Exelon Generation

10 CFR 50.54(f)

RS-13-085

April 30, 2013

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

Peach Bottom Atomic Power Station, Units 2 and 3
Renewed Facility Operating License Nos. DPR-44 and DPR-56
NRC Docket Nos. 50-277 and 50-278

Subject: Response to March 12, 2012, Request for Information Pursuant to Title 10 of the Code of Federal Regulations 50.54(f) Regarding Recommendations of the Near-Term Task Force Review of Insights from the Fukushima Dai-ichi Accident, Enclosure 5, Recommendation 9.3, Emergency Preparedness – Staffing, Requested Information Items 1, 2, and 6 - Phase 1 Staffing Assessment

References:

1. NRC Letter, Request for Information Pursuant to Title 10 of the Code of Federal Regulations 50.54(f) Regarding Recommendations 2.1, 2.3, and 9.3, of the Near-Term Task Force Review of Insights from the Fukushima Dai-ichi Accident, dated March 12, 2012
2. Exelon Generation Company, LLC's 60-Day Response to March 12, 2012 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 May 14, 2012
3. NEI 12-01, "Guideline for Assessing Beyond Design Basis Accident Response Staffing and Communications Capabilities," Revision 0, dated May 2012
4. NRC Letter to NEI, dated May 15, 2012, USNRC Review of NEI 12-01, "Guideline for Assessing Beyond Design Basis Accident Response Staffing and Communications Capabilities," Revision 0, dated May 2012
5. NRC Order Number EA-12-049, "Issuance of Order to Modify Licenses with Regard to Requirements for Mitigation Strategies for Beyond-Design-Basis External Events," dated March 12, 2012

On March 12, 2012, the NRC staff issued a letter entitled Request for Information Pursuant to Title 10 of the Code of Federal Regulations 50.54(f) Regarding Recommendation 9.3 of the Near-Term Task Force Review of Insights from the Fukushima Dai-ichi Accident (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 10 CFR 50.54, "Conditions of licenses," paragraph (f), addressees were requested to submit a written response to the information requests within 90 days.

In accordance with Reference 1, Enclosure 5, Exelon Generation Company, LLC (EGC) submitted an alternative course of action for performing the requested actions and providing the requested information (Reference 2). Enclosure 1 of Reference 2 described the alternative course of action and schedule for responding to the Emergency Preparedness – Staffing, Requested Information Items 1, 2, and 6.

Enclosure 1 to this letter provides the Peach Bottom Atomic Power Station Phase 1 Staffing Assessment Report. The Peach Bottom Atomic Power Station Phase 1 Staffing Assessment Report follows the assessment process methodology described in NEI 12-01 (Reference 3), which was endorsed by the NRC in Reference 4.

In accordance with Reference 2, Enclosure 1, this letter provides the response to the following information requests:

- Reference 1, Enclosure 5, Staffing, Requested Information Item 1
- Reference 1, Enclosure 5, Staffing, Requested Information Item 2
- Reference 1, Enclosure 5, Staffing, Requested Information Item 6

Response to Information Request in Reference 1, Enclosure 5, Staffing, 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 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.***

- ***New staff or functions identified as a result of the assessment.***

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

Response

Enclosure 1 provides the Peach Bottom Atomic Power Station on-shift staffing assessment conducted pursuant to Reference 2. A detailed timeline based upon the existing loss of AC power procedures 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. Major tasks include de-energization of unnecessary DC loads to preserve battery life, reactor pressure vessel depressurization and makeup, and establishment of additional ventilation paths. Radiation Protection and Chemistry Technician Functions (as specified in site response procedures) were also assessed to identify any discipline-specific actions required in response to a loss of all AC power. The assessment concluded that Chemistry sampling and analysis equipment would be unavailable due to the loss of power.

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 NEI 10-05, "Assessment of On-Shift Emergency Response Organization Staffing and Capabilities," 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 EP-AA-1007, Radiological Emergency Plan Annex for Peach Bottom Atomic Power Station, the required minimum shift staffing of 23 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 NEI 10-05 staffing analysis tables for Peach Bottom Atomic Power Station are included in Enclosure 1.

Regarding the staffing requirements for movement of temporary equipment, development of the procedures to support the mitigation strategies required by NRC Order EA-12-049 (Reference 5) must be completed in order to determine the applicable staffing requirements to address back-up equipment. As described in Enclosure 1, Section 4.1.4, Peach Bottom Atomic Power Station will perform the requested assessment as part of the Phase 2 staffing assessment to be provided four months prior to the P3R20 Refueling Outage (Fall 2015), 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 Information Request in Reference 1, Enclosure 5, Staffing, 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.

Response

The Phase 1 Staffing Assessment results for Peach Bottom Atomic Power Station require the establishment of procedural controls to activate the Expanded Response Capability. EGC will incorporate instructions into applicable fleet procedures to activate the Expanded Response Capability and to request any necessary logistical support for site access 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 Severe Accident Management (SAM) strategies for more than 1 unit.

These procedure changes will be implemented by September 30, 2014.

Response to Information Request in Reference 1, Enclosure 5, Staffing, 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.).

Response

As described in Enclosure 1, Section 8, Item 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, Section 8, Item 2, the existing augmented ERO, supplemented by site staff, provides sufficient staffing to satisfy the Expanded Capability functions defined in NEI 12-01, Table 3.1. No changes to the Emergency Plan augmented ERO staffing have been identified.

As described in Enclosure 1, Section 7.5, the existing agreements with offsite resource providers were determined to be adequate and no new or revised agreements are required.

Given that the Beyond Design Basis External Event has not been incorporated into the Exelon Emergency Plan at this time, Exelon will not be revising the drill and exercise program in response to the Phase 1 Staffing Assessment. Consideration will be given to making the appropriate changes to the drill and exercise program based upon the implementation of the mitigating strategies in response to the Order for Recommendation 4.2.

A list of regulatory commitments contained in this letter is provided in Enclosure 2.

If you have any questions regarding this submittal, please contact Ron Gaston at (630) 657-3359.

I declare under penalty of perjury that the foregoing is true and correct. Executed on the 30th day of April 2013.

Respectfully,

D. P. Helker

David P. Helker
Manager - Licensing & Regulatory Affairs
Exelon Generation Company, LLC

Enclosures:

1. Peach Bottom Atomic Power Station NEI 12-01 Phase 1 Staffing Assessment

2. Summary of Regulatory Commitments

cc: Director, Office of Nuclear Reactor Regulation
Regional Administrator - NRC Region I
NRC Senior Resident Inspector - Peach Bottom Atomic Power Station
NRC Project Manager, NRR - Peach Bottom Atomic Power Station
Director, Bureau of Radiation Protection - Pennsylvania Department of Environmental Resources
S. T. Gray, State of Maryland
R. R. Janati, Chief, Division of Nuclear Safety, Pennsylvania Department of Environmental Protection, Bureau of Radiation Protection Commonwealth of Pennsylvania

Enclosure 1

Peach Bottom Atomic Power Station

NEI 12-01 Phase 1 Staffing Assessment Report

(35 Pages)

Exelon Generation

Enclosure 1

PEACH BOTTOM ATOMIC POWER STATION

NEI 12-01 Phase 1

Staffing Assessment

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1.0 EXECUTIVE SUMMARY

This report provides the 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 Exelon Generation Company, LLC's 60-Day Response for Peach Bottom Station. 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. The report also includes a discussion of any changes planned in response to the Phase 1 Staffing Assessment and the associated implementation schedule.

The Phase 1 staffing assessment concluded that the current minimum on-shift staffing as defined in EP-AA-1007, Radiological Emergency Plan Annex for Peach Bottom Station, 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 in NEI 12-01, Section 3.4.

The Phase 1 Staffing Assessment will require the establishment of fleet procedural controls to activate the Expanded Response Capability. These controls will be established by September 30, 2014.

2.0 BACKGROUND

Response to Near-Term Task Force Recommendation 9.3, Staffing

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 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.*

The industry developed an alternative response based upon a phased approach to Recommendation 9.3. This phased approach was developed with recognition of:

1) the higher priority placed upon the completion of licensee actions necessary to comply with the EP Rule promulgated in Federal Register Volume 76, Number 226; dated November 23, 2011; Pages 72560-72600; and,

2) the dependency of certain assessment elements upon future definition of new response requirements associated with Fukushima NTTF Recommendation 4.2, as subsequently modified by the staff and issued as NRC Order EA-12-049. This phased approach was defined in NEI 12-01, Guideline for Assessing Beyond Design Basis Accident Response Staffing and Communications Capabilities.

NEI 12-01 Executive Summary states, in part:

...A licensee should be able to provide the staffing necessary for responding to a beyond design basis external event affecting all units on a site. The number and composition of the response staff should be sufficient to implement mitigation strategies and repair actions intended to maintain or restore the functions of core cooling, containment, and spent fuel pool cooling for all affected units...

In its letter to Susan Perkins-Grew, NEI, dated May 15, 2012, the US NRC states, in part:

The staff has reviewed NEI 12-01, Revision 0, dated May 2012, and has found this guidance to be an acceptable method for licensees to employ when responding to the 10 CFR 50.54(f) letters regarding NTTF Recommendation 9.3.

The phased approach and associated schedule was submitted to the NRC under Exelon Generation Company, LLC's 60-Day Response to March 12, 2012 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 May 11, 2012 and May 14, 2012 (corrected). In this letter, Exelon committed to the completion of a Phase 1 staffing assessment by March 29, 2013, and submittal of the assessment to the NRC by April 30, 2013. Per this letter, the April 30 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 (Staffing Request Nos. 1A, 2C and 6A). Specifically, these items are:

1 Provide an assessment of the on-site and augmented staff needed to respond to a large scale natural event meeting the conditions described in the Discussion section. This assessment should include a discussion of the on-site 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 on-site staff will move back-up equipment (e.g., pumps, generators) from alternate on-site 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.

New staff or functions identified as a result of the assessment.

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

1A Provide on-site and augmented staffing assessment considering all requested functions except those related to NTTF Recommendation 4.2. [Phase 1 staffing assessment]

2A Conduct the on-site and augmented staffing assessment:

The on-site and augmented staffing assessment considering all requested functions except those related to NTTF Recommendation 4.2. [Phase 1 staffing assessment] (March 29, 2013)

2C A schedule of the time needed to implement changes will be provided as follows:

Those associated with the Phase 1 staffing assessment (April 30, 2013)

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.).

6A Changes will be identified as follows:

Those associated with the Phase 1 Staffing Assessment. (April 30, 2013)

This report for Peach Bottom Station provides the NEI 12-01 Phase 1 Staffing Assessment, as requested by the §50.54(f) letter, conducted using the guidance in

NEI 12-01 and material from NEI 10-05. This report addresses items 1A, 2A, and 6A, as described in Exelon's letter of May 14, 2012.

Relation to EP Rulemaking

The requirements for an on-shift and augmented emergency response organization (ERO) are provided in 10 CFR 50.47(b) and 10 CFR 50 Appendix E.

> §50.47(b)(1) states, in part:
> *...each principal response organization has staff to respond and to augment its initial response on a continuous basis.*
>
> §50.47(b)(2) states, in part:
> *On-shift facility licensee responsibilities for emergency response are unambiguously defined, adequate staffing to provide initial facility accident response in key functional areas is maintained at all times, timely augmentation of response capabilities is available...*
>
> §50 Appendix E.IV, Content of Emergency Plans, subsection A states, in part:
> *The organization for coping with radiological emergencies shall be described, including definition of authorities, responsibilities, and duties of individuals assigned to the licensee's emergency organization and the means for notification of such individuals in the event of an emergency...*

As part of the overall Emergency Preparedness rulemaking published in November of 2011, the Commission amended §50, Appendix E, Section IV.A, "Organization" to address concerns regarding the assignment of tasks or responsibilities to on-shift ERO personnel that would potentially overburden them and prevent the timely performance of their emergency plan functions. §50 Appendix E.IV subsection A.9 was added to state:

> *By December 24, 2012, for nuclear power reactor licensees, a detailed analysis demonstrating that on-shift personnel assigned emergency plan implementation functions are not assigned responsibilities that would prevent the timely performance of their assigned functions as specified in the emergency plan.*

In conjunction with the new rule, the NRC issued, Interim Staff Guidance (ISG) NSIR/DPR-ISG-01. ISG Section IV.C provides specific detail on the criteria and acceptable methods for the conduct of the on-shift staffing analysis, including the endorsement of NEI 10-05. The NEI analysis methodology is composed of the following:

- Identification of the on-shift ERO staffing and response time requirements.
- Identification of the site specific event scenarios described in the ISG.

- Documentation of an On-shift Staffing Analysis (OSA) for each event scenario.
- Documentation of a Time Motion Study (TMS), if deemed necessary.

While NSIR/DPR-ISG-01, Section IV.C, and NEI 10-05 address a Station Blackout (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.

3.0 EMERGENCY PLAN MINIMUM STAFFING

The Peach Bottom Station Emergency Plan Annex establishes the licensing basis for the on-shift staffing complement. Only personnel required to be on-shift are credited in the staffing analysis. The following table indicates the on-shift personnel necessary to perform the required emergency planning functions.

Functional Area	Major Tasks	Emergency Positions	Minimum Shift Size
1. Plant Operations/Safe Shutdown and Assessment of Operational Aspects	Control Room Staff	Shift Manager Shift Supervisor Nuclear Station Operator [b] SSD Non Licensed Operator [b]	1 1 3 3
2. Emergency Direction and Control	Command and Control	Shift Emergency Director	1 [a]
3. Notification and Communication	Emergency Communications	Plant Shift Personnel	2
4. Radiological Assessment	Offsite Dose Assessment In-Plant Surveys Chemistry	RP Personnel [e] Off-site Field Team (RP) Off-site Field Team (Driver) RP Personnel Chemistry Personnel	1 1 1 1 1
5. Plant System Engineering Repair and Corrective Action	Technical Support Repair and Corrective Actions	STA or Incident Assessor Mech Maintenance I&C Maintenance Electrical Maintenance Radwaste Operator	1 1 [a] 1 1 [a] 1
6. In Plant Protective Actions	Radiation Protection	RP Personnel	2 [a]
7. Fire Fighting	--	Fire Brigade [c]	5
8. First Aid and Rescue Operations	--	Plant Personnel	2 [a]
9. Site Access Control and Personnel Accountability	Security and Accountability	Security Team Personnel	(d)
		Total:	**23**

(a) May be provided by personnel assigned other functions
(b) Safe Shutdown per Fire Protection Report or per Technical Specifications. A Reactor Operator who maintains a Non Licensed Operator (NLO) qualification may fill an NLO position.
(c) Fire Brigade per UFSAR/Technical Specifications, as applicable
(d) Function performed by on-shift security personnel
(e) May be provided by RP Technician at Limerick Generating Station

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 on-site 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 (e.g., private resource providers or public sector support), etc.

   b. Post event time: 6 to 24 hours - Limited site access. Individuals may access the site by walking, personal vehicle or via alternate transportation capabilities (e.g., private resource providers or public sector support).

   c. Post event time: 24+ hours - Improved site access. Site access is restored to a near-normal status and/or augmented transportation resources are available to deliver equipment, supplies, and large numbers of personnel.

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 Staffing 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 Station Blackout (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.

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).

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 Additional Guidance 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.

   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. For purposes of this analysis, 360 minutes will be used as the time period for the conduct of on-shift ERO response actions.

Per NEI 10-05, the analysis methodology allows flexibility in the assignment of on-shift response functions and tasks, dependent upon the event or accident. For example, members of a fire brigade may be assigned other response duties if the event or accident does not include a fire. Likewise, a security officer might be assigned to perform offsite notifications during a DBA but not the DBT. For the purposes of this assessment, members of the fire brigade are utilized to perform actions during the initial and transition phases of the response.

On March 12, 2012, the NRC issued the *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.* It requested licensees perform the following assessment:

> *"How on-site staff will move back-up equipment (e.g., pumps, generators) from alternate on-site 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 of NUREG-0654, Table B-1, such as plant operations and assessment of operational aspects, emergency direction and control, notification/communication, radiological accident assessment, and support of operational accident assessment, as appropriate."*

The 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. Therefore, Peach Bottom will perform the requested assessment as part of the Phase 2 staffing assessment. The Phase 2 assessment will be submitted four months prior to Peach Bottom refueling outage P3R20, scheduled for the fall of 2015.

4.2 Scope/Sequence of Events

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

Per NEI 12-01, Section 2.2, 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.

- Both units experience a loss of offsite power and a failure of all emergency AC power sources resulting in a Station Blackout (Loss of all AC power).

- For the Phase 1 assessment, it is assumed that any systems/components that are not reliant upon AC power remain available for use in existing mitigation strategies.

- The BDBEE occurs such that restoration of any AC power source is not possible before the arrival of the augmented ERO personnel. (e.g., 360 minutes)

- The event initially results in a Site Area Emergency based on EAL MS1, with a subsequent escalation to a General Emergency based on EAL MG1.

4.2.2 On-shift Response

Peach Bottom has a common Control Room for the operation of Units 2 and 3 with one Shift Manager (SRO) providing Operations oversight of both units, and one Control Room Supervisor (SRO) who directs the activities for both units. In addition, minimum staffing includes a Shift Technical Advisor or Incident Assessor (STA/IA), and three Reactor Operators (ROs).

During a plant transient, manual or automatic shutdown, the Control Room Supervisor directs implementation of response actions per applicable abnormal operating or emergency operating procedures. The STA provides independent oversight and safety function status assessment (for both units during a dual unit event). The Shift Manager provides independent oversight and is also the Interim Emergency Director when plant conditions reach emergency action declaration criteria.

Non-licensed plant operators, on-shift Radiation Protection and Chemistry technicians will report to the control room for direction or direction will be provided to them via portable radio or other communications, as available.

For the Phase 1 assessment, on-shift personnel respond to the initiating events in accordance with Plant procedures. The initial response relies upon RCIC for vessel injection. Subsequent to vessel depressurization, injection would continue using the Diesel-Driven Fire Pump (DDFP) via the fire system. Transition phase actions include preparations for the establishment of temporary DC power for the safety relief valves and staging of portable pumps for vessel injection.

The following procedures were referenced during the event review:

- T-100, SCRAM
- T-101, RPV Control
- T-102, Secondary Containment Control,
- T-103, Radioactivity Release
- SE-11, Loss of Offsite Power
- SE-11, Attachment B, Responding to a Diesel Generator Trip or Failure to Start
- SE-11, Attachment T, DC Load Shed
- SE-11, Attachment U, Opening Secondary Containment Doors to Support Long-term HPCI/RCIC Operation
- SE-11, Attachment X, Defeat of the HPCI and RCIC Steam Line High Temperature Isolation
- SE-11.1, Operating Station Blackout Line During a LOOP Event
- T-261-2, Placing the Backup Instrument Nitrogen Supply from CAD Tank in Service
- T-261-3, Placing the Backup Instrument Nitrogen Supply from CAD Tank in Service
- T-243-2, Fire System Injection into the RPV
- T-243-3, Fire System Injection into the RPV
- T-225-2, Defeating RCIC Low Pressure Isolation
- T-225-3, Defeating RCIC Low Pressure Isolation
- T-200-2, Primary Containment Venting
- T-200-3, Primary Containment Venting
- TSG-4.1, Peach Bottom Station Operational Contingency Guidelines
- EP-AA-112-100-F-01, Shift Emergency Director Checklist
- RP-PB-300-1004, Use of RP Response Cards

4.2.3 Severe Accident Management Guideline (SAMG)

The BDBEE did not result in entry conditions into SAMG procedures prior to the ERO augmentation. Entry conditions into SAMG procedures are not expected to occur until after the augmenting ERO has responded.

It is therefore concluded that the on-shift ERO would not be called upon to perform SAMG functions and activities for the event analyzed for this report prior to the assistance of the greater ERO in the emergency facilities being available.

5.0 ON-SHIFT STAFFING TASK ANALYSIS RESULTS

Peach Bottom Operations personnel conducted a table-top review of the on-shift response to the postulated BDBEE and extended loss of AC power for the Initial and Transition Phases using the current SBO strategies. Resources needed to perform initial event response actions were identified from the Emergency Operating Procedures (EOPs), Abnormal Operating Procedures (AOPs), or other operations procedures.

Per NEI 12-01, Corporate EP performed an assessment of the ability to execute the required EP functions using the methodology specified in NEI 10-05. Per NEI 10-05, the analysis is performed using five tables to evaluate the on-shift staffing and functions. The on-shift resources were entered in the appropriate tables (Attachment 1, Tables 2 and 3). Applicable RP and Chemistry tasks and the time required to perform expected emergency plan functions were entered in Table 4. This information was documented on the applicable tables from NEI 10-05 located in Attachment 1 of this report. The Emergency Plan functions for the event were reviewed and assigned to the on-shift resource responsible for performance of the identified function and documented as per NEI 12-01 using the NEI 10-05 documentation (Table 5). Finally, the on-shift resources and their actions were summarized in Table 1 using the NEI 10-05 documentation process.

This Phase 1 Staffing Assessment concluded that the current shift staffing is sufficient to execute all required initial and transition phase tasks prior to the arrival of additional site personnel. The most resource-intensive positions were determined to be the Equipment Operators (EO). The EO tasks were assigned as shown in Table 5.1 below. None of these operating tasks require the use of the Shift Manager / Shift Emergency Director or the dedicated shift communicators. As such, no unacceptable collateral duties were identified. Refer to Attachment 1, NEI 10-05 Staffing Table for Peach Bottom Station, for documentation of the on-shift staffing analysis results.

Table 5.1: Peach Bottom EO Utilization

Time / Pos	0-15	15-30	30-45	45-60	60-75	75-90	90-105	105-120
EO #1	Report to MCR	Check EDGs			Defeat RCIC Temp Isolation			
EO #2	Report to MCR	Check EDGs			Defeat RCIC Temp Isolation			
EO #3	Report to MCR	Establish Backup N2		Monitor Turb and M-G Sets, Vent Generators			Prepare to Vent Containment	
EO #4	Report to MCR	Establish Backup N2		Monitor Turb and M-G Sets, Vent Generators			Prepare to Vent Containment	
EO #5	Report to MCR	Remove ECCS Fuses				Equalize CSTs		
EO #6	Report to MCR	DC Load Shed				Line-up DDFP for Injection		
EO #7	Report to MCR	DC Load Shed					Defeat RCIC Low Press isolation	
EO #8	Report to MCR	Establish RCIC Ventilation						

Time / Pos	120-135	135-150	150-165	165-180	180-195	195-210	210-225	225-240
EO #1	Transfer Fuel to DDFP Tank							
EO #2	Transfer Fuel to DDFP Tank							
EO #3	Prepare to Vent Containment							
EO #4	Prepare to Vent Containment							
EO #5					Supply DC Power to SRVs			
EO #6					Supply DC Power to SRVs			
EO #7					Supply DC Power to SRVs			
EO #8								

Time / Pos	240-255	255-270	270-285	285-300	300-315	315-330	330-345	345-360
EO #1			Establish Flow from DDFPs					
EO #2			Establish Flow from DDFPs					
EO #3			Establish Flow from DDFPs					
EO #4	Stage Portable Pumps							
EO #5	Supply DC Power to SRVs							
EO #6	Supply DC Power to SRVs							
EO #7	Supply DC Power to SRVs							
EO #8	Stage Portable Pumps							

6.0 ON-SHIFT STAFFING TIME MOTION STUDY

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

7.0 EXPANDED RESPONSE CAPABILITY

A typical augmented ERO for a multi-unit site would be challenged to effectively respond to a beyond design basis external event that resulted in an extended loss of AC power affecting more than one unit. 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 Peach Bottom should be to enable the performance of unit-specific accident assessment and mitigation functions.

In accordance with NEI 12-01, to be effective, the expanded response capability should encompass those functions necessary for preventing damage to irradiated fuel, or if such damage occurs, minimizing radiological releases. Selected functions must directly support the assessment and implementation of a range of mitigation strategies intended to maintain or restore the functions of core cooling, containment, and spent fuel pool cooling.

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 these 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.

Table 7.1 of this report describes the recommended expanded response capability staffing for Peach Bottom Station based upon the NEI 12-01 guidance for the Phase 1 assessment.

Table 7.1
Expanded Response Functions for Peach Bottom Phase 1 Staffing Assessment

Expanded Response Function	Typical Location	Key Roles and Staffing Considerations	Required Staffing	Function Fulfilled By
Unit Response Coordination	TSC	• 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	2	Station ED - Normal ERO Response (Required staffing* + 1) **Note 1**
Operations Coordination	TSC	• Provides coordination of Operations staff and support for an assigned unit • One individual per unit; individuals should not be assigned other functions	2	Operations Manager - Normal ERO Response (Required staffing* + 1) **Note 1**
Maintenance Coordination	TSC or OSC	• Provides coordination of Maintenance staff and support for an assigned unit • One individual per unit; individuals should not be assigned other functions	2	Maintenance Manager - Normal ERO Response (Required staffing* + 1)
Engineering Coordination	TSC or OSC	• Provides coordination of Engineering staff and support for an assigned unit • One individual per unit; individuals should not be assigned other functions	2	Technical Manager - Normal ERO Response (Required staffing* + 1) **Note 1**

Expanded Response Function	Typical Location	Key Roles and Staffing Considerations	Required Staffing	Function Fulfilled By
Engineering Assessments	TSC or OSC	• One team for each unit to perform engineering assessments in support of 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	6	Core Th/Hyd Eng Mech Eng Elect Eng Normal ERO Response (Required staffing* + 1)
Evaluation of Severe Accident Management (SAM) Strategies	TSC or OSC	• 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	(4) Duty concurrent with Technical Manager and /or Operations Manager	Technical Manager / Operations Manager **Note 1**
Unit In-Plant Team Coordination	OSC	• Overall cognizance of on-site and in-plant teams performing or supporting repair and corrective actions for an assigned unit • One individual per unit; individuals should not be assigned other functions	2	OSC Director Asst OSC Director Normal ERO Response (Required staffing + 1)
Non-Licensed Operators	OSC	• Two individuals per unit to implement repair and corrective actions • Should not include members of the on-shift staff	4	Site NLOs and/or regional NLO resources
Mechanical Maintenance Repair and Corrective Action	OSC	• 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)	4	Site Technicians and/or regional resources

Expanded Response Function	Typical Location	Key Roles and Staffing Considerations	Required Staffing	Function Fulfilled By
Electrical Maintenance Repair and Corrective Action	OSC	• 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)	4	Site Technicians and/or regional resources
I&C Repair and Corrective Action	OSC	• 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)	4	I&C Tech #1 and Site Technicians and/or regional resources
Implementation of SAM Strategies	OSC	• Number and composition of personnel capable of simultaneous implementation of any 2 SAM strategies at each unit (See **Note 2** below) • Should not include personnel assigned to other functions (e.g., emergency repair and corrective actions); however, may include members of the on-shift staff and personnel responsible for implementation of Transition Phase coping strategies	2 ROs, 4 EOs, 4 I&C Techs	2 ROs and 4 EOs, 2 I&C Techs from on-shift crew; 2 I&C Techs from Site staff and/or regional resources

*** - The required staffing for each position is specified in EP-AA-1007, Radiological Emergency Plan Annex for Peach Bottom Station. Normal augmentation is the required staffing plus one additional qualified individual.**

Notes:

1 – The SAMG Decision Maker position requires two individuals qualified as SAMG Decision Maker. The SAMG Evaluator position requires four additional individuals qualified as SAMG Evaluator. Per EP-AA-1007, Table 2-1, the SAMG Decision Maker and SAMG Evaluator functions may be assigned as concurrent duties.

2 - The SAM strategies selected for Peach Bottom were T-261-2(3), Placing the Backup Instrument Nitrogen Supply from CAD Tank In Service, and T-202-2(3), Primary Containment Nitrogen Injection for Combustible Gas Control.

7.1 On-Site Radiation Protection Technicians

Following a beyond design basis external event, on-site Radiation Protection (RP) Technicians are available in sufficient numbers to support performance of assigned emergency plan functions and the 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 Peach Bottom Station:

RPTCOP = 2 RP Technicians (Assessment of Radiological Conditions)

RPTRCA = 4 RP Technicians (2 per Unit)

RPTNC = 2 RP Technician (Off-site Surveys)

RPTT = 8 RP Technicians

For Peach Bottom, the complement of RP Technicians specified in the augmented ERO per EP-AA-1007 is 10. 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 the Site staff, as well as other Exelon sites.

7.2 Administrative Support Personnel

Administrative support personnel positions are not required for the Peach Bottom On-call ERO Staffing Requirements. Should the need for administrative support arise, this support would be obtained through a combination of site personnel and personnel from the Corporate organization, as well as other regional Exelon nuclear sites. Therefore, no enhancements have been identified in the assessment of administrative support personnel.

7.3 Training

No new ERO tasks or functions are required for implementing the expanded response capability. There are a sufficient number of qualified ERO personnel to implement the expanded response; qualification of additional personnel will not be required.

7.4 Work Areas for Expanded Capability

Several facilities may be utilized to support the expanded response capabilities if available. These facilities include Unit 1 office space and Maintenance shop facilities. Should these locations not be available due to the BDBEE, other available office space may be utilized, as appropriate, based upon the nature and effects of the external event.

7.5 Site Access for Expanded Capability

7.5.1 Activation of Expanded Response Capability

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, HU-AA-1081-F-15, Emergency Response Organization Fundamentals, has been revised to direct individuals to take the following actions if they become aware of a grid disturbance or significant natural disaster (e.g., earthquake, tornado, flood):

- Monitor local radio communications for impact on the Grid structure and local roads.
- Should the situation appear to be a major disturbance to the Grid structure, ensure your home and family is safe, and then report to your emergency response facility (ERF). If your ERF is not accessible, report to your alternate reporting location.

Direction has also been added to ensure that cell phones are maintained in a charged condition to support potential emergency communications for personnel not affected by the loss of communications.

7.5.2 Support for Expanded Capability Site Access

Various methods of access would apply to each site, depending upon the nature of the natural disaster affecting the site, including walking, personal vehicle, helicopter, ATV and water craft. Logistical support for site access under adverse conditions would be provided under the mutual aid structure. For the Commonwealth of Pennsylvania, the provision of emergency support is governed by Title 35, Chapter 73, Commonwealth Services, Subchapter A, The Governor and Disaster Emergencies, Subchapter B, Pennsylvania Emergency Management Agency, and Subchapter C, Intrastate Mutual Aid. These statutes assign the Governor the authority, under a declared state of

emergency, to utilize all available resources of the Commonwealth Government and each political subdivision of this Commonwealth as reasonably necessary to cope with the disaster emergency. The Governor has the authority for the deployment and use of any forces to which the plan or plans apply and for use or distribution of any supplies, equipment and materials and facilities assembled, stockpiled or arranged to be made available pursuant to this part or any other provision of law relating to disaster emergencies, and is the Commander in Chief of the Pennsylvania military forces.

In addition to the applicable state statutes, site-specific letters of agreements / memoranda of understanding are in place with local law enforcement and fire/rescue. These entities may be called upon to assist in site access:

- Pennsylvania Emergency Management Agency Memorandum of Understanding (MOU) (Letter on File). Documentation of agreement for Lancaster, Chester, and York counties are contained as part of the agreement with PEMA.
- Pennsylvania State Police
- Memo of Understanding with Maryland Emergency Management Agency (MEMA), which includes the following support agencies:
  - Maryland Department of the Environment/Radiological Health Program
  - Harford County Division of Emergency Operations, and
  - Cecil County Emergency Management Agency
- Delta-Cardiff Volunteer Fire / Ambulance Company

State and Local authorities are expected to provide the primary source of support to facilitate facility access. In addition, there may be some heavy equipment under the control of the off-site electrical distribution companies that could be applied during a natural disaster and resultant grid emergency. It is important to note that the primary focus of the distribution companies would be restoration of AC power, in accordance with PJM Manual 39, Nuclear Plant Interface Coordination, PJM Manual 36, System Restoration, and PJM Manual 13, Emergency Operations. The normal Exelon Corporate structure provides the primary conduit for requesting support from PECO to support nuclear station emergencies. In addition, Peach Bottom maintains an interface agreement with PECO governing the conduct of work at the site. This interface provides an additional communications interface between the sites and the distribution companies. Based upon a review of the existing manuals and procedures, no revisions are required at this time. A review of the relationships with the electrical distribution companies has concluded that no additional agreements are required.

8.0 CHANGES REQUIRED TO SUPPORT PHASE 1 STAFFING ASSESSMENT

1. Staffing Changes

This Phase 1 Staffing Assessment concluded that 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.

Resources needed to perform initial event response actions were identified from the EOP, AOP, or other operations procedures and documented as per the guidance in NEI 12-01 using the NEI 10-05 documentation process (Attachment 1, Tables 2 and 3). The team determined when other on-shift resources, such as the RP or Chemistry Technician, would be required and identified the time required to perform expected emergency plan functions (Table 4). This information was documented on the applicable tables from NEI 10-05 located in Attachment 1 of this report. The Emergency Plan functions for the event were reviewed and assigned to the on-shift resource responsible for performance of the identified function and documented as per NEI 12-01 using the NEI 10-05 documentation (Table 5). Finally, the on-shift resources and their actions were summarized in Table 1 using the NEI 10-05 documentation process. This review concluded that the personnel assigned to the required Emergency Plan functions are not required to execute the initial event response actions. As such, no unacceptable collateral duties were identified.

2. Expanded Capability Staffing

The existing augmented ERO, supplemented by site staff, provides sufficient staffing to satisfy the Expanded Capability functions as defined in NEI 12-01, Table 3.1. Additional staffing support is available from fleet resources. 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 Exelon's processes enables personnel shared between sites to support site-specific activities.

3. Emergency Plan and Procedure Changes

Per NEI 12-01, 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.

Exelon will incorporate instructions into applicable fleet procedures to activate the Expanded Response Capability and to request any necessary logistical support for site access 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 Severe Accident Management (SAM) strategies for more than 1 unit.

These procedure changes will be implemented concurrent with the implementation of the mitigating strategies at the first affected Exelon site in the fall of 2014. This action will be completed by September 30, 2014.

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 has not been incorporated into the Exelon Emergency Plan, at this time, Exelon will not be revising the drill and exercise program in response to the Phase 1 assessment. Consideration will be given to making the appropriate changes to the drill and exercise program based upon the implementation of the mitigating strategies in response to the order for recommendation 4.2.

9.0 CONCLUSION

This Phase 1 Staffing Assessment concluded that the current minimum on-shift staffing as defined in EP-AA-1007, Radiological Emergency Plan Annex for Peach Bottom Atomic Power Station, 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 Phase 1 Staffing Assessment also identified the staffing necessary to support the Expanded Response Capability for the Beyond Design Basis External Event (BDBEE) as defined for the Phase 1 assessment. This staffing will be provided by the current site resources, supplemented by fleet resources, as necessary.

The Phase 1 Staffing Assessment concluded that an action is required to establish procedural controls to activate the Expanded Response Capability. These controls will be established by September 30, 2014.

10.0 ATTACHMENTS

10.1 Attachment 1, NEI 10-05 Staffing Tables for Peach Bottom Station

11.0 REFERENCES

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

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

11.3 NSIR DPR-ISG-01, "Interim Staff Guidance – Emergency Planning for Nuclear Power Plants."

11.4 EP-AA-1000, Exelon Nuclear Standardized Radiological Emergency Plan, Rev. 21

11.5 EP-AA-1007, Exelon Nuclear Radiological Emergency Plan Annex For Peach Bottom Atomic Power Station, Rev 26

11.6 NRC Letter "Request for Information Pursuant to Title 10 of the Code of Federal Regulations 50.54(f) Regarding Recommendations 2.1, 2.3, and 9.3, of the Near-Term Task Force Review of Insights from the Fukushima Dai-ichi Accident," dated March 12, 2012.

11.7 Exelon Generation Company, LLC Letter to NRC, "60-Day Response to March 12, 2012 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 May 14, 2012.

11.8 HU-AA-1081-F-15, Emergency Response Organization Fundamentals

11.9 EP-AA-1007 Addendum 1, Peach Bottom On-shift Staffing Technical Basis

11.10 Exelon Generation Company, LLC Letter to NRC, "Exelon Generation Company, LLC's (EGC) 90-Day Response to March 12, 2012 Request for Information Pursuant to Title 10 of the Code of Federal Regulations 50.54(f) Regarding Recommendation 9.3 of the Near-Term Task Force Review of Insights from the Fukushima Dai-Ichi Accident; dated March 12, 2012 (Emergency Preparedness)," dated June 11, 2012.

11.11 NRC Letter to Susan Perkins-Grew, NEI, "U.S. Nuclear Regulatory Commission Review of NEI 12-01, "Guideline for Assessing Beyond Design Basis Accident Response Staffing and Communications Capabilities," Revision 0, dated May 2012," dated May 15, 2012.

Attachment 1

NEI 10-05 Staffing Table

For

Peach Bottom Station

NEI 12-01 Phase 1

Attachment 1

NEI 12-01 Phase 1 On-shift Staffing Assessment (OSA)

1. **Accident Summary:**

   - A loss of all offsite AC power occurs coincident with the trip of both units. All emergency diesel generators fail to start.

2. **Accident Specific Assumptions:**

   - There was no other plant damage and all equipment operates as designed.

3. **Procedures Reviewed for Accident Response Include:**

   - T-100, SCRAM
   - T-101, RPV Control
   - T-102, Secondary Containment Control,
   - T-103, Radioactivity Release
   - SE-11, Loss of Offsite Power
   - SE-11, Attachment B, Responding to a Diesel Generator Trip or Failure to Start
   - SE-11, Attachment T, DC Load Shed
   - SE-11, Attachment U, Opening Secondary Containment Doors to Support Long-term HPCI/RCIC Operation
   - SE-11, Attachment X, Defeat of the HPCI and RCIC Steam Line High Temperature Isolation
   - SE-11.1, Operating Station Blackout Line During a LOOP Event
   - T-261-2, Placing the Backup Instrument Nitrogen Supply from CAD Tank in Service
   - T-261-3, Placing the Backup Instrument Nitrogen Supply from CAD Tank in Service
   - T-243-2, Fire System Injection into the RPV
   - T-243-3, Fire System Injection into the RPV
   - T-225-2, Defeating RCIC Low Pressure Isolation
   - T-225-3, Defeating RCIC Low Pressure Isolation
   - T-200-2, Primary Containment Venting
   - T-200-3, Primary Containment Venting
   - TSG-4.1, Peach Bottom Station Operational Contingency Guidelines
   - EP-AA-112-100-F-01, Shift Emergency Director Checklist
   - RP-PB-300-1004, Use of RP Response Cards

Attachment 1
Peach Bottom

This OSA is applicable to Analysis **NEI 12-01 Phase 1**.

TABLE 1 – On-shift Positions

Line	On-shift Position	Emergency Plan Reference	Augmentation Elapsed Time (min) Note 2	Role in Table#/Line#
1.	Shift Manager / Shift ED	EP-AA-1007, Table 2-1	N/A	T2/L1 T5/L1 T5/L2 T5/L3 T5/L4 T5/L5 T5/L8 T5/L10
2.	U2 Control Room Supv (SRO)	EP-AA-1007, Table 2-1	N/A	T2/L2
3.	STA (SRO)	EP-AA-1007, Table 2-1	N/A	T2/L3
4.	U2 Reactor Operator (RO #1)	EP-AA-1007, Table 2-1	N/A	T2/L4
5.	U3 Reactor Operator (RO #2)	EP-AA-1007, Table 2-1	N/A	T2/L5
6.	Plant Reactor Operator (RO #3)	EP-AA-1007, Table 2-1	N/A	T2/L6
7.	SSD Equipment Operator (EO #1)	EP-AA-1007, Table 2-1	N/A	T2/L7
8.	SSD Equipment Operator (EO #2)	EP-AA-1007, Table 2-1	N/A	T2/L8
9.	SSD Equipment Operator (EO #3)	EP-AA-1007, Table 2-1	N/A	T2/L9
10.	Fire Brigade Leader (EO #4)	EP-AA-1007, Table 2-1	N/A	T2/L10
11.	Fire Brigade (EO #5)	EP-AA-1007, Table 2-1	N/A	T2/L11
12.	Fire Brigade (EO #6)	EP-AA-1007, Table 2-1	N/A	T2/L12
13.	Fire Brigade (EO #7)	EP-AA-1007, Table 2-1	N/A	T2/L13
14.	Fire Brigade (EO #8)	EP-AA-1007, Table 2-1	N/A	T2/L14
15.	Shift NRC Communicator (EO #9) **Note 1**	EP-AA-1007, Table 2-1	N/A	T5/L13
16.	Shift EP Communicator (RO #4) **Note 1**	EP-AA-1007, Table 2-1	N/A	T5/L6 T5/L9
17.	Radwaste Operator (EO #10)	EP-AA-1007, Table 2-1	N/A	T2/L15

Line	On-shift Position	Emergency Plan Reference	Augmentation Elapsed Time (min) Note 2	Role in Table#/Line#
18.	Rad Pro Tech #1	EP-AA-1007, Table 2-1	N/A	T4/L1
19.	Rad Pro Tech #2	EP-AA-1007, Table 2-1	N/A	-
20.	Rad Pro Tech #3 (Limerick)	EP-AA-1007, Table 2-1	N/A	--
21.	Chem Tech	EP-AA-1007, Table 2-1	N/A	-
22.	I&C Tech #1	EP-AA-1007, Table 2-1	N/A	-
23.	I&C Tech #2	EP-AA-1007, Table 2-1	N/A	-
24.	Security	EP-AA-1007, Table 2-1 (Function performed by on-shift security personnel)	N/A	T5/L15

Notes:

1. The Shift EP Communicator can be filled by any available qualified individual who is not assigned STA, Fire Brigade, SSD or Shift Emergency Director.

2. Augmentation Elapsed Time - Per the site access assumptions in NEI 12-01, augmentation will begin at T = 6 hours. This assessment is based upon the ability to execute the required functions for the initial 6 hours following the initiating event.

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Attachment 1
Peach Bottom

TABLE 2 – Plant Operations & Safe Shutdown Analysis **NEI 12-01 Phase 1**

Two Units - One Control Room Applicable to site unit(s) # 2 & 3

Minimum Operations Crew Necessary to Implement AOPs and EOPs, or SAMGs if applicable

Line	Generic Title/Role	On-Shift Position	Task Performance Validation
1	Shift Manager	Shift Manager	Ops Training Program
2	Unit Supervisor	U2 Control Room Supv (SRO)	Ops Training Program
3	Shift Technical Advisor	STA (SRO)	Ops Training Program
4	Reactor Operator #1	U2 Reactor Operator (RO #1)	Ops Training Program
5	Reactor Operator #2	U3 Reactor Operator (RO #2)	Ops Training Program
6	Reactor Operator #3	Plant Reactor Operator (RO #3)	Ops Training Program
7	Auxiliary Operator #1	SSD Equipment Operator (EO #1)	Ops Training Program
8	Auxiliary Operator #2	SSD Equipment Operator (EO #2)	Ops Training Program
9	Auxiliary Operator #3	SSD Equipment Operator (EO #3)	Ops Training Program
10	Auxiliary Operator #4	FBL (EO #4)	Ops Training Program
11	Auxiliary Operator #5	FBM (EO #5)	Ops Training Program
12	Auxiliary Operator #6	FBM (EO #6)	Ops Training Program
13	Auxiliary Operator #7	FBM (EO #7)	Ops Training Program
14	Auxiliary Operator #8	FBM (EO #8)	Ops Training Program
15	Auxiliary Operator #10	Radwaste Operator (EO #10)	Ops Training Program

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

Line	Generic Title/Role	On-Shift Position	Task Performance Validation
16	Mechanic	n/a	n/a
17	Electrician	n/a	n/a
18	I&C Technician	n/a	n/a
19	Other	n/a	n/a

Attachment 1
Peach Bottom

TABLE 3 – Firefighting Analysis **NEI 12-01 Phase 1**

Line	Performed By	Task Performance Validation
1	n/a	n/a
2	n/a	n/a
3	n/a	n/a
4	n/a	n/a
5	n/a	n/a

Notes:

1. Fire Brigade not utilized for this scenario.

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TABLE 4 – Radiation Protection & Chemistry Analysis **NEI 12-01 Phase 1**

Line	Position Performing Function/Task	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	85-90
1	In-Plant Survey On-Shift Position: **RP#1**				X	X	X	X											
2	On-Site Survey On-Shift Position:																		
3	Personnel Monitoring On-Shift Position:																		
4	Job Coverage On-Shift Position: **RP#2** **See Notes**	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
5	Offsite Radiological Assessment On-Shift Position:																		
6	Other Site-Specific RP Describe: On-Shift Position:																		
7	Chemistry function/task #1 – Describe: **See Notes** On-Shift Position: **Chem Tech #1**	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
8	Chemistry function/task #2 – Describe: On-Shift Position:																		

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TABLE 4 – Radiation Protection & Chemistry Cont'd Analysis **NEI 12-01 Phase 1**

Line	Position Performing Function/Task	Performance Time Period After Emergency Declaration (minutes)									
		90-120	120-150	150-180	180-210	210-240	240-270	270-300	300-330	330-360	360-390
1	In-Plant Survey On-Shift Position: **RP#1**										
2	On-Site Survey On-Shift Position:										
3	Personnel Monitoring On-Shift Position:										
4	Job Coverage On-Shift Position: **RP#2** **See Notes**	X	X	X	X	X	X	X	X	X	X
5	Offsite Radiological Assessment On-Shift Position:										
6	Other Site-Specific RP – Describe: On-Shift Position:										
7	Chemistry function/task #1 – Describe: **See Notes** On-Shift Position: **Chem Tech #1**	X	X	X	X	X	X	X	X	X	X
8	Chemistry function/task #2 – Describe: On-Shift Position:										

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TABLE 4 – Radiation Protection & Chemistry Analysis **NEI 12-01 Phase 1**

Notes:
When not performing specific tasks noted below, RP and Chemistry personnel will perform assignments at the direction of the Shift Manager.

RP Techs

- **RP #1**
  - EP-AA-112-100-F-01, Step 1.10 – An RP tech is assigned to the MCR to support emergency response. This RP Tech will support Operations activities as necessary and as prioritized by the Shift Emergency Director. However, there are no specific actions for RP indentified under this procedure step.
  - RP-PB-300-1004, Use of RP Response Cards directs RP Tech to survey Scram Discharge Volume and other plant areas. There is no time requirement for this action.

Chemistry – no immediate actions.

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TABLE 5 – Emergency Plan Implementation Analysis **NEI 12-01 Phase 1**

Line	Function/Task	On-Shift Position	Task Performance Validation
1	Declare the Emergency Classification Level (ECL)*	Shift Manager	Ops Training Program
2	Approve Offsite Protective Action Recommendations*	Shift Manager	Ops Training Program
3	Approve content of State/local notifications*	Shift Manager	Ops Training Program
4	Approve extension to allowable dose limits*	Shift Manager	Ops Training Program/ EP Drills and Exercises
5	Notification and direction to on-shift staff (e.g., to assemble, evacuate, etc.)	Shift Manager	Ops Training Program
6	ERO notification	Shift EP Communicator	Ops Training Program/ EP Drills and Exercises
7	Abbreviated NRC notification for DBT event	n/a	n/a
8	Complete State/local notification form	Shift Manager	Ops Training Program
9	Perform State/local notifications	Shift EP Communicator	Ops Training Program/ EP Drills and Exercises
10	Complete NRC event notification form	Shift Manager	Ops Training Program
11	Activate ERDS	n/a	n/a
12	Offsite radiological assessment	n/a	n/a
13	Perform NRC notifications	Shift NRC Communicator	Ops Training Program/ EP Drills and Exercises
14	Perform other site-specific event notifications (e.g., INPO, ANI, etc.)	n/a	n/a
15	Personnel accountability	Security	EP Drills and Exercises
16	Other: Specify	n/a	n/a

* Shift Manager non-delegable duty

Enclosure 2

SUMMARY OF REGULATORY COMMITMENTS

The following table identifies commitments made in this document. (Any other actions discussed in the submittal represent intended or planned actions. They are described to the NRC for the NRC's information and are not regulatory commitments.)

COMMITMENT	COMMITTED DATE OR "OUTAGE"	COMMITMENT TYPE	
		ONE-TIME ACTION (Yes/No)	PROGRAMMATIC (Yes/No)
EGC will incorporate instructions into applicable fleet procedures to activate the Expanded Response Capability and to request any necessary logistical support for site access 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 Severe Accident Management (SAM) strategies for more than 1 unit.	September 30, 2014	No	Yes