. (5) 4 – 5 hr. (6) 5 – 7.5 hr. (7) 8 – 10 hr. (8) 10 – duration	(1) Open CR panel doors per 2-ECA0.0 step 5.b (10 min) Coordinate attempt to restore power (2) Monitor channel and train indications per FSG-004 step 4.1 (10 min) / Initiate deep load shed per FSG-004 Att. 1 (20 min) (3) Plant monitoring (4) Go to the U2 FLEX RCS and SFP makeup pumps staging area to assist running hoses and lineup of RCS makeup and SFP makeup strategies. (5) Unload U2 non-collapsible and collapsible hoses from trailer at pump staging areas (6) Perform FSG-0011 Att. 1 and FSG-011 Att 2 to align hoses for RCS and SFP makeup. (2.5 hr.) RCS and SFP makeup available at T=8 (7) Layout and hookup hoses for Alternate Low Pressure Feedwater makeup per FSG-003 Att. 1 (2 hrs.) (8) Available to start Alternate SG makeup when needed	No
U2	Nuclear Plant Operator #1	(1) T=0 – 1 hr. (2) 1 – 1.5 hr. (3) 3.5 – 4 hr. (4) 4 - 5.5 hrs. (5) 5.5 – 7 hr. (6) 7 – 7.5 hr. (7) 7.5 – until OSC is operational	(1) Investigate DG failure /Attempt to start Appendix R DG/ perform DC load shed per 2-AOP-DC-1 (2) FSG 004 DC deep load shed (3) Go to the U2 FLEX DG staging area to run cables and setup DG when staged (5 min) (4) Unload DG cables from trailer and hookup FLEX DG per FSG-005 Att. 3 (90 min) (5) Start DG per FSG-005 Att 4 and align breakers per Att 5 (90 min) (6) Re-start battery room exhaust fans and battery chargers (15 min) (7) Periodic monitoring of FLEX DG	No
U2	Nuclear Plant Operator #2	(1) T=0 – 0.5 hr. (2) 0.5 – 1 hr. (3) 1 – 8 hr.. (4) 8 – 10 hr. (5) 10 - until OSC is operational	(1) Open AFW roll-up doors (10 min) (2) Line up N2 to ADV to allow control from CR (15 min) (3) Available for local manual control of aux feed reg vlvs as needed / Support Aux Feedwater Bldg tasks (4) Run hoses and hookup Alternate low pressure Feedwater makeup per FSG-003 Att 1 (2 hr.) (5) Support Aux Feedwater Bldg tasks	No
U2	Nuclear Plant Operator #3	(1) T=0 – 1 hr. (2) 1 – 1.5 hr. (3) 1.5 – 2.5 hr. (4) 3 – 3.5 hr. (5) 3.5 - 4 (6) 4 – 5 hr. (7) 5 – 7.5 hr. (8) 8 – 9 hr. (9) As necessary until OSC is operational	(1) Close RCP letdown isolation valves per 2-ECA-0.0 step 3 (25 min) (2) Monitor SFP level and temperature (10 min) (3) Perform BAST line flush (60 min) (4) Perform FSG-011 Att 1 to establish FSB natural circulation ventilation (30 min) (5) Go to U2 FLEX RCS and SFP staging area to run and connect hoses when equipment is staged (6) Unload U2 non-collapsible and collapsible hoses from trailer at pump staging area (1 hr.) (7) Perform FSG-001 Att 1 and FSG-011 Att 2 to align hoses for RCS and SFP makeup (2.5 hr.) (8) Available for SFP and RCS makeup as needed	No

Unit	POSITION	TIME	TASK	Collateral Duty?
U2	Nuclear Plant Operator #4	(1) T=0 – 1 hr. (2) 1 – 2 hr. (3) 3.5 – 4 hr. (4) 4 – 5.5 hr. (5) 5.5 – 7. 5 hr. (6) 10 – 12 hr. (7) 11 – as necessary until OSC is operational	(1) Isolate Hotwell per 2-ECA-0.0 Step 9 (10 min) (2) Go to U2 DG staging area to run cables when the equipment is staged (3) Unload FLEX DG cables from trailer (45 min) and hookup per FSG-005 Att 3 (45 min) (4) Start DG per FSG-005 Att 4 (15 min) and align breakers per Att 5 (90 min) Restart U2 battery chargers (15 min) Complete at T=7.5 (5) Set-up hoses for CST makeup per FSG-006 Att 1 (2 hrs.) (6) Available for CST makeup when needed	No
U2	Nuclear Plant Operator #5	(1) 1 – 4 hr. (2) 4 – 5 hr. (3) 5 – 5.5 hr. (4) 5.5 - 6 hr. (5) 6 – 9 hr. (6) 10 – 12 hr. (7) 11-16 hr. or until OSC is operational	(1) Transit to FLEX Storage bldg. and commence initial debris removal (2) Transfer and unload U2 collapsible hose trailer at pump staging areas (3) Transfer U2 SFP MU pump (4) Transfer U2 SG MU pump (5) Transfer and unload U2 diesel driven air compressor and hoses (6) Set up hoses and FLEX CST makeup pump for CST makeup per FSG-006 Att. 1 (2 hrs.) (7) Plant walk-down – damage assessment	No
U1	U1 Nuclear Plant Operator	(1) T=0 – 1 hr. (2) 1 – 3.5 hr. (3) 3.5 – 4 hr. (4) 4 – 4.5 hr. (5) 4.5 – 5 hr. (6) 5 – 5.5 hr. (7) 5.5 – 8 hr. (8) 10 – 12 hr. (9) until OSC is operational	(1) Replace radio repeater antenna if damaged (2) Transit to FLEX storage bldg. and support debris removal (2.5 hr.) (3) Transfer U2 DG cables to staging area (30 min) (4) Transfer U2 FLEX DG to staging area (30 min) (5) Transfer U2 RCS inventory makeup pump to staging area (30 min) (6) Transfer U2 CST makeup pump to staging area (30 min) (7) Transfer lighting trailers #1, 2, 4, 6, and 8 to staging area (30 min each) (8) Setup hoses for CST makeup per FSG-006 Att 1(2 hrs.) (9) As directed	No
U2	Radiation Protection	(1) T=0 – 1 hr. (2) 3.5 – 4 hr. (3) 4 – 4.5 hr. (4) 4.5 – 5.5 hr. (5) 5.5 – 8 hr. (6) 8 - until OSC is operational	(1) Report to the U2 CR / Perform RP support actions as directed by the SM or ED since no release or fuel damage. (2) RP support to establish FSB natural circulation ventilation per FSG-011 (30 min) (3) Establish radiological monitoring for U2 SFP fill activities and level monitoring (30 min (4) RP support to unload U2 hose trailers (1 hr.) (5) RP support to align hoses for RCS and SFP makeup (2.5 hrs.) (6) RP support as needed	No

Unit	POSITION	TIME	TASK	Collateral Duty?
U2	Chemistry	(1) T=0 – 1 hr. (2) 1 – 3.5 hr. (3) 3.5 – 8 hr. (4) 8 – 10 hr. (5) 10 – until OSC is operational	(1) Report to the U2 CR and perform actions as directed by the SM or ED/ available for dose assessment should a release occur (2) Transit to FLEX bldg., support debris removal (3) Transfer U3 FLEX DG cables to staging area (30 min) Transfer U3 FLEX DG to staging area (30 min) Transfer U3 RCS inventory makeup pump to staging area (30 min) Transfer U3 SFP makeup pump to staging area (30 min) Transfer U3 Steam generator makeup pump to staging area (30 min) Transfer U3 diesel driven air compressor to staging area (30 min) Transfer U3 diesel driven air compressor hoses to staging area (30 min) Transfer light trailer #7 to staging area (30 min) (4) Stage FLEX portable fuel tank with truck per FSG-005 Att 2 step 4 (5) Commence refuel strategy	No
U3	Shift Manager	(1) T=0 – 1 hr. (2) 1 – 1.5 (3) 1.5 – 2 hr. (4) 2 – duration	(1) Post event SM oversight responsibilities / Communicate with U2 SM on plant status, classification, and ELAP (2) U3 SM oversight responsibilities / declare ELAP / assist ED as requested / coordinate need for FLEX equipment and actions of U3 Chemistry and RP techs with ED/ implement FSG-100 (3) If directed by the ED, contact County EOC/911 to make requests for assistance (debris removal, transportation, local conditions, etc.) (FSG-100) (2 min) / continue SM oversight and assist ED as requested (4) SM responsibilities / assist ED	No
U3	Control Room Supervisor	(1) T=0 – 1 hr. (2) 1 - duration	(1) Direct immediate plant actions per SBO and Loss of SFP cooling procedures , and EOP (2) Direct and coordinate EOP/ELAP actions	No
U3	Shift Technical Advisor	(1) T=0 - 1 hr. (2) 1 – 1.5 hr. (3) 3 - until mode 5	(1) Technical Support / Plant monitoring and assessment (2) Assessment per FSG-005 Att 1 (3) Technical Support Plant monitoring	No

Unit	POSITION	TIME	TASK	Collateral Duty?
U3	SRO Fire Brigade Leader	(1) T=0 – 1 hr. (2) 1 – 4 hr. (3) 4 – 9 hr. (4) 11 – 16 / duration	(1) Replace CAF radio repeater antenna (if damaged) (2) Transit to FLEX bldg. / commence initial debris removal and movement of FLEX equipment (3) Transfer and unload U2/U3 non-collapsible hose trailer at pump staging areas Transfer / unload U3 collapsible hose trailer Transfer U2 CST MU pump Transfer light trailer #3 then #5 Transfer U3 diesel air compressor hoses Transfer U3 diesel air compressor (4) Plant walkdowns damage assessment / as directed	No
U3	Reactor Operator #1	(1) T=0 – 0.5 hr. (2) 0.5 – 1 hr. (3) 1 – 3 (4) 3 – 10 hr. (5) 10 – 18 hr. (6) 18 - duration	(1) Immediate plant actions (2) Coordinate RCS cooldown with NPO#3 (3) Perform plant cooldown / plant monitoring (4) Plant monitoring (5) Open head vent valve for letdown / plant monitoring (6) Plant monitoring	No
U3	Reactor Operator #2	(1) T=0 – 0.5 hr. (2) 0.5 – 1 hr. (3) 1.0 – 1.5 hr. (4) 3.5 – 4 hr. (5) 4 – 5 hr. (6) 5 – 7.5 hr. (7) 10 – 12 hr. (8) duration	(1) Immediate plant actions /open CR panel doors/ Assume loss of U3 CST and open SG supply from CWST PCV-1188 (2) Perform AOP/SBO load shed (3) FSG-004 DC load shed (4) Go to U3 FLEX RCS and SFP staging area to run and connect hoses when equipment is staged (5) Unload RCS and SFP hoses at staging area, CST and SG hoses at staging area (6) Perform RCS and SFP makeup hose connections and alignment for makeup (7) Align FLEX SG makeup pump and hoses for suction from hotwell and discharge to AFW tie-in per FSG-003 Att. 3 to be available if lose AFW (8) As directed.	No
U3	Nuclear Plant Operator #1	(1) T=0 – 0.5 hr. (2) 0.5 – 1 hr. (3) 1 – 1.5 hr. (4) 1.5 – 2 hr. (5) 3.5 – 4 hr. (6) 4 – 5.5 hr. (7) 5.5 – 7 hr. (8) 7 – 7.5 (9) 7.5 until OSC operational	(1) Investigate DG failure attempt to start and attempt to start (30 min) (2) Attempt start Appendix R DG / DC load shed per 3 AOP-DC (10 min) (3) Deep DC load shed per FSG-004 Att 1 (15 min) (4) Verify DC bus voltage per FSG-004 step 4.3 (5) Go to U3 FLEX DG staging area to run cables when the equipment is staged (6) Unload DG cables from trailer and hookup to DG per FSG-005 Att 3 (90 min) (7) Start FLEX DG and align breakers per FSG-005 – Att 5 (90 min) (8) Re-start battery room exhaust fans and battery chargers (15 min) Complete at 7.5 hrs. (9) Periodic monitoring of FLEX DG operation	No

Unit	POSITION	TIME	TASK	Collateral Duty?
U3	Nuclear Plant Operator #2	(1) T=0 – 0.5 hr. (2) 1 – 1.5 hr. (3) 1.5 – 2.5 hr. (4) 3 – 3.5 hr. (5) 3.5 – 4 hr. (6) 4 – 5.0 hr. (7) 5 – 7.5 hr. (8) 8 – 9 hr. (9) 10 – 11 hr. (10) 11 – until OSC operational	(1) Immediate plant actions / isolate RCP letdown & seal water 3-ECA-0.0 (2) Monitor U3 SFP level and temperature (10 min) (3) Perform BAST line flush per CVCS-8 with assistance from U2 NPO (60 min) (4) Establish FSB Natural Circulation ventilation per FSSG-011 Att 1 (30 min) (5) Go to U3 FLEX RCS and SFP makeup staging area to run and connect hoses when the equipment is staged (6) Unload U3 hoses from trailer at pump staging areas (7) Align hoses for RCS and SFP makeup per FSG-001 Att 1 and FSG-011 Att 2 Available at T=8 (8) Refill SFP (9) Start RCS makeup and continue as necessary (10) Available for SFP and RCS makeup as needed	No
U3	Nuclear Plant Operator #3	(1) T=0 – 0.5 hr. (2) 0.5 – 1 hr. (3) 8 – 10 hr. (4) 10 – OSC operational	(1) Verify MSIV bypass valves closed / go to Aux Feed pump room area and monitor N2. Install N2 backup jumper to PCV-1188 per FSG-002 Att 2 (30 min) (2) Lineup N2 to atmospheric dump valves to allow control from CR (15 min)/ Remain in area to be available to perform tasks as necessary (3) Align FLEX SG makeup pump and hoses for suction from hotwell and discharge to AFW tie-in per FSG-003 Att. 3 to be available if lose AFW (4) Support tasks in Aux Feed Bldg / monitor nitrogen / Start FLEX SG makeup if TDAFW pump lost	No
U3	Nuclear Plant Operator #4	(1) T=0 – 0.5 hr. (2) 0.5 – 1 hr. (3) 3.5 – 4 hr. (4) 4 – 5.5 hr. (5) 5.5 – 7 hr. (6) 7 – 7.5 hr. (7) 7.5 - OSC operational	(1) Break condenser vacuum (10 min) / Close CST to hotwell isolation valves (10 min) 3-ECA-0.0 (2) Vent generator hydrogen and secure seal oil pump (20 min) 3-ECA-0.0 (3) Go to U3 FLEX DG staging area to run cables when equipment is staged (4) Unload and hookup FLEX DG cables per FSG-005 ATT 3 (90 min) (5) Start FLEX DG and align breakers per Att 5 (90 min) (6) Restart battery room exhaust fans and battery chargers (15 min) Chargers in service at T=7.5 (7) As directed	No
U3	Communicator (Nuclear Plant Operator #5)	(1) T=0 – 0.5 hr. (2) 0.5 – 1 hr. (3) 1 hr. – until EOF assumes the function	(1) Report to the control room / Establish initial offsite communication using satellite phone. Make State and local notifications (2) Make NRC notification and notify ERO via Everbridge using satellite phone (will be received outside the 25 mile zone) (3) Make offsite notifications as required	No

Unit	POSITION	TIME	TASK	Collateral Duty?
U3	Chemistry Technician	(1) T=0 – 1 hr. (2) 1 – 8 hr. (3) 8 – 10 hr. (4) 10 – Until OSC operational	(1) Report to U3 CR to be available for dose assessment if needed (2) Available for dose assessment as necessary (3) Stage portable fuel tank with truck per FSG-005 Att 2 (2 hr.) (4) Commence refuel strategy	No
U3	Radiation Protection Technician	(1) T=0 – 3 hr. (2) 3 – 3.5 hr. (3) 3.5 – 4 hr. (4) 4 – 5.5 hr. (5) 5.5 – 7.5 hr. (6) 7.5 – until OSC operational	(1) Report to control room / RP support as needed (2) RP support to establish FSB naturalization ventilation (3) RP support for filling SFP and monitoring SFP level and temperature (4) If available support unloading U3 FLEX hose trailers at staging areas (5) Support alignment of hoses for RCS and SFP makeup. (6) Onsite and in-plant Radiation monitoring and job coverage as needed	No
	Security	(1) T=0 - duration	(1) Security function to include opening gates and doors to provide access for FLEX equipment or environmental conditions	No

ATTACHMENT 3 Expanded Emergency Response Table

NOTE
ERO positions are filled in accordance with the applicable facility emergency implementing procedure. Selected ERO positions are shown in the Table to show comparable responsibilities for NEI 12-01 Table 3.2 recommended expanded emergency response individuals. Expertise from both units is desired, but not required, for those positions.

Expanded Response Function from NEI 12-01, Table 3.2	Location	Key Roles and Staffing Considerations	TOTAL Number required U2 and U3	ERO Available to Implement Coping Strategies for 2 units
Evaluation of Transition Phase Coping Strategy	TSC	• One team for each unit to evaluate selection of Transition Coping strategies; team performs evaluations not done by the Control Room • Team composition (i.e., number and represented disciplines) as described in governing site programs, procedures and guidelines. • Team may include personnel responsible for performing other functions for the same assigned unit.	No additional team members	Unit Operations Coordinator Unit Engineering Coordinator TSC Engineering Team
Implementation of Transition Phase Coping Strategies	OSC	• Number and composition of personnel capable of simultaneous implementation of any 2 Transition Phase coping strategies at each unit. • Should not include personnel assigned to other function (e.g., emergency repair and corrective actions); however, may include members of the on-shift staff and personnel responsible for implementation of SAM strategies.	U2 – 5 NPO U3 – 5 NPO	4 ERO OSC Teams

IPEC Simultaneous Implementation of 2 Transition Phase Coping Strategies

		Strategy	Required Staff to Implement	Available Staff
U2	FSG-003	Implement Alternate Low Pressure Feedwater	2 Operators	48 ROs* 55 NPOs*
U2	FSG-006	Implement CST Makeup	3 Operators	
U3	FSG-003	Implement Alternate Low Pressure Feedwater	2 Operators	
U3	FSG-006	Implement CST Makeup	3 Operators	

*Unit specific qualification is not required for running and connecting hoses/cables and operating FLEX equipment. Qualified on-shift staff is available to manipulate or operate installed plant valves or equipment.