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NL-13-070

April 30, 2013

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

SUBJECT: 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) Indian Point Unit Numbers 2 and 3
Docket Nos. 50-247 and 50-286
License Nos. DPR-26 and DPR-64

REFERENCE:

1. NRC letter to Entergy, *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 (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, *Guideline for Assessing Beyond-Design-Basis Accident Response Staffing and Communications Capabilities*, Revision 0, dated May 2012
4. NRC Order Number EA-12-049, *Order to Modify Licenses with Regard to Requirements for Mitigation Strategies for Beyond-Design-Basis External Events*, dated March 12, 2012 (ML12054A735)
5. NEI 10-05, *Assessment of On-Shift Emergency Response Organization Staffing and Capabilities*, Revision 0, dated June 2011

Dear Sir or Madam:

On March 12, 2012, the NRC staff issued Reference 1. 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

AQ45
NRR

Designated as original
Douglas Pickett 8/30/13
Public per PM

Reference 1, Enclosure 5, Entergy Nuclear Operations, Inc. (Entergy) submitted an alternative course of action for performing the requested actions and providing the requested information (Reference 2). Reference 2 described the alternative course of action and schedule for responding to the Emergency Preparedness – Staffing, Requested Information Items 1, 2, and 6.

Enclosure 1 to this letter provides the Indian Point Energy Center (IPEC) Phase 1 Staffing Assessment Report. The IPEC Phase 1 Staffing Assessment Report follows the assessment process described in References 3 and 5.

In accordance with Reference 2, this letter provides the response to Reference 1, Enclosure 5, Staffing, Requested Information Items 1, 2, and 6.

Response to Requested Information Item 1:

It is requested that addressees 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 (Reference 1, Enclosure 5). 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:

- ***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. 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.***
- ***New staff or functions identified as a result of the assessment.***
- ***Collateral duties (personnel not being prevented from timely performance of their assigned functions).***

Enclosure 1 provides the IPEC on-shift staffing assessment conducted pursuant to Reference 2. A detailed timeline based upon the existing loss of alternating-current (AC) power was performed based upon operations' review of the applicable station procedures. The focus of the timeline was to identify all resources, both operators and support organizations that would be required to execute each task. The data from the operations' timeline, as well as the review of radiation protection and chemistry resource requirements, was analyzed by applying the methodology specified in Reference 5 to evaluate the capability of the minimum on-shift staffing complement to execute the actions specified for operations, radiation protection, and chemistry and the required emergency plan responsibilities.

Based upon the minimum shift staffing, as specified in the IPEC Emergency Plan, the required minimum shift staffing of 26 is sufficient to support the required plant 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.

The tables describing the required minimum staffing, the operations' timeline, and the Reference 5 staffing analysis tables for IPEC are included in Enclosure 1.

As described in Enclosure 1, development of the guidance to support the mitigation strategies required by Reference 4 must be completed in order to determine the applicable staffing requirements to address back-up equipment. Entergy will perform this assessment as part of the Phase 2 staffing assessment by November 3, 2014, as previously identified in Reference 2.

The staffing assessment provided in Enclosure 1 determined that no new staff or functions have been identified as a result of the Phase 1 assessment.

The staffing assessment provided in Enclosure 1 determined that the existing on-shift staff is sufficient to implement the existing loss of all AC power, multi-unit event response strategies, while supporting performance of the required emergency planning duties without unacceptable collateral duties.

Response to Requested Information Item 2:

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.

Enclosure 1 provides the IPEC on-shift and augmented staffing assessment for the loss of all AC power, multi-unit event. Entergy will identify any appropriate modifications to the IPEC Emergency Plan Drill and Exercise Program upon completion of the mitigation strategies and associated guidance being developed in response to Reference 4 (November 3, 2014).

Response to Requested Information Item 6:

Identify changes 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.).

As described in Enclosure 1, the existing on-shift staff is sufficient to implement the existing loss of all AC power strategies at both units. No changes to the emergency plan on-shift staffing have been identified.

Also as described in Enclosure 1, the existing augmented emergency response organization (ERO) provides sufficient staffing to satisfy the expanded capability functions defined in Reference 3, Table 3.1. No changes to the emergency plan augmented ERO staffing have been identified.

As described in Enclosure 1, the existing agreements with offsite resource providers were determined to be adequate and no new or revised agreements are required.

The Phase 1 Staffing Assessment results for IPEC require the establishment of procedural controls to activate the expanded response capability. Entergy will incorporate instructions into applicable fleet or

site guidance for IPEC to activate the expanded response capability and to integrate this capability into the existing augmented ERO structure based upon the following conditions as described in Reference 3:

- Loss of all offsite and all on-site power sources to AC emergency busses at more than one unit, or
- Plant parameters or conditions require implementation of severe accident management strategies for more than one unit.

These changes will be implemented by March 5, 2014.

The new commitments contained in this submittal are summarized in the Attachment to this letter. If you have any questions concerning the content of this letter, please contact Mr. Robert Walpole, Manager, Licensing at (914) 254-6710.

I declare under penalty of perjury that the foregoing is true and correct. Executed on 4/30, 2013.

Respectfully,



JAV/sp

Enclosure: Indian Point Energy Center Nuclear Energy Institute 12-01 Phase 1 Staffing Assessment

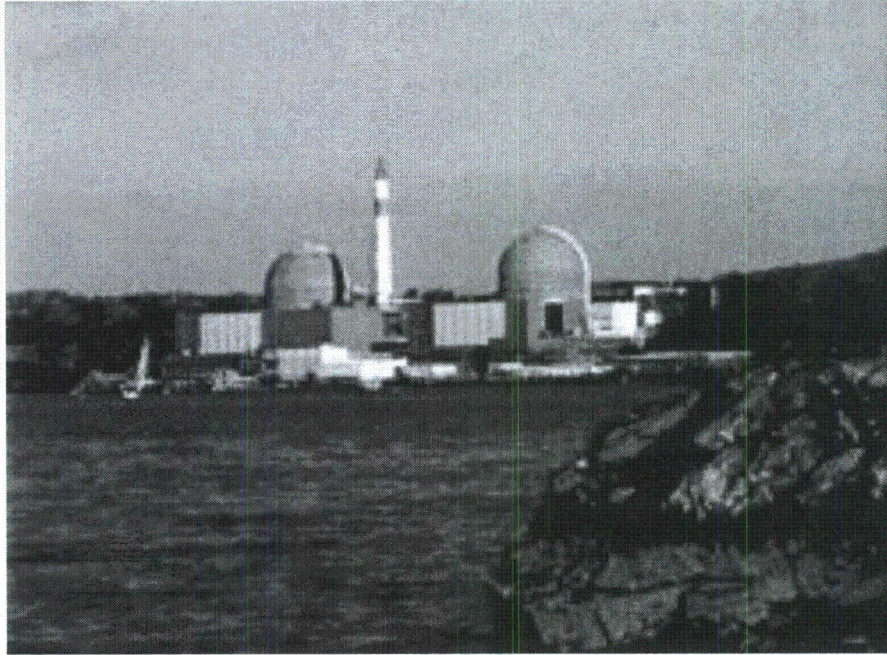
Attachment: Indian Point Energy Center List of Regulatory Commitments

cc: Mr. Douglas V. Pickett, Senior Project Manager, NRC NRR DORL
Mr. William M. Dean, Regional Administrator, NRC Region 1
NRC Resident Inspectors
Mr. Francis J. Murray, Jr., President and CEO, NYSERDA
Ms. Bridget Frymire, New York State Dept. of Public Service

ENCLOSURE TO NL-13-070

INDIAN POINT ENERGY CENTER NUCLEAR ENERGY
INSTITUTE 12-01 PHASE 1 STAFFING ASSESSMENT

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



ENTERGY

INDIAN POINT ENERGY CENTER

NEI 12-01 PHASE 1

STAFFING ASSESSMENT



Entergy Indian Point Energy Center NEI 12-01 Phase 1 Staffing Assessment

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1.0 EXECUTIVE SUMMARY

This report provides responses to the March 12, 2012, *Nuclear Regulatory 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,* as committed in the 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). The staffing assessment completion date of March 29, 2013 and submittal date of April 30, 2013 is in accordance with the Regulatory Commitment in the Entergy 60-day response letter. (ML12144A157).

This report provides responses to Enclosure 5, Recommendation 9.3 Staffing, Requested Information Items 1, 2, and 6. This response includes the results of the Phase 1 staffing assessment, as described in NEI 12-01, *Guideline for Assessing Beyond Design Basis Accident Response Staffing and Communications Capabilities* and Emergency Plan implementation using the guidance of NEI-10-05, *Assessment of On-Shift Emergency Response Organization Staffing and Capabilities*. The report also includes a discussion of any changes planned in response to the Phase 1 assessment and the associated implementation schedule.

The Phase 1 staffing assessment concluded that the current minimum on-shift staffing as defined in the Indian Point Energy Center (IPEC) Emergency Plan is sufficient to support the implementation of the current station blackout (SBO) strategies on both, Units 2 and 3, as well as the required Emergency Plan actions, with no unacceptable collateral duties. The Phase 1 assessment also identifies the staffing necessary to support the Expanded Response Capability for the beyond design basis external event (BDBEE) as defined for the Phase 1 assessment.

The Phase 1 assessment did, however, identify the need to establish guidance to activate the Expanded Response Capability and to integrate this capability into the existing augmented ERO structure. The need to establish this guidance is noted in Attachment 2.

2.0 SCOPE

In response to the Fukushima Dai-Ichi accident, US Nuclear Regulatory Commission (NRC) issued a 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. The information requests related to Emergency Preparedness (EP) are contained in

Entergy Indian Point Energy Center NEI 12-01 Phase 1 Staffing Assessment

Enclosure 5, "Recommendation 9.3: Emergency Preparedness" of this §50.54(f) Letter. Within this enclosure are two Requested Actions (Communications and Staffing). Both Requested Actions involve performance of an assessment. The action for the staffing assessment is summarized below:

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.

Per the 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, the April 30, 2013 submittal is required to provide the requested information for Phase 1 (all functions except those related to NTTF Recommendation 4.2) of the Staffing Assessment (Enclosure 5, Recommendation 9.3 Staffing, Information Request Nos. 1, 2, and 6). Specifically, these items are:

- (1) Provide an assessment of the onsite and augmented staff needed to respond to a large scale natural event meeting the conditions described in section 4.0. 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:
 - 1.a 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 Near-Term Task Force (NTTF) Recommendation 4.2. 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.
 - 1.b New staff or functions identified as a result of the assessment.
 - 1.c Collateral duties (personnel not being prevented from timely performance of their assigned functions).
- (2) 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.

- (6) Identify changes 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.).

While NSIR/DPR-ISG-01, *Interim Staff Guidance – Emergency Planning for Nuclear Power Plants* and NEI 10-05 address a SBO affecting a single-unit site, and one unit on a multi-unit site, they do not consider the scenario of an extended loss of AC power affecting all units on a multi-unit site. Licensees of multi-unit sites should perform an assessment of this scenario using the assumptions listed in NEI 12-01 and the methodology provided in NEI 10-05. In particular, the assessment should determine the ability of the on-shift staff to implement Initial Phase coping actions and, consistent with the site access assumptions, any Transition Phase actions that must be performed prior to the end of the "no site access" time period.

Phase I of the staffing assessment includes the Initial and Transition Phases of the approach for mitigating a BDBEE. In this assessment, the BDBEE is an external event causing multi-unit extended loss of AC power (ELAP) or extended SBO that result in:

- All on-site units affected
- Extended loss of AC power
- Impeded access to the units

The Initial Phase assessment of the on-shift staffing is to determine the ability of the on-shift staff to implement Initial Phase coping strategies needed to respond to a large-scale external event causing multi-unit extended loss of AC power (ELAP). The Initial Phase requires the minimum on-shift staff to use installed equipment and resources to maintain or restore the functions of core cooling, containment, and spent fuel pool cooling. The normal Emergency Response Organization (ERO) response time is 60 minutes, however, this assessment assumes no augmented ERO or support arrives for the first six (6) hours after the event occurred due to impediments preventing site access.

The Transition Phase will be accomplished using portable equipment stored on-site. The strategies for this phase must be capable of maintaining core cooling, containment, and spent fuel pool cooling capabilities (following their restoration, if applicable) from the time they are implemented until they can be supplemented by offsite resources in the final phase which will be accomplished using the portable equipment stored on-site and augmented with additional equipment and consumables obtained from off-site.

2.1 Methodology

A tabletop was used to determine what plant actions and emergency plan implementation actions were required based on plant procedures prior to staff augmentation during a six (6) hour SBO coping period and during the 6 to 24 hour period with limited augmented staff. In cases where multiple tasks were assigned to an individual in their role, the team evaluated timing of the tasks to ensure that they could be performed by the individual in series within any specified time requirements. A team of Emergency Planning and Operations personnel completed the assessment of the on-shift staff's response to the SBO Initial Phase (6 hours). Security, Radiation Protection, and Chemistry also provided input for their expected response to a station blackout. 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 and implement mitigation strategies and repair or corrective actions intended to maintain or restore the functions of core cooling, containment, and spent fuel pool cooling for both units.

IPEC has a total of 26 staff members on shift for both units including one individual available to perform actions in Unit 1 if needed. The on-shift staff consists of individuals necessary to support each of the emergency plan functional areas or tasks per NUREG-0654 and the IPEC Emergency Plan Table B-1.

3.0 EMERGENCY PLAN MINIMUM STAFFING

The IPEC Emergency Plan establishes the licensing basis for the on-shift staffing complement. Only personnel required to be on-shift are credited in the staffing for the initial 6 hours of the event. The following table indicates the on-shift personnel necessary to perform the required emergency planning functions.

Position	E-Plan Functional Area U2 staff	E-Plan Functional Area U3 staff	On-Shift Staffing Analysis Results U2	On-Shift Staffing Analysis Results U3
Shift Manager (SM)	Safe Shutdown /Emergency Direction and Control	Emergency Direction and Control	1	1
Control Room Supervisor (CRS)	Plant Operations/Safe Shutdown	Plant Operations/Safe Shutdown	1	1
Shift Technical	Technical	Technical	1	1

Entergy Indian Point Energy Center NEI 12-01 Phase 1 Staffing Assessment

Advisor (STA)	Support	Support		
Reactor Operators	Plant Operations/Safe Shutdown	Plant Operations/Safe Shutdown	2	2
Auxiliary Operators	Plant Operations/Safe Shutdown/Fire Brigade	Plant Operations/Fire Brigade	5	4
Auxiliary Operator	Communicator / Notifications for both units			1
Auxiliary Operator Unit 1	Safe Shutdown		1	
SRO		Fire Brigade Leader		1
Chemistry	Chemistry/Offsite Dose Assessment	Chemistry/Offsite Dose Assessment	1	1
Radiation Protection	Radiation Protection	Radiation Protection	1	1
Security	Access Control and Accountability		Per Security Contingency Plan	
			13	13

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 Shift Manager provides emergency direction and control and plant operations and assessment of operational aspects.

4.0 BEYOND DESIGN BASIS EXTERNAL EVENT (BDBEE)

4.1 General Assumptions and Limitations

4.1.1 NEI 12-01 Assumptions Common to Both Assessments (Staffing and Communications)

1. A large-scale external event occurs that results in:
 - a. all onsite units affected
 - b. extended loss of AC power
 - c. 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 road way obstructions, use different travel routes, mobilize alternate transportation capabilities, 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.
 - 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.

Each licensee should identify transportation and site access-enhancing methods in accordance with Section 3.9 of NEI 12-01, and include this information in the response to Staffing Information Request #4. The Information Request #4 response should also include an overview discussion of how the identified methods will be implemented following a beyond design basis external event.

A staffing assessment may utilize a “no site access” end time of less than 6 hours and greater than or equal to 4 hours, if supported by a documented basis. This basis should include a discussion of the site-specific transportation-related resources and capabilities, and related supporting arrangements, which provide assurance that augmented staff would be available on the site starting at the time used in the assessment. These resources and capabilities could be provided by Company-internal, private or public sources (including vehicles and aircraft, such as helicopters from military and National Guard organizations). All arrangements with the anticipated service providers should be documented (e.g., Letter of Agreement, contract, etc.).

A staffing assessment may not utilize a “no site access” end time of less than 4 hours.

4.1.2 NEI 12-01 Assumptions for Staffing Assessment

1. 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.
2. The NEI 12-01, Phase 1 staffing assessment considered the applicable actions from the SBO coping strategies in place at the time of the assessment.
 - a. Such actions may include the shedding of non-essential battery loads, use of portable generators or batteries, opening room and cabinet doors, water/coolant conservation or makeup using portable equipment, etc.
 - b. These actions do not include those associated with cross-tying AC power sources or electrical distribution busses between units since all on-site units are experiencing an extended loss of AC power.
3. Following the accident at Fukushima Dai-Ichi, the Institute of Nuclear Power Operations (INPO) issued three Event Reports (referred to as IERs) requiring the assessment and implementation of a range of actions intended to improve the capabilities for responding to a beyond design basis event and an extended loss of AC power, including events that impact the cooling of spent fuel. The staffing assessments performed in response to the NRC letter should include consideration of those IER improvement actions already implemented at the time of the assessment (e.g., incorporated into plant procedures).
4. Sites with existing strategies for responding to an extended loss of AC power affecting all on-site units should consider those actions in their NEI 12-01, Phase 1 staffing assessment.

4.1.3 Other Assumptions for Staffing Assessment

1. For purposes of assessing augmented staffing, it is assumed that the on-shift staff successfully performs all Initial Phase, and any Transition Phase, coping actions during the 0-6 hour period.

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, and spent fuel pool cooling.

4.1.4 NEI 10-05 Applicable Assumptions to Support Methodology

1. On-Shift personnel can report to their assigned response locations within timeframes sufficient to allow for performance of assigned actions.
2. 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) without the aid of a Radiation Protection Technician.
3. It is assumed that personnel assigned to the major response area of Plant Operations & Safe Shutdown meet the requirements and guidance established by NRC regulations. 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.
4. The on-site security organization is able to satisfactorily perform all tasks related to Site and Protected Area Access Controls, under all event or accident conditions. 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.
5. Individuals holding the position of radiation protection or chemistry technician are qualified to perform the range of tasks expected of their position.
6. 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.
7. 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.
8. 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). The ERO augmentation time is based on the time of event declaration until the time of turnover of the function/responsibility.

Specifically, any time needed by the augmenting ERO to acquire materials or prepare for turnover is accounted for. Facility activation includes the turnover of functions from the on shift staff.

4.2 Sequence of Events

4.2.1 Beyond Design Basis External Event (BDBEE): Station Blackout (SBO)

- A large-scale external event occurs that results in:
 - All on-site units affected
 - Extended loss of AC power
 - Impeded access to the units
- Initially, both on-site reactors are operating at full power and are successfully shut down.
- The event consists of a loss of offsite power and a failure of all emergency AC power sources resulting in a Station Blackout (Loss of all AC power). All of the emergency diesel generators (EDGs) experience a catastrophic failure, resulting in a complete loss of all AC power.
- Both units experience the extended loss of AC power, there is no “unaffected” unit.
- The BDBEE occurs such that restoration of any AC power source is not possible before the arrival of the augmented ERO personnel. (e.g., 6 hours)
- The event results in a Site Area Emergency based on EAL SS1.1
- On-shift personnel respond to the initiating events in accordance with Plant procedures. The initial response relies upon the turbine driven auxiliary boiler feedwater pump (TDAFWP) taking suction from the condensate storage tank (CST) and feeding a steam generator (SG) for decay heat removal. Containment status is confirmed by verifying position or by manually closing valves and isolating the reactor coolant pump (RCP) seal leakage. The spent fuel pool (SFP) is not challenged for the initial 6 hours.

4.2.2 The following procedures were referenced during the event review:

Common Procedures

0-AOP-SEC-3, Event Contingency Actions

0-SOP-ESP-002, Emergency Contingency Plan

0-SOP-ESP-003, Contingency Plan Strategy Attachments

IP-EP-115, Emergency Plan Forms

IP-EP-120, Emergency Classification
IP-EP-210, Central Control Room
IP-EP-410, Protective Action Recommendation

Unit 2:

2-E-0, Reactor Trip or Safety Injection
2-ECA-0.0, Loss of All AC Power
2-AOP-DC1, Loss of DC Panel
2-AOP-1B1-1, Loss of Power to Instrument Bus
2-SOP-ESP-001, Local Equipment Operation and Contingency Actions
2-SOP-4.3.1, Spent Fuel Pit Cooling
2-AOP-SFP.1, Loss of Spent Fuel Pit Cooling
2-SACRG-1, Severe Accident Control Room Guide

Unit 3:

3-E-0, Reactor Trip or Safety Injection
3-ECA-0.0, Loss of All AC Power
3-AOP-DC1, Loss of DC Panel
3-AOP-1B1-1, Loss of Power to Instrument Bus
3-SOP-ESP-001, Local Equipment Operation and Contingency Actions
3-SOP-4.3.1, Spent Fuel Pit Cooling
3-AOP-SFP.1, Loss of Spent Fuel Pit Cooling
3-SACRG-1, Severe Accident Control Room Guide

4.2.3 Severe Accident Management Guideline (SAMG)

The overall strategy at IPEC is to maintain both units in hot standby and to remove decay heat by feeding the SG using TDAFWP with condensate from the CST. Both units use CST for decay heat removal. Each CST has inventory sufficient to support TDAFWP operation and remove decay heat from the unit for greater than 24 hours. On this success path, the core is cooled and the SAMG entry condition on the core exit temperature is never met for the 24 hour period prior to the full ERO on site.

It is therefore concluded that the on shift ERO would not be called upon to perform SAMG activities, based on a loss of core cooling for the event analyzed for this report prior to the assistance of the greater ERO. Procedures 2/3-ECA-0.0, Loss of All AC Power, however, direct the operator to 0-SOP-ESP-002, Emergency Contingency Plan, for some contingency actions that do not require AC power.

5.0 EMERGENCY PLAN IMPLEMENTATION

5.1 On-shift Staff ERO Responsibilities

Each unit has an Operations staff of one Shift Manager (SM), one Control Room Supervisor (CRS), one Shift Technical Advisor (STA) and two Reactor Operators (ROs). Unit 2 has five Nuclear Plant Operators (NPOs), Unit 3 has four NPOs, and Unit 1 has one NPO that is a safe shutdown operator for Unit 2. IPEC has an NPO assigned to each shift that is the dedicated communicator for both units. Since both units are affected, this analysis assumes the U2 SM assumes the Emergency Director (ED) function and the Communicator NPO assumes the function of notifications. The ROs and NPOs, except the communicator, are available in each unit to perform plant operations as directed by the CRS using emergency operations procedures, abnormal operations procedures, and other procedures containing actions applicable to a station blackout. Two RP Technicians and two Chemistry Technicians are on shift and may perform tasks as directed by the Shift Manager in either unit. One Chemistry Technician is assigned the task of dose assessment if a release should occur. The U3 Shift Manager is available to assist the ED with other communications such as contacting the CEC and coordinating request for resources.

5.2 Classification

For the assessment tabletop, the U2 Shift Manager assumed the role of ED and declared a Site Area Emergency based on EAL SS1.1. The ED then directed a protected area evacuation and directed all on-shift staff to card into an accountability card reader and Security to perform accountability. Card readers are assumed operable based on Security backup battery power. The tabletop demonstrated that the Shift Manager is capable of performing the Emergency Director function with no collateral duties.

After approximately 3 to 4 hours, the ED declared a General Emergency based on EAL SG1.1 and determined a Protective Action Recommendation (PAR). The GE declaration may be expected to be made earlier if the ED receives information that on-site and off-site power restoration will not be possible within 4 hours.

5.3 Notification

IPEC communication/notification systems have battery backup on loss of power. The NPO Communicator made the State and local notifications and notified the ERO using ERON (Emergency Response Organization Notification). It is assumed ERO members in the 25-mile radius do not receive the notification due to a 25 mile radius power outage. ERO members outside the 25 mile radius are assumed to receive the notification because the equipment implementing the ERON process is located outside the affected areas. Additionally, ERO members are trained to automatically respond to their assigned facilities or a designated staging area when made aware of an area-wide loss-of-grid (e.g., by direct observation, media reports, word-of-mouth, etc.). The

Communicator notified and maintained an open line with the NRC. An additional notification was made to the Corporate Duty Manager. The U3 SM may assist the U2 SM or Communicator with making other communications such as coordinating requests for support from the Corporate Emergency Center (CEC). The tabletop demonstrated that the Communicator is capable of performing the notification function without collateral duties.

Satellite phones are available in the Control Room and available for the Communicator to use to make notifications when the backup batteries are depleted. Each Control Room has multiple satellite phones available to make offsite notifications, NRC notification and other notifications.

5.4 Communication

The telephone system has battery backup and may be used (if available) until the batteries are depleted. As noted in section 5.3, satellite phones are available as a backup to the telephone system. Power is lost to the plant paging system in a SBO. Hand-held radios with talk-around capability are available for in-plant communications. The ED will use radios to communicate with the on-shift staff outside of the control room and with security. For purposes of this assessment, it was assumed the minimum on-shift staff (including security) were the only personnel on site.

5.5 Accident Assessment

A release is not expected since core cooling is maintained by decay heat removal using TDAFWP to feed the SG and the atmospheric dump valve (ADV) to control the cool-down rate. One of the two Chemistry Technicians is assigned the role of dose assessor if a release should occur. Effluent sampling is not available due to the loss of power. One of the two RP technicians is available to perform on-site and site boundary surveys to detect for an unmonitored release. RP and Chemistry are capable of performing their function, except for sampling, with no collateral duties.

5.6 The station emergency lighting batteries are rated for 8 hours. Flashlights with spare batteries are available to provide portable lighting for the 24 hour duration. Food and water is available for 72 hours duration.

6.0 **ON-SHIFT STAFFING INITIAL PHASE COPING STRATEGIES AND CAPABILITY** [RFI#1, 1b, 1c]

6.1 The assessment utilized a "no site access" period of 6 hours per the assumptions in NEI 12-01 Section 2.2. During this 6 hour period, the on-shift staff used installed plant equipment to respond to the event. The overall strategy at IPEC is to maintain both units in hot standby and to remove decay heat by feeding the SGs using TDAFWP with condensate from a seismic qualified source (CST). Both units have a CST for decay heat

removal. The CRS in each unit directs the actions of the procedures to mitigate the event. Each unit has 2 ROs and 5/4 NPOs to carry out the actions as directed by the CRS.

- Core Cooling - Using the existing IPEC PRA/MAAP analyses which assume an available CST volume of 360,000 gallons at the start of the event, the SG(s) can be supplied with water for approximately 46 hours of TDAFWS operation. With the above strategies and capabilities, the estimated Core Cooling coping time is in excess of 24 hours. (Ref. Response to IER 11-4 Recommendation #1)

With respect to ADV operation, installed nitrogen supplies will support at least 30 hours of ADV operation (i.e., two ADVs for IP2 and one ADV for IP3) based on the licensing basis calculations that conservatively assume minimum required N2 bottle pressure and 35 full strokes of the ADV. The licensing basis calculation points out that this assumed number of strokes is conservatively high, since plant cool down requires minimal ADV manipulation in the field. (Ref. Response to IER 11-4 Recommendation #1)

Instrumentation indications for essential parameters remain available for an estimated range of 2.4 hours to 5.2 hours for U2 and 3.8 hours to 5.8 hours for U3. Per the INPO IER 11-4 Recommendation 2 response, these times could be extended to the 4 to 8 hour range, or possibly longer, by implementing additional load shedding and/or series sequencing of batteries early in the event. Once batteries are depleted, indication is available locally for SG pressure and CST level. The on-shift staff is capable of maintaining core cooling using available battery power and manual operation of the TDAFWP and ADV.

- Containment - The on-shift staff can maintain containment integrity for the first 6 hours of the SBO. U2 procedure 2-ECA-0.0, Loss of All AC Power, and U3 procedure 3-ECA-0.0, Loss of All AC Power, provides direction to manually close isolation valves. Due to RCP seal leakage and loss of forced containment cooling, containment pressure and temperature will slowly rise. Based on the above, containment pressure and temperature are not projected to approach design limits in the first 24 hours into the event.
- Spent Fuel Pool Cooling - The Spent Fuel Pool is not challenged in the initial 6 hour period. Per IPEC's response to IER 11-04, the limiting case is 20 days after shutdown. U2 SFP time to boil is 10 hours and will reach 10 ft. above the fuel in 58 hours. U3 SFP time to boil is 9.7 hours and will reach 10 ft. above the fuel in 51 hours. No action is required to maintain 10 ft. above the fuel for at least 24 hours. Procedure 0-SOP-ESP-002, Emergency Contingency Plan, provides instructions for SFP makeup using fire hose stations or using a portable pump.

6.2 The on-shift staff is capable of implementing all Initial Phase coping strategies. Available staffing is sufficient to implement the actions of the EOPs, AOPs, and SOPs

timely when directed by the CRS and without collateral duties. The NPOs performed non-time critical tasks in series when necessary and were able to timely perform all their assigned functions. The staff performing plant operations is not assigned any other emergency plan function or task for the conditions of the SBO. Therefore, the performance of Initial Phase coping strategies does not impact the ability of the on-shift staff to perform any required emergency response function. Emergency response function would not be degraded or lost prior to the arrival of the augmented ERO.

7.0 TRANSITION PHASE STRATEGIES AND CAPABILITY

7.1 On-shift Staff Transition Phase Coping Actions

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.

This assessment did not identify any Transition Phase action that must be completed by the on-shift staff within the no-access 6 hour period. The response to SBO was assessed by first reviewing the response procedures. The on-shift staff was capable of performing all required task of the Initial Phase using installed equipment and procedures. It is assumed SAMG entry conditions based on core exit temperatures are not met in the 24 hour period.

7.2 Augmented ERO Transition Phase Coping Actions

The following tasks are assumed to be performed by the augmented staff within the 6-24 hour period after limited ERO members arrive:

1. **[U2/U3]** Align hoses from fire protection hose stations to makeup to the spent fuel pool per 0-SOP-ESP-002, Emergency Contingency Plan.
2. **[U2/U3]** Take readings locally at instruments using a digital multi-meter for critical parameters (i.e., core exit temperature).

Both tasks may be performed by the augmented ERO in the 6-24 hour time period. Makeup to the SFP is not necessary in the 24 hour period following the SBO. Core exit temperature instrument reading may be necessary when lowering SG pressure.

8.0 AUGMENTED ERO

8.1 ERO Response

Emergency Response Organization members are instructed to respond to their assigned Emergency Response Facility (ERF) or, if that facility is inaccessible, to the alternate facility. In support of this requirement, training material FCBT-EP-RESP, Entergy ERO Responsibilities, and FCBT-EP-ERO ROLES, ERO Roles and Responsibilities provides

information to direct the actions individuals should take if they become aware of an area-wide grid disturbance or significant natural disaster (e.g., earthquake, tornado, flood). The normal ERO augmentation expectation is 60 minutes.

8.2 ERO Notification

IPEC has four (4) qualified ERO teams, with a team on call 24/7, to respond to any Alert or higher emergency declared by the Shift Manager. EN-EP-801, Emergency Response Organization, list the expectations and responsibilities of ERO members. To facilitate a timely and effective response, the following procedure sections apply:

Section 5.2.2

- Respond promptly to actual emergencies, pager tests and off-hours/unannounced drills when available, regardless of whether on-call or not. ERO members not on-call are expected to respond unless they are unavailable.

If an area-wide loss of grid occurred that degraded the capability to notify the ERO to respond, IPEC has communicated the expectation to the ERO to ensure that “ERO members are trained to automatically respond to their assigned facilities or a designated staffing area when made aware of an area-wide loss-of-grid (e.g., by direct observation, media reports, work-of-mouth, etc.).”

If a loss of telephone or internet services were to occur, satellite phones in the control room may be used to activate the ERO. Procedure IP-EP-210, Central Control Room, provides detailed instructions on how to mobilize/activate the ERO using the Emergency Response Organization Notification (ERON) system, including backup methods.

8.3 ERO Notification with Degraded Communications Capabilities (RFI#3)

Requested Information#3: *Identify how the augmented staff would be notified given degraded communications capabilities.*

- Entergy provided a response to RFI #3 in *Entergy's 90-Day Response to the March 12, 2012, Information Request, Action Plan for Completing Emergency Communication and Staffing Assessments* dated June 8, 2012 (NL-12-075)
- This section provides additional information to the response.

NEI 12-01 Section 4.4 offers two potential options to promote timely staff augmentation by the ERO:

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- ERO members can be notified of the emergency using a method that would be operable under the assumed event conditions (e.g., satellite pagers), AND/OR
- ERO members are trained to automatically respond to their assigned facilities or a designated staging area when made aware of an area wide loss-of-grid (e.g., by direct observation, media reports, word-of-mouth, etc.).

IPEC has chosen to implement option #2. In the 90-Day response letter, stated:

Initial expectations have been communicated to the Emergency Response Organization (ERO) to respond to their assigned emergency response facilities when made aware of an area-wide loss-of-grid that results in degraded communications capability. This will be included in the ERO annual requalification training program by December 12, 2012.

ERO members were made aware of the expectation by an email sent to all ERO members on 05/16/2012 via ERON with the requirement to acknowledge receipt for tracking purposes. This action is documented in the corrective action program LO-HQNLO-2011-00138 CA-24. The message that went out included the information to go to their alternate facility if unable to report to the primary facility.

The expectation was also included in the following training material:

- FCBT-EC-RESP, Entergy Nuclear Emergency Response Organization Responsibilities
- FCBT-EP-ERORoles, ERO Roles and Responsibilities

8.4 Augmented ERO Site Access (RFI#4)8.4.1 Requested Information#4: *Identify the methods of access (e.g., roadways, navigable bodies of water and dockage, airlift, etc.) to the site that are expected to be available after a widespread large scale natural event.* Entergy provided a response to RAI #4 in *Entergy's 90-Day Response to the March 12, 2012, Information Request, Action Plan for Completing Emergency Communication and Staffing Assessments* dated June 8, 2012 (NL-12-075).

- This section provides additional information to the response Per the assumptions of NEI 12-01, the event impedes site access as follows:

Post event time: 6 hours – No site access. This duration reflects the time necessary to clear roadway obstructions. Use of different travel routes, mobilize alternate transportation capabilities (e.g., private resource providers or public sector support) etc.

8.4.2 IPEC assumes that limited augmented ERO resources will be available at six hours post-event time to full ERO staffing at 24 hours. In the event that the site cannot

be accessed via the roadways, EOF personnel will report to the alternate EOF in White Plains, NY. The staging area for the TSC/OSC personnel is the Centennial Hose Company in Peekskill, NY.

8.4.3 The EP Manager reviewed the Emergency Plan Letters of Agreement and interviewed State and County officials to confirm the assistance provided to IPEC. The following agreements are in place for assistance and/or services:

- Memorandum of Understanding with local fire departments (Buchanan Engine Company 1, Verplanck Fire Protection Association, Montrose Fire Department)
- Westchester County Fire and Emergency Medical Services Responses & Mutual Aid Plan
- Memorandum of Understanding with NY State Police
- Memorandum of Understanding with Consolidated Edison to restore power (FERC NUC-0001 requirements)
- Memorandum of Understanding with local hospitals (Hudson Valley Hospital Center, Phelps Memorial Hospital Center)
- Memorandum of Understanding with DOE – Radiation Emergency Assistance
- Agreement with NY State Office of Emergency Management
- Purchase Order with Bottini Fuel, HO Penn

A. Alternate Transportation – Primary Method

In the event the site cannot be accessed via the roadways, IPEC has verbal agreement with the State of New York Office of Emergency Management that in the event of restricted site access following a BDBEE, they will provide resources such as a helicopter as priorities allow transporting ERO personnel from an alternate location to the site. It is also recognized that the New York State Police as part of NYS Empire Shield located at Fort Hamilton in Brooklyn, NY, has National Guard resources available to provide support if needed. This support may include the facilitation of boat transport up the Hudson River from the Alternate EOF to the IPEC site. The staging area for the TSC / OSC is located close enough to the site that transportation by foot is a viable method to access the site.

Based on the this strategy, sufficient ERO personnel will be available at six hours post-event time to support the on-shift staff in completing the required coping strategies, including Transition Phase strategies.

B. Time Estimates of Alternate Transportation

The following are time estimates of available access methods discussed above to the IPEC site. Aviation resources available from State Police and Division of Military and Naval Affairs are located at Islip, Albany, and Rochester. Seating capacity ranges from 8 to 36 persons. One or more of the methods are expected to be available after a widespread large scale natural event:

Transportation times are estimates

1. Albany to Westchester by air - <30 minutes, or may come from another location
2. Islip to Westchester by air - <30 minutes
3. Westchester Airport to IPEC - 10-15 minutes
4. Post Event - NYS Empire Shield - 1-2 hours
5. Brooklyn to Tarrytown by boat - 1-2 hours
6. Tarrytown to IPEC by boat - 30 minutes - 1 hour
7. Walking time from Centennial Hose Company - <1 hour

C. Provisions for Restoring Site Access

The Shift Manager/Emergency Director may contact the State or county Emergency Operations Center to request actions to clear impediments to allow ERO access to the site after he/she is made aware of impediments.

Additional logistics support is available from the Entergy Corporate Emergency Center (CEC) located at the headquarters in Jackson, MS. Once notified that a station is in a declared emergency and station blackout, the CEC should be activated using EN-EP-601, Corporate Emergency Center Operations. The purpose of the CEC is to provide site support to an Entergy station(s) during declared emergencies, recovery operations, severe weather events, or off-normal events. The CEC serves as the central command area for coordinating fleet resources. The CEC coordinates requests for additional equipment and materials, and support services/resources from Entergy sites or corporate headquarters, contractors, vendors, or other outside agencies. The CEC has resources to contract helicopter services, tree trimming services, etc. as necessary to provide ERO site access.

The CEC is located in Jackson, MS and outside of the 25 mile radius of any Entergy station. It is assumed it would be fully functional to support IPEC in an extended SBO. IPEC control room and the CEC have satellite communication capability. The CEC activates and operates in accordance with EN-EP-601.

8.5 Expanded ERO

- 8.5.1 The current IPEC augmented ERO would be challenged to effectively respond to a BDBEE that resulted in an extended loss of AC power affecting both units. In an event of this magnitude, it would be necessary to “expand” the capability of the augmented ERO in order to facilitate timely and effective performance of critical emergency response functions. The focus of this “expanded response capability” at IPEC should be to enable the performance of unit-specific accident assessment and mitigation functions.

NEI 12-01 Table 3.1 lists the emergency response functions identified by the NEI Beyond Design Basis Event Response Staffing Study Task Force as meeting expanded response requirements. NEI 12-01 Table 3.1 further provides key roles and staffing considerations for each expanded response function and specifies the staffing necessary to support the simultaneous deployment of emergency repair and corrective action teams to each affected unit.

The personnel required for implementation of strategies for a BDBEE may vary depending upon several factors. However, the process should facilitate a flexible response strategy that can be applied in a graded approach by the ERO personnel on a unit/priority specific basis (i.e., the extent/type of BDBEE and associated event challenges would correspond to the expansion/contraction of the expanded ERO and the assignment of unit specific expanded ERO response functions and unit specific resources).

NEI 12-01 Table 3.1 was compared to the recommended ERO staffing listed in EN-EP-801, Emergency Response Organization and the IPEC ERO roster at the time of the assessment data collection. This method identified expanded ERO candidates from the existing ERO to perform the functions identified in Table 3.1 regardless of the BDBEE event.

The IPEC TSC and OSC are co-located which eliminates the need for a separate Maintenance Coordination function as noted in NEI 12-01 Table 3.1. The Table 3.1 expanded response functions of Maintenance Coordination and Unit In-Plant Team Coordination are combined in the co-located TSC/OSC as a Mechanical Coordinator and an Electrical/I&C Coordinator. The Mechanical Coordinator and Electrical/I&C Coordinator coordinate the work activities of the teams performing or supporting repair and corrective action for their discipline.

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8.5.2 Table 8-1 Expanded Response Functions for IPEC Phase 1 Staffing

TABLE 8-1				
Expanded Response Function from NEI 12-01, Table 3.1	Key Roles and Staffing Considerations	IPEC ERO Position Performing this Function and Available Staff Resources	ERO Available to Implement Coping Strategies for 2 units?	IPEC ERF Reporting Location
Unit Response Coordination	<ul style="list-style-type: none"> • Overall cognizance of the activities related to implementation of repair and corrective actions, and implementation of Transition Phase coping and Severe Accident Management (SAM) strategies for an assigned unit • One individual per unit; individuals should not be assigned other functions 	Emergency Plant Manager (EPM) <ul style="list-style-type: none"> • IPEC maintains 4 qualified Emergency Plant Managers and 4 TSC Managers • May be filled by EPM or TSC Manager 	This requires a new position for a multi-unit event to allow the EPM to maintain the TSC oversight and TSC Manager to manage TSC overall operation. N+2 Filled by existing EPMs or TSC Managers	TSC
Operations Coordination	<ul style="list-style-type: none"> • Provides coordination of Operations staff and support for an assigned unit • One individual per unit; individuals should not be assigned other functions 	Operations Coordinator <ul style="list-style-type: none"> • IPEC maintains 4 qualified Operations Coordinator 	Operations Coordinators N+1	TSC
Maintenance Coordination	<ul style="list-style-type: none"> • Provides coordination of Maintenance staff and support for an assigned unit • One individual per unit; individuals should not be assigned other functions 	<ul style="list-style-type: none"> • N/A (See section 8.5.1 paragraph 5) 	N/A	TSC
Engineering Coordination	<ul style="list-style-type: none"> • Provides coordination of Engineering staff and support for an assigned unit. • One individual per unit; 	Engineering Coordinator <ul style="list-style-type: none"> • IPEC maintains a minimum of 4 qualified Engineering 	Engineering Coordinators N+1	TSC

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TABLE 8-1				
Expanded Response Function from NEI 12-01, Table 3.1	Key Roles and Staffing Considerations	IPEC ERO Position Performing this Function and Available Staff Resources	ERO Available to Implement Coping Strategies for 2 units?	IPEC ERF Reporting Location
	individuals should not be assigned other functions.	Coordinators		
Engineering Assessments	<ul style="list-style-type: none"> • One team for each unit to perform engineering assessments in support repair and corrective actions. • Team composition (i.e., number and represented disciplines) as described in the emergency plan. • Team may include personnel responsible for performing other functions for the same assigned unit. 	<p>Engineers</p> <ul style="list-style-type: none"> • The ERO requires a minimum of 4 Mechanical Engineers, 4 Electrical/I&C Engineers and 4 Reactor Engineers on the ERO. 	<p>Mech. Engineer N+1</p> <p>Elec/I&C Engineer N+1</p> <p>Reactor Engineer N+1</p> <p>Duty concurrent with Engineering Assessments</p>	TSC
Evaluation of Severe Accident Management (SAM) Strategies	<ul style="list-style-type: none"> • One team for each unit to evaluate selection of SAM strategies; team performs evaluations not done by Control Room personnel. • 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. 	SAMG Evaluator / Operations Coordinator / Engineering Coordinator	<p>SAMG Evaluator N+1</p> <p>Ops Coordinator N+1</p> <p>Eng. Coordinator N+1</p> <p>Duty concurrent with ERO position responsibilities</p>	TSC
Unit In-Plant Team	<ul style="list-style-type: none"> • Overall cognizance of on-site and in-plant teams 	Mechanical Coordinator /	Mechanical Coordinators	OSC

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TABLE 8-1

Expanded Response Function from NEI 12-01, Table 3.1	Key Roles and Staffing Considerations	IPEC ERO Position Performing this Function and Available Staff Resources	ERO Available to Implement Coping Strategies for 2 units?	IPEC ERF Reporting Location
Coordination	performing or supporting repair and corrective actions for an assigned unit. <ul style="list-style-type: none"> • One individual per unit; individuals should not be assigned other functions. (Note: See section 8.5.1)	Electrical/I&C Coordinator IPEC maintains a minimum of 4 qualified Mechanical Coordinators and 4 qualified Electrical/I&C Coordinators1/team of each.	N+1 Electrical/I&C Coordinators N+1	
Non-Licensed Operators (NLO)	<ul style="list-style-type: none"> • Two individuals per unit to assist with implementation of repair and corrective actions. • Should not include members of the on-shift staff. 	Non-Licensed Operators	4	OSC
Mechanical Maintenance Repair and Corrective Action	<ul style="list-style-type: none"> • Two individuals per unit to implement repair and corrective actions. • Staffing may include an on-shift individual (i.e., 2 individuals for a unit composed of 1 on-shift and 1 augmented) 	No maintenance positions on shift.	4	OSC
Electrical Maintenance Repair and Corrective Action	<ul style="list-style-type: none"> • Two individuals per unit to implement repair and corrective actions. • Staffing may include an on-shift individual (i.e., 2 individuals for a unit composed of 1 on-shift and 1 augmented) 	No maintenance positions on shift.	4	OSC

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TABLE 8-1				
Expanded Response Function from NEI 12-01, Table 3.1	Key Roles and Staffing Considerations	IPEC ERO Position Performing this Function and Available Staff Resources	ERO Available to Implement Coping Strategies for 2 units?	IPEC ERF Reporting Location
I&C Repair and Corrective Action	<ul style="list-style-type: none"> Two individuals per unit to implement repair and corrective actions. Staffing may include an on-shift individual (i.e., 2 individuals for a unit composed of 1 on-shift and 1 augmented) 	No maintenance positions on shift.	4	OSC
Implementation of SAMG Strategies	<ul style="list-style-type: none"> Number and composition of personnel capable of simultaneous implementation of any 2 SAM strategies at each unit. 	The TSC/OSC implements the SAMG. Unit 2 Strategy #1 – 5 people Strategy #2 – 7 people Unit 3 Strategy #1 – 5 people Strategy #2 – 7 people (See discussion in section 8.5.6)	U2: 7 NPOs 2 Mechanics 2 Security Officers 1 RP U3: 7 NPOs 2 Mechanics 2 Security Officers 1 RP	OSC
RP Techs	<ul style="list-style-type: none"> Number needed to support implementation of any 2 extended loss of AC power coping strategies per unit. Determine this number by reviewing strategies for each unit Number needed for repair and corrective action (= 2 x the number of units) Number of on-site RP Technicians performing 	(See discussion in section 8.5.3)	8	OSC

Entergy Indian Point Energy Center NEI 12-01 Phase 1 Staffing Assessment

TABLE 8-1				
Expanded Response Function from NEI 12-01, Table 3.1	Key Roles and Staffing Considerations	IPEC ERO Position Performing this Function and Available Staff Resources	ERO Available to Implement Coping Strategies for 2 units?	IPEC ERF Reporting Location
	other emergency plan functions that would preclude them from performing job coverage for extended loss of AC power coping, repair or corrective action teams			

8.5.3 On-Site Radiation Protection Technicians

The IPEC process for providing an expanded response capability will include provisions for a minimum number of available Radiation Protection (RP) Technicians following a BDBEE to support performance of emergency plan functions and expanded response capability.

Per NEI 12-01, the equation is used to determine the required number of on-site RP Technicians (RPTs):

$$RPTT = RPTCOP + RPTRCA + RPTNC$$

Where:

RPTT = Total required number of on-site RP Technicians

RPTCOP = Number needed to support implementation of any 2 extended loss of AC power coping strategies per unit. Determine this number by reviewing strategies for each unit.

RPTRCA = Number needed for repair and corrective action
 = 2 x the number of units

RPTNC = Number of on-site RP Technicians performing other emergency plan functions that would preclude them from performing job coverage for extended loss of AC power coping, repair or corrective action teams.

For IPEC U2 & U3:

RPTCOP = 2 RP Technicians (Assume no core damage, no leakage, no release)

RPTRCA = 4 RP Technicians (2 per Unit)

RPTNC = 2 RP Technician (Surveys)

RPTT = 8 RP Technicians

RPTCOP – FLEX equipment and procedures are not in place at this time to evaluate coping strategy implementation. Entry into SAMG on core exit temperature was not required.

Provisions to obtain additional RP Techs

For IPEC, the complement of RP Technicians specified in the augmented ERO per the Emergency Plan is eight 60 minute responders. Therefore, sufficient RP Technicians are anticipated to be available from site resources to support the initial staffing of the Expanded Capability. Additional RP Technician resources are available from other Entergy sites.

Should additional RP Technicians be required, the Corporate Duty Manager, if the CEC is not activated, or the Corporate Emergency Center (CEC) will contact the other Entergy sites to obtain additional RP staff (Entergy or Contract personnel) to support IPEC. Procedure EN-EP-601, Corporate Emergency Center Operations, describes the conduct of the CEC. The CEC may contact INPO to coordinate request for assistance from other utilities or vendors per the Nuclear Power Plant Emergency Response Voluntary Assistance Agreement.

8.5.4 Administrative Support Personnel

IPEC has a pool of support staff that responds to the all-call ERO notification of an Alert or higher emergency. The normal assignments from this group are 1 to the Central Control Room, 1 to the OSC, 3 to the EOF, and 1 to the JIC. Additional administrative staff members respond to the ERO call-out and are available for assignment if additional administrated support is needed for the expanded ERO. No additional Administrative Support personnel other than those already assigned to respond are required.

8.5.5 Work Areas for Personnel Performing Expanding Response Functions

- The EOF is located in the Indian Point Energy Center, just inside the Main Facility Gate. Walkdowns of these areas identified sufficient space is available in adjacent offices conference rooms, and classrooms to support the role of the expanded response functions.
- The TSC is located in the Unit 1 Super-heater Building 53' elevation. Walkdowns of these areas identified sufficient space is available in adjacent

offices and conference rooms to support the role of the expanded response functions.

- The OSC is located in the Unit 1 Super-heater Building 53' adjacent to the TSC. Walkdowns of these areas identified sufficient space is available in adjacent offices and conference rooms to support the role of the expanded response functions.
- A TSC and OSC staging area is located at the Centennial Hose Firehouse in Peekskill, NY. The Alternate EOF is located on the 12th floor of the AT&T building at 440 Hamilton Avenue, White Plains, NY. Alternate facilities may be used if needed

8.5.6 Expanded ERO for SAMG Actions

SAMG was reviewed for U2 and U3 to determine the strategies requiring the greatest number of staff. The strategies are the same for U2 and U3. Each unit requires an estimated 12 people to perform the 2 strategies simultaneously.

Unit 2

- Strategy #1: SG depressurization and fill with pressurized fire header and the diesel contingency pump. Requires an estimated:
 - 4 NPOs (1 at SG Atmospherics, 1 at diesel pump and hydrant, 1 at the SG feed regulating valves, and 1 to assist with moving the pump and laying out hoses)
 - 1 Security officer.
- Strategy #2: Flooding containment with portable pump. Requires an estimated:
 - 3 NPOs (1 at pump & hydrant, 1 for valve lineup, and 1 to move pump and lay out hose)
 - 2 Mechanics
 - 1 Security
 - 1 RP

Unit 3

- Strategy #1: SG depressurization and fill with pressurized fire header and the diesel contingency pump. Requires an estimated:
 - 4 NPOs (1 at SG Atmospherics, 1 at diesel pump and hydrant, 1 at the SG feed regulating valves, and 1 to assist with moving the pump and laying out hoses)
 - 1 Security officer.

- Strategy #2: Flooding containment with portable pump. Requires an estimated:
 - 3 NPOs (1 at pump & hydrant, 1 for valve lineup, and 1 to move pump and lay out hose)
 - 2 Mechanics
 - 1 Security
 - 1 RP

8.6 Staffing the Expanded Response Functions

NEI 12-01 states: A licensee should ensure the availability of a sufficient number of personnel to perform expanded response functions. This may be done in several ways, including:

- Assign responsibilities to existing ERO positions. Per NRC Letter Staffing Information Request #1, the potential impacts from the assignment of new collateral duties should be assessed.
- Establish provisions for calling out additional individuals from the existing augmented ERO staff (e.g., calling out 2 engineering teams at a 2-unit site).
- Select and qualify additional personnel. Sources of additional staffing include site, corporate or contracted personnel. Site Security Department resources may also be considered.
- Consider the application of remote data access, meeting and other communications technologies to support the availability of required staffing

Entergy will establish guidance to use suggestion #2 to fill the expanded ERO positions from call-out of the existing augmented ERO. The ERO consist of 4 qualified teams. All 4 teams will respond to the call -out and be available to fill the expanded ERO positions. Two teams will be utilized to fill the ERO positions for 12 hour rotation duty. The other 2 teams will be used to fill the expanded ERO positions for 12 hour rotation. The expanded response position will be filled with ERO members qualified for the position but training drills have not included an expanded ERO or simultaneous mitigation strategies on both units.

9.0 **ON-SITE STAFF'S ABILITY TO MOVE BACK-UP EQUIPMENT [RFI#1a]**

- 9.1 US Nuclear Regulatory Commission (NRC) letter, Request for Information Pursuant to Title 10 of 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 REQUESTED INFORMATION states in part

The following functions are requested to be assessed:

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 NTTF Recommendation 4.2. It is requested that consideration be given to the major functional areas or 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.

Back-up equipment was not installed and associated procedures were not developed at the time of this assessment. The response to this request requires that the procedures to support the mitigating strategies, as described in the Order regarding the NTTF Recommendation 4.2, be developed to determine the applicable staffing. The schedule for the response to the order does not support the timing requirements of the Phase 1 staffing assessment.

This information will be provided in the Phase 2 Staffing Assessment. Refer to Entergy Letter (NL-12-054) 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 which contains the following commitments:

1. Conduct the onsite and augmented staffing assessment considering functions related to NTTF Recommendation 4.2. Scheduled completion date Oct 3, 2014.
2. Provide onsite and augmented staffing assessment considering functions related to NTTF Recommendation 4.2. Scheduled completion date Nov. 3, 2014.

10.0 STAFFING ASSESSMENT COMPLETION OF NEI 10-05 STYLE TABLES

- 10.1 Refer to Attachment 1, NEI 10-05 Style Staffing Table for IPEC, for documentation of the on-shift staffing analysis results.
- 10.2 There were no potential overlap tasks identified. The most limiting positions were determined to be the Nuclear Plant Operators (NPO). The NPO tasks were assigned as shown in Table 10.1 below. Note the Communicator NPO is excluded from Table 10.1. The Communicator does not have assigned collateral tasks.

Entergy Indian Point Energy Center NEI 12-01 Phase 1 Staffing Assessment

Table 10.1: IPEC NPO Utilization
(Time in Minutes)

	0-15	15-30	30-45	45-60	60-75	75-90	90-105	105-120
U2 NPO #1		E						
U2 NPO #2	B		G					
U2 NPO #3	C	D			A			
U2 NPO #4		F						
U2 NPO #5		K		J				
U3 NPO #1		E		K				
U3 NPO #2	B		G					
U3 NPO #3	C	D			A		J	
U3 NPO #4		F						

	120-135	135-150	150-165	165-180	180-195	195-210	210-225	225-240
U2 NPO #1								
U2 NPO #2	G							
U2 NPO #3	A				A			
U2 NPO #4	F							
U2 NPO #5	I				H			
U3 NPO #1					H			
U3 NPO #2	G							
U2 NPO #3	J				A			
U3 NPO #4	F							

Entergy Indian Point Energy Center NEI 12-01 Phase 1 Staffing Assessment

	240-255	255-270	270-285	285-300	300-315	315-330	330-345	345-360
U2 NPO #1								
U2 NPO #2	G							
U2 NPO #3	A				A			
U2 NPO #4	F							
U2 NPO #5								
U3 NPO #1								
U2 NPO #2	G							
U3 NPO #3	A				A			
U3 NPO #4	F							

- A. Monitor SFP level & temperature
- B. Attempt to start D/G
- C. Attempt to start App R D/G
- D. DC load shed
- E. Isolate RCP seal
- F. Monitor/Control TDAFWP locally, open rollup door
- G. Monitor/operate ADV
- H. Close doors SFB area
- I. Check CST level
- J. Verify valve positions/close Attachment
- K. Isolate CST from hotwell

10.3 The analysis did not identify any new or non-validated tasks or potential overlap of tasks that would require a Time Motion Study to be performed.

11.0 CHANGES / INTERIM ACTIONS TO SUPPORT PHASE 1 STAFFING ASSESSMENT (RFI#5)

11.1 Requested Information#5: *Identify any interim actions that have been taken or are planned prior to the completion of the staffing assessment.*

- Entergy provided a response to RFI #5 in *Entergy's 90-Day Response to the March 12, 2012, Information Request, Action Plan for Completing Emergency Communication and Staffing Assessments* dated June 8, 2012.

- This section provides additional information to the response.

11.2 Staffing Changes

The existing on-shift staff is sufficient to implement the existing SBO strategies on both units, simultaneously, while supporting performance of the required Emergency Planning duties without unacceptable collateral duties. No staffing changes are required. The emergency plan will not be changed as a result of the on-shift or augmented staffing necessary to respond to a loss of all ac power.

11.3 Expanded Capability Staffing

The existing augmented ERO provides sufficient staffing to satisfy the Expanded Capability functions as defined in NEI 12-01, Table 3.1. Additional staffing support is available from Entergy fleet resources (Arkansas Nuclear One, Grand Gulf, River Bend, Waterford, Palisades, Fitzpatrick, Vermont Yankee, and Pilgrim) as well as the Corporate organization at Jackson, Ms. Resources, including Operations, Maintenance, Instrumentation and Controls, Radiation Protection, and Engineering, are routinely shared during refueling outages. This experience, along with the common structure of Entergy's processes enables personnel shared between sites to support site-specific activities. Should the event require long-term staffing, additional resources are available from the remaining Entergy Nuclear sites, as well as the corporate office at Echelon in Jackson. .

11.4 Emergency Plan and Procedure Changes

Per NEI 21-01, Section 3.10, the capability for responding to a beyond design basis external event does not need to be described in the emergency plan. A licensee may, however, choose to incorporate implementing instructions for expanded response functions into emergency plan implementing procedures, and/or extended loss of AC power, SAM or other program documents.

Entergy will incorporate instructions into applicable fleet/site guidance to activate the Expanded Response Capability and to integrate this capability into the existing augmented emergency response organization structure based upon the following conditions, as described in NEI 12-01, Section 3.8:

- Loss of ALL offsite and ALL on-site power sources to AC emergency busses at more than 1 unit, OR
- Plant parameters or conditions require implementation of SAM strategies for more than 1 unit.

11.5 Emergency Response Drill and Exercise Program

NEI 12-01 further states that a licensee should determine if any changes are necessary to documents describing the emergency response drill and exercise program. In particular, standard objectives and extent-of-play may need to be revised to clarify the expected demonstration of functions that are dependent upon the type of scenario event or accident (i.e., within or beyond design basis, and number of affected units). For example, functions associated with an expanded response capability would not be demonstrated during a drill or exercise that involved a design basis accident affecting only one unit.

Given that the BDBEE mitigating strategies, associated procedures, and modifications have not been implemented at this time, Entergy will not revise the drill and exercise program in response to the Phase 1 assessment. Entergy will identify any appropriate modifications to the Indian Point Energy Center (IPEC) Emergency Plan Drill and Exercise Program upon completion of the mitigation strategies and associated guidance being developed in response to NRC order EA 12-049 recommendation 4.2.

(Enhancement)

12.0 **IMPLEMENTATION SCHEDULE TO CONDUCT ONSITE AND AUGMENTED STAFFING ASSESSMENT (RFI #2)**

- 12.1 *Provide an implementation schedule of the time needed to conduct the onsite and augmented staffing assessment. If any modifications are determined to be appropriate include in the schedule the time to implement the changes.*
- 12.2 Attachment 1 provides the IPEC on-shift and augmented staffing assessment Phase 1 for the loss of all AC power, multi-unit event. No modifications were identified in the Phase 1 assessment.
- 12.3 Per the commitment made in Entergy's 60 day response to the March 12, 2012, NL-12-054 dated May, 11, 2012, the Phase 1 staffing assessment submittal date is April 30, 2013 and the Phase 2 staffing assessment will be completed by October 3, 2014 and submitted by November 3, 2014.

13.0 **NEI 12-01 PHASE 1 STAFFING ASSESSMENT SUMMARY [RFI#1, #6]**

This assessment concluded that the current minimum on-shift staffing as defined in EP-Emergency Plan for Indian Point Energy Center, is sufficient to support the implementation of the current station blackout (SBO) 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 any new staff or identify any new functions or tasks that have not been analyzed.

The Phase 1 assessment also identified the staffing necessary to support the Expanded Response Capability for the beyond design basis external event (BDBEE) as defined for

Entergy Indian Point Energy Center NEI 12-01 Phase 1 Staffing Assessment

the Phase 1 assessment. This staffing will be provided by the current site resources, supplemented by fleet resources, as necessary.

The existing on-shift staff and augmented ERO is sufficient to implement the existing SBO strategies on both units, simultaneously, while supporting performance of the required Emergency Planning duties without unacceptable collateral duties. No staffing changes are required. The emergency plan will not be changed as a result of the on-shift or augmented staffing necessary to respond to a loss of all ac power. No interim actions have been taken or are planned prior to the completion of the staffing assessment.

The Letters of Agreement in the Emergency Plan along with State and County Emergency Plans and Mutual Aid Agreements are sufficient to describe the support available to assist the sites should a BDBEE occur.

The assessment concluded that an action is required to establish guidance and controls to activate the Expanded Response Capability. Enhancements are identified in Attachment 2.

14.0 **REFERENCES**

- 14.1 NEI 12-01, Rev 0, *Guideline for Assessing Beyond Design Basis Accident Response Staffing and Communications Capabilities*
- 14.2 NEI 10-05, Rev 0, *Assessment of On-Shift Emergency Response Organization Staffing and Capabilities*
- 14.3 NSIR DPR-ISG-01, *Interim Staff Guidance – Emergency Planning for Nuclear Power Plants*
- 14.4 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.*
- 14.5 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*
- 14.6 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*
- 14.7 Entergy Letter (NL-12-142) dated October 31, 2012, *Entergy Response to the March 12, 2012, Information Request Pursuant to 10 CFR 50.54(f) Regarding Recommendation 9.3 for Completing Emergency Communication Assessments.*
- 14.8 Corrective Action Program Learning Organization LO-HQNLO-00138, Notifying Augmented Staff
- 14.9 Corrective Action Program CR-IP2-2011-3909, IPEC Response to IJPO IER Level 1 No. 11-4
- 14.10 IPEC-EP-12-01, Rev 14, IPEC Emergency Plan

15.0 **ATTACHMENTS**

- 15.1 Attachment 1, NEI 10-05 Style Staffing Tables for IPEC
- 15.2 Attachment 2 Enhancements

Entergy Indian Point Energy Center Phase 1 Staffing Assessment

Attachment 1

ATTACHMENT 1

NEI 10-05 STAFFING TABLES

FOR

ENTERGY INDIAN POINT ENERGY CENTER

NEI 12-01 PHASE 1 STAFFING ASSESSMENT

Entergy Indian Point Energy Center Phase 1 Staffing Assessment

Attachment 1

ATTACHMENT 1 – NEI 10-05 STYLE STAFFING TABLES FOR IPEC

Attachment 1

NEI 12-01 Phase 1 OSA

Multi- Unit Extended Station Blackout (SBO)

- 1. Accident Summary:**
 - A loss of all offsite AC power occurs coincident with the trip of the unit. All emergency diesel generators fail to start.
- 2. Accident Specific Assumptions:**
 - The start and load manual actions for the SBO Diesel Generators are unsuccessful.
 - NEI 10-05 Assumptions identified in Section 4.0.
 - NEI 12-01 Assumptions identified in Section 4.0
- 3. Procedures Reviewed for Accident Response Include:**
 - Procedures identified in Section 4.2

Entergy Indian Point Energy Center Phase 1 Staffing Assessment

Attachment 1

IPEC TABLE 1 - ON-SHIFT POSITIONS Multi-Unit Extended Station Blackout						
Line #	On-shift Position	Basis Document	Augmentation Elapsed Time	Role in Table # / Line #	Unanalyzed Task?	TMS Required?
1	U2 SM	E-Plan Table B-1	N/A	U2 T2/L1 T5/L1 T5/L2 T5/L3 T5/L5 T5/L8 T5/L10	No	No
2	U2 CRS	E-Plan Table B-1	N/A	U2 T2/L2	No	No
3	U1STA	E-Plan Table B-1	N/A	U2 T2/L3	No	No
4	U2 RO #1	E-Plan Table B-1	N/A	U2 T2/L4	No	No
5	U2 RO #2	E-Plan Table B-1	N/A	U2 T2/L5	No	No
6	U2 NPO #1	E-Plan Table B-1	N/A	U2 T2/L6	No	No
7	U2 NPO #2	E-Plan Table B-1	N/A	U2 T2/L7	No	No
8	U2 NPO #3	E-Plan Table B-1	N/A	N/A	No	No
9	U2 NPO #4	E-Plan Table B-1	N/A	N/A	No	No
10	U2 NPO #5	E-Plan Table B-1	N/A	N/A	No	No
11	U2 Chemistry	E-Plan Table B-1	N/A	T5/L12	No	No
12	U2 RP	E-Plan Table B-1	N/A	T4/L2	No	No
13	U3 SM	E-Plan Table B-1	N/A	U3 T2/L1 T5/L14	No	No
14	U3 CRS	E-Plan Table B-1	N/A	U3T2/L2	No	No
15	U3 STA	E-Plan Table B-1	N/A	U3 T2/L3	No	No
16	U3 RO #1	E-Plan Table B-1	N/A	U3 T2/L4	No	No
17	U3 RO #2	E-Plan Table B-1	N/A	U3 T2/L5	No	No
18	U3 NPO #1	E-Plan Table B-1	N/A	U3 T2/L6	No	No
19	U3 NPO #2	E-Plan Table B-1	N/A	U3 T2/L7	No	No
20	U3 NPO #3	E-Plan Table B-1	N/A	U3 T2/L8	No	No
21	U3 NPO#4	E-Plan Table B-1	N/A	N/A	No	No
22	U3 Chemistry	E-Plan Table B-1	N/A	N/A	No	No
23	U3 RP	E-Plan Table B-1	N/A	T4/L4	No	No
24	U1 NPO	E-Plan Table B-1	N/A	U2 T2/L8	No	No
25	Communicator	E-Plan Table B-1	N/A	T5/L6	No	No

Entergy Indian Point Energy Center Phase 1 Staffing Assessment

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				T5/L9 T5/L13		
26	SRO FBL	E-Plan Table B-1 (FB)	N/A	N/A	No	No
27	Security	Security Contingency Plan / E-Plan Table B- 1	N/A	T5/L15	No	No

Entergy Indian Point Energy Center Phase 1 Staffing Assessment

Attachment 1

IPEC TABLE 2 - UNIT 2 PLANT OPERATIONS & SAFE SHUTDOWN			
Two Unit - Two Control Room			
Multi-Unit Extended Station Blackout			
Minimum Operations Crew Necessary to Implement AOPs and EOPs or SAMGs if Applicable			
Line #	Generic Title/Role	On-Shift Position	Task Analysis Controlling Method
1	Shift Manager	Shift Manager	Licensed Operator Training Program
2	Unit Supervisor	Control Room Supervisor	Licensed Operator Training Program
3	Shift Technical Advisor	Shift Technical Advisor	Licensed Operator Training Program
4	Reactor Operator #1	Reactor Operator #1	Licensed Operator Training Program
5	Reactor Operator #2	Reactor Operator #2	Licensed Operator Training Program
6	Auxiliary Operator #1	Nuclear Plant Operator #1	Non-Licensed Operator Training Program
7	Auxiliary Operator #2	Nuclear Plant Operator #2	Non-Licensed Operator Training Program
8	Auxiliary Operator #3	U1 Nuclear Plant Operator	Non-Licensed Operator Training Program
9	Other needed for Safe Shutdown	N/A	N/A
10	Other needed for Safe Shutdown	N/A	N/A

IPEC TABLE 2- UNIT 3 PLANT OPERATIONS & SAFE SHUTDOWN			
Two Unit - Two Control Room			
Multi-Unit Extended Station Blackout			
Minimum Operations Crew Necessary to Implement AOPs and EOPs or SAMGs if Applicable			
Line #	Generic Title/Role	On-Shift Position	Task Analysis Controlling Method
1	Shift Manager	Shift Manager	Licensed Operator Training Program
2	Unit Supervisor	Control Room Supervisor	Licensed Operator Training Program
3	Shift Technical Advisor	Shift Technical Advisor	Licensed Operator Training Program
4	Reactor Operator #1	Reactor Operator #1	Licensed Operator Training Program

Entergy Indian Point Energy Center Phase 1 Staffing Assessment

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5	Reactor Operator #2	Reactor Operator #2	Licensed Operator Training Program
6	Auxiliary Operator #1	Nuclear Plant Operator #1	Non-Licensed Operator Training Program
7	Auxiliary Operator #2	Nuclear Plant Operator #2	Non-Licensed Operator Training Program
8	Auxiliary Operator #3	Nuclear Plant Operator #3	Non-Licensed Operator Training Program
9	Other needed for Safe Shutdown	N/A	N/A
10	Other needed for Safe Shutdown	N/A	N/A

Other (non-Operations) Personnel Necessary to Implement AOPs and EOPs, or SAMGs if applicable

Line #	Generic Title/Role	On-Shift Position	Task Analysis Controlling Method
11	Mechanic	N/A	N/A
12	Electrician	N/A	N/A
13	I&C Technician	N/A	N/A
14	Other	N/A	N/A
15	Other	N/A	N/A

Fire Brigade (No firefighting activities included in this accident.)

IEPC TABLE 3 - FIREFIGHTING Multi-Unit Extended Station Blackout		
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

Entergy Indian Point Energy Center Phase 1 Staffing Assessment

Attachment 1

IPEC TABLE 4 - RADIATION PROTECTION AND CHEMISTRY																		
Multi-Unit Extended Station Blackout																		
L I N E	Position Performing Function / Task 6 + hours	Performance Time Period After Emergency Declaration (minutes)*																
		0-5	5-10	10-15	15-20	20-25	25-30	30-35	35-40	40-45	45-50	50-55	55-60	60-65	65-70	70-75	75-80	80-85
1	In-Plant Survey: <u>U2/U3RP</u>)	As directed by SM																
2	On-site Survey: _____																	
3	Personnel Monitoring: _____																	
4	Job Coverage: <u>U2/U3 RP</u>	As directed by SM																
5	Offsite Rad Assessment: <i>(Included in Table 5</i>																	
6	Other site specific RP (describe): _____																	
7	Chemistry Function task #1 (describe) <u>U3 Chem</u>	As directed by SM																
8	Chemistry Function task #2 (describe) _____																	

IPEC TABLE 4 - RADIATION PROTECTION AND CHEMISTRY																		
Multi-Unit Extended Station Blackout																		
L I N E	Position Performing Function / Task 6 + hours	Performance Time Period After Emergency Declaration (minutes)*																
		90-95	95-100	100-105	105-110	110-115	115-120	120-125	125-130	130-135	135-140	140-145	145-150	150-155	155-160	160-165	165-170	170-175

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1	In-Plant Survey: U2/U3 RP	As directed by SM																	
2	On-site Survey:																		
3	Personnel Monitoring:																		
4	Job Coverage: U2 RP	As directed by SM																	
5	Offsite Rad Assessment: <i>(Included in Table 5)</i>																		
6	Other site specific RP (describe):																		
7	Chemistry Function task #1 (describe) U3 Chem	As directed by SM																	
8	Chemistry Function task #2 (describe)																		

**IPEC TABLE 4 – RADIATION PROTECTION AND CHEMISTRY
Multi-Unit Extended Station Blackout**

LINE	Position Performing Function / Task 6 + hours	Performance Time Period After Emergency Declaration (minutes)*																
		180-185	185-190	190-195	195-200	200-205	205-210	210-215	215-220	220-225	225-230	230-235	235-240	240-245	245-250	250-255	255-260	260-265
1	In-Plant Survey: U2/U3 RP	As directed by SM																

Entergy Indian Point Energy Center Phase 1 Staffing Assessment

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IPEC TABLE 4 - RADIATION PROTECTION AND CHEMISTRY																		
Multi-Unit Extended Station Blackout																		
L I N E	Position Performing Function / Task 6 + hours	Performance Time Period After Emergency Declaration (minutes)*																
		270- 275	275- 280	280- 285	285- 290	290- 295	295- 300	300- 305	305- 310	310- 315	315- 320	320- 325	325- 330	330- 335	335- 340	340- 345	345- 350	350- 355
1	In-Plant Survey: U2/U3 RP	As directed by SM																
2	On-site Survey: U2/U3 RP	As directed by SM																
3	Personnel Monitoring:																	
4	Job Coverage: U2/U3 RP	As directed by SM																
5	Offsite Rad Assessment: <i>(Included in Table 5</i>																	
6	Other site specific RP (describe):																	
7	Chemistry Function task #1 (describe) U3 Chem	As directed by SM																
8	Chemistry Function task #2 (describe)																	

Entergy Indian Point Energy Center Phase 1 Staffing Assessment

Attachment 1

IPEC TABLE 5 – EMERGENCY PLAN IMPLEMENTATION			
Multi-Unit Extended Station Blackout			
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	U3 SM	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)	Emergency Planning Training Program
13	Perform NRC notifications	Communicator	Emergency Planning Training Program
14	Perform other site-specific event notifications (e.g., Duty Plant Manager, INPO, ANI, etc.)	U3 SM	Licensed Operator Training Program
15	Personnel Accountability	Security	Security Training Program / EP Drills

Entergy Indian Point Energy Center Phase 1 Staffing Assessment

Attachment 1

- 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 may 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 Chemistry will report to the U2 Control Room to assist the SM/ED as directed and be available if an unmonitored release is detected by onsite surveys. A release is not anticipated since core cooling, spent fuel pool cooling and containment are maintained during the 24 hour period

Entergy IPEC Phase 1 Staffing Assessment

Attachment 2

ATTACHMENT 2

ENHANCEMENTS IDENTIFIED

ENTERGY INDIAN POINT ENERGY CENTER

NEI 12-01 PHASE 1 STAFFING ASSESSMENT

Entergy IPEC Phase 1 Staffing Assessment

Attachment 2

ATTACHMENT 2 - ENHANCEMENTS

A. Activating the IPEC Expanded Response Capability

Entergy will incorporate instructions into applicable fleet/site guidance to activate the Expanded Response Capability and to integrate this capability into the existing augmented emergency response organization structure based upon the following conditions, as described in NEI 12-01, Section 3.8:

- Loss of ALL offsite and ALL on-site power sources to AC emergency busses at more than 1 unit, OR
- Plant parameters or conditions require implementation of SAM strategies for more than 1 unit.

. [Enhancement]

B. Drill and Exercise Program

Given that the mitigating strategies, associated procedures, and modifications have not been implemented at this time, Entergy will not be revising the drill and exercise program in response to the Phase 1 assessment. Entergy will identify any appropriate modifications to the Indian Point Energy Center (IPEC) Emergency Plan Drill and Exercise Program upon completion of the mitigation strategies and associated guidance being developed in response to NRC order EA 12-049 recommendation 4.2. [Enhancement]

ATTACHMENT TO NL-13-070

INDIAN POINT ENERGY CENTER
LIST OF REGULATORY COMMITMENTS

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

List of Regulatory Commitments

The following table identifies those actions committed to by Entergy in this document. Any other statements in this submittal are provided for information purposes and are not considered to be regulatory commitments.

COMMITMENT	TYPE (Check One)		SCHEDULED COMPLETION DATE (If Required)
	ONE- TIME ACTION	CONTINUING COMPLIANCE	
Entergy will perform this assessment (determine the applicable staffing requirements to address back-up equipment to support the mitigation strategies required by NRC Order Number EA-12-04) as part of the Phase 2 staffing assessment as previously identified in NL-12-054.	X		November 3, 2014
Entergy will identify any appropriate modifications to the Indian Point Energy Center (IPEC) Emergency Plan Drill and Exercise Program upon completion of the mitigation strategies and associated guidance being developed in response to NRC Order Number EA-12-04.	X		November 3, 2014
Entergy will incorporate instructions into applicable fleet/site guidance for IPEC to activate the expanded response capability and to integrate this capability into the existing augmented emergency response organization structure based upon the following conditions as described in Nuclear Energy Institute (NEI) 12-01, Revision 0, dated May 2012. : <ul style="list-style-type: none"> • Loss of all offsite and all on-site power sources to AC emergency busses at more than one unit, or • Plant parameters or conditions require implementation of severe accident management strategies for more than one unit. 	X		March 5, 2014