

# Edwin I. Hatch Nuclear Plant



## Standard Emergency Plan Proposed Version 4.0 On-Shift Staffing Analysis

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## HNP On-Shift Staffing Analysis

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## HNP On-Shift Staffing Analysis

### Introduction

10CFR50 Appendix E, effective on December 23, 2011, directed that a detailed study be performed by December 24, 2012, to ensure on-shift staffing was adequate to perform critical functions until relieved by the augmented Emergency Response Organization (ERO). The NRC in the published staff guidance (Reference 2) endorsed NEI 10-05 as an acceptable means of performing the required staffing analysis.

An on-shift staffing analysis was completed in December 2017, to support implementation of Technical Specifications Task Force (TSTF)-258 for the Edwin I. Hatch Nuclear Plant (HNP). TSTF-258 allows for elimination of the title 'Shift Technical Advisor (STA)' from section 5.2.2.g of the HNP TS with the function being assumed by qualified personnel. The on-shift staffing analysis was performed with the STA position being removed as a required on-shift position in the SNC Standard Emergency Plan, Hatch Annex Table 2.2.A. Proposed Version 4.0 of the on-shift staffing analysis report documents the results of this evaluation.

### References

1. 10CFR50 Appendix E
2. NSIR/DPR-ISG-01, Interim Staff Guidance, Emergency Planning for Nuclear Power Plants
3. NEI 10-05, Revision 0, Assessment of On-Shift Emergency Response Organization Staffing and Capabilities
4. SNC Standard Emergency Plan Annex for HNP Units 1 and 2, Version 4.0, Table 2.2.A
5. HNP UFSAR Chapter 15, Revision 31

### Executive Summary

A detailed staffing analysis, performed in accordance with NEI 10-05, was conducted to document the adequacy of shift staffing as required by 10CFR50 Appendix E.

Table 1 identifies the minimum staff described in the SNC Standard Emergency Plan Annex for HNP Units 1 and 2, Version 4.0, Table 2.2.A, and was used to perform the on-shift staffing analysis.

NRC staff guidance directs the scenarios that must be used to demonstrate the adequacy of on-shift staffing to perform required functions for event mitigation, radiation protection response, firefighting, chemistry and Emergency Plan functions. Those scenarios include specific design basis accidents as described in the UFSAR as well as specific scenarios defined in the Staff Guidance document. Identification of these scenarios is the first phase of the NEI 10-05 process. Table 2 identifies the scenarios that were required to be considered for evaluation.

The next phase required of NEI 10-05 requires a dedicated team, using tabletop techniques, to evaluate the scenarios for conflicts between the functional areas that must be resolved by detailed procedural analysis. For those scenarios where no conflicts are identified in the specified areas no further action is required. The results of this analysis determined that conflicts do not exist; therefore, further action is not required.



## HNP On-Shift Staffing Analysis

### Conclusion

The minimum staff identified in the SNC Standard Emergency Plan Annex for HNP Units 1 and 2, Table 2.2.A, is adequate to respond to the scenarios identified in the regulations until relieved by the augmented ERO. The analysis showed that the number of on-shift personnel is sufficient to respond to analyzed events until augmented by the ERO 75 minutes after event declaration and that no conflicts in responsibilities exist.

**Table 1**  
**HNP On-Shift Staffing**

Position Title	On-Shift
Shift Manager (SM)	1
Shift Supervisor (SRO)	2
Shift Support Supervisor (SRO/FBL) <sup>Note 1</sup>	1
Reactor Operators (RO)	4
System Operators (SO) <sup>Note 1</sup>	7
RP Technician (RP)	3
Chemistry Technician (CT)	2
Maintenance Supervisor (MS)	1
Electrical Maintenance (EM)	1
Mechanical Maintenance (MM)	1
I&C Maintenance (IC)	1
<b>Total On-Shift Personnel</b>	<b>24</b>
Fire Brigade <sup>Note 1</sup>	5
Rescue Operations/First Aid <sup>Note 2</sup>	2
Security	Sec plan

**Note 1** – Fire Brigade is a collateral duty of Operations requiring 5 personnel without safe shutdown responsibilities. The Fire Brigade consists of 1 Fire Brigade Leader (Shift Support Supervisor – SRO) and 4 Fire Brigade Members (System Operators). These individuals are not assigned safe shutdown responsibilities.

**Note 2** – Rescue/First Aid is a collateral duty of RP personnel.



## HNP On-Shift Staffing Analysis

**Table 2**  
**NEI 10-05 Appendix A**  
**Analyzed Events and Accidents**

Event #	Event Type	Event	Summary Description of Event	Reactor Mode	Reference Documents	Event EAL	Analysis Required
1.	DBT	Hostile Action Based Event	Land based hostile action against the Protected Area by a HOSTILE FORCE. Assume adversary characteristics defined by the DBT	1-5	ISG IV.C	SAE	Yes
2.	DBA	Loss of Cooling Accident (LOCA)	Complete circumferential shear of 1 Recirc Line	1-5	UFSAR §15.3.3 Condition IV	SAE GE	Yes
3.	DBA	Control Rod Drop Accident	Rod with the highest worth drops from the fully inserted position	2	UFSAR §15.3.2 Condition IV	None	No <b>Note 1</b>
4.	DBA	Main Steamline Break	Complete severance outside Secondary Containment	1	UFSAR §15.3.4 Condition IV	UE	Yes
5.	DBA	Fuel Handling Accident	Irradiated, fully raised fuel bundle is dropped onto the top of the core	5	UFSAR §15.3.5 Condition IV	ALERT	No <b>Note 2</b>
6.	ISG	Aircraft Probable Threat	Verifiable information that the plant is in the flight path of a track of interest (TOI) with an ETA of 30 minutes or less.	1-5	ISG IV.C	ALERT	Yes
7.	ISG	ATWS	Failure of Rx to SCRAM without operator action	1-2	ISG IV.C	UE	Yes
8.	ISG	Station Blackout	A loss of all offsite AC power and Emergency Diesel Generators	1	ISG IV.C HNP Station Blackout analysis	SAE	Yes
9.	ISG	Control Room Fire with Evacuation and Remote Shutdown	MCR Evacuation required. Operation from Remote Shutdown Panel.	1-5	ISG IV.C	ALERT	Yes
10.	ISG	NFPA-805 Fire	NFPA-805 Fire requiring FB Response	N/A	ISG IV.C	ALERT	No <b>Note 3</b>
11.	ISG	Entry Into SAMGs	Directed to the SAMGs from the Emergency Operating Procedure Flow Charts	N/A	ISG IV.C and the EOP Flowcharts	GE	No <b>Note 4</b>



## HNP On-Shift Staffing Analysis

**Table 2**  
**NEI 10-05 Appendix A**  
**Analyzed Events and Accidents**

Event #	Event Type	Event	Summary Description of Event	Reactor Mode	Reference Documents	Event EAL	Analysis Required
12.	NSIR	Fast Breaker	Event with an initial classification of General Emergency	1	NSIR	GE	<b>Yes</b> <b>Note 5</b>

**Note 1** – Per UFSAR Section 15.3.2, the radiological consequences for the realistic case (NEI 10-05 Section 2.8 guidance) do not reach an EAL threshold. Events that do not result in an emergency classification do not require analysis per NEI 10-05 Section 3.2.1.1.e.

**Note 2** – Refueling accident is not analyzed with the existing on-shift staff per FAQ 2013-008.

**Note 3** – Event is bounded by the Control Room Fire with Evacuation and Remote Shutdown. No further analysis required.

**Note 4** – Per NEI 10-05, Section 2.11, no actions other than licensed and non-licensed operators are involved with SAMG implementation, therefore analysis is not required.

**Note 5** – Event designated as proceeding non-mechanistically to GE with release exceeding Protective Action Guides (PAGs) and requiring PARs (PARs).



## **HNP On-Shift Staffing Analysis**

### **Appendix A Phase II Analysis Results**



### HNP On-Shift Staffing Analysis

A multi-disciplined team of subject matter experts from HNP was assembled to provide input into the on-shift staffing analysis (OSA) of events identified by NSIR/DPR-ISG-01, Interim Staff Guidance, Emergency Planning for Nuclear Power Plants. This team consisted of: a Senior Reactor Operator (SRO – EOP Coordinator); an RP Manager; an RP Supervisor; a Security Captain; a Chemist; a FLEX Engineer; FLEX Procedure Writers; and Emergency Planning Staff (station, corporate, and consultants). The team provided analysis support during the Phase II analysis as follows:

**Table 3**  
**On-Shift Staffing Analysis Team**

<b>Team Member</b>	<b>Subject Matter Expertise</b>
EOP Coordinator - SRO	EOP actions
	Abnormal Procedure (AB) actions
	Operating Procedure actions
	Shift Technical Advisor actions
	Emergency Director (E Plan) actions
	Fire Brigade response actions
	Offsite Communicator actions
RP Manager RP Supervisor	RP response actions
	Field Monitoring Team (FMT) actions
	First Aid response actions
Chemist	Chemistry Response Actions
	Prompt Dose Assessment actions
Security Captain	Security response actions
FLEX Engineer FLEX Procedure Writer	Station Black Out (SBO) response actions
Emergency Planning	Emergency Plan response actions

The OSA was conducted in three steps; identification of events for analysis; minimum on-shift staffing complement determination; and, a tabletop analysis of the on-shift staffing resources required for response to identified events. The results and recommendations of the OSA are documented in this report.



## **HNP On-Shift Staffing Analysis**

### **Appendix B Phase II Event Analysis Tables**

## HNP On-Shift Staffing Analysis

### On-Shift Personnel Assignments Used During OSA

#### On-Shift Operator Assignments

Position	Designation	Assignment
Shift Manager	SM	Shift Manager/Emergency Director
Unit Supervisor	SRO1	Unit 1 Shift Supervisor (SSD)
Unit Supervisor	SRO2	Unit 2 Shift Supervisor (SSD)
Shift Support Supervisor	SRO3/FBL	Shift Support / Fire Brigade Leader
Reactor Operator	RO1	Unit 1 Operator At Controls (SSD)
Reactor Operator	RO2/COM2	Unit 1 Licensed Operator (SSD)
Reactor Operator	RO3	Unit 2 Operator At Controls (SSD)
Reactor Operator	RO4/COM1	Unit 2 Operator At Controls (SSD)
System Operator	SO1	Unit 1 NLO (SSD)
System Operator	SO2	Unit 2 NLO (SSD)
System Operator	SO3	Unit 1 Inside SO (SSD)
System Operator	SO4/FBM1	Unit 2 Inside SO (FBM1)
System Operator	SO5/FBM2	Unit 1 Outside SO (FBM2)
System Operator	SO6/FBM3	Maintenance SO (FBM3)
System Operator	SO7/FBM4	Maintenance SO (FBM4)

#### Other On-Shift Personnel Assignments

Position	Designation	Assignment
RP Technician	RP1	RP Support
RP Technician	RP2	RP Support
RP Technician	RP3/FMT	RP Support/ Field Monitoring
Chemistry Technician	CT1	Chemistry Support
Chemistry Technician	CT2/DA	Chemistry Support/ Dose Assessment
Maintenance Supervisor	MM2	Maintenance Supervision
Mechanical Maintenance	MM1	Mechanical Maintenance Support
Electrical Maintenance	EM1	Electrical Maintenance Support
I&C Maintenance	IC1	I&C Maintenance Support
SAS Operator	SEC1	Accountability
CAS Operator	SEC2	Security Interface



## HNP On-Shift Staffing Analysis

### Event #1      Design Basis Threat

Initial Conditions:

Time: Saturday @0230

Unit 1 & 2 @ 100% Power

Normal operating temperature

Normal operating pressure

Sequence of Events:

0235    Adversary force assaults HNP and attempts to breach the protected area fence

         Security engages adversaries and notifies Shift Manager

0240    Security informs Shift Manager that PA has been breached

0245    Security informs Shift Manager that adversaries have been neutralized

         No injuries to site personnel

         No fires or collateral damage to plant equipment

         No adverse consequences to plant safety

## HNP On-Shift Staffing Analysis

### APPENDIX B

**Event #1: DBT/ISG - Design Basis Threat**  
**TABLE 1 – On-shift Positions**

**ECL: Site Area Emergency**

Line	On-shift Position	Emergency Plan Reference	Augmentation Elapsed Time (min)	Role in Table#/Line#	Unanalyzed Task?	TMS Required?
1.	Shift Manager (SM)	SNC Standard E Plan Annex for HNP U1&2, Table 2.2.A	75	T2/L1 T5/L1 T5/L5 T5/L6 T5/L13	No	No
2.	Shift Supervisor (SRO1)	SNC Standard E Plan Annex for HNP U1&2, Table 2.2.A	N/A	T2/L2	No	No
3.	Shift Supervisor (SRO2)	SNC Standard E Plan Annex for HNP U1&2, Table 2.2.A	N/A	T2/L3 T5/L10 T5/L11	No	No
4.	Shift Support Supervisor (SRO3/FBL)	SNC Standard E Plan Annex for HNP U1&2, Table 2.2.A	N/A	T2/L4 T5/L2 T5/L4	No	No
5.	Reactor Operator (RO1)	SNC Standard E Plan Annex for HNP U1&2, Table 2.2.A	N/A	T2/L5 T5/L3	No	No
6.	Reactor Operator (RO2/COM2)	SNC Standard E Plan Annex for HNP U1&2, Table 2.2.A	N/A	T2/L6	No	No
7.	Reactor Operator (RO3)	SNC Standard E Plan Annex for HNP U1&2, Table 2.2.A	N/A	T2/L7 T5/L3	No	No
8.	Reactor Operator (RO4/COM1)	SNC Standard E Plan Annex for HNP U1&2, Table 2.2.A	75	T2/L8 T5/L3 T5/L8 T5/L12	No	No
9.	SAS Operator (SEC1)	SNC Standard E Plan Annex for HNP U1&2, Table 2.2.A	N/A	T2/L9	No	No



### HNP On-Shift Staffing Analysis

Line	On-shift Position	Emergency Plan Reference	Augmentation Elapsed Time (min)	Role in Table#/Line#	Unanalyzed Task?	TMS Required?
10.	CAS Operator (SEC2)	SNC Standard E Plan Annex for HNP U1&2, Table 2.2.A	N/A	T2/L10	No	No

**Notes:** Although multiple functions have been identified for some positions, no conflict exists requiring further action. Performance of these functions by the identified positions is either acceptable by NEI 10-05 guidance, **OR** the functions are the same, **OR** the functions are performed sequentially without issue.

## HNP On-Shift Staffing Analysis

**TABLE 2 - Plant Operations & Safe Shutdown**

Event #   1  

**Two Units – One Control Room (Shared)**  
**Minimum Operations Crew Necessary to Implement**  
**ABs and EOPs, FSG, or SAMGs if applicable**

**Applicable to Unit**   1&2  

Line	Generic Title/Role	On-Shift Position	Task Performance Validation
1.	Shift Manager	Shift Manager (SM)	Operator Training
2.	Shift Supervisor	Shift Supervisor – U1 (SRO1)	Operator Training
3.	Shift Supervisor	Shift Supervisor – U2 (SRO2)	Operator Training
4.	Shift Support Supervisor	Shift Support Supervisor (SRO3/FBL)	Operator Training
5.	Reactor Operator	Reactor Operator (RO1)	Operator Training
6.	Reactor Operator	Reactor Operator (RO2/COM2)	Operator Training
7.	Reactor Operator	Reactor Operator (RO3)	Operator Training
8.	Reactor Operator	Reactor Operator (RO4/COM1)	Operator Training

**Notes:** See Table 2A for AB/EOP response actions

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

Line	Generic Title/Role	On-Shift Position	Task Performance Validation
9.	SAS Operator	SAS Operator (SEC1)	Security Training
10.	CAS Operator	CAS Operator (SEC2)	Security Training

**Notes:** See Table 2A for AB/EOP response actions



## HNP On-Shift Staffing Analysis

Event # 1: Title: Table 2A - Design Basis Threat

Procedure Step/Actions			Performance Time (mins) After Procedure Implementation																	
Proc/Step	Task	Assigned Resource	0-5	5-10	10-15	15-20	20-25	25-30	30-35	35-40	40-45	45-50	50-55	55-60	60-65	65-70	70-75	75-80	80-85	85-90
34AB-Y22-004-0, Intruder Based Security Threat Procedure, Rev 6.4																				
Step 4.2	NRC Notification	SRO3/FBL	X																	
Step 4.3	Security Notification	SM	X																	
Step 4.3.2	Implement Security Procedures	SEC2	X																	
Step 4.3.3	Merge PA System	SEC1	X																	
Step 4.4	Lock CR Doors	RO2/COM2	X																	
Step 4.7.1	PA Announcement (Duck And Cover)	RO2/COM2	X																	
Step 4.7.2	Notify Load Dispatcher	RO4/COM1	X																	
Step 4.7.3	SCRAM Rx (Both Units & Transition to 34AB-C71-001-1/2)	SRO1 SRO2	X																	
34AB-C71-001-1, SCRAM Procedure, Rev 12.14; 34AB-C71-001-2, SCRAM Procedure, Rev 13.1																				
Step 3.1	Manual SCRAM IAW RC-1 Attachment 3	SRO1 SRO2 RO1 RO3	X																	
Step 3.2	Perform RC-2 Water Level Control Attachment 3	RO2/COM2 RO3 RO4/COM1	X (periodic – RO3 relieves RO4/COM1 as needed to enable performance of State/local notifications)																	
Step 3.3	Perform RC-3 Pressure Control Attachment 3	RO2/COM2 RO3 RO4/COM1	X (periodic – RO3 relieves RO4/COM1 as needed to enable performance of State/local notifications)																	
Step 4.1	PA Announcement	RO1 RO3	X																	
Step 4.2	Trip Main Turbine (TC-1)	SRO1 SRO2 RO1 RO3	X																	
34AB-Y22-004-0, Intruder Based Security Threat, Rev 6.4 (continued)																				
Step 4.7.11	Begin Aggressive RCS Cooldown	RO1 RO3																		

Task completion time

## HNP On-Shift Staffing Analysis

**TABLE 3 – Firefighting**

**Event #** 1

<b>Line</b>	<b>Performed By</b>	<b>Task Analysis Controlling Method</b>
1.	N/A	N/A
2.	N/A	N/A
3.	N/A	N/A
4.	N/A	N/A
5.	N/A	N/A

**Notes:** No Fire Brigade response required for this event.



## HNP On-Shift Staffing Analysis

**TABLE 4 – Radiation Protection & Chemistry**

Event # 1

Line	Position Performing Function/Task	Performance Time Period After Event Initiation (Minutes)																	
		0-5	5-10	10-15	15-20	20-25	25-30	30-35	35-40	40-45	45-50	50-55	55-60	60-65	65-70	70-75	75-80	80-85	85-90
1.	In-Plant Survey On-Shift Position:																		
2.	Out of Plant Survey On-Shift Position:																		
3.	Personnel Monitoring On-Shift Position:																		
4.	Job Coverage On-Shift Position:																		
5.	Offsite Radiological Assessment On-Shift Position:																		
6.	Other Site-Specific RP – Describe: On-Shift Position:																		
7.	Chemistry function/task #1 – Describe: On-Shift Position:																		
8.	Chemistry function/task #2 – Describe: On-Shift Position:																		

**Notes:** RP/Chemistry personnel in 'Duck and Cover'.

## HNP On-Shift Staffing Analysis

**TABLE 5 – Emergency Plan Implementation**

Event # 1

Line	Function/Task	On-Shift Position	Task Analysis Controlling Method
1.	Declare the Emergency	SM	EP/Ops Training and EP Drill Program
2.	ERO notification	SRO3/FBL	EP/Ops Training and EP Drill Program
3.	Notification and direction to on-shift staff (e.g., to assemble, evacuate, etc.)	RO1 RO3 RO4/COM1	EP/Ops Training and EP Drill Program
4.	Abbreviated NRC Notification for DBT event	SRO3/FBL	EP/Ops Training and EP Drill Program
5.	Complete State/local notification form	SM	EP/Ops Training and EP Drill Program
6.	Approve State/local notifications	SM	EP/Ops Training and EP Drill Program
7.	Approve Offsite PARs	N/A	EP/Ops Training and EP Drill Program
8.	Perform State/local notifications <span style="color: red;">Note 1</span>	RO4/COM1	EP/Ops Training and EP Drill Program
9.	Dose Assessment	N/A	EP/Ops Training and EP Drill Program
10.	Complete NRC event notification form	SRO2	EP/Ops Training and EP Drill Program
11.	Perform NRC notifications	SRO2	EP/Ops Training and EP Drill Program
12.	Activate ERDS	RO4/COM1	EP/Ops Training and EP Drill Program
13.	Perform other site-specific event notifications (DM) <span style="color: red;">Note 2</span>	SM	EP/Ops Training and EP Drill Program
14.	Personnel accountability	N/A	EP/Ops Training and EP Drill Program
15.	Approve extension to allowable dose limits	N/A	EP/Ops Training and EP Drill Program

**Notes:** EAL – HS1, Site Area Emergency  
NMP-EP-141-002, Hatch Emergency Action Levels and Basis, Rev 1  
NMP-EP-142, Emergency Notification, Rev 1  
Note 1 – RO3 relieves RO4/COM1 from RC-2 and RC-3 duties to enable RO4/COM1 to perform offsite notifications.  
Note 2 – SM notifies the Duty Manager (DM) IAW NMP-EP-142, Emergency Notification. This notification is completed within 2-3 minutes and does not affect performance of other functions.




## HNP On-Shift Staffing Analysis

Table 5A - E-Plan Implementation Timeline/Event # 1

Function/Task	On-shift Position	Time from Event Initiation (minutes)																	
		5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90
Declare the Emergency	SM	HS1																	
ERO notification	SRO3/FBL		X																
Notification and direction to on-shift staff (e.g., to assemble, evacuate, etc.)	RO1	X																	
	RO3	X																	
	RO4/COM1	X				X													
Abbreviated NRC notification for DBT event	SRO3/FBL	X																	
Complete State/local notification form	SM				X												X		
Approve State/local notifications	SM					X												X	
Approve Offsite PARs	N/A																		
Perform State/local notifications <span style="color: red;">Note 1</span>	RO4/COM1						X												X
Dose Assessment	N/A																		
Complete NRC event notification form	SRO2							X											
Perform NRC notifications	SRO2														X				
Activate ERDS	RO4/COM1					X													
Perform other site-specific event notifications (DM) <span style="color: red;">Note 2</span>	SM				X														
Personnel accountability	N/A																		
Approve extension to allowable dose limits	N/A																		

**Notes:** Note 1 – RO3 relieves RO4/COM1 from RC-2 and RC-3 duties to enable RO4/COM1 to perform offsite notifications.  
Note 2 – SM notifies the Duty Manager (DM) IAW NMP-EP-142, Emergency Notification. This notification is completed within 2-3 minutes and does not affect performance of other functions.

 Task completion time

## HNP On-Shift Staffing Analysis

### Event #2      Large break LOCA with Release and PARs

Initial Conditions:

Time: Tuesday @ 0430

Unit 1 100% Power, NOP & NOT

Sequence of Events:

0430	Large Break LOCA occurs Loss of Normal AC power occurs coincident with break
0435	Reactor Level < -155 inches. Drywell pressure >1.85 psig
0505	Dose Projection indicates 1.1 R/hr at the site boundary

#### 15.3.3.2 Starting Conditions and Assumptions

The LOCA is analyzed using the following assumptions:

- A. The reactor is operating at the condition that maximizes the severity of the aspect of the accident being considered. Aspects considered are containment response, fission product release, and ECCS requirements.
- B. A complete loss of normal power (offsite) occurs simultaneously with the pipe break. This additional condition results in the longest delay time for the ECCS to become operational. The situation in which ac power availability is retained was also investigated.
- C. The recirculation line is considered to be severed instantaneously, with coolant discharged from both ends of the break. This results in the most rapid coolant loss and depressurization.
- D. When reactor water level reaches -101", all 8 MSIVs automatically close.



## HNP On-Shift Staffing Analysis

### APPENDIX B

**Event #2: DBA/ISG – Loss of Coolant Accident (LOCA) with release and PARs**

**ECL: Site Area → General Emergency**

**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 (SM)	SNC Standard E Plan Annex for HNP U1&2, Table 2.2.A	75	T5/L1 T5/L5 T5/L6 T5/L7 T5/L13 T5/L15	No	No
2.	Shift Supervisor (SRO1)	SNC Standard E Plan Annex for HNP U1&2, Table 2.2.A	N/A	T2/L1	No	No
3.	Shift Supervisor (SRO2)	SNC Standard E Plan Annex for HNP U1&2, Table 2.2.A	75	T5/L2 T5/L10 T5/L11	No	No
4.	Reactor Operator (RO1)	SNC Standard E Plan Annex for HNP U1&2, Table 2.2.A	N/A	T2/L2	No	No
5.	Reactor Operator (RO2/COM2)	SNC Standard E Plan Annex for HNP U1&2, Table 2.2.A	N/A	T2/L3	No	No
6.	Reactor Operator (RO4/COM1)	SNC Standard E Plan Annex for HNP U1&2, Table 2.2.A	75	T2/L4 T5/L3 T5/L8 T5/L12	No	No
7.	System Operator (SO5/FBM2)	SNC Standard E Plan Annex for HNP U1&2, Table 2.2.A	N/A	T2/L5	No	No
8.	RP Technician (RP1)	SNC Standard E Plan Annex for HNP U1&2, Table 2.2.A	75	T4/L1	No	No
9.	RP Technician (RP3/FMT)	SNC Standard E Plan Annex for HNP U1&2, Table 2.2.A	75	T4/L6	No	No

### HNP On-Shift Staffing Analysis

Line	On-shift Position	Emergency Plan Reference	Augmentation Elapsed Time (min)	Role in Table#/Line#	Unanalyzed Task?	TMS Required?
10.	Chemistry Technician (CT2/DA)	SNC Standard E Plan Annex for HNP U1&2, Table 2.2.A	75	T2/L6 T4/L5 T5/L9	No	No
11.	SAS Operator (SEC1)	SNC Standard E Plan Annex for HNP U1&2, Table 2.2.A	N/A	T5/L14	No	No

**Notes:** Although multiple functions have been identified for some positions, no conflict exists requiring further action. Performance of these functions by the identified positions is either acceptable by NEI 10-05 guidance, **OR** the functions are the same, **OR** the functions are performed sequentially without issue.



## HNP On-Shift Staffing Analysis

**TABLE 2 - Plant Operations & Safe Shutdown**

Event #   2  

**Two Units – One Control Room (Shared)**  
**Minimum Operations Crew Necessary to Implement**  
**ABs and EOPs, FSG, or SAMGs if applicable**

Applicable to Unit   1  

Line	Generic Title/Role	On-Shift Position	Task Performance Validation
1.	Shift Supervisor	Shift Supervisor (SRO1)	Operator Training
2.	Reactor Operator	Reactor Operator (RO1)	Operator Training
3.	Reactor Operator	Reactor Operator (RO2/COM2)	Operator Training
4.	Reactor Operator	Reactor Operator (RO4/COM1)	Operator Training
5.	System Operator	System Operator (SO5/FBM2)	Operator Training

**Notes:** See Table 2A for AB/EOP response actions

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


Line	Generic Title/Role	On-Shift Position	Task Performance Validation
6.	Chemistry Technician	Chemistry Technician (CT2/DA)	Chemistry Training

**Notes:** See Table 2A for AB/EOP response actions

## HNP On-Shift Staffing Analysis

Event # 2: Title: Table 2A - Loss of Coolant Accident (LOCA) with release and PARs

Procedure Step/Actions			Performance Time (mins) After Procedure Implementation																		
Proc/Step	Task	Assigned Resource	0-5	5-10	10-15	15-20	20-25	25-30	30-35	35-40	40-45	45-50	50-55	55-60	60-65	65-70	70-75	75-80	80-85	85-90	
31EO-EOP-010-1 RC RPV Flowchart, Rev 12.0																					
	Perform RC-1 SCRAM Immediate Actions	RO1	X																		
	Perform RC-2 and RC-3 Rx Level and Pressure Control	RO2/COM2	X (periodic)																		
31EO-EOP-012-1 Primary Containment Flowchart, Rev 7.1																					
	Initiate TORUS Spray	RO1		X																	
	Initiate Drywell Spray	RO1			X																
34AB-R22-002-1 Loss of 4160v Emergency Buss, Rev 2.0																					
	Dispatch SO to Locally Monitor EDG operations	RO1 SO5/FBM2	X																		
34AB-D11-001-1 Radioactivity Release Control, Rev 1.11																					
Step 4.1	Direct Chemistry to perform Prompt Offsite Dose Assessment	RO1						X													
	Perform Prompt Offsite Dose Assessment	CT2/DA						X (Prompt Dose Assessment initiated prior to RO1 direction)													
73EP-RAD-001-0 Radiological Event Procedure, Rev 2.3																					
Step 4.1.1	PA Announcement for Possible Release	RO4/COM1								X											
SC Flowchart	Transition to 31EO-EOP-014, Rev 13.0	SRO1								X											

 Task completion time



## HNP On-Shift Staffing Analysis

**TABLE 3 – Firefighting**

**Event #**   2  

<b>Line</b>	<b>Performed By</b>	<b>Task Analysis Controlling Method</b>
1.	N/A	N/A
2.	N/A	N/A
3.	N/A	N/A
4.	N/A	N/A
5.	N/A	N/A

**Notes:** No Fire Brigade response required for this event.


# HNP On-Shift Staffing Analysis

TABLE 4 – Radiation Protection & Chemistry

Event # 2

Line	Position Performing Function/Task	Performance Time Period After Event Initiation (Minutes)																	
		0-5	5-10	10-15	15-20	20-25	25-30	30-35	35-40	40-45	45-50	50-55	55-60	60-65	65-70	70-75	75-80	80-85	85-90
1.	In-Plant Survey On-Shift Position: RP1				X														
2.	Out of Plant Survey On-Shift Position:																		
3.	Personnel Monitoring On-Shift Position:																		
4.	Job Coverage On-Shift Position:																		
5.	Offsite Radiological Assessment On-Shift Position: CT2/DA				X														
6.	Other Site-Specific RP – Describe: FMT Support On-Shift Position: RP3/FMT				X														
7.	Chemistry function/task #1 – Describe: On-Shift Position:																		
8.	Chemistry function/task #2 – Describe: On-Shift Position:																		

**Notes:** Post trip chemistry samples are not required until after augmentation (2-4 hours after trip)  
NMP-EP-147, Offsite Dose Assessment, Rev 2.0

 Task Completion Time



## HNP On-Shift Staffing Analysis

**TABLE 5 – Emergency Plan Implementation**

Event # 2

Line	Function/Task	On-Shift Position	Task Analysis Controlling Method
1.	Declare the Emergency	SM	EP/Ops Training and EP Drill Program
2.	ERO notification	SRO2	EP/Ops Training and EP Drill Program
3.	Notification and direction to on-shift staff (e.g., to assemble, evacuate, etc.)	RO4/COM1	EP/Ops Training and EP Drill Program
4.	Abbreviated NRC Notification for DBT event	N/A	EP/Ops Training and EP Drill Program
5.	Complete State/local notification form	SM	EP/Ops Training and EP Drill Program
6.	Approve State/local notifications	SM	EP/Ops Training and EP Drill Program
7.	Approve Offsite PARs	SM	EP/Ops Training and EP Drill Program
8.	Perform State/local notifications	RO4/COM1	EP/Ops Training and EP Drill Program
9.	Dose Assessment	CT2/DA	EP/Ops Training and EP Drill Program
10.	Complete NRC event notification form	SRO2	EP/Ops Training and EP Drill Program
11.	Perform NRC notifications	SRO2	EP/Ops Training and EP Drill Program
12.	Activate ERDS	RO4/COM1	EP/Ops Training and EP Drill Program
13.	Perform other site-specific event notifications (DM) <span style="color: red;">Note 1</span>	SM	EP/Ops Training and EP Drill Program
14.	Personnel accountability	SEC1	EP/Ops Training and EP Drill Program
15.	Approve extension to allowable dose limits	SM	EP/Ops Training and EP Drill Program

**Notes:** EAL - FS1, Site Area Emergency; RG1, General Emergency  
 NMP-EP-141-002, Hatch Emergency Action Levels and Basis, Rev 1  
 NMP-EP-142, Emergency Notification, Rev 1  
 NMP-EP-143, Protective Actions, Rev 2  
 NMP-EP-147, Offsite Dose Assessment, Rev 2  
Note 1 – SM notifies the Duty Manager (DM) IAW NMP-EP-142, Emergency Notification.  
 This notification is completed within 2-3 minutes and does not affect performance of other functions.



## HNP On-Shift Staffing Analysis

Table 5A - E-Plan Implementation Timeline/Event # 2

Function/Task	On-shift Position	Time from Event Initiation (minutes)																					
		5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90				
Declare the Emergency	SM	X		FS1					X		RG1												
ERO notification	SRO2				X																		
Notification and direction to on-shift staff (e.g., to assemble, evacuate, etc.)	RO4/COM1				X			X				X											
Abbreviated NRC notification for DBT event	N/A																						
Complete State/local notification form	SM				X							X											
Approve State/local notifications	SM					X							X										
Approve Offsite PARs	SM												X										
Perform State/local notifications	RO4/COM1						X							X									
Dose Assessment	CT2/DA				X																		
Complete NRC event notification form	SRO2				X																		
Perform NRC notifications	SRO2						X (periodic)																
Activate ERDS	RO4/COM1				X																		
Perform other site-specific event notifications (DM) <sup>Note 1</sup>	SM					X																	
Personnel accountability	SEC1				X																		
Approve extension to allowable dose limits	SM										X (as needed)												

**Notes:** Note 1 – SM notifies the Duty Manager (DM) IAW NMP-EP-142, Emergency Notification. This notification is completed within 2-3 minutes and does not affect performance of other functions.

Site Area Emergency declaration actions completion time  
 General Emergency declaration actions completion time  
 Task completion time



## HNP On-Shift Staffing Analysis

### **Event #4      MSL Break outside containment isolation**

Initial Conditions:

Time: Tuesday @ 0430

Unit 1 100% Power, NOP, NOT, NOL

Sequence of Events:

0430 Double-ended guillotine MSLB occurs outside secondary containment  
Loss of Off Site Power, EDGs load to Emergency Buses  
Scram occurs  
MSIVs close in < 5.0 seconds

## HNP On-Shift Staffing Analysis

### APPENDIX B

**Event #4: DBA/ISG – Main Steam Line Break (MSLB)**

**ECL: Unusual Event**

**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 (SM)	SNC Standard E Plan Annex for HNP U1&2, Table 2.2.A	75	T5/L1 T5/L5 T5/L6 T5/L13	No	No
2.	Shift Supervisor (SRO1)	SNC Standard E Plan Annex for HNP U1&2, Table 2.2.A	N/A	T2/L1	No	No
3.	Shift Supervisor (SRO2)	SNC Standard E Plan Annex for HNP U1&2, Table 2.2.A	N/A	T5/L10	No	No
4.	Shift Support Supervisor (SRO3/FBL)	SNC Standard E Plan Annex for HNP U1&2, Table 2.2.A	75	T5/L11	No	No
5.	Reactor Operator (RO1)	SNC Standard E Plan Annex for HNP U1&2, Table 2.2.A	N/A	T2/L2	No	No
6.	Reactor Operator (RO2/COM2)	SNC Standard E Plan Annex for HNP U1&2, Table 2.2.A	N/A	T2/L3	No	No
7.	Reactor Operator (RO4/COM1)	SNC Standard E Plan Annex for HNP U1&2, Table 2.2.A	75	T5/L2 T5/L3 T5/L8	No	No
8.	System Operator (SO5/FBM2)	SNC Standard E Plan Annex for HNP U1&2, Table 2.2.A	N/A	T2/L4	No	No

**Notes:** Although multiple functions have been identified for some positions, no conflict exists requiring further action. Performance of these functions by the identified positions is either acceptable by NEI 10-05 guidance, **OR** the functions are the same, **OR** the functions are performed sequentially without issue.



## HNP On-Shift Staffing Analysis

**TABLE 2 - Plant Operations & Safe Shutdown**

**Event #** 4

**Two Units – One Control Room (Shared)**

**Applicable to Unit** 1

**Minimum Operations Crew Necessary to Implement  
ABs and EOPs, FSG, or SAMGs if applicable**


<b>Line</b>	<b>Generic Title/Role</b>	<b>On-Shift Position</b>	<b>Task Performance Validation</b>
1.	Shift Supervisor	Shift Supervisor (SRO1)	Operator Training
2.	Reactor Operator	Reactor Operator (RO1)	Operator Training
3.	Reactor Operator	Reactor Operator (RO2/COM2)	Operator Training
4.	System Operator	System Operator (SO5/FBM2)	Operator Training

**Notes:** See Table 2A for AB/EOP response actions

## HNP On-Shift Staffing Analysis

Event # 4: Title: Table 2A - Main Steam Line Break (MSLB)

Procedure Step/Actions			Performance Time (mins) After Procedure Implementation																			
Proc/Step	Task	Assigned Resource	0-5	5-10	10-15	15-20	20-25	25-30	30-35	35-40	40-45	45-50	50-55	55-60	60-65	65-70	70-75	75-80	80-85	85-90		
34AB-C71-001-1, SCRAM Procedure, Rev 12.14; 31EO-EOP-010-1, RC RPV Control Flowchart, Rev 12.0																						
	Perform RC-1 (Rx Trip Verification and Immediate Actions)	SRO1 RO1	X																			
	Perform RC-2 and RC-3 (Level and Pressure Control)	SRO1 RO2/COM2	X																			
Step 4.1	PA Announcement	RO1	X																			
Step 4.2	Trip Main Turbine (TC-1)	SRO1 RO1	X																			
34AB-R22-002-1, Loss of 4160 Emergency Buss, Rev 2.0																						
	Monitor EDG Operation	SO5/FMB2			X (periodic)																	
34SO-E11-010-1, Residual Heat Removal System Procedure, Rev 44.13																						
Step 7.2.5	Suppression Pool Cooling	SRO1 RO1			X																	
34GO-OPS-013-1, Normal Plant Shutdown Procedure, Rev 31.4																						
4.6.2	Plot Cool down	RO1							X (periodic)													

 Task completion time



## HNP On-Shift Staffing Analysis

**TABLE 3 – Firefighting**

**Event #** 4

<b>Line</b>	<b>Performed By</b>	<b>Task Analysis Controlling Method</b>
1.	N/A	N/A
2.	N/A	N/A
3.	N/A	N/A
4.	N/A	N/A
5.	N/A	N/A

**Notes:** No Fire Brigade response required for this event.

## HNP On-Shift Staffing Analysis

**TABLE 4 – Radiation Protection & Chemistry**

Event # 4

Line	Position Performing Function/Task	Performance Time Period After Event Initiation (Minutes)																	
		0-5	5-10	10-15	15-20	20-25	25-30	30-35	35-40	40-45	45-50	50-55	55-60	60-65	65-70	70-75	75-80	80-85	85-90
1.	In-Plant Survey On-Shift Position:																		
2.	Out of Plant Survey On-Shift Position:																		
3.	Personnel Monitoring On-Shift Position:																		
4.	Job Coverage On-Shift Position:																		
5.	Offsite Radiological Assessment On-Shift Position:																		
6.	Other Site-Specific RP – Describe: On-Shift Position:																		
7.	Chemistry function/task #1 – Describe: On-Shift Position:																		
8.	Chemistry function/task #2 – Describe: On-Shift Position:																		

**Notes:** Post trip sampling not required until 2-4 hours after reactor trip.



## HNP On-Shift Staffing Analysis

**TABLE 5 – Emergency Plan Implementation**

Event # 4

Line	Function/Task	On-Shift Position	Task Analysis Controlling Method
1.	Declare the Emergency	SM	EP/Ops Training and EP Drill Program
2.	ERO notification	RO4/COM1	EP/Ops Training and EP Drill Program
3.	Notification and direction to on-shift staff (e.g., to assemble, evacuate, etc.)	RO4/COM1	EP/Ops Training and EP Drill Program
4.	Abbreviated NRC Notification for DBT event	N/A	EP/Ops Training and EP Drill Program
5.	Complete State/local notification form	SM	EP/Ops Training and EP Drill Program
6.	Approve State/local notifications	SM	EP/Ops Training and EP Drill Program
7.	Approve Offsite PARs	N/A	EP/Ops Training and EP Drill Program
8.	Perform State/local notifications	RO4/COM1	EP/Ops Training and EP Drill Program
9.	Dose Assessment	N/A	EP/Ops Training and EP Drill Program
10.	Complete NRC event notification form	SRO2	EP/Ops Training and EP Drill Program
11.	Perform NRC notifications	SRO3/FBL	EP/Ops Training and EP Drill Program
12.	Activate ERDS	N/A	EP/Ops Training and EP Drill Program
13.	Perform other site-specific event notifications (DM) <span style="color: red;">Note 1</span>	SM	EP/Ops Training and EP Drill Program
14.	Personnel accountability	N/A	EP/Ops Training and EP Drill Program
15.	Approve extension to allowable dose limits	N/A	EP/Ops Training and EP Drill Program

**Notes:** EAL - SU1, Unusual Event

NMP-EP-141-002, Hatch Emergency Action Levels and Basis, Rev 1

NMP-EP-142, Emergency Notification, Rev 1

Note 1 – SM notifies the Duty Manager (DM) IAW NMP-EP-142, Emergency Notification. This notification is completed within 2-3 minutes and does not affect performance of other functions.




## HNP On-Shift Staffing Analysis

Table 5A - E-Plan Implementation Timeline/Event # 4

Function/Task	On-shift Position	Time from Event Initiation (minutes)																	
		5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90
Declare the Emergency	SM	SU1																	
ERO notification	RO4/COM1	X																	
Notification and direction to on-shift staff (e.g., to assemble, evacuate, etc.)	RO4/COM1	X			X														
Abbreviated NRC notification for DBT event	N/A																		
Complete State/local notification form	SM				X												X		
Approve State/local notifications	SM					X												X	
Approve Offsite PARs	N/A																		
Perform State/local notifications	RO4/COM1						X												X
Dose Assessment	N/A																		
Complete NRC event notification form	SRO2						X												
Perform NRC notifications	SRO3/FBL								X										
Activate ERDS	N/A																		
Perform other site-specific event notifications (DM) <span style="color: red;">Note 1</span>	SM							X											
Personnel accountability	N/A																		
Approve extension to allowable dose limits	N/A																		

**Notes:** Note 1 – SM notifies the Duty Manager (DM) IAW NMP-EP-142, Emergency Notification. This notification is completed within 2-3 minutes and does not affect performance of other functions.

 Task completion time



## HNP On-Shift Staffing Analysis

### Event #6 "Aircraft Probable Threat" response actions in accordance with 10 CFR 50.54(hh)(1)

Initial Conditions:

Time: Monday @ 2100

Unit 1&2 100% Power, NOP & NOT

Sequence of Events:

2100 Aircraft probable threat call received from NRC Headquarters.  
Call verified. Aircraft is 25 minutes from site.

## HNP On-Shift Staffing Analysis

### APPENDIX B

**Event #6: ISG – Aircraft Probable Threat**  
**TABLE 1 – On-shift Positions**

**ECL: Alert**

Line	On-shift Position	Emergency Plan Reference	Augmentation Elapsed Time (min)	Role in Table#/Line#	Unanalyzed Task?	TMS Required?
1.	Shift Manager (SM)	SNC Standard E Plan Annex for HNP U1&2, Table 2.2.A	75	T2/L1 T5/L1 T5/L2 T5/L5 T5/L6 T5/L10 T5/L13	No	No
2.	Shift Supervisor (SRO1)	SNC Standard E Plan Annex for HNP U1&2, Table 2.2.A	75	T2/L2 T5/L11	No	No
3.	Shift Supervisor (SRO2)	SNC Standard E Plan Annex for HNP U1&2, Table 2.2.A	N/A	T2/L3	No	No
4.	Shift Support Supervisor (SRO3/FBL)	SNC Standard E Plan Annex for HNP U1&2, Table 2.2.A	N/A	T2/L4 T3/L1	No	No
5.	Reactor Operator (RO1)	SNC Standard E Plan Annex for HNP U1&2, Table 2.2.A	N/A	T2/L5	No	No
6.	Reactor Operator (RO2/COM2)	SNC Standard E Plan Annex for HNP U1&2, Table 2.2.A	N/A	T2/L6	No	No
7.	Reactor Operator (RO3)	SNC Standard E Plan Annex for HNP U1&2, Table 2.2.A	N/A	T2/L7	No	No
8.	Reactor Operator (RO4/COM1)	SNC Standard E Plan Annex for HNP U1&2, Table 2.2.A	75	T2/L8 T5/L3 T5/L8 T5/L12	No	No
9.	System Operator (SO1)	SNC Standard E Plan Annex for HNP U1&2, Table 2.2.A	N/A	T2/L9	No	No



### HNP On-Shift Staffing Analysis

Line	On-shift Position	Emergency Plan Reference	Augmentation Elapsed Time (min)	Role in Table#/Line#	Unanalyzed Task?	TMS Required?
10.	System Operator (SO2)	SNC Standard E Plan Annex for HNP U1&2, Table 2.2.A	N/A	T2/L10	No	No
11.	System Operator (SO4/FBM1)	SNC Standard E Plan Annex for HNP U1&2, Table 2.2.A	N/A	T2/L11 T3/L2	No	No
12.	System Operator (SO5/FBM2)	SNC Standard E Plan Annex for HNP U1&2, Table 2.2.A	N/A	T2/L12 T3/L3	No	No
13.	System Operator (SO6/FBM3)	SNC Standard E Plan Annex for HNP U1&2, Table 2.2.A	N/A	T2/L13 T3/L4	No	No
14.	System Operator (SO7/FBM4)	SNC Standard E Plan Annex for HNP U1&2, Table 2.2.A	N/A	T2/L14 T3/L5	No	No
15.	SAS Operator (SEC1)	SNC Standard E Plan Annex for HNP U1&2, Table 2.2.A	N/A	T2/L15	No	No
16.	CAS Operator (SEC2)	SNC Standard E Plan Annex for HNP U1&2, Table 2.2.A	N/A	T2/L16	No	No

**Notes:** Although multiple functions have been identified for some positions, no conflict exists requiring further action. Performance of these functions by the identified positions is either acceptable by NEI 10-05 guidance, **OR** the functions are the same, **OR** the functions are performed sequentially without issue.

## HNP On-Shift Staffing Analysis

**TABLE 2 - Plant Operations & Safe Shutdown**

Event # 6

**Two Units – One Control Room (Shared)**

Applicable to Unit 1&2

**Minimum Operations Crew Necessary to Implement  
ABs and EOPs, FSG, or SAMGs if applicable**

Line	Generic Title/Role	On-Shift Position	Task Performance Validation
1.	Shift Manager	Shift Manager (SM)	Operator Training
2.	Shift Supervisor	Shift Supervisor (SRO1)	Operator Training
3.	Shift Supervisor	Shift Supervisor (SRO2)	Operator Training
4.	Shift Support Supervisor	Shift Support Supervisor (SRO3/FBL)	Operator Training
5.	Reactor Operator	Reactor Operator (RO1)	Operator Training
6.	Reactor Operator	Reactor Operator (RO2/COM2)	Operator Training
7.	Reactor Operator	Reactor Operator (RO3)	Operator Training
8.	Reactor Operator	Reactor Operator (RO4/COM1)	Operator Training
9.	System Operator	System Operator (SO1)	Operator Training
10.	System Operator	System Operator (SO2)	Operator Training
11.	System Operator	System Operator (SO4/FBM1)	Operator Training
12.	System Operator	System Operator (SO5/FBM2)	Operator Training
13.	System Operator	System Operator (SO6/FBM3)	Operator Training
14.	System Operator	System Operator (SO7/FBM4)	Operator Training

**Notes:** See Table 2A for AB/EOP response actions

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

Line	Generic Title/Role	On-Shift Position	Task Performance Validation
15.	SAS Operator	SAS Operator (SEC1)	Security Training
16.	CAS Operator	CAS Operator (SEC2)	Security Training


**Notes:** See Table 2A for AB/EOP response actions



## HNP On-Shift Staffing Analysis

Event # 6: Title: Table 2A - Aircraft Probable Threat

Procedure Step/Actions			Performance Time (mins) After Procedure Implementation																		
Proc/Step	Task	Assigned Resource	0-5	5-10	10-15	15-20	20-25	25-30	30-35	35-40	40-45	45-50	50-55	55-60	60-65	65-70	70-75	75-80	80-85	85-90	
34AB-Y22-005-0, Airborne Security Threat. Rev 5.0																					
Step 4.1	Establish Continuous Communications with NRC	SRO1	X (periodic)																		
Step 4.2	Notify Security	SM	X																		
Step 4.2.1.2-3	Merge PA & Maintain Communications w/ CR/Security	SEC1 SEC2	X																		
Step 5.2.1	PA Announcement	RO4/COM1	X																		
Step 5.2.1	Fire Brigade Assemble (SO's respond to FB initially, but will be re-directed based on plant needs)	SRO3/FBL SO4/FBM1 SO5/FBM2 SO6/FBM3 SO7/FBM4	X																		
Step 5.2.5.1-2	Fast Rx Shutdown (hold @ 50%)	SRO1 SRO2 RO1 RO2/COM2 RO3 RO4/COM1		X																	
Step 5.2.6	Trip and Isolate RWCU Systems	RO1 RO3		X																	
Step 5.2.8	Secure Lighting	SO1 SO2			X																

 Task completion time

## HNP On-Shift Staffing Analysis

**TABLE 3 – Firefighting**

**Event #** 6

<b>Line</b>	<b>Performed By</b>	<b>Task Analysis Controlling Method</b>
1.	Shift Support Supervisor (SRO3/FBL)	Fire Brigade Training
2.	System Operator (SO4/FBM1)	Fire Brigade Training
3.	System Operator (SO5/FBM2)	Fire Brigade Training
4.	System Operator (SO6/FBM3)	Fire Brigade Training
5.	System Operator (SO7/FBM4)	Fire Brigade Training

**Notes:** Fire Brigade assembled per 34AB-Y22-005-0.



# HNP On-Shift Staffing Analysis

**TABLE 4 – Radiation Protection & Chemistry**

Event # 6

Line	Position Performing Function/Task	Performance Time Period After Event Initiation (Minutes)																	
		0-5	5-10	10-15	15-20	20-25	25-30	30-35	35-40	40-45	45-50	50-55	55-60	60-65	65-70	70-75	75-80	80-85	85-90
1.	In-Plant Survey On-Shift Position:																		
2.	Out of Plant Survey On-Shift Position:																		
3.	Personnel Monitoring On-Shift Position:																		
4.	Job Coverage On-Shift Position:																		
5.	Offsite Radiological Assessment On-Shift Position:																		
6.	Other Site-Specific RP – Describe: On-Shift Position:																		
7.	Chemistry function/task #1 – Describe: On-Shift Position:																		
8.	Chemistry function/task #2 – Describe: On-Shift Position:																		

**Notes:** RP/Chemistry personnel in 'Duck and Cover' per PA Announcement.



## HNP On-Shift Staffing Analysis

**TABLE 5 – Emergency Plan Implementation**

Event # 6

Line	Function/Task	On-Shift Position	Task Analysis Controlling Method
1.	Declare the Emergency	SM	EP/Ops Training and EP Drill Program
2.	ERO notification	SM	EP/Ops Training and EP Drill Program
3.	Notification and direction to on-shift staff (e.g., to assemble, evacuate, etc.)	RO4/COM1	EP/Ops Training and EP Drill Program
4.	Abbreviated NRC Notification for DBT event	N/A	EP/Ops Training and EP Drill Program
5.	Complete State/local notification form	SM	EP/Ops Training and EP Drill Program
6.	Approve State/local notifications	SM	EP/Ops Training and EP Drill Program
7.	Approve Offsite PARs	N/A	EP/Ops Training and EP Drill Program
8.	Perform State/local notifications	RO4/COM1	EP/Ops Training and EP Drill Program
9.	Dose Assessment	N/A	EP/Ops Training and EP Drill Program
10.	Complete NRC event notification form	SM	EP/Ops Training and EP Drill Program
11.	Perform NRC notifications	SRO1	EP/Ops Training and EP Drill Program
12.	Activate ERDS	RO4/COM1	EP/Ops Training and EP Drill Program
13.	Perform other site-specific event notifications (DM) <span style="color: red;">Note 1</span>	SM	EP/Ops Training and EP Drill Program
14.	Personnel accountability	N/A	EP/Ops Training and EP Drill Program
15.	Approve extension to allowable dose limits	N/A	EP/Ops Training and EP Drill Program

**Notes:** EAL – HA1, Alert  
 NMP-EP-141-002, Hatch Emergency Action Levels and Basis, Rev 1  
 NMP-EP-142, Emergency Notifications, Rev 1  
Note 1 – SM notifies the Duty Manager (DM) IAW NMP-EP-142, Emergency Notification. This notification is completed within 2-3 minutes and does not affect performance of other functions.




## HNP On-Shift Staffing Analysis

Table 5A - E-Plan Implementation Timeline/Event # 6

Function/Task	On-shift Position	Time from Event Initiation (minutes)																	
		5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90
Declare the Emergency	SM	HA1																	
ERO notification	SM				X														
Notification and direction to on-shift staff (e.g., to assemble, evacuate, etc.)	RO4/COM1	X				X													
Abbreviated NRC notification for DBT event	N/A																		
Complete State/local notification form	SM				X												X		
Approve State/local notifications	SM					X												X	
Approve Offsite PARs	N/A																		
Perform State/local notifications	RO4/COM1						X												X
Dose Assessment	N/A																		
Complete NRC event notification form	SM							X											
Perform NRC notifications	SRO1	X																	
Activate ERDS	RO4/COM1					X													
Perform other site-specific event notifications (DM) <span style="color: red;">Note 1</span>	SM				X														
Personnel accountability	N/A																		
Approve extension to allowable dose limits	N/A																		

**Notes:** Note 1 – SM notifies the Duty Manager (DM) IAW NMP-EP-142, Emergency Notification. This notification is completed within 2-3 minutes and does not affect performance of other functions.

 Task completion time

## HNP On-Shift Staffing Analysis

### Event #7      ATWS

Initial Conditions:

Time: Tuesday @ 0430

Unit 1 100% Power, NOP & NOT

Sequence of Events:

0430    Inadvertent Closure of all MSIVs.

Reactor does not trip.

Supplemental and/or manual trip occurs.

### 15.4.5 ATWS

For postulated ATWS events, the following assumptions apply:

- A.      The plant is operating in a planned operating mode.
- B.      A transient - Closure of all MSIVs - requiring a scram occurs.
- C.      The control rods fail to insert.



## HNP On-Shift Staffing Analysis

### APPENDIX B

**Event #7: DBA/ISG – ATWS**

**ECL: Unusual Event**

**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 (SM)	SNC Standard E Plan Annex for HNP U1&2, Table 2.2.A	75	T5/L1 T5/L5 T5/L6 T5/L13	No	No
2.	Shift Supervisor (SRO1)	SNC Standard E Plan Annex for HNP U1&2, Table 2.2.A	N/A	T2/L1	No	No
3.	Shift Supervisor (SRO2)	SNC Standard E Plan Annex for HNP U1&2, Table 2.2.A	N/A	T5/L10	No	No
4.	Shift Support Supervisor (SRO3/FBL)	SNC Standard E Plan Annex for HNP U1&2, Table 2.2.A	75	T5/L11	No	No
5.	Reactor Operator (RO1)	SNC Standard E Plan Annex for HNP U1&2, Table 2.2.A	N/A	T2/L2 T5/L3	No	No
6.	Reactor Operator (RO2/COM2)	SNC Standard E Plan Annex for HNP U1&2, Table 2.2.A	N/A	T2/L3	No	No
7.	Reactor Operator (RO4/COM1)	SNC Standard E Plan Annex for HNP U1&2, Table 2.2.A	75	T5/L2 T5/L3 T5/L8	No	No

**Notes:** Although multiple functions have been identified for some positions, no conflict exists requiring further action. Performance of these functions by the identified positions is either acceptable by NEI 10-05 guidance, **OR** the functions are the same, **OR** the functions are performed sequentially without issue.

## HNP On-Shift Staffing Analysis

**TABLE 2 - Plant Operations & Safe Shutdown**

**Event #** 7

**Two Units – One Control Room (Shared)**

**Applicable to Unit** 1

**Minimum Operations Crew Necessary to Implement  
ABs and EOPs, FSG, or SAMGs if applicable**

<b>Line</b>	<b>Generic Title/Role</b>	<b>On-Shift Position</b>	<b>Task Performance Validation</b>
1.	Shift Supervisor	Shift Supervisor (SRO1)	Operator Training
2.	Reactor Operator	Reactor Operator (RO1)	Operator Training
3.	Reactor Operator	Reactor Operator (RO2/COM2)	Operator Training


**Notes:** See Table 2A for AB/EOP response actions



## HNP On-Shift Staffing Analysis

Event # 7: Title: Table 2A - ATWS

Procedure Step/Actions			Performance Time (mins) After Procedure Implementation																	
Proc/Step	Task	Assigned Resource	0-5	5-10	10-15	15-20	20-25	25-30	30-35	35-40	40-45	45-50	50-55	55-60	60-65	65-70	70-75	75-80	80-85	85-90
34AB-C71-001-1, SCRAM Procedure, Rev 12.14; 31EO-EOP-010-1, RC RPV Control Flowchart, Rev 12.0																				
	Perform RC-1 (Rx Trip Verification and Immediate Actions)	SRO1 RO1	X																	
	Perform RC-2 and RC-3 (Level and Pressure Control)	SRO1 RO2/COM2	X (periodic)																	
Step 4.1	PA Announcement	RO1	X																	
Step 4.2	Trip Main Turbine (TC-1)	SRO1 RO1	X																	
34SO-E11-010-1, Residual Heat Removal, Rev 44.13																				
Step 7.2.5	Suppression Pool Cooling	SRO1 RO1			X															
34GO-OPS-013-1, Normal Plant Shutdown Procedure, Rev 31.4																				
	Plot Cool down	RO1													X (periodic)					

 Task completion time

## HNP On-Shift Staffing Analysis

**TABLE 3 – Firefighting**

**Event #** 7

<b>Line</b>	<b>Performed By</b>	<b>Task Analysis Controlling Method</b>
1.	N/A	N/A
2.	N/A	N/A
3.	N/A	N/A
4.	N/A	N/A
5.	N/A	N/A

**Notes:** No Fire Brigade response required for this event.




# HNP On-Shift Staffing Analysis

TABLE 4 – Radiation Protection & Chemistry

Event # 7

Line	Position Performing Function/Task	Performance Time Period After Event Initiation (Minutes)																	
		0-5	5-10	10-15	15-20	20-25	25-30	30-35	35-40	40-45	45-50	50-55	55-60	60-65	65-70	70-75	75-80	80-85	85-90
1.	Out of Plant Survey On-Shift Position:																		
2.	Personnel Monitoring On-Shift Position:																		
3.	Job Coverage On-Shift Position:																		
4.	Offsite Radiological Assessment On-Shift Position:CT2/DA																		
5.	Other Site-Specific RP – Describe: FMT On-Shift Position: RP3/FMT																		
6.	Chemistry function/task #1 – Describe: On-Shift Position:																		
7.	Chemistry function/task #2 – Describe: On-Shift Position:																		

**Notes:** Post trip chemistry samples are not required until after augmentation (2-4 hours after trip).

 Task completion time



## HNP On-Shift Staffing Analysis

**TABLE 5 – Emergency Plan Implementation**

Event # 7

Line	Function/Task	On-Shift Position	Task Analysis Controlling Method
1.	Declare the Emergency	SM	EP/Ops Training and EP Drill Program
2.	ERO notification	RO4/COM1	EP/Ops Training and EP Drill Program
3.	Notification and direction to on-shift staff (e.g., to assemble, evacuate, etc.)	RO1 RO4/COM1	EP/Ops Training and EP Drill Program
4.	Abbreviated NRC Notification for DBT event	N/A	EP/Ops Training and EP Drill Program
5.	Complete State/local notification form	SM	EP/Ops Training and EP Drill Program
6.	Approve State/local notifications	SM	EP/Ops Training and EP Drill Program
7.	Approve Offsite PARs	N/A	EP/Ops Training and EP Drill Program
8.	Perform State/local notifications	RO4/COM1	EP/Ops Training and EP Drill Program
9.	Dose Assessment	N/A	EP/Ops Training and EP Drill Program
10.	Complete NRC event notification form	SRO2	EP/Ops Training and EP Drill Program
11.	Perform NRC notifications	SRO3/FBL	EP/Ops Training and EP Drill Program
12.	Activate ERDS	N/A	EP/Ops Training and EP Drill Program
13.	Perform other site-specific event notifications (DM) <span style="color: red;">Note 1</span>	SM	EP/Ops Training and EP Drill Program
14.	Personnel accountability	N/A	EP/Ops Training and EP Drill Program
15.	Approve extension to allowable dose limits	N/A	EP/Ops Training and EP Drill Program

**Notes:** EAL – SU5, Unusual Event  
 NMP-EP-141-002, Hatch Emergency Action Levels and Basis, Rev 1  
 NMP-EP-142, Emergency Notification, Rev 1  
Note 1 – SM notifies the Duty Manager (DM) IAW NMP-EP-142, Emergency Notification.  
 This notification is completed within 2-3 minutes and does not affect performance of other functions.



# HNP On-Shift Staffing Analysis

Table 5A - E-Plan Implementation Timeline/Event # 7

Function/Task	On-shift Position	Time from Event Initiation (minutes)																	
		5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90
Declare the Emergency	SM	SU5																	
ERO notification	RO4/COM1	X																	
Notification and direction to on-shift staff (e.g., to assemble, evacuate, etc.)	RO1	X																	
	RO4/COM1				X														
Abbreviated NRC notification for DBT event	N/A																		
Complete State/local notification form	SM				X												X		
Approve State/local notifications	SM					X												X	
Approve Offsite PARs	N/A																		
Perform State/local notifications	RO4/COM1						X												X
Dose Assessment	N/A																		
Complete NRC event notification form	SRO2							X											
Perform NRC notifications	SRO3/FBL									X									
Activate ERDS	N/A																		
Perform other site-specific event notifications (DM) <span style="color: red;">Note 1</span>	SM						X												
Personnel accountability	N/A																		
Approve extension to allowable dose limits	N/A																		

Notes: Note 1 – SM notifies the Duty Manager (DM) IAW NMP-EP-142, Emergency Notification. This notification is completed within 2-3 minutes and does not affect performance of other functions.

 Task completion time

## HNP On-Shift Staffing Analysis

### Event #8      Station (Unit) Blackout

Initial Conditions:

Time: Monday @ 0330

Unit 1 100% Power, NOP & NOT

Unit 2 100% Power, NOP & NOT

Sequence of Events:

0330    Total LOOP

Unit 1 DGs (A, B, & C) fail to start

Unit 2 DGs (A & C) start and load to emergency buses

0415    Power is restored to Unit 1 using the 1B EDG



# HNP On-Shift Staffing Analysis

## APPENDIX B

Event #8: ISG – Station Blackout (SBO)

ECL: Site Area Emergency

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 (SM)	SNC Standard E Plan Annex for HNP U1&2, Table 2.2.A	75	T5/L1 T5/L2 T5/L5 T5/L6 T5/L10 T5/L13	No	No
2.	Shift Supervisor (SRO1)	SNC Standard E Plan Annex for HNP U1&2, Table 2.2.A	N/A	T2/L1	No	No
3.	Shift Supervisor (SRO2)	SNC Standard E Plan Annex for HNP U1&2, Table 2.2.A	N/A	T2/L2	No	No
4.	Shift Support Supervisor (SRO3/FBL)	SNC Standard E Plan Annex for HNP U1&2, Table 2.2.A	N/A	T5/L11	No	No
5.	Reactor Operator (RO1)	SNC Standard E Plan Annex for HNP U1&2, Table 2.2.A	N/A	T2/L3 T5/L3	No	No
6.	Reactor Operator (RO2/COM2)	SNC Standard E Plan Annex for HNP U1&2, Table 2.2.A	N/A	T2/L4	No	No
7.	Reactor Operator (RO3)	SNC Standard E Plan Annex for HNP U1&2, Table 2.2.A	N/A	T2/L5 T5/L3	No	No
8.	Reactor Operator (RO4/COM1)	SNC Standard E Plan Annex for HNP U1&2, Table 2.2.A	75	T2/L6 T5/L3 T5/L8 T5/L12	No	No
9.	System Operator (SO3)	SNC Standard E Plan Annex for HNP U1&2, Table 2.2.A	N/A	T2/L7	No	No
10.	System Operator (SO4/FBM1)	SNC Standard E Plan Annex for HNP U1&2, Table 2.2.A	N/A	T2/L8	No	No
11.	System Operator (SO5/FBM2)	SNC Standard E Plan Annex for HNP U1&2, Table 2.2.A	N/A	T2/L9	No	No

### HNP On-Shift Staffing Analysis

Line	On-shift Position	Emergency Plan Reference	Augmentation Elapsed Time (min)	Role in Table#/Line#	Unanalyzed Task?	TMS Required?
12.	System Operator (SO6/FBM3)	SNC Standard E Plan Annex for HNP U1&2, Table 2.2.A	N/A	T2/L10	No	No
13.	System Operator (SO7/FBM4)	SNC Standard E Plan Annex for HNP U1&2, Table 2.2.A	N/A	T2/L11	No	No
14.	RP Technician (RP1)	SNC Standard E Plan Annex for HNP U1&2, Table 2.2.A	75	T2/L12 T4/L3	No	No
15.	RP Technician (RP3/FMT)	SNC Standard E Plan Annex for HNP U1&2, Table 2.2.A	75	T4/L5	No	No
16.	Chemistry Technician (CT2/DA)	SNC Standard E Plan Annex for HNP U1&2, Table 2.2.A	75	T4/L4 T5/L9	No	No
17.	SAS Operator (SEC1)	SNC Standard E Plan Annex for HNP U1&2, Table 2.2.A	N/A	T5/L14	No	No

**Notes:** Although multiple functions have been identified for some positions, no conflict exists requiring further action. Performance of these functions by the identified positions is either acceptable by NEI 10-05 guidance, **OR** the functions are the same, **OR** the functions are performed sequentially without issue.



## HNP On-Shift Staffing Analysis

**TABLE 2 - Plant Operations & Safe Shutdown**

Event # 8

**Two Units – One Control Room (Shared)**  
**Minimum Operations Crew Necessary to Implement**  
**ABs and EOPs, FSG, or SAMGs if applicable**

Applicable to Unit 1&2

Line	Generic Title/Role	On-Shift Position	Task Performance Validation
1.	Shift Supervisor	Shift Supervisor (SRO1)	Operator Training
2.	Shift Supervisor	Shift Supervisor (SRO2)	Operator Training
3.	Reactor Operator	Reactor Operator (RO1)	Operator Training
4.	Reactor Operator	Reactor Operator (RO2/COM2)	Operator Training
5.	Reactor Operator	Reactor Operator (RO3)	Operator Training
6.	Reactor Operator	Reactor Operator (RO4/COM1)	Operator Training
7.	System Operator	System Operator (SO3)	Operator Training
8.	System Operator	System Operator (SO4/FBM1)	Operator Training
9.	System Operator	System Operator (SO5/FBM2)	Operator Training
10.	System Operator	System Operator (SO6/FBM3)	Operator Training
11.	System Operator	System Operator (SO7/FBM4)	Operator Training

**Notes:** See Table 2A for AB/EOP response actions

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

Line	Generic Title/Role	On-Shift Position	Task Performance Validation
12.	RP Technician	RP Technician (RP1)	RP Training

**Notes:** See Table 2A for AB/EOP response actions



## HNP On-Shift Staffing Analysis

Event # 8: Title: Table 2A - Station (Unit) Blackout (SBO)


Procedure Step/Actions			Performance Time (mins) After Procedure Implementation																							
Proc/Step	Task	Assigned Resource	0-5	5-10	10-15	15-20	20-25	25-30	30-35	35-40	40-45	45-50	50-55	55-60	60-65	65-70	70-75	75-80	80-85	85-90						
34AB-C71-001-1, SCRAM Procedure, Rev 12.14; 31EO-EOP-010-1, RC RPV Control Flowchart, Rev 12.0																										
	Perform RC-1 (Rx Trip Verification and Immediate Actions)	SRO1 RO1	X																							
	Perform RC-2 and RC-3 (Level and Pressure Control)	SRO1 RO2/COM2	X (periodic)																							
Step 4.1	PA Announcement	RO1	X																							
Step 4.2	Trip Main Turbine (TC-1)	SRO1 RO1	X																							
34AB-R22-003-1-100, Station Blackout Flow Chart, Rev 1.0																										
	Investigate EDG and attempt re-start IAW 34AB-R43-001-1	RO1 SO5/FBM2	X																							
	Operate RCIC & Secure HPCI	SRO1 RO2/COM2	X																							
	Remove Main Turbine EBOP and RFPT Emergency Oil Pumps (Occurs after coast down of Main Turbine)	RO1			X																					
	Direct RO to secure DC Loads (U1)	SRO1	X																							
	Secure DC Loads (U1)	RO1 SO3		X																						
34AB-G41-001-1, Loss of SFP Cooling, Rev 6.6; 34AB-G41-001-2, Loss of SFP Cooling, Rev 6.2																										
Step 4.10	Install Portable Temperature Monitors in SFP	SO4/FBM1 RP1							X																	
34SO-R23-001-1, 600v/400v AC System, Rev 14.1																										
Step 7.3.5	Energize 600v AC Buss 1C from Alternate Supply	RO1 SO3										X														
34SO-E11-010-1, Residual Heat Removal, Rev 44.13																										
Step 7.2.5	Suppression Pool Cooling (U1)	RO2/COM2													X											



## HNP On-Shift Staffing Analysis

Event # 8: Title: Table 2A - Station (Unit) Blackout (SBO)

Procedure Step/Actions			Performance Time (mins) After Procedure Implementation																	
Proc/Step	Task	Assigned Resource	0-5	5-10	10-15	15-20	20-25	25-30	30-35	35-40	40-45	45-50	50-55	55-60	60-65	65-70	70-75	75-80	80-85	85-90
34AB-C71-001-2, SCRAM Procedure, Rev 13.1; 31EO-EOP-010-2, RC RPV Control Flowchart, Rev 11.0																				
	Perform RC-1 (Rx Trip Verification and Immediate Actions)	SRO2 RO3	X																	
	Perform RC-2 and RC-3 (Level and Pressure Control)	SRO2 RO3 RO4/COM1	X (periodic – RO3 relieves RO4/COM1 as needed to enable performance of State/local notifications)																	
Step 4.1	PA Announcement	RO3	X																	
Step 4.2	Trip Main Turbine (TC-1)	SRO2 RO3	X																	
	Monitor Operating EDG's (U2)	SO7/FBM4	X																	
34AB-R23-001-2, Loss of 600v Emergency Buses, Rev 4.0																				
Attachment 1	Recovery of 600v Essential Loads (U2)	RO3	X																	
	Recovery of 600v Essential Loads (U2)	SO5/FBM2 SO6/FBM3		X																
34SO-E11-010-2, Residual Heat Removal, Rev 42.10																				
Step 7.2.5	Suppression Pool Cooling (U2)	RO3					X													

 Task completion time

## HNP On-Shift Staffing Analysis

**TABLE 3 – Firefighting**

**Event #** 8

<b>Line</b>	<b>Performed By</b>	<b>Task Analysis Controlling Method</b>
1.	N/A	N/A
2.	N/A	N/A
3.	N/A	N/A
4.	N/A	N/A
5.	N/A	N/A

**Notes:** No Fire Brigade response required for this event.




## HNP On-Shift Staffing Analysis

**TABLE 4 – Radiation Protection & Chemistry**

Event # 8

Line	Position Performing Function/Task	Performance Time Period After Event Initiation (Minutes)																	
		0-5	5-10	10-15	15-20	20-25	25-30	30-35	35-40	40-45	45-50	50-55	55-60	60-65	65-70	70-75	75-80	80-85	85-90
1.	Out of Plant Survey On-Shift Position:																		
2.	Personnel Monitoring On-Shift Position:																		
3.	Job Coverage – Remote SFP Temp Monitoring On-Shift Position: RP1																		
4.	Offsite Radiological Assessment On-Shift Position: CT2/DA																		
5.	Other Site-Specific RP – Describe: FMT On-Shift Position: RP3/FMT																		
6.	Chemistry function/task #1 – Describe: On-Shift Position:																		
7.	Chemistry function/task #2 – Describe: On-Shift Position:																		

**Notes:** Post trip chemistry samples are not required until after augmentation (2-4 hours after trip).  
NMP-EP-147, Offsite Dose Assessment, Rev 2

 Task completion time



## HNP On-Shift Staffing Analysis

**TABLE 5 – Emergency Plan Implementation**

Event # 8

Line	Function/Task	On-Shift Position	Task Analysis Controlling Method
1.	Declare the Emergency	SM	EP/Ops Training and EP Drill Program
2.	ERO notification <span style="color: red;">Note 1</span>	SM	EP/Ops Training and EP Drill Program
3.	Notification and direction to on-shift staff (e.g., to assemble, evacuate, etc.)	RO1 RO3 RO4/COM1	EP/Ops Training and EP Drill Program
4.	Abbreviated NRC Notification for DBT event	N/A	EP/Ops Training and EP Drill Program
5.	Complete State/local notification form	SM	EP/Ops Training and EP Drill Program
6.	Approve State/local notifications	SM	EP/Ops Training and EP Drill Program
7.	Approve Offsite PARs	N/A	EP/Ops Training and EP Drill Program
8.	Perform State/local notifications	RO4/COM1	EP/Ops Training and EP Drill Program
9.	Dose Assessment	CT2/DA	EP/Ops Training and EP Drill Program
10.	Complete NRC event notification form	SM	EP/Ops Training and EP Drill Program
11.	Perform NRC notifications	SRO3/FBL	EP/Ops Training and EP Drill Program
12.	Activate ERDS	RO4/COM1	EP/Ops Training and EP Drill Program
13.	Perform other site-specific event notifications (DM) <span style="color: red;">Note 2</span>	SM	EP/Ops Training and EP Drill Program
14.	Personnel accountability	SEC1	EP/Ops Training and EP Drill Program
15.	Approve extension to allowable dose limits	N/A	EP/Ops Training and EP Drill Program

**Notes:** EAL – SS1, Site Area Emergency  
NMP-EP-141-002, Hatch Emergency Action Levels and Basis, Rev 1  
NMP-EP-142, Emergency Notification, Rev 1  
NMP-EP-143, Protective Actions, Rev 2  
NMP-EP-147, Offsite Dose Assessment, Rev 2  
Note 1 – SM notifies ERO using NXT Communicator (auto-dialer system). This notification is completed within 2-3 minutes and does not affect performance of other functions.  
Note 2 – SM notifies the Duty Manager (DM) IAW NMP-EP-142, Emergency Notification. This notification is completed within 2-3 minutes and does not affect performance of other functions.




## HNP On-Shift Staffing Analysis

Table 5A - E-Plan Implementation Timeline/Event # 8

Function/Task	On-shift Position	Time from Event Initiation (minutes)																	
		5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90
Declare the Emergency	SM	SS1																	
ERO notification <span style="color: red;">Note 1</span>	SM				X														
Notification and direction to on-shift staff (e.g., to assemble, evacuate, etc.)	RO1	X																	
	RO3	X																	
	RO4/COM1				X														
Abbreviated NRC notification for DBT event	N/A																		
Complete State/local notification form	SM				X												X		
Approve State/local notifications	SM					X												X	
Approve Offsite PARs	N/A																		
Perform State/local notifications	RO4/COM1						X												X
Dose Assessment	CT2/DA				X														
Complete NRC event notification form	SM						X												
Perform NRC notifications	SRO3/FBL								X										
Activate ERDS	RO4/COM1				X														
Perform other site-specific event notifications (DM) <span style="color: red;">Note 2</span>	SM								X										
Personnel accountability	SEC1				X														
Approve extension to allowable dose limits	N/A																		

**Notes:** Note 1 – SM notifies ERO using NXT Communicator (auto-dialer system). This notification is completed within 2-3 minutes and does not affect performance of other functions.  
Note 2 – SM notifies the Duty Manager (DM) IAW NMP-EP-142, Emergency Notification. This notification is completed within 2-3 minutes and does not affect performance of other functions.

 Task completion time

## HNP On-Shift Staffing Analysis

### **Event #9      Control room fire leading to evacuation and remote shutdown**

Initial Conditions:

Time: Monday @ 0330

Unit 1&2 100% Power, NOP & NOT

Sequence of Events:

0330    Smoke, sparks and flames observed coming from back of control board

0337    CR personnel attempt to extinguish flames without success

Decision made to evacuate Control Room



## HNP On-Shift Staffing Analysis

### APPENDIX B

**Event #9: ISG – Control Room Fire with Evacuation and Remote Shutdown**

**ECL: Alert**

**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 (SM)	SNC Standard E Plan Annex for HNP U1&2, Table 2.2.A	75	T2/L1 T5/L1 T5/L2 T5/L5 T5/L6 T5/L10 T5/L11 T5/L13	No	No
2.	Shift Supervisor (SRO1)	SNC Standard E Plan Annex for HNP U1&2, Table 2.2.A	N/A	T2/L2	No	No
3.	Shift Supervisor (SRO2)	SNC Standard E Plan Annex for HNP U1&2, Table 2.2.A	N/A	T2/L3	No	No
4.	Shift Support Supervisor (SRO3/FBL)	SNC Standard E Plan Annex for HNP U1&2, Table 2.2.A	N/A	T2/L4 T3/L1	No	No
5.	Reactor Operator (RO1)	SNC Standard E Plan Annex for HNP U1&2, Table 2.2.A	N/A	T2/L5	No	No
6.	Reactor Operator (RO2/COM2)	SNC Standard E Plan Annex for HNP U1&2, Table 2.2.A	N/A	T2/L6	No	No
7.	Reactor Operator (RO3)	SNC Standard E Plan Annex for HNP U1&2, Table 2.2.A	N/A	T2/L7	No	No
8.	Reactor Operator (RO4/COM1)	SNC Standard E Plan Annex for HNP U1&2, Table 2.2.A	75	T2/L8 T5/L3 T5/L8 T5/L12	No	No
9.	System Operator (SO1)	SNC Standard E Plan Annex for HNP U1&2, Table 2.2.A	N/A	T2/L9	No	No

### HNP On-Shift Staffing Analysis

Line	On-shift Position	Emergency Plan Reference	Augmentation Elapsed Time (min)	Role in Table#/Line#	Unanalyzed Task?	TMS Required?
10.	System Operator (SO2)	SNC Standard E Plan Annex for HNP U1&2, Table 2.2.A	N/A	T2/L10	No	No
11.	System Operator (SO3)	SNC Standard E Plan Annex for HNP U1&2, Table 2.2.A	N/A	T2/L11	No	No
12.	System Operator (SO4/FBM1)	SNC Standard E Plan Annex for HNP U1&2, Table 2.2.A	N/A	T2/L12 T3/L2	No	No
13.	System Operator (SO5/FBM2)	SNC Standard E Plan Annex for HNP U1&2, Table 2.2.A	N/A	T2/L13 T3/L3	No	No
14.	System Operator (SO6/FBM3)	SNC Standard E Plan Annex for HNP U1&2, Table 2.2.A	N/A	T2/L14 T3/L4	No	No
15.	System Operator (SO7/FBM4)	SNC Standard E Plan Annex for HNP U1&2, Table 2.2.A	N/A	T2/L15 T3/L5	No	No
16.	RP Technician (RP1)	SNC Standard E Plan Annex for HNP U1&2, Table 2.2.A	75	T2/L17 T4/L4	No	No
17.	RP Technician (RP2)	SNC Standard E Plan Annex for HNP U1&2, Table 2.2.A	75	T2/L18 T4/L5	No	No
18.	RP Technician (RP3/FMT)	SNC Standard E Plan Annex for HNP U1&2, Table 2.2.A	75	T4/L7	No	No
19.	Chemistry Technician (CT2/DA)	SNC Standard E Plan Annex for HNP U1&2, Table 2.2.A	75	T4/L6 T5/L9	No	No
20.	SAS Operator (SEC1)	SNC Standard E Plan Annex for HNP U1&2, Table 2.2.A	N/A	T2/L16	No	No

**Notes:** Although multiple functions have been identified for some positions, no conflict exists requiring further action. Performance of these functions by the identified positions is either acceptable by NEI 10-05 guidance, **OR** the functions are the same, **OR** the functions are performed sequentially without issue.



## HNP On-Shift Staffing Analysis

**TABLE 2 - Plant Operations & Safe Shutdown**

Event # 9

**Two Units – One Control Room (Shared)**

Applicable to Unit 1&2

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

Line	Generic Title/Role	On-Shift Position	Task Performance Validation
1.	Shift Manager	Shift Manager (SM)	Operator Training
2.	Shift Supervisor	Shift Supervisor (SRO1)	Operator Training
3.	Shift Supervisor	Shift Supervisor (SRO2)	Operator Training
4.	Shift Support Supervisor	Shift Support Supervisor (SRO3/FBL)	Operator Training
5.	Reactor Operator	Reactor Operator (RO1)	Operator Training
6.	Reactor Operator	Reactor Operator (RO2/COM2)	Operator Training
7.	Reactor Operator	Reactor Operator (RO3)	Operator Training
8.	Reactor Operator	Reactor Operator (RO4/COM1)	Operator Training
9.	System Operator	System Operator (SO1)	Operator Training
10.	System Operator	System Operator (SO2)	Operator Training
11.	System Operator	System Operator (SO3)	Operator Training
12.	System Operator	System Operator (SO4/FBM1)	Operator Training
13.	System Operator	System Operator (SO5/FBM2)	Operator Training
14.	System Operator	System Operator (SO6/FBM3)	Operator Training
15.	System Operator	System Operator (SO7/FBM4)	Operator Training

**Notes:** See Table 2A for AB/EOP response actions

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

Line	Generic Title/Role	On-Shift Position	Task Performance Validation
16.	SAS Operator	SAS Operator (SEC1)	Security Training
17.	RP Technician	RP Technician (RP1)	RP Training
18.	RP Technician	RP Technician (RP2)	RP Training

**Notes:** See Table 2A for AB/EOP response actions



### HNP On-Shift Staffing Analysis

Event # 9: Title: Table 2A - Control Room Fire with Evacuation and Remote Shutdown


Procedure Step/Actions			Performance Time (mins) After Procedure Implementation																	
Proc/Step	Task	Assigned Resource	0-5	5-10	10-15	15-20	20-25	25-30	30-35	35-40	40-45	45-50	50-55	55-60	60-65	65-70	70-75	75-80	80-85	85-90
34AB-X43-001-1, Fire Procedure, Rev 15.0: 34AB-X43-001-2, Fire Procedure, Rev 18.1																				
Step 4.3	Direct Security to Merge PA	RO2/COM2	X																	
	Merge PA	SEC1	X																	
Step 4.4	PA Announcement (Fire Brigade Response)	RO4/COM1	X																	
	FB Assemble and Respond (tied to PA announcement)	SRO3/FBL SO4/FBM1 SO5/FBM2 SO6/FBM3 SO7/FBM4	X																	
Step 4.8	SCRAM Rx IAW RC-1	SRO1 SRO2 RO1 RO3		X																
Step 5.15.1	Stop Cable Spreading Room HVAC	RO2/COM2	X																	
31RS-OPS-001-1, Shutdown From Outside the Control Room, Rev 6.1; 31RS-OPS-001-2, Shutdown From Outside the Control Room, Rev 7.1																				
Step 3.1.2	Trip Main Turbine	RO1 RO3		X																
Step 3.1.3	Place level control in single element	RO1 RO3		X																
Step 3.3	PA Announcement (Direct Ops to Remote Shutdown/CR Evacuation)	RO4/COM1		X																
	Assemble @ U1 Remote Shutdown Panel	SRO1 RO1 RO2/COM2 SO1 SO3 RP1		X																
	Assemble @ U2 Remote Shutdown Panel	SRO2 RO3 SO2 RP2		X																
Step 3.4	SM & communicator report to TSC	SM RO4/COM1		X																



### HNP On-Shift Staffing Analysis

Event # 9: Title: Table 2A - Control Room Fire with Evacuation and Remote Shutdown

Procedure Step/Actions			Performance Time (mins) After Procedure Implementation																	
Proc/Step	Task	Assigned Resource	0-5	5-10	10-15	15-20	20-25	25-30	30-35	35-40	40-45	45-50	50-55	55-60	60-65	65-70	70-75	75-80	80-85	85-90
31RS-OPS-001-1 Shutdown from Outside of the Control Room, Rev 6.1																				
4.7 - 4.12	Verify Plant Parameters	SRO1 RO1 RO2/COM2 SO1 SO3			X (periodic)															
34AB-X43-001-1, Fire Procedure, Rev 15.0 (continued)																				
Attachment 1	Safe Shutdown Actions	SO1 SO3								X										
31RS-OPS-001-2, 1 Shutdown from Outside of the Control Room, Rev 7.1																				
4.7 - 4.12	Verify Plant Parameters	SRO2 RO3 SO2			X (periodic)															
34AB-X43-001-2, Fire Procedure, Rev 18.1 (continued)																				
Attachment 1	Safe Shutdown Actions	SO2								X										

 Task completion time

## HNP On-Shift Staffing Analysis

**TABLE 3 – Firefighting**

**Event #** 9

<b>Line</b>	<b>Performed By</b>	<b>Task Analysis Controlling Method</b>
1.	Shift Support Supervisor (SRO3/FBL)	Fire Brigade Training
2.	System Operator (SO4/FBM1)	Fire Brigade Training
3.	System Operator (SO5/FBM2)	Fire Brigade Training
4.	System Operator (SO6/FBM3)	Fire Brigade Training
5.	System Operator (SO7/FBM4)	Fire Brigade Training

**Notes:** Fire Brigade response required for this event.




# HNP On-Shift Staffing Analysis

TABLE 4 – Radiation Protection & Chemistry

Event # 9

Line	Position Performing Function/Task	Performance Time Period After Event Initiation (Minutes)																	
		0-5	5-10	10-15	15-20	20-25	25-30	30-35	35-40	40-45	45-50	50-55	55-60	60-65	65-70	70-75	75-80	80-85	85-90
1.	In-Plant Survey On-Shift Position:																		
2.	Out of Plant Survey On-Shift Position:																		
3.	Personnel Monitoring On-Shift Position:																		
4.	Job Coverage On-Shift Position: RP1 <i>Note 1</i>		X																
5.	Job Coverage On-Shift Position: RP2 <i>Note 1</i>		X																
6.	Offsite Radiological Assessment <i>Note 2</i> On-Shift Position: CT2/DA				X														
7.	Other Site-Specific RP – Describe: FMT On-Shift Position: RP3/FMT				X														
8.	Chemistry function/task #1 – Describe: On-Shift Position:																		

**Notes:** *Note 1* – RP1 and RP2 provide support to Unit 1 and 2 Remote Shutdown Panels IAW 31RS-OPS-001-1/2 and provide job coverage as needed.  
*Note 2* – Initial Dose Assessment performed once, no radiological release in progress; however, CT2/DA is available to perform additional dose assessments until augmented resources assume responsibility.  
 Post trip chemistry samples are not required until after augmentation (2-4 hours after trip).  
 NMP-EP-147, Offsite Dose Assessment, Rev 2

 Task completion time



## HNP On-Shift Staffing Analysis

**TABLE 5 – Emergency Plan Implementation**

Event # 9

Line	Function/Task	On-Shift Position	Task Analysis Controlling Method
1.	Declare the Emergency	SM	EP/Ops Training and EP Drill Program
2.	ERO notification	SM	EP/Ops Training and EP Drill Program
3.	Notification and direction to on-shift staff (e.g., to assemble, evacuate, etc.)	RO4/COM1	EP/Ops Training and EP Drill Program
4.	Abbreviated NRC Notification for DBT event	N/A	EP/Ops Training and EP Drill Program
5.	Complete State/local notification form	SM	EP/Ops Training and EP Drill Program
6.	Approve State/local notifications	SM	EP/Ops Training and EP Drill Program
7.	Approve Offsite PARs	N/A	EP/Ops Training and EP Drill Program
8.	Perform State/local notifications	RO4/COM1	EP/Ops Training and EP Drill Program
9.	Dose Assessment	CT2/DA	EP/Ops Training and EP Drill Program
10.	Complete NRC event notification form	SM	EP/Ops Training and EP Drill Program
11.	Perform NRC notifications	SM	EP/Ops Training and EP Drill Program
12.	Activate ERDS	RO4/COM1	EP/Ops Training and EP Drill Program
13.	Perform other site-specific event notifications (DM) <span style="color: red;">Note 2</span>	SM	EP/Ops Training and EP Drill Program
14.	Personnel accountability	N/A	EP/Ops Training and EP Drill Program
15.	Approve extension to allowable dose limits	N/A	EP/Ops Training and EP Drill Program

**Notes:** EAL – HA6, Alert

Emergency Plan functions performed in the Technical Support Center (TSC)

NMP-EP-141-002, Hatch Emergency Action Levels and Basis, Rev 1

NMP-EP-142, Emergency Notification, Rev 1

NMP-EP-147, Offsite Dose Assessment, Rev 2

Note 1 – SM notifies ERO using NXT Communicator (auto-dialer system). This notification is completed within 2-3 minutes and does not affect performance of other functions.

Note 2 – SM notifies the Duty Manager (DM) IAW NMP-EP-142, Emergency Notification. This notification is completed within 2-3 minutes and does not affect performance of other functions.



## HNP On-Shift Staffing Analysis


Table 5A - E-Plan Implementation Timeline/Event # 9

Function/Task	On-shift Position	Time from Event Initiation (minutes)																	
		5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90
Declare the Emergency	SM	HA6																	
ERO notification <span style="color: red;">Note 1</span>	SM				X														
Notification and direction to on-shift staff (e.g., to assemble, evacuate, etc.)	RO4/COM1	X	X		X														
Abbreviated NRC notification for DBT event	N/A																		
Complete State/local notification form	SM				X												X		
Approve State/local notifications	SM					X												X	
Approve Offsite PARs	N/A																		
Perform State/local notifications	RO4/COM1						X												X
Dose Assessment	CT2/DA				X														
Complete NRC event notification form	SM						X												
Perform NRC notifications	SM								X (periodic)										
Activate ERDS	RO4/COM1						X												
Perform other site-specific event notifications (DM) <span style="color: red;">Note 2</span>	SM								X										
Personnel accountability	N/A																		
Approve extension to allowable dose limits	N/A																		

**Notes:** Emergency Plan functions are performed in the Technical Support Center (TSC) for this event.

Note 1 – SM notifies ERO using NXT Communicator (auto-dialer system). This notification is completed within 2-3 minutes and does not affect performance of other functions.

Note 2 – SM notifies the Duty Manager (DM) IAW NMP-EP-142, Emergency Notification. This notification is completed within 2-3 minutes and does not affect performance of other functions.

 Task completion time

## **HNP On-Shift Staffing Analysis**

### **Event #12      Event with initial classification of General Emergency**

Initial Conditions: Unit 1 and 2 @ 100% Power

Time: Tuesday @ 0500

An undetermined event results in fuel clad damage, primary and secondary containment failures and a release greater than PAGs at the site boundary.

Sequence of Events:

0500    Earthquake Occurs, felt in MCR

Assumptions:

1. Reactor scrammed, single unit event
2. MSIVs failed open
3. MCR indications of Steam Tunnel and Turbine Bldg High Temps
4. MCR indications of Turbine Bldg High Rad
5. Drywell Rads > 1400 R/hr



## HNP On-Shift Staffing Analysis

### APPENDIX B

**Event #12: NSIR – Initial General Emergency Classification with release exceeding PAGs (Fast Breaker) ECL: General Emergency**

**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 (SM)	SNC Standard E Plan Annex for HNP U1&2, Table 2.2.A	75	T5/L1 T5/L5 T5/L6 T5/L7 T5/L13 T5/L15	No	No
2.	Shift Supervisor (SRO1)	SNC Standard E Plan Annex for HNP U1&2, Table 2.2.A	N/A	T2/L1	No	No
3.	Shift Supervisor (SRO2)	SNC Standard E Plan Annex for HNP U1&2, Table 2.2.A	N/A	T5/L2 T5/L10	No	No
4.	Shift Support Supervisor (SRO3/FBL)	SNC Standard E Plan Annex for HNP U1&2, Table 2.2.A	N/A	T5/L11	No	No
5.	Reactor Operator (RO1)	SNC Standard E Plan Annex for HNP U1&2, Table 2.2.A	N/A	T2/L2 T5/L3	No	No
6.	Reactor Operator (RO2/COM2)	SNC Standard E Plan Annex for HNP U1&2, Table 2.2.A	N/A	T2/L3	No	No
7.	Reactor Operator (RO4/COM1)	SNC Standard E Plan Annex for HNP U1&2, Table 2.2.A	75	T2/L4 T5/L3 T5/L8 T5/L12	No	No
8.	RP Technician (RP1)	SNC Standard E Plan Annex for HNP U1&2, Table 2.2.A	75	T4/L1	No	No
9.	RP Technician (RP3/FMT)	SNC Standard E Plan Annex for HNP U1&2, Table 2.2.A	75	T4/L5	No	No

### HNP On-Shift Staffing Analysis

Line	On-shift Position	Emergency Plan Reference	Augmentation Elapsed Time (min)	Role in Table#/Line#	Unanalyzed Task?	TMS Required?
10.	Chemistry Technician (CT2/DA)	SNC Standard E Plan Annex for HNP U1&2, Table 2.2.A	75	T2/L5 T4/L4 T5/L9	No	No
11.	SAS Operator (SEC1)	SNC Standard E Plan Annex for HNP U1&2, Table 2.2.A	N/A	T5/L14	No	No

**Notes:** Although multiple functions have been identified for some positions, no conflict exists requiring further action. Performance of these functions by the identified positions is either acceptable by NEI 10-05 guidance, **OR** the functions are the same, **OR** the functions are performed sequentially without issue.



## HNP On-Shift Staffing Analysis

**TABLE 2 - Plant Operations & Safe Shutdown**

Event # 12

**Two Units – One Control Room (Shared)**  
**Minimum Operations Crew Necessary to Implement**  
**ABs and EOPs, or SAMGs if applicable**

Applicable to Unit 1

Line	Generic Title/Role	On-Shift Position	Task Performance Validation
1.	Shift Supervisor	Shift Supervisor (SRO1)	Operator Training
2.	Reactor Operator	Reactor Operator (RO1)	Operator Training
3.	Reactor Operator	Reactor Operator (RO2/COM2)	Operator Training
4.	Reactor Operator	Reactor Operator (RO4/COM1)	Operator Training

**Notes:** See Table 2A for AB/EOP response actions

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


Line	Generic Title/Role	On-Shift Position	Task Performance Validation
5.	Chemistry Technician	Chemistry Technician (CT2/DA)	Chemistry Training

**Notes:** See Table 2A for AB/EOP response actions

### HNP On-Shift Staffing Analysis

Event # 12: Title: Table 2A - Initial General Emergency classification with release requiring PARs (Fast Breaker)

Procedure Step/Actions			Performance Time (mins) After Procedure Implementation																	
Proc/Step	Task	Assigned Resource	0-5	5-10	10-15	15-20	20-25	25-30	30-35	35-40	40-45	45-50	50-55	55-60	60-65	65-70	70-75	75-80	80-85	85-90
31EO-EOP-010-1, RC RPV Control Flowchart, Rev 12.0																				
	Perform RC-1 (Rx Trip Verification and immediate actions)	SRO1 RO1	X																	
	Perform RC-2 and RC-3 (Level and Pressure Control)	SRO1 RO2/COM2	X (periodic)																	
Step 4.1	PA Announcement	RO1	X																	
Step 4.2	Trip Main Turbine (TC-1)	SRO1 RO1	X																	
31EO-EOP-014-1, SC-Secondary Containment Control Flowchart, Rev 13.0																				
	Emergency Depressurization	SRO1 RO1	X																	
73EP-RAD-001-0, Radiological Event, Rev 2.3																				
	Evacuate Rx and Turbine Buildings (Plant Page)	RO4/COM1	X																	
34AB-D11-001-1, Radioactivity Release Control. Rev 1.11																				
Step 4.1	Direct Chemistry Technician to perform Prompt Offsite Dose Assessment	RO1		X																
	Perform Prompt Offsite Dose Assessment	CT2/DA				X														

 Task completion time



## HNP On-Shift Staffing Analysis

**TABLE 3 – Firefighting**

**Event #** 12

<b>Line</b>	<b>Performed By</b>	<b>Task Analysis Controlling Method</b>
1.	N/A	N/A
2.	N/A	N/A
3.	N/A	N/A
4.	N/A	N/A
5.	N/A	N/A

**Notes:** No Fire Brigade response required for this event.


# HNP On-Shift Staffing Analysis

TABLE 4 – Radiation Protection & Chemistry

Event # 12

Line	Position Performing Function/Task	Performance Time Period After Event Initiation (Minutes)																	
		0-5	5-10	10-15	15-20	20-25	25-30	30-35	35-40	40-45	45-50	50-55	55-60	60-65	65-70	70-75	75-80	80-85	85-90
1.	In Plant Survey On-Shift Position: RP1				X														
2.	Personnel Monitoring On-Shift Position:																		
3.	Job Coverage On-Shift Position:																		
4.	Offsite Radiological Assessment On-Shift Position: CT2/DA				X														
5.	Other Site-Specific RP – Describe: FMT On-Shift Position: RP3/FMT				X														
6.	Chemistry function/task #1 – Describe: On-Shift Position:																		
7.	Chemistry function/task #2 – Describe: On-Shift Position:																		

**Notes:** Post trip chemistry samples are not required until after augmentation (2-4 hours after trip).  
NMP-EP-147, Offsite Dose Assessment, Rev 2

 Task completion time



## HNP On-Shift Staffing Analysis

**TABLE 5 – Emergency Plan Implementation**

Event # 12

Line	Function/Task	On-Shift Position	Task Analysis Controlling Method
1.	Declare the Emergency	SM	EP/Ops Training and EP Drill Program
2.	ERO notification	SRO2	EP/Ops Training and EP Drill Program
3.	Notification and direction to on-shift staff (e.g., to assemble, evacuate, etc.)	RO1 RO4/COM1	EP/Ops Training and EP Drill Program
4.	Abbreviated NRC Notification for DBT event	N/A	EP/Ops Training and EP Drill Program
5.	Complete State/local notification form	SM	EP/Ops Training and EP Drill Program
6.	Approve State/local notifications	SM	EP/Ops Training and EP Drill Program
7.	Approve Offsite PARs	SM	EP/Ops Training and EP Drill Program
8.	Perform State/local notifications	RO4/COM1	EP/Ops Training and EP Drill Program
9.	Dose Assessment	CT2/DA	EP/Ops Training and EP Drill Program
10.	Complete NRC event notification form	SRO2	EP/Ops Training and EP Drill Program
11.	Perform NRC notifications	SRO3/FBL	EP/Ops Training and EP Drill Program
12.	Activate ERDS	RO4/COM1	EP/Ops Training and EP Drill Program
13.	Perform other site-specific event notifications (DM) <b>Note 1</b>	SM	EP/Ops Training and EP Drill Program
14.	Personnel accountability	SEC1	EP/Ops Training and EP Drill Program
15.	Approve extension to allowable dose limits	SM	EP/Ops Training and EP Drill Program

**Notes:** EAL – FG1, General Emergency  
 NMP-EP-141-002, Hatch Emergency Action Levels and Basis, Rev 1  
 NMP-EP-142, Emergency Notification, Rev 1  
 NMP-EP-143, Protective Actions, Rev 2  
 NMP-EP-147, Offsite Dose Assessment, Rev 2  
**Note 1** – SM notifies the Duty Manager (DM) IAW NMP-EP-142, Emergency Notification.  
 This notification is completed within 2-3 minutes and does not affect performance of other functions.




## HNP On-Shift Staffing Analysis

Table 5A - E-Plan Implementation Timeline/Event # 12

Function/Task	On-shift Position	Time from Event Initiation (minutes)																			
		5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90		
Declare the Emergency	SM	FG1																			
ERO notification	SRO2				X																
Notification and direction to on-shift staff (e.g., to assemble, evacuate, etc.)	RO1	X																			
	RO4/COM1				X																
Abbreviated NRC notification for DBT event	N/A																				
Complete State/local notification form	SM				X												X				
Approve State/local notifications	SM					X												X			
Approve Offsite PARs	SM					X												X			
Perform State/local notifications	RO4/COM1						X												X		
Dose Assessment	CT2/DA			X																	
Complete NRC event notification form	SRO2							X													
Perform NRC notifications	SRO3/FBL								X					X							
Activate ERDS	RO4/COM1				X																
Perform other site-specific event notifications (DM) <small>Note 1</small>	SM							X													
Personnel accountability	SEC1				X																
Approve extension to allowable dose limits	SM	X (as needed)																			

**Notes:** Note 1 – SM notifies the Duty Manager (DM) IAW NMP-EP-142, Emergency Notification. This notification is completed within 2-3 minutes and does not affect performance of other functions.

 Task completion time



**Joseph M. Farley Nuclear Plant - Units 1 and 2  
Edwin I. Hatch Nuclear Plant - Units 1 and 2  
Vogtle Electric Generating Plant - Units 1 and 2  
License Amendment Request to Revise Technical Specification 5.2.2.g and  
Update Emergency Plan Minimum On-shift Staff Tables**

**Attachment 5**

**Farley Nuclear Plant Revised Emergency Plan On-Shift Staffing Analysis**