

WOLF CREEK

NUCLEAR OPERATING CORPORATION

Cleveland Reasoner
Site Vice President

January 18, 2016
WO 16-0003

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

- Reference:
- 1) Letter dated March 12, 2012 from E. J. Leeds and M. R. Johnson, USNRC, to M. W. Sunseri, WCNOG, "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"
 - 2) Letter WO 12-0044, dated May 9, 2012, from S. E. Hedges, WCNOG, to USNRC, "Wolf Creek Nuclear Operating Corporation 60-day Response to 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"
 - 3) Letter WO 12-0049, dated June 6, 2012, from S. E. Hedges, WCNOG, to USNRC, "Wolf Creek Nuclear Operating Corporation 90-day Response to 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"
 - 4) Letter WO 14-0023, dated March 31, 2014, from R. A. Smith, WCNOG, to USNRC, "Request for Schedule Relaxation of NRC Order EA-12-049, Requirement IV.A.2, at Wolf Creek Generating Station"
 - 5) Letter dated May 20, 2014, from E. J. Leeds, USNRC, to A. C. Heflin, WCNOG, "Wolf Creek Generating Station Unit 1 – Relaxation of the Schedule Requirements for Order EA-12-049 'Issuance of Order to Modify Licenses with Regard to Requirements for Mitigation Strategies for Beyond Design Basis External Events'"

Subject: Docket No. 50-482: Wolf Creek Nuclear Operating Corporation Fukushima Staffing

Gentlemen:

This letter provides Wolf Creek Nuclear Operating Corporation's (WCNOG) response to Nuclear Regulatory Commission (NRC) requests for information (RFI) one, two, and six made in Enclosure #5, Recommendation 9.3: Emergency Preparedness, Staffing of Reference 1. The responses to RFIs three, four, and five were previously provided in Reference 3 that provided WCNOG's 90 day response to Reference 1.

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In Reference 2 WCNOC committed to providing this remaining information four to five months prior to the second refueling outage after the issuance of the Order as defined in NRC Order EA-12-049. Schedule relaxation was subsequently requested (Reference 3), and granted (Reference 4), that extended the due date for these items to be four to five months prior to Wolf Creek Generating Station Refueling Outage 21, scheduled to begin in September 2016.

The Attachment to this letter provides a description of RFIs one, two, and six and WCNOC's responses.

The Enclosure provides the FLEX Staffing Study supporting these responses.

This letter contains no commitments. If you have any questions concerning this matter, please contact me at (620) 364-4171, or Cynthia R. Hafenstine (620) 364-4204.

Sincerely,



Cleveland Reasoner

COR/rlt

Attachment: Wolf Creek Nuclear Operating Corporation's Responses to Request for Information Pursuant to 10 CFR 50.54(f) Regarding Recommendation 9.3 of the Near-Term Task Force Review of Insights from the Fukushima Dai-Ichi Accident

Enclosure: FLEX Staffing Study

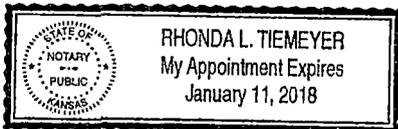
cc: M. L. Dapas (NRC), w/a, w/e
C. F. Lyon (NRC), w/a, w/e
N. H. Taylor (NRC), w/a, w/e
Senior Resident Inspector (NRC), w/a, w/e

STATE OF KANSAS)
) SS
COUNTY OF COFFEY)

Cleveland Reasoner, of lawful age, being first duly sworn upon oath says that he is Site Vice President of Wolf Creek Nuclear Operating Corporation; that he has read the foregoing document and knows the contents thereof; that he has executed the same for and on behalf of said Corporation with full power and authority to do so; and that the facts therein stated are true and correct to the best of his knowledge, information and belief.

By *Cleveland Reasoner*
Cleveland Reasoner
Site Vice President

SUBSCRIBED and sworn to before me this 18th day of January, 2016.



Rhonda L. Tiemeyer
Notary Public

Expiration Date *January 11, 2018*

Wolf Creek Nuclear Operating Corporation's Responses to Request for Information Pursuant to 10 CFR 50.54(f) Regarding Recommendation 9.3 of the Near-Term Task Force Review of Insights from the Fukushima Dai-Ichi Accident

Original request shown in italics.

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 above. 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 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: The staffing assessment was conducted in November 2015 using draft FLEX Support Guidelines. The FLEX Staffing Report is enclosed with this submittal. The assessment concluded that the current on-shift minimum staffing designated in the Emergency Plan is sufficient to perform the tasks associated with a beyond design basis natural event and implement the Emergency Plan.

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 staffing assessment was conducted in November 2015 using draft FLEX Support Guidelines. The assessment will need to be validated when the final FLEX Support Guidelines are approved. Final FLEX implementation is scheduled for December 2016.

6. *Identify changes that have been made or will be made to your emergency plan regarding 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: No changes need to be made to the Emergency Plan regarding on-shift or augmented staffing necessary to respond to a beyond design basis natural event and implement the Emergency Plan.

Enclosure to Letter WO 16-0003

**FLEX Staffing Study
(26 Pages)**



FLEX Staffing Study

12/14/2015
Enercon Services Inc.
Bill Chausse

TABLE OF CONTENTS

1.0 Introduction.....2

2.0 Analysis Summary.....3

3.0 Analysis Overview5

4.0 Assumptions5

5.0 Event Staffing Analysis7

Attachments

Attachment 1 - Acronyms.....14

Attachment 2 - References.....15

Attachment 3 - NEI 10-05 Tables16

Attachment 4 - Participants25

1. Introduction

In May, 2012, NEI published NEI 12-01, “*Guideline for Assessing Beyond Design Basis Accident Response Staffing and Communications Capabilities*”. This guideline provide criteria to assist with the preparation of assessments used to determine the required staff needed to respond to a Beyond Design Basis External Event (BDBEE) that affect multiple units at a site, and the identification of enhancements that could provide a means to power equipment needed to communicate with on-site and offsite personnel during an extended loss of AC power event. These assessments were necessary for responding to certain information requests contained in US Nuclear Regulatory Commission (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. As discussed in SECY-11-0137, “*Prioritization of Recommended Actions to be taken in Response to Fukushima Lessons Learned*”, dated October 3, 2011, responses to the information requests will be used to inform possible future regulatory actions.

Recommendation 4.2 requires a three-phase approach for mitigating beyond-design-basis external events. The Initial Phase requires the use of installed equipment and resources to maintain or restore the functions of core cooling, containment and spent fuel pool cooling. The Transition Phase requires providing sufficient, portable, on-site equipment and consumables to maintain or restore these functions until they can be accomplished with resources brought from off site. The Final Phase requires obtaining sufficient offsite resources to sustain those functions indefinitely. Additionally, the event analyzed impedes site access such that for the first 6 hours no personnel from off-site can access the site, from 6 to 24 hours there is limited site access and after 24+ hours there is improved site access.

Section IV.A.9 of 10 CFR 50, Appendix E, states that nuclear power reactor licensees shall perform “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.” The Nuclear Energy Institute (NEI) On-Shift ERO Staffing Task Force developed NEI 10-05, “*Assessment of On-Shift Emergency Response Organization Staffing and Capabilities*” to establish a standard methodology for performing analyses of the ability of on-shift staff to perform all required functions and tasks necessary to respond to a declared emergency. Licensees used this methodology to meet the requirement of 10 CFR 50, Appendix E, Section IV.A.9 in a manner acceptable to the US Nuclear Regulatory Commission (NRC) staff. The methodology provided in this guidance was used to perform the Wolf Creek Nuclear Operating Corporation (WCNOC) On-Shift Staffing Assessment (OSSA), conducted in November 2015..

This report provides the staffing assessment results for Wolf Creek Nuclear Plant as required by the US Nuclear Regulatory Commission (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. Analysis Summary

The assessment concluded that the on-shift staff as defined in the current Wolf Creek Emergency Plan and augmented ERO is adequate to implement existing and planned BDBEE and ELAP strategies while continuing to perform required Emergency Planning tasks without unacceptable collateral duties. Gaps identified during the Staffing Assessment process should be addressed through the Wolf Creek Corrective Action Program.

Gaps identified:

- a. The staffing assessment was not performed with the final approved versions of procedures and guidelines that will be used during an ELAP. (CR00050727-01-10)
- b. FLEX Support Guideline task training/qualification is not yet developed and incorporated into the appropriate training programs. (CR00050727-01-10)
- c. Current drill and exercise procedures do not include objectives or demonstration criteria for FLEX implementation. (CR00066747-02-46)

3. Analysis Overview

Staffing Analysis Scope

The Wolf Creek Nuclear Plant staffing assessment was performed using the guidance of NEI 12-01 to conduct the staffing assessment. This assessment considers the staffing necessary to implement actions that address functions related to Fukushima NTTF Recommendation 4.2. The intent of this assessment was to perform the following:

1. Evaluate the ability of the on-shift staff to implement Initial Phase coping actions and, consistent with the site access assumption, evaluate Transition Phase actions which 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 involving the use of on-site portable equipment and consumables to extend the coping period, and prevent a loss of functions needed for core cooling, containment integrity, and spent fuel pool cooling. Setup for these strategies may be performed prior to the end of the Initial Phase as determined by procedure.
2. Evaluate the ability of the on-shift staff to implement the Station Blackout (SBO) coping strategies in place before Extended Loss of AC Power (ELAP) is declared.
 3. Evaluate the EOPs and FSGs for responding to an ELAP affecting the unit. (Note: Draft FSGs were used.)
 4. Evaluate whether the ability of the on-shift staff to perform any required emergency response functions would be degraded or lost prior to the arrival of the augmented ERO.
 5. Consistent with the site access assumption, evaluate the ability of the on-shift staff and augmented staff to implement Transition Phase coping strategies performed after the end of the “no site access” time period.

The staffing level determined as a result of the Phase 2 assessment will be verified and validated in the process used to reasonably assure required tasks, manual actions and decisions for FLEX strategies are feasible and may be executed. Validation will be performed at a date after the submittal of the staffing assessment report per NEI guidance “FLEX Beyond Design Basis Validation Process” dated July 18, 2014. Necessary corrective actions will be tracked using the WCNOG corrective action program if the validation determines the assumed resources cannot complete a time sensitive action within the constraints identified in the Overall Integrated Plan (OIP) per NRC Order EA-12-049.

Methodology

A tabletop assessment was performed to determine what operational and emergency response actions were procedurally required during an ELAP. Representatives from Wolf Creek Operations, Maintenance, Radiation Protection, Chemistry, Procedure Writers, Engineering, Security, and Emergency Preparedness met with an industry consultant in a tabletop exercise in November 2015. The participants reviewed the assumptions and applied procedural guidance, including 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. Because the FSGs were not

finalized, the results of the assessment are preliminary and will require validation prior to FLEX implementation. All gaps identified will be addressed through the Wolf Creek corrective action program.

The team reviewed the tasks of each member of the minimum on-shift staff in responding to the ELAP and constructed a timeline (Table 5.1) recording the tasks and the approximate time at which they were performed following the event. In reviewing on-shift staffing tasks, the team was alert to identify instances where staff members were assigned conflicting tasks or collateral duties that would distract from their ability to fulfill Plan responsibilities.

The assessment team used the guidance of NEI 10-05 to determine if the number and composition of the on-shift staff was sufficient to implement the Emergency Plan, Initial Phase actions, and, with the assistance from augmented staff, Transition Phase actions intended to maintain or restore core cooling, containment integrity, and spent fuel pool makeup for both units. The NEI 10-05 data tables (Attachment 3) were modified to include tasks associated with FLEX strategies.

4. Assumptions

NEI 12-01 Assumptions for Staffing Analysis

The set of standard assumptions that were used in the development of this report:

1. A large-scale external event occurs that results in:
 - all on-site units affected
 - extended loss of AC power
 - impeded access to the units
2. All on-site reactors are operating at full power and are successfully shut down.
3. A Hostile Action directed at the affected site does not occur during the period that the site is responding to the event.
4. The event impedes site access as follows:
 - A. Post event time: 6 hours – No site access. This duration reflects the time necessary to clear roadway obstructions, use different travel routes, mobilize alternate transportation capabilities (e.g., private resource providers or public sector support), etc.
 - B. Post event time: 6 to 24 hours – Limited site access. Individuals may access the site by walking, personal vehicle or via alternate transportation capabilities (e.g., private resource providers or public sector support).

- C. Post event time: 24+ hours – Improved site access. Site access is restored to a near-normal status and/or augmented transportation resources are available to deliver equipment, supplies and large numbers of personnel.
5. The on-shift personnel complement is limited to the minimum required number and composition as described in the site emergency plan. If the plan commitments allow for different minimum staffing levels (e.g., a variance between a normal dayshift and a backshift), use the staffing with the smallest total number of personnel.

NEI 10-05 Applicable Assumptions

In accordance with this guidance, the following assumptions and limitations apply to the Phase 2 OSSA:

1. On-shift personnel can report to their assigned response locations within the 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. Personnel assigned to the major response area of Plant Operations and Safe Shutdown meet the requirements and guidance established by NRC regulations and are able to satisfactorily perform the functions and tasks necessary to achieve and maintain safe shutdown.

Note: Staff performance within this area was not evaluated as part of this assessment, unless a role/function/task from another major response area is assigned as a collateral duty.

4. Performance of the on-site security organization's function is regularly analyzed through other station programs and was not evaluated in the OSSA, unless a role or function from another major response area was assigned as a collateral duty.
5. Individuals holding the position of Radiation Protection Technician 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 was 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. Communications methods will be different, i.e. Satellite phones instead of dedicated phone lines. Satellite phones require clear view of southern sky and therefore the communicator must go outside or set up an outside antenna. As such the communication to the State, Counties and the NRC will be done in series as each phone must be dialed separately. The satellite phones have simple usage cards with each phone and the use is similar to the use of a Cellular phone within the capability of the communicator.

7. The task of performing a peer check had minimal impact on the ability to perform other assigned functions/tasks, and was 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 events occur during off-normal work hours at a time when augmented ERO responders are not at the site (e.g., during a backshift, weekend or holiday).

5. Event Staffing Analysis

Minimum On-Shift Staffing

The shift staffing requirements for Wolf Creek are listed in the table below. The methodology of NEI 12-01 requires that only personnel required to be on-shift can be credited in the staffing analysis.

AP 06-002, Radiological Emergency Response Plan,
WCGS Minimum Staffing for Emergencies

Position	On-Shift
Shift Manager (SRO)	1
Control Room Supervisor (CRS)	1
Reactor Operator (RO#1 & RO#2)	2
Nuclear Station Operator (NSO AB)	1
Nuclear Station Operator (NSO TB)	1
Nuclear Station Operator (NSO Site)	1
Nuclear Station Operator (NSO FBL)	1
Nuclear Station Operator (NSO OFN 16)	1
Shift Technical Advisor (STA)	1
HP Personnel (HP#1, HP#2 & HP#3)	3
Chemistry Personnel (Chem #1 & Chem #2)	2
Communicators (Comm #1 & Comm #2)	2
Total	17
Security	Per Security Plan

Scenario Overview

The BDBEE assumes a loss of off-site power combined with a failure of the emergency diesel generators to load. All remaining power is supplied by the station batteries. The loss of AC power to emergency buses initially results in the declaration of a Site Area Emergency. When it becomes apparent that power will be unavailable for a prolonged period, the event classification is escalated to a General Emergency.

Wolf Creek utilizes a three-phase approach for mitigating beyond-design-basis external events. The Initial Phase utilizes installed equipment and resources to monitor, maintain or restore the functions of core cooling, containment and spent fuel pool cooling. The Transition Phase requires providing sufficient, portable, on-site equipment and consumables to maintain or restore these functions until they can be accomplished with resources brought from off site. The Final Phase uses offsite resources to sustain those functions indefinitely. Portable and off-site equipment location and operation during the Transition and Final Phases is addressed through the FSG's.

EMG E-0 and EMG C-0 are the governing procedures for the BDBEE initial response. Actions are focused on response to the unit trip, restoration of electrical power and establishing ventilation in different areas of the plant.

FLEX strategies are focused on maintaining or restoring key plant safety functions and are not tied to any specific damage state or mechanistic assessment of external events.

Staffing Analysis Summary

Tables 5.1 & 5.2 provide the results of the actions taken to the BDBEE transient using installed plant and portable equipment and the available staffing complement. The on-shift staff performed actions required by operating and emergency plan procedures in the 6-hour period, relying only on installed structures, systems and components available in the Initial Phase of the response.

The assessment concluded that the on-shift staff as defined in the current Wolf Creek Emergency Plan and augmented ERO is adequate to implement existing and planned BDBEE and ELAP strategies while continuing to perform required Emergency Planning tasks without unacceptable collateral duties.

Table 5.1

On-Shift Staff Actions

(Within the first seven hours)

Resources	Tasks by Time (min)															
	0-10	10-20	20-30	30-40	40-50	50-60	60-75	75-90	90-105	105-120	120-150	150-180	180-240	240-300	300-360	360-420
Shift Manager (SM)	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Shift Technical Advisor (STA)	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
Control Room Supervisor (CRS)	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3
Reactor Operator (RO 1)	3	3	12	3	3	3	3	3	3	3	3	3	3	3	3	3
Reactor Operator (RO 2)	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3
Nuclear Systems Operator (NSO AB)		6	8		14	14		18	18	18	19					
Nuclear Systems Operator (NSO TB)		7	11	13	13/14	14		21	21							
Nuclear Systems Operator (NSO Site)		9	9				16	16	20	20						

Nuclear Systems Operator (NSO FBL)		10	10													
Nuclear Systems Operator (NSO OFN 16)						15	15	17	17	17	17					
Health Physics Technician (HP 1)								17	17	17	17					
Health Physics Technician (HP 2)		36	36	36	36	36	36									
Health Physics Technician (HP 3)																
Chemistry Technician (Chem 1)	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5
Chemistry Technician (Chem 2)																
Communicator (Comm 1)	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4
Communicator (Comm 2)	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4
Security																

Note : Numbers in this table refer to the task numbers in Table 5.2 Task Listing

Task #	Table 5.2 Task Listing Task Description	Time	Performer
1.	Emergency Coordinator (Control Room)	Duration	SM
2.	Engineering Oversight (Control Room)	Duration	STA
3.	Emergency Procedures Implementation/ Monitoring and Control (Control Room)	Duration	CRS/ RO
4.	Emergency Communications	Duration	Communicators
5.	Dose Assessment	Duration	Chem 1
6.	Locally close the RCS and pressurizer sample line isolation valves at 3 locations in the aux building	10	SO (AB)
7.	Attempt to start EDG's locally/ Attempt to restore electrical power to at least one emergency bus	10 Min	SO (TB)
8.	Isolate RCP seals	5 Min	SO (AB)
9.	Manually start the diesel fire pump	15 Min	SO (Site)
10.	TSC diesel – local start	20 Min	SO (FBL)
11.	Emergency ventilation – TDAFW doors opened	5 Min	SO (TB)
12.	Emergency ventilation – Cabinet doors in the control building	15 Min	RO1
13.	Check DC bus loads (Load shed)	15 Min	SO (TB)
14.	Damage assessment of buildings/ equipment	30 Min	SO (TB) SO (AB)
15.	Debris Removal (as required) - Including gate removal/ access	30 Min	SO (OFN 16)

Task #	Table 5.2 Task Listing Task Description	Time	Performer
16.	Deploy cables/ generator 480 VAC generator	30 Min	SO (Site)
17.	SFP Ventilation	60 Min	SO (OFN 16) HP1 Security
18.	SFP Hose – to SFP location	45 Min	SO (AB)
19.	Deploy SFP hose	30 Min	SO (AB)
20.	Deploy 120 VAC generator, 4 ventilation panels and associated cables (two trips with Polaris/ one trip with the truck)	30 Min	SO (Site)
21.	Load Centers NG-01 thru 4/ – open circuit breakers (FSG-4, Attachment A)	20 Min	SO (TB)
22.	Run cables/ hook up to panels	45 Min	SO (TB) SO (FBL)

Tasks Performed Following First Six Hours/ Augmented Staff Available			
23.	Energize NG-01 load center from FLEX generator (Attachment B), generator running, ready to load the bus	60 Min	SO (TB) SO (FBL)
24.	Energize loads (Attachment C)	90 Min	SO (TB) SO (FBL)
25.	Control Building Ventilation deployment	90 Min	SO (OFN 16) HP

26.	Deploy FLEX Air Compressors	60 Min	SO 1 Aug
27.	Deploy FLEX Core Cooling Pump -includes deployment and three hoses	30 Min	SO 1 Aug
28.	Place FLEX Core Cooling pump in service	60 Min	2 SO 1 Aug
29.	Refueling of portable equipment	Start to end	Aug Security
30.	FLEX RCS Make-Up Pump – calculations required	60 Min	RO
31.	Deploy RCS Make-up suction & discharge path (pump pre-staged)	60 Min	2 SOs
32.	Place CST Make-Up pump in service – stage (pump pre-staged) hoses	240 Min	6 Aug
33.	HP surveys will be required when cooldown commences	600 Min	HP
34.	One chemist will be in control room for dose assessment	Start to End	CHEM
35.	Accumulator isolation from control room (prior to cooldown to 120#) or vent to containment		RO SO
36.	CR HP Coverage	60 minutes	HP #2

Notes:

- Draft versions of the FSG's were utilized for the staffing analysis.
- Security will be present for Task #17 as part of normal response to the roll-up door
- RO#1 assists with emergency ventilation by opening cabinet doors in the control building
- Augmented staff utilized after 6 hours when site access is partially restored (Task #26)

Attachment 1

Acronyms

AOP	Abnormal Operating Procedure
BDBEE	Beyond Design Basis External Event
CFR	Code of Federal Regulations
EDG	Emergency Diesel Generator
EOP	Emergency Operating Procedure
ERO	Emergency Response Organization
HP	Health Physics Technician
NEI	Nuclear Energy Institute
NRC	Nuclear Regulatory Commission
NTTF	Near Term Task Force
RCP	Reactor Coolant Pump
RCS	Reactor Coolant System
SAMG	Severe Accident Management Guidelines
SBO	Station Blackout
SFP	Spent Fuel Pool
SO	System Operator
TSC	Technical Support Center

Attachment 2

References

1. EMG C-0, Loss of All AC Power
2. EMG E-0, Reactor Trip or Safety Injection
3. OFN KJ-032, Local Emergency Diesel Startup
4. OFN NB-030, Loss of AC Emergency Bus NB01 (NB02)
5. STN KAT-001, Technical Support Diesel Generator Operation
6. SYS SY-120, Sharpe Diesel Operation and Alignment to Site
7. FSG-1 Long Term Inventory Control
8. FSG-3 Alternate Low Pressure Feedwater
9. FSG-4 ELAP DC Load Shed/ Management
10. FSG-5 Initial Assessment and FLEX Equipment Staging
11. FSG-6 Alternate CST Makeup
12. FSG-7 Loss of Vital Instrumentation or Control Power
13. FSG-8 Alternate RCS Boration
14. FSG-9 Low Decay Heat Temperature Control
15. FSG-10 Passive RCS Injection Isolation
16. FSG-11 Alternate SFP Makeup and Cooling
17. FSG-12 Alternate Containment Cooling
18. FSG-13 Transition from FLEX Equipment
19. NEI 10-05 (Rev. 0), "Assessment of On-Shift Emergency Response Organization Staffing and Capabilities"
20. NEI 12-01 (Rev. 0), Guideline for Assessing Beyond Design Basis Accident Response Staffing and Communications Capabilities

**Attachment 3
NEI 10-05
Table 1 – On-Shift Positions**

Line	On-Shift Position	Emergency Plan Reference	Augmentation Elapsed Time (min)	Role in Table#/ Line #	Unanalyzed Task?	TMS Required?
1	Shift Manager	Radiological Emergency Response Plan, Figure 2, "Minimum Shift Staffing" & Attachment D, "WCGS Minimum Staffing for Emergencies"	NA	T2/L1 T5/L1 T5/L2 T5/L3 T5/L4 T5/L5 T5/L8 T5/L10 T5/L13	No	No
2	Shift Technical Advisor	Radiological Emergency Response Plan, Figure 2, "Minimum Shift Staffing" & Attachment D, "WCGS Minimum Staffing for Emergencies"	NA	T2/L3 T5/L11	No	No
3	Control Room Supervisor	Radiological Emergency Response Plan, Figure 2, "Minimum Shift Staffing" & Attachment D, "WCGS Minimum Staffing for Emergencies"	NA	T2/L2	No	No
4	Reactor Operator #1	Radiological Emergency Response Plan, Figure 2, "Minimum Shift Staffing" & Attachment D, "WCGS Minimum Staffing for	N/A	T2/L4	No	No

		Emergencies”				
5	Reactor Operator #2	Radiological Emergency Response Plan, Figure 2, “Minimum Shift Staffing” & Attachment D, “WCGS Minimum Staffing for Emergencies”	N/A	T2/L4	No	No
6	Station Operator #1	Radiological Emergency Response Plan, Figure 2, “Minimum Shift Staffing” & Attachment D, “WCGS Minimum Staffing for Emergencies”	N/A	T2/L6	No	No
7	Station Operator #2	Radiological Emergency Response Plan, Figure 2, “Minimum Shift Staffing” & Attachment D, “WCGS Minimum Staffing for Emergencies”	N/A	T2/L7	No	No
8	Station Operator #3	Radiological Emergency Response Plan, Figure 2, “Minimum Shift Staffing” & Attachment D, “WCGS Minimum Staffing for Emergencies”	N/A	T2/L8	No	No
9	Station Operator #4	Radiological Emergency Response Plan, Figure 2, “Minimum Shift Staffing” & Attachment D, “WCGS Minimum Staffing for Emergencies”	N/A	T2/L9	No	No

10	Station Operator #5	Radiological Emergency Response Plan, Figure 2, "Minimum Shift Staffing" & Attachment D, "WCGS Minimum Staffing for Emergencies"	N/A	T2/ L10	No	No
11	Chemistry Technician #1	Radiological Emergency Response Plan, Figure 2, "Minimum Shift Staffing" & Attachment D, "WCGS Minimum Staffing for Emergencies"	60	T2/ L11 T4/L5 T4/L6	No	No
12	Chemistry Technician #2	Radiological Emergency Response Plan, Figure 2, "Minimum Shift Staffing" & Attachment D, "WCGS Minimum Staffing for Emergencies"	60	T2/ L12	No	No
13	HP Tech #1	Radiological Emergency Response Plan, Figure 2, "Minimum Shift Staffing" & Attachment D, "WCGS Minimum Staffing for Emergencies"		T2/ L13 T4/ L1	No	No
14	HP Tech #2	Radiological Emergency Response Plan, Figure 2, "Minimum Shift Staffing" & Attachment D, "WCGS Minimum Staffing for Emergencies"		T2/ L14 T4/ L2	No	No
15	HP Tech #3	Radiological Emergency Response Plan, Figure 2, "Minimum Shift Staffing" & Attachment D, "WCGS		T2/ L15 T4/ L3	No	No

		Minimum Staffing for Emergencies”				
16	Communicator #1	Radiological Emergency Response Plan, Figure 2, “Minimum Shift Staffing” & Attachment D, “WCGS Minimum Staffing for Emergencies”		T2/ L16	No	No
17	Communicator #2	Radiological Emergency Response Plan, Figure 2, “Minimum Shift Staffing” & Attachment D, “WCGS Minimum Staffing for Emergencies”		T2/ L17	No	No
	Security	Radiological Emergency Response Plan, Figure 2, “Minimum Shift Staffing” & Attachment D, “WCGS Minimum Staffing for Emergencies”	N/A	T5/L15	No	No

**Attachment 3
NEI 10-05**

TABLE 2 – Plant Operations, Safe Shutdown & FLEX Operations

Line	Generic Title/Role	On-Shift Position	Task Analysis Controlling Method
1	Shift Manager	Shift Manager	Operations Training
2	Unit Supervisor	Control Room Supervisor	Operations Training
3	Shift Technical Advisor	Shift Technical Advisor	Operations Training
4	Reactor Operator #1	Reactor Operator #1	Operations Training
5	Reactor Operator #2	Reactor Operator #2	Operations Training
6	Station Operator #1	Station Operator (AB)	Operations Training
7	Station Operator #2	Station Operator (TB)	Operations Training
8	Station Operator #3	Station Operator (Site)	Operations Training
9	Station Operator #4	Station Operator (FBL)	Operations Training
10	Station Operator #5	Station Operator (OFN 16)	Operations Training

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

Line	Generic Title/Role	On-Shift Position	Task Analysis Controlling Method
11	Chemistry Tech #1	Chemistry Technician	Chemistry Training
12	Chemistry Tech #2	Chemistry Technician	Chemistry Training
13	Health Physics Tech #1	Health Physics Technician	Health Physics Training
14	Health Physics Tech #2	Health Physics Technician	Health Physics Training
15	Health Physics Tech #3	Health Physics Technician	Health Physics Training
16	Communicator #1	As assigned	Emergency Plan Training
17	Communicator #2	As assigned	Emergency Plan Training
18	Security	N/A	Security Training

Attachment 3
NEI 10-05
TABLE 3 – Firefighting

Line	Performed By	Task Analysis Controlling Method
1	N/A – there is no fire associated with this event.	N/A
2	N/A	N/A
3	N/A	N/A
4	N/A	N/A
5	N/A	N/A

Attachment 3

NEI 10-05

TABLE 4 – Radiation Protection & Chemistry

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	85-90
1	In-Plant Survey On-Shift Position: HP Tech Surveys				X	X	X	X	X	X	X	X	X	X	X	X	X	X
2	On-Site Survey On-Shift Position:	N/A The performance of an on-site survey is not necessary for implementation of the Emergency Plan and is not required by any procedure. No radiological release for this event.																
3	Personnel Monitoring On-Shift Position: CR HP Tech	X	X	X	X	X	X	X	X	X	X	X	X					
4	Job Coverage On-Shift Position: HP Tech As needed	X	X	X	X	X	X	X	X	X	X	X	X					
5	Offsite Radiological Assessment On-Shift Position: Chemistry Tech.	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X

Attachment 3

NEI 10-05

TABLE 5 – Emergency Plan Implementation

Line	Function/Task	On-Shift Position	Task Analysis Controlling Method
1	Declare the Emergency Classification Level (ECL)	Shift Manager	Operations Training and EP Training/Drill Program
2	Approve Offsite Protective Action Recommendations	Shift Manager	Operations Training and EP Training/Drill Program
3	Approve content of State/local notifications	Shift Manager	Operations Training and EP Training/Drill Program
4	Approve extension to allowable dose limits	Shift Manager	Operations Training and EP Training/Drill Program
5	Notification and direction to On-shift staff (e.g., to assemble, evacuate, etc.)	Shift Manager	Operations Training and EP Training/Drill Program
6	ERO notification	Station Operator	Operations Training and EP Training/Drill Program
7	Abbreviated NRC notification for DBT event	N/A for this event	N/A
8	Complete State/local notification Form	Shift Manager	Operations Training and EP Training/Drill Program
9	Perform State/local notifications	Station Operator	Operations Training and EP Training/Drill Program
10	Complete NRC event notification form	Shift Manager	Operations Training and EP Training/Drill Program
11	Activate ERDS	TSC ERF Computer Operator	EP Training/ Drill Program

12	Offsite radiological assessment	N/A – Table 4 Chemistry Tech	Chemistry Training and EP Training/Drill Program
13	Perform NRC notifications	Communicator	Maintenance Training and EP Training/Drill Program
14	Perform other site-specific event notifications (e.g., INPO, ANI, etc.)	Station Operator	Operations Training and EP Training/Drill Program
15	Personnel accountability	Security/ Station Operator	Security Training and EP Training/Drill Program

**Attachment 4
Tabletop Participants**

Rick Foust	Engineering
Chad Carmen	Chemistry
Joe Franks	FLEX Procedure Writer
Jim Gilmore	FLEX Procedure Writer
Monty Thomas	Security
Marcus Stice	Operations
Frank Buchman	Emergency Planning
John Schepers	Radiation Protection