Nebraska Public Power District
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NLS2016029
May 18, 2016

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

Subject: Response to NRC Request for Information Pursuant to 10 CFR 50.54(f) Regarding Recommendation 9.3, Emergency Preparedness - Staffing, Requested Information Items 1, 2, and 6 - Phase 2 Staffing Assessment
Cooper Nuclear Station, Docket No. 50-298, DPR-46

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 (Accession No. ML12056A046)

2. NPPD letter to NRC, "Nebraska Public Power District's 60-Day Response to the March 12, 2012, Information Request, Action Plan for Completing Emergency Communication and Staffing Assessments," dated May 9, 2012 (Accession No. ML12136A237)

3. NEI 12-01, "Guideline for Assessing Beyond Design Basis Accident Response Staffing and Communications Capabilities," Revision 0, dated May 2012 (Accession No. ML12125A412)

4. NRC letter to 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 (Accession No. ML12131A043)

5. NPPD Letter to NRC, "Nebraska Public Power District's 90-Day Response to the March 12, 2012, Information Request, Action Plan for Completing Emergency Communication and Staffing Assessments," dated June 7, 2012 (Accession No. ML12167A224)

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NRR

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Dear Sir or Madam:

On March 12, 2012, the Nuclear Regulatory Commission (NRC) issued a 50.54(f) letter to all power reactor licensees and holders of construction permits in active or deferred status (Reference 1). Enclosure 5 of Reference 1 contains the specific Requested Actions, Requested Information, and Required Response associated with Near-Term Task Force Recommendation 9.3 for Emergency Preparedness - Staffing.

On May 9, 2012, in accordance with Reference 1, Enclosure 5, Nebraska Public Power District (NPPD) submitted an alternative course of action for performing the requested actions and providing the requested information (Reference 2). Attachment 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.

On June 7, 2012, NPPD responded to the Emergency Preparedness - Staffing, Requested Information items 3, 4, and 5 (Reference 5).

In accordance with Reference 2, Attachment 1 to this letter provides responses 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

Attachment 2 to this letter provides the Cooper Nuclear Station (CNS) Phase 2 Staffing Assessment. The CNS Phase 2 Staffing Assessment follows the assessment process methodology described in NEI 12-01 (Reference 3) which was endorsed by the NRC in Reference 4.

This letter contains no new regulatory commitments. Should you have any questions, please contact Jim Shaw, Licensing Manager, at (402) 825-2788.

I declare under penalty of perjury that the foregoing is true and correct.

Executed on: 5/18/16

Sincerely,

Oscar A. Limpias
Vice President - Nuclear and
Chief Nuclear Officer

/bk

Attachments: 1. Responses to the Near-Term Task Force Recommendation 9.3 for Emergency Preparedness - Staffing, Requested Information Items 1, 2, and 6

2. Cooper Nuclear Station NEI 12-01 Phase 2 Staffing Assessment

cc: Regional Administrator, w/attachments
USNRC - Region IV

Director, w/attachments
USNRC - Office of Nuclear Reactor Regulation

Cooper Project Manager, w/attachments
USNRC - NRR Plant Licensing Branch IV-2

Senior Resident Inspector, w/attachments
USNRC - CNS

NPG Distribution, w/o attachments

CNS Records, w/attachments

Attachment 1

Responses to the Near-Term Task Force Recommendation 9.3 for Emergency Preparedness - Staffing, Requested Information Items 1, 2, and 6

The Near-Term Task Force Recommendation 9.3 for Emergency Preparedness - Staffing, Requested Information Items 1, 2, and 6 (Reference 1) are provided below in bold, italic font. Nebraska Public Power District's (NPPD) responses are provided in block font.

Requested Information Item 1:

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

NPPD Response:

Attachment 2 to this letter provides the Cooper Nuclear Station (CNS) Phase 2 Staffing Assessment conducted per NEI 12-01 guidance (Reference 2). A detailed timeline was developed based on a tabletop discussion and review of the on-shift response to the postulated beyond-design-basis external event (BDBEE) extended loss of alternating current power (ELAP). On-shift and augmented staff response was determined based upon the tabletop team members' review of applicable plant procedures and draft diverse and flexible strategies (FLEX) guidance for the strategies identified at the time of the assessment. The focus of the timeline was to identify onsite resources that would be required to execute each task to implement the initial and transition phase FLEX mitigating strategies and the CNS Emergency Plan.

The tables describing the required minimum staffing, task implementation timelines and NEI 10-05 (Reference 3) modified staffing analysis tables for CNS are included in Attachment 2.

The Phase 2 Staffing Assessment concluded that the CNS current minimum shift staffing is sufficient to execute required initial and transition phase tasks actions, as well as the Emergency Plan functions, without the assignment of collateral duties that would adversely affect the ability to execute the Emergency Plan functions. Any changes to this conclusion resulting from revisions to strategies or implementation guidance will be documented in CNS' Final Integrated Plan for FLEX.

The following functions are requested to be assessed:

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

NPPD Response:

Portable FLEX equipment stored in the FLEX storage buildings is planned to be trailer-mounted or on wheels for ease of deployment. Dedicated vehicles are planned to be utilized for deploying FLEX equipment from the storage location to the staging areas on site. These vehicles would also be used for debris removal.

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

The Minimum Staffing Table shown in Section 4.0 of the Phase 2 assessment report in Attachment 2 provides a table showing the on-shift staff responsible for the major functional areas of NUREG-0654, Table B-1 (Reference 4), following the BDBEE.

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

NPPD Response:

The Phase 2 assessment did not identify the need for additional on-shift staff or changes to the Emergency Response Organization (ERO) structure. The assessment did not identify any new functions.

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

NPPD Response:

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

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.

NPPD Response:

Attachment 2 provides the CNS Phase 2 Staffing Assessment for a BDBEE and ELAP. The Phase 2 staffing assessment was performed by April 22, 2016. No modifications were identified in the Phase 2 assessment.

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.).

NPPD Response:

Staff: The existing on-shift staff is sufficient to implement the CNS Emergency Plan and ELAP strategies during the first six-hour "no site access" period. No changes to the CNS Emergency Plan on-shift staffing were identified.

ERO: The existing augmented ERO provides sufficient staffing to fill the 24-hour ERO positions. No changes to the CNS Emergency Plan augmented ERO staffing were identified.

Agreements: Further review during the Phase 2 Staffing Assessment determined that no new or revised agreements are necessary.

Drills: Reference 2 states that a licensee should determine if any changes are necessary to documents describing the emergency response drill and exercise program. No changes to the CNS Emergency Plan drill and exercise program are being made. Although not as a result of this assessment, CNS is planning to incorporate requirements for drills and exercises involving a BDBEE scenario in accordance with the guidance and implementation schedule of NEI 13-06 (Reference 5) when issued.

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. NEI 12-01, "Guideline for Assessing Beyond Design Basis Accident Response Staffing and Communications Capabilities," Revision 0, dated May 2012

3. NEI 10-05, "Assessment of On-Shift Emergency Response Organization Staffing and Capabilities," Revision 0, dated June 2011

4. NUREG-0654/FEMA-REP-1, "Criteria for Preparation and Evaluation of Radiological Emergency Response Plans and Preparedness in Support of Nuclear Power Plants," Revision 1

5. NEI 13-06, "Enhancements to Emergency Response Capabilities for Beyond Design Basis Accidents and Events" (Draft)

Attachment 2

Cooper Nuclear Station
NEI 12-01 Phase 2 Staffing Assessment

COOPER NUCLEAR STATION
NEI 12-01 PHASE 2
STAFFING ASSESSMENT
APRIL 21, 2016

Prepared:	Milton Fred Guynn, Entergy – Fukushima Project	4-21-16 Date
Reviewed:	James L. Stough – Manager, Emergency Planning	5/9/16 Date
Reviewed:	Dan Goodman – Manager, Operations	5-11-16 Date
Reviewed/Approved:	Jerry J. Long – Fukushima Response Program Mgr.	5/12/16 Date

Table of Contents

1.0 EXECUTIVE SUMMARY

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

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

- an extended loss of AC power
- an extended loss of access to the ultimate heat sink
- impact on the unit (unit is operating at full power at the time of the event)
- impeded access to the unit by off-site responders as follows:
  (1) 0 to 6 Hours Post Event – No site access.
  (2) 6 to 24 Hours Post Event – Limited site access. Individuals may access the site by walking, personal vehicle or via alternate transportation capabilities (e.g., private resource providers or public sector support).
  (3) 24 Hours Post Event – Improved site access. Site access is restored to a near-normal status and/or augmented transportation resources are available to deliver equipment, supplies and large numbers of personnel.

To conduct the on-shift portion of the assessment, a team of subject matter experts from Operations, Radiation Protection, Training, Security, Emergency Planning, and the Entergy FLEX Project Team performed or provided input to a tabletop review in April 2016. The tabletop participants reviewed the assumptions and applied procedural guidance, including applicable draft FLEX Support Guidelines (FSGs), for coping with a BDBEE using minimum on-shift staffing. Particular attention was given to the sequence and timing of each procedural step, its duration, and the on-shift individual performing the step to account for the time needed to prepare for and perform the task.

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

2.0 INTRODUCTION

The Nuclear Regulatory Commission (NRC) issued a Letter to All Power Reactor Licensees and Holders of Construction Permits in Active or Deferred Status, dated March 12, 2012,

Request for Information Pursuant to Title 10 of the Code of Federal Regulations 50.54(f) Regarding Recommendation 2.1, 2.3, and 9.3, of the Near-Term Task Force Review of Insights from the Fukushima Dai-ichi Accident. Information requests related to Emergency Preparedness were contained in Enclosure 5 of the §50.54(f) letter. Enclosure 5 contained two requested actions; one involving performance of a staffing assessment and the other a communications assessment. The communications assessment is independent of the staffing assessment and not included as part of this report. The Phase 2 staffing assessment addresses Requested Information Items 1, 2, and 6 of NTTF Recommendation 9.3. The actions for the staffing assessment are summarized as follows:

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

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

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

3.0 SCOPE OF THE ELAP ERO STAFFING ASSESSMENT

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

Single unit sites should provide the requested information as it pertains to an Extended Loss of all AC Power, and impeded access to the site.

The CNS staffing assessment was performed per the guidance of NEI 12-01 with a required submittal date no later than May 24, 2016. The assessment performed the following:

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

pool makeup. Setup for these strategies may be performed prior to the end of the Initial Phase as determined by procedure.

- Evaluated the ability of the on-shift staff to implement the Station Blackout (SBO) coping strategies before ELAP is declared.
- Evaluated the EOPs and FSGs for responding to an ELAP. (Note: draft EOPs and FSGs revised for FLEX implementation were used for this assessment).
- Evaluated whether the ability of the on-shift staff to perform any required emergency response functions would be degraded or lost prior to the arrival of the augmented ERO.
- Consistent with the site access assumption, evaluated the ability of the on-shift staff and augmented staff to implement Transition Phase coping strategies performed after the end of the "no site access" time period.

The staffing level determined as a result of the Phase 2 assessment will be verified and validated in the process used to reasonably assure required tasks, manual actions and decisions for FLEX strategies are feasible and may be executed within the constraints identified in the Overall Integrated Plan (OIP) as amended by the six-month status reports through February, 2016 or order EA 12-049. Validation will be performed at a date after the submittal of the staffing assessment per Attachment "E", *Validation Guidance*, of NEI 12-06 *Diverse and Flexible Coping Strategies (FLEX) Implementation Guide*.

4.0 EMERGENCY PLAN MINIMUM ON-SHIFT STAFFING

The CNS Emergency Plan establishes the licensing basis for the on-shift staffing complement as determined by the staffing assessment performed as part of the overall Emergency Preparedness rulemaking published in November of 2011. 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 Initial Phase plant operations and the required emergency planning functions.

Minimum Staffing Table		
Position	**NUREG-0654 Functional Area/Tasks**	**On-Shift Staffing**
Shift Manager (SM)	Emergency Direction and Control / Plant Operations and Assessment of Operational Aspects	1
Control Room Supervisor (CRS)	Plant Operations and Assessment of Operational Aspects / Safe Shutdown	1
Shift Technical Engineer (STE)	Plant System Engineering / Technical Support	1
Reactor Operator (RO)	Plant Operations and Assessment of Operational Aspects / Safe Shutdown	2
Reactor Operator (RO)	Plant Operations and Assessment of Operational Aspects / Fire Fighting	1
Station Operator (SO)	Plant Operations and Assessment of Operational Aspects / Safe Shutdown / Repair and Corrective Actions	1
Station Operator (SO)	Plant Operations and Assessment of	2

Minimum Staffing Table		
Position	**NUREG-0654 Functional Area/Tasks**	**On-Shift Staffing**
	Operational Aspects / Fire Fighting / Repair and Corrective Actions	
Communicator	Notifications / Communications	1
Chemistry/Radiation Protection	Chemistry - Radiochemistry / Support of Radiological Accident Assessment / Onsite and In-plant Surveys / Protective Actions	1
Dose Assessor	Radiological Accident Assessment / Offsite Dose Assessment	1
Utility Worker Fire Brigade	Fire Fighting	2
Security	Access Control and Accountability	Per Security Plan

Emergency plan tasks of firefighting, first aid and rescue operations are provided by personnel assigned other functions as allowed by NUREG-0654 Table B-1 and NEI 10-05. For the purpose of this staffing assessment, it is assumed firefighting, first aid and rescue are not required.

5.0 PHASE 2 STAFFING ASSESSMENT FOR BDBEE/ELAP

5.1 On-shift Staff Responsibilities

Responsibilities of the on-shift staff as shown in Section 4 are assumed as follows for the purpose of the tabletop conducted for this assessment:

- SM assumed the Emergency Director (ED) function.
- STE remained in role to provide advisory technical support to the SM in the areas of thermal hydraulics and reactor engineering.
- Communicator was available to perform off-site notifications.
- CRS, 3 ROs and 3 Station Operators were available to perform plant operations to establish and maintain core cooling, spent fuel pool makeup, and containment integrity as directed by the CRS using EOPs and FSGs.
- One Chemistry/RP Technician and one Dose Assessor were available to perform their emergency plan function and other tasks as directed by the SM.
    - The Dose Assessor was available to perform tasks as directed by the SM.
    - The Chemistry/RP Technician was available to perform job support, in-plant surveys, and onsite surveys or other tasks as directed by the SM.
- Since the emergency diesel generators were assumed to be unavailable for the event, limited time was spent attempting to troubleshoot /repair.
- Existing strategies do not anticipate the use of security officers to perform duties unrelated to their assigned security roles. Tasks performed by security officers in response to FLEX actions are consistent with their normal duties such as monitoring and controlling site access, providing site access for FLEX equipment staging, opening and

providing compensating measures for doors that may need to remain open to facilitate controlling environmental conditions or staging and operation of FLEX equipment.

- The Emergency Director and Communicator functions and responsibilities remained assigned in the Control Room throughout the first 24 hour period although these and other emergency functions would be expected to transfer to the augmented ERO after T = 6 hours. It is recognized that the augmented ERO would begin to arrive on-site or at their designated off-site facilities and assume emergency functions (ex. Emergency Direction and Control, Communications / Notifications, Radiological Assessment, etc.) as soon as possible but no earlier than 6 hours following the event.

5.2 Methodology

- The Phase 2 staffing assessment response functions related to NTTF Recommendation 4.2 must be based on the actions delineated in the procedures and guidelines developed in response to the Order to ensure accurate results. Once the site specific actions associated with the FLEX implementation response strategies are defined (i.e., down to the procedure or guideline step level), the staffing needed to perform these actions can be assessed with the necessary level of accuracy.
- Draft EOP and FSG documents were used during the conduct of the Phase 2 staffing assessment and the development of this report.
- A tabletop assessment was used to determine which plant actions and emergency plan implementation actions were required based on procedures during an ELAP. In cases where multiple tasks were assigned to an individual, the team evaluated timing of the tasks to ensure that they could be performed by the individual in series within any specified time constraints.
- The guidance of NEI 10-05 was used to determine if the number and composition of the on-shift staff is sufficient to implement the Emergency Plan, Initial Phase actions and, with assistance from augmented staff, implement Transition Phase mitigation strategies and repair or corrective actions intended to maintain or restore the functions of core cooling, containment integrity, and spent fuel pool cooling.
- The guidance of NEI 10-05 was used but the tables were modified to include tasks to implement the FLEX strategies.
- Due to the lead time before Phase 3, it was assumed that offsite equipment would arrive on site and appropriate staff would be available to receive, stage, and operate the equipment. Therefore, the staffing assessment did not consider Phase 3 FLEX strategies.

5.3 NEI 12-01 General Assumptions and Limitations

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

- Post event time: 0 to 6 hours – No site access. This duration reflects the time necessary to clear road way obstructions, use different travel routes, mobilize alternate transportation capabilities, etc.
- Post event time: 6 to 24 hours – Limited site access. Individuals may access the site by walking, personal vehicle or via alternate transportation capabilities.
- Post event time: 24 hours – Improved site access. Site access is restored to a near-normal status and/or augmented transportation resources are available to deliver equipment, supplies, and large numbers of personnel.

5.4 Other Assumptions for Staffing Assessment

- The result of the beyond-design-basis event may place the plant in a condition where it cannot comply with certain Technical Specifications and/or with its Security Plan, and as such, may warrant invoking 10 CFR 50.54(x) and/or 10 CFR 73.55(p).
- For purposes of assessing augmented staffing, it is assumed that the on-shift staff successfully performs all Initial Phase and any necessary Transition Phase coping actions during the 0-6 hour period. It is assumed an adequate number of augmented ERO members arrive on site between 6 hours and 24 hours to assist the on-shift staff successfully implement the appropriate FLEX strategies and FSGs.

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

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

5.5 NEI 12-06 Staffing Assumptions

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

5.6 NEI 10-05 Applicable Assumptions to Support Methodology

- On-Shift personnel can report to their assigned response locations within timeframes sufficient to allow for performance of assigned actions.
- The on-shift staff possesses the necessary Radiation Worker qualifications to obtain normal dosimetry and to enter Radiologically Controlled Areas (but not high, locked high or very high radiation areas unless allowed by procedure or Emergency Plan) without the aid of a Radiation Protection Technician.

- Performance of site and protected area access control function is regularly analyzed through other station programs and will not be evaluated here, unless a role or function from the major response area is assigned as a collateral duty.
- The task of making a simple and brief communication has minimal impact on the ability to perform other assigned functions/tasks, and is therefore an acceptable collateral duty for all positions. Examples include making a plant page announcement or placing a call for assistance to an offsite resource such as local law enforcement. This assumption does not apply to emergency notification to an Offsite Response Organization (ORO) or the NRC.
- The task of performing a peer check has minimal impact on the ability to perform other assigned functions/tasks, and is therefore an acceptable collateral duty for all positions. Examples include performing a peer check on a recommended emergency classification or notification form for transmittal to offsite authorities.
- The analyzed event occurs during off-normal work hours at a time when augmented ERO responders are not at the site (e.g., during a backshift, weekend or holiday).

5.7 Severe Accident Management Guideline (SAMG)

- It was concluded in the Phase 2 Staffing Assessment that the on shift staff and augmented ERO would not be called upon to perform SAMG activities for the event analyzed for this assessment.

5.8 Assessment of the INITIAL PHASE Coping Strategies and Capability

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

5.9 Assessment of TRANSITION PHASE Coping Strategies and Capability

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

  The Transition Phase requires providing sufficient, portable, on-site equipment and consumables to maintain or restore functions until they can be accomplished with resources brought from off site. Actions include:

  (1) Performing DC Load Reduction (5.3SBO)
  (2) Performing debris removal in preparation for staging FLEX equipment (5.10FLEX.20)
  (3) Establishing ventilation paths for critical plant areas (5.10FLEX.18)
  (4) Opening PC-MOV-233MV, Torus Inlet Inboard Isolation Valve, in preparation for Containment Venting when needed. (5.10FLEX.30)
  (5) Setup and alignment of FLEX DG, cables, and breakers to repower electrical buses and battery chargers (5.10FLEX.01; 5.10FLEX.03)
  (6) Setup and alignment of FLEX DG and cables for powering ECST Transfer Pump to transfer Hotwell to the ECST (5.10FLEX.09)

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

  The following tasks are assumed to be performed by the on-shift and augmented staff, if available, after the 6 hour no access period as shown in Attachment 2.

  (1) Setup and alignment of FLEX Air Compressor to provide air to Reactor Building Air Header (5.10FLEX.12)
  (2) Setup portable diesel generators, power cords and fans to establish Control Building Alternate ventilation. (5.10FLEX.19)
  (3) Setup and establish ECST makeup from the North Well (5.10FLEX.10)
  (4) Establish Primary Containment ventilation using the Hardened Containment Vent System (5.10FLEX.30)
  (5) Setup and establish backup power supply to the Hardened Containment Vent battery charger (5.10FLEX.05)
  (6) Prepare for and commence refueling of FLEX equipment (5.10FLEX.31)

6.0 AUGMENTED ERO

6.1 ERO Response

- The methods to notify and augment the ERO was identified in Nebraska Public Power District's (NPPD) letter to the NRC dated June 7, 2012, *Nebraska Public Power District's 90-Day Response to the March 12, 2012 Information Request, Action Plan for Completing Emergency Communication and Staffing Assessments* (CNS Letter NLS2012048).
- The ERO is trained to report to their assigned emergency response facilities when made aware of an area-wide loss of electrical grid that results in degraded communications capability. If access to the assigned facilities is not possible, personnel report to the pre-established alternate offsite facilities.

6.2 Site Access for Augmented ERO

- The methods of site access for the augmented ERO was identified in Nebraska Public Power District's letter to the NRC dated June 7, 2012, *Nebraska Public Power District's 90-Day Response to the March 12, 2012 Information Request, Action Plan for Completing Emergency Communication and Staffing Assessments* (CNS Letter NLS2012048).
- The States of Nebraska and Missouri provide support in response to actual events through existing Letters of Agreement. Additionally, the Letter of Agreement between and among Nebraska Emergency Management Agency, Nebraska Department of Health and Human Services, Division of Public Health, Nebraska Public Power District and Omaha Public Power District was revised to include providing logistical support for the transport of emergency responders to the site in the event of a large scale natural disaster that inhibits site access. The revised Letter of Agreement also addresses the clearing of emergency evacuation routes and site access roads.
- If the site is inaccessible, off-site ERO members may be directed to assemble at the off-site EOF or pre-determined transportation staging areas.

7.0 PHASE 2 STAFFING ASSESSMENT CONCLUSION

7.1 Staffing Level

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

The non-licensed operators perform tasks in series when necessary and are able to perform all assigned functions. The operators take actions to ensure core cooling, containment integrity, and spent fuel pool cooling are maintained. The performance of coping strategies does not affect the ability of the on-shift staff to perform any required emergency response function. Emergency response functions are not degraded or lost prior to the arrival of the augmented ERO.

The emergency plan will not be changed as a result of the shift staffing assessment. No interim actions have been taken or are planned as a result of this assessment.

7.2 Task Analysis Results

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

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

7.3 Time Motion Study (TMS) Results

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

7.4 Augmented ERO Assessment Results

The existing ERO is sufficient to fill the augmented ERO positions and assist the on-shift staff respond to a BDBEE. CNS has six ERO teams that have been trained to respond to the site. No changes to the Emergency Plan augmented ERO staffing have been identified.

8.0 REFERENCES

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

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

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

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

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

8.6 NPPD's letter (NLS2012034) to the NRC dated May 9, 2012, *Nebraska Public Power District's 60-Day Response to the March 12, 2012, Information Request, Action Plan for Completing Emergency Communication and Staffing Assessments (ML12130A418)*

8.7 NPPD's letter (NLS2012048) to the NRC dated June 7, 2012, *Nebraska Public Power District's 90-Day Response to the March 12, 2012, Information Request, Action Plan for Completing Emergency Communication and Staffing Assessments (ML12167A224)*

8.8 NPPD's letter (NLS2012116) to the NRC dated October 26, 2012, *Revision to Commitment Made in 90-Day Response to the March 12, 2012, Request for Information (ML12310A201)*

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

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

8.11 Nebraska Public Power District Emergency Plan for Cooper Nuclear Station

9.0. ATTACHMENTS

ATTACHMENT 1	PHASE 2 STAFFING ASSESSMENT NEI 10-05 TABLETOP DATA
ATTACHMENT 2	CNS FLEX IMPLEMENTATION TIMELINES

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

Note

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

1. Accident Summary:

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

2. Accident Specific Assumptions:

   - Attachment 2 assumptions include:
     - SM/CRS are expected to use available staff to provide periodic relief (if needed) for individuals working in extreme environmental conditions (e.g., high heat areas).
     - Estimated task times include expected pre-job and safety briefings
   - Assumptions are identified in Section 5.0 of this document.

3. Procedures Reviewed for Accident Response Include:

   - 5.10FLEX.01, 125 VDC DIV 1 FLEX Operations
   - 5.10FLEX.02, 125 VDC DIV 2 FLEX Operations
   - 5.10FLEX.03, 250 VDC DIV 1 FLEX Operations
   - 5.10FLEX.04, 250 VDC DIV 2 FLEX Operations
   - 5.10FLEX.05, Reliable Hardened Containment Vent Battery Charger Tie-in
   - 5.10FLEX.06, Fuel Pool Level Instrument Electrical Tie-in
   - 5.10FLEX.07, 4160 "F" Bus Tie-in with off-site Generator
   - 5.10FLEX.08, 4160 "G" Bus Tie-in with off-site Generator
   - 5.10FLEX.09, Hotwell to ECST FLEX Operations
   - 5.10FLEX.10, ECST Makeup from North Well
   - 5.10FLEX.11, Spent Fuel Pool Supply FLEX Operations
   - 5.10FLEX.12, Reactor Building Reliable Air FLEX Operations
   - 5.10FLEX.13, REC SW FLEX Supply
   - 5.10FLEX.14, RHR DIV 1 Shutdown Cooling FLEX Operations
   - 5.10FLEX.15, RHR DIV 2 Shutdown Cooling FLEX Operations
   - 5.10FLEX.16, Residual Heat Removal Service Water DIV 1 FLEX Operations
   - 5.10FLEX.17, Residual Heat Removal Service Water DIV 2 FLEX Operations

- 5.10FLEX.18, Alternate Reactor Building Ventilation for FLEX Operations
- 5.10FLEX.19, Control Building Alternate Ventilation FLEX Operations
- 5.10FLEX.20, Debris Removal in Support of FLEX Operations
- 5.10FLEX.21, Shutdown Injection FLEX Operations
- 5.10FLEX.22, Communications & Lighting Equipment FLEX Power
- 5.10FLEX.23, Reactor Equipment Cooling FLEX Operations
- 5.10FLEX.22, Communications Equipment FLEX Power
- 5.10FLEX.24, Control Building Temporary Heating FLEX Operations
- 5.10FLEX.25, Alternate RPV Injection Thru RHR Service Water Riser or "B" B.5.B Connection
- 5.10FLEX.26, RHR Suppression Pool Cooling DIV 1 FLEX Operation
- 5.10FLEX.27, RHR Suppression Pool Cooling DIV 2 FLEX Operation
- 5.10FLEX.28, Vital Instrumentation FLEX Operations
- 5.10FLEX.29, Alternate Reactor Vessel Injection from Missouri River
- 5.10FLEX.30, Hardened Containment Vent System FLEX Operations
- 5.10FLEX.31, FLEX Equipment Refueling Operations
- 5.10FLEX, FLEX Support Guidelines (FSG's)
- 15.HCVS.304, Hardened Containment Vent System UPS Functional Test
- 15.HCVS.305, PC-233MV UPS Functional Test
- 5.3SBO, Station Blackout
- 5.3SBO, Station Blackout Flow Chart
- 2.0.3, Conduct of Operations

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

NEI 10-05 TABLES

CNS TABLE 1 – ON-SHIFT POSITIONS Single Unit ELAP/LUHS				
Line #	**On-shift Position**	**Role in Table # / Line #**	**Unanalyzed Task?**	**Collateral Tasks? (See Attachment 2 for specific tasks, sequence & timeline)**
1	SM	T2/L1 T5/L1 T5/L2 T5/L3 T5/L5 T5/L6	No	No
2	CRS	T2/L2	No	No
3	STE	T2/L3	No	No
4	RO #1	T2/L4	No	No
5	RO #2	T2/L5	No	No
6	RO #3	T2/L6	No	No
7	Station Operator #1	T2/L7	No	No
8	Station Operator #2	T2/L8	No	No
9	Station Operator #3	T2/L9	No	No
10	Communicator	T5/L8 T5/L9 T5/L10 T5/L13	No	No
11	RP/Chem. Tech	T2a/L12 T4/L1 T4/L2 T4/L4	No	No
12	Dose Assessor	T2a/L11 T4/L7	No	No
13	Utility Fire Brigade Member #1	T2a/L13	No	No
14	Utility Fire Brigade Member #2	T2a/L14	No	No
15	Security	T5/L15	No	No

CNS TABLE 2 - PLANT OPERATIONS & SAFE SHUTDOWN Single Unit ELAP/LUHS Minimum Operations Crew Necessary to Implement EOPs, SAMGs or FSGs as Applicable			
Line #	**Generic Title/Role**	**On-Shift Position * (Note 1)**	**Task Analysis Controlling Method (Note 2)**
1	Shift Manager	SM	Licensed Operator Training Program
2	Unit Supervisor	CRS	Licensed Operator Training Program
3	Shift Technical Engineer	STE	Licensed Operator Training Program
4	Reactor Operator #1	RO #1	Licensed Operator Training Program
5	Reactor Operator #2	RO #2	Licensed Operator Training Program
6	Reactor Operator #3	RO #3	Licensed Operator Training Program
7	Auxiliary Operator #1	Station Operator #1	Non-Licensed Operator Training Program
8	Auxiliary Operator #2	Station Operator #2	Non-Licensed Operator Training Program
9	Auxiliary Operator #3	Station Operator #3	Non-Licensed Operator Training Program

*The on-shift Communicator does not perform EOP, SAMG, or FSG procedures and is not shown in Table 2.

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

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

CNS Table 2a Other on-shift staff available to perform (or assist Operators) FLEX related tasks (not safe shutdown)			
Line #	**Generic Title/Role**	**On-Shift Position (Note 1)**	**Task Analysis Controlling Method (Note 2)**
11	RP/Chem. Tech	RP/Chem. Tech	**N/A**
12	Dose Assessor	Dose Assessor	**N/A**
13	Utility Fire Brigade Member #1	Utility Fire Brigade Member #1	**N/A**
14	Utility Fire Brigade Member #2	Utility Fire Brigade Member #2	**N/A**

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

Note 2: The controlling method put in place when FLEX is implemented will follow the guidance recommended by the industry.

CNS TABLE 3 – FIREFIGHTING* Single Unit ELAP/LUHS		
Line #	**Performed by**	**Task Analysis Controlling Method**
1	N/A	N/A
2	N/A	N/A
3	N/A	N/A
4	N/A	N/A
5	N/A	N/A

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

CNS TABLE 4 – RADIATION PROTECTION AND CHEMISTRY Single-Unit ELAP/LUHS																			
LINE	Position Performing Function / Task	Performance Time Period After Station Blackout (hours)*																	
		0-.5	.5-1.0	1.0-2.0	2.0-3.0	3.0-4.0	4.0-5.0	5.0-6.0	6.0-7.0	7.0-8.0	8.0-9.0	9.0-10.0	10.0-11.0	11.0-12.0	12.0-13.0	13.0-14.0	14.0-15.0	15.0-16.0	16.0-24.0
1	In-Plant Survey: RP/Chem	As directed by SM* (See Attachment 2 of this report)																	
2	On-site Survey: RP/Chem	As directed by SM* (See Attachment 2 of this report)																	
3	Personnel Monitoring:																		
4	Job Coverage: RP/Chem FLEX equipment setup	As directed by SM* (See Attachment 2 of this report)																	
5	Offsite Rad Assessment: *(Included in Table 5- Dose Assessor)*																		
6	Other site specific RP																		
7	Dose Assessor Task #1	As directed by SM* (See Attachment 2 of this report)																	

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

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

Note 1: Control Room staff would be expected to activate ERDS at the declaration of the emergency (Site Area Emergency for this event). It is recognized however, that the BDBEE is assumed to result in the loss of normal communication paths for ERDS. If ERDS capability is lost, critical information would be communicated directly to the NRC over other communication paths such as satellite phones.

Note 2: The on-shift Dose Assessor will report to the Control Room to perform the task of dose assessment (if needed). A significant radiological release is not anticipated however, since core cooling, spent fuel pool cooling and containment integrity are maintained during the 24 hour period. The Dose Assessor is expected to be available to support the implementation of FLEX strategies if needed.

Note 3: The SM will not make these communications, other than the initial brief notification to SAFER. The augmented ERO will report to the site or off-site staging area and make other additional communications as required.

Note 4: Security Shift Supervisor is responsible for performing site accountability.

Note 5: The SM performs ERO notifications using an automated callout system. The performance of this brief task has been previously analyzed and found to be an acceptable task for the SM and remains valid for this event. It is also recognized that due to the loss of power and communications capability to the surrounding area, some ERO personnel may not be notified. ERO personnel would be expected to respond automatically as trained when made aware of an area-wide loss of electrical grid that results in degraded communications capability.

ATTACHMENT 2: CNS FLEX IMPLEMENTATION TIMELINES

Timeline

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

JOB POSITION	TIME	TASK	Collateral Duty?
SM	(1) T = 0 – 15 min. (2) T = 15- 30 min. (3) T = 1.0 hr. (4) T = 1.0 – 1.5 hrs. (5) T = 0 – duration	(1) Assess event and declare Site Area Emergency (SAE) per EAL SS1.1 (2) Approve Notification Message Form and direct communicator to make notifications / direct SAE evacuation & accountability / perform ERO notification (3) Declare ELAP (4) Call SAFER / Notify Security that FLEX is being implemented / declare General Emergency (GE) per EAL SG1.1 / develop PAR, approve Notification Message Form and direct Communicator to make notifications. A GE is expected to be declared between the time the ELAP is declared thru T = 4 hrs. with the time variation based on the information available to the ED (5) Perform oversight and ED responsibilities (ED responsibilities expected to be remain in the CR until transferred to augmented staff)	No
CRS	(1) T = 0 – 1.0 hr. (2) T = 1.0 hr. - duration	(1) Direct immediate plant actions for SBO (2) Direct and coordinate EOP / ELAP actions	No
STE	(1) T = 0.5 – 1.0 hr. (2) T = 0 – duration	(1) Visual observations from Control Building roof for initial determination of extent of damage (if needed) (2) Technical Support / Plant monitoring and assessment	No
RO #1	(1) T = 0 – 30 min. (2) T = 30 min. – 1.0 hr. (3) T = 0 – duration	(1) Post trip actions (includes transfer of makeup flow to RCIC and securing HPCI) / Plant actions for SBO (includes Att. 2, 9, and 10) (2) Post trip actions / Plant actions for SBO (3) Plant monitoring	No
RO #2	(1) T = 0 – 30 min. (2) T = 1.0 hr. – duration	(1) Post trip actions / Plant actions for SBO (includes Att. 2, 9, and 10) (2) Plant monitoring / support offsite communications (if needed and available)	No

Cooper Nuclear Station Phase 2 Staffing Assessment
Attachment 2

JOB POSITION	TIME	TASK	Collateral Duty?
RO #3 (WCO)	(1) T = 0 – 30 min (2) T = 30 min – 1.0 hr. (3) T = 1.0 – 1.5 hrs. (4) T = 10.75 – 11 hrs.	(1) Perform actions for SBO (includes opening CR panel doors and performing Att. 4) (2) Perform actions for SBO (includes Att. 5, 6, & 7) (3) Determine which FLEX building(s) will be used (based on extent of damage) / Assign staff to perform 5.10FLEX.09 actions for transferring the Hotwell to the ECST / Assign staff to perform 5.10FLEX.01and 5.10FLEX.03 actions to provide backup power to the DIV 1 125/250 VDC battery chargers / Assign staff to perform 5.10FLEX.30 Att. 2 to operate PC-MO-33MV UPS / Assign staff to perform 5.10FLEX.18 actions for Alternate Reactor Building Ventilation (4) Perform actions for 5.10FLEX.12 to pressurize the Reactor Building reliable air header from a FLEX portable air compressor	No
Station Operator #1	(1) T = 0 – 30 min (2) T = 30 min – 1.0 hr. (3) T = 1.0 – 2.0 hrs. (4) T = 2.0 – 4.0 hrs. (5) T = 9.0 – 11 hrs. (6) T = 12 – 15 hrs. (7) T = 16 – 16.75 hrs.	(1) Perform actions for SBO Att. 15 and 16 to investigate DG1 and DG2 failure to start (2) Perform actions for SBO Att. 11 for DC Load Reduction (3) Perform actions for SBO Att. 8 for NBPP load minimization / Perform SBO Att. 12 for emergency venting of H2 from main generator (4) Perform actions for 5.10FLEX.09 Att. 1-5 to transfer water from Hotwell to ECST (5) Perform actions for 5.10FLEX.10 Att. 1 to provide ECST makeup form the North Well (6) Perform actions for 5.10FLEX.22 to provide backup power to communications equipment (for ERP and MET) using portable generators (7) Perform actions for 5.10FLEX.05 to provide backup power for the Reliable Hardened Containment Vent Battery charger using the 60KW generator	No
Station Operator #2	(1) T = 0 – 30 min (2) T = 30 min – 1.0 hr. (3) T = 1.0 – 1.5 hrs. (4) T = 1.5 – 3.5 hrs. (5) T = 4.0 – 4.5 hrs. (6) T = 8.0 – 9.5 hrs. (7) T = 10.5 – 11 hrs. (8) T = 12 – 13 hrs.	(1) Perform actions for SBO to prop open 125/250 VDC Switchgear Room "A" Doors / Transfer Vital Control Room instruments to NBPP (2) Perform action for SBO Att. 10 (RCIC) and Att. 9 (HPCI) (3) Perform actions for 5.10FLEX.30 Att. 2 to open PC-MOV-233MV in support of Hardened Containment Venting System Operation (4) Perform actions for 5.10FLEX.01 and 5.10FLEX.03 to provide backup power to the Div. 1 125/250 VDC "C" Battery Chargers using the SAMG 175KW Diesel Generator (5) Perform actions for SBO Att. 13 to recharge relief valve accumulators (6) Perform actions for 5.10FLEX.19 to provide Control Building alternate ventilation using portable fans powered from a portable 6KW generator (7) Perform actions for 5.10FLEX.10 to support start of the North Well pump to provide makeup to the ECST (8) Perform actions for 5.10FLEX.22 to provide backup power to communications equipment and portable lighting for the CR using portable generators.	No

Cooper Nuclear Station Phase 2 Staffing Assessment
Attachment 2

JOB POSITION	TIME	TASK	Collateral Duty?
Station Operator #3	(1) T = 0 – 30 min (2) T = 30 min – 1 hr. (3) T = 1.0 – 2.0 hrs. (4) T = 2.0 – 2.5 hrs. (5) T = 2.5 – 3.0 hrs. (6) T = 11 – 12 hrs.	(1) Perform action for SBO to align "C" and "D" Sparger Pumps operating switches / Open Condenser Vacuum Breakers (2) Perform actions for SBO to secure RRMG Lube Oil Pumps (3) Perform actions for 5.10FLEX.20 Att. 2 to assist in clearing debris path and moving FLEX equipment (4) Perform actions for SBO Att. 14 to prevent CST draining to the Hotwell (5) Perform actions for 5.10FLEX.01 and 5.10FLEX.03 to connect cables for powering 125/250VDC DIV 1 battery chargers from SAMG 175KW Diesel Generator (6) Perform actions for 5.10FLEX.12 to pressurize the Reactor Building reliable air header from a FLEX portable air compressor	No
Communicator	(1) T = 0 – duration	(1) Establishes communications capabilities using satellite phones (if needed). Communicator remains available for communications with offsite agencies throughout the event.	No
RP/Chem. Tech	(1) T = 0 – 2.0 hrs. (2) T = 2.0 – 4.0 hrs. (3) T = 4.0 - duration	(1) Available for radiological monitoring (as needed) (2) Assist Station Operator perform actions for 5.10FLEX.09 Att. 1-5 to transfer water from Hotwell to ECST (3) Available for radiological monitoring (as needed)	No
Dose Assessor	(1) T = 0 – 1.0 hr. (2) T = 1.0 – 3.0 hrs. (3) T = 3.0 – duration	(1) Available for dose assessment (as needed) (2) Perform actions for 5.10FLEX.20 Att. 2 to assist in clearing debris paths and moving FLEX equipment (3) Available for dose assessment (as needed)	No
Utility Worker Fire Brigade #1	(1) T = 1.0 – 3.0 hrs. (2) T = 7.0 – 7.25 hrs. (3) T = 9.0 – 10 hrs. (4) T = 12 – 15 hrs. (5) T = 16 – 16.5 hrs.	(1) Perform actions for 5.10FLEX.20 Att. 2 and 5.10FLEX.09 to clear debris paths and move FLEX equipment. 60KW Generator and cable trailer delivered to staging area by T + 2.7 hrs. to support transferring water from Hotwell to the ECST (2) Perform actions for 5.10FLEX.22 to provide portable battery powered lighting for the CR (3) Perform actions for 5.10FLEX.10 to cut hole in fence to support running hoses for ECST makeup from North Well (4) Perform actions for 5.10FLEX.22 to clear debris paths and provide backup power to communications equipment (for ERP and MET) using portable generators. (5) Perform actions for 5.10FLEX.05 to provide backup power for the Reliable Hardened Containment Vent Battery charger using the 60KW generator.	No

JOB POSITION	TIME	TASK	Collateral Duty?
Utility Worker Fire Brigade #2	(1) T = 1.0 – 3.0 hrs. (2) T = 8.0 – 9.0 hrs. (3) T = 9.0 – 10 hrs. (4) T = 11 – 12 hrs. (5) T = 12 – 12.25 hrs. (6) T = 12.5 - duration	(1) Perform actions for 5.10FLEX.20 Att. 2 and 5.10FLEX.01 to clear debris paths and move FLEX equipment. SAMG Generator delivered to staging area by T + 2.3 hrs. to support powering 125/250VDC DIV 1 battery chargers (2) Perform actions for 5.10FLEX.19 to transport and setup cables and the portable 6KW generator to support Control Building Alternate Ventilation (3) Perform actions for 5.10FLEX.10 Att. 1 to layout cables and hoses to support providing makeup to the ECST from the North Well (4) Perform actions for 5.10FLEX.12 to pressurize the Reactor Building reliable air header from a FLEX portable air compressor (5) Perform actions for 5.10FLEX.22 to place portable generator and cables in staging area to support providing backup power to communications equipment for the CR (6) Perform actions for 5.10FLEX.31 to perform refueling of FLEX equipment	No
Security	(1) T = 0 – duration (2) T = 1.0 – 3.0 hrs. (3) T = 9.0 – 11.0 hrs.	(1) Access control and onsite personnel accountability (2) Support FLEX equipment access to the protected area as needed throughout the event / Open Reactor Building Roof access, ASD doors and Reactor Building RR airlock for ventilation (3) Support Station Operators setup and alignment of FLEX equipment for ECST makeup from the North Well pump while penetrating the Security fence	No
Augmented Staff	Assumes augmented staff is available after T = 6.0 hours to perform refueling of FLEX equipment and other tasks as assigned.		No