



South Texas Project Electric Generating Station P.O. Box 289 Wadsworth, Texas 77483

April 25, 2013
NOC-AE-13002989
10 CFR 50.54(f)

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

South Texas Project
Units 1 & 2
Docket Nos. STN 50-498, STN 50-499
Response 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 - Phase 1 Staffing Assessment

- References:
1. Letter, Eric Leeds to E. D. Halpin, "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 (ML12053A340)
 2. Letter, D.W. Rencurrel to NRC, "60-Day Response 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", dated May 9, 2012 (ML12136A472)
 3. Letter, D.W. Rencurrel to NRC, "Revised 60-Day Response 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", dated June 4, 2012 (ML12163A344)
 4. Letter from D. W. Rencurrel to NRC, "90-Day Response 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 Daiichi Accident, dated June 4, 2012 (ML12163A331)

On March 12, 2012, the Nuclear Regulatory Commission (NRC) issued Reference 1. Enclosure 5 of Reference 1 contained specific Requested Actions and Requested Information associated with Recommendation 9.3 for Emergency Preparedness programs. In accordance with 10 CFR 50.54, "Conditions of licenses," paragraph (f), addressees were requested to submit a written response to the information requests.

In accordance with Reference 1, STP Nuclear Operating Company (STPNOC) submitted an alternative course of action for providing the requested information in Reference 2

STI 33680282

ADD
NRK

which was revised by Reference 3. As described in our alternative course of action (Reference 2 and 3), Enclosure 1 to this letter transmits STPNOC's Phase 1 Staffing Assessment Report. A summary of the Requested Information Items in References 2 and 3 and the conclusions from the staffing assessment, including an implementation schedule are provided in Enclosure 2.

The only commitments in this letter are summarized in Enclosure 3.

Note: The enclosed list of commitments also includes a revision to the estimated due date associated with the completion of the Phase 2 Staffing Assessment. See Enclosure 3 for details.

If there are any questions regarding this letter, please contact Robyn Savage at (361) 972-7438.

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

Executed on: 4/25/2013


D. W. Rencurrel
Sr. Vice President, Operations

- Enclosures:
1. STP Phase 1 Extended Loss of All AC Power (ELAP) ERO Staffing Analysis Report
 2. Summary of Requested Items and Actions Planned for the Phase 1 Staffing Assessment
 3. List of Commitments

rds

cc:
(paper copy)

(electronic copy)

Regional Administrator, Region IV
U. S. Nuclear Regulatory Commission
1600 East Lamar Boulevard
Arlington, TX 76011-4511

A. H. Gutterman, Esquire
Morgan, Lewis & Bockius LLP

Balwant K. Singal
U. S. Nuclear Regulatory Commission

Balwant K. Singal
Senior Project Manager
U.S. Nuclear Regulatory Commission
One White Flint North (MS 8 B1)
11555 Rockville Pike
Rockville, MD 20852

John Ragan
Chris O'Hara
Jim von Suskil
NRG South Texas LP

NRC Resident Inspector
U. S. Nuclear Regulatory Commission
P. O. Box 289, Mail Code: MN116
Wadsworth, TX 77483

Kevin Pollo
Richard Pena
City Public Service

C. M. Canady
City of Austin
Electric Utility Department
721 Barton Springs Road
Austin, TX 78704

Peter Nemeth
Crain Caton & James, P.C.

C. Mele
City of Austin

Eric Leeds
Director, Office of Nuclear Reactor Regulation
U.S. Nuclear Regulatory Commission
One White Flint North (MS 13 H 16)
11555 Rockville Pike
Rockville, MD 20852

Richard A. Ratliff
Texas Department of State Health
Services

Alice Rogers
Texas Department of State Health
Services

RMS

Enclosure 1

South Texas Project (STP)

Phase 1 Extended Loss of All AC Power (ELAP)
ERO Staffing Analysis Report



South Texas Project

Phase 1 Extended Loss of All AC Power (ELAP) ERO Staffing Analysis Report

Revision 0

TABLE OF CONTENTS

1	INTRODUCTION	5
2	PHASE 1 STAFFING ANALYSIS SUMMARY	6
	2.1 Task Analysis Results	6
	2.1.1 Non-Validated Task Assessment	6
	2.1.2 Potential Task Overlap Assessment	6
	2.2 Time Motion Study (TMS) Results	6
	2.3 Augmented and Expanded ERO Assessment Results	7
3	ON-SHIFT STAFFING COMPLEMENT	8
	3.1 Shift Staffing Basis	8
	3.2 Initial Shift Staffing Locations	9
4	EXTENDED LOSS OF ALL AC POWER (ELAP)	10
	4.1 Scope	10
	4.2 Assumptions	10
	4.3 Event Description and Initial Conditions	11
	4.4 Procedures Used in the Event	12
	4.4.1 List of Procedures Applicable to a Loss of All AC Power and Emergency Plan Implementation	12
	4.4.2 Procedure Changes Due to IER Responses Applicable to Phase 1	12
5	AUGMENTED AND EXPANDED ERO RESPONSE ANALYSIS	14
	5.1 ERO Notification and Response during an ELAP	14
	5.1.1 General ERO Response	16
	5.1.2 Position Specific ERO Response	19
	5.2 Expanded Response Functions for Phase 1 Staffing Assessment	21
6	LIST OF IMPROVEMENT ACTIONS IDENTIFIED DURING THE PHASE 1 ASSESSMENT	24
7	LIST OF REFERENCES	25
	Attachment 1: NEI 10-05 Table 5 Controlling Method Correlation	27
	Attachment 2: NEI 10-05 Appendix B On-Shift Staffing Analysis Results Tables	29
	Attachment 3: NEI 10-05 Appendix D & E On-Shift Staffing Analysis Results Tables.....	35

GLOSSARY

Alternate Response Facility	Alternate TSC/OSC, located in the EOF in Bay City, Texas. Used in the event of a declared emergency when access to the site is restricted.
ANI	American Nuclear Insurers
Augmented ERO	Personnel mobilized to assist the on-shift staff in responding to more serious events and accidents. Augmented ERO personnel are capable of performing a wide range of functions necessary for responding to a radiological emergency, up to and including a severe accident involving fuel damage. This group of people is normally offsite and split into teams.
BYP	Bypass
CAP	Corrective Action Program
CR	Control Room
CVCS	Chemical Volume Control System
DC	Direct current
DP	Differential pressure
EAB	Electrical Auxiliary Building
EAL	Emergency Action Level
ECL	Emergency Classification Level
EDG	Emergency Diesel Generator
EDMG	Extensive Damage Mitigation Guidelines
ELAP	Extended Loss of all AC Power
Emergency Management Plan	Document developed by Matagorda County that supports the STP Emergency Plan and the State of Texas Emergency Management Plan
ENS	Emergency Notification System – used to provide operational and health physics information to the Nuclear Regulatory Commission Operations Center during the early phase of an emergency.
EOC	Emergency Operations Center
EOF	Emergency Operations Facility
ERDS	Emergency Response Data System
ERF	Emergency Response Facility (e.g. TSC, OSC, EOF)
ERO	Emergency Response Organization – consists of those site personnel trained and qualified to respond to any accident within the scope of the plant design basis
ESF	Engineered Safety Feature
Expanded ERO	Additional personnel who expand the capability of the augmented ERO to facilitate timely and effective performance of critical emergency response functions – a typical augmented ERO for a multi-unit site would be challenged to effectively respond to a beyond design basis external event that resulted in an extended loss of AC power affecting more than one unit.
FBT	Fire Brigade Team
FLEX	Diverse and Flexible Coping Strategies
I&C	Instrumentation and Control
IER	INPO Event Report
IER L1 11-1	Fukushima Daiichi Nuclear Station Fuel Damage Caused by Earthquake and Tsunami (including Supplement 1)
IER L1 11-2	Fukushima Daiichi Nuclear Station Spent Fuel Pool Loss of Cooling and Makeup

IER L1 11-4	Near-Term Actions to Address the Effects of an Extended Loss of All AC Power in Response to the Fukushima Daiichi Event
Initial Phase Coping Actions	Implementation of strategies that generally rely upon installed plant equipment
INPO	Institute of Nuclear Power Operations
JPM	Job Performance Measure (a training activity)
MAB	Mechanical Auxiliary Building
Minimum On-Shift Staffing	Those personnel required to be on site 24/7 per the site Emergency Plan.
MOV	Motor Operated Valve
NEI	Nuclear Energy Institute
NEI 10-05	"Assessment of On-Shift Emergency Response Organization Staffing and Capabilities", June 2011
NEI 12-01	"Guideline for Assessing Beyond Design Basis Accident Response Staffing and Communications Capabilities", May 2012
NRC	Nuclear Regulatory Commission
NTTF	The NRC "Near-Term Task Force"
On-shift ERO	Activated upon declaration of an Unusual Event. Should the event escalate to an Alert, the On-shift Organization will be augmented by the duty Emergency Response Organization.
ONP	Off-Normal Procedure
ORO	Offsite Response Organization
OSC	Operations Support Center
PAR	Protective Action Recommendation
PORV	Power-Operated Relief Valve
PWR	Power
RCP	Reactor Coolant Pump
RCS	Reactor Coolant System
RP or RPT	Radiation Protection or Radiation Protection Technician
SAM or SAMG	Severe Accident Mitigation or Severe Accident Mitigation Guidelines
SFP	Spent Fuel Pool
SG	Steam Generator
STP	South Texas Project
STPNOC	STP Nuclear Operating Company
TGB	Turbine Generator Building
TMS	Time Motion Study
Transition Phase Coping Actions	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, and spent fuel pool cooling. Setup for these strategies should be performed prior to the end of the Initial Phase.
TSC	Technical Support Center

Note: Acronyms with adjacent definitions may not be included in this glossary.

1 INTRODUCTION

Information requests related to Emergency Preparedness are contained in Enclosure 5 of the §50.54(f) Letter (Reference 7.1).

Within this enclosure are two Requested Actions; one involves performance of a staffing assessment and the other a communications assessment. The actions for the staffing assessment are summarized as follows:

Assess 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 external event, and determine if any enhancements are appropriate given the considerations of Fukushima Near-Term Task Force (NTTF) Recommendation 9.3 (Reference 7.2).

Reference 7.3 endorsed the 2-phase approach in NEI 12-01 (Reference 7.4) to the schedule presented in the §50.54(f) Letter (Reference 7.1).

Reference 7.5 presented an alternate schedule to Reference 7.1 and stated that an onsite and augmented staffing assessment considering all requested functions except those related to Near Term Task Force (NTTF) Recommendation 4.2 (Phase 1 staffing analysis) would be provided. This report provides the Phase 1 staffing analysis for South Texas Project (STP) Units 1 and 2.

The criteria presented in the NEI 12-01 guidance are intended to assist with the identification of additional organizational capabilities that will facilitate simultaneous performance of accident mitigation and repair actions at all on-site units following a beyond design basis external event. In lieu of a standard template, the guidance provides recommended criteria for use in performing an assessment to identify the staff that should be available to respond to a beyond design basis external event affecting multiple units at a site.

Phase 1 Staffing Assessment

For multi-unit plants, the Phase 1 staffing assessment will be performed by March 29, 2013, and provided to the NRC by April 30, 2013.

The staffing assessment, as requested by the 50.54(f) letter, will be performed using NEI 12-01 and material from NEI 10-05.

The objective of the staffing assessment is to evaluate the on-site and augmented staff needed to respond to a large-scale external event meeting the conditions described in the NEI 12-01 assumptions, NOT including staffing needed to implement actions that address NRC Order Modifying Licenses with Regard to Requirements for Mitigation Strategies for Beyond-Design-Basis External Events (EA-12-049). That is; the staffing assessment will consider all requested functions except those related to Fukushima NTTF Recommendation 4.2 (FLEX) - an assessment considering these functions will be performed in Phase 2.

The results of the assessment have been verified and validated to ensure adequacy and accuracy. Each corrective action and enhancement identified during this assessment will be tracked in the site Corrective Action Program (CAP) with an estimated completion date. In accordance with the requirements of 10 CFR 50, Appendix B, any Condition Adverse to Quality identified during an assessment must be entered into a corrective action program.

2 PHASE 1 STAFFING ANALYSIS SUMMARY

The on-shift staffing analysis determined that a sufficient number of staff are present on site to perform all initial phase coping actions.

At the time of this Phase 1 assessment, two Fukushima-related IER response actions have been implemented that involve tasks to be performed by the on-shift staff. One of these tasks was applicable to the ELAP scenario and was assessed in the Phase 1 task analysis. None of the implemented responses to the Fukushima-related INPO IERs have an impact on the augmented or expanded ERO staffing. Refer to Section 4.4 for a description of the IER related procedure tasks.

Sufficient augmented ERO personnel resources exist to fill most expanded ERO functions. Utilizing Table 3.1 from NEI 12-01 to evaluate expanded staffing requirements, STP has identified staffing gaps for performing engineering assessments and for evaluating and implementing SAMGs. STP will ensure that the required numbers of qualified individuals are added to the expanded ERO to fill these roles.

Provisions and procedures for the establishment of an expanded ERO have not been developed at STP.

Using existing procedures and strategies, the event response did not result in entry conditions into STP Severe Accident Management Guidelines (SAMGs) procedure prior to the ERO augmentation (6 hours) and for a period greater than 24 hours.

The ability of the on-site staff to implement FLEX strategies will be evaluated as part of the Phase 2 staffing assessment since the FLEX equipment was not in place at the time of this assessment.

A list of improvement actions identified during the Phase 1 staffing assessment is provided in Section 6.

2.1 Task Analysis Results

2.1.1 Non-Validated Task Assessment

The analysis did not identify any non-validated tasks – no time motion studies were required. Refer to Attachment 2, NEI 10-05 Appendix B On-Shift Staffing Analysis Results Tables, for additional documentation of the on-shift staffing task analysis results.

2.1.2 Potential Task Overlap Assessment

No task overlaps were identified in the assessment. Refer to Attachment 2, NEI 10-05 Appendix D & E On-Shift Staffing Analysis Results Tables for additional information

2.2 Time Motion Study (TMS) Results

No time motion studies were required as documented in Attachment 2, NEI 10-05 Appendix B On-Shift Staffing Analysis Results Tables.

2.3 Augmented and Expanded ERO Assessment Results

Utilizing Table 3.1 from NEI 12-01 to evaluate expanded ERO staffing requirements, STP has identified staffing gaps in the current augmented ERO for performing engineering assessments and for evaluating and implementing SAMGs. Specifically, one additional ERO member must be qualified for the following positions:

- TSC Technical Manager
- Engineering Supervisor
- Engineer – Nuclear
- Engineer – Mechanical
- Engineer – Electrical
- Engineer – I&C
- TSC Operations Communicator

STP will ensure that the required number of qualified individuals are added to the expanded ERO to fill these roles.

Currently, there are two Mechanical Engineers, three Nuclear Engineers, and one TSC Operations Communicator listed as members of STP's "Gold Team" – a fourth ERO team that maintains the required ERO qualifications but are not part of the regular duty rotation. The additional expanded ERO members will be added to this team.

Refer to Table 5-2 for additional documentation of the expanded ERO functional staffing resources and the identified gaps.

<p>Action #1: Ensure that the required number of qualified individuals are added to fill all necessary roles of the expanded ERO.</p>
--

3 ON-SHIFT STAFFING COMPLEMENT

3.1 Shift Staffing Basis

Only personnel required to be on-shift are credited in the staffing analysis. The on-shift personnel complement includes the minimum required number and composition as described in the STP Emergency Plan.

Functional Area	Major Tasks	Emergency Positions	Analysis Shift Staffing
1. Plant Operations and Assessment of Operational Aspects	Control Room Staff	Shift Manager	2
		Unit Supervisor	2
		Reactor Operator	4
		Plant Operator	4
2. Emergency Direction and Control	Command and Control	Shift Manager	1 ^(a)
3. Notification & Communication	Local/ State	Plant Operator	1
	Federal (ENS)	Reactor Operator	1
4. Radiological Assessment	Dose Assessment	Senior HP	1
	In-plant Surveys	RP Technician	1
	Onsite Surveys	RP Technician	1
	Chemistry	Chemistry Technician	1
5. Plant System Engineering, Repair, and Corrective Actions	Technical Support	Shift Technical Advisor	1 ^(a)
	Repair and Corrective Actions	Rad Waste Operator	1 ^(a)
		Mechanical Maintenance	1 ^(a)
		Electrical Maintenance I&C Maintenance	1 1
6. In-Plant PAs	Radiation Protection	RP Tech / Chem Tech	2 ^(a)
7. Fire Fighting ^(b)	--	Fire Brigade	5
8. 1 st Aid and Rescue Ops	--	Plant Protection Personnel	2 ^(a)
9. Site Access Control and Accountability	Security & Accountability	Plant Protection Personnel	(c)
TOTAL:			25

- (a) These positions may be covered by on-shift personnel assigned other functions .
- (b) Fire Brigade per Technical Specifications; composed of five plant operators not assigned other duties.
- (c) Per the STP Security Plan.

3.2 Initial Shift Staffing Locations

On-shift personnel can report to their assigned response locations within timeframes sufficient to allow for performance of assigned actions. The following are the typical locations of the on shift personnel:

- U1 Shift Manager..... Control Room
- U1 Unit Supervisor Control Room
- U1 Reactor Operator, Primary RO (U1 Pri RO) Control Room
- U1 Reactor Operator, Balance of Plant (U1 BOP RO)..... Control Room
- U1 Plant Operator, TGB Watch (PO #1)..... Unit 1 Turbine Generator Building
- U1 Plant Operator, MAB Watch (PO #2)..... Unit 1 Mechanical Aux Building
- U2 Shift Manager..... Control Room
- U2 Unit Supervisor Control Room
- U2 Reactor Operator, Primary RO (U2 Pri RO) Control Room
- U2 Reactor Operator, Balance of Plant (U2 BOP RO)..... Control Room
- U2 Plant Operator, TGB Watch (PO #3)..... Unit 2 Turbine Generator Building
- U2 Plant Operator, MAB Watch (PO #4)..... Unit 2 Mechanical Aux Building
- ENS Communicator (RO #5) Control Room
- State/County Communicator (PO #5) U1 Electrical Aux Building
- Senior HP 41' Elevation Mechanical Aux Building
- RP Technician #1 41' Elevation Mechanical Aux Building
- RP Technician #2 41' Elevation Mechanical Aux Building
- Chemistry Technician29' Cold Chem Lab
- Electrical Maintenance.....MOST Team Trailer
- I&C TechnicianMOST Team Trailer
- Fire Brigade Leader, (PO #6)^(d) U1 Turbine Generator Building
- Fire Brigade Member #1, (PO #7)^(d) U2 Turbine Generator Building
- Fire Brigade Member #2, (PO #8)^(d) U2 Electrical Aux Building
- Fire Brigade Member #3, (PO #9)^(e) Electrical Aux Building
- Fire Brigade Member #4, (PO #10)^(e) Electrical Aux Building

^(d) State and County Communicator position and Fire Brigade positions are filled by the 6 on-shift Plant Operators not assigned safe shutdown duties – EAB Watch, Condensate Polishing (CP) Watch, and Yard Watch. Assignments are documented per site procedure 0POP01-ZQ-0022, "Plant Operations Shift Routines".

^(e) EAB Watch Plant Operators

4 EXTENDED LOSS OF ALL AC POWER (ELAP)

4.1 Scope

1. The staffing assessment determined the ability of the on-shift staff to implement Initial Phase coping actions. No Transition Phase actions were evaluated because none were established at the time of this assessment - the use of portable equipment and consumables will be developed as part of the FLEX strategies and will not be evaluated until the Phase 2 Staffing Assessment.
2. The applicable actions from the Station Blackout coping strategies in place at the time of the assessment were evaluated.
3. Those IER improvement actions already implemented at the time of the assessment (e.g., incorporated into plant procedures) were evaluated and discussed in Section 4.4.
4. The staffing assessment evaluated the ability of the on-shift staff to perform required emergency plan response functions prior to the arrival of the augmented ERO.

4.2 Assumptions

1. The ELAP 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).
2. A Hostile Action directed at the affected site does not occur during the period that the site is responding to the event.
3. All equipment credited in current coping strategies remains available for use (e.g., a non-seismic water tank, diesel fire water pump).
4. 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 an RP Technician.
5. The on-site security organization is able to satisfactorily perform all tasks related to Site and Protected Area Access Controls, under all event or accident conditions. Performance of this function is regularly analyzed through other station programs and will not be evaluated here, unless a role or function from another major response area is assigned as a collateral duty.
6. Individuals holding the position of Radiation Protection Technician or Chemistry Technician are qualified to perform the range of tasks expected of their position.
7. 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.
8. 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.

9. For purposes of assessing augmented staffing, it is assumed that the on-shift staff successfully performs all Initial Phase coping actions.
10. NEI 10-05 assumes that augmented ERO members will arrive on-site within their normal response times (60-minute or 75-minute response). NEI 12-01 assumes that augmented ERO members will not begin to arrive for 6 hours due to a LSEE.

The event impedes site access as follows:

- A. Post event time: 6 hours – No site access. Consistent with NEI 12-01, which is based on a nominal 4 hours + 50%, this duration reflects the time necessary to clear roadway obstructions, use different travel routes and 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.

For purposes of this analysis, 6 hours will be used as the time period for the conduct of the on-shift ERO response actions. See assumption 10.A above.

11. Offsite facilities and staging areas are available.

4.3 Event Description and Initial Conditions

A large-scale external event occurs that results in:

- all on-site units affected
- extended loss of all AC power
- impeded access to the units

Initially, both reactors are operating at full power. Upon the loss of AC power, both reactors are successfully shut down.

This event results in a Site Area Emergency (SAE) Emergency Classification Level (ECL) based on Emergency Action Level (EAL) SS1.1 which escalates to a General Emergency ECL based on EAL SG1.1 once it has been determined that power cannot be restored before the coping time has been exceeded.

Initial Conditions: Both STP Unit 1 and Unit 2 are initially at 100% power at equilibrium, middle of core life.

Abnormal Conditions: None

Scenario Events: An offsite electrical transient occurs resulting in a loss of all offsite power.

None of the Emergency Diesel Generators (EDGs) can be synchronized to any Unit 1 or Unit 2 AC bus, resulting in a dual-unit loss of all AC power.

One EDG on each unit is assumed to start, but cannot be paralleled with any electrical bus.

Adequate core cooling and heat sink is maintained throughout the 6 hour duration. No core damage occurs and no entry into SAMG is required

Notes: This scenario constitutes a dual unit event.

The scenario is designed such that restoration of any AC power source is not possible before the arrival of ERO personnel (360 minutes).

4.4 Procedures Used in the Event

4.4.1 List of Procedures Applicable to a Loss of All AC Power and Emergency Plan Implementation

- 0POP05-EO-EO00, Reactor Trip or Safety Injection
- 0POP05-EO-EC00, Loss of All AC Power
- 0ERP01-ZV-IN01, Emergency Classification
- 0ERP01-ZV-IN02, Notifications to Offsite Agencies
- 0ERP01-ZV-IN03, Emergency Response Organization Notification
- 0ERP01-ZV-IN04, Assembly and Accountability
- 0ERP01-ZV-IN05, Site Evacuation
- 0ERP01-ZV-SH01, Shift Manager
- 0ERP01-ZV-SH02, Acting Radiological Manager

4.4.2 Procedure Changes Due to IER Responses Applicable to Phase 1

Following the accident at Fukushima Daiichi, the Institute of Nuclear Power Operations (INPO) issued three IERs requiring the assessment of actions intended to improve the capabilities for responding to a beyond design basis event and an extended loss of all AC power, including events that impact the cooling of spent fuel.

1. Response to IER-L1-11-1 did not implement any new procedure actions to be performed by the on-shift or augmenting ERO.
2. Response to IER-L1-11-2 included two items that affect actions to be performed by the on-shift ERO or augmenting ERO.

- STPNOC revised the Off-Normal Procedure (ONP) for a seismic event to add specific steps to check SFP temperatures and initiate a recovery log to ensure SFP level and temperature are maintained within specified limits. This procedure is not applicable to the ELAP and was therefore not assessed in the Phase 1 analysis.
 - The ONPs for control room evacuation, natural or destructive phenomena (severe weather & flood) and loss of power to one or more 13.8 KV standby busses did not contain specific steps to check SFP level and temperature. STPNOC revised each of the ONPs to include actions and contingencies to monitor SFP level and temperature. These actions were assessed in the Phase 1 analysis.
3. Response to IER-L1-11-4 included two items that affect actions to be performed by the on-shift ERO or augmenting ERO.
- Additional load shedding off DC busses
 - Establish ventilation in the EAB

Neither of these two strategies were implemented at the time of this analysis and were not assessed.

5 AUGMENTED AND EXPANDED ERO RESPONSE ANALYSIS

5.1 ERO Notification and Response during an ELAP

Staffing resources for assessment of the expanded ERO are provided by the depth of personnel filling the existing augmenting ERO positions. Table 5-1 below documents the augmenting ERO staffing requirements from Emergency Plan Table C-1, Figure C-2, C-3, C-4 and C-5. The numbers reported in Table 5-1 assume the site ERO is fully staffed.

Table 5-1 Augmented ERO Response Resources

Assigned Major Function/Task	ERO Title	# per Team	# Qualified
Emergency Direction and Control	TSC Manager	1	3
	Assistant TSC Manager	1	3
	EOF Director	1	3
	Deputy EOF Director	1	3
Notification / Communication	TSC Communicator	1	3
	TSC Ops Communicator	1	3
	OSC Communicator	1	3
	EOF Liaison	1	3
	Texas Liaison	1	3
	EOF Offsite Agency Communicator	1	3
	EOF Licensing Director	1	3
	EOF Assistant Licensing Director	1	3
	EOF Comm System Supervisor	1	3
	EOF Fed Response Agency Liaison	1	3
Rad Assessment (Offsite Dose Assessment)	EOF Dose Assessment Specialist	1	3
	EOF Asst Dose Assessment Specialist	1	3
Rad Assessment (Offsite Surveys)	Offsite Field Team	2	6
	Offsite Field Team Driver	2	6
	EOF Offsite Field Team Supervisor	1	3
Rad Assessment (In-Plant & Onsite Surveys)	RP Technician	3	36 ^(f)
In-Plant Protective Actions	RP Technician	4	36 ^(f)
	OSC Radiological Coordinator	1	3
Rad Assessment (Sample Analyses)	OSC Chemistry Analysis Supv	1	3
	Chemistry Technician	1	14
Rad Assessment (RP Supervisory)	TSC Radiological Manager	1	3
	TSC Assist Radiological Manager	1	3
	TSC Chem/Radchem Manager	1	3
	EOF Radiological Director	1	3
Rad Assessment (ERF Surveys)	EOF Radiological Staff	1	3
Plant Operations and Assmt of Operational Aspects	OSC Plant Ops Discipline Lead	1	3
	TSC Assistant Operations Manager	1	3

^(f) There are two additional qualified RP Technicians currently credited as members of the Offsite Field Team and are therefore not included in the total number of qualified RP Technicians

Assigned Major Function/Task	ERO Title	# per Team	# Qualified
Plant System Engineering	TSC Nuclear Engineer	1	3
	TSC Mechanical Engineer	1	3
	TSC Electrical Engineer	1	3
	TSC Technical Manager	1	3
	TSC Engineering Supervisor	1	3
	TSC I&C Engineer	1	3
	EOF Technical Director	1	3
	EOF Technical Staff	1	3
	EOF System Status Evaluator	1	3
	EOF Engineering Assistant	1	3
Repair and Corrective Actions	OSC Mechanical Maintenance Lead	1	3
	Mechanic	1	54 ^(g)
	OSC Electrical Maintenance Lead	1	3
	Electrician	2	52 ^(h)
	I&C Technician	1	51 ⁽ⁱ⁾
	OSC Coordinator	1	3
	Assistant OSC Coordinator	1	3
	OSC Mechanical Maint Planner	1	3
	OSC Electrical Maintenance Planner	1	3
	OSC I&C Maintenance Planner	1	3
	OSC I&C Maintenance Lead	1	3
	TSC Maintenance Manager	1	3
	TSC Maintenance Communicator	1	3
Access Control and Personnel Accountability	TSC Security Manager	1	3
	TSC Security Supervisor	1	3
	OSC Security Coordinator	1	3
Resource Allocation and Administration	TSC Rad Status Board Keeper	1	3
	TSC Administrative Manager	1	3
	TSC Administrative Staff	1	3
	OSC Resource Coordinator	1	3
	OSC Status Board Keeper	1	3
	EOF Director Admin Assistant	1	3
	EOF Status Board Keeper	2	6
	EOF Rad Status Board Keeper	1	3
	EOF Support Organization Director	1	3
	EOF Asst Support Org Director	1	3
	EOF Procurement/Resources Supv	1	3
	EOF Records Supervisor	1	3
	EOF Support Orientation Coordinator	1	3
	EOF Materials Engineer	1	3
	EOF Information Systems Analyst	1	3
	EOF Employee Support	1	3
	EOF Purchaser	1	3
	EOF Administrative Staff	2	6
	JIC Administrative Manager	1	3
JIC Administrative Staff	6	18	

^(g) Includes Mechanics from both Mechanical Maintenance and the Integrated Maintenance Team – Apprentices and Supervisors are not included in this number

^(h) Includes Electricians from both Electrical Maintenance and the Integrated Maintenance Team – Apprentices and Supervisors are not included in this number

⁽ⁱ⁾ Includes I&C Technicians from both the I&C Maintenance organization and the Integrated Maintenance Team – Apprentices and Supervisors are not included in this number

Assigned Major Function/Task	ERO Title	# per Team	# Qualified
Public Information	Company Spokesperson	1	3
	EOF Site Public Affairs Coordinator	1	3
	EOF Site Public affairs Specialist	1	3
	JIC Director	1	3
	JIC Senior Staff Writer	1	3
	JIC Public Inquiry Manager	1	3
	JIC Media Relations Manager	1	3
	JIC Media Relations ANI Liaison	1	3
	JIC Internet/Graphics Technician	1	3
	JIC Audio-Visual Specialist	1	3
	JIC Communications Technician	1	3
	JIC Technical Support Liaison	1	3
	JIC Media Rel Tech Spokesperson	1	3
	JIC Media Relations Staff	3	9
	JIC Public Inquiry Staff	7	21

5.1.1 General ERO Response

1. Implementing Strategy for the Expanded ERO

When the ERO notification system is operable, all qualified ERO members on a team are contacted and expected to report if fit for duty. In the absence of the call out system, all ERO members are trained to report to the EOF following a large scale external event.

Action #2: Develop specific guidance for how and when to establish the expanded ERO from the pool of augmented ERO.

2. Response Timeliness for the Expanded ERO

On 07/12/12 a Training Bulletin was issued to “communicate the expectation of the augmenting ERO to automatically respond to a designated staging area.” The bulletin was sent to the minimum and full staffing ERO members (ERO roster personnel), but was not communicated to off-shift Operations, Maintenance, Radiation Protection, or Security personnel. Procedure OPGP05-ZV-0003, dated 12/27/12, Addendum 1, was revised to provide the following:

If local telephone landlines and cellular systems are not available to call-out the ERO during a large scale external event (e.g., hurricane, major flood), ERO members must go to the EOF when made aware (e.g., by direct observation, media reports, word of mouth), of the event. Once there, decisions will be made on how and when they will be transported to the plant site.

Action #3: Develop and communicate the process to expand the automatic response of ERO personnel who report to the EOF in the event of a loss of communications due to a large scale event to include appropriate activation of off-shift Operations, Maintenance, Security, RP personnel, and expanded ERO.

Action #4 The changes in Action #3 will be included in annual site training.

3. Work Location for the Expanded ERO

As described above, during a wide spread loss of power off hours event TSC and OSC ERO personnel will automatically respond to the EOF, which has been designated as the alternate TSC/OSC. The facility is located approximately 12.5 air miles north-northeast of the station at 4000 Avenue F, in Bay City, Texas.

The alternate TSC/OSC has equipment for communicating with the control room, and plant security. TSC and OSC personnel at the alternate TSC/OSC have the capability to perform engineering assessment activities, including damage control team planning and preparation prior to returning to the site.

Site procedure 0ERP01-ZV-OF03, Alternate TSC/OSC, describes the layout and assigned work areas for the alternate TSC/OSC. This alternate facility was designed to support current augmented ERO staffing.

Action #5: Identify and revise applicable site procedures to address logistics for the expanded ERO response teams for a dual unit event.

4. Transportation to the Site for the Expanded ERO

STP's 90-day response to Recommendation 9.3 of the NTTF letter (Reference 7.10) states that the following methods of access to the site are available:

1. *STP has multiple roadways to access the site:*
 - *From the West – Highway 521*
 - *From the North – Farm to Market (FM) 1468*
 - *From the East – Highway 521*
2. *STP's owner controlled area is located on the west bank of the Colorado River. The river can be used to transport personnel and small equipment by boat from surrounding areas to the site.*
3. *Helicopters can be used to transport personnel to the site.*
4. *STP has road clearing equipment and a boat onsite which may be available after a large scale event.*
5. *STPNOC has an agreement with Matagorda County to provide local resources upon request or state and federal resources if there is a disaster declaration. These resources include road clearing equipment, off-road and high water vehicles, boats and helicopters.*

The process used by the ERO for obtaining emergency assistance is as follows:

- Upon activation of the EOF, the Emergency Operations Center (EOC) for Matagorda County is contacted for assistance
 - The EOC is located in the Matagorda County Sheriffs Office, approximately 1.2 miles north of the EOF
 - STP has a Letter of Agreement in place with Matagorda County to provide assistance in the event of an emergency
- If Matagorda County requires additional resources to assist in their Emergency Management efforts, they will contact the Texas Department of Public Safety in Pierce, Texas
- Should further resources be required, the State Operations Center in Austin, Texas would be contacted.

Contact numbers for Matagorda County EOC, Department of Public Safety in Pierce, the State Operations Center in Austin, and the US Coast Guard in both Houston and Corpus Christi are listed the site Emergency Communications Directory (including back-up satellite phone numbers, where applicable).

5. ERO Drill & Exercise Program

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

Current STP drill and exercise procedures do not include evaluation objectives or demonstration criteria for dual unit events or expanded ERO activities. Future guidance is expected from the NRC in this area.

5.1.2 Position Specific ERO Response

1. Radiation Protection Technicians (RPTs)

The equation below was used to determine the required number of on-site RP Technicians (on-shift plus augmented ERO RP Technicians that perform on-site response functions) for the STP expanded ERO:

$$\mathbf{RPT_T = RPT_{COP} + RPT_{RCA} + RPT_{NC}}$$

Where:

RPT_T = Total required number of on-site RP Technicians.

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

RPT_{RCA} = Number needed for repair and corrective action (2 x the number of units).

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

The STP RPT_{COP} number is based upon the coping strategies of 0POP05-EO-EC00 which requires two RPTs to provide job coverage into radiation areas for personnel to perform the required actions.

The STP RPT_{RCA} number is four RPTs.

The STP RPT_{NC} number is based upon emergency plan Table C-1 which requires two RPTs to perform onsite surveys and one RPT to perform dose assessments which would preclude them from performing job coverage for extended loss of all AC power coping, repair or corrective action teams (note, Table C-1 provides for four individuals for performing offsite surveys).

$$\mathbf{9 (RPT_T) = 2 (RPT_{COP}) + 4 (RPT_{RCA}) + 3 (RPT_{NC})}$$

Thus, the total required number of on-site RP Technicians to be provided as part of the expanded ERO is 18, based on staffing needed to operate on 12-hour shifts.

Following a beyond design basis external event 36 RP Technicians are available to support performance of assigned emergency plan functions and the expanded response capability (Refer to Table 5-1).

Provisions exist for obtaining additional RP Technicians through industry agreement with INPO as part of the INPO Emergency Resources Manual documented by a current letter of agreement.

2. Administrative Support Personnel

STP evaluated the administrative support positions on the ERO and determined that the number of administrative staff personnel is sufficient.

3. SAMG Implementation

The assessment considered the number and qualifications of ERO personnel necessary for simultaneous implementation of the two most task intensive SAMG strategies in both units. The two most labor intensive strategies were as follows:

- SAG-1, Inject into Steam Generators
- SAG-2, Depressurize the RCS

Implementation of the SAG-1 strategy requires the following personnel resources:

ERO Position	# per unit	Function
Plant Operator	3	Operate Equipment
Mechanic	2	Connect Hoses
RP Technician	2	Job Coverage

Implementation of the SAG-2 strategy requires the following personnel resources:

ERO Position	# per unit	Function
Plant Operator	2	Operate Equipment
RP Technician	2	Job Coverage

These two strategies implemented simultaneously and in both units, would require the following personnel resources:

- 10 Plant Operators
- 4 Mechanics
- 8 RP Technicians

As stated in NEI 12-01, while personnel previously assigned to other functions such as emergency repair and corrective actions should not be included, members of the on-shift staff may be included.

5.2 Expanded Response Functions for Phase 1 Staffing Assessment

Table 5-2 addresses NEI 12-01 Table 3.1 expanded staffing requirements and documents the staffing necessary to support the simultaneous deployment of emergency repair and corrective action teams to each affected unit. The number required column is equal to two times the specified staffing consideration per unit in order to support 24-hour expanded ERO staffing based on 12-hour shifts.

Per current site procedures, one of the existing three ERO teams is on call each week - there will be no changes to this procedure at this time. There is reasonable assurance that the additional personnel for the expanded ERO can be brought to the site by the time they are needed.

Table 5-2 Expanded vs. Augmented ERO Response Comparison

Function	Key Roles and Staffing Considerations	Location	STP Augmented ERO Positions	# Required	# Available
Unit Response Coordination	<ul style="list-style-type: none"> Overall cognizance of the activities related to implementation of repair and corrective actions, and implementation of Transition Phase coping and Severe Accident Management (SAM) strategies for an assigned unit One individual per unit; individuals should not be assigned other functions 	TSC	TSC Manager / Asst TSC Manager	4	6
Operations Coordination	<ul style="list-style-type: none"> Provides coordination of Operations staff and support for an assigned unit One individual per unit; individuals should not be assigned other functions 	CR / TSC	Ops Manager / Asst Ops Manager	4	6
Maintenance Coordination	<ul style="list-style-type: none"> Provides coordination of Maintenance staff and support for an assigned unit One individual per unit; individuals should not be assigned other functions 	OSC	OSC Coordinator / Asst OSC Coordinator	4	6
Engineering Coordination	<ul style="list-style-type: none"> Provides coordination of Engineering staff and support for an assigned unit One individual per unit; individuals should not be assigned other functions 	TSC	TSC Technical Manager Engineering Supervisor	4	6

Function	Key Roles and Staffing Considerations	Location	STP Augmented ERO Positions	# Required	# Available
Engineering Assessments	<ul style="list-style-type: none"> One team for each unit to perform engineering assessments in support repair and corrective actions Team composition (i.e., number and represented disciplines) as described in the emergency plan Team may include personnel responsible for performing other functions for the same assigned unit 	TSC	Engineer – Nuclear ^(j) Engineer – Mechanical ^(j) Engineer – Electrical ^(j)	4 4 4	3 3 3
Evaluation of Severe Accident Management (SAM) Strategies	<ul style="list-style-type: none"> One team for each unit to evaluate selection of SAM strategies; team performs evaluations not done by Control Room personnel Team composition (i.e., number and represented disciplines) as described in governing site programs, procedures and guidelines Team may include personnel responsible for performing other functions for the same assigned unit 	TSC	TSC Technical Manager Engineering Supervisor Engineer – Nuclear Engineer – Mechanical Engineer – Electrical Engineer – I&C ^(k) Rad Manager / Asst Rad Manager Ops Manager / Asst Ops Manager	4 4 4 4 4 4 4	3 3 3 3 3 6 6
Unit In-Plant Team Coordination	<ul style="list-style-type: none"> Overall cognizance of on-site and in-plant teams performing or supporting repair and corrective actions for an assigned unit One individual per unit; individuals should not be assigned other functions 	OSC	Maintenance Discipline Leaders (Electrical, Mechanical, I&C)	4	9
Non-Licensed Operators	<ul style="list-style-type: none"> Two individuals per unit to assist with implementation of repair and corrective actions Should not include members of the on-shift staff 	OSC	Plant Operators	8	77 ^{(l)(m)}
Mechanical Maintenance Repair and Corrective Action	<ul style="list-style-type: none"> Two individuals per unit to implement repair and corrective actions Staffing may include an on-shift individual (i.e., 2 individuals for a unit composed of 1 on-shift and 1 augmented) 	OSC	Mechanic	8	54

^(j) Engineers also credited as SAMG Evaluators

^(k) The I&C Engineer position is not listed as a required minimum staffing position for the TSC or EOF, but they are listed as trained SAMG Evaluators

^(l) 10 of these available POs are counted as part of the minimum on-shift staff

^(m) As of 2/27/2013, 61 of the available plant operators were fully qualified and the remaining 16 were not fully qualified

Function	Key Roles and Staffing Considerations	Location	STP Augmented ERO Positions	# Required	# Available
Electrical Maintenance Repair and Corrective Action	<ul style="list-style-type: none"> Two individuals per unit to implement repair and corrective actions Staffing may include an on-shift individual (i.e., 2 individuals for a unit composed of 1 on-shift and 1 augmented) 	OSC	Electrician	8	52
I&C Repair and Corrective Action	<ul style="list-style-type: none"> Two individuals per unit to implement repair and corrective actions Staffing may include an on-shift individual (i.e., 2 individuals for a unit composed of 1 on-shift and 1 augmented) 	OSC	I&C Technician	8	51
Implementation of SAM Strategies	<ul style="list-style-type: none"> Number and composition of personnel capable of simultaneous implementation of any 2 SAM strategies at each unit Should not include personnel assigned to other functions (e.g., emergency repair and corrective actions); however, may include members of the on-shift staff and personnel responsible for implementation of Transition Phase coping strategies 	OSC	Plant Operators	10	77
			Mechanics	4	54
			RP Technicians	8	36
		CR	Shift Manager	4	10
	Shift Technical Advisor	4	9		
	Reactor Operators	4	44		
		TSC	Operations Communicator	4	3

6 LIST OF IMPROVEMENT ACTIONS IDENTIFIED DURING THE PHASE 1 ASSESSMENT

The following enhancements have been entered into the CAP system to track their resolution:

Description	Estimated Completion Date
Action #1: Ensure that the required number of qualified individuals are added to fill all necessary roles of the expanded ERO.	March 31, 2014
Action #2: Develop specific guidance for how and when to establish the expanded ERO from the pool of augmented ERO.	December 4, 2014
Action #3: Develop and communicate the process to expand the automatic response of ERO personnel who report to the EOF in the event of a loss of communications due to a large scale event to include appropriate activation of off-shift Operations, Maintenance, Security, RP personnel, and the expanded ERO.	December 4, 2014
Action #4: The changes in Action #3 will be included in annual site training.	December 4, 2014
Action #5: Identify and revise applicable site procedures to address logistics for the expanded ERO response teams for a dual unit event.	December 4, 2014

Note: None of the above listed actions are classified as Conditions Adverse to Quality (CAQ). These actions apply to a Beyond Design Basis event and therefore do not meet the requirements of a CAQ.

The December 4, 2014 date was chosen to align with the completion and submittal of the STP Phase 2 Staffing Assessment.

The March 31, 2014 date was chosen to align with the Engineering Department's process for assigning ERO responsibilities and to give sufficient time to incorporate ERO changes into the appropriate site directories.

7 LIST OF REFERENCES

- 7.1 Letter from E. J. Leeds (NRC) to E. D. Halpin, "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", dated March 12, 2012 (ML12053A340)
- 7.2 SECY-11-0093, "The Near-Term Task Force Review of Insights from the Fukushima Dai-ichi Accident", n, refer to NRC staff report entitled, Recommendations for Enhancing Reactor Safety in the 21st Century, dated July 12, 2011 (ML111861807)
- 7.3 Letter from D. L. Skeen (NRC) to Susan Perkins-Grew (NEI), U.S. Nuclear Regulatory Commission Review of NEI 12-01, "Guideline for Assessing Beyond Design Basis Accident Response Staffing and Communications Capabilities," Revision 0, dated May 2012, letter dated May 15, 2012 (ML12131A043)
- 7.4 NEI 12-01, Guideline for Assessing Beyond Design Basis Accident Response Staffing and Communications Capabilities, Rev. 0 (ML12126A344)
- 7.5 Letter, D.W. Rencurrel to NRC, "Revised 60-Day Response 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", dated June 4, 2012 (ML12163A331)
- 7.6 NEI 10-05, Assessment of On-Shift Emergency Response Organization Staffing and Capabilities, Rev. 0 (ML111751698)
- 7.7 STP Response to IER 11-1, Fukushima Daiichi Nuclear Station Fuel Damage Caused by Earthquake and Tsunami, dated 04/15/11
- 7.8 STPNOC Response to IER 11-2, Fukushima Daiichi Nuclear Station Spent Fuel Pool Loss of Cooling and Makeup, dated 09/22/11
- 7.9 STPNOC Response to IER 11-4, Near-Term Actions to Address the Effects of an Extended Loss of all AC Power in Response to the Fukushima Daiichi Event, dated 01/19/12
- 7.10 Letter from D. W. Rencurrel to NRC, "90-Day Response 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 Daiichi Accident", dated June 4, 2012 (ML12163A331)
- 7.11 STP Emergency Plan Section C, Organizational Control of Emergencies, Rev ICN 20-9
- 7.12 0POP05-EO-EO00, Reactor Trip or Safety Injection Rev. 22
- 7.13 0POP05-EO-EC00, Loss of All AC Power, Rev. 23
- 7.14 0ERP01-ZV-IN01, Emergency Classification, Rev. 9
- 7.15 0ERP01-ZV-IN02, Notifications To Offsite Agencies, Rev. 29
- 7.16 0ERP01-ZV-IN03, Emergency Response Organization Notification, Rev. 17

-
- 7.17 0ERP01-ZV-IN04, Assembly and Accountability, Rev. 13
 - 7.18 0ERP01-ZV-IN05, Site Evacuation, Rev. 12
 - 7.19 0ERP01-ZV-IN07, Offsite Protective Action Recommendations, Rev 13
 - 7.20 0ERP01-ZV-SH01, Shift Manager, Rev. 27
 - 7.21 0ERP01-ZV-SH02, Acting Radiological Manager, Rev. 10
 - 7.22 0ERP01-ZV-TP01, Offsite Dose Calculations, Rev. 20
 - 7.23 0ERP01-ZV-OF03, Alternate TSC/OSC, Rev. 1
 - 7.24 SAG-1, Inject into the Steam Generators, Rev. 1
 - 7.25 SAG-2, Depressurize the RCS, Rev. 1
 - 7.26 SAG-3, Inject into the RCS, Rev. 1
 - 7.27 SAG-4, Inject into Containment, Rev. 1
 - 7.28 SAG-5, Reduce Fission Product Releases, Rev. 1
 - 7.29 SAG-6, Control Containment Conditions, Rev. 1
 - 7.30 SAG-7, Reduce Containment Hydrogen, Rev. 1
 - 7.31 SAG-8, Flood Containment, Rev. 1
 - 7.32 SACRG-1, Severe Accident Control Room Guideline Initial Response, Rev. 1
 - 7.33 SACRG-2, Severe Accident Control Room Guideline After the TSC is Functional, Rev. 1

Attachment 1: NEI 10-05 Table 5 Controlling Method Correlation

Line	Function/Task	Operations Training Program and EP Drill Program Task Analysis Controlling Methods
1.	Declare the Emergency Classification Level (ECL)	<p>Emergency Response Training Program Learning Objectives for Emergency Direction, Part 1</p> <p><u>TERMINAL OBJECTIVE:</u></p> <p>01. Given the necessary reference materials and a hypothetical emergency situation, classify the emergency.</p> <p><u>Enabling OBJECTIVE:</u></p> <p>06. Using applicable references, CLASSIFY an incident for a specified plant condition or set of plant parameters.</p>
2.	Approve Offsite Protective Action Recommendations	<p>Emergency Response Training Program Learning Objectives for Emergency Direction, Part 2</p> <p><u>TERMINAL OBJECTIVE:</u></p> <p>01. Given necessary reference materials and a hypothetical emergency situation, determine the correct Protective Action Recommendation (PAR).</p> <p>Drill Objective OBJ-B-2, On-Shift Emergency Director Demonstrate the Shift Manager's ability to immediately and unilaterally initiate any emergency response action, including providing protective action recommendations to authorities responsible for implementing off-site emergency measures.</p>
3.	Approve content of State/local notifications	<p>Drill Objective OBJ-A-2, Operational Agreement Demonstrate the coordination of the implementation of emergency measures and the exchange of information between the utility and Federal, State and local agencies and other support organizations having an emergency response role within the EPZ.</p>
4.	Approve extension to allowable dose limits	<p>Drill Objective OBJ-K-1, Emergency Worker Exposure Controls Demonstrate the ability to establish on-site exposure guidelines consistent with EPA Manual of Protective Action Guides and Protective Actions For Nuclear Incidents (EPA 400-R-92-001) for: removal of injured persons, undertaking corrective actions, performing assessment actions, providing first aid, performing personnel decontamination, providing ambulance services, and providing medical treatment services.</p>
5.	Notification and direction to on-shift staff (e.g., to assemble, evacuate, etc.)	<p>Drill Objective OBJ-J-1, Assembly & Accountability Demonstrate the capability to account for all individuals on-site and ascertain the names of missing individuals within 30 minutes of the start of Assembly & Accountability and account for all on-site individuals continuously thereafter.</p> <p>Drill Objective OBJ-J-2, Alerting On-site Personnel Demonstrate the means, within the required time, to alert individuals who do not have emergency assignments (such as visitors, contractor and construction personnel, and persons who may be in the public access areas within the owner controlled area).</p>

Attachment 1: NEI 10-05 Table 5 Controlling Method Correlation

Line	Function/Task	Operations Training Program and EP Drill Program Task Analysis Controlling Methods
6.	ERO notification	Drill Objective OBJ-E-1, ERO Notifications Demonstrate the ability to alert, notify and mobilize ERO personnel.
7.	Abbreviated NRC notification for DBT event	N/A Assumptions dictate no hostile action is occurring
8.	Complete State/local notification form	Drill Objective OBJ-E-2, Initial Notification Demonstrate the ability to provide an accurate initial off-site notification message within 15 minutes from emergency declaration.
9.	Perform State/local notifications	Drill Objective OBJ-E-2, Initial Notification Demonstrate the ability to provide an accurate initial off-site notification message within 15 minutes from emergency declaration.
10.	Complete NRC event notification form	Drill Objective OBJ-Q-1, NRC Notifications Demonstrate the ability to notify the NRC.
11.	Activate ERDS	N/A ERDS is continuously active at STP.
12.	Offsite radiological assessment	Drill Objective OBJ-I-2, Release and Dose Assessment Demonstrate the capability to determine the magnitude of radioactive releases or perform dose assessments based on plant parameters, effluent monitors, field data and meteorological conditions.
13.	Perform NRC notifications	Drill Objective OBJ-Q-1, NRC Notifications Demonstrate the ability to notify the NRC.
14.	Perform other site-specific event notifications (e.g., INPO, ANI, etc.)	N/A Not performed by STP shift staff
15.	Personnel accountability	Drill Objective OBJ-I-1, Assembly and Accountability Demonstrate the capability to account for all individuals on-site and ascertain the names of missing individuals within 30 minutes of the start of Assembly & Accountability and account for all on-site individuals continuously thereafter.
16.	Implement Security Contingency Plan	N/A Assumptions dictate no hostile action is occurring

Attachment 2: NEI 10-05 Appendix B On-Shift Staffing Analysis Results Tables

TABLE 1 – On-Shift Positions

Extended Loss of All AC Power (ELAP)

Line	On-shift Position	Emergency Plan Reference	Augmentation Elapsed Time (min)	Role in Table # / Line#	Unanalyzed Task?	TMS Required?
1.	U1 Shift Manager	Table C-1	-	2 / 1 5 / 1 5 / 2 5 / 3 5 / 5	No	No
2.	U1 Unit Supervisor	Table C-1	-	2 / 2	No	No
3.	U1 Reactor Operator (U1 Pri RO)	Table C-1	-	2 / 3	No	No
4.	U1 Reactor Operator (U1 BOP RO)	Table C-1	-	2 / 4	No	No
5.	U1 TGB Watch Plant Operator (PO #1)	Table C-1	-	2 / 5	No	No
6.	U1 MAB Watch Plant Operator (PO #2)	Table C-1	-	2 / 6.A 2 / 6.B 2 / 6.C 2 / 6.D 2 / 6.E 2 / 6.F	No	No
7.	U2 Shift Manager	Table C-1	-	2 / 7	No	No
8.	U2 Unit Supervisor	Table C-1	-	2 / 8	No	No
9.	U2 Reactor Operator (U2 Pri RO)	Table C-1	-	2 / 9	No	No
10.	U2 Reactor Operator (U2 BOP RO)	Table C-1	-	2 / 10	No	No
11.	U2 TGB Watch Plant Operator (PO #3)	Table C-1	-	2 / 11	No	No
12.	U2 MAB Watch Plant Operator (PO #4)	Table C-1	-	2 / 12.A 2 / 12.B 2 / 12.C 2 / 12.D 2 / 12.E 2 / 12.F	No	No

Attachment 2: NEI 10-05 Appendix B On-Shift Staffing Analysis Results Tables

Line	On-shift Position	Emergency Plan Reference	Augmentation Elapsed Time (min)	Role in Table # / Line#	Unanalyzed Task?	TMS Required?
13.	ENS Communicator (RO #5)	Table C-1	-	5 / 10 5 / 13	No	No
14.	State/County Communicator (PO #5)	Table C-1	-	5 / 8 5 / 9	No	No
15.	Fire Brigade Leader (PO #6)	Table C-1	-	2 / 15 3 / 1	N/A N/A	N/A N/A
16.	FBT Member #1 (PO #7)	Table C-1	-	2 / 16 3 / 2	N/A N/A	N/A N/A
17.	FBT Member #2 (PO #8)	Table C-1	-	2 / 17 3 / 3	N/A N/A	N/A N/A
18.	FBT Member #3 (PO #9)	Table C-1	-	2 / 18 3 / 4	No N/A	No N/A
19.	FBT Member #4 (PO #10)	Table C-1	-	2 / 19 3 / 5	No N/A	No N/A
20.	I&C Technician	Table C-1	-	2 / 20	N/A	N/A
21.	Elect. Maintenance	Table C-1	-	2 / 21	N/A	N/A
22.	Senior HP	Table C-1	360	4 / 1 4 / 5	No	No
23.	RP Technician #1	Table C-1	360	4 / 1 4 / 4	No	No
24.	RP Technician #2	Table C-1	360	4 / 1 4 / 4	No	No
25.	Chemistry Technician	Table C-1	360	4 / 8	N/A	N/A
26.	Security	All per STP Security Plan	-	5 / 6 5 / 15	No	No

Note: In Table 1, those on-shift positions with tasks labeled as N/A were not assigned a specific action for the first six hours.

Attachment 2: NEI 10-05 Appendix B On-Shift Staffing Analysis Results Tables

**TABLE 2 – Plant Operations & Safe Shutdown
 Minimum Crew (Two Units – One Control Room)**

Extended Loss of All AC Power (ELAP)

Line	Generic Title/Role	On-Shift Position	Task Description	Controlling Method
1.	Shift Manager	U1 Shift Manager	Plant Oversight	Ops Training Program
2.	Unit Supervisor #1	U1 Unit Supervisor	Direct U1 CR operations (EO00 / EC00)	Ops Training Program
3.	Reactor Operator #1	U1 Reactor Operator (U1 Pri RO)	Perform U1 CR operations (EO00 / EC00)	Ops Training Program
4.	Reactor Operator #2	U1 Reactor Operator (U1 BOP RO)	Perform U1 CR operations (EO00 / EC00)	Ops Training Program
5.	Auxiliary Operator #1	U1 TGB Watch Plant Operator (PO #1)	Attempt to start U1 TSC DG (in-plant EC00 action)	Ops Training Program
6.	Auxiliary Operator #2	U1 MAB Watch Plant Operator (PO #2)	A. Isolate U1 RCP Seal Return (in-plant EC00 action)	JPM 20.02
			B. Isolate U1 Thermal Barriers (in-plant EC00 action)	JPM 28.02
			C. Isolate U1 Seal Injection (in-plant EC00 action)	JPM 28.02
			D. Close U1 MOV-0025 (in-plant EC00 action)	Ops Training Program
			E. Close U1 RA-MOV-0004 & RA-MOV-0006 (in-plant EC00 action)	JPM 127.02
			F. Verify U1 SFP Level (in-plant EC00 action)	Ops Training Program
7.	Shift Technical Advisor	U2 Shift Manager	STA Tasks	Ops Training Program
8.	Unit Supervisor #2	U2 Unit Supervisor	Direct U2 CR operations (EO00 / EC00)	Ops Training Program
9.	Reactor Operator #3	U2 Reactor Operator (U2 Pri RO)	Perform U2 CR operations (EO00 / EC00)	Ops Training Program
10.	Reactor Operator #4	U2 Reactor Operator (U2 BOP RO)	Perform U2 CR operations (EO00 / EC00)	Ops Training Program
11.	Auxiliary Operator #3	U2 TGB Watch Plant Operator (PO #3)	Attempt to start U2 TSC DG (in-plant EC00 action)	Ops Training Program
12.	Auxiliary Operator #4	U2 MAB Watch Plant Operator (PO #4)	A. Isolate U2 RCP Seal Return (in-plant EC00 action)	Ops Training Program
			B. Isolate U2 Thermal Barriers (in-plant EC00 action)	Ops Training Program
			C. Isolate U2 Seal Injection (in-plant EC00 action)	Ops Training Program
			D. Close U2 MOV-0025 (in-plant EC00 action)	Ops Training Program
			E. Close U2 RA-MOV-0004 & RA-MOV-0006 (in-plant EC00 action)	JPM 127.02
			F. Verify U2 SFP Level (in-plant EC00 action)	Ops Training Program
13.	Other	ENS Communicator (RO #5)	NRC communications/notifications per site procedure 0ERP01-ZV-IN02	EP Training Program

Attachment 2: NEI 10-05 Appendix B On-Shift Staffing Analysis Results Tables

14.	Other	State/County Communicator (PO #5)	State/County notifications per site procedure 0ERP01-ZV-IN02	EP Training Program
15.	Other	Fire Brigade Leader (PO #6)	N/A	N/A
16.	Other	FBT Member #1 (PO #7)	N/A	N/A
17.	Other	FBT Member #2 (PO #8)	N/A	N/A
18.	Other	FBT Member #3 (PO #9)	A. Place SG PORV Station Blackout PWR switches to bypass (Unit 1) B. U1 Load Shed (in-plant EC00 action)	JPM 34.02 Ops Training Program
19.	Other	FBT Member #4 (PO #10)	A. Place SG PORV Station Blackout PWR switches to bypass (Unit 2) B. U2 Load Shed (in-plant EC00 action)	JPM 34.02 Ops Training Program

Other (non-Operations) Personnel

Line	Generic Title/Role	On-Shift Position	Task Description	Controlling Method
20.	I&C Technician	I&C Technician	N/A	N/A
21.	Electrical Technician	Electrical Maintenance	N/A	N/A

TABLE 3 – Firefighting

Extended Loss of All AC Power (ELAP)

Line	Performed By	Task Description	Controlling Method
1.	Fire Brigade Leader (PO #6)	N/A	N/A
2.	FBT Member #1 (PO #7)	N/A	N/A
3.	FBT Member #2 (PO #8)	N/A	N/A
4.	FBT Member #3 (PO #9)	N/A	N/A
5.	FBT Member #4 (PO #10)	N/A	N/A

Attachment 2: NEI 10-05 Appendix B On-Shift Staffing Analysis Results Tables

TABLE 4 – Radiation Protection and Chemistry Extended Loss of All AC Power (ELAP)

#	Position Performing Function/Task	Performance Time Period After Emergency Declaration (minutes)										
		0-30	30-60	60-90	90-120	120-150	150-180	180-210	210-240	240-300	300-330	330-360
1.	In-Plant Survey On-Shift Position: HP Supervisor	X	X	X								
2.	On-Site Radiological Survey On-Shift Position:											
3.	Personnel Monitoring On-Shift Position:											
4.	Job Coverage On-Shift Position: RP Technician #1 RP Technician #2	X X	X X	X X	X X	X X	X X	X X	X X	X X	X X	X X
5.	Offsite Radiological Assessment On-Shift Position: HP Supervisor									X		
6.	Other RP – On-Shift Position:											
7.	Sampling On-Shift Position: Chemistry	X	X	X	X	X	X	X	X	X	X	X
8.	Other Chem – Describe: On-Shift Position:											

Note: The basis for the selected performance time period was established by the subject matter experts during the task analysis review.

Attachment 2: NEI 10-05 Appendix B On-Shift Staffing Analysis Results Tables

TABLE 5 – Emergency Plan Implementation **Extended Loss of All AC Power (ELAP)**

Line	Function/Task	On-Shift Position	Controlling Method
1.	Declare the Emergency Classification Level (ECL)	U1 Shift Manager	EP Training Program
2.	Approve Offsite Protective Action Recommendations	U1 Shift Manager	EP Training Program EP Drill Program
3.	Approve content of State/local notifications	U1 Shift Manager	EP Drill Program
4.	Approve extension to allowable dose limits	N/A	N/A
5.	Notification and direction to on-shift staff (e.g., to assemble, evacuate, etc.)	U1 Shift Manager	EP Drill Program
6.	ERO notification	Security	EP Drill Program
7.	Abbreviated NRC notification for Design Basis Threat event	N/A	N/A
8.	Complete State/local notification form	State/County Communicator	EP Drill Program
9.	Perform State/local notifications	State/County Communicator	EP Drill Program
10.	Complete NRC event notification form	ENS Communicator	EP Drill Program
11.	Activate ERDS	N/A	N/A
12.	Offsite radiological assessment	N/A	N/A
13.	Perform NRC notifications	ENS Communicator	EP Drill Program
14.	Perform other site-specific event notifications (e.g., INPO, ANI, etc.)	N/A	N/A
15.	Personnel accountability	Security	EP Drill Program
16.	Implement Security Contingency Plan	N/A	Security Training Program

Note: Line #3, #8 and #9 includes initial and follow-up State/local notifications.

Attachment 3: NEI 10-05 Appendix D & E On-Shift Staffing Analysis Results Tables

Extended Loss of All Power (ELAP)

Position: U1 MAB Watch Plant Operator (PO #2)

Line #:1-6

Appendix D: Function / Responsibility (Task) Analysis

Function	Responsibility (Task)	Action Step	Duration (min)
1. Plant Operations (status monitoring and EOP actions)	1.1 Isolate U1 RCP Seal Return (2/6.A)	1.1.1 EC00 Step 4.c	3
	1.2 Isolate U1 Thermal Barriers (2/6.B)	1.2.1 EC00 Step 8.b	9
	1.3 Isolate U1 Seal Injection (2/6.C)	1.3.1 EC00 Step 8.c	9
	1.4 Close U1 MOV-0025 (2/6.D)	1.4.1 EC00 Step 20.b	5
	1.5 Close U1 RA-MOV-0004 & RA-MOV-0006 (2/6.E)	1.4.1 EC00 Step 21.a	10
	1.6 Verify U1 Spent Fuel Pool Level (2/6.F)	1.5.1 EC00 Step 24.a	15

Timing for Isolate RCP Seal Return, Isolate Thermal Barriers, Isolate Seal Injection and Verify CVCS Charging line isolated (MOV-0025) were taken from Ops walkthroughs documented on STI # 33099634, "EOP Local Actions, General Operator Action Transit Times."

Timing for closure for RA-MOV-0004 & RA-MOV-0006 is taken from JPM 127.02.

Timing for Verify Spent Fuel Pool Level is taken from operator experience (a visual check of SFP level from the operating deck is a non-technical general operator rounds task).

Attachment 3: NEI 10-05 Appendix D & E On-Shift Staffing Analysis Results Tables

Extended Loss of All Power (ELAP)

Position: U1 MAB Watch Plant Operator (PO #2)

Line #:1-6

Appendix E: Work Activities Analysis

Time	Plant/equipment/environmental events and conditions applicable to the functions and tasks	Task / Action Step description (start & stop)
00:00	Actions completed at U1 MAB 29'. Refer to section 4.3 for event and conditions description	Perform U1 in-plant EC00 actions: Isolate U1 RCP Seal Return (00:00 – 00:03)
00:04	Actions completed at U1 MAB 41' penetration space. Refer to section 4.3 for event and conditions description	Perform U1 in-plant EC00 actions: Isolate U1 Thermal Barriers (00:04 – 00:13)
00:14	Actions completed at U1 MAB 29'. Refer to section 4.3 for event and conditions description	Perform U1 in-plant EC00 actions: Isolate U1 Seal Injection (00:14 – 00:23)
00:24	Actions completed at U1 MAB 29'. Refer to section 4.3 for event and conditions description	Perform U1 in-plant EC00 actions: Verify U1 CVCS Charging line isolated (MOV-0025) (00:24 – 00:29)
00:30	Actions completed at U1 MAB 41' penetration space. Refer to section 4.3 for event and conditions description	Perform U1 in-plant EC00 actions: Close U1 RA-MOV-0004 & RA-MOV-0006 (00:30 – 00:40)
00:41	Actions completed at U1 FHB operating deck. Refer to section 4.3 for event and conditions description	Perform U1 in-plant EC00 actions: Verify U1 Spent Fuel Pool Level (00:41 – 00:56)

Note: Time 00:00 is the time an action is first assigned to the Plant Operator. This table documents the total time for the Plant Operator to perform all of their assigned actions - the actions are not necessarily performed in direct sequence.

Attachment 3: NEI 10-05 Appendix D & E On-Shift Staffing Analysis Results Tables

Extended Loss of All Power (ELAP)

Position: U2 MAB Watch Plant Operator (PO #4)

Line #:1-12

Appendix D: Function / Responsibility (Task) Analysis

Function	Responsibility (Task)	Action Step	Duration (min)
1. Plant Operations (status monitoring and EOP actions)	1.1 Isolate U2 RCP Seal Return (2/12.A)	1.1.1 EC00 Step 4.c	3
	1.2 Isolate U2 Thermal Barriers (2/12.B)	1.2.1 EC00 Step 8.b	9
	1.3 Isolate U2 Seal Injection (2/12.C)	1.3.1 EC00 Step 8.c	9
	1.4 Close U2 MOV-0025 (2/12.D)	1.4.1 EC00 Step 20.b	5
	1.5 Close U2 RA-MOV-0004 & RA-MOV-0006 (2/12.E)	1.4.1 EC00 Step 21.a	10
	1.6 Verify U2 Spent Fuel Pool Level (2/12.F)	1.5.1 EC00 Step 24.a	15

Timing for Isolate RCP Seal Return, Isolate Thermal Barriers, Isolate Seal Injection and Verify CVCS Charging line isolated (MOV-25) were taken from Operations walkthroughs documented on STI # 33099634, "EOP Local Actions, General Operator Action Transit Times."

Timing for closure for RA-MOV-0004 & RA-MOV-0006 is taken from JPM 127.02.

Timing for Verify Spent Fuel Pool Level is taken from operator experience (a visual check of SFP level from the operating deck is a non-technical general operator rounds task).

Attachment 3: NEI 10-05 Appendix D & E On-Shift Staffing Analysis Results Tables

Extended Loss of All Power (ELAP)

Position: U2 MAB Watch Plant Operator (PO #4) Line #:1-12

Appendix E: Work Activities Analysis

Time	Plant/equipment/environmental events and conditions applicable to the functions and tasks	Task / Action Step description (start & stop)
00:00	Actions completed at U2 MAB 29'. Refer to section 4.3 for event and conditions description	Perform U2 in-plant EC00 actions: Isolate U2 RCP Seal Return (00:00 – 00:03)
00:04	Actions completed at U2 MAB 41' penetration space. Refer to section 4.3 for event and conditions description	Perform U2 in-plant EC00 actions: Isolate U2 Thermal Barriers (00:04 – 00:13)
00:14	Actions completed at U2 MAB 29'. Refer to section 4.3 for event and conditions description	Perform U2 in-plant EC00 actions: Isolate U2 Seal Injection (00:14 – 00:23)
00:24	Actions completed at U2 MAB 29'. Refer to section 4.3 for event and conditions description	Perform U2 in-plant EC00 actions: Verify U2 CVCS Charging line isolated (MOV-0025) (00:24 – 00:29)
00:30	Actions completed at U2 MAB 41' penetration space. Refer to section 4.3 for event and conditions description	Perform U2 in-plant EC00 actions: Close U2 RA-MOV-0004 & RA-MOV-0006 (00:30 – 00:35)
00:41	Actions completed at U2 FHB operating deck. Refer to section 4.3 for event and conditions description	Perform U2 in-plant EC00 actions: Verify U2 Spent Fuel Pool Level (00:41 – 00:56)

Note: Time 00:00 is the time an action is first assigned to the Plant Operator. This table documents the total time for the Plant Operator to perform all of their assigned actions - the actions are not necessarily performed in direct sequence.

Attachment 3: NEI 10-05 Appendix D & E On-Shift Staffing Analysis Results Tables

Extended Loss of All Power (ELAP)

Position: Fire Brigade Member #3 (PO #9)

Line #:1-18

Appendix D: Function / Responsibility (Task) Analysis

Function	Responsibility (Task)	Action Step	Duration (min)
1. Plant Operations (status monitoring and EOP actions)	1.1 Ensure the SG PORV Station Blackout power switches are in "BYP" (2/19.A)	1.1.1 EC00 Conditional Information Page (CIP)	2.5
	<ul style="list-style-type: none"> Place U1 Train "A" SG PORV Station Blackout PWR switch to Bypass 		2
	<ul style="list-style-type: none"> Place U1 Train "D" SG PORV Station Blackout PWR switch to Bypass 		2
	<ul style="list-style-type: none"> Place U1 Train "B" SG PORV Station Blackout PWR switch to Bypass 		2.5
	<ul style="list-style-type: none"> Place U1 Train "C" SG PORV Station Blackout PWR switch to Bypass 		
	1.2 U1 Load Shed (2/18.B)	1.2.1 EC00 Step 7.a	3
	<ul style="list-style-type: none"> De-energize ESF Load Sequencers (EC00 Addendum 4, Step 1.) 		3
	<ul style="list-style-type: none"> De-energize DP1201 Components (EC00 Addendum 4, Step 2.b) 		3
<ul style="list-style-type: none"> De-energize DP1204 Components (EC00 Addendum 4, Step 2.c) 	4.5		
<ul style="list-style-type: none"> De-energize 120 VAC Non-1E Loads (EC00 Addendum 4, Step 3.) 			

Note: Duration times are rounded up to the nearest half-minute

Timing for Load Shed actions and for placing SG PORV Station Blackout switches in bypass were taken from Operations walkthroughs documented on STI # 33099634, "EOP Local Actions, General Operator Action Transit Times."

Attachment 3: NEI 10-05 Appendix D & E On-Shift Staffing Analysis Results Tables

Extended Loss of All Power (ELAP)

Position: Fire Brigade Member #3 (PO #9)

Line #:1-18

Appendix E: Work Activities Analysis

Time	Plant/equipment/environmental events and conditions applicable to the functions and tasks	Task / Action Step description (start & stop)
00:00	Actions completed at U1 EAB 10'. Refer to section 4.3 for event and conditions description	Perform U1 in-plant EC00 actions: Place U1 Train "A" SG PORV Station Blackout PWR switch to Bypass (00:00 – 00:02:30)
00:03:30	Actions completed at U1 EAB 10'. Refer to section 4.3 for event and conditions description	Perform U1 in-plant EC00 actions: Place U1 Train "D" SG PORV Station Blackout PWR switch to Bypass (00:03:30– 00:05:30)
00:06:30	Actions completed at U1 EAB 35'. Refer to section 4.3 for event and conditions description	Perform U1 in-plant EC00 actions: Place U1 Train "B" SG PORV Station Blackout PWR switch to Bypass (00:06:30– 00:08:30)
00:09:30	Actions completed at U1 EAB 60'. Refer to section 4.3 for event and conditions description	Perform U1 in-plant EC00 actions: Place U1 Train "C" SG PORV Station Blackout PWR switch to Bypass (00:09:30– 00:12)
00:13	Actions completed at U1 EAB 10'. Refer to section 4.3 for event and conditions description	Perform U1 in-plant EC00 actions: U1 Load Shed - De-energize ESF Load Sequencers (00:13 – 00:16)
00:17	Actions completed at U1 EAB 10'. Refer to section 4.3 for event and conditions description	Perform U1 in-plant EC00 actions: U1 Load Shed - De-energize DP1201 Components (00:17 – 00:20)
00:21	Actions completed at U1 EAB 60'. Refer to section 4.3 for event and conditions description	Perform U1 in-plant EC00 actions: U1 Load Shed - De-energize DP1204 Components (00:21 – 00:24)
00:25	Actions completed at U1 EAB 10'. Refer to section 4.3 for event and conditions description	Perform U1 in-plant EC00 actions: U1 Load Shed - De-energize 120 VAC Non-1E Loads (00:25 – 00:29:30)

Note: Time 00:00 is the time an action is first assigned to the Plant Operator. This table documents the total time for the Plant Operator to perform all of their assigned actions - the actions are not necessarily performed in direct sequence.

Attachment 3: NEI 10-05 Appendix D & E On-Shift Staffing Analysis Results Tables

Extended Loss of All Power (ELAP)

Position: Fire Brigade Member #4 (PO #10)

Line #:1-19

Appendix D: Function / Responsibility (Task) Analysis

Function	Responsibility (Task)	Action Step	Duration (min)
1. Plant Operations (status monitoring and EOP actions)	1.1 Ensure the SG PORV Station Blackout power switches are in "BYP" (2/19.A)	1.1.1 EC00 Conditional Information Page (CIP)	2.5
	• Place U2 Train "A" SG PORV Station Blackout PWR switch to Bypass		2
	• Place U2 Train "D" SG PORV Station Blackout PWR switch to Bypass		2
	• Place U2 Train "B" SG PORV Station Blackout PWR switch to Bypass		2.5
	• Place U2 Train "C" SG PORV Station Blackout PWR switch to Bypass		
	1.2 U2 Load Shed (2/18.B)	1.2.1 EC00 Step 7.a	3
• De-energize ESF Load Sequencers (EC00 Addendum 4, Step 1.)	3		
• De-energize DP1201 Components (EC00 Addendum 4, Step 2.b)	3		
• De-energize DP1204 Components (EC00 Addendum 4, Step 2.c)	4.5		
• De-energize 120 VAC Non-1E Loads (EC00 Addendum 4, Step 3.)			

Note: Duration times are rounded up to the nearest half-minute

Timing for Load Shed actions and for placing SG PORV Station Blackout switches in bypass were taken from Operations walkthroughs documented on STI # 33099634, "EOP Local Actions, General Operator Action Transit Times."

Attachment 3: NEI 10-05 Appendix D & E On-Shift Staffing Analysis Results Tables

Extended Loss of All Power (ELAP)

Position: Fire Brigade Member #4 (PO #10)

Line #:1-19

Appendix E: Work Activities Analysis

Time	Plant/equipment/environmental events and conditions applicable to the functions and tasks	Task / Action Step description (start & stop)
00:00	Actions completed at U2 EAB 10'. Refer to section 4.3 for event and conditions description	Perform U2 in-plant EC00 actions: Place U2 Train "A" SG PORV Station Blackout PWR switch to Bypass (00:00 – 00:02:30)
00:03:30	Actions completed at U2 EAB 10'. Refer to section 4.3 for event and conditions description	Perform U2 in-plant EC00 actions: Place U2 Train "D" SG PORV Station Blackout PWR switch to Bypass (00:03:30– 00:05:30)
00:06:30	Actions completed at U2 EAB 35'. Refer to section 4.3 for event and conditions description	Perform U2 in-plant EC00 actions: Place U2 Train "B" SG PORV Station Blackout PWR switch to Bypass (00:06:30– 00:08:30)
00:09:30	Actions completed at U2 EAB 60'. Refer to section 4.3 for event and conditions description	Perform U2 in-plant EC00 actions: Place U2 Train "C" SG PORV Station Blackout PWR switch to Bypass (00:09:30– 00:12)
00:13	Actions completed at U2 EAB 10'. Refer to section 4.3 for event and conditions description	Perform U2 in-plant EC00 actions: U2 Load Shed - De-energize ESF Load Sequencers (00:13 – 00:16)
00:17	Actions completed at U2 EAB 10'. Refer to section 4.3 for event and conditions description	Perform U2 in-plant EC00 actions: U2 Load Shed - De-energize DP1201 Components (00:17 – 00:20)
00:21	Actions completed at U2 EAB 60'. Refer to section 4.3 for event and conditions description	Perform U2 in-plant EC00 actions: U2 Load Shed - De-energize DP1204 Components (00:21 – 00:24)
00:25	Actions completed at U2 EAB 10'. Refer to section 4.3 for event and conditions description	Perform U2 in-plant EC00 actions: U2 Load Shed - De-energize 120 VAC Non-1E Loads (00:25 – 00:29:30)

Note: Time 00:00 is the time an action is first assigned to the Plant Operator. This table documents the total time for the Plant Operator to perform all of their assigned actions - the actions are not necessarily performed in direct sequence.

Enclosure 2

South Texas Project (STP)

Summary of Requested Items and Actions Planned for the
Phase 1 Staffing Assessment

Summary of Requested Items and Actions Planned for the Phase 1 Staffing Assessment

Below is a summary of the Requested Information Items delineated in References 2 and 3 and conclusions based on the completion of the South Texas Project (STP) Phase 1 staffing assessment provided in Enclosure 1 to this submittal.

Phase 1 Staffing Assessment

Request #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 NRC Request. 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).

Provide onsite and augmented staffing assessment considering all requested functions except those related to NTTF Recommendation 4.2. [**Phase 1 staffing assessment**] by 4/30/2013.

Provide onsite and augmented staffing assessment considering functions related to NTTF Recommendation 4.2. [**Phase 2 staffing assessment**]. To be provided 4 months prior to the beginning of 2RE17 (*Original Estimated date 6/4/14*)*

** As used within the context of NRC Order EA-12-049.*

This date corresponded to 4 months prior to the beginning of the planned first occurrence of the second refueling outage (2RE17) as identified in Reference 3. The 2RE16 outage counts as the first refueling outage based on submitting the overall integrated plan on February 28, 2013. 1RE19 outage will be the second refueling outage in the second Unit.

STPNOC Actions Taken/Actions Planned - Request #1

The overall results of the STP Phase 1 Assessment are included in Enclosure 1 to this letter with a summary of potential staffing issues discussed below.

Summary of Requested Items and Actions Planned for the Phase 1 Staffing Assessment

On-shift Emergency Response Organization (ERO) Staffing Assessment Conclusions

The assessment concluded that the required minimum on-shift staffing as specified in the STP Emergency Plan for Units 1 & 2 is sufficient to support the initial phase coping actions and Emergency Plan actions in a dual unit event involving the extended loss of all emergency AC power sources.

Augmented ERO Staffing Assessment Conclusions

The current augmented ERO resources are sufficient to meet the recommended staffing levels identified in NEI 12-01 to perform most of the expanded ERO functions. STP has identified staffing gaps for performing engineering assessments and for evaluating and implementing Severe Accident Management Guidelines (SAMGs). STP will ensure that the required numbers of qualified individuals are added to the expanded ERO to fill these roles.

The Phase 2 Staffing Assessment is expected to be completed by 12/4/2014 (Four months prior to the start of 2RE17). Note: This date is based on the 4/4/2015 start date for 2RE17. The outage dates for the start of 2RE17 were recently changed due to a forced outage in Unit 2. This revises the commitment dates provided in References 2 and 3 (See Enclosure 3).

Request #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.

1. Conduct the onsite and augmented staffing assessment:
The onsite and augmented staffing assessment considering all requested functions except those related to NTTF Recommendation 4.2. **[Phase 1 staffing assessment]**.
Completion Date: 3/29/2013.

The onsite and augmented staffing assessment considering functions related to NTTF Recommendation 4.2. **[Phase 2 staffing assessment]**
Estimated Completion: 5 months prior to the beginning of 2RE17 (Original Estimated date 5/4/14)*

2. A schedule of the time needed to implement changes associated with the Phase 1 staffing assessment. *Estimated Completion: 4/30/2013.*

Those associated with the Phase 2 staffing assessment. *Estimated Completion: 4 months prior to the beginning of 2RE17* (Original Estimated date 6/4/14)**

* As used within the context of NRC Order EA-12-049.

This date corresponded to 4 months prior to the beginning of the currently planned first occurrence of the second refueling outage (2RE17). The 2RE16 outage counts as the first refueling outage based on submitting the overall integrated plan on February 28, 2013. 1RE19 outage will be the second refueling outage in the second Unit.

Summary of Requested Items and Actions Planned for the Phase 1 Staffing Assessment

STPNOC Actions Taken/Actions Planned - Request #2

Phase 1 Assessment:

The following enhancements are being tracked in the Corrective Action Program.

1. Ensure that the required number of qualified individuals are added to fill all necessary roles of the expanded ERO (See Table 5-2). This will be completed by 3/31/14.
2. Develop specific guidance for how and when to establish the expanded ERO from the pool of augmented ERO. This will be completed by 12/4/14.
3. Develop and communicate the process to expand the automatic response of ERO personnel who report to the EOF in the event of a loss of communications due to a large scale event to include appropriate activation of off-shift Operations, Maintenance, Security, RP personnel, and expanded ERO. This will be completed by 12/4/14.
4. The changes in action #3 will be included in annual site training. This will be completed by 12/4/14.
5. Identify and revise applicable site procedures to address logistics for the expanded ERO response teams for a dual unit event. This will be completed by 12/4/14.

Phase 2 Assessment:

The Phase 2 Staffing Assessment is expected to be completed by 12/4/2014 (Four months prior to the start of 2RE17).

Note: This date is based on the 4/4/2015 start date for 2RE17. The outage dates for the start of 2RE17 were recently changed due to a forced outage in Unit 2. This revises the commitment dates provided in References 2 and 3 (See Enclosure 3).

Request #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.).

Changes will be identified as follows:

Those associated with the **Phase 1 staffing assessment.**

Completion: 4/30/2013.

Those associated with the Phase 2 staffing assessment.

Estimated Completion: 4 months prior to the beginning of 2RE17 (Original Estimated date 6/4/14)**

STPNOC Actions Taken/Actions Planned - Request #6

STP will ensure that the required number of qualified individuals are maintained to man the expanded ERO. No changes to the Emergency Plan are considered necessary at this time.

When the Phase 2 Assessment is completed, changes to the emergency plan will be considered at that time.

Enclosure 3

South Texas Project (STP)

List of Commitments

List of Commitments

The following table identifies those actions committed to by the STP Nuclear Operating Company (STPNOC) in this document. Any statements in this submittal with the exception of those in the tables below are provided for information purposes and are not considered commitments. Please direct questions regarding these commitments and revised commitments to Robyn Savage at (361) 972-7438.

Commitments	Scheduled Due Date	Condition Report
1. Ensure that the required number of qualified individuals are added to fill all necessary roles of the expanded ERO (Table 5-2 positions) <ul style="list-style-type: none"> • TSC Technical Manager • Engineering Supervisor • Engineer – Nuclear • Engineer – Mechanical • Engineer – Electrical • Engineer – I&C • TSC Operations Communicator 	March 31, 2014	12-11657-24 - 12-11657-28

Revised Commitments dates related to the Phase 2 Staffing Assessment

Commitments	Original Scheduled Due Date	Revised Scheduled Date	Condition Report
1. STPNOC will perform a second staffing assessment as requested by the 50.54(f) letter using NEI 12-01 and provide the results of the assessment to the NRC. (Phase 2 Assessment). STPNOC will provide the NRC with the results of the Phase 2 assessment and an implementation schedule of the time needed to implement any changes.	4 months prior to the beginning of 2RE17 <i>(estimated date 6/4/14)</i>	4 months prior to the beginning of 2RE17 * <i>(estimated date 12/4/14)</i>	12-11657-10
2. STPNOC will identify changes associated with the Phase 2 staffing assessment that have been made or will be made to our emergency plan regarding the on-shift or augmented staffing changes including any new or revised agreements with offsite resource providers (e.g., staffing, equipment, transportation, etc.) and provide this to the NRC	4 months prior to the beginning of 2RE17 <i>(estimated date 6/4/14)</i>	4 months prior to the beginning of 2RE17 * <i>(estimated date 12/4/14)</i>	12-11657-12

* Note: The STP Phase 2 Staffing Assessment is expected to be completed by 12/4/2014 (Four months prior to the start of 2RE17). This date is based on the 4/4/2015 start date for 2RE17. The outage dates for the start of 2RE17 were recently changed due to an ongoing forced outage in Unit 2. This revises the commitment dates provided in References 2 and 3 related to the Phase 2 Staffing Assessment.