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10 CFR 50.90
10 CFR 50.54(q)(4)

BVY 14-018

March 24, 2014

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

SUBJECT: Proposed Changes to the Vermont Yankee Emergency Plan
Vermont Yankee Nuclear Power Station
Docket No. 50-271
License No. DPR-28

REFERENCE: 1. Letter, Entergy Nuclear Operations, Inc. to USNRC, "Notification of Permanent Cessation of Power Operations," BVY 13-079, dated September 23, 2013 (ML13273A204)

Dear Sir or Madam:

Pursuant to 10 CFR 50.90, Entergy Nuclear Operations, Inc. (ENO) requests an amendment to Renewed Facility Operating License Number DPR-28 for Vermont Yankee Nuclear Power Station (VY). The proposed amendment would revise the site emergency plan (SEP) for the permanently defueled condition. The proposed changes are being submitted to the NRC for approval prior to implementation, as required under 10 CFR 50.54(q)(4).

The proposed SEP changes would revise the on-shift staffing and Emergency Response Organization (ERO) staffing. ENO has reviewed the proposed changes against the planning standards in 10 CFR 50.47(b) and requirements in 10 CFR 50, Appendix E and concludes that the standards and requirements will continue to be met.

On September 23, 2013, ENO informed the NRC that VY will permanently cease operations at the end of the current operating cycle, which is expected to occur in the fourth quarter of 2014 (Reference 1). Upon docketing of the certifications for permanent cessation of operations (10 CFR 50.82(a)(1)(i)) and permanent removal of fuel from the reactor vessel (10 CFR 50.82(a)(1)(ii)), pursuant to 10 CFR 50.82(a)(2), the 10 CFR Part 50 license for VY will no longer authorize operation of the reactor or emplacement or retention of fuel into the reactor vessel.

The proposed changes to the SEP are commensurate with the reduced spectrum of credible accidents in the permanently defueled condition. In order to assist in the transition from an operating facility to a permanently defueled facility, the changes are required to properly reflect the

conditions of the facility while continuing to preserve the VY Decommissioning Trust Fund and the effectiveness of the SEP.

The proposed changes have been evaluated in accordance with 10 CFR 50.91(a)(1) using criteria in 10 CFR 50.92(c), and ENO has determined that this change involves no significant hazards consideration. ENO has also determined that the proposed SEP changes satisfy the criteria for categorical exclusion in accordance with 10 CFR 51.22(c)(9) and do not require an environmental review. Therefore, pursuant to 10 CFR 51.22(b), no environmental impact statement or environmental assessment is required.

The description and evaluation of the proposed SEP changes are contained in Attachment 1. Attachment 2 provides a tabular summary of the proposed changes to the SEP. Attachment 3 provides the revised pages of the SEP with the proposed changes. Attachment 4 provides the post-shutdown on-shift staffing analysis. Attachment 5 provides the analysis of Emergency Response Organization (ERO) tasks that will be transferred to remaining ERO positions.

Attachment 6 of this letter contains a new regulatory commitment.

In accordance with 10 CFR 50.91(b)(1), a copy of this application, with attachments, is being provided to the designated state of Vermont official.

ENO requests review and approval of the proposed license amendment by January 1, 2015 with a 60 day implementation period. Approval of these changes by this date will allow VY adequate time to implement changes to the emergency plan and emergency response organization following completion of defueling activities. ENO requests that the approved amendment become effective upon docketing of the certifications required by 10 CFR 50.82(a)(1).

If you have any questions on this transmittal, please contact Mr. Coley Chappell at 802-451-3374.

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

Executed on March 24, 2014.

Sincerely,

CJW/plc

Attachments:
1. Description and Evaluation of Proposed Changes
2. Tabular Summary of Proposed Changes to Site Emergency Plan
3. Proposed Revision to Site Emergency Plan Pages
4. Analysis of Proposed Post-Shutdown On-Shift Staffing
5. ERO Task Analysis
6. List of Regulatory Commitments

cc: Mr. William M. Dean
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VT Department of Public Service
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Attachment 1

Vermont Yankee Nuclear Power Station

Description and Evaluation of Proposed Changes

1. SUMMARY DESCRIPTION

This evaluation supports a request to amend the Renewed Facility Operating License (OL) DPR-28 for Vermont Yankee Nuclear Power Station (VY).

The proposed changes would revise VY Site Emergency Plan (SEP) on-shift and Emergency Response Organization (ERO) staffing to support the planned permanent cessation of operations and permanent defueling of the VY reactor (Reference 1).

A post-shutdown on-shift staffing assessment (OSA) was performed to provide the basis for the proposed changes to the on-shift staffing. VY currently has one (1) Shift Manager (SM), one (1) Control Room Supervisor (CRS), two (2) Control Room Operators (CRO), six (6) Auxiliary Operators (AOs), one (1) Radiation Protection Technician, one (1) Chemistry Technician and one (1) Shift Technical Advisor (STA) on shift. The post-shutdown OSA shows that an on-shift complement of one (1) SM, one (1) CRS/Certified Fuel Handler (CFH), one (1) Radiation Protection Technician and three (3) CROs/AOs/Non-Certified Operators (NCOs) will be required in the permanently defueled condition since the consequences of credible events will be reduced when compared to the events that can occur with an operating reactor.

The number of on-shift and ERO staff at VY following permanent defueling will be reduced from current normal operating levels, but are commensurate with the need to safely store spent fuel at the facility in a manner that is protective of public health and safety.

ENO has reviewed the proposed changes against the planning standards in 10 CFR 50.47(b) and requirements in 10 CFR 50, Appendix E, “Emergency Planning and Preparedness for Production and Utilization Facilities,” and has concluded that the standards and requirements will continue to be met. Therefore, no exemption from 10 CFR 50.47 or 10 CFR 50, Appendix E is requested.

2. PROPOSED CHANGES

The proposed changes would revise the SEP to reflect the permanently shutdown and defueled condition. Specifically, the proposed changes would eliminate the on-shift positions not needed for the safe storage of spent fuel in the spent fuel pool (SFP) during the initial decommissioning period and eliminate the ERO positions not necessary to effectively respond to credible accidents.

Attachment 2 provides a tabular summary of the proposed changes to the SEP. Attachment 3 provides the revised pages of the SEP with the proposed changes shown in strikethrough and underline format. The changes shown in Attachments 2 and 3 include additional changes beyond those involving a reduction in staffing. NRC approval of these additional changes is not being requested. These additional changes are included for informational purposes.

<u>On-Shift Staffing</u>

Currently, SEP Table 8.4, “Minimum Staffing Requirements for the ENVY ERO,” specifies the on-shift and augmented staffing for certain positions in the following Major Functional Areas:

- Plant Operations & Assessment of Operational Aspects
- Emergency Direction & Control
- Notification/Communication
- Radiological Accident Assessment and Support of Operational Accident Assessment
- Plant System Engineering
- Repair & Corrective Actions
- In-Plant Protective Actions

- Fire Fighting
- Rescue Operations & First Aid
- Site Access Control & Personnel Accountability

The proposed changes to the SEP will eliminate the following on-shift positions:

- Two (2) CROs
- Three (3) AOs
- STA
- Chemistry Technician

Operations on-shift personnel will consist of one (1) SM, one (1) CRS/CFH and three (3) CROs/AOs/ NCOs. Title changes for the CRS and CRO/AO to CFH and NCO, respectively, are dependent upon NRC approval of proposed changes to the VY Technical Specifications (Reference 2) that revise the minimum shift staffing requirements in the VY Technical Specifications by replacing references to licensed and non-licensed operators with references to CFHs and NCOs. These staffing levels have been evaluated in the VY analysis of proposed post-shutdown on-shift staffing in conjunction with the postulated accidents that will be applicable in the permanently defueled condition. The analysis is provided in Attachment 4 of this submittal.

The term NCO is used to differentiate from CFH. CFHs will supervise fuel handling operations in the permanently defueled condition. CRSs and SMs will be qualified as CFHs. However, the SM requires additional qualification beyond the CFH training. Therefore, any reference to the CFH position throughout this submittal is considered to be equivalent to the current CRS position. NCOs will perform duties typically associated with those performed by AOs and CROs, such as manipulation and monitoring of plant equipment. NCOs will also be assigned to monitor indications and communications in the Control Room. Reference 3 submitted a CFH training program for NRC approval. Dedicated CROs will not be utilized in the permanently defueled condition.

The proposed changes to the on-shift organization are identified in Section 8.1, “Normal Plant Organization,” of the SEP, Table 8.4, and Figure 8.1, “Defueled On-Shift Emergency Organization.”

Emergency Response Organization Staffing

Currently, SEP Table 8.4 specifies the on-shift and augmented staffing for certain positions in the Major Functional Areas identified above. The proposed changes to the SEP will eliminate the augmented Technical Support Center (TSC) Reactor Engineer position identified in Section 8.2.2, “Emergency Plant Manager” and Table 8.4. The TSC Reactor Engineer is also identified in Table 9.1, “Vermont Yankee Emergency Response,” as a position notified at an Alert, Site Area Emergency or General Emergency and required to activate the TSC.

The proposed changes to the SEP will also eliminate non-minimum (i.e., not required for facility activation) ERO positions currently identified in Table 8.3, “A Summary of Offsite Coordination,” Figure 8.2, “VY Emergency Management Organization,” Figure 8.3, “Technical Support Center Emergency Organization,” Figure 8.4, “Operations Support Center Emergency Organization,” Figure 8.5, “Emergency Operations facility Organization,” Figure 8.7, “Joint Information Center Organization,” and Table 9.1, “Vermont Yankee Emergency Response” Specific positions identified for elimination are listed in Table 1 of this attachment.

3. REASON FOR PROPOSED CHANGES

The proposed changes are desired to reflect the pending permanent cessation of operation and permanent defueling of the VY reactor at the end of the current operating cycle. After the reactor is shut down, all fuel assemblies will be removed from the reactor vessel and placed in the SFP. The irradiated fuel will be stored in the SFP and in the Independent Spent Fuel Storage Installation (ISFSI) until it is shipped off-site in accordance with the schedules that will be described in the Post-Shutdown Decommissioning Activities Report (PSDAR) and updated Irradiated Fuel Management Plan. Upon docketing of the certifications for permanent cessation of operations (10 CFR 50.82(a)(1)(i)) and permanent removal of fuel from the reactor vessel (10 CFR 50.82(a)(1)(ii)), pursuant to 10 CFR 50.82(a)(2), the 10 CFR Part 50 license for VY will no longer authorize operation of the reactor or emplacement or retention of fuel into the reactor vessel.

The proposed revisions to the SEP are commensurate with the reduction in hazards associated with the permanently defueled condition and will allow the facility staff to transition from that required for an operating facility to that required for a permanently defueled facility. The proposed changes are required to properly reflect the conditions of the facility while continuing to preserve the VY Decommissioning Trust Fund and the effectiveness of the SEP.

4. BACKGROUND

On-Shift and ERO Staffing

NUREG-0654, “Criteria for Preparation and Evaluation of Radiological Emergency Response Plans and Preparedness in Support of Nuclear Power Plants,” (Reference 4), Section II.B, “Onsite Emergency Organization,” presents guidance for meeting the planning standards and requirements of 10 CFR 50.47(b) and 10 CFR 50, Appendix E, Section IV.A. The guidance describes the onsite emergency organization, including the staffing requirements found in Table B-1, “Minimum Staffing Requirements for NRC Licensees for Nuclear Power Plant Emergencies.” This table specifies a minimum of ten on-shift responders in four Major Functional Areas. It also specifies seven on-shift response functions where the duties may be performed by shift personnel who are assigned other functions (i.e., there are no dedicated responders to perform these functions). Table B-1 specifies two Major Functional Areas (i.e., firefighting and site access control/personnel accountability) which must be staffed on a site-specific basis.

The on-shift staff must be able to cope with a spectrum of events until augmenting ERO personnel arrive in accordance with the site’s emergency plan commitments. The augmenting ERO responders assume many managerial, engineering, and administrative duties from the on-shift personnel, allowing on-shift personnel to focus more fully on plant operations.

On November 23, 2011, the NRC published a final rule in the Federal Register amending certain emergency preparedness (EP) requirements in its regulations that govern domestic licensing of production and utilization facilities (Reference 5). This final rule amended 10 CFR Part 50, Appendix E, Section IV.A, “Organization,” to address the assignment of tasks or responsibilities to on-shift ERO personnel that could potentially overburden them and prevent the timely performance of their emergency plan functions. Specifically, Section IV.A.9 states that licensees shall perform “…a detailed analysis demonstrating that on-shift personnel assigned emergency plan implementation functions are not assigned responsibilities that would prevent the timely performance of their assigned functions as specified in the emergency plan.”

Coincident with the rule change in 10 CFR 50, Appendix E, Section IV.A.9, the NRC issued NSIR/DPR-ISG-01, “Interim Staff Guidance – Emergency Planning for Nuclear Power Plants” (Reference 6). This Interim Staff Guidance (ISG) provides information relevant to performing the

on-shift staffing analysis. The ISG states that the Nuclear Energy Institute (NEI) developed NEI 10-05, “Assessment of On-Shift Emergency Response Organization Staffing and Capabilities,” (Reference 7) to establish a standard methodology for a licensee to perform the required staffing analysis, and that the NRC reviewed NEI 10-05 and found it to be an acceptable methodology for this purpose. The ISG also indicates that the completed staffing analyses are required to be part of the emergency plan and the results documented and submitted to the NRC in accordance with 10 CFR 50.54(q)(5).

4.1 VY Specific Background

On-Shift Staffing

In December 2012, an OSA was performed in accordance with the NEI 10-05 guidance to satisfy the requirements of 10 CFR 50, Appendix E Section IV.A.9. This analysis examined the capability of the minimum staff listed in Table 8.4 of the SEP to perform the key emergency response actions for events described in the ISG until augmenting ERO staff arrive. The analysis was conducted by a cross disciplinary team of corporate EP personnel and station personnel from the Operations, Training, Radiation Protection (RP), Chemistry, Licensing and EP departments. The emergency response to each of the events described in the ISG was determined by conducting a tabletop of the event using the emergency plan and procedures and the applicable departmental procedures such as emergency and off normal procedures. Each scenario was reviewed by the cross disciplinary team to determine what plant actions and emergency plan implementation actions were required based on plant procedures prior to staff augmentation. These actions were then compared to the minimum staffing for emergency response implementation as described in Table 8.4, ensuring that no actions were assigned to staff members that conflicted with either their dedicated emergency response role or their dedicated operational role, as appropriate. In cases where multiple tasks were assigned to an individual, the team evaluated the timing of the tasks to ensure that they could be performed by the individual in series within any specified time requirements. The Design Basis Accident scenarios considered in this OSA were the control rod drop accident (CRDA), loss of coolant accident (LOCA), main steam line break (MSLB) accident and fuel handling accident (FHA).

The OSA was updated in December 2013 and concluded that an on-shift staff of thirteen is required to respond to the most limiting accident scenario, which was determined to be a Control Room fire and plant shutdown at the remote shutdown panel.

SEP Table 8.4 specifies the minimum staffing requirements for the VY ERO and defines the positions initially responsible for satisfying key ERO functions and specifies positions that will augment the on-shift staff.

Emergency Response Organization Staffing

The VY SEP defines four classes of emergency events; Notification of Unusual Event (UE), Alert, Site Area Emergency (SAE) and General Emergency (GE). Because on-shift personnel can normally address an emergency response to UEs without additional support, staff augmentation is not activated for an UE declaration. The Operations SM maintains responsibility during UEs. The second classification level, Alert, requires ERO activation of all Emergency Response Facilities (ERFs). This includes the Technical Support Center (TSC), the Operations Support Center (OSC), the Emergency Operations Facility (EOF) and the Joint Information Center (JIC). Overall responsibility for the event is assumed by the Emergency Director in the EOF. When the ERO is activated, notification is sent to those required to respond to their assigned ERF.

VY SEP Section 8.0, “Organization,” describes how the normal plant operating organization transitions into an ERO to effectively deal with any incident at VY. Section 8.1, “Normal Plant Organization,” describes the normal operation organization on duty at the plant during all shifts.

The VY Emergency Management Organization is shown in SEP Figure 8.2. Staffing for the onsite emergency response facilities is shown in SEP Figure 8.3 (TSC) and SEP Figure 8.4 (OSC). Staffing for the off-site emergency response facilities is shown in SEP Figure 8.5 (EOF/Recovery Center) and SEP Figure 8.7 (JIC). All or portions of these organizations are activated depending upon the emergency classification. Elements of the emergency response plan are activated subsequent to an emergency declaration by the SM; designated company personnel are notified and will report to designated locations. The emergency response actions of the personnel already present are performed on a priority basis depending on the emergency conditions and the immediate need which those conditions dictate, as determined by the on-shift operations crew.

Plans and procedures have been put into place to ensure the timely activation of emergency response facilities. SEP Table 9.1 identifies the personnel required to staff and activate the TSC, OSC, the EOF/Recovery Center, and the JIC. Depending upon the emergency classification, different levels of mobilization are implemented. The mobilization scheme ensures that specific technical disciplines identified by Table B-1 of NUREG-0654 can be augmented within appropriate time frames.

5. TECHNICAL EVALUATION

5.1 Accident Analysis

Section 14 of the VY Updated Final Safety Analysis Report (UFSAR) describes the Abnormal Operational Transients and DBA scenarios that are applicable during plant operations. Other accidents evaluated in the UFSAR include a Station Blackout (SBO) event, 10 CFR 50 Appendix R fire events and an Anticipated Transient without SCRAM (ATWS) event. Upon docketing of the certifications required by 10 CFR 50.82(a)(1), the 10 CFR Part 50 license for VY will no longer authorize operation of the reactor or emplacement or retention of fuel into the reactor vessel, as specified in 10 CFR 50.82(a)(2). Therefore, most of the accident scenarios postulated in the UFSAR will no longer be applicable once VY is in the permanently defueled condition.

The postulated DBA that will remain applicable to VY in its permanently shutdown and defueled condition is the FHA in the reactor building, where the SFP is located. UFSAR Section 14 will be revised to eliminate the DBAs that will not be applicable in the permanently defueled condition. These DBAs are the CRDA, LOCA and MSLB accident.

SBO, Appendix R fire and ATWS were not considered in the post-shutdown OSA. Once the certifications required by 10 CFR 50.82(a)(1) are docketed, VY will no longer be licensed to operate and 10 CFR 50.63 (the Station Blackout Rule) will no longer be applicable pursuant to 10 CFR 50.63(a)(1). Similarly, 10 CFR 50 Appendix R is applicable to licensed nuclear power generating stations. Once the certifications required by 10 CFR 50.82(a)(1) are docketed, VY will no longer be licensed to generate nuclear power. Finally, since the Part 50 license will no longer authorize emplacement or retention of fuel in the reactor vessel, an ATWS will no longer be a credible event.

A comparison of the accident scenarios included in the current and post-shutdown OSA is provided in the next section.

5.2 Analysis of Proposed Changes

ERO Staffing

In the permanently defueled condition, VY will maintain ERO teams, with one complete team being on duty and on-call at any given time. When the SM directs the activation of the ERO call out system, all ERO members are notified to ensure adequate coverage of all ERO positions at all ERFs.

VY requires members to act promptly in reporting to their assigned ERF even when not on duty. During duty periods, the procedure further requires that team members respond within the required response time for their ERF (unless a longer time frame is specified for their specific ERO position) and that they remain fit for duty throughout the duty assignment. Individuals are trained to respond to their ERF even if they are not on duty. Excess personnel that respond may be assigned support responsibilities or be designated as a relief shift. This conservative policy ensures timely activation since some off duty personnel may respond sooner than the on duty personnel.

The proposed revisions to the SEP will not change these requirements. It will continue to be a management expectation that all duty and support ERO members report to their respective ERF as quickly as possible.

Currently, VY maintains a minimum of four (4) persons per ERO position as specified in SEP Table 8.4, Note 3. In order to provide flexibility and optimize the staff available in the permanently defueled condition, SEP Table 8.4, Note 3, is being revised to remove the minimum number of persons per ERO position and state the following:

> "ENVY has designated ERO members who staff positions required to meet minimum staffing to activate the TSC, OSC and EOF. The minimum staff positions required to activate the TSC and EOF are shown in E Plan Figures 8.3 and 8.5. The OSC Manager is the only position required to activate and staff the OSC. All ERO personnel are expected to respond when notified by the emergency call-in notification system."

Emergency Preparedness Operating Procedures identify ERO positions assigned to each facility and the minimum staffing required before each facility can be declared operational. These positions are summarized in Table 1.

Table 1 - Emergency Response Organization Positions

Procedure	Facility	Current Positions	Proposed Positions	Current Minimum Staff Position
EPOP-TSC-3542	TSC	Emergency Plant Manager	Emergency Plant Manager	Yes
		TSC Manager		No
		Operations Coordinator	Operations Coordinator	Yes
		Radiological Coordinator	Radiological Coordinator	Yes
		TSC Reactor Engineer		Yes
		Engineering Coordinator	Engineering Coordinator	Yes
		Maintenance Coordinator	Maintenance Coordinator	Yes
		Manpower and Planning Liaison		No
		ENS Communicator	ENS Communicator	No
		TSC Communicator		No
		TSC Engineers		No
		IT Specialist		No
EPOP-OSC-3544	OSC	OSC Manager	OSC Manager	Yes
		Operations Support		No
		I&C/Electrical Coordinator		No
		Mechanical Coordinator		No
		Rad/Chem Coordinator		No
		Work Control Coordinator		No
		OSC Log Keeper		No
EPOP-EOF-3546	EOF	Emergency Director	Emergency Director	Yes
		EOF Manager		No
		Technical Advisor	Technical Advisor	Yes
		EOF Communicator		No
		Radiological Assessment Coordinator	Radiological Assessment Coordinator	Yes
		Offsite Communicator	Offsite Communicator	Yes
		Public Information Liaison		No
		Lead Offsite Liaison	Lead Offsite Liaison	No
		Offsite Team Coordinator	Offsite Team Coordinator	No
		Administration and Logistics Coordinator	Administration and Logistics Coordinator	No
		Emergency Planning Coordinator		No
		IT Specialist		No
		Dose Assessor	Dose Assessor	No
		Offsite Liaisons	Offsite Liaisons	No
		Personnel & Equipment Monitor	Personnel & Equipment Monitor	No
		EOF Log Keeper		No
EPOP-JIC-3550	JIC	Company Spokesperson	Company Spokesperson	Yes
		JIC Manager	JIC Manager	No
		Information Coordinator		No
		Press Release Writer		No
		Logistics Coordinator		No
		Technical Assistant		No
		Technical Advisor	Technical Advisor	No
		JIC Log Keeper		No
		Inquiry Response Coordinator		No
		Inquiry Responder	Inquiry Responder	No
		Media Monitor/Status Phone Recorder		No
		Media Monitor	Media Monitor	No
		Media Liaison	Media Liaison	No
		Credentialing		No

These procedures will continue to assign responsibilities to ERO responders with the purposes of removing the responsibilities of coordinating with offsite responders and delivering information to the public from the Control Room, allowing operations personnel to focus on returning the plant to a safe condition.

The current SEP and the ERO staffing required by implementing procedures is intended to address the risks to public health and safety inherent in an operating reactor. The risk in the permanently defueled condition is significantly reduced. Many of the potential initiating conditions that would lead to an emergency declaration will no longer be credible. The set of plant equipment required in the permanently defueled condition is also greatly reduced, which reduces the assessments and mitigation activities the TSC/OSC must perform.

Restoration of equipment supporting spent fuel cooling and inventory will be the primary focus of emergency mitigation actions for the TSC/OSC in a permanently shutdown and defueled condition. Although ERO activation/response time requirements will be unchanged, the elimination of credible accidents involving an operating reactor provides additional time to plan and execute assessment and mitigation actions. The proposed changes do not impact the capability to assess and monitor actual or potential offsite consequences of a radiological emergency. Appropriate assessment and mitigation are well within the capabilities of the reduced TSC/OSC/EOF staff.

ERO duties have been reviewed and duties for eliminated positions will be transferred appropriately. The proposed staffing changes eliminate one minimum staff ERO position, the TSC Reactor Engineer. This position can be eliminated without increasing the risk to public health and safety because the major task of evaluating core/thermal hydraulics is not necessary in a permanently shutdown and defueled condition. Remaining ERO positions will inherit duties from eliminated positions, but not to the extent of jeopardizing the ERF mission. Attachment 5 contains the results of the task analysis for the eliminated and remaining ERO positions.

There are two positions being eliminated that had tasks that involved interfacing with state and local officials was the EOF Manager and the JIC Logistics Coordinator. The EOF Manager briefed these officials when they arrived at the EOF. This is a duplicate effort with the Lead Offsite Liaison (which is not being eliminated). Therefore, there will be no impact on the existing interface with the elimination of the EOF Manager. The JIC Logistics Coordinator was responsible for copying and distribution of press releases in the JIC to state and local officials. This task is going to be assumed by the JIC Manager. Therefore, the elimination of the JIC Logistics Coordinator will not impact the ability to maintain the interface with state and local officials.

The proposed ERO staffing changes do not impact the capabilities of the on-shift staffing or augmented response. The ERFs will continue to be activated at an Alert or higher declaration. Functional responsibilities of the positions eliminated as a result of the changes described within will be reassigned to remaining positions. The proposed ERO staffing reductions continue to address the risks to public health and safety, comply with the SEP, site commitments and regulation.

<u>On-Shift Staffing</u>

To support reduced staffing following permanent cessation of operations and permanent removal of fuel from the reactor vessel, the proposed post-shutdown on-shift staffing was evaluated in conjunction with the postulated accidents previously submitted to the NRC using NEI 10-05 methodology (Attachment 4). The post-shutdown OSA assumed that the FHA is the only DBA that can occur. The OSA concluded that in a permanently defueled condition one (1) on-shift SM, one (1) CRS/CFH, one (1) Radiation Protection Technician and three (3) CROs/AOs/NCOs can

perform all required SEP actions in a timely manner and there are no collateral duties that would prevent the timely performance of emergency plan functions.

For the current OSA, the following accident scenarios were included:

Design Basis Threat

The event evaluated for this analysis assumes a land based threat that is neutralized immediately when inside the protected area fence, no significant damage to equipment or systems that require corrective actions before the ERO is staffed, no radiological release, and no fire that requires firefighting response before the ERO is staffed.

Control Rod Drop Accident

The control rod drop event results in fuel damage and radioactivity that is retained within the turbine, condensers, and the offgas system. Release to the environment is due to leakage from the various contaminated systems into the turbine building.

Loss of Coolant Accident

The event results in a release of radioactive material from the reactor coolant system to the primary containment from a complete circumferential break of one of the recirculation loop lines.

Fuel Handling Accident (FHA)

The FHA is assumed to occur when the primary containment is open and the reactor vessel head has been removed. The DBA for this case involves the dropping of a fuel bundle on top of the core.

Main Steam Line Break Accident

This event results in radioactive material releases outside secondary containment and was due to a complete severance of a 16-inch line leading to the turbine bypass steam chest.

Aircraft Potential Threat (50.54(hh))

Notification is received from the NRC that a potential aircraft threat exists.

Fire requiring evacuation of the Control Room and plant shutdown from remote location, (Appendix R Fire)

A fire occurs in the main control room requiring the evacuation of the control room and procedures implemented to remotely shutdown the reactor.

Station Blackout

A loss of all offsite AC power occurs and the failure of the emergency diesel generators to start. The SM determines power cannot be restored and declares a Site Area Emergency due to the loss of off-site power.

General Emergency (GE) with radioactive release and Protective Action Recommendation (PAR)

This event is based on the same initial conditions of the LOCA but assumes system failures meet the GE conditions of a loss of two fission product boundaries with the potential loss of the third.

For the post-shutdown OSA, the following accident scenarios were included:

Design Basis Threat

The event evaluated for this analysis assumes a land based threat that is neutralized immediately when inside the protected area fence, no significant damage to equipment or systems that require corrective actions before the ERO is staffed, no radiological release, and no fire that requires firefighting response before the ERO is staffed.

Fuel Handling Accident (FHA)

The postulated design basis accident that will remain applicable to VY in its permanently shutdown and defueled condition is the FHA in the reactor building where the SFP is located.

Aircraft Potential Threat (50.54(hh))

Notification is received from the NRC that a potential aircraft threat exists.

Fire requiring evacuation of the Control Room and control of service water pumps from a remote location

A fire occurs requiring the evacuation of the Control Room and procedures implemented to control service water pumps from a remote location.

General Emergency (GE) with radioactive release and PAR (assumed for analysis purposes)

This event is based on the same initial conditions as the FHA, but assumes a dose that exceeds the EPA PAGs beyond the site boundary, and thus necessitates promulgation of a PAR.

The post-shutdown OSA indicates that the proposed on-shift personnel can satisfactorily implement all emergency plan functions as required by regulation without augmented ERO personnel for at least 90 minutes following an emergency declaration. The post-shutdown OSA confirmed that no chemistry job tasks were noted as being required within the first 90 minutes of any of the analyzed events.

Currently, the Chemistry Technician is an on-shift position per SEP Table 8.4 so that a technician is always available to immediately collect and analyze a liquid sample if the applicable radiation monitor is not available during a release, or as directed by the SM. When the on-shift Chemistry Technician position is eliminated, the on-shift Radiation Protection Technician will be able to perform sampling and analysis, so as to not delay information potentially needed by the SM to determine if an emergency declaration is required. For gaseous releases, the only credible scenario for releasing gas would be to mechanically damage spent fuel during handling or by impact of a heavy object. Activities that could cause mechanical damage will require that a

Chemistry Technician be on-site or the radiation monitor listed in gaseous effluent EALs is in service, thereby alleviating any reliance on a potentially delayed sample analysis to determine EAL applicability. A new regulatory commitment to revise applicable fuel handling procedures to incorporate this prerequisite is included in Attachment 6.

Based on the above, the proposed change in on-shift operations staffing and elimination of the on-shift Chemistry Technician are appropriate given the permanent cessation of operations and removal of fuel from the reactor vessel.

Because of the reduced number of possible events requiring mitigating actions in the permanently defueled condition and the limited number of actions to be performed by the Control Room positions in a permanently defueled condition, no CRO or STA job tasks were noted as being required for any of the events analyzed in the post-shutdown OSA. Therefore, the CRO and STA positions can be eliminated without reducing the effectiveness of the post-shutdown SEP.

The proposed on-shift staffing changes do not impact the capabilities of the on-shift staff to respond to an emergency and continues to comply with the SEP, site commitments and regulations.

Additional analysis for each of the staffing changes associated with SEP Table 8.4 is provided in the following:

5.2.1 Major Functional Area: Plant Operations & Assessment of Operational Aspects

Current Staffing Requirement

During normal operations, the minimum staff on duty at the plant during all shifts consists of one (1) SM, one (1) CRS, two (2) CROs, six (6) AOs, one (1) STA, one (1) Radiation Protection Technician, and one (1) Chemistry Technician.

Proposed Change

The following on-shift positions will be eliminated:

- Two (2) CROs
- Three (3) AOs
- STA
- Chemistry Technician

Operations On-shift personnel will consist of one (1) SM, one (1) CRS/CFH and three (3) CROs/AOs/NCOs. Title changes for the CRS and CRO/AO to CFH and NCO, respectively, are dependent upon NRC approval (Reference 2).

Analysis

The regulatory standard for minimum staffing requirements for NRC licensees is documented in NUREG-0654. The total minimum on-shift staffing expressed in NUREG-0654, Table B-1, is ten personnel. Plant Operations shift staffing as implemented previously was based on an operating philosophy that provided defense in depth. The post-shutdown OSA concluded that in a permanently defueled condition, the on-shift SM, CRS, Radiation Protection Technician and three (3) CROs/AOs/NCOs can perform all required SEP actions in a timely manner and there are no collateral duties that would prevent the timely performance of emergency plan functions. Therefore, this deviation from the guidance

presented in NUREG-0654, Table B-1 is acceptable.

5.2.2 Major Functional Area: Notification/Communication

Current Staffing Requirement

STA or an AO performs the function of on-shift notification/communication.

Proposed Change

Replace the STA/AO with a CRS/CFH.

Analysis

This function is currently performed by an on-shift staff position (Communicator). The Communicator is either the STA or an AO.

This function is currently augmented by one position within 30 minutes and two additional positions within 60 minutes. These augmentation resources report to the EOF, assume the function once the EOF is activated and are managed by the Emergency Director (ED).

Initial notification to State authorities are required to occur within 15 minutes of declaration of an emergency and initial NRC notification is required to occur immediately after notification of the appropriate State or local agencies and not later than 60 minutes after the time of the emergency declaration. Subsequent notifications are made should the event escalate and for informational updates. The resource commitment to support the communication function is not full time so there is time to support performance of collateral duties during the first 60 minutes until staff augmentation can occur. The on-shift and off-site communicators have advanced communications capabilities available such as the InForm Notification System and the Nuclear Alert System (NAS), which permits a single telephone call to reach three states simultaneously. Communications with the NRC are over dedicated telephone lines provided for and maintained by the NRC (Emergency Notification System (ENS)). For purposes of the OSA, NRC notifications were treated as a continuous action in accordance with 10 CFR 50.72(c)(3), meaning that once the initial NRC communications are established, it was assumed that the NRC will request an open line to be continuously maintained with the NRC Operations Center. The use of dedicated phone circuits and wireless headsets enables these notifications to be performed by the same on-shift communicator who performs the state notifications.

The SM initially approves the content of the communication with state and federal agencies until relieved of this function by the EOF. The SEP goal is to activate the EOF within 60 minutes. The EOF assumes the communication responsibility concurrent with activation. Therefore, the current communication protocol may remain within the Control Room for the first 60 minutes, regardless of the presence of any prior ERO augmentation.

In addition, direction and control of any augmented resources, available prior to EOF activation, would need to be performed by the SM. This may represent an additional burden on the SM without commensurate benefit.

This change is acceptable because the post-shutdown OSA concluded that in a permanently defueled condition, the CRS/CFH can perform this required SEP action in a timely manner and there are no collateral duties that would prevent the timely performance of this emergency plan function.

5.2.3 Major Functional Area: Radiological Accident Assessment and Support of Operational Accident Assessment: Offsite Dose Assessment

Current Staffing Requirement

SM, CRS, STA or Chemistry Technician performs the major task of on-shift dose assessment.

Proposed Change

Eliminate the STA and Chemistry Technician. The SM or CRS/CFH will perform this task.

Analysis

The function of offsite dose assessment is to review radiological conditions using data from available instrumentation, assess the impact of changing radiological conditions on emergency classification, assist in accident assessment based upon those changing radiological conditions, and recommend appropriate offsite protective measures. This function is currently performed by the Control Room staff (i.e., SM, CRS, Chemistry Technician and STA). All functions and actions associated with emergency classification, accident assessment and offsite protective action measures are initially performed by on-shift resources. Classification is initially performed by the SM using procedure AP-3125, "Emergency Plan Classification and Emergency Action Level Scheme." The EAL methodology uses readily available and easily recognized plant instrumentation, and associated alarm set points combined with event and symptom based emergency action levels to determine the appropriate emergency classification. In accordance with the SEP the on-shift SM, CRS and STA have the capability to perform initial dose assessment and develop protective action recommendations.

This function is currently augmented by one person within 30 minutes. The augmentation resource reports to the EOF, assumes the function once the EOF is activated and is managed by the ED. The proposed elimination of the STA and Chemistry Technician are appropriate given the reduced risk in a permanently defueled condition. Many of the potential initiating conditions that would lead to an emergency declaration are no longer credible. The set of plant equipment required in this condition is also greatly reduced, which reduces assessments and mitigation activities in the Control Room within the first 30 minutes of an emergency.

This change is acceptable because the post-shutdown OSA concluded that in a permanently defueled condition, the CRS/CFH can perform the offsite dose assessment in a timely manner and there are no collateral duties that would prevent the timely performance of this emergency plan function. Additionally, since the post-shutdown OSA confirmed that no chemistry job tasks were noted as being required within the first 90 minutes of any of the analyzed events, the proposed elimination of the on-shift Chemistry Technician is acceptable.

5.2.4 Major Functional Area: Plant System Engineering

5.2.4.1 *Major Task: Shift Technical Advisor*

Current Staffing Requirement

The on-shift STA performs the major task of Shift Technical Advisor.

Proposed Change

Eliminate the on-shift STA position.

Analysis

The STA performs independent assessments of plant operating concerns, technical support, appropriate corrective actions, analysis of events and their effects, effectiveness of response(s) to emergent conditions, classifications of emergencies, protection of the public, and any other actions related to critical safety functions and plant safety during abnormal and emergency situations. They also contribute to operations during normal plant conditions. By routine monitoring of equipment and plant operations, the STA can focus on preventative actions in order to mitigate the consequences of an accident.

Because of the permanent cessation of operations and removal of fuel from the reactor vessel, the STA position is no longer necessary for technical and analytical assistance. The Technical Support function will be assumed by the remaining Control Room personnel.

The post-shutdown OSA concluded that the on-shift SM and CRS/CFH can perform any required technical analysis, until augmented by the TSC engineering staff, in a timely manner and there are no collateral duties that would prevent the timely performance of this task.

5.2.4.2 *Major Task: Core/Thermal Hydraulics*

Current Staffing Requirement

Augment the on-shift core/thermal hydraulics capability by one within 30 minutes (Technical Support Center Reactor Engineer).

Proposed Change

Eliminate the Technical Support Center Reactor Engineer ERO position.

Analysis

The function of this responder is to provide confirmation of adequacy of core cooling, maintenance of coolable core geometry, and to verify that actual plant response to the event is as expected. This function is initially performed by the on-shift STA under the guidance of the SM. The STA is assigned other SEP responsibilities including communication and radiological assessment functions; however, these are not considered to impact the ability of the STA to perform engineering oversight functions.

The TSC Reactor Engineer position can be eliminated without increasing the risk to public health and safety because the major task of evaluating core/thermal hydraulics is not necessary in a permanently shutdown and defueled condition.

5.2.5 Major Functional Areas: Repair and Corrective Actions

5.2.5.1 *Major Task: Mechanical Maintenance*

Current Staffing Requirement

An AO performs the function of on-shift mechanical maintenance.

Proposed Change

Replace the AO with a CRO/AO/NCO.

Analysis

The function of this position is to provide for minor or limited scope damage repair and corrective actions.

The OSA defines repair and corrective action as: “An action that can be performed promptly to restore a nonfunctional component to functional status (e.g., resetting a breaker), or to place a component in a desired configuration (e.g., open a valve), and which does not require work planning or implementation of lockout/tag out controls to complete.”

During the initial stages of an event, the major response activities are concentrated on determining the cause of the event and placing the plant in a safe condition through plant manipulations and system alignments. The on-shift CROs/AOs/NCOs will have the necessary expertise and training to perform troubleshooting and minor repairs during plant operations. The CROs/AOs/NCOs would be available to satisfy any minor troubleshooting and repair activities that might be needed.

NUREG-0654, Table B-1, indicates that repair and corrective action tasks may be performed by qualified shift personnel assigned other emergency response functions/tasks. VY Nuclear Plant Operators are trained to perform the actions associated with the repair and corrective action functional area. In addition, repair and corrective action is an acceptable collateral duty in accordance with the guidance in NEI 10-05. Therefore, the proposed change does not represent a deviation from NUREG-0654, Table B-1.

The post-shutdown OSA concluded that in a permanently defueled condition, CROs/AOs/NCOs can perform this required SEP action in a timely manner and there are no collateral duties that would prevent the timely performance of this task.

5.2.5.2 *Major Task: Rad Waste Operator*

Current Staffing Requirement

An AO or CRO performs the function of on-shift Rad Waste Operator.

Proposed Change

Replace the AO/CRO with a CRO/AO/NCO.

Analysis

During the initial stages of an event, the major response activities are concentrated on determining the cause of the event and placing the plant in a safe condition through plant manipulations and system alignments. The on-shift CRO/AOs/NCOs will have the necessary expertise and training to perform troubleshooting and minor repairs during plant operations. The CRO/AOs/NCOs would be available to satisfy any minor troubleshooting

and repair activities that might be needed.

NUREG-0654, Table B-1, indicates that repair and corrective action tasks may be performed by qualified shift personnel assigned other emergency response functions/tasks. VY Nuclear Plant Operators are trained to perform the actions associated with the repair and corrective action functional area. In addition, repair and corrective action is an acceptable collateral duty in accordance with the guidance in NEI 10-05. Therefore, the proposed change does not represent a deviation from NUREG-0654, Table B-1.

The post-shutdown OSA concluded that in a permanently defueled condition, AOs/NCOs can perform this required SEP action in a timely manner and there are no collateral duties that would prevent the timely performance of this task.

5.2.5.3 *Major Task: Electrical Maintenance/Instrumentation and Control*

Current Staffing Requirement

An AO performs the function of on-shift Electrical Maintenance/Instrumentation and Control Technician.

Proposed Change

Replace the AO with a CRO/AO/NCO.

Analysis

The function of this position is to provide for minor or limited scope damage repair and corrective actions such as identification and correction of controller and setpoint mal-adjustment, tripped breakers and overloads, surveillance necessary for accident mitigation and/or hands off troubleshooting. These are the only activities that can be accomplished in the time frame in question.

The OSA defines repair and corrective action as: “An action that can be performed promptly to restore a nonfunctional component to functional status (e.g., resetting a breaker), or to place a component in a desired configuration (e.g., open a valve), and which does not require work planning or implementation of lockout/tag out controls to complete.”

During the initial stages of an event, the major response activities are concentrated on determining the cause of the event and placing the plant in a safe condition through plant manipulations and system alignments. The on-shift CROs/AOs/NCOs will have the necessary expertise and training to perform troubleshooting and minor repairs during plant operations. The CROs/AOs/NCOs would be available to satisfy any minor troubleshooting and repair activities that might be needed.

NUREG-0654, Table B-1, indicates that repair and corrective action tasks may be performed by qualified shift personnel assigned other emergency response functions/tasks. VY Nuclear Plant Operators are trained to perform the actions associated with the repair and corrective action functional area. In addition, repair and corrective action is an acceptable collateral duty in accordance with the guidance in NEI 10-05. Therefore, the proposed change does not represent a deviation from NUREG-0654, Table B-1.

The post-shutdown OSA concluded that in a permanently defueled condition, CROs/AOs/NCOs can perform this required SEP action in a timely manner and there are

no collateral duties that would prevent the timely performance of this task.

5.2.6 Major Functional Area: Protective Actions (In-Plant)

Major Tasks: Access Control; Radiation Protection (RP) Coverage for Repair, Corrective Actions, Search and Rescue, First Aid and Firefighting; Personnel Monitoring; Dosimetry

Current Staffing Requirement

Two AOs perform the in-plant protective actions.

Proposed Change

Replace the two AOs with two CROs/AOs/NCOs.

Analysis

The function of these additional resources is to provide RP oversight of the on-shift complement of personnel and augmented personnel who are expected to respond to emergency events for damage repair, corrective actions, search and rescue, first aid, firefighting and personnel monitoring. They can also be expected to provide for access control and the issuance of dosimetry. Analysis of the proposed change for each of these tasks is discussed below. The fire brigade will continue to perform the tasks of search and rescue, first aid and firefighting in the permanently defueled condition.

5.2.6.1 *Major Tasks: Access Control and Personnel Monitoring*

In the original SEP, radiological access control was a labor intensive task. Dedicated RP Technicians were required to check dose margins, training qualifications, and to ensure workers had read and understood their radiation work permit. Worker access control is now automated because RP work processes have been computerized. Radiation work permit access control and electronic dosimeter computer systems work together to provide a fully integrated system allowing workers to sign-in on their radiation work permit and to self-issue electronic dosimeters. Both systems have been used by plant workers for several years. Worker dose margins and training qualifications are also automatically verified when the radiation work permit access control system is used. If a worker's dose margin is inadequate or training is expired, the worker’s access would be precluded and the access control system would not allow issuance of an electronic dosimeter. During the log-in process, workers acknowledge their electronic dosimeter alarm setpoints and that they have read and understand their radiation work permit. The electronic dosimeter provides the worker with a continuous status of dose received and work area dose rates, and will alarm at preset dose and dose rate alarms. Worker use of electronic dosimeters facilitates more efficient use of RP Technicians to provide RP coverage while preserving the ALARA concept. Access control is maintained because the worker must obtain an electronic dosimeter and enter a radiation work permit number into the access control computer system prior to being allowed access into the Radiologically Controlled Area (RCA). No setup is required for the radiation work permit access control computers, which allows RP Technicians to be used for more critical tasks during emergency response. Personnel are required to self-monitor for radioactive contamination whenever they exit the RCA. No RP involvement is necessary for this contamination monitoring activity because workers are trained to perform this task without supervision or oversight.

Replacing the AOs with CROs/AOs/NCOs in a permanently shutdown and defueled

condition is supported by current access control and personnel monitoring processes and equipment.

The post-shutdown OSA concluded that in a permanently defueled condition, CROs/AOs/NCOs can perform this required SEP action in a timely manner and there are no collateral duties that would prevent the timely performance of this task.

5.2.6.2 *Major Task: RP Coverage*

RP coverage will only be performed if the radiological status of a room is unknown and there is a definitive need for emergency workers to enter the room to perform a task. The decision to provide RP coverage may be based on plant radiological conditions as indicated by installed area radiation monitors (ARMs).

During the initial stages of an accident, not all areas of the plant would be affected by releases of radioactive materials. Therefore, RP coverage would not be required for all areas. If RP coverage is deemed necessary, multiple emergency teams can be covered by the on-shift RP Technician. If RP coverage is not provided (for entry into areas with low radiological risk or known radiological status), worker protection is ensured because emergency workers are required to wear electronic dosimeters (which will alarm at preset dose and dose rate setpoints) and because of the installed ARMs (which alarm locally and remotely at preset dose rates) located throughout the plant.

5.2.6.3 *Major Task: Dosimetry*

In the original SEP, dosimetry issuance was a manual process requiring RP Technicians to zero and issue dosimeters, verify worker training, and verify and track radiation dose margins. As addressed in the Access Control/Personnel Monitoring Section above, access control computers are now used for issue of electronic dosimetry with alarming capability. Battery-powered electronic dosimeters are available as a backup. Worker self-issuance of electronic dosimeters has eliminated the need for RP Technicians to physically issue dosimetry, with the exception of any tasks that require specialized dosimetry and/or special body placement of the dosimetry. These types of tasks are not expected in the initial stages of an event, but during the recovery phase.

The post-shutdown OSA determined there are no time critical RP or chemistry tasks, and that task performance is directed and prioritized by the SM for the 90-minute time frame used in the analysis. There are no overlapping RP or chemistry tasks. RP tasks were able to be performed without augmented personnel in the 90-minute time frame used in the analysis.

5.2.7 Conclusion

The risk of a major event resulting in the release of radiological materials to the environment is significantly reduced in the permanently defueled condition. All required radiation protection functions are accommodated within the requisite time frames using the proposed on-shift resources. Any anticipated tasks can be handled by that resource. In addition, direction and control of any 30-minute augmented resources needs to be performed by on-shift resources (i.e., the SM). This represents an additional burden on the SM without commensurate benefit.

5.3 Summary

ENO completed an evaluation of the proposed reduction in on-shift and ERO staffing and completed a post-shutdown OSA to analyze the ability of the proposed defueled on-shift and ERO organization to respond to an emergency.

The post-shutdown OSA was conducted assuming an on-shift complement of one (1) SM, one (1) CRS/CFH, one (1) RP Technician and three (3) CROs/AOs/NCOs and indicates that the proposed on-shift personnel can satisfactorily implement all regulatory required emergency plan functions without augmented ERO personnel for at least 90 minutes following an emergency declaration. The post-shutdown OSA confirmed that no chemistry job tasks were noted as being required within the first 90 minutes of any of the analyzed events. Compensatory measures will be implemented to ensure that the ability to assess and declare an emergency during fuel handling activities is maintained. Based on the above, the proposed change in on-shift operations staffing and elimination of the on-shift Chemistry Technician are appropriate for the permanently defueled condition.

The proposed ERO staffing changes do not impact the capabilities of the on-shift staffing or augmented response. The ERFs will continue to be activated at an Alert or higher declaration. Functional responsibilities of the positions eliminated as a result of the changes described within are being reassigned to remaining positions. The proposed ERO staffing reductions continue to address the risks to public health and safety, comply with the SEP, site commitments and regulation.

6. REGULATORY EVALUATION

6.1 Applicable Regulatory Requirements and Guidance

<u>On-Shift and ERO Staffing</u>

The specific standard for establishing an onsite emergency organization to respond to emergency events appears in 10 CFR 50.47(b) and 10 CFR 50, Appendix E, Section IV.A. Specifically:

- 10 CFR 50.47(b)(1): Primary responsibilities for emergency response by the nuclear facility licensee and by State and local organizations within the Emergency Planning Zones have been assigned, the emergency responsibilities of the various supporting organizations have been specifically established, and each principal response organization has staff to respond and to augment its initial response on a continuous basis.

- 10 CFR 50.47(b)(2): On-shift facility licensee responsibilities for emergency response are unambiguously defined, adequate staffing to provide initial facility accident response in key functional areas is maintained at all times, timely augmentation of response capabilities is available and the interfaces among various onsite response activities and offsite support and response activities are specified.

- 10 CFR 50, Appendix E Section IV.A.1: [E-Plans must contain] A description of the normal plant operating organization.

- 10 CFR 50, Appendix E Section IV.A.2: [E-Plans must contain] A description of the onsite emergency response organization with a detailed discussion of:

    - Authorities, responsibilities, and duties of the individual(s) who will take charge during an emergency;

- Plant staff emergency assignments;

- Authorities, responsibilities, and duties on an onsite emergency coordinator who shall be in charge of the exchange of information with offsite authorities responsible for coordinating and implementing offsite emergency measures;

NUREG-0654 (Reference 4), Section II.B, “Onsite Emergency Organization,” presents guidance for meeting these requirements. The guidance describes the onsite emergency organization, including the staffing requirements found in Table B-1, “Minimum Staffing Requirements for NRC Licensees for Nuclear Power Plant Emergencies.”

10 CFR Part 50, Appendix E, Section IV.A.9 states that licensees shall perform “…a detailed analysis demonstrating that on-shift personnel assigned emergency plan implementation functions are not assigned responsibilities that would prevent the timely performance of their assigned functions as specified in the emergency plan.”

NSIR/DPR-ISG-01, “Interim Staff Guidance – Emergency Planning for Nuclear Power Plants” (Reference 6) provides information relevant to performing the on-shift staffing analysis. The ISG states that NEI 10-05, “Assessment of On-Shift Emergency Response Organization Staffing and Capabilities,” is an acceptable methodology for performing the staffing analysis. The ISG also indicates that the completed staffing analyses are required to be part of the emergency plan and the results documented and submitted to the NRC in accordance with 10 CFR 50.54(q)(5).

NRC Regulatory Guide 1.101, “Emergency Response Planning and Preparedness for Nuclear Power Reactors,” Revision 4 (Reference 8), Section C, stated in part "The criteria and recommendations in Revision 1 of NUREG-0654/FEMA-REP-1, ‘Criteria for Preparation and Evaluation of Radiological Emergency Response Plans and Preparedness in Support of Nuclear Power Plants (November 1980),’ are methods acceptable to the NRC staff for complying with the standards in 10 CFR 50.47 that must be met in onsite and offsite emergency response plans. These criteria provide a basis for NRC licensees and State and local governments to develop acceptable radiological emergency plans and improve emergency preparedness."

Regulatory Guide 1.219, “Guidance on Making Changes to Emergency Plans for Nuclear Power Reactors,” November 2011 (Reference 9), describes a method that the NRC considers to be acceptable to implement the requirements in 10 CFR 50.54(q). In Section 2.a.(1), the NRC encourages licensees to arrange a conference call with the NRC staff to clarify 10 CFR 50.54(q) requirements and guidance within this regulatory guide for EP changes that increase the activation time of emergency response facilities.

Regulatory Issue Summary 2005-02, "Clarifying the Process for Making Emergency Plan Changes," Revision 1 (Reference 10) was issued by the NRC to clarify the meaning of "decrease in effectiveness" and the process for making changes to emergency plans, and to provide some examples of changes that are considered to be a decrease in effectiveness.

6.2 Precedence

The requested changes to the on-shift staffing and ERO staffing are similar in nature to the post-shutdown changes implemented by Kewaunee Power Station, using the 10 CFR 50.54(q) process that resulted in the NRC issuing a Severity Level IV violation (Reference 11). As a result of this violation, ENO is submitting the proposed changes as a License Amendment Request pursuant to 10 CFR 50.54(q)(4) and 10 CFR 50.90.

6.3 No Significant Hazards Consideration Determination

Pursuant to 10 CFR 50.92, Entergy Nuclear Operations, Inc. (ENO) has reviewed the proposed changes and concludes that the changes do not involve a significant hazards consideration because the proposed changes satisfy the criteria in 10 CFR 50.92(c). These criteria require that operation of the facility in accordance with the proposed amendment would not (1) involve a significant increase in the probability or consequences of an accident previously evaluated; (2) create the possibility of a new or different kind of accident from any accident previously evaluated; or (3) involve a significant reduction in a margin of safety.

The proposed changes would revise the Vermont Yankee Nuclear Power Station (VY) Site Emergency Plan (SEP) to reduce the number of on-shift and emergency response organization (ERO) positions commensurate with the hazards associated with a permanently shutdown and defueled facility.

The discussion below addresses each of these criteria and demonstrates that the proposed amendment does not constitute a significant hazard.

1. Does the proposed amendment involve a significant increase in the probability or consequences of an accident previously evaluated?

   Response: No.

   The proposed changes to the SEP do not impact the function of plant structures, systems, or components (SSCs). The proposed changes do not affect accident initiators or precursors, nor does it alter design assumptions. The proposed changes do not prevent the ability of the on-shift staff and ERO to perform their intended functions to mitigate the consequences of any accident or event that will be credible in the permanently defueled condition. The proposed changes only remove positions that will no longer be credited in the SEP in the permanently defueled condition.

   Therefore, the proposed change does not involve a significant increase in the probability or consequences of an accident previously evaluated.

2. Does the proposed amendment create the possibility of a new or different kind of accident from any accident previously evaluated?

   Response: No.

   The proposed changes reduce the number of on-shift and ERO positions commensurate with the hazards associated with a permanently shutdown and defueled facility. The proposed changes do not involve installation of new equipment or modification of existing equipment, so that no new equipment failure modes are introduced. Also, the proposed changes do not result in a change to the way that the equipment or facility is operated so that no new accident initiators are created.

   Therefore, the proposed change does not create the possibility of a new or different kind of accident from any previously evaluated.

3. Does the proposed amendment involve a significant reduction in a margin of safety?
   Response: No.

Margin of safety is associated with confidence in the ability of the fission product barriers (i.e., fuel cladding, reactor coolant system pressure boundary, and containment structure) to limit the level of radiation dose to the public. The proposed changes are associated with the SEP staffing and do not impact operation of the plant or its response to transients or accidents. The change does not affect the Technical Specifications. The proposed changes do not involve a change in the method of plant operation, and no accident analyses will be affected by the proposed changes. Safety analysis acceptance criteria are not affected by the proposed changes. The revised SEP will continue to provide the necessary response staff with the proposed changes.

Therefore, the proposed change does not involve a significant reduction in a margin of safety.

Based on the above, ENO concludes that the proposed amendment presents no significant hazards consideration under the standards set forth in 10 CFR 50.92(c), and, accordingly, a finding of “no significant hazards consideration” is justified.

6.4 Environmental Considerations

This amendment request meets the eligibility criteria for categorical exclusion from environmental review set forth in 10 CFR 51.22(c)(9) as follows:

(i) The amendment involves no significant hazards consideration.

As described in Section 6.3 of this evaluation, the proposed changes involve no significant hazards consideration.

(ii) There is no significant change in the types or significant increase in the amounts of any effluent that may be released offsite.

The proposed changes do not involve any physical alterations to the plant configuration or any changes to the operation of the facility that could lead to a change in the type or amount of effluent release offsite.

(iii) There is no significant increase in individual or cumulative occupational radiation exposure.

The proposed changes do not involve any physical alterations to the plant configuration or any changes to the operation of the facility that could lead to a significant increase in individual or cumulative occupational radiation exposure.

Based on the above, ENO concludes that the proposed change meets the eligibility criteria for categorical exclusion as set forth in 10 CFR 51.22(c)(9). Pursuant to 10 CFR 51.22(b), no environmental impact statement or environmental assessment need be prepared in connection with the issuance of this amendment.

7. REFERENCES

1. Letter, Entergy Nuclear Operations, Inc. to USNRC, “Notification of Permanent Cessation of Power Operations,” BVY 13-079, dated September 23, 2013 (ML13273A204)

2. Letter, Entergy Nuclear Operations, Inc. to USNRC, “Technical Specifications Proposed Change No. 307, Revision to Mitigation Strategy License Condition and

Technical Specification Administrative Controls for Permanently Defueled Condition," BVY 13-096, dated October 31, 2013 (ML13316A004)

3. Letter, Entergy Nuclear Operations, Inc. to USNRC "Request for Approval of Certified Fuel Handler Training Program," BVY 13-095, dated October 31, 2013 (ML13325B015)

4. NUREG-0654, FEMA-REP-1, "Criteria for Preparation and Evaluation of Radiological Emergency Response Plans and Preparedness in Support of Nuclear Power Plants," Revision 1, published November 1980.

5. Federal Register Volume 76, Number 226, Wednesday, November 23, 2011, Rules and Regulations, "Enhancements to Emergency Preparedness Regulations; Final Rule."

6. NSIR/DPR-ISG-01, "Interim Staff Guidance – Emergency Planning for Nuclear Power Plants," Revision 0, November 2011 (ML113010523)

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

8. NRC Regulatory Guide 1.101, "Emergency Response Planning and Preparedness for Nuclear Power Reactors," Revision 4, July 2003

9. Regulatory Guide 1.219, "Guidance on Making Changes to Emergency Plans for Nuclear Power Reactors," November 2011

10. Regulatory Issue Summary 2005-02, "Clarifying the Process for Making Emergency Plan Changes," Revision 1, April 19, 2011

11. Letter, USNRC to Dominion Energy Kewaunee, Inc., "NRC Inspection Report No. 05000305/2013011(DNMS)-Kewaunee Power Station," dated March 10, 2014 (ML14069A225)

Attachment 2

Vermont Yankee Nuclear Power Station

Tabular Summary of Proposed Changes to Site Emergency Plan

Attachment 3

Vermont Yankee Nuclear Power Station

Proposed Revision to Site Emergency Plan Pages

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LIST OF FIGURES

LIST OF FIGURES (Continued)

4.0 THE AREA

4.1. The Site

Vermont Yankee Nuclear Power Station is located on the west bank of the Connecticut River immediately upstream of the Vernon Hydrostation, in the town of Vernon, Vermont. The Vermont Yankee Nuclear Power Station ~~is a boiling water reactor having a thermal rated power of 1912 MWt~~ceased power operations and is permanently defueled in accordance with 10 CFR 50.82(a)(1)(i) and (ii). The station, shown in Figure 4.1, is located on about 125 acres in Windham County, and is owned by Entergy, with the exception of a narrow strip of land between the Connecticut River and the Vermont Yankee property for which it has perpetual rights and easements from the owner, New England Power Company.

On September 23, 2013, ENO submitted a notification of permanent cessation of power operations pursuant to 10 CFR 50.82(a)(1)(i), stating that ENO has decided to permanently cease power operation of Vermont Yankee in the fourth quarter of 2014. ENO has submitted written certification to the NRC, in accordance with 10 CFR 50.82(a)(1) that meets the requirements of 10 CFR 50.4(b)(9) certifying that fuel has been permanently removed from the reactor vessel. Upon docketing of these certifications, the 10 CFR Part 50 license for VY no longer authorizes operation of the reactor or emplacement or retention of fuel into the reactor vessel, as specified in 10 CFR 50.82(a)(2).

With irradiated fuel being stored in the Spent Fuel Pool and the ISFSI, the reactor, reactor coolant system and secondary system are no longer in operation and have no function related to the storage of the irradiated fuel. Therefore, the postulated accidents involving failure or malfunction of the reactor and reactor coolant system or secondary system are no longer applicable.

4.2. Area Characteristics, Land Use and Demography

The site, also shown in Figure 4.1, is bounded by the Connecticut River (Vernon Pond) on the east, by farm and pasture land mixed with wooded areas on the north and south, and by the town of Vernon on the west. Warwick and Northfield State Forests (approximately 8 miles southwest of the site), Green Mountain National Forest (approximately 18 miles southwest of the site) and the Pisgah Mountain Range (northeast of the site) limit the population density and land use within a 50-mile radius of the site. Most of the land around the site is undeveloped. Table 4.1 characterizes the land use within 25 miles of the plant. The developed land is used for agricultural, dairying, and for residential areas within small villages. The primary agricultural crop is silage corn, which is stored for year-round feed for milk cows.

The nearest house is 1,300 feet from the Reactor Building and is one of several west of the site. The Vernon Elementary School (approximate enrollment of 250 pupils) is about 1,500 feet from the Reactor Building. The nearest hospital, Brattleboro Memorial, is approximately five (5) miles north-northwest from the site. The nearest dairy farm is approximately 1/2-mile northwest of the site. Additional dairy farms are located within a

5-mile radius of the plant. ~~The largest sports facility in the vicinity is the Hinsdale Raceway, located approximately three (3) miles from the site. For racing events, the average attendance is approximately 4,000.~~ A nursing home is located 2 miles south of the plant. These areas have been noted since they have required special planning consideration by offsite authorities in the event of a radiological emergency at Vermont Yankee.

Figure 4.2 shows an overall perspective of the area within 50 miles of Vermont Yankee. The average population density within a 10-mile radius of Vermont Yankee for 2000 was estimated to be 126 people per square mile. Figures 4.3, 4.4, and 4.5 provide the 2000 population distribution within a 5-, 10-, and 50-mile radius of the Vermont Yankee Nuclear Power Station. Table 4.2 summarizes these data.

8.0 ORGANIZATION

This section describes how the normal plant and engineering support organization transform into an emergency response organization to effectively deal with any incident at Vermont Yankee.

8.1. Normal Plant Organization

Vermont Yankee's normal operation and management organization consist of the onsite facility organization supported by the engineering and management organizations located offsite. The relationship and content of these onsite and offsite organizations are specified in the plant Technical Specifications, Technical Requirements Manual or Entergy Quality Assurance Manual.

~~During normal operations, t~~The minimum staff on duty at the plant during all shifts consists of one (1) Shift Manager, one (1) Control Room Supervisor (CRS)/Certified Fuel Handler (CFH), three (3) Auxiliary Operators (AO)/Control Room Operators (CRO)/Non-Certified Operators (NCO)~~two (2) Control Room Operators, six (6) Auxiliary Operators, one (1) Shift Technical Advisor~~, one (1) Radiation Protection Technician~~, one (1) Chemistry Technician~~ and security personnel as indicated in Figure 8.1. The responsibility for determining the status of the plant in an emergency is assigned to the Shift Manager or, in his absence from the Control Room, to the Control Room Supervisor who has the authority and responsibility to immediately initiate any emergency actions, including emergency classification and notification. Additional personnel are available on an on-call basis to respond to plant emergencies. Corrective action and repair, as outlined in Table 8.4, is performed by Operations staff on-shift until supplemented by additional ERO staff.

8.2. Emergency Response Organization

The Vermont Yankee emergency response organization is activated in part or in whole, depending upon the condition classification determined by the normal plant operations crew in the Control Room. Vermont Yankee's emergency response organization is divided into onsite and offsite elements. The Vermont Yankee Emergency Management Organization is shown in Figure 8.2. Staffing for the onsite emergency response facilities is shown in Figure 8.3 (Technical Support Center) and Figure 8.4 (Operations Support Center). Staffing for the off-site emergency response facilities is shown in Figure 8.5 (Emergency Operations Facility/Recovery Center). All or portions of these organizations are activated depending upon the emergency classification.

Elements of the emergency response plan are activated subsequent to an emergency declaration by the Shift Manager; designated company personnel are notified and will report to designated locations. The emergency response action of the personnel already present are performed on a priority basis depending on the emergency conditions and the immediate need which those conditions dictate as determined by the onshift operations crew. The specific priorities facing the emergency response forces in the various locations cannot be pre-established. They would be specific to the nature of the emergency and variable with time as it proceeds.

8.2.2. Emergency Plant Manager

The Emergency Plant Manager has direct responsibility for the conduct of operations at the plant. During an emergency situation, the Emergency Plant Manager is responsible for the overall supervision and coordination of the onsite emergency response activities and directs the activities of the Technical Support Center until the accident is terminated. The Emergency Plant Manager's primary responsibilities are to:

1. Direct the onsite activities required to restore the plant to a safe condition;

2. Provide technical accident assessment and support to terminate the accident;

3. Analyze instrument and control problems, design and coordinate the installation of short-term modifications, and define emergency operation procedures during the modification period;

4. Analyze problems in the area of system operations, determine emergency procedures related to system operations and establish shift operations support, if applicable;

5. Develop guidance for plant shift operations concerning plant protection ~~of the reactor core~~;

6. Oversee the accumulation, retention, retrieval and transmission of vital plant parameters required to analyze the accident progression and subsequent termination;

7. Provide assistance to the Shift Manager or Emergency Director on the escalation and de-escalation of the emergency classification as conditions warrant;

8. Initially direct the activities of onsite and offsite teams until EOF becomes operational.

A qualified manager assumes the role of Emergency Plant Manager under all emergency conditions. To assist the Emergency Plant Manager, the TSC is staffed by representatives from the following departments as depicted in Figure 8.3:

- Operations
- Maintenance
- ~~Reactor Engineering~~
- Engineering
- Chemistry ~~(in the OSC)~~
- Radiation Protection
- Security (stationed at the off site command post)

TABLE 8.3 (Continued)
(Page 3 of 3)

A SUMMARY OF OFFSITE COORDINATION

EMERGENCY PLAN FUNCTION	PLANT RESPONSIBILITY	STATE RESPONSIBILITY	LOCAL RESPONSIBILITY
Coordination of Radiological Data (continued)	The Emergency Director will advise the State response personnel of results.	In the Commonwealth of Massachusetts, the Director of the Radiation Control Branch of the Massachusetts Department of Public Health will command this function at the State EOC. In the State of New Hampshire, the Director of the Division of Public Health Services will command this function at the State EOC.	
Plant Access Control	The Security Coordinator coordinates plant site security and offsite law enforcement support as necessary.	State Police would respond as directed by the Directors of the Emergency Management Agencies.	Local police would assist as directed by the State Police.
Evacuation Process	Shift Manager will sound evacuation alarm under Site Area or General Emergencies. OSC Manager will direct personnel to monitor all plant evacuees.	State Emergency management Agencies will coordinate the activation of the Public Notification System. Health and Human Services or Red Cross representative will coordinate the establishment of Reception Centers.	
Public Information Release	The Emergency Director issues final approval prior to release. The Technical Advisor ~~Public Information Liaison~~ at the EOF/RC relays accident status reports to the Joint Information Center. The Company Spokesperson releases the information to the media.	State press personnel report to the Joint Information Center. State press personnel coordinate releases with the Company Spokesperson.	Media inquiries are referred to the Joint Information Center.

Table 8.4
(Page 1 of 2)
MINIMUM STAFFING REQUIREMENTS FOR THE ENVY ERO

FUNCTIONAL AREA	MAJOR TASKS	ENVY POSITION TITLE[1]	RESPONSE TIME
Plant Operations & Assessment of Operational Aspects		Shift Manager (1)	On Shift
		CRS/Certified Fuel Handler (CFH)**** (1)	On Shift
		~~CRO (2)~~	~~On Shift~~
		~~AO (6)~~AO/CRO/NCO**** (3)	On Shift
		~~STA (1)~~	~~On Shift~~
Emergency Direction & Control (Emergency Coordinator)***		Shift Manager (1**)	On Shift
Notification / Communication****	Notify Licensee, State local and federal personnel & maintain communication	~~STA/ AO~~CRS/CFH ~~STA~~/Offsite Comm/ENS Comm~~/Chem.Tech~~ (1) [3] ~~STA~~/Offsite Comm/ENS Comm~~/Chem.Tech~~ (2) [3]	On Shift 30 min. 60 min.
Radiological Accident Assessment and Support of Operational Accident Assessment	Emergency Operations Facility (EOF) Director Offsite Dose assessment	EOF Emergency Director (1)	60 min.
		Shift Mgr / CRS/CFH/~~STA/Chem Tech~~ RP Staff (1)[4]	On Shift 30 min.
	Off site surveys	Field monitoring teams (2) Field monitoring teams (2)	30 min. 60 min.
	Onsite (out of plant)	Shift RP tech (1) Field monitoring teams (1) [3] Field monitoring teams (1)	On Shift 30 min. 60 min.
	In plant surveys	Shift RP Tech (1) RP staff (1) RP staff (1)	On Shift 30 min. 60 min.
	Chemistry / Radiochemistry	~~Shift Chem. Tech (1)~~ Chem staff (1)	~~On Shift~~60 min. ~~60 min.~~
Plant System Engineering	Shift Technical Advisor	Positions not needed in a Permanently Defueled Condition~~STA (1)~~ ~~TSC RE (1)~~ [3]	~~On Shift~~
	Core/Thermal hydraulics		~~30 min.~~
	Electrical	TSC Manager / TSC Engineering staff (1)	60 min.
	Mechanical	TSC Manager / TSC Engineering staff (1)	60 min.
Repair & Corrective Actions	Mechanical Maintenance	~~Shift AO~~Shift AO/CRO/NCO (1**)	On Shift
	Mechanical Maintenance	Maintenance (1)	60 min.
	Rad Waste operator	~~AO/CRO (1)~~AO/CRO/NCO	60 min.
	Electrical Maintenance / Instrumentation & Control Technician	~~Shift AO~~Shift AO/CRO/NCO (1**) Maintenance (1) Maintenance (1)	On Shift 30 min. 60 min.
	Instrumentation & Control Technician	Maintenance (1)	30 min.

Table 8.4 (Continued)
(Page 2 of 2)
MINIMUM STAFFING REQUIREMENTS FOR THE ENVY ERO

FUNCTIONAL AREA	MAJOR TASKS	ENVY POSITION TITLE[1]	RESPONSE TIME
Protective Actions (In Plant)	Radiation protection, access control, HP coverage for repair, corrective actions, search & rescue, first aid & firefighting, personnel monitoring, dosimetry	Shift AO/CRO/NCO (2**) [2] RP (2) RP (2)	On Shift 30 min 60 min
Fire Fighting		Fire brigade* (5**) [1] Local support Local support	On Shift 30 min. 60 min.
Rescue Operations & First Aid		Fire brigade (2**) Local support Local support	On Shift 30 min. 60 min.
Site Access Control & Personnel Accountability	Security, communications, personnel accountability	Security Force	On Shift

NOTE: Response times are from NOTIFICATION of the event and are based on optimum travel conditions.

* Position staffed in accordance with Technical Requirements Manual and Administrative procedures.

** May be provided by shift personnel assigned other functions

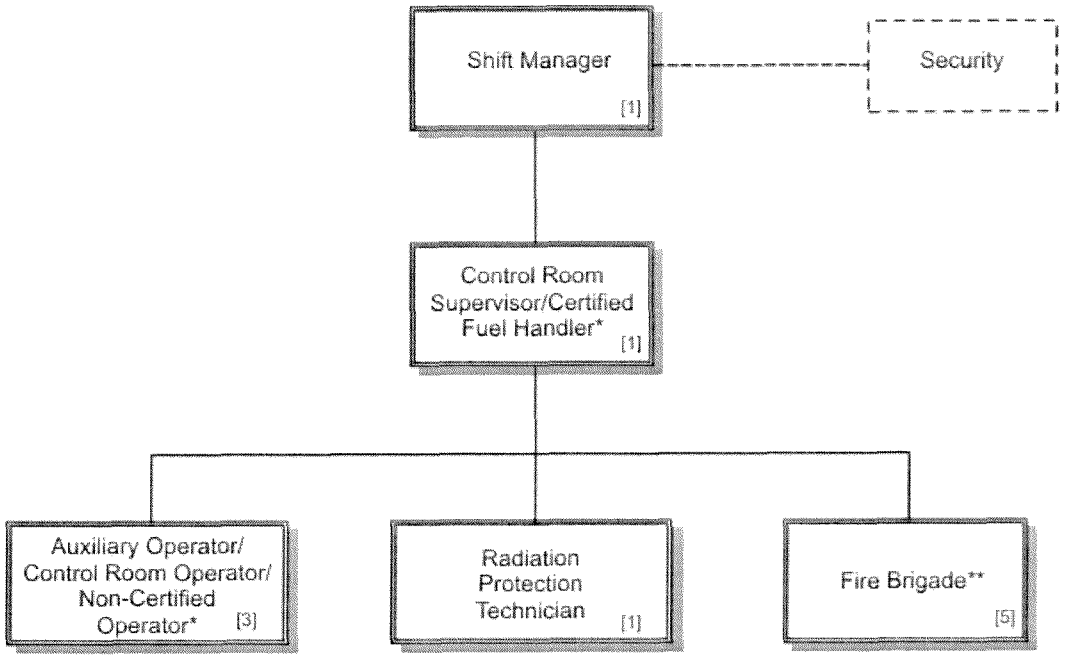
*** Overall direction of facility response to be assumed by EOF director when all centers are fully staffed. Direction of minute to minute facility operations remains with senior manager in technical support center or control room.

**** Title Change is dependent on NRC approval of revised Technical Specifications (BVY 13-096, dated 10/31/13). CFHs will supervise fuel handling operations in the permanently defueled condition. The CRS and SM will be qualified as CFHs. However, the SM requires additional qualification beyond the CFH training. Therefore, any reference to the CFH position throughout this Plan is considered to be equivalent to the CRS position. Non-Certified Operators will perform duties typically associated with those performed by Auxiliary Operators and Control Room Operators, such as manipulation and monitoring of plant equipment.~~May be performed by engineering aide to Shift Manager (STA for ENVY)~~

NOTES

1. AP 0894 specifies minimum shift staffing requirements. FB requires 5 persons per TRM and the Vermont Yankee Nuclear Power Station Analysis of Proposed Post-Shutdown On-Shift Staffing ~~Analysis~~. The staffing analysis was evaluated to reflect VY's permanently shutdown and defueled conditions, including the on-shift staff composition and revised accident analyses.~~The staffing analysis is maintained as a controlled document and is effective 30 days after OSRC approval. STA and Chemistry Tech must be available within 10 minutes to the Control Room. VY letter to NRC dated 4/14/1981 (FVY 81-65) establishing position. VY letter to NRC 6/22/1982 (FVY 82-75) Supplement –NUREG 0737 Item III.A.1.2 on training of on-shift staff to support VY position for staffing. VY letter to NRC 4/14/1981 (FVY 81-65) TMI Action Plan Item III.A.1.2, goal for augmentation of staff. VY letter to NRC 6/15/82 (FVY 82-70) Results of Augmentation drills to support use of goals. Titles of ENVY ERO positions are shown.~~
2. All AOs/CROs/NCOs use digital dosimeters with features for dose rate and total dose monitoring. AOs/CROs/NCOs are trained to self-monitor in an emergency.

3. ENVY has designated ~~pager holders~~ERO members who staff positions required to meet minimum staffing to activate the TSC, OSC and EOF. The minimum staff positions required to activate the TSC and EOF are (shown in ~~see~~ E Plan Figures 8.3 ~~through~~ and 8.5~~)~~. The OSC Manager is the only position required to activate and staff the OSC. ~~There are a minimum of 4 persons per position (4 teams who rotate duty). However, all persons on teams are expected to respond. In addition, a~~All ~~other~~ ERO personnel ~~not on pagers~~ are expected to respond when notified by the emergency call-in notification system ~~and are expected to respond~~.
4. The on-shift Shift Manager~~,~~ and CRS~~, STA, and Chem Tech~~ have the capability to do initial dose assessment and PAR. The TSC and EOF radiation assessment staff relieves them of this function.



* Title change is dependent on NRC approval of revised Technical Specifications.

** May be provided by shift personnel assigned other functions. Fire Brigade positions are staffed in accordance with Technical Requirements Manual and Administrative procedures.

Note:
Corrective action repair is performed by Operations Staff on-shift until supplemented by emergency response organization.

[x] = Number of Individuals

Figure 8.1

Defueled On-shift Emergency Organization.

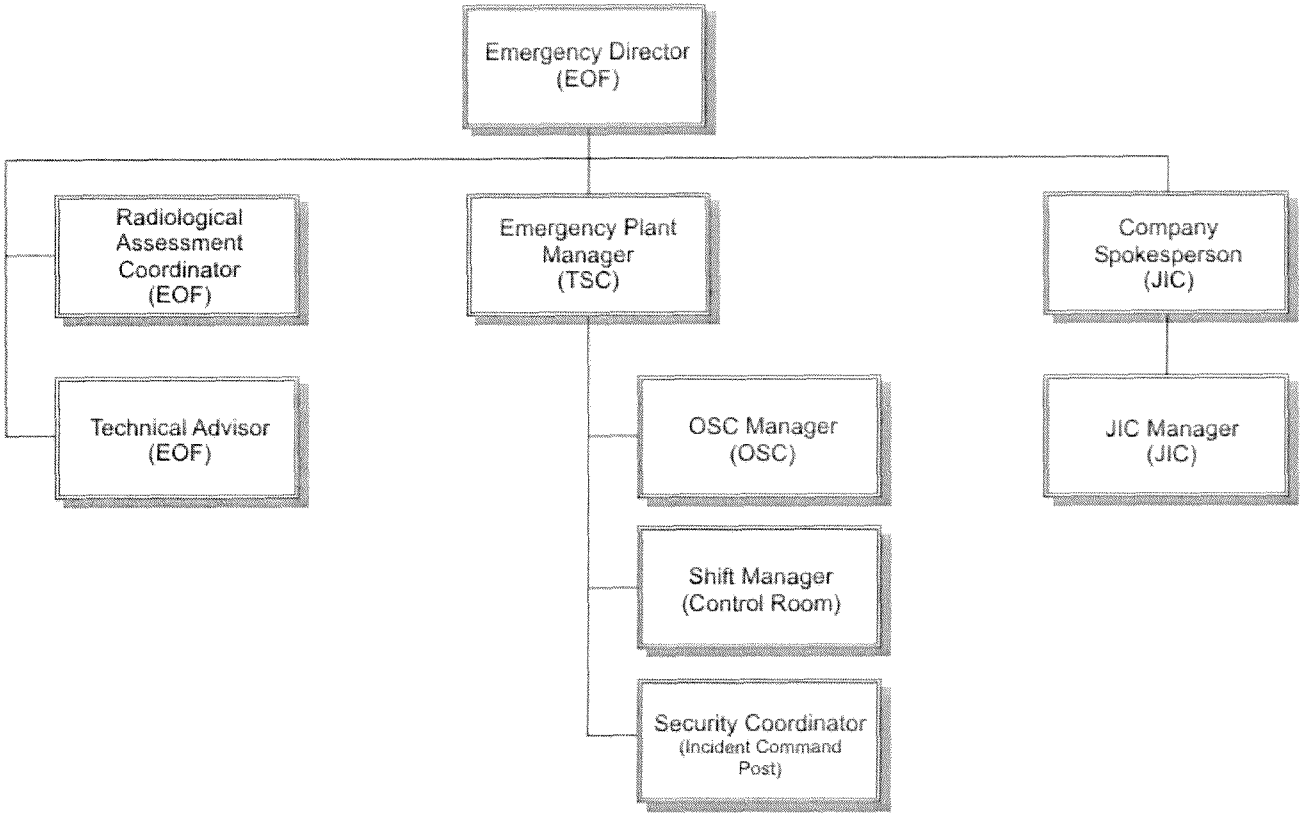
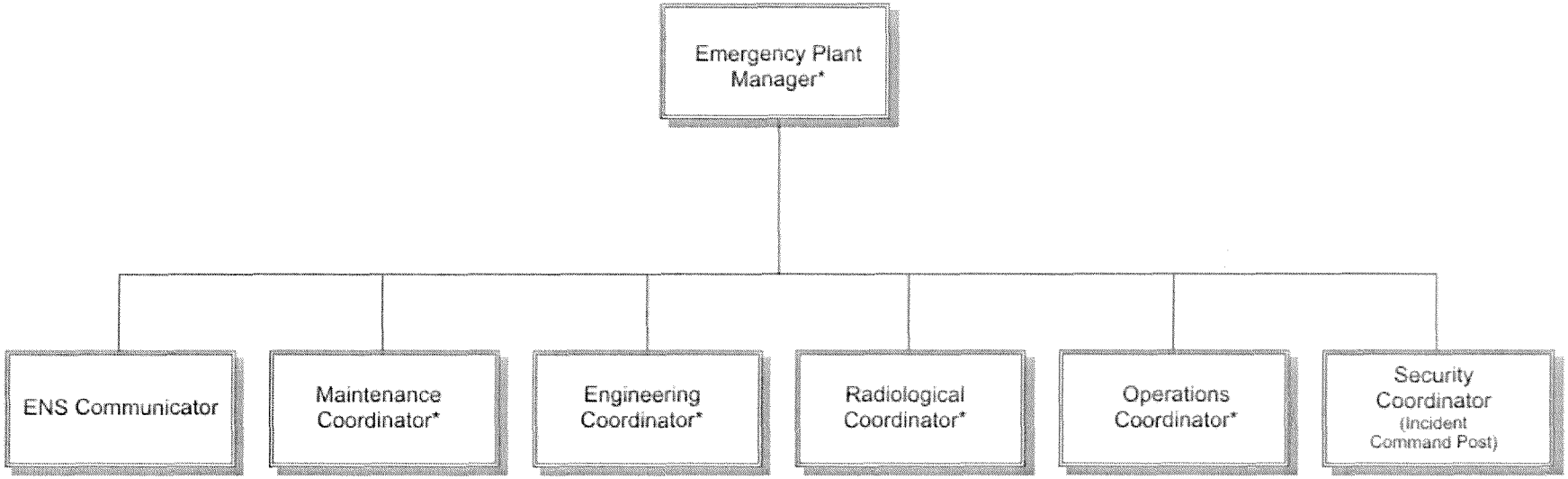


Figure 8.2

VY Defueled Emergency Management Organization



* required for activation

Figure 8.3

Defueled Technical Support Center Emergency Organization

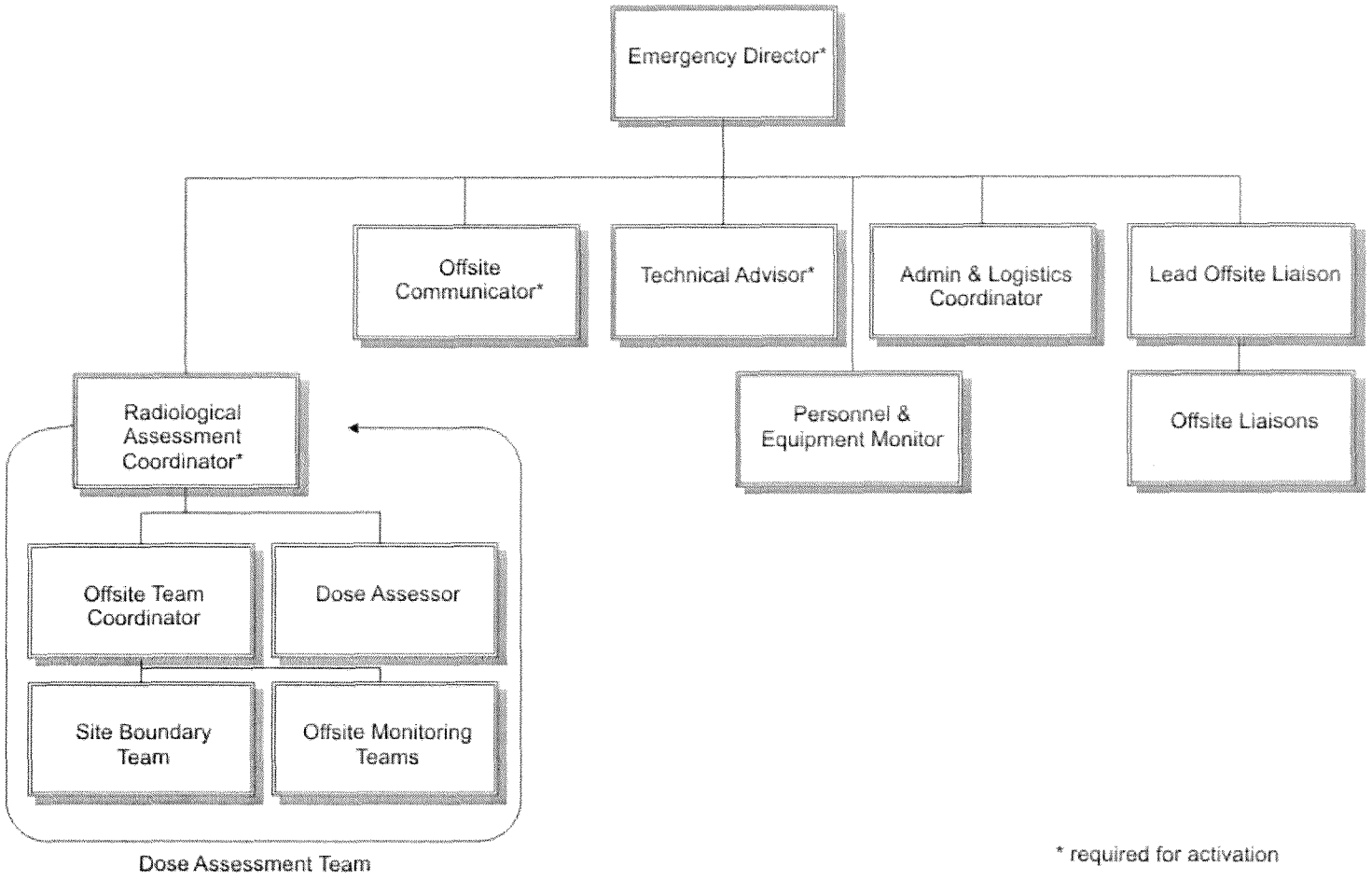
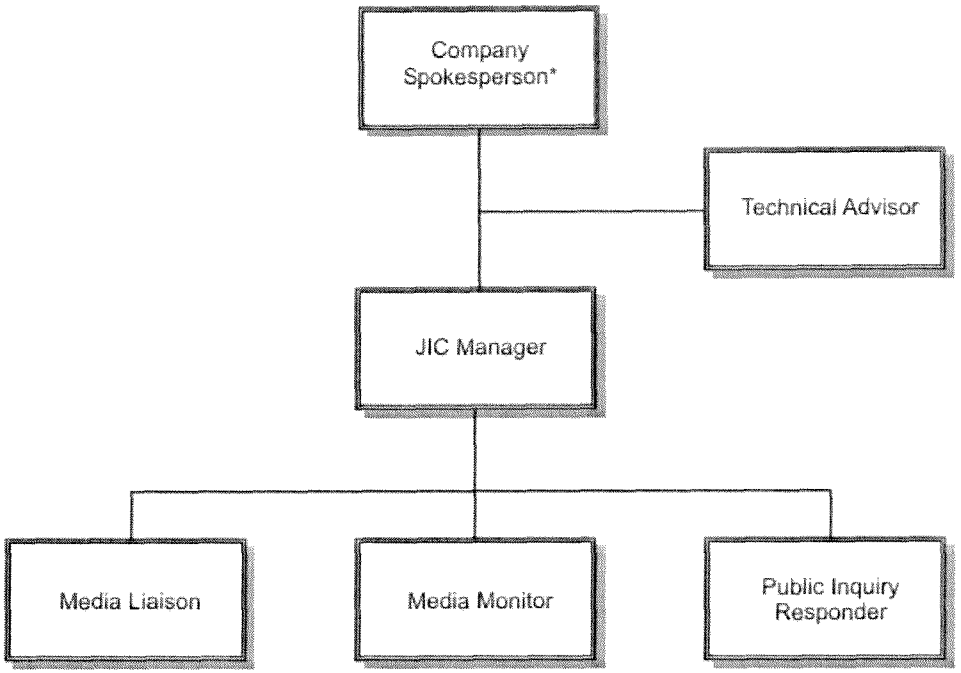


Figure 8.5

Defueled Emergency Operations Facility Organization



* required for activation

Figure 8.7

Defueled Joint Information Center Organization

9.2.1. Notification of Unusual Event Response

Appendix A defines the conditions that require the declaration of a Notification of Unusual Event. Emergencies defined within this classification demand the mobilization of specific emergency response members and the initiation of precautionary and/or corrective actions which mitigate the consequences of the event. A Notification of Unusual Event does not activate the entire emergency response organization, but may require augmentation of on-shift resources to deal with the event. Offsite emergency organizations are notified for informational purposes, and aid from offsite fire, medical, and security organizations may be required depending on the nature of the event.

The response required as a result of this declaration of a Notification of Unusual Event varies according to the specified event, but a general summary of actions taken is described below:

1. The emergency condition is recognized and classified by the Shift Manager who instructs Control Room personnel to announce over the plant page system the emergency classification;

2. The on-duty operations shift and selected plant personnel respond as directed by the Shift Manager;

~~3. The Shift Technical Advisor reports to the Control Room and provides technical support as necessary;~~

~~4.~~3. Appropriate plant staff are directed to assume various emergency functions;

~~5.~~4. Control Room personnel notify the New Hampshire, Massachusetts and Vermont State Police. The State Police notify the appropriate state authorities;

~~6.~~5. The NRC is notified;

~~7.~~6. Other support is requested as necessary;

~~8.~~7. The Emergency Call-in Method is implemented as shown in the notification plan (Figure 9.1);

~~9.~~8. Additional personnel report to the plant as requested by the SM;

~~10.~~9. The Shift Manager directs the activities of emergency response personnel until overall responsibility is assumed by the Emergency Director;

~~11.~~10. If necessary, appropriate emergency medical, fire department, or law enforcement agencies are notified and requested to respond;

~~12.~~11. The TSC may be activated at the discretion of the Emergency Plant Manager;

~~13.~~12. The public information representative is notified and handles public information associated with the event; and

~~14.~~13. The Shift Manager terminates the Notification of Unusual Event status and closes out the event with a verbal summary to offsite authorities or escalates to higher level emergency classification.

9.2.1.1. Unusual Event (Terminated) Response

If a condition that warrants a Notification of Unusual Event declaration has occurred, and was immediately rectified such that the condition no longer existed by the time of declaration, this Notification of Unusual Event classification is referred to as an Unusual Event (Terminated).

The event or condition did not affect personnel onsite or the public offsite, or result in radioactive releases requiring offsite monitoring.

The response to this declaration of an Unusual Event (Terminated) is not as comprehensive as that for a Notification of Unusual Event. All the same notifications for a Notification of Unusual Event are made, and emergency response personnel reporting to the plant are based on specific requests of the SM.

9.2.2. Alert Response

An Alert requires actions to: 1) assure that sufficient emergency response personnel are mobilized to respond to the accident conditions at the site; and 2) that offsite emergency organizations are readily available to respond to the situation. Prompt notification is made to state officials and follow-up information is provided as needed to offsite emergency organizations. Unassigned personnel are evacuated from the site. In an Alert, the steps listed in the Notification of Unusual Event Response section (except for the termination process) and the following are performed:

1. The Alert emergency notification and response, as shown in Figure 9.1 and described in Table 9.1 are implemented;

2. The Technical Support Center, Operations Support Center, the Emergency Operations Facility/Recovery Center, and the Joint Information Center are activated by personnel as shown in Table 9.1;

3. If sufficient personnel are not available onsite, off-duty personnel are called in as specified in the emergency implementing procedures;

4. The Emergency Plant Manager reports to the Technical Support Center and directs in-plant emergency operations;

5. The EOF Manager establishes operations in the EOF/RC;

9.2.4. General Emergency Response

All Emergency Centers are activated and all available resources are called upon in the event of a General Emergency. The plant promptly notifies offsite authorities and initiates all emergency response organization capabilities.

Offsite authorities fully activate their emergency response and implement appropriate protective measures based on meteorological information, actual or projected radiological dose conditions and/or conditions. The Emergency Director and the entire emergency response organization assemble plant status parameters and continually advise offsite authorities of the type of public protective action most appropriate to the situation based on plant conditions and offsite dose projections. This includes whether to shelter or evacuate the affected towns within the plume exposure emergency planning zone. In a General Emergency, the steps listed in the Site Area Emergency Response section and the following are performed:

1. The Emergency Director may request that the EOF Manager mobilize other personnel in support of Vermont Yankee through activation of the Corporate Emergency Center;

2. Other nuclear industry resources are alerted and requested to render appropriate assistance;

3. The full resources of the National Response Framework are activated; and

4. Dissemination of information and instructions associated with protective actions to the public is the principal focus of all response organizations. The plant fully participates in these efforts by providing detailed emergency condition information.

9.3. Emergency De-Escalation and Termination Criteria

Classification of an accident condition requires that the plant operation staff recognize that pre-established EALs associated with an emergency condition, as defined in Appendix A, have been reached or exceeded.

De-escalation criteria require (1) an extensive review of plant parameters and/or offsite radiological conditions in conjunction with the pre-established EALs; (2) review of plant and offsite conditions with offsite authorities; and (3) concurrence by offsite authorities as to the appropriate time frame required to implement de-escalation.

De-escalation from a Notification of Unusual Event to a recovery phase requires satisfying the following criteria:

1. Criticality controls are in effect;

~~2. The core is being adequately cooled;~~

~~3.~~2. The fission product release has been controlled;

~~4. Control has been established over containment pressure and temperature;~~

~~5.~~3. An adequate heat transfer path to an ultimate heat sink has been established;

~~6. Reactor coolant system pressure is under control; and/or~~

~~7.~~4. Notification of Unusual Event conditions have been reviewed, are under control, and are not expected to deteriorate further.

De-escalation from emergency classes greater than the Notification of Unusual Event level to a recovery phase requires satisfying all the criteria stated in Items 1 through 6 above and that the States of Vermont and New Hampshire, and the Commonwealth of Massachusetts reach agreement with the Emergency Director or designee that there is no longer a need for either consideration of further public protective action or surveillance related to public protective action.

When plant conditions allow de-escalation in the emergency class to a recovery phase, the Emergency Director directs the emergency response organization to perform certain response actions prior to implementing any change. These actions include:

1. Notification of all plant emergency management personnel of the pending change;

2. Notification of offsite authorities of the pending change;

3. Notification of corporate support services of the pending change;

4. Coordination of media releases concerning the transition; and

5. Announcement of the transition over the plant page system.

TABLE 9.1
(Page 1 of 2)
VERMONT YANKEE EMERGENCY RESPONSE

EMERGENCY CENTER	NOTIFICATION OF UNUSUAL EVENT	ALERT OR SITE AREA OR GENERAL EMERGENCY
Technical Support Center	Activation at the discretion of the Emergency Plant Manager	Emergency Plant Manager ~~TSC Manager~~ Maintenance Coordinator (Electrical/Mechanical/I&C) Radiological Coordinator ~~Reactor Engineer~~ Engineering Coordinator (Project, System, Design) Operations Coordinator ~~Engineering Support Group~~
Operations Support Center	Not activated	OSC Manager Radiation Protection Staff Chemistry Staff ~~Spare Licensed Operators~~ Spare ~~Auxiliary~~ AOs/CROs/NCOs~~Operators~~ Control Instrument Specialists Plant Mechanics

TABLE 9.1 (Continued)
(Page 2 of 2)
VERMONT YANKEE EMERGENCY RESPONSE

EMERGENCY CENTER	NOTIFICATION OF UNUSUAL EVENT	ALERT OR SITE AREA OR GENERAL EMERGENCY
Emergency Operations Facility/Recovery Center	Activation at the discretion of the Emergency Plant Manager	Emergency Director Offsite Communicator Technical Advisor ~~EOF Manager~~ Administration and Logistics Coordinator Radiological Assessment Coordinator ~~Personnel & Equipment Monitor~~ *Site/Offsite Monitoring Teams ~~Public Information Liaison~~
Joint Information Center	Not Activated	Company Spokesperson ~~VY Public Information Staff~~ ~~Nuclear Public Information Representatives~~ ~~Joint Information Center Staff~~

*Deployed from OSC and report to Radiological Assessment Coordinator

10.2. Protective Action Recommendation Criteria

In the event a General Emergency has been declared, Vermont Yankee immediately recommends protective actions to state authorities based on plant conditions ~~which include the status of core and containment conditions~~. At a minimum, the Shift Manager or Emergency Director, who is in charge of the emergency response activities, recommends that the general public be advised to seek shelter for the towns of Hinsdale, New Hampshire and Vernon, Vermont; and the towns located five miles downwind in the affected sectors.

If plant conditions indicate a severe ~~reactor~~ accident exists ~~involving actual or projected substantial core damage~~, Vermont Yankee recommends to the appropriate state officials evacuation of the towns of Hinsdale, New Hampshire and Vernon, Vermont; and all towns located five miles downwind in the affected sectors.

With an emergency condition producing a radiological release or an inplant (i.e., containment) source term that could be subsequently released, one of the priorities of the responding emergency personnel is to implement the sampling and analysis of releases and/or source terms to identify if there is a radioiodine component. This sampling capability includes containment atmosphere, gas spaces in other plant systems, and the plant stack. Radioiodine identified at any of these points is quantified and evaluated in terms of actual or potential offsite impact.

Once actual source term, onsite and/or offsite field monitoring determinations have been made, the Vermont Yankee Emergency Director or designee provides projected offsite Total Effective Dose Equivalents (TEDEs) and thyroid Committed Dose Equivalents (CDEs) at various distances from the plant to the Departments of Public Health of Vermont, New Hampshire and Massachusetts. Based upon these results, the Emergency Director recommends protective actions in accordance with the criteria set forth in the EPA Protective Action Guides, Table 10.1.1. For environmental samples collected and analyzed by Vermont Yankee, the results of these samples are coordinated with the appropriate state agencies, and the state agencies implement the appropriate ingestion pathway protective actions in accordance with the FDA/HHS document Accidental Radioactive Contamination of Human Food and Animal Feeds, issued 8/13/98. Table 10.1.2 lists the Recommended Derived Intervention Level (DIL) for each radionuclide group.

10.3. Radiological Exposure Control

During a plant emergency, abnormally high levels of radiation and/or radioactivity may be encountered. These levels may range from slightly above those experienced during normal plant operation to life-endangering levels of several hundred rem in a short period of time. Under all emergency situations, immediate actions are required to regain control of the emergency or for life-saving purposes; steps should be taken to minimize personnel exposure from external and/or internal sources of radiation.

Table 10.2 specifies the guidelines on emergency dose limits for personnel providing emergency response duties which is consistent with the Environmental Protection Agency Emergency Worker Dose Limit Guides (EPA 400-R-92-001). The Shift Manager initially has the responsibility to authorize emergency dose commitments until relieved by the Emergency Plant Manager. This authorization is coordinated with the assistance of the Radiological Coordinator ~~or Shift Chemistry~~ and Radiation Protection Technicians as needed. Exposure to individuals providing emergency functions will be consistent with the limits specified in Table 10.2 with every attempt made to keep exposures ALARA.

The Radiological Coordinator is responsible for developing emergency radiological protection programs for plant staff support personnel. Emergency kits in each emergency center are provided with self-reading dosimeters (both high and low range). Each member reporting to the site will be provided a DLR badge. Dose records will be maintained at each center based upon the results of the self-reading dosimeters. This information is cross-referenced with the DLR badge data, as soon as they can be processed at the Emergency Operations Facility/Recovery Center. The capability exists for the emergency processing of DLRs on a 24-hour per day basis, if necessary, through a General Services Agreement with Landauer Inc. Emergency workers are instructed to read self indicating dosimeters frequently, and DLRs may be processed with increased periodicity.

10.4. Protective Measures

10.4.1. Site Personnel Accountability

The goal of the personnel accountability process is to account for personnel within 30 minutes of the emergency declaration of an Alert or higher. Accountability for a Notification of Unusual Event is at the discretion of the Emergency Plant Manager. Plant procedures require Security personnel at the gate to maintain a list of personnel entering or leaving the site during a site evacuation. Emergency Response Facility Managers are responsible for accounting for their staff as they report to their facility. Each facility maintains an organizational sign-in method which enhances this reporting process. All reports are provided to the Emergency Plant Manager in the Technical Support Center, who initiates search and rescue actions for any missing personnel. Plant security provides assistance for this accountability effort and aids in the control of personnel during extended emergency operations.

Accountability may be modified or suspended if the safety of personnel may be jeopardized by a Security event or other event hazardous to personnel.

11.3. Public Information

Any emergency generates a continuous and intensive demand for up-to-date information. This is best accomplished if each organization involved is aware of what the others are saying. Consequently, Vermont Yankee has planned for the establishment of a Joint Information Center for the purpose of providing coordinated press releases during an accident.

For a Notification of Unusual Event, the Manager of Communications is notified of the incident by telephone or paging system. The Manager of Communications, or designated alternate, is responsible for writing any official statements or press releases concerning the incident. Prior to release, statements are approved by an officer of the company or designee. Information is released directly to the press pool and the "Status Phones" are updated with this information. In addition, the Manager of Communications notifies the appropriate departmental staff and the corporate public affairs office.

For an Alert, Site Area Emergency and a General emergency, the Joint Information Center is activated and fully staffed.

The ~~Public Information Liaison~~ Technical Advisor and required staff report to the EOF/RC for coordinating the accident information between the plant and the Joint Information Center. The Joint Information Center is staffed and provides immediate accessibility to information files and resources for the Company Spokesperson (Manager of Communications, or designated alternate) and/or the Joint Information Center staff.

Regular press conferences are held at the Joint Information Center, directed by the Company Spokesperson in conjunction with appropriate state and federal organizations. Vermont Yankee can provide 24-hour coverage at the Joint Information Center to ensure timely updates and answers to questions from visiting media representatives.

As part of Vermont Yankee's full disclosure policy, Vermont Yankee has initiated a public inquiry phone for media and public use. Normally, a prerecorded message provides, on a daily basis, routine operating information, changes in plant operation, and other items of interest. During an emergency, the phone is used to relay and provide up-to-date status reports regarding the situation.

Joint Information Center personnel monitor local radio and television for erroneous information concerning accident conditions. When misinformation is recognized, corrective action is taken.

Attachment 4

Vermont Yankee Nuclear Power Station

Analysis of Proposed Post-Shutdown On-Shift Staffing

(63 Pages)

VERMONT YANKEE NUCLEAR POWER STATION

ANALYSIS OF PROPOSED POST-SHUTDOWN ON-SHIFT STAFFING

March 10, 2014

Prepared by: _____ / 3-10-14
/ Date

Peer Review by: _____ 3/11/14
/ Date

Approved by: _____ 3/11/14
/ Date

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I. INTRODUCTION

On September 23, 2013, Entergy Nuclear Operations, Inc. (ENO) informed the Nuclear Regulatory Commission that the Vermont Yankee Nuclear Power Station (VY) will permanently cease operations in the fourth quarter of 2014. Once fuel has been permanently removed from the reactor vessel, ENO will submit a written certification to the NRC, in accordance with 10 CFR 50.82(a)(1)(ii) that meets the requirements of 10 CFR 50.4(b)(9). Upon docketing of these certifications, the 10 CFR Part 50 license for VY will no longer authorize operation of the reactor or emplacement or retention of fuel into the reactor vessel, as specified in 10 CFR 50.82(a)(2). In the permanently defueled condition, the Updated Final Safety Analysis Report (UFSAR) credible accidents (postulated accidents) are reduced via the 50.59 process. In order to address the transition from an operating facility to a permanently defueled facility, changes are required to preserve the effectiveness of the Emergency Plan to properly reflect the conditions of the facility.

This report details the preliminary analysis of the proposed post-shutdown on-shift staffing for VY incorporating anticipated changes to address post-shutdown and defueled conditions. Specifically, it reassigns some on-shift tasks to align with proposed changes to on-shift staffing and the resulting changes to VY Emergency Plan Implementing Procedures. This analysis will be updated and formal Time Motion Studies (TMS) will be conducted, as necessary, following development and validation of procedures that address VYs permanently shutdown and defueled conditions.

This analysis evaluates the ability of the proposed post-shutdown minimum on-shift staff to implement all emergency tasks, evaluated in accordance with NEI 10-05, Rev. 0, *Assessment of On-shift Emergency Response Organization Staffing and Capabilities*, as applicable to the permanently shutdown and defueled conditions.

This analysis satisfies the requirements of 10 CFR Part 50, Appendix E Section IV.A.9, which states that nuclear power licensees shall perform "*a detailed analysis demonstrating that on-shift personnel assigned emergency plan implementation functions are not assigned responsibilities that would prevent the timely performance of their assigned functions as specified in the emergency plan."* To support reduced staffing following permanent cessation of operations and permanent removal of fuel from the reactor vessel, the proposed post-shutdown on-shift staffing was evaluated in conjunction with the postulated accidents that will be applicable in the permanently defueled condition and assumed corresponding changes to procedures. This analysis examined the capability of the proposed post-shutdown minimum staff to perform the actions for the key functional areas of events described in NSIR/DPR-ISG-01, *Interim Staff Guidance – Emergency Planning for Nuclear Power Plants*, until augmenting Emergency Response Organization (ERO) staff arrives in accordance with the Emergency Plan (E-Plan).

II. ANALYSIS SUMMARY

This analysis determined that a proposed post-shutdown on-shift staff of seven (7) is able to cope with the spectrum of analyzed events, as described in Section IV of this report, until augmenting ERO staff arrives. As

noted in the table below, VY may qualify Radiation Protection (RP) Technicians for Fire Brigade duties at some point in the future. If this occurs, the Fire Brigade qualified on-shift RP Technician may be called upon to act in that role, as necessary. This contingency was evaluated as part of this analysis and there are no conflicting responsibilities in the events analyzed if the RP Technician is called upon to perform as a Fire Brigade member. During those instances when the RP Technician could be designated as a Fire Brigade member, the minimum on-shift staff of seven (7), reflected in the following table, is able to cope with the analyzed events. When the RP Technician is not designated as a member of the Fire Brigade, the on-shift staffing will consist of eight (8) personnel. The on-shift staff consists of individuals necessary to support each of the following emergency plan functional areas or tasks:

- Emergency Direction and Control
- Plant Operations and SFP Cooling
- Fire Fighting (Fire Brigade)
- Accident/Dose Assessment
- Radiation Protection
- Notification/Communication
- Access Control and Accountability

NEI 10-05 states it is acceptable for certain functions to be assigned to personnel already assigned other functions/tasks. These include Repair and Corrective Action, Rescue Operations and First Aid.

A. Emergency Plan Minimum Staffing

Per 10 CFR 50.54(q)(1)(iii), *Emergency planning function* means a capability or resource necessary to prepare for and respond to a radiological emergency, as set forth in the elements of section IV of Appendix E and, for nuclear power reactor licensees, the planning standards of § 50.47(b).

The following table indicates the result of the NEI 10-05 staffing analysis of proposed post-shutdown on-shift personnel to perform the required emergency planning function and proposed post-shutdown minimum number for each on-shift position. These positions are the proposed post-shutdown on-shift positions expected to be in place following shutdown and permanent removal of fuel from the reactor vessel.

This analysis will be updated and formal TMSs will be conducted, as necessary, following development and validation of procedures that address VYs permanently shutdown and defueled conditions to verify the proposed post-shutdown on-shift staffing is appropriate.

Position	Licensing Basis Requirement	E-Plan Functional Area	On-Shift Staffing Analysis Results
Shift Manager (SM)	E-Plan Table 8.4	Emergency Direction and Control	1
Control Room Supervisor (CRS)/Certified Fuel Handler (CFH)[1]	E-Plan Table 8.4	Accident / Dose Assessment[2] Notifications/Communications	1
Auxiliary Operator (AO #1)/Control Room Operator (CRO)/Non-Certified Operator (NCO#1)[1]	E-Plan Table 8.4	FB	1
Auxiliary Operator (AO #2)/Control Room Operator (CRO)/Non-Certified Operator (NCO#2)[1]	E-Plan Table 8.4	FB	1
Auxiliary Operator (AO #3)/Control Room Operator (CRO)/Non-Certified Operator (NCO#3)[1]	E-Plan Table 8.4	FB	1
Fire Brigade #1 (FB #1)	E-Plan Table 8.4	FB	1[3]
Fire Brigade #2 (FB #2)	E-Plan Table 8.4	FB	1[3]
Radiation Protection (RP) Technician	E-Plan Table 8.4	Radiation Protection	1[4]
Security	Security Contingency Plan/E-Plan Table 8.4	Access Control and Accountability	Per Security Contingency Plan
TOTAL			**7**[5]

[1] Titles are dependent upon NRC approval of proposed changes to Technical Specifications. CFHs will supervise fuel handling operations in the permanently defueled condition. The CRS and SM will be qualified as CFHs. However, the SM requires additional qualification beyond the CFH training. Therefore, any reference to the CFH position throughout this document is considered to be equivalent to the CRS position. Non-Certified Operators (NCO) will perform duties typically associated with those performed by Auxiliary Operators (AO) and Control Room Operators (CRO), such as manipulation and monitoring of plant equipment.

[2] CRS is assigned Accident/Dose Assessment responsibilities in the Fuel Handling Accident analyses (Analyses #2 and #5). There are no Accident/Dose Assessment tasks identified as being required during the remaining analyses.

[3] Fire Brigade #1 and #2– May be provided by shift personnel assigned other functions. These positions do not have any actions or tasks that would conflict with Fire Brigade responsibilities in the events analyzed. The on-shift member is available to support the Shift Manager, where qualified, in non-fire events.

[4] RP Technician may be Fire Brigade qualified at some point in the future and may be called upon to act in that role, if necessary. There are no conflicting responsibilities in the events analyzed.

[5] During those instances when the RP Technician is designated as a Fire Brigade member, the minimum on-shift staff of seven (7) is able to cope with the analyzed events. When the RP Technician is not designated as a member of the Fire Brigade, the on-shift staffing will consist of eight (8) personnel.

B. Other Commitments to Shift Staffing

None

C. Staffing Exceptions and Time Motion Studies (TMS)

1. No chemistry job tasks were noted as being required within the first 90 minutes of any of the analyzed events. Because the Chemistry Technician was not identified as having any specific Chemistry/Radio-Chemistry related emergency tasks during the scenarios evaluated for this analysis, the Chemistry Technician position is not included in the proposed post-shutdown on-shift staffing complement.
2. Because VY will no longer be authorized to operate the reactor or place fuel into the reactor vessel, the STA position is not included in the proposed post-shutdown on-shift staffing complement.
3. Because of the reduced actions necessary to mitigate an emergency in the permanently defueled condition and the minimal actions of the Control Room positions in a permanently defueled condition, no Control Room Operator job tasks were noted as being required for any of the analyzed events. Because the Control Room Operators were not identified as having any specific emergency tasks during the scenarios evaluated for this analysis, the Control Room Operator position is not included in the proposed post-shutdown on-shift staffing complement.
4. The Shift Manager is assigned the responsibility to make some site specific event notifications such as to the Duty Plant Manager, Operations Manager, and Resident Inspector. These notifications by phone are considered communications that are approximately one minute in length and are deemed acceptable in accordance with NEI 10-05 Section 3.2.2 (6)(a)(14) due to the short duration of the notifications. Additionally, these notifications are collectively evaluated in conjunction with other Shift Manager duties and responsibilities during Operations simulator training evaluations and Emergency Plan drills and are not deemed as impacting the Shift Managers ability to maintain oversight of the event or perform other required emergency plan tasks. In accordance with the guidance of NEI 10-05, Line 14 of NEI Table 5 contained in Section VII of this report does not reflect the performance of these short duration notifications. No further analysis or TMS is required.
5. Guidance provided in Table 3.1 of NEI 10-05 indicates the need to perform a TMS to verify the capability of the CRS to perform the Notification/Communication responsibilities assigned in each analysis. The VY process for completing state and local emergency notification forms and performing the off-site notifications is automated and requires minimal manual actions. TMSs were conducted and demonstrated that these tasks could be performed by the on-shift CRS without impacting the ability of the CRS to remain in role providing support and oversight during the emergency. The TMSs demonstrated the Notification/Communication responsibilities could be performed individually or in series without impacting the CRS function. The results are documented in Section VIII of this analysis.

6. Guidance provided in Table 3.1 of NEI 10-05 indicates the need to perform a TMS to verify the capability of the CRS to perform the Dose Assessment responsibilities assigned in Analyses #2 and #5. VY has developed a method to quickly determine the projected offsite radiological conditions at various distances downwind of the plant site. During the initial stages of an emergency, the Shift Manager or designated individual is responsible to perform the initial evaluation of offsite radiological conditions. A TMS was conducted and demonstrated that these tasks could be performed by the on-shift CRS without impacting the ability of the CRS to remain in role providing support and oversight during the emergency. The TMSs demonstrated this task could be performed individually or in series with off-site notifications without impacting the CRS function. The results are documented in Section VIII of this analysis.
7. Station staff are required to maintain continuous communications with the notification source during an aircraft threat in accordance with 10CFR50.54(hh) and Reg. Guide 1.214. There are no specific qualifications required to perform this task and the function is not required to be assigned in advance. The analysis of this event identified there are sufficient personnel on-shift to perform this task during the event. No further analysis or TMS is required.
8. A TMS was conducted during development of the Vermont Yankee On-Shift Staffing Analysis Report, dated December 19, 2012 to determine if the Shift Manager could perform the task of notifying the ERO of the emergency while continuing to maintain emergency direction and control. The TMS demonstrated the Shift Manager was able to maintain Emergency Direction and Control during the approximate 2 minutes it took to notify the ERO using Everbridge. This evaluation may be used to allow the Shift Manager to perform this task if desired. No further analysis or TMS is required.
9. The VY Emergency Response Data System (ERDS) link to the NRC will not be operational in a permanently shut down and defueled condition. The task of ERDS activation is therefore not included as an on-shift task requiring evaluation as part of this staffing analysis.
10. NRC event notifications required due to the declaration of an Emergency Classification in accordance with 10 CFR 50.72 is made in accordance with EPOP-CR-3540.. A written event notification form is generated by on-shift staff for this notification.

D. Emergency Plan Tasks Not Analyzed

1. Repair and Corrective Action - Per the guidance of NUREG-0654, Table B-1, repair and corrective action tasks may be performed by shift personnel assigned other functions. Repair and corrective action is defined as:

   - An action that can be performed promptly to restore a non-functional component to functional status (e.g., resetting a breaker), or to place a component in a desired configuration (e.g., open a valve), and which does not require work planning or implementation of lockout/tagout controls to complete.

   In accordance with NEI 10-05 section 2.5, the analysis included a review of repair and corrective action tasks. For the purpose of this analysis, the tasks were considered to fall into two broad categories:

   - Unplanned/unexpected actions that address equipment failures. These actions are contingent in nature and cannot be specified in advance.
   - Planned/expected actions performed in support of operating procedure implementation, including severe accident management guidelines.

   At VY, AO/CRO/NCOs are trained to perform the actions associated with this functional area. Actions (e.g., reset breakers, valve manipulation) directed by the Control Room Supervisor/Certified Fuel Handler (CFH) to mitigate the event per procedures were performed by the AO/CRO/NCOs in this analysis. Repair and Corrective Action is an acceptable collateral duty per the guidance of NEI 10-05 and was not analyzed.

2. Rescue Operations and First Aid: In accordance with NEI 10-05 section 2.6, the analysis also included a review of rescue operations and first aid response although neither task was required during the evaluated scenarios. Per the guidance of NUREG-0654, Table B-1, rescue operations and first aid may be performed by shift personnel assigned other functions. The station fire brigade staff is trained in first aid and rescue operations and is available to perform these tasks if required. First aid and rescue operations are acceptable collateral duties per the guidance of NEI 10-05.

III. ANALYSIS PROCESS

The Vermont Yankee On-Shift Staffing Analysis Report, Rev. 0, dated December 19, 2012, was conducted by a joint team of corporate Emergency Preparedness (EP) personnel and station personnel from the Operations, Training, Licensing, Radiation Protection, Chemistry and Emergency Preparedness (EP) departments. Additionally, members of the Security staff provided input to the analysis. Revision 1 of this report (December 19, 2013) was developed based on input, reviews and concurrence from station personnel from the same departments as those participating in the original analysis.

The current analysis was developed by reviewing each scenario from Revision 1 to determine its applicability in a permanent shutdown and defueled condition and what plant actions and emergency plan implementation actions were required based on plant procedures prior to staff augmentation. These actions were then compared to the proposed post-shutdown on-shift positions expected to be in place following shutdown and permanent removal of fuel from the reactor vessel, ensuring that no actions were assigned to staff members that conflicted with either their proposed emergency plan role or operational role as appropriate. In cases where multiple tasks were assigned to an individual in their role, an evaluation of the timing of the tasks was conducted to ensure that they could be performed by the individual in series within any specified time requirements.

The results of the analysis for each of the scenarios are included in Section VII, APPENDIX B – ON-SHIFT STAFFING ANALYSIS. Note that NSIR DPR-ISG-01 states that only Design Basis Accidents (DBA) "which would result in an emergency declaration" should be evaluated in the staffing assessment. In a permanently shutdown and defueled condition UFSAR Chapter 14 will be revised to eliminate the DBAs that will not be applicable in the permanently defueled condition. These DBAs include the control rod drop accident, loss of coolant accident, main steam line break.

IV. ACCIDENT SCENARIOS

A. Accident Selection

1. The OSA scenarios were chosen using the guidance of NEI 10-05 and NSIR/DPR-ISG-01, based on the applicability in a permanent shutdown and defueled condition. The evaluation considered the station DBAs described in the UFSAR along with additional scenarios specified by the guidance documents. The following scenarios were considered for inclusion in this analysis:

    - Design Basis Threat (DBT) ground assault as described in NEI 10-05
    - DBA Fuel Handling Accident (FHA).
    - Aircraft Potential Threat as described in 10 CFR 50.54(hh).
    - Fire requiring evacuation of the Control Room, (Appendix R Fire) as described in NEI 10-05
    - General Emergency with radioactive release and Protective Action Recommendation (PAR) as described in NEI 10-05 – assumed for analysis purposes.
    - Station Blackout (SBO) as described in NEI 10-05.

B. Accident Scenarios included in the Analysis

1. Design Basis Threat

    - The event evaluated for this analysis assumes a land based threat that is neutralized immediately when inside the protected area fence, no significant damage to equipment or systems that require corrective actions before the ERO is staffed, no radiological release, and no fire that requires firefighting response before the ERO is staffed.

2. Fuel Handling Accident (FHA)

- The postulated design basis accident that will remain applicable to VY in its permanently shutdown and defueled condition is the FHA in the reactor building where the SFP is located. A revised FHA analysis has been developed to address the permanently defueled condition to determine the dose to operators in the Control Room and the public at the Exclusion Area Boundary (EAB or Site Boundary) and Low Population Zone. This accident analysis assumes the drop of a spent fuel assembly onto the spent fuel racks within the SFP resulting in breaking the fuel rods.

3. Aircraft Potential Threat (50.54(hh))
   - Notification is received from the NRC that a potential aircraft threat exists (>5 minutes, <30 minutes).
4. Fire requiring evacuation of the Control Room and control of service water pumps from a remote location
   - A fire occurs requiring the evacuation of the Control Room and procedures implemented to control service water pumps from a remote location.
5. General Emergency (GE) with radioactive release and PAR (assumed for analysis purposes)
   - This event is based on the same initial conditions as the FHA, but assumes a dose that exceeds the Environmental Protection Agency's (EPA) Protective Action Guides (PAGs) beyond the site boundary, and thus necessitates promulgation of a PAR.

C. Accident Scenarios not included in the Analysis

1. Station Blackout

ISG-01 provides guidance associated with the staffing analysis for a Station Blackout (SBO). ISG-01 states, in part:

> *Station blackouts are beyond the plant's design basis and may not need to be addressed in the staffing analysis. The blackout coping analyses performed by licensees pursuant to 10 CFR 50.63 establish blackout coping times that exceed the required on-shift staff augmentation time. Also, since the control room fire scenario leading to evacuation and remote shutdown may adequately address the considerations involved with an Appendix R "safe shutdown" fire, licensees may not need to consider this scenario in the staffing analysis.*

10 CFR 50.63(a)(1) states, in part:

> *Each light-water-cooled nuclear power plant licensed to operate under this part, each light-water-cooled nuclear power plant licensed under subpart C of 10 CFR part 52 after the Commission makes the finding under § 52.103(g) of this chapter, and each design for a light-water-cooled nuclear power plant approved under a standard design approval, standard design certification,*

and manufacturing license under part 52 of this chapter must be able to withstand for a specified duration and recover from a station blackout as defined in § 50.2.

Once VY submits the certification of permanent removal of fuel in accordance with 10 CFR 50.82(a)(1)(ii), per 10 CFR 50.82(a)(2) the Part 50 license will no longer authorize operation of the reactor or emplacement of fuel in the reactor vessel. VY will no longer be a nuclear power plant licensed to operate under 10 CFR Part 50 and 10 CFR 50.63 will no longer be applicable. The SBO scenario is no longer considered an appropriate gauge by which to measure whether an event presents on-shift staff with responsibilities that would prevent the timely performance of assigned functions in the E-Plan. Therefore, this scenario is not considered in this analysis.

2. Appendix R Fire That Results in a Reactor Trip

10 CFR 50 Appendix R is applicable to licensed nuclear power generating stations. Once the certifications required by 10 CFR 50.82(a)(1) are docketed, VY will no longer be licensed to generate nuclear power. The Appendix R fire scenario is no longer considered an appropriate gauge by which to measure whether an event presents on-shift staff with responsibilities that would prevent the timely performance of assigned functions in the E-Plan. Therefore, this scenario is not considered in this analysis.

V. GENERAL ASSUMPTIONS AND LIMITATIONS

A. Notes and Assumptions applicable to all accidents in VY Staffing Analysis:

1. The RP and Chemistry tasks reviewed were those directed by the Shift Manager to support actions in Operations procedures for Off-Normal and Emergency conditions, and Emergency Plan procedures and checklists. Any additional tasks directed by the Technical Support Center (TSC), Operations Support Center (OSC), or Emergency Operations Facility (EOF) procedures were not reviewed.
2. VY has 30 and 60 minute emergency responders when augmented while the ERO is offsite. This analysis was conducted assuming a 90 minute response of the augmented ERO to allow the use of this analysis for a possible future extension in ERO augmentation times. There were no specific emergency response tasks assigned to the augmented ERO prior to the 90 minute response.
3. There are no time critical RP or Chemistry tasks and task performance is directed and prioritized by the Shift Manager. The time RP is directed to perform a task and the amount of time taken to complete tasks are estimated. No Chemistry samples are required by Tech Specs within the 90 minute period after a declaration. Because the Shift Manager directs when the tasks are performed, there are no overlapping RP or chemistry tasks.

B. NEI 10-05 Rev 0 Assumptions

1. Response time used for this analysis was the maximum acceptable number of minutes elapsed between emergency declaration and the augmented ERO position holder at a location necessary to relieve an on-shift position of the emergency response task. As noted above, this analysis assumed a 90 minute augmentation time although the times noted in the Table 1 accident analysis tables reflects the E-plan required staffing times of 30 or 60 minutes.
2. On-shift personnel complement was based on the proposed post-shutdown on-shift positions expected to be in place following shutdown and permanent removal of fuel from the reactor vessel.
3. Although the temporary absence of a position may be allowed by Tech Specs, the analysis was performed assuming that all required on-shift positions are filled.
4. Each analyzed event occurred during off-normal work hours where the ERO was offsite and all required minimum on-shift positions were filled.
5. On-shift personnel reported to their assigned response locations within timeframes sufficient to allow for performance of assigned actions.
6. On-shift staff had necessary Radiation Worker qualification to obtain normal dosimetry and enter the radiological control area (RCA) (but not locked high or very high radiation areas) without the aid of an RP technician.
7. Personnel assigned plant operations met the requirements and guidance (analyzed through other programs such as operator training) and were not evaluated as part of this assessment unless a role/function/task from another major response area was assigned as a collateral duty.
8. In-plant (manual) safety related operator actions to manipulate components and equipment from locations outside the control room to achieve and maintain SFP cooling was done by a member of the on-shift staff as defined in the unit's Tech Specs.
9. Fire brigade (FB) staff performance is analyzed through other station programs (e.g., fire drills) and was not evaluated as part of this assessment unless a role/function/task from another major response area was assigned as a collateral duty.
10. Security was not evaluated unless a role or function from another major response area was assigned as a collateral duty.
11. Communications, briefings, and peer checks are acceptable collateral duties.
12. All on-shift staff positions were evaluated, even if they had no known collateral duties, to ensure they can perform the tasks assigned to them. [Ref NSIR/DPR-ISG-01]
13. The Staffing Analysis specified the resources available to perform "Repair and Corrective Actions" and "Rescue Operations and First Aid" but these may be assigned as collateral duty to a designated on-shift responder.
14. For assessment purposes, NRC notifications were treated as a continuous action per 10CFR50.72(c)(3) and 73.71(b)(1). This means once the initial NRC communications are established, the NRC will request an open line be maintained with the NRC Operations Center.

15. DBA (postulated accident, Condition IV event, or limiting fault) is considered as “Unanticipated occurrences that are postulated for accident analysis purposes but not expected to occur during the life of the plant. A postulated accident could result in sufficient damage to preclude resumption of plant operation. As a result, a greater number and variety of actions would need to be implemented by plant personnel.”
16. DBT assumed a hostile force breached the protected area fence but was neutralized with no adverse consequences to plant safety. Damage inflicted on plant systems, structures and components was not sufficient to interrupt SFP cooling or cause a radiological release. There was no fire significant enough to warrant firefighting efforts prior to arrival of offsite resources and/or the augmented ERO.
17. The Staffing Analysis used DBA analysis assumptions, inputs, timing of events, plant protective response, and specified manual operator actions and their timing, as documented in the UFSAR.
18. In cases where a DBA analysis included a radiological release, and the starting point of the release was not clearly defined, the staffing analysis assumed that the release began 15-minutes after the initiating event.

VI. APPENDIX A - ANALYZED EVENTS AND ACCIDENTS

Event #	Event Type	Summary Description of Event	Plant Mode[1]	Reference Document(s)	Event ECL	Analysis Required?
1	DBT	Land and/or waterborne HOSTILE ACTION directed against the Protected Area by a HOSTILE FORCE. Assume adversary characteristics defined by the Design Basis Threat (DBT).	Permanently Defueled	NEI 10-05	Site Area Emergency	Yes
2	DBA	Fuel Handling Accident	Permanently Defueled	UFSAR Chapter 14 (as revised to address permanently defueled conditions)	Alert	Yes
3	Assumed for Analysis Purpose	Aircraft Potential Threat	Permanently Defueled	10CFR50.54hh(1) RG 1.214	Alert	Yes
4	Assumed for Analysis Purpose	Control Room Evacuation and transfer control to remote location (fire in main control room)	Permanently Defueled	10 CFR Part 50.48	Alert	Yes
5	Assumed for Analysis Purpose	General Emergency with radiological release and PAR	Permanently Defueled	ISG IV.C	General Emergency	Yes
6	Assumed for Analysis Purpose	Station Blackout	Permanently Defueled	10CFR50.63	Site Area Emergency	No[2]
7	Assumed for Analysis Purpose	Appendix R Fire	Permanently Defueled	ISG IV.C	Alert	No[3]

[1] Once VY submits the certification of permanent removal of fuel in accordance with 10 CFR 50.82(a)(1)(ii), per 10 CFR 50.82(a)(2) the 10 CFR Part 50 license will no longer authorize operation of the reactor or emplacement of fuel in the reactor vessel. VY will no longer be a nuclear power plant licensed to operate under Part 50.

[2] Once VY submits the certification of permanent removal of fuel in accordance with 10 CFR 50.82(a)(1)(ii), per 10 CFR 50.82(a)(2) the 10 CFR Part 50 license will no longer authorize operation of the reactor or emplacement of fuel in the reactor vessel and 10 CFR 50.63 will no longer be applicable.

[3] Upon Termination of License as prescribed under 10 CFR 50.82 VY 's Fire Protection program will fall under 10 CFR 50.48 (f) which requires the maintenance of a fire protection program to address the potential for fires that could result in the release or spread of radioactive materials..

VII. APPENDIX B – ON-SHIFT STAFFING ANALYSIS

A. Accident Analysis #1 – Design Basis Threat

1. Accident Summary

   - Land and/or waterborne HOSTILE ACTION directed against the Protected Area by a HOSTILE FORCE. Assume adversary characteristics defined by the Design Basis Threat (DBT).

2. Accident Specific Assumptions Made

   - The VY DBT for this analysis assumes a land based threat.
   - This event assumes the threat is neutralized immediately when inside the protected area fence, no significant damage to equipment or systems that require corrective actions before the ERO is staffed, no radiological release, and no fire that requires firefighting response before the ERO is staffed.
   - Assume Spent Fuel Pool Temperature of 125ºF.
   - Security notifies the Shift Manager of condition of hostile action occurring within the protected area (Security code RED)
   - Assume all non-security staff is located inside the protected area at their normal work station when the event occurs.
   - Assume all systems function and the spent fuel remains covered. No fuel damage and no release.

3. Procedures for Accident Response

   - OPOP-SECU-3132, Operations Response to Security Events
   - EPOP-CR-3540, Control Room Actions During an Emergency
   - OP3547, Security Actions During an Emergency

4. Tables

VY TABLE 1 – ON-SHIFT POSITIONS Analysis # 1 DBT Security Threat						
Line #	**On-shift Position**	**E-Plan Reference**	**Augmentation Elapsed Time (min)***	**Role in Table # / Line #**	**Unanalyzed Task?**	**TMS Required?**
1	SM	Emergency Plan Table 8.4	60	T2/L1 T5/L1 T5/L3 T5/L5 T5/L6	No	Yes[1]
2	CRS	Emergency Plan Table 8.4	N/A	T2/L2 T5/L7* T5/ L8 T5/L9 T5/L10 T5/L13	No	Yes[2]
3	AO/CRO/NCO #1	Emergency Plan Table 8.4	N/A	N/A	No	No
4	AO/CRO/NCO #2	Emergency Plan Table 8.4	N/A	N/A	No	No
5	AO/CRO/NCO #3/	Emergency Plan Table 8.4	N/A	N/A	No	No
6	FB #1	Emergency Plan Table 8.4	N/A	N/A	No	No
7	FB #2	Emergency Plan Table 8.4	N/A	N/A	No	No
8	RP	Emergency Plan Table 8.4	30	N/A	No	No
9	Security	Security Contingency Plan / Emergency Plan Table 8.4	N/A	T5/L15	No	No

[1] Guidance provided in Table 3.1 of NEI 10-05 indicates the need to perform a TMS to verify the results of this analysis. The Shift Manager is assigned the responsibility to make ERO notifications. A TMS was conducted during development of the December 2012 OSA and demonstrated that the Shift Manager was able to maintain Emergency Direction and Control during the approximate 2 minutes it took to notify the ERO using Everbridge. No further analysis or TMS is required to verify timely and effective implementation.

[2] See Section VIII.A

* Expected duration of less than 1 minute. Therefore, Task not included in the TMS included in Section VIII.A.

VY TABLE 2 – PLANT OPERATIONS One Unit – One Control Room ANALYSIS # 1 DBT Security Threat Minimum Operations Crew Necessary to Implement AOPs and EOPs if Applicable			
Line #	**Generic Title/Role**	**On-Shift Position**	**Task Analysis Controlling Method**
1	Shift Manager	SM	Licensed Operator Training Program
2	Unit Supervisor	CRS	Licensed Operator Training Program

Other (non-Operations) Personnel Necessary to Implement AOPs and EOPs if Applicable

Line #	Generic Title/Role	On-Shift Position	Task Analysis Controlling Method
3	Mechanic	N/A	N/A
4	Electrician	N/A	N/A
5	I&C Technician	N/A	N/A
6	Other	N/A	N/A
7	Other	N/A	N/A

Fire Brigade

VY TABLE 3 – FIREFIGHTING ANALYSIS # 1 DBT Security Threat		
Line #	**Performed by**	**Task Analysis Controlling Method**
1	N/A	N/A
2	N/A	N/A
3	N/A	N/A
4	N/A	N/A
5	N/A	N/A

This accident does not include the need for firefighting, first aid or search & rescue.

VY TABLE 4 – RADIATION PROTECTION AND CHEMISTRY Analysis # 1 DBT Security Threat																			
LINE	Position Performing Function / Task	Performance Time Period After Emergency Declaration (minutes)																	
		0-5	5-10	10-15	15-20	20-25	25-30	30-35	35-40	40-45	45-50	50-55	55-60	60-65	65-70	70-75	75-80	80-85	85-90
1	In-Plant Survey: N/A																		
2	On-site Survey: N/A																		
3	Personnel Monitoring: N/A																		
4	Job Coverage: N/A																		
5	Offsite Rad Assessment: N/A																		
6	Other site specific RP (describe): N/A																		
7	Chemistry Function task #1 (describe) N/A																		
8	Chemistry Function task #2 (describe) N/A																		

No chemistry or RP job function tasks for the conditions described in the DBT assumptions. RP takes cover as directed.

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

B. Accident Analysis #2 – Fuel Handling Accident

1. Accident Summary
   - The FHA assumes the drop of a spent fuel assembly onto the spent fuel racks within the SFP resulting in breaking the fuel rods.

2. Accident Specific Assumptions Made
   - This analysis assumes an ALERT declaration based on area radiation monitors reaching levels to prompt an emergency declaration.
   - Additional station personnel, including Operations and Health Physics Technicians, would be on-site during fuel assembly movement. Additional station personnel were not required, however, to support initial response actions.

3. Procedures for Accident Response
   - OP 1101, Management of Refueling Activities and Fuel Assembly Movement
   - OP 1100, Refuel Platform Operation

4. Tables

VY TABLE 1 – ON-SHIFT POSITIONS Analysis #2 – Fuel Handling Accident						
Line #	**On-shift Position**	**E-Plan Reference**	**Augmentation Elapsed Time (min)**	**Role in Table # / Line #**	**Unanalyzed Task?**	**TMS Required?**
1	SM	Emergency Plan Table 8.4	60	T2/L1 T5/L1 T5/L3 T5/L5 T5/L6	No	Yes[1]
2	CRS	Emergency Plan Table 8.4	N/A	T2/L2 T5/L8 T5/L9 T5/L10 T5/L12 T5/L13	No	Yes[2]
3	AO/CRO/NCO #1	Emergency Plan Table 8.4	N/A	N/A	No	No
4	AO/CRO/NCO #2	Emergency Plan Table 8.4	N/A	N/A	No	No
5	AO/CRO/NCO #3	Emergency Plan Table 8.4	N/A	N/A	No	No
6	FB #1	Emergency Plan Table 8.4	N/A	N/A	No	No
7	FB #2	Emergency Plan Table 8.4	N/A	N/A	No	No
8	RP	Emergency Plan Table 8.4	30	T4/L2	No	No
9	Security	Security Contingency Plan / Emergency Plan Table 8.4	N/A	T5/L15	No	No

[1] Guidance provided in Table 3.1 of NEI 10-05 indicates the need to perform a TMS to verify the results of this analysis. The Shift Manager is assigned the responsibility to make ERO notifications. A TMS was conducted during development of the December 2012 OSA and demonstrated that the Shift Manager was able to maintain Emergency Direction and Control during the approximate 2 minutes it took to notify the ERO using Everbridge. No further analysis or TMS is required to verify timely and effective implementation.

[2] See Section VIII.B

VY TABLE 2 – PLANT OPERATIONS One Unit – One Control Room ANALYSIS # 2 – Fuel Handling Accident			
Minimum Operations Crew Necessary to Implement AOPs and EOPs if Applicable			
Line #	**Generic Title/Role**	**On-Shift Position**	**Task Analysis Controlling Method**
1	Shift Manager	SM	Licensed Operator Training Program
2	Unit Supervisor	CRS	Licensed Operator Training Program

Other (non-Operations) Personnel Necessary to Implement AOPs and EOPs if Applicable

Line #	Generic Title/Role	On-Shift Position	Task Analysis Controlling Method
3	Mechanic	N/A	N/A
4	Electrician	N/A	N/A
5	I&C Technician	N/A	N/A
6	Other	N/A	N/A
7	Other	N/A	N/A

Fire Brigade

VY TABLE 3 – FIREFIGHTING ANALYSIS # 2 – Fuel Handling Accident		
Line #	**Performed by**	**Task Analysis Controlling Method**
1	N/A	N/A
2	N/A	N/A
3	N/A	N/A
4	N/A	N/A
5	N/A	N/A

This accident does not include the need for firefighting, first aid or search & rescue.

VY TABLE 4 – RADIATION PROTECTION AND CHEMISTRY Analysis #2 – Fuel Handling Accident																			
LINE	Position Performing Function / Task	Performance Time Period After Emergency Declaration (minutes)*																	
		0-5	5-10	10-15	15-20	20-25	25-30	30-35	35-40	40-45	45-50	50-55	55-60	60-65	65-70	70-75	75-80	80-85	85-90
1	In-Plant Survey: N/A																		
2	On-site Survey: RP						X	X	X	X	X	X	X	X	X	X	X	X	X
3	Personnel Monitoring: N/A																		
4	Job Coverage: N/A																		
5	Offsite Rad Assessment: *(Included in Table 5*																		
6	Other site specific RP (describe): N/A																		
7	Chemistry Function task #1 (describe) N/A																		
8	Chemistry Function task #2 (describe) N/A																		

The time* to commence and complete the task is estimated.

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

C. Accident Analysis #3 – Aircraft Potential Threat

1. Accident Summary

   - The analysis includes all emergency response actions taken prior to an aircraft impact in accordance with RG 1.214.
   - The analysis does not include a scenario or response actions taken during or after a crash.

2. Accident Specific Assumptions Made

   - The Shift Manager receives the call from the NRC of potential aircraft threat.
   - All non-security on-shift personnel are inside the protected area fence at their normal workstation.

3. Procedures for Accident Response

   - ON3177, Operations Response to an Aircraft Threat
   - EPOP-CR-3540, Control Room Actions During an Emergency

4. **Tables**

VY TABLE 1 – ON-SHIFT POSITIONS Analysis #3 – Aircraft Potential Threat						
Line #	**On-shift Position**	**E-Plan Reference**	**Augmentation Elapsed Time (min)**	**Role in Table # / Line #**	**Unanalyzed Task?**	**TMS Required?**
1	SM	Emergency Plan Table 8.4	60	T2/L1 T5/L1 T5/L3 T5/L5 T5/L6	No	Yes[1]
2	CRS	Emergency Plan Table 8.4	N/A	T2/L2 T5/L9 T5/L13	No	Yes[2]
3	AO/CRO/NCO #1	Emergency Plan Table 8.4	N/A	T3/L1	No	No
4	AO/CRO/NCO #2	Emergency Plan Table 8.4	N/A	T3/L2	No	No
5	AO/CRO/NCO #3	Emergency Plan Table 8.4	N/A	T3/L3	No	No
6	FB #1	Emergency Plan Table 8.4	N/A	T3/L4	No	No
7	FB #2	Emergency Plan Table 8.4	N/A	T3/L5	No	No
8	RP	Emergency Plan Table 8.4	30	N/A	No	No
9	Security	Security Contingency Plan / Emergency Plan Table 8.4	N/A	T5/L15	No	No

[1] Guidance provided in Table 3.1 of NEI 10-05 indicates the need to perform a TMS to verify the results of this analysis. The Shift Manager is assigned the responsibility to make ERO notifications. A TMS was conducted during development of the December 2012 OSA and demonstrated that the Shift Manager was able to maintain Emergency Direction and Control during the approximate 2 minutes it took to notify the ERO using Everbridge. No further analysis or TMS is required to verify timely and effective implementation.

[2] See Section VIII.C.

VY TABLE 2 – PLANT OPERATIONS & SAFE SHUTDOWN One Unit – One Control Room Analysis #3 – Aircraft Potential Threat			
Minimum Operations Crew Necessary to Implement AOPs and EOPs if Applicable			
Line #	**Generic Title/Role**	**On-Shift Position**	**Task Analysis Controlling Method**
1	Shift Manager	SM	Licensed Operator Training Program
2	Unit Supervisor	CRS	Licensed Operator Training Program

Other (non-Operations) Personnel Necessary to Implement AOPs and EOPs if Applicable

Line #	Generic Title/Role	On-Shift Position	Task Analysis Controlling Method
3	Mechanic	N/A	N/A
4	Electrician	N/A	N/A
5	I&C Technician	N/A	N/A
6	Other	N/A	N/A
7	Other	N/A	N/A

Fire Brigade

VY TABLE 3 – FIREFIGHTING Analysis #3 – Aircraft Potential Threat		
Line #	**Performed by**	**Task Analysis Controlling Method**
1	AO/CRO/NCO #1	Fire Protection Program
2	AO/CRO/NCO #2	Fire Protection Program
3	AO/CRO/NCO #3	Fire Protection Program
4	FB#1	Fire Protection Program
5	FB#2	Fire Protection Program

This accident does not include the need for firefighting, first aid or search & rescue. The Fire Brigade relocates outside the PA and stands by in the Plant Support Building.

Analysis # 6 Aircraft Threat

VY TABLE 4 – RADIATION PROTECTION AND CHEMISTRY Analysis #3 – Aircraft Potential Threat																			
LINE	Position Performing Function / Task	Performance Time Period After Emergency Declaration (minutes)*																	
		0-5	5-10	10-15	15-20	20-25	25-30	30-35	35-40	40-45	45-50	50-55	55-60	60-65	65-70	70-75	75-80	80-85	85-90
1	In-Plant Survey: N/A																		
2	On-site Survey: N/A																		
3	Personnel Monitoring: N/A																		
4	Job Coverage: N/A																		
5	Offsite Rad Assessment: *(Included in Table 5 – N/A*																		
6	Other site specific RP (describe): N/A**																		
7	Chemistry Function task #1 (describe) – N/A																		
8	Chemistry Function task #2 (describe) – N/A																		

*Times are estimated.

** The Radiation Protection Technician has assigned no tasks in response to this event and would be available, if needed, to maintain continuous communications with the NRC during the event.

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

Note 1: Lines 8 and 10 are not performed during an aircraft threat.

D. Accident Analysis #4 – Control Room Fire Requiring Evacuation and Maintain SFP Cooling

1. Accident Summary

   - This event involves a large transient fire requiring evacuation of the Control Room. The event has the potential to include shorts and/or spurious signals producing potential to lose SFP cooling capabilities.

2. Accident Specific Assumptions Made

   - Assumed control room staff does not have time to perform any procedural actions other than declare the Alert and make the plant announcement before leaving the control room.

3. Procedures for Accident Response

   - EPOP-CR-3540, Control Room Actions During an Emergency
   - OP 3547, Security Actions During an Emergency

4. **Tables**

VY TABLE 1 – ON-SHIFT POSITIONS Analysis #4 – CR Evacuation & SFP Cooling						
Line #	**On-shift Position**	**E-Plan Reference**	**Augmentation Elapsed Time (min)**	**Role in Table # / Line #**	**Unanalyzed Task?**	**TMS Required?**
1	SM	Emergency Plan Table 8.4	60	T2/L1 T5/L1 T5/L3 T5/L5 T5/L6	No	Yes[1]
2	CRS	Emergency Plan Table 8.4	N/A	T2/L2 T5/L8 T5/L9 T5/L10 T5/L13	No	Yes[2]
3	AO/CRO/NCO #1	Emergency Plan Table 8.4	N/A	T3/L1	No	No
4	AO/CRO/NCO #2	Emergency Plan Table 8.4	N/A	T3/L2	No	No
5	AO/CRO/NCO #3	Emergency Plan Table 8.4	N/A	T3/L3	No	No
6	FB #1	Emergency Plan Table 8.4	N/A	T3/L4	No	No
7	FB #2	Emergency Plan Table 8.4	N/A	T3/L5	No	No
8	RP	Emergency Plan Table 8.4	30	N/A	No	No
9	Security	Security Contingency Plan / Emergency Plan Table 8.4	N/A	N/A	No	No

[1] Guidance provided in Table 3.1 of NEI 10-05 indicates the need to perform a TMS to verify the results of this analysis. The Shift Manager is assigned the responsibility to make ERO notifications. A TMS was conducted during development of the December 2012 OSA and demonstrated that the Shift Manager was able to maintain Emergency Direction and Control during the approximate 2 minutes it took to notify the ERO using Everbridge. No further analysis or TMS is required to verify timely and effective implementation.

[2] See Section VIII.D.

VY TABLE 2 – PLANT OPERATIONS One Unit – One Control Room Analysis #4 – CR Evacuation & SFP Cooling			
Minimum Operations Crew Necessary to Implement AOPs and EOPs if Applicable			
Line #	**Generic Title/Role**	**On-Shift Position**	**Task Analysis Controlling Method**
1	Shift Manager	SM	Licensed Operator Training Program
2	Unit Supervisor	CRS	Licensed Operator Training Program

Other (non-Operations) Personnel Necessary to Implement AOPs and EOPs if Applicable

Line #	Generic Title/Role	On-Shift Position	Task Analysis Controlling Method
3	Mechanic	N/A	N/A
4	Electrician	N/A	N/A
5	I&C Technician	N/A	N/A
6	Other	N/A	N/A
7	Other	N/A	N/A

Fire Brigade

VY TABLE 3 – FIREFIGHTING Analysis #4 – CR Evacuation & SFP Cooling		
Line #	**Performed by**	**Task Analysis Controlling Method**
1	AO/CRO/NCO #1	Fire Protection Program
2	AO/CRO/NCO #2	Fire Protection Program
3	AO/CRO/NCO #3	Fire Protection Program
4	FB#1	Fire Protection Program
5	FB#2	Fire Protection Program

VY TABLE 4 – RADIATION PROTECTION AND CHEMISTRY Analysis #4 – CR Evacuation & SFP Cooling																			
LINE	Position Performing Function / Task	Performance Time Period After Emergency Declaration (minutes)*																	
		0-5	5-10	10-15	15-20	20-25	25-30	30-35	35-40	40-45	45-50	50-55	55-60	60-65	65-70	70-75	75-80	80-85	85-90
1	In-Plant Survey: N/A																		
2	On-site Survey: N/A																		
3	Personnel Monitoring: N/A																		
4	Job Coverage: N/A																		
5	Offsite Rad Assessment: *(Included in Table 5*																		
6	Other site specific RP (describe): N/A																		
7	Chemistry Function task #1 (describe) – N/A																		
8	Chemistry Function task #2 (describe) – N/A																		

No specific time critical tasks were identified for RP or Chemistry for this event.

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

E. Accident Analysis #5 –General Emergency with Radioactive Release and PAR

1. Accident Summary (Assumed for Staffing Analysis Purpose)

   - The FHA assumes the drop of a spent fuel assembly onto the spent fuel racks within the SFP resulting in breaking the fuel rods.
   - A General Emergency is declared when the Shift Manager is given a dose assessment update that projects >1 Rem TEDE dose at the site boundary.

2. Accident Specific Assumptions Made

   - The UFSAR does not contain detailed radiological conditions or release rates to determine an EAL classification. This analysis, therefore, assumed a General Emergency declaration based on area radiation monitors reaching levels to prompt an emergency declaration.
   - Additional station personnel, including Operations and Health Physics Technicians, would be on-site during fuel assembly movement. Additional station personnel were not required, however, to support initial response actions.

3. Procedures for Accident Response

   - OP 1101, Management of Refueling Activities and Fuel Assembly Movement
   - OP 1100, Refuel Platform Operation
   - SAPs
   - EPOP-CR-3540, Control Room Actions During an Emergency
   - OP3513, Evaluation of Offsite Radiological Conditions
   - OP3510, Offsite and Site Boundary Monitoring
   - EPOP-PAR-3511, Offsite Protective Action Recommendation

4. Tables

VY TABLE 1 – ON-SHIFT POSITIONS Analysis #5 –GE with PAR						
Line #	**On-shift Position**	**E-Plan Reference**	**Augmentation Elapsed Time (min)**	**Role in Table # / Line #**	**Unanalyzed Task?**	**TMS Required?**
1	SM	Emergency Plan Table 8.4	60	T2/L1 T5/L1 T5/L2 T5/L3 T5/L4 T5/L5 T5/L6	No	Yes[1]
2	CRS	Emergency Plan Table 8.4	N/A	T2/L2 T5/L8 T5/L9 T5/L10 T5/L12 T5/L13	No	Yes[2]
3	AO/CRO/NCO #1	Emergency Plan Table 8.4	N/A	N/A	No	No
4	AO/CRO/NCO #2	Emergency Plan Table 8.4	N/A	N/A	No	No
5	AO/CRO/NCO #3	Emergency Plan Table 8.4	N/A	N/A	No	No
6	FB #1	Emergency Plan Table 8.4	N/A	N/A	No	No
7	FB #2	Emergency Plan Table 8.4	N/A	N/A	No	No
8	RP	Emergency Plan Table 8.4	30	T4/L1 T4/L2	No	No
9	Security	Security Contingency Plan / Emergency Plan Table 8.4	N/A	T5/L15	No	No

[1] Guidance provided in Table 3.1 of NEI 10-05 indicates the need to perform a TMS to verify the results of this analysis. The Shift Manager is assigned the responsibility to make ERO notifications. A TMS was conducted during development of the December 2012 OSA and demonstrated that the Shift Manager was able to maintain Emergency Direction and Control during the approximate 2 minutes it took to notify the ERO using Everbridge. No further analysis or TMS is required to verify timely and effective implementation.

[2] See Section VIII.E.

VY TABLE 2 – PLANT OPERATIONS & SAFE SHUTDOWN One Unit – One Control Room Analysis #5 – GE with PAR			
Minimum Operations Crew Necessary to Implement AOPs and EOPs if Applicable			
Line #	**Generic Title/Role**	**On-Shift Position**	**Task Analysis Controlling Method**
1	Shift Manager	SM	Licensed Operator Training Program
2	Unit Supervisor	CRS	Licensed Operator Training Program

Other (non-Operations) Personnel Necessary to Implement AOPs and EOPs if Applicable

Line #	Generic Title/Role	On-Shift Position	Task Analysis Controlling Method
5	Mechanic	N/A	N/A
6	Electrician	N/A	N/A
7	I&C Technician	N/A	N/A
8	Other	N/A	N/A
9	Other	N/A	N/A

Fire Brigade

VY TABLE 3 – FIREFIGHTING Analysis #5 – GE with PAR		
Line #	**Performed by**	**Task Analysis Controlling Method**
1	N/A	N/A
2	N/A	N/A
3	N/A	N/A
4	N/A	N/A
5	N/A	N/A

This accident does not include the need for firefighting, first aid or search & rescue.

VY TABLE 4 – RADIATION PROTECTION AND CHEMISTRY Analysis #5 – GE with PAR																			
LINE	Position Performing Function / Task	Performance Time Period After Emergency Declaration (minutes)*																	
		0-5	5-10	10-15	15-20	20-25	25-30	30-35	35-40	40-45	45-50	50-55	55-60	60-65	65-70	70-75	75-80	80-85	85-90
1	In-Plant Survey: RP			X	X	X	X	X	X	X									
2	On-site Survey: RP											X	X	X	X	X	X	X	X
3	Personnel Monitoring: N/A																		
4	Job Coverage: N/A																		
5	Offsite Rad Assessment: *See Table 5*																		
6	Other site specific RP (describe): N/A																		
7	Chemistry Function task #1 (describe) N/A																		
8	Chemistry Function task #2 (describe) N/A																		

RP will survey areas as directed by the SM. It was assumed the RP performs in-plant surveys and onsite surveys throughout the event until relieved by the oncoming ERO. Times* indicated above are estimated. There are no time critical RP tasks. .

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

VIII. **APPENDIX C – TIME MOTION STUDIES SUPPORTING THE STAFFING ANALYSIS**

A. Analysis #1 – Design Basis Threat

TIME MOTION STUDY OF OVERLAPPING TASKS

Analysis #1
Design Basis Threat

TASK 1: Complete the State Notification Form Using InForm
JOB: Control Room Supervisor

TASK 2: Transmit the State Notification Form Using InForm
JOB: Control Room Supervisor

TASK 3: Perform NRC Notification
JOB: Control Room Supervisor

TASK 4: Perform Event Mitigation
JOB: Control Room Supervisor

PURPOSE:

Perform a Time Motion Study to evaluate whether the performance of notification actions assigned to the Control Room Supervisor is an acceptable task overlap to the Control Room Supervisor's primary emergency plan function of event mitigation.

NOTE:

The Time Motion Study should be completed in a simulator training scenario to demonstrate notification actions while the Shift Manager is demonstrating the Emergency Director function.

CONCLUSION:

The Time Motion Study demonstrated the Control Room Supervisor could perform the tasks of completing State, local and NRC notifications successfully, individually or in series, without impacting the ability of the CRS to remain in role providing support and oversight during the emergency.

LOCATION:

Simulator

REQUIRED TOOLS/EQUIPMENT:

A. Attachment 9.5 of Procedure OP 3513, "Evaluation of Offsite Radiological Conditions"

B. Procedure EPOP-PAR-3511, "Off-Site Protective Action Recommendations"

C. Stopwatch or watch to time actions

Function / Responsibility (Task) Analysis Template

Event: # 1 Site: Vermont Yankee Position: Control Room Supervisor Line #: 8-10, 13

Function	Responsibility (Task)	Action Step	Duration
1. Off-Site Notification	1.1 Complete the state notification form using InForm.	1.1.1 Retrieve Procedure EPAP-INFORM-10076, "InForm Notification System".	12"
		1.1.2 Launch the InForm software.	3"
		1.1.3 Enter the required information on the Plant Information Tab.	1' 56"
		1.1.4 Enter the required information on the Protective Actions Tab.	8"
		1.1.5 Click on the "Show Notification Form" button and review the form for accuracy.	19"
		TASK duration for complete notification form	2' 38"
2. State notification	2.1 Transmit the state notification form using InForm	2.1.1 Obtain verification, and click on the "Send Message" button.	8"
		TASK duration for state notification	8"
3. NRC Notification	3.1 Complete NRC event notification form	3.1.1 Retrieve VY APF 0156.01, "Event Notification Worksheet."	15"
		3.1.2 Complete VY APF 0156.01, "Event Notification Worksheet," for the appropriate emergency event.	15' 17"
		3.1.3 Make telephone call to notify the NRC	2' 59"
		TASK duration for NRC notification	18' 31"
4. Event Mitigation	4.1 Assess and respond to plant conditions	4.1.1 Provide assistance to the Shift Manager in mitigating the event as directed.	7' 32'
		TASK duration for event mitigation	7' 32"
		TOTAL DURATION	28' 49"

Task Performer: Vince Roll Position: Control Room Supervisor Date: 2/20/14

Evaluator: Chuck Dissinger Position: Senior Emergency Planner Date: 2/20/14

B. Analysis #2 – Fuel Handling Accident

TIME MOTION STUDY OF OVERLAPPING TASKS

Analysis #2
Fuel Handling Accident

TASK 1: Complete the State Notification Form Using InForm
JOB: Control Room Supervisor

TASK 2: Transmit the State Notification Form Using InForm
JOB: Control Room Supervisor

TASK 3: Perform Off-Site Dose Assessment
JOB: Control Room Supervisor

TASK 4: Perform NRC Notification
JOB: Control Room Supervisor

TASK 5: Perform Event Mitigation
JOB: Control Room Supervisor

PURPOSE:

Perform a Time Motion Study to evaluate whether the performance of notification and dose assessment actions assigned to the Control Room Supervisor are acceptable task overlaps to the Control Room Supervisor's primary emergency plan function of event mitigation.

After the dose assessment is complete, the Control Room Supervisor will formulate a Protective Action Recommendation (PAR) based on the dose assessment results.

NOTE:

The Time Motion Study should be completed in a simulator training scenario with a stack release (GE level release) to demonstrate dose assessment actions while the Shift Manager is demonstrating the Emergency Director function. Stack Release Rate, Wind Direction, Wind Speed, and Stability Class as determined by the Simulator Instructors or the EP Representative or Instructor to require a PAR based on dose assessment.

CONCLUSION:

The Time Motion Study demonstrated the Control Room Supervisor could perform the tasks of completing State, local and NRC notifications and dose assessment successfully, individually or in series, without impacting the ability of the CRS to remain in role providing support and oversight during the emergency.

LOCATION:

Simulator

REQUIRED TOOLS/EQUIPMENT:

A. Attachment 9.5 of Procedure OP 3513, "Evaluation of Offsite Radiological Conditions"

B. Procedure EPOP-PAR-3511, "Off-Site Protective Action Recommendations"

C. Stopwatch or watch to time actions

Function / Responsibility (Task) Analysis Template

Event: # 2 Site: Vermont Yankee Position: Control Room Supervisor Line #: 8-10, 12, 13

Function	Responsibility (Task)	Action Step	Duration
1. Off-Site Notification	1.1 Complete the state notification form using InForm.	1.1.1 Retrieve Procedure EPAP-INFORM-10076, "InForm Notification System".	12"
		1.1.2 Launch the InForm software.	3"
		1.1.3 Enter the required information on the Plant Information Tab.	1' 56"
		1.1.4 Enter the required information on the Protective Actions Tab.	8"
		1.1.5 Click on the "Show Notification Form" button and review the form for accuracy.	19"
		TASK duration for complete notification form	2' 38"
2. State notification	2.1 Transmit the state notification form using InForm	2.1.1 Obtain verification, and click on the "Send Message" button.	8"
		TASK duration for state notification	8"
3. Dose Assessment and Protective Action Recommendation	3.1 Perform Dose Assessment using the Off-Site Dose Projection System per OP 3513, Attachment 9.5 for a stack release	3.1.1 Click the "ODPS" menu item on the RTIME menu bar to access the "ODPS Menu" **OR** if the workstation has an ERFIS terminal keyboard, press the "ODPS" key.	3"
		3.1.2 Click on the "SOURCE TERM DATA" box to display screen.	5"
		3.1.3 Click the "PDPS" menu item on the RTIME menu bar to access the "ODPS Menu" **OR** if the workstation has an ERFIS terminal keyboard, press the "ODPA" key.	5"
		3.1.4 Click on the "PROTECTIVE ACTION RECOMMENDATIONS LIVE STACK MR/HR" box to display screen.	4"
	3.2 Formulate a PAR using Section 9.2 of EPOP-PAR-	3.2.1 Use InForm to obtain the PAR	1' 06"

	3511		
		3.2.2 If available, a second individual should independently verify the PAR. The verification may be performed by the individual who is approving the PAR (Shift Manager or Emergency Director)	55”
		TASK duration for dose assessment	2’ 18”
4. NRC Notification	4.1 Complete NRC event notification form	4.1.1 Retrieve VY APF 0156.01, “Event Notification Worksheet.”	15”
		4.1.2 Complete VY APF 0156.01, “Event Notification Worksheet,” for the appropriate emergency event.	15’ 17”
		4.1.3 Make telephone call to notify the NRC	2’ 59”
		TASK duration for NRC notification	18’ 31”
5. Event Mitigation	5.1 Assess and respond to plant conditions	5.1.1 Provide assistance to the Shift Manager in mitigating the event as directed.	7’ 32’
		TASK duration for event mitigation	7’ 32”
		TOTAL DURATION	31’ 07”

Task Performer: Vince Roll Position: Control Room Supervisor Date: 2/20/14

Evaluator: Chuck Dissinger Position: Senior Emergency Planner Date: 2/20/14

C. Analysis #3 – Aircraft Potential Threat

TIME MOTION STUDY OF OVERLAPPING TASKS

Analysis #3
Aircraft Potential Threat

TASK 1: Complete the State Notification Form Using InForm
JOB: Control Room Supervisor

TASK 2: Transmit the State Notification Form Using InForm
JOB: Control Room Supervisor

TASK 3: Perform NRC Notification
JOB: Control Room Supervisor

TASK 4: Perform Event Mitigation
JOB: Control Room Supervisor

PURPOSE:

Perform a Time Motion Study to evaluate whether the performance of NRC notification actions assigned to the Control Room Supervisor is an acceptable task overlap to the Control Room Supervisor's primary emergency plan function of event mitigation.

NOTE:

The Time Motion Study should be completed in a simulator training scenario to demonstrate notification actions while the Shift Manager is demonstrating the Emergency Director function.

CONCLUSION:

The Time Motion Study demonstrated the Control Room Supervisor could perform the tasks of completing State, local and NRC notifications successfully, individually or in series, without impacting the ability of the CRS to remain in role providing support and oversight during the emergency.

LOCATION:

Simulator

REQUIRED TOOLS/EQUIPMENT:

A. Attachment 9.5 of Procedure OP 3513, "Evaluation of Offsite Radiological Conditions"

B. Procedure EPOP-PAR-3511, "Off-Site Protective Action Recommendations"

C. Stopwatch or watch to time actions

Function / Responsibility (Task) Analysis Template

Event: # 3 Site: Vermont Yankee Position: Control Room Supervisor Line #: 9, 13

Function	Responsibility (Task)	Action Step	Duration
1. Off-Site Notification	1.1 Complete the state notification form using InForm.	1.1.1 Retrieve Procedure EPAP-INFORM-10076, "InForm Notification System".	12"
		1.1.2 Launch the InForm software.	3"
		1.1.3 Enter the required information on the Plant Information Tab.	1' 56"
		1.1.4 Enter the required information on the Protective Actions Tab.	8"
		1.1.5 Click on the "Show Notification Form" button and review the form for accuracy.	19"
		TASK duration for complete notification form	2' 38"
2. State notification	2.1 Transmit the state notification form using InForm	2.1.1 Obtain verification, and click on the "Send Message" button.	8"
		TASK duration for state notification	8"
3. NRC Notification	3.1 Complete NRC event notification form	3.1.1 Retrieve VY APF 0156.01, "Event Notification Worksheet."	15"
		3.1.2 Complete VY APF 0156.01, "Event Notification Worksheet," for the appropriate emergency event.	15' 17"
		3.1.3 Make telephone call to notify the NRC	2' 59"
		TASK duration for NRC notification	18' 31"
4. Event Mitigation	4.1 Assess and respond to plant conditions	4.1.1 Provide assistance to the Shift Manager in mitigating the event as directed.	7' 32'
		TASK duration for event mitigation	7' 32"
		TOTAL DURATION	28' 49"

Task Performer: Vince Roll Position: Control Room Supervisor Date: 2/20/14

Evaluator: Chuck Dissinger Position: Senior Emergency Planner Date: 2/20/14

D. Analysis #4 – Control Room Fire Requiring Evacuation and Maintain SFP Cooling

TIME MOTION STUDY OF OVERLAPPING TASKS

Analysis #4
Control Room Fire Requiring Evacuation and Maintain SFP Cooling

TASK 1: Complete the State Notification Form Using InForm
JOB: Control Room Supervisor

TASK 2: Transmit the State Notification Form Using InForm
JOB: Control Room Supervisor

TASK 3: Perform NRC Notification
JOB: Control Room Supervisor

TASK 4: Perform Event Mitigation
JOB: Control Room Supervisor

PURPOSE:

Perform a Time Motion Study to evaluate whether the performance of notification actions assigned to the Control Room Supervisor is an acceptable task overlap to the Control Room Supervisor's primary emergency plan function of event mitigation.

NOTE:

The Time Motion Study should be completed in a simulator training scenario to demonstrate notification actions while the Shift Manager is demonstrating the Emergency Director function.

CONCLUSION:

The Time Motion Study demonstrated the Control Room Supervisor could perform the tasks of completing State, local and NRC notifications successfully, individually or in series, without impacting the ability of the CRS to remain in role providing support and oversight during the emergency.

LOCATION:

Simulator

REQUIRED TOOLS/EQUIPMENT:

A. Attachment 9.5 of Procedure OP 3513, "Evaluation of Offsite Radiological Conditions"

B. Procedure EPOP-PAR-3511, "Off-Site Protective Action Recommendations"

C. Stopwatch or watch to time actions

Function / Responsibility (Task) Analysis Template

Event: # 4 Site: Vermont Yankee Position: Control Room Supervisor Line #: 8-10, 13

Function	Responsibility (Task)	Action Step	Duration
1. Off-Site Notification	1.1 Complete the state notification form using InForm.	1.1.1 Retrieve Procedure EPAP-INFORM-10076, "InForm Notification System".	12"
		1.1.2 Launch the InForm software.	3"
		1.1.3 Enter the required information on the Plant Information Tab.	1' 56"
		1.1.4 Enter the required information on the Protective Actions Tab.	8"
		1.1.5 Click on the "Show Notification Form" button and review the form for accuracy.	19"
		TASK duration for complete notification form	2' 38"
2. State notification	2.1 Transmit the state notification form using InForm	2.1.1 Obtain verification, and click on the "Send Message" button.	8"
		TASK duration for state notification	8"
3. NRC Notification	3.1 Complete NRC event notification form	3.1.1 Retrieve VY APF 0156.01, "Event Notification Worksheet."	15"
		3.1.2 Complete VY APF 0156.01, "Event Notification Worksheet," for the appropriate emergency event.	15' 17"
		3.1.3 Make telephone call to notify the NRC	2' 59"
		TASK duration for NRC notification	18' 31"
4. Event Mitigation	4.1 Assess and respond to plant conditions	4.1.1 Provide assistance to the Shift Manager in mitigating the event as directed.	7' 32'
		TASK duration for event mitigation	7' 32"
		TOTAL DURATION	28' 49"

Task Performer: Vince Roll Position: Control Room Supervisor Date: 2/20/14

Evaluator: Chuck Dissinger Position: Senior Emergency Planner Date: 2/20/14

E. Analysis #5 – General Emergency with Radioactive Release and PAR

TIME MOTION STUDY OF OVERLAPPING TASKS

Analysis #5
General Emergency with Radioactive Release and PAR

TASK 1: Complete the State Notification Form Using InForm
JOB: Control Room Supervisor

TASK 2: Transmit the State Notification Form Using InForm
JOB: Control Room Supervisor

TASK 3: Perform Off-Site Dose Assessment
JOB: Control Room Supervisor

TASK 4: Perform NRC Notification
JOB: Control Room Supervisor

TASK 5: Perform Event Mitigation
JOB: Control Room Supervisor

PURPOSE:

Perform a Time Motion Study to evaluate whether the performance of notification and dose assessment actions assigned to the Control Room Supervisor are acceptable task overlaps to the Control Room Supervisor's primary emergency plan function of event mitigation.

After the dose assessment is complete, the Control Room Supervisor will formulate a Protective Action Recommendation (PAR) based on the dose assessment results.

NOTE:

The Time Motion Study should be completed in a simulator training scenario with a stack release (GE level release) to demonstrate dose assessment actions while the Shift Manager is demonstrating the Emergency Director function. Stack Release Rate, Wind Direction, Wind Speed, and Stability Class as determined by the Simulator Instructors or the EP Representative or Instructor to require a PAR based on dose assessment.

CONCLUSION:

The Time Motion Study demonstrated the Control Room Supervisor could perform the tasks of completing State, local and NRC notifications and dose assessment successfully, individually or in series, without impacting the ability of the CRS to remain in role providing support and oversight during the emergency.

LOCATION:

Simulator

REQUIRED TOOLS/EQUIPMENT:

A. Attachment 9.5 of Procedure OP 3513, "Evaluation of Offsite Radiological Conditions"

B. Procedure EPOP-PAR-3511, "Off-Site Protective Action Recommendations"

C. Stopwatch or watch to time actions

Function / Responsibility (Task) Analysis Template

Event: # 5 Site: Vermont Yankee Position: Control Room Supervisor Line #: 8-10, 12, 13

Function	Responsibility (Task)	Action Step	Duration
1. Off-Site Notification	1.1 Complete the state notification form using InForm.	1.1.1 Retrieve Procedure EPAP-INFORM-10076, "InForm Notification System".	12"
		1.1.2 Launch the InForm software.	3"
		1.1.3 Enter the required information on the Plant Information Tab.	1' 56"
		1.1.4 Enter the required information on the Protective Actions Tab.	8"
		1.1.5 Click on the "Show Notification Form" button and review the form for accuracy.	19"
		TASK duration for complete notification form	2' 38"
2. State notification	2.1 Transmit the state notification form using InForm	2.1.1 Obtain verification, and click on the "Send Message" button.	8"
		TASK duration for state notification	8"
3. Dose Assessment and Protective Action Recommendation	3.1 Perform Dose Assessment using the Off-Site Dose Projection System per OP 3513, Attachment 9.5 for a stack release	3.1.1 Click the "ODPS" menu item on the RTIME menu bar to access the "ODPS Menu" **OR** if the workstation has an ERFIS terminal keyboard, press the "ODPS" key.	3"
		3.1.2 Click on the "SOURCE TERM DATA" box to display screen.	5"
		3.1.3 Click the "PDPS" menu item on the RTIME menu bar to access the "ODPS Menu" **OR** if the workstation has an ERFIS terminal keyboard, press the "ODPA" key.	5"
		3.1.4 Click on the "PROTECTIVE ACTION RECOMMENDATIONS LIVE STACK MR/HR" box to display screen.	4"
	3.2 Formulate a PAR using Section 9.2 of EPOP-PAR-	3.2.1 Use InForm to obtain the PAR	1' 06"

	3511		
		3.2.2 If available, a second individual should independently verify the PAR. The verification may be performed by the individual who is approving the PAR (Shift Manager or Emergency Director)	55”
		TASK duration for dose assessment	2’ 18”
4. NRC Notification	4.1 Complete NRC event notification form	4.1.1 Retrieve VY APF 0156.01, “Event Notification Worksheet.”	15”
		4.1.2 Complete VY APF 0156.01, “Event Notification Worksheet,” for the appropriate emergency event.	15’ 17”
		4.1.3 Make telephone call to notify the NRC	2’ 59”
		TASK duration for NRC notification	18’ 31”
5. Event Mitigation	5.1 Assess and respond to plant conditions	5.1.1 Provide assistance to the Shift Manager in mitigating the event as directed.	7’ 32’
		TASK duration for event mitigation	7’ 32”
		TOTAL DURATION	31’ 07”

Task Performer: Vince Roll Position: Control Room Supervisor Date: 2/20/14

Evaluator: Chuck Dissinger Position: Senior Emergency Planner Date: 2/20/14

IX. OVERLAP OF TASKS ACTIVITIES OR OTHER CONFLICTS IDENTIFIED

A. Overlap Requiring Compensatory Measures

None

X. REFERENCES

- Letter, Entergy Nuclear Operations, Inc. to USNRC, "Notification of Permanent Cessation of Power Operations," BVY 13-079, dated September 23, 2013 (ML13273A204)
- NEI 10-05, Rev 0, *Assessment of On-Shift Emergency Response Organization Staffing and Capabilities*
- NSIR DPR-ISG-01, *Interim Staff Guidance – Emergency Planning for Nuclear Power Plants*
- Letter, Entergy Nuclear Operations, Inc. to USNRC "Request for Approval of Certified Fuel Handler Training Program," BVY 13-095, dated October 31, 2013 (ML13325B015)
- Letter, Entergy Nuclear Operations, Inc. to USNRC, "Technical Specifications Proposed Change No. 307, Revision to Mitigation Strategy License Condition and Technical Specification Administrative Controls for Permanently Defueled Condition," BVY 13-096, dated October 31, 2013 (ML13316A004)
- NUREG-0654, *Criteria for Preparation and Evaluation of Radiological Emergency Response Plans and Preparedness in Support of Nuclear Power Plants.*
- VY Emergency Plan, Rev 54
- Vermont Yankee Nuclear Power Station On-Shift Staffing Analysis Final Report, Rev. 0, December 19, 2012.
- Vermont Yankee Nuclear Power Station On-Shift Staffing Analysis, Rev. 1, December 19, 2013.

XI. STAFFING ANALYIS TEAM

The staffing analysis team consisted of plant and Entergy Corporate staff representing the following departments / organizations:

- Fleet Emergency Preparedness Project Management
- Operations
- Training
- Security
- Chemistry
- Radiation Protection
- Regulatory Assurance
- Emergency Planning

Attachment 5

Vermont Yankee Nuclear Power Station

ERO Task Analysis

ERO POSITION MATRIX

Current ERO Position	EN-EP-801 Tasks (F#)	Identified Gaps with Procedural Tasks (P#)	Implementing Actions	Position eliminated?	Task Assigned to?	Min Staffing?	Key NRC PI?	Procedure(s) E-Plan section	Regulatory Requirement
EMERGENCY OPERATIONS FACILITY									
EP Coordinator	***Not standard in EN-EP-801***	P1. Maintain coordination with the EOF Manager to allow quick response to personnel, equipment or facility issues. P2. Support Radiological Assessment Coordinator as requested	Eliminate position P1. Eliminate task (ED and Admin & Logistics Coord already perform this task) P2. Eliminate task	Yes	N/A	No	No	3546 - Att 11	N/A
Emergency Director	F1. Receive turnover from the ED and assume command/control of EOF and activities outside the area controlled by the TSC F2. Direct the activation, operation and deactivation of the EOF. F3. Prepare and facilitate facility briefings F4. Upgrade the emergency classification level. (cannot delegate) F5. Make protective action recommendations (PAR) to offsite agencies (cannot delegate) F6. Direct and approve offsite notification to State and local agencies (cannot delegate) F7. Communicate within and between the emergency response facilities F8. Ensure event information is communicated to other organizations (NRC, Entergy Corp, etc.) to keep them informed of the emergency situation. F9. Direct the activities of the EOF organization in support of the TSC and offsite response agencies. (County, Parish and State) F10. Direct protective actions for offsite monitoring teams, EOF ERO and offsite resources. F11. Request assistance from offsite agencies, excluding requests for offsite medical/fire, security assistance. (Coordinate request for Federal assistance through the State) F12. Integrate off-site responders with site response efforts when required. F13. Authorize issuance of KI and radiation exposure in excess of 10CFR 20 limits for ERO members outside of the protected area. F14. Authorize press releases (cannot delegate) F15. Direct facility relocation to the alternate EOF (where applicable) F16. Determine reportability actions for non-emergency reportable events during an emergency (hazardous material spills, contaminated injured personnel, and so forth). F17. Conduct turnover of command and control to relief ED. F18. Terminate the event in accordance with procedures (cannot delegate) F19. Establish and direct recovery actions	P1. Fill vacant positions if needed P2. Maintain a log P3. De escalation to the Recovery Phase	F3 - task from EOF Manager	No	N/A	Yes	Yes	3546 - Att 1 F1. Eplan 8.2.1/Table 8.4 F2./P1. Eplan 8.2.1 F4./F5./F6./F14./F18. Eplan 8.2.1/ Table 8.3 F5. Eplan 10.2 F5./F8. Eplan 8.4/8.5 F11. Eplan 8.2.1/8.4.3 F13. Eplan 10.3 F14. Eplan 8.2.1/11.3 F18. Eplan 8.2.1 F19./P3. Eplan 8.3	F1. NUREG 0654 II.A.1.d/II.B.3/II.B.5 F11/P1. NUREG 0654 II.A.4 F4. NUREG 0654 II.B.4 F5. NUREG 0654 II.B.4/II.J.7 F6. NUREG 0654 II.B.4 F5./F8. NUREG 0654 II.B.7.c F11. NUREG 0654 II.B.7.a/II.C.1.a F13. NUREG 0654 II.K.2 F14. NUREG 0654 II.B.4/II.B.7.d F18. NUREG 0654 II.B.4 F19/P3. NUREG 0654 II.B.7.b/II.K.6.c/II.M.2
Radiological Assessment Coord	F1. Direct the activities of the dose assessor and radiological offsite monitoring teams. F2. Evaluate dose assessment results and recommendations. F3. Determine dose consequences F4. Communicate dose projection results to the ED to determine classification or PAR. F5. Keep the ED appraised of offsite radiological conditions. F6. Maintain awareness of dose projections generated by NRC, state and utility models and recognize differences. F7. Provide overall liaison and coordination of efforts in the area of field team data with State Radiological Personnel. F8. Brief offsite authorities responding to the EOF on radiological information. F9. Contact the NRC on Health Physics Network (HPN) Line.(Can be designated to another staff member) F10. Direct possible predictive and worst-case dose projections. F11. Monitor or direct monitoring of ERF habitability. F12. Ensure facility emergency ventilation in service (where applicable) F13. Recommend EOF relocation based on environmental conditions and provide radiological guidance for the EOF evacuation, where applicable. F14. Monitor information from displays or reports to detect changes that affect dose assessment. F15. Establish radiological controls for supplemental and relief personnel responding to the station. F16. Recommend emergency exposure limits and KI for EOF ERO or offsite monitoring teams F17. Coordinate the administration of KI.			No	N/A	Yes	Yes	F9. Eplan 7.6 F2./F3 Eplan 8.2.6	F9. NUREG 0654 II.A.1.e
Off-site Communicator	F1. Ensure the Emergency Director approves all notifications forms to State/Local agencies. F2. Make notification to the State and local agencies as required by regulations using primary and backup notification system. F3. Verify State and local agencies received and understand the notification F4. Make follow-up notifications F5. Maintain records of all notifications and communications	P1. Confirm that the TSC IT Specialist has verified the ERDS connection with the NRC. P2. Ensure the State PAR status board is maintained	P5 - task from EOF Manager	No	N/A	Yes	Yes	3546 - Att 6 F2. Eplan 7.1/7.2/7.7	F2. NUREG 0654 II.A.1.e
Technical Advisor	F1. Maintain contact with the TSC and Control Room to obtain current plant and emergency status F2. Monitor plant computer system parameters. F3. Recommend actions on classification of emergencies F4. Support PAR decision making/determination.	P1. Complete VYAPF 0156.01, Event Notification Worksheet in preparation for the NRC ENS notifications. P2. Assist Emergency Director in conduct of briefings.	F1 - task from PIL F2 - task from PIL F3 - task from PIL P1 - task from PIL P2 - task from PIL F1 - task from EOF Communicator P2 - task from EOF Communicator P3 - task from EOF Communicator P5 - task from EOF Communicator	No	N/A	Yes	No	3546 - Att 3	N/A

ERO POSITION MATRIX

Current ERO Position	EN-EP-801 Tasks (F#)	Identified Gaps with Procedural Tasks (P#)	Implementing Actions	Position eliminated?	Task Assigned to?	Min Staffing?	Key NRC PI?	Procedure(s) E-Plan section	Regulatory Requirement
EOF Manager	F1. Direct activities of the EOF personnel F2. Assure staffing and timely activation of the EOF F3. Obtain additional resources through the Admin/Logistics Coordinator when necessary F4. Brief and assist offsite authorities responding to the EOF F5. Assist Rad Assessment Coordinator with facility habitability and emergency ventilation system operation per procedure (site specific) F6. Ensure correct and timely State and local notifications are made within regulatory requirements F7. Ensure WebEOC or status boards are maintained F8. Notify Entergy Corporate Office and Corporate Emergency Center	P1. Obtain official time from PDS and coordinate with the Public Information Liaison P2. Ensure classification level is posted P3. Coordinate with Security to ensure arrangements are made to perform FFD testing P4. Notify Hunter North of emergency declaration – Direct response to VY Training Center / Request relief roster P5. Provide notifications that EOF is operational P6. Direct the Radiological Assessment Coordinator to assess on site and off site radiological conditions P7. Coordinate with the Radiological Assessment Coordinator and Offsite Team Coordinator to ensure the needs of the States' offsite communicators are met P8. Notify the Administration and Logistics Coordinator upon arrival of security contractor P9. Keep the Emergency Director informed of changing conditions that may cause a change in the Emergency Classification P10. Assist the ED in determining the appropriate Protective Action Recommendations to Offsite Authorities P11. Ensure periodic updates are communicated to offsite authorities P12. Assist the ED in the review of news releases P13. Assist the ED in periodic facility briefings P14. Assist the RAC with KI	F4 - eliminate task (already done by Lead Offsite Liaison(F1)) F5 - eliminate task F6 - eliminate task F7 - eliminate task P6 - eliminate task P7 - Eliminate task P8 - eliminate task P9 - Eliminate task (TA already doing) P10 - eliminate task P11 - eliminate task (OSC already doing) P12 - eliminate task P13 - eliminate task P14 - eliminate task	Yes	F1 - eliminate - ED already responsible for this task (F2) F2 - eliminate - ED already responsible for this task (F2) F3 - Emergency Director F8 - Admin & Logistics coord P1 - EOF Tech Adv P2 - Lead Offsite Liaison P3 - Admin & Logistics coord P4 - Admin & Logistics coord P5 - Off-site communicator	No	No	3546 - Att 2	N/A
EOF Communicator	F1. Transmit and receive information from onsite ERF's. F2. Ensure EOF is notified of information received of significant changes in plant conditions (e.g., start of a release, LOCA, EAL conditions) F3. Document information on the required forms or WebEOC F4. Assist the EOF Manager with other non-regulatory notifications or communications	P1. Review current information and recommendations with the thresholds on the EAL Chart or AP 3125, Emergency Plan Classification and Action Level Scheme P2. Establish the Primary Auto Ringdown Circuit P3. Continuously monitor the Primary Auto Ring Down Circuit and advise Technical Advisor of major events P4. Inform the Technical Advisor of any plant parameters which are of substantial concern or which have significant trends. P5. Post important plant information on white board	F2 - eliminate task F3 - eliminate task F4 - eliminate task P1 - eliminate task P4 - eliminate task	Yes	F1 - EOF Tech Adv P2 - EOF Tech Adv P3 - EOF Tech Adv P5 - EOF Tech Adv	No	No	3546 - Att 4	N/A
Public Information Liaison	F1. Ensure JIC is provided with current plant status F2. Ensure classification upgrades are communicated to Company Spokesperson to ensure media briefings are accurate F3. Review press releases and provide to the ED for approval	P1. Test paging microphone P2. Make announcements of when EOF and JIC are operational	**Eliminate position**	Yes	F1 - EOF Tech Adv F2 - EOF Tech Adv F3 - EOF Tech Adv P1 - EOF Tech Adv P2 - EOF Tech Adv	No	No	3546 - Att 7	N/A
EOF Log Keeper	F1. Maintain a chronological log F2. Ensure timeliness of facility briefs F3. Support the EOF Manager / ED	P1. Fax plant status briefing sheets to JIC/TSC P2. Provide copies of plant status briefing sheets to Lead Offsite Liaison P3. Request TSC to fax plant parameter sheets to the EOF if PDS is unavailable	**Eliminate position** F1 - eliminate task (ED already does this) F2 - eliminate task F3 - eliminate task P2 - eliminate task	Yes	F1 - Emergency Director P1 - Lead Offsite Liaison P3 - TSC ENS Communicator	No	No	3546 - Att 16	N/A
Lead Offsite Liaison	F1. Obtain plant information and ensure the offsite agencies located in the EOF and the offsite liaisons are briefed on the plant conditions.	P1. Set up State Area P2. Verify phones are operable P3. Set up fax machines	P1 - task from EOF Log Keeper P2 - task from EOF Mgr	No	N/A	No	No	3546 - Att 8	N/A
Admin & Logistics Coord	F1. Manage 24 hour staffing of the emergency response facilities. F2. Manage logistics for supporting the onsite and offsite emergency response such as additional support personnel or equipment, meals, lodging, etc. F3. Coordinate access security measures in the EOF if applicable	P1. Coordinate the evacuation of declared pregnant staff	F8 - task from EOF Manager P3 - task from EOF Manager P4 - task from EOF Manager P2 - task from TSC Manpower/Planning P5 - task from TSC Manpower/Planning P1 - task from IT Specialist P3 - task from IT Specialist	No	N/A	No	No	3546 - Att 10 F1./F2. Eplan 8.2.7	F1. NUREG 0654 II.A.1.e F1./F2. NUREG 0654 II.A.4 F2. NUREG 0654 II.B.7.a
IT Specialist	F1. Monitor facility equipment (computer related and communications) to ensure adequate operation F2. Resolve any IT related malfunctions F3. Verify or perform ERDS activation. F4. Assist with issues related to WebEOC, if available	P1. Notify the vendors of the emergency declaration and direct them to respond to VY Trng Ctr. P2. Check phones for operability P3. Ensure the intercom volumes are turned to full volume	**Eliminate position**	Yes	F1 - IT Helpdesk F2 - IT Helpdesk F3 - Control Room F4 - IT Helpdesk P1 - Admin & Logistics Coord P2 - Transfer to each position that uses that phone P3 - Admin & Logistics Coord	No	No	3546 - Att 12	N/A

ERO POSITION MATRIX

Current ERO Position	EN-EP-801 Tasks (F#)	Identified Gaps with Procedural Tasks (P#)	Implementing Actions	Position eliminated?	Task Assigned to?	Min Staffing?	Key NRC PI?	Procedure(s) E-Plan section	Regulatory Requirement
Personnel & Equip Monitor	***Not standard in EN-EP-801***	P1. Establish a control point at the EOF P2. Maintain a log P3. IF a release is in progress, THEN MONITOR yourself first then all personnel on duty inside the EOF P4. Monitor all incoming personnel at the EOF control point P5. Set up for decontamination activities if required P6. Receive guidance from the Radiological Assessment Coordinator on decontamination activities P7. Direct contaminated individuals to a Reception Center if not needed for staffing P8. Survey vehicles as time permits	N/A	No	N/A	No	No	3546 - Att 15	N/A
Dose Assessor	F1. Support the radiological activities of the EOF F2. Obtain data from offsite monitoring team reports, meteorological and radiological data, and plant data F3. Perform dose projection calculations using plant data and offsite monitoring team data. F4. Perform possible predictive (what-if) and worst case dose projections when directed F5. Provide offsite dose projection information to the RAC F6. Monitor available parameter indications to detect changes that affect dose assessment. F7. Perform dose projections using primary and backup methods	N/A	N/A	No	N/A	No	No	3546 - Att 13	N/A
Off-site Team Coordinator	F1. Maintain communications with offsite monitoring teams (OMT). F2. Employ and direct OMT based on radiological /met information. F3. Supervise/develop a plume tracking strategy. F4. Log communications with OMT to include dose /air sample survey results, dosimeter reading, etc. F5. Ensure radiological information is communicated to the RAC for possible modifications to the dose calculations F6. Support coordination of efforts in the area of offsite monitoring team data with State radiological personnel F7. Ensure team is aware of changing plant / meteorological conditions F8. Ensure team is notified on KI requirements	N/A	N/A	No	N/A	No	No	3546 - Att 9 F1. Eplan 7.4	F1. NUREG 0654 II.A.1.e
Offsite Liaisons (3)	F1. Obtain plant information and ensure the offsite agencies located in the EOC are briefed on the plant conditions. F2. Clarify plant conditions, respond to questions, etc. for the offsite agencies.	N/A	N/A	No	N/A	No	No	3546 - Att 14 F1./F2. Eplan 8.5	F1./F2. NUREG 0654 II.C.2.b
Monitoring Team - Green (2)	F1. Perform activities directed by the OTC to support plume tracking and measurements F2. Monitor self reading dosimeters and report results back to the OTC F3. Implement KI protective measures when notified by the OTC	N/A	N/A	No	N/A	No	No	3510 - Att 9.2 F1. Table 8.4	F1. NUREG 0654 II.B.5
Monitoring Team - Blue (2)	F1. Perform activities directed by the OTC to support plume tracking and measurements F2. Monitor self reading dosimeters and report results back to the OTC F3. Implement KI protective measures when notified by the OTC	N/A	N/A	No	N/A	No	No	3510 - Att 9.3 F1. Table 8.4	F1. NUREG 0654 II.B.5
Monitoring Team - Site Boundary (2)	***Not standard in EN-EP-801***	P1. Perform activities directed by the OTC to support plume tracking and measurements P2. Monitor self reading dosimeters and report results back to the OTC P3. Implement KI protective measures when notified by the OTC	N/A	No	N/A	No	No	3510 - Att 9.1 F1. Table 8.4	F1. NUREG 0654 II.B.5
TECHNICAL SUPPORT CENTER									
Emergency Plant Manager	F1. Direct the activation, operation and deactivation of the TSC F2. Assume command and control of the TSC and OSC and the onsite mitigation efforts F3. Provide information and recommendations to the ED regarding the classification of an emergency F4. Prepare and facilitate facility briefings F5. Verify event classifications F6. Ensure timely ENS notifications F7. Perform accident assessment to prioritize mitigation actions. F8. Coordinate the activities of the CR, TSC and OSC F9. Direct personnel evacuation, assembly and accountability of non-essential personnel F10. Provide information and recommendations to the ED regarding plant activities F11. Advise the ED on core damage and plant conditions for classification and PAR determination. F12. Direct the organization, coordination, and prioritization of repair corrective action teams F13. Direct onsite protective actions F14. Authorize emergency radiation exposure and issuance of KI to recommended personnel in the CR, TSC or OSC or to Security personnel. F15. Make operational decisions involving the safety of the plant and its personnel and make recommendations to the Control Room Personnel F16. Initiate immediate corrective actions to limit or contain the emergency invoking the provisions of 10 CFR 50.54(x) if appropriate1 F17. Implement severe accident management procedure strategies F18. Direct relocation to an alternate location. F19. Integrate offsite responders with on-site response efforts when required F20. Perform emergency termination duties	P1. Maintain a log P2. Establish and maintain accountability for Station personnel within the Protected Area P3. Direct and coordinate the Site Boundary and Offsite Teams activities	F1 - task from TSC Communicator F1 - task from TSC Manager F5 - task from TSC Manager F7 - task from TSC Manager F9 - task from TSC Manager	No	N/A	Yes	Yes	3542 - Att 1 F2. Eplan 8.2.2 P2. Eplan 10.4.1 F14. Eplan 10.3	F2. NUREG 0654 II.A.1.d/II.B.3 P2. NUREG 0654 II.J.5 F14. NUREG 0654 II.K.2

ERO POSITION MATRIX

Current ERO Position	EN-EP-801 Tasks (F#)	Identified Gaps with Procedural Tasks (P#)	Implementing Actions	Position eliminated?	Task Assigned to?	Min Staffing?	Key NRC PI?	Procedure(s) E-Plan section	Regulatory Requirement
TSC Manager	F1. Assure staffing/timely activation of the TSC. F2. Notify EPM when operational conditions exist. F3. Recognize and implement all technical aspects of accident mitigation for the emergency. F4. Perform technical assessments and communicate the conclusions to the EPM. F5. Set priorities for the TSC personnel/OSC Teams. F6. Assist the EPM to make operational decisions concerning the safety of the plant. F7. Oversee the activities for relocation to an alternate location. F8. Direct the tracking of plant configuration changes. F9. Deactivate the TSC when the emergency is terminated.	P1. Synchronize the TSC time with CR time P2. Maintain log	**Eliminate position** P1 - eliminate task (already done by Maint Coord via TSC Comm (P1)) P2 - eliminate task (already done by EPM) F2 - eliminate task F3 - eliminate task F4 - eliminate task F6 - eliminate task	Yes	F1 - EPM F5 - EPM F7 - EPM F8 - Ops Coord F9 - EPM	No	No	3542 - Att 2	
Operations Coordinator	1. Coordinate TSC efforts in determining the nature and extent of emergencies pertaining to equipment and plant facilities in support of Control Room actions. 2. Perform accident assessment activities. 3. Provide assistance to initiate immediate corrective actions to limit or contain the emergency invoking the provisions of 10 CFR 50.54(x)1 if appropriate, and specifically when addressing Severe Accident Management Guidelines (SAMG/SAG). 4. Recommend equipment operations checks and miscellaneous actions to the Control Room in support of restoration and accident mitigation. 5. Approve emergency special procedures, and implement as required under the provisions of 10 CFR 50.54(x)1 if qualified. 6. Recommend changes in plant priorities. 7. Assist the Maintenance Coordinator in determining the priority assigned to OSC activities. 8. Coordinate additional staffing for the Control Room if requested by the SM. 9. Provide input on event classification. 10. Assist the EPM in evaluating changes in event classification. 11. At the direction of the EPM, assume the duties and responsibilities of the Evaluator, or Decision-Maker if qualified, when transition to Severe Accident Management Guidelines (SAMG/SAG) is initiated. 12. Inform the TSC of the overall plant condition and significant changes to system and equipment status. 13. Ensure the Control Room, TSC, and EOF is informed of significant changes in event status (e.g. changes in classification, command and control, initiation of station assembly, accountability, evacuation, etc.). 14. Coordinate CR request for operations activities outside of the Control Room 15. Provide technical assistance to the Shift Manager. 16. Recommend strategies and actions to prevent severe core damage and containment failure and reduce radiological release.	P1. If needed, call the Control Room to secure the AFBF 1 TSC Exhaust fan to reduce noise levels P2. Obtain from the Control Room the status of Auxiliary Operators (AOs) mitigation activities. Provide the AO status information to the Maintenance Coordinator P3. Provide technical support to OSC teams	F8 - task from TSC Mgr	No	N/A	Yes	Yes	3542 - Att 3	
Radiological Coordinator	F1. Assess radiological conditions to develop radiological plans. F2. Keep the TSC Manager informed of the radiological conditions. F3. Obtain and evaluate data on plant conditions such as meteorological and radiological monitoring readings, and other pertinent data. F4. Ensure that appropriate bioassay procedures have been implemented for onsite personnel when a radioactivity incident has occurred. F5. Recommend authorization of personnel emergency exposure limits. F6. Advise the TSC Manager when use of KI should be considered and coordinate the issuance if approved. F7. Recommend evacuation based on environmental conditions F8. Advise the TSC Manager and EOF Radiological Assessment Coordinator of changes in radiological release status. F9. Assist in planning rescue operations and provide monitoring services as required, including the transfer of injured and/or contaminated personnel. F10. Coordinate with the Security Coordinator to determine the routes to be used for evacuation of non-essential personnel and BRE's. F11. Evaluate and request additional radiation protection personnel and/or equipment. F12. Advise the Rad Chem Coordinator in the OSC of changes in plant conditions or equipment that may change radiological conditions onsite.	P1. Ensure a RP Tech turns on the four (4) portable TSC/OSC radiation monitors. P2. Maintain a log P3. Direct decontamination efforts of personnel, equipment, and onsite areas as appropriate P4. Coordinate the implementation of post accident sampling, and prioritize the assignment of desired samples to be collected and analyzed with the OSC Manager P5. Ensure the Health Physics Network (HPN) is staffed when requested by the NRC	F1 - task from Rad/Chem Coord F2 - task from Rad/Chem Coord F3 - task from Rad/Chem Coord F4 - task from Rad/Chem Coord F6 - task from Rad/Chem Coord F7 - task from Rad/Chem Coord F12 - task from Rad/Chem Coord F12. Change to OSC Manager F8. Change to EPM and EOF RAC	No	N/A	Yes	Yes	3542 - Att 4 F9. Eplan 10.2 P3. Eplan 10.4.3	F9. NUREG II.K.1.a P3. NUREG II.K.1.e
Engineering Coordinator	F1. Provide technical guidance to support repair activities. F2. Recommend strategies and actions to prevent severe core damage and containment failure and reduce radiological releases. F3. Coordinate Engineering work requests with the Engineering support team. F4. Provide results back to the TSC Manager. F5. Support SAMG activities and strategies. F6. Direct tracking and trending of parameters. F7. Direct the development of emergency repair procedures to support emergency teams. F8. Track plant configuration changes.	P1. Maintain a log P2. Coordinate with Non Entergy engineering support (INPO, Mutual Assistance, General Electric, Equipment Vendors and/or NRC Engineers)	F4 - eliminate task F5 - eliminate task - SAMG no longer required	No	N/A	Yes	Yes	3542 - Att 6	
Maintenance Coordinator	F1. Communicate the request for repair and corrective teams to the OSC Work Control Coordinator. F2. Prioritizes the requests with the TSC Manager.	P1. Provide operational guidance and recommendations on equipment operations P2. Identify emergency repairs that can be undertaken to restore and maintain equipment operability and plant safety P3. Assist in developing emergency procedures if needed P4. Assist the OSC Coordinators in preparing to send repair teams into the plant	F1 - change to OSC Manager F2 - eliminate task P1 - task from TSC Comm	No	N/A	Yes	Yes	3542 - Att 7	

ERO POSITION MATRIX

Current ERO Position	EN-EP-801 Tasks (F#)	Identified Gaps with Procedural Tasks (P#)	Implementing Actions	Position eliminated?	Task Assigned to?	Min Staffing?	Key NRC PI?	Procedure(s) E-Plan section	Regulatory Requirement
TSC Communicator	F1. Maintain facility log on WebEOC or other acceptable method. F2. Ensure timeliness of facility briefs by prompting EPM to develop and adhere to briefing schedule F3. Communicate between the ERF's if necessary regarding plant status or WebEOC entries. F4. Support the EPM/TSC Manager as requested.	P1. Synchronize TSC time with the Control Room clock	**Eliminate position** F2 - eliminate task F3 - eliminate task F4 - eliminate task	Yes	F1 - EPM P1 - Maintenance Coord	No	No	3542 - Att 10	
ENS Communicator	F1. Prepare the NRC notification worksheet. F2. Establish and maintain communications with the NRC via the ENS phone. F3. Prepare follow-up notifications F4. Monitor plant computer parameters and provide plant status to the NRC. F5. Use backup NRC notification method if ENS line fails.	P1. Maintain a log P2. Assist the Operations Coordinator in obtaining plant data from ERFIS/PDS	P3 - task from EOF Logkeeper	No	N/A	No	No	3542 - Att 9 F2. Eplan 7.6	F2. NUREG 0654 II.A.1.e
TSC Manpower/Planning	***Not standard in EN-EP-801***	P1. Perform Initial Accountability P2. Manage 24 hour staffing of the emergency response facilities. P3. Assist the Administration and Logistics Coordinator in the EOF in obtaining resources P4. Coordinate with the Radiological Coordinator to ensure all individuals were provided KI P5. Coordinate implementation of the relief schedule	**Eliminate position** P3 - elminiate task P4 - eliminate task	Yes	P1 - Security P2 - Admin & Logistics Coordinator P5 - Admin & Logistics Coordinator	No	No	3542 - Att 8	N/A
IT Specialist	F1. Monitor facility equipment (computer related and communications) to ensure adequate operation F2. Resolve any IT related malfunctions F3. Verify or perform ERDS activation. F4. Assist with issues related to WebEOC, if available	P1. Verify operability of phones and fax machines	**Eliminate position**	Yes	F1 - IT Helpdesk F2 - IT Helpdesk F3 - Control Room F4 - IT Helpdesk	No	No	3542 - Att 12	N/A
Reactor Engineer	1. Determine and provide estimation of core damage. 2. Assist in Severe Accident Management Guideline implementation. 3. Provide core parameter information results back to the TSC Manager.	N/A	**Eliminate position** - no reactor responsibilities to transfer	Yes	N/A	Yes	No	3542 - Att 5	N/A
TSC Engineer - Mechanical	F1. Respond to engineering requests from the Engineering Coordinator. F2. Evaluate SAM/SAG strategy implementation when designated	N/A	**Eliminate position**	Yes	N/A	No	No	3542 - Att 11 F1. Table 8.4	F1. NUREG 0654 II.B.5
TSC Engineer - Electrical/I&C	F1. Respond to engineering requests from the Engineering Coordinator. F2. Evaluate SAM/SAG strategy implementation when designated	N/A	**Eliminate position**	Yes	N/A	No	No	3542- Att 11 F1. Table 8.4	F1. NUREG 0654 II.B.5
TSC Engineer	***Not standard in EN-EP-801***	F1. Respond to engineering requests from the Engineering Coordinator. F2. Evaluate SAM/SAG strategy implementation when designated	**Eliminate position**	Yes	N/A	No	No	3542 - Att 11	N/A
Security Coordinator	F1. Overall coordination of the offsite assistance for the security related response. F2. Designated National Incident Management System (NIMS) Liaison between the Incident Command Post (ICP) and Site Organization. F3. Coordinate accountability F4. Keep security force advised of emergency status F5. Coordinate with Radiological Coordinator regarding protective actions for the security force. F6. Keep the ED/EPM informed of any security contingency event which may be occurring and response in progress F7. Coordinate the dispatch of security officers to evacuation assembly areas and keep the ED/EPM informed of evacuation accountability.	P1. Establish ring down phone line	N/A	No	N/A	No	Yes	3547 - Att 9.2 F1. Eplan 8.2.8	N/A
OPERATIONS SUPPORT CENTER									
OSC Manager	F1. Direct the activation, operation and deactivation activities of the OSC. F2. Coordinate and/or prioritize assessment and corrective actions with the TSC. F3. Provide periodic briefings to the OSC personnel. F4. Support the formation, briefing and debriefing of teams. F5. Maintain communications with the CR and the TSC to inform of OSC teams activities. F6. Ensure timely dispatch of the teams and mobilize other required support personnel. F7. Ensure work task priorities are being maintained. F8. Maintain OSC accountability. F9. Coordinate movement of OSC personnel to a habitable location or alternate OSC if conditions degrade. F10. Identify and request resources, equipment and supplies to support the OSC.	P1. (If release in progress) Have OSC personnel obtain a stack sample immediately P2. Prepare for the dispatching of the Site Boundary and Offsite Teams. P3. Maintain adequate OSC Staffing P4. Coordinate the implementation of post accident sampling, and prioritize the assignment of desired samples to be collected and analyzed with the Radiological Coordinator (TSC) P5. Coordinate the activities of the Site Boundary and Off Site Teams	F1 - task from OSC Log Keeper F2 - task from Work Control Coord P1 - task from Work Control Coord F1 - task from Work Coords F2 - task from Work Coords F3 - task from Work Coords F4 - task from Work Coords F5 - task from Work Coords F2 - task from Ops Support	No	N/A	Yes	Yes	3544 - Att 1	N/A

ERO POSITION MATRIX

Current ERO Position	EN-EP-801 Tasks (F#)	Identified Gaps with Procedural Tasks (P#)	Implementing Actions	Position eliminated?	Task Assigned to?	Min Staffing?	Key NRC PI?	Procedure(s) E-Plan section	Regulatory Requirement
Work Control Coordinator	F1. Coordinate the formation, briefing and debriefing of teams F2. Maintain communications with the Maintenance Coordinator F3. Capture and track (log) repair/corrective action teams, search/rescue teams, onsite monitoring teams and other support personnel to ensure timely dispatch of teams	P1. Establish the Primary Auto Ring Down Circuit	**Eliminate position** F1 - eliminate task (already done by OSCM) F3 - eliminate task (already done by OSCM)	Yes	F2 - OSC Manager P1 - OSC Manager	No	No	3544 - Att 6	N/A
OSC Log Keeper	F1. Maintain facility log F2. Ensure timeliness of facility briefs F3. Support the OSC Manager as requested	N/A	**Eliminate position** F2 - eliminate task F3 - eliminate task	Yes	F1 - OSC Manager	No	No	3544 - Att 7	N/A
Rad/Chem Coordinator	F1. Coordinate RP activities, including on-site radiological assessment, personnel exposure control, and radiation protection programs. F2. Ensure use of protective clothing, respiratory protection, and access control within the plant is deemed appropriate to control personnel exposures. F3. Deploy onsite radiation monitoring teams to survey radiation levels and sample for contamination. F4. Ensure habitability of the TSC and/or OSC and habitability of Control Room (where applicable) F5. Ensure that personnel are decontaminated, if necessary. F6. Conduct/provide assistance for the rad briefings to support the dispatch of the repair/corrective action teams and chemistry/ RP sampling. F7. Communicate rad/chemistry sample results to the TSC and/or CR. F8. Coordinate the transport of potentially contaminated or highly exposed personnel to off-site medical facilities. F9. Determine the necessity for emergency exposure limits and KI issuance and communicate conditions to the TSC. F10. Provide radiological support for evacuations, medical response, fire response and search and rescue. F11. Ensure emergency ventilation filtration system is started per procedures (site specific). F12. Establish chemistry sampling priorities. F13. Debrief returning emergency teams.	P1. Coordinate the Site Boundary and Off Site Team activities	**Eliminate position** P1 - Eliminate task (already done by OSC Mgr) F5 - Eliminate task (already done by RP Coord) F8 - Eliminate task (already done by RP Coord) F9 - Eliminate task (already done by RP Coord) F10 - Eliminate task (already done by RP Coord) F11 - Does not apply to VY F13 - Eliminate task (already done by OSC Mgr)	Yes	F1 - RP Coordinator F2 - RP Coordinator F3 - RP Coordinator F4 - RP Coordinator F6 - RP Coordinator F7 - RP Coordinator F12 - RP Coordinator	No	No	3544 - Att 5 F5. Eplan 10.4.3 (RPC has this task)	F5. NUREG 0654 II.K.1.e (RPC has this task)
Mechanical Work Coordinator	F1. Assign team members F2. Conduct/participate in pre-job briefings F3. Ensure repair and corrective action teams are tracked. F4. Ensure communication with the teams is maintained. F5. Participate in debriefing of returning emergency teams.	N/A	**Eliminate Position**	Yes	F1 - OSC Manager F2 - OSC Manager F3 - OSC Manager F4 - OSC Manager F5 - OSC Manager	No	No	3544 - Att 4	N/A
I&C / Electrical Work Coordinator	F1. Assign team members F2. Conduct/participate in pre-job briefings F3. Ensure repair and corrective action teams are tracked. F4. Ensure communication with the teams is maintained. F5. Participate in debriefing of returning emergency teams.	N/A	**Eliminate Position**	Yes	F1 - OSC Manager F2 - OSC Manager F3 - OSC Manager F4 - OSC Manager F5 - OSC Manager	No	No	3544 - Att 3	N/A
Operations Support	F1. Support the OSC as needed. F2. Ensure the SM is informed of OSC teams and activities. F3. Identify potential operational support needs.	N/A	Eliminate Position F1 - Eliminate task F3 - Eliminate task	Yes	F2 - OSC Manager	No	No	3544 - Att 2	N/A
JOINT INFORMATION CENTER									
Company Spokesperson	F1. Obtain briefing from the ED to ensure timely development of news releases. F2. Ensure that news media briefings are held regularly. F3. Serve as spokesperson at media briefings. F4. Keep the Entergy Vice President of Communications, or designee, informed throughout the emergency. F5. Resolve any known rumors or misinformation to the Media.	P1. Prepare press release prior to Press Release Writer arrival	P1 - eliminate task P1 - task from PRW P2 - task from PRW P3 - task from PRW	No	N/A	Yes	No	3550 - Att 1 F3./F5. Eplan 11.3	F3. NUREG 0654 II.B.7.d/ II.G.3.a/II.G.4.a F5. NUREG 0654 II.G.4.c
JIC Manager	F1. Direct the activation, operation and deactivation of the JIC. F2. Obtain ED approval for the developed news releases and revise accordingly. F3. Ensure press release information is communicated to the offsite agencies. F4. Ensure press releases are coordinated with the offsite agencies. F5. Ensure appropriate timing, content and distribution of news releases. F6. Ensure activation of rumor control/public inquiry activities for response to questions from the general public. F7. Establish or ensure media briefing schedule. F8. Notify the Corporate Emergency Center (CEC).	P1. Place the no access to 1st floor elevator sign on elevator. P2. Call State/NRC/FEMA personnel & inform them that the JIC is being activated. P3. If initial press release was not emailed, contact the news organizations in the news media list. P4. Establish contact with Landmark College P5. Relocation to the Alternate Joint Information Center	F7 - eliminate task - CS already doing F2 - task from Info Coord F3 - task from Info Coord P4 - task from Info Coord P12 - task from Info Coord F1 - task from Log Keeper F3 - task from Logistics Coord P1 - task from Logistics Coord P2 - task from Logistics Coord P3 - task from Logistics Coord F1 - task from Press Release Writer	No	N/A	No	No	3550 - Att 2	N/A

ERO POSITION MATRIX

Current ERO Position	EN-EP-801 Tasks (F#)	Identified Gaps with Procedural Tasks (P#)	Implementing Actions	Position eliminated?	Task Assigned to?	Min Staffing?	Key NRC PI?	Procedure(s) E-Plan section	Regulatory Requirement
Technical Advisor	F1. Answer technical questions from the news media regarding the emergency situation. F2. Advise the Inquiry Response Coordinator on questions about radiation or nuclear technology to respond to phone questions from the public or media. F3. Assists the press release writer for technical accuracy, if JIC Technical Assistant position is not staffed.	N/A	F2 - change to Inquiry Responder F3 - change to "Assists the CS for technical accuracy of press releases"	No	N/A	No	No	3550 - Att 7	N/A
Technical Assistant	***Optional in EN-EP-801*** F1. Assists the press release writer for technical accuracy.	P1. Assist the Press Release Writer and Technical Advisor by communicating with the Public Information Liaison located in the EOF P2. Participate in plant-related discussions in the Press Release Writer's Area to ensure general understanding of plant conditions	**Eliminate position** F1 - eliminate task (Tech Adv already has task) P1 - eliminate task P2 - eliminate task	Yes	N/A	No	No	3550 - Att 6	N/A
Media Liaison	F1. Verify the readiness of the JIC briefing area. F2. Ensures media is informed of protocol and schedules established for media briefings. F3. Receive and distribute press release information to the media in the JIC briefing area.	P1. Change emergency level placards for each classification change P2. During and between news media briefings, take note of any unaddressed issues	F1 - task from Credentialing F2 - task from Credentialing P1 - task from Credentialing P2 - task from Credentialing P1 - task from JIC Log Keeper P2 - task from JIC Log Keeper F1 - task from Logistics Coord F2 - task from Logistics Coord	No	N/A	No	No	3550 - Att 13	N/A
Information Coordinator	F1. Provide news bulletins / press releases for distribution F2. Supervise media monitoring and response activities. F3. Supervise public response activities. F4. Establish and maintain frequent contact with the communications personnel in the corporate office or CEC.	P1. Obtain VoIP phone (x4330) P2. Place name placards on table P3. Discuss news release function with Press Release Writer to ensure news releases adequately cover event and are distributed without delay P4. Ensure all phone numbers on press releases are correct and operable P5. Oversee information flow including press release preparation and approval P6. Ensure press release writer initiates operational press release P7. Ensure the distribution of the news releases by the Logistics Coordinator P8. Ensure Inquiry Response Coordinator is updated with the latest information P9. Monitor feedback from Inquiry Response Coordinator P10. Discuss with JIC Manager and/or Company Spokesperson strategies for ensuring all rumors and misinformation are addressed P11. Ensure Inquiry Response Coordinator and Logistics Coordinator are promptly informed of any escalations in the emergency classification P12. Post the proper emergency classification signs P13. Attend pre-briefings with Company Spokesperson and PIOs/Reps in the Communications Area	**Eliminate position** F1 - eliminate task (assigned to TA by elimination of Logistics Coord) F4 - eliminate task P1 - eliminate task P2 - eliminate task P3 - eliminate task P5 - eliminate task P6 - eliminate task P7 - eliminate task P8 - eliminate task P9 - eliminate task P10 - eliminate task P11 - eliminate task P13 - eliminate task	Yes	F2 - JIC Manager F3 - JIC Manager P4 - JIC Manager P12 - JIC Manager	No	No	3550 - Att 3	N/A
Credentialing	***Optional in EN-EP-801*** F1. Establish security to restrict access to the JIC to authorized Utility/Government JIC responders. F2. Restrict access to the JIC media/briefing area to persons with media credentials.	P1. Set up the credentialing area desk P2. Accommodate press during JIC activation	Reassign tasks	Yes	F1 - Media Liaison F2 - Media Liaison P1 - Media Liaison P2 - Media Liaison	No	No	3550 - Att 14	N/A
Press Release Writer	F1. Fax copies of press releases to the CEC/Corporate Communications	P1. Develop press releases P2. Post to WebEOC P3. Send to off-site agencies/outlets via Outlook	**Eliminate position**	Yes	F1 - JIC Manager P1 - Company Spokesperson P2 - Company Spokesperson P3 - Company Spokesperson	No	No	3550 - Att 4	N/A
Logistics Coordinator	F1. Activate facility security and briefing center. F2. Maintain access control to the JIC. F3. Ensure distribution of all press releases to the offsite agencies, JIC/EOF facilities and to the Media Liaison.	P1. Interface with Security personnel throughout duration of event P2. Retrieve Press Release from the Press Release Writer or Information Coordinator and prepare for distribution P3. When the State/Federal representative(s) brings over a press release or EAS message, prepare for distribution	**Eliminate position**	Yes	F1 - Media Liaison F2 - Media Liaison F3 - JIC Manager P1 - JIC Manager P2 - JIC Manager P3 - JIC Manager	No	No	3550 - Att 5	N/A
Inquiry Response Coordinator	F1. Ensure activation of rumor control activities for response to questions from the general public and media. F2. Monitor and respond to the public/media inquiry calls and track trends. F3. Refer questions on radiation or nuclear technology from Rumor Control Center to the Technical Advisor	N/A	**Eliminate position** F1 - eliminate task	Yes	F2 - Inquiry Responder F3 - Inquiry Responder	No	No	3550 - Att 9	N/A
Media Monitors	F1. Monitor TV and radio broadcasts for inaccuracies F2. Report all inaccuracies to the Information Coordinator to ensure they are addressed in the media briefings.	P1. Make initial telephone calls to news media outlets notifying them the JIC has been declared operational P2. Update the recorded status phone message	Change F2 to JIC Manager	No	N/A	No	No	3550 - Att 11 & 12	N/A
JIC Log Keeper	F1. Maintain facility log on WebEOC or other acceptable method. F2. Support the JIC Manager as requested.	P1. Display presentations on TVs in briefing area. P2. Maintain "briefing in progress/next briefing time" board on door to briefing area	**Eliminate position** F2 - Eliminate task	Yes	F1 - JIC Manager P1 - Media Liaison P2 - Media Liaison	No	No	3550 - Att 8	N/A
Inquiry Responders	F1. Log questions that require a callback F2. Log rumors and provide to the Inquiry Response Coordinator	N/A	Change F2 to JIC Manager	No	N/A	No	No	3550 - Att 10	N/A

Attachment 6

Vermont Yankee Nuclear Power Station

List of Regulatory Commitments

List of Regulatory Commitments

This table identifies actions discussed in this letter for which Entergy commits to perform. Any other actions discussed in this submittal are described for the NRC's information and are **not** commitments.

COMMITMENT	TYPE (Check one)		SCHEDULED COMPLETION DATE (If Required)
	ONE-TIME ACTION	CONTINUING COMPLIANCE	
Revise applicable fuel handling procedures to require that a Chemistry Technician be on-site or the radiation monitor listed in the gaseous effluent EALs is in service as a prerequisite to handling or moving spent fuel.	**x**		Prior to permanent removal of fuel from the VY reactor vessel