Enclosure 1

Vermont Yankee Nuclear Power Station

ISFSI Emergency Plan

# ISFSI EMERGENCY PLAN

# ENTERGY VERMONT YANKEE

# VERNON, VERMONT

REVISION 0

PREPARER: _____

Manager, Emergency Preparedness (Print/Sign) Date

REVIEWED: _____

Independent Safety Review (Print/Sign) Date

APPROVED: _____

Decommissioning Director (Print/Sign) Date

Effective Date_____

ENTERGY VERMONT YANKEE ISFSI EMERGENCY PLAN

REVISION SUMMARY

| DATE | REVISION | DESCRIPTION |
|---|---|---|
| TBD | 0 | The Vermont Yankee (VY) Independent Spent Fuel Storage Installation (ISFSI) Emergency Plan (IEP) describes VY's plans for responding to emergencies that may arise at the VY ISFSI. |

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# 1.0 INTRODUCTION

Vermont Yankee Nuclear Power Station (VY) permanently ceased power operations on December 29, 2014. On January 12, 2015, by letter BVY 15-001, Entergy Nuclear Operations, Inc. provided certification to the U.S. Nuclear Regulatory Commission (NRC) required by 10 CFR 50.82(a)(1)(i) and (ii) that VY had permanently ceased power operations and that all fuel had been permanently removed from the reactor vessel. Subsequently, all spent fuel has been transferred to the on-site Independent Spent Fuel Storage installation (ISFSI) facility.

The VY ISFSI Emergency Plan (IEP) describes the plan for responding to emergencies that may arise at the ISFSI. In this condition, no reactor operations can take place and all irradiated fuel has been removed from the Spent Fuel Pool. This IEP adequately addresses the risks associated with VY's current conditions.

The Holtec International (Holtec) Final Safety Analysis Report (FSAR) for the HI-STORM 100 Cask System describes the Design Basis Accidents (DBAs) applicable to the VY ISFSI along with the radiological dose calculation results. As provided in the Holtec FSAR, the analyses of the potential radiological impacts of postulated off-normal, natural phenomena, and accident events involving the ISFSI indicate that any releases would result in a dose to the public below the radiation limits established in 10 CFR 72.106(b). Exposure levels, which warrant pre-planned response measures are limited to the ISFSI and immediate vicinity, and for this reason, radiological emergency planning is focused on this area. The VY 10 CFR 72.212 Report for the HI-STORM 100 System discusses compliance with Amendments 2 and 10 of the Holtec HI-STORM 100 System Certificate of Compliance (CoC) terms, conditions, and specifications

## 1.1. Purpose

The purpose of the IEP is to ensure an adequate level of preparedness to cope with the spectrum of emergencies that could be postulated to occur. This plan integrates the necessary elements to provide effective emergency response considering cooperation and coordination of organizations expected to respond to potential emergencies.

## 1.2. Scope

The IEP has been developed to respond to potential radiological emergencies at the VY ISFSI. Because there are no postulated off-normal, natural phenomena or accident events that would result in dose consequences that are large enough to require offsite emergency planning, the overall scope of the IEP details the actions necessary to safeguard onsite personnel. The concepts presented in the IEP address the applicable regulations stipulated in 10 CFR 50.47, "Emergency Plans," and Appendix E to 10 CFR 50, "Emergency Planning and Preparedness for Production and Utilization Facilities." The IEP is consistent with the applicable guidelines established in NUREG-0654/FEMA-REP-1, Revision 1, "Criteria for

Preparation and Evaluation of Radiological Emergency Response Plans and Preparedness in Support of Nuclear Power Plants."

Exemptions from selected portions of 10 CFR 50.47 and Appendix E to 10 CFR Part 50 were approved by the Nuclear Regulatory Commission (NRC) on December 10, 2015 (ADAMS Accession Number ML15180A054).

The IEP, Revision 0, was approved per NRC Safety Evaluation dated ***[insert date prior to issuing]***.

## 2.0 DISCUSSION

### 2.1. Overview of ISFSI Emergency Plan

In the event of an emergency at the VY ISFSI, actions are required to identify and assess the nature of the emergency and to respond in a manner that protects the health and safety of the public and onsite personnel. The IEP describes the organization and responsibilities for implementing emergency measures and describes interfaces with offsite agencies (Federal, State and local) and organizations which may be notified in the event of an emergency and may provide assistance.

Fire, law enforcement, and medical response are provided by local public and private entities. Specifically: fire support services are provided by the Vernon and Brattleboro Fire Departments; law enforcement support services are provided by local, State, and Federal law enforcement authorities, as appropriate; ambulance services are provided by Rescue, Inc.; and medical services are provided by Brattleboro Memorial Hospital.

VY is licensed under the requirements of 10 CFR Part 50, "Domestic Licensing of Production and Utilization Facilities." Consistent with the requirements of 10 CFR Part 50, the IEP is based on the requirements of 10 CFR Part 50, Section 50.47(b) and Appendix E, "Emergency Planning and Preparedness for Production and Utilization Facilities," with approved exemptions.

Sections 5.0 thru 20.0 of this IEP address the standards outlined in 10 CFR 50.47(b)(1) through (16). In addition, the IEP is also intended to meet appropriate NRC regulations in accordance with Entergy Nuclear Operations, Inc.'s (ENO) Renewed Facility Operating License (No. DPR-28). VY is licensed to store spent fuel in the ISFSI under the General License provisions of 10 CFR 72.210 and 10 CFR 72.212.

Because the analyses of the credible design basis events and consequences indicate there are no postulated events that would result in offsite dose consequences large enough to require offsite emergency planning, emergencies are divided into two classifications: 1) Notification of Unusual Event (Unusual Event) and 2) Alert.

VY is responsible for planning and implementing emergency measures associated with the VY ISFSI. The IEP is provided to meet that responsibility. To carry out specific emergency measures discussed in the IEP, detailed Emergency Plan Implementing Procedures (EPIPs) are established and maintained. Appendix B provides a listing of the EPIPs for the IEP.

In addition to the description of activities and steps that can be implemented during a potential emergency, the IEP also provides a general description of the steps taken to recover from an emergency. It also describes the training, exercises and drills, planning, and coordination appropriate to maintain an adequate level of emergency preparedness.

## 2.2. Facility Description

The VY facility is located on the west bank of the Connecticut River immediately upstream of the Vernon Hydrostation, in the town of Vernon, Vermont. The VY facility 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. Most of the land around the facility is undeveloped. The developed land is used for agriculture, dairying, and for residential areas within small villages. The nearest residence is 1,300 feet from the former Reactor Building and is one of several west of the site. The Vernon Elementary School is about 1,500 feet from the former Reactor Building.

The VY facility consists of a permanently shut down single unit, 1912 MWt, General Electric Type 4 Boiling Water Reactor with a Mark I containment that began operation in 1972. The unit is certified to have ceased power operations and is permanently defueled in accordance with 10 CFR 50.82(a)(1)(i) and (ii). All spent fuel has been transferred to the ISFSI which is located to the north of the Plant. The VY ISFSI is a robust and high integrity facility for the spent fuel storage system. This facility is designed to prevent the release of radioactivity in the event of accidents, including environmental phenomena (e.g., earthquake and flooding).

## 2.3. Summary of Emergency Actions

The IEP is activated by the ISFSI Shift Supervisor (ISS) upon identification of an emergency situation based upon the Emergency Action Level (EAL) criteria. The ISS assumes the position of the Emergency Director upon classification of an emergency. The emergency measures described in the subsequent sections and EPIPs are implemented in accordance with the classification and nature of the emergency, and at the direction of the Emergency Director. Regulatory authorities and offsite support organizations are notified in accordance with this Plan. The Emergency Director has authority and responsibility for control and mitigation of the emergency, including emergency response resources, coordination of radiological assessment activities, and recovery implementation.

The following sections of this IEP describe the detailed plans and actions of the VY Emergency Response Organization (ERO), including interfaces with offsite support organizations.

## 3.0 DEFINITIONS AND ACRONYMS

This section provides definitions and acronyms that are used in this document.

### 3.1. Definitions

**Accountability** - A discretionary protective action taken for all persons onsite (within the ISFSI Protected Area) that involves the gathering of personnel into pre-designated areas and subsequent verification that the location of all personnel is known.

**Alert** - Events are in progress or have occurred which involve an actual or potential substantial degradation of the level of safety of the ISFSI or a security event that involves probable life threatening risk to site personnel or damage to ISFSI equipment because of hostile action. Any releases are expected to be limited to small fractions of the Environmental Protection Agency (EPA) Protective Action Guideline (PAG) exposure levels.

**Annual** - Once per calendar year, unless otherwise stated.

**Assessment Actions** - Those actions taken during or after an emergency for the purposes of obtaining and processing the information necessary to make decisions to implement specific emergency measures.

**Biennial** – Once per two calendar years, unless otherwise stated.

**Corrective Action** - Those emergency measures taken to mitigate or terminate an emergency situation at or near the source of the problem in order to prevent an uncontrolled release of radioactive material or to reduce the magnitude of a release (e.g., equipment shutdown, firefighting, equipment repair, and damage control).

**Design Basis Accident (DBA)** - Credible accident events as analyzed in the ISFSI Updated Final Safety Analysis Report.

**Emergency Action Level (EAL)** - A pre-determined, site-specific, observable threshold for an Initiating Condition (IC) that, when met or exceeded, places the ISFSI in a given emergency classification level.

**Emergency Classification System** - A system of classification in which emergency occurrences are categorized according to specific protective action levels. The two emergency classification levels, in ascending order of severity, are: Notification of Unusual Event (Unusual Event) and Alert.

**Emergency Director** - This position is the highest level of authority for the VY Emergency Response Organization (ERO) and on-site emergency activities. This position is held by the ISFSI Shift Supervisor (ISS) or designated alternate.

**Emergency Plan Implementing Procedure (EPIP)** - Specific procedures describing actions taken by plant staff to activate and implement the IEP.

**Emergency Response Facility (ERF)** – Facility containing the communications equipment necessary for emergency conditions. It is operated under the direction of the Emergency Director and serves as the primary location for classification of the emergency, notification of the emergency to offsite agencies, assessment actions, and emergency action direction.

**Emergency Response Organization (ERO)** - Organization comprised of assigned individuals who would respond and assist during a classified emergency.

**Fire** - Combustion characterized by heat and light. Sources of smoke such as slipping drive belts or overheated electrical equipment do not constitute fires. Observation of flame is preferred but is not required if large quantities of smoke and heat are observed.

**Frequency** - That unit of time specified (monthly, quarterly, etc.) plus or minus 25 percent, unless otherwise specifically stated. This definition does not apply to "Annual" when it is related to the conduct of the Biennial Exercise. Biennial Exercises are performed within the calendar year.

**Hostile Action** - An act toward the ISFSI or its personnel that includes the use of violent force to destroy equipment, take hostages, and/or intimidate the licensee to achieve an end. This includes attack by air, land or water using guns, explosives, projectiles, vehicles, or other devices used to deliver destructive force. Other acts that satisfy the overall intent may be included. Hostile action should not be construed to include acts of civil disobedience or felonious acts that are not part of a concerted attack on the ISFSI. Non-terrorism-based EALs should be used to address such activities, (e.g., violent acts between individuals in the Owner Controlled Area).

**Hostile Force** - One or more individuals who are engaged in a determined assault, overtly or by stealth and deception, equipped with suitable weapons capable of killing, maiming, or causing destruction.

**Independent Spent Fuel Storage Installation (ISFSI)** - A complex that is designed and constructed for the interim storage of spent nuclear fuel and other radioactive materials associated with spent fuel storage.

**ISFSI Controlled Area** - That area immediately surrounding an ISFSI or MRS (Monitored Retrievable Storage Installation) for which the licensee exercises authority over its use and within which ISFSI or MRS operations are performed

**Initiating Condition (IC)** - An event or condition that aligns with the definition of one of the two emergency classification levels by virtue of the potential or actual effects or consequences.

**Local Assembly Area** - A pre-designated area where personnel report to for organization, roll-call, and supervision when ISFSI accountability is initiated.

**Notification of Unusual Event (Unusual Event)** - Events are in progress or have occurred which indicate a potential degradation of the level of safety of the ISFSI or indicate a security threat to facility protection has been initiated. No releases of radioactive material requiring offsite response or monitoring are expected.

**Owner Controlled Area** - The fenced in area outside of the Protected Area, owned by Entergy.

**Protected Area** - That area within the perimeter of the security fence.

**Protective Actions** - Those measures taken in anticipation of, or after an uncontrolled release of radioactive material, for the purpose of preventing or minimizing radiological exposures to persons that would be likely to occur if the actions were not taken.

**Protective Action Guide (PAG)** – The projected dose to an individual, resulting from a radiological incident at which specific protective actions to reduce or avoid that dose are warranted.

**Radioactive Release** - Any radioactive material beyond pre-emergency levels and not attributable to normal ISFSI operations, either detected or suspected of migrating beyond the Protected Area, while in a classified emergency.

**Radiological Control Area (RCA)** - An area in which radioactive material is present and the potential exists for the spread of radioactive contamination. The area is posted for the purpose of protecting individuals against undue risks from exposure to radiation and radioactive materials.

**Recovery** – The condition declared after the immediate hazards to life and safety due to the emergency have been removed and efforts are directed to returning affected areas to normal.

**Recovery Actions** – Those actions taken after the emergency has been controlled in order to restore the ISFSI to safe conditions.

**Security Condition** - Any Security Event as listed in the approved security contingency plan that constitutes a threat/compromise to site security, threat/risk to site personnel, or a

potential degradation to the level of safety of the ISFSI. A security condition does not involve a hostile action.

**Site** - That property within the fenced boundary of Vermont Yankee which is owned by Entergy.

**Site Boundary** – That line beyond which the land is not owned, leased, or otherwise controlled by the licensee. This line establishes the perimeter of the Owner Controlled Area (OCA).

**Substantial Degradation** – Unanticipated conditions which are believed by the Emergency Director to fall under the emergency classification level description for an Alert.

### 3.2. Acronyms

| | |
|---|---|
| ALARA | As Low As Reasonably Achievable |
| DBA | Design Basis Accident |
| EAL | Emergency Action Level |
| ENS | Emergency Notification System |
| EPA | Environmental Protection Agency |
| EPIP | Emergency Plan Implementing Procedure |
| ERF | Emergency Response Facility |
| ERO | Emergency Response Organization |
| FSAR | Final Safety Analysis Report |
| FTS | Federal Telecommunication System |
| IC | Initiating Condition |
| IEP | ISFSI Emergency Plan |
| ISFSI | Independent Spent Fuel Storage Installation |
| ISS | ISFSI Shift Supervisor |
| LLEA | Local Law Enforcement Agency |
| NRC | Nuclear Regulatory Commission |
| OCA | Owner Controlled Area |
| ORO | Offsite Response Organization |
| PAG | Protective Action Guide |
| RCA | Radiological Control Area |
| REAC/TS | Radiation Emergency Assistance Center/Training Site |
| VY | Vermont Yankee |

## 4.0 REFERENCES


1. 10 CFR 50.47, "Emergency Plans"
2. Appendix E to 10 CFR Part 50, "Emergency Planning and Preparedness for Production and Utilization Facilities"
3. 10 CFR Part 20, "Standards and Protection Against Radiation"
4. NUREG-0578, "TMI-2 Lessons Learned Task Force Status Report and Short-Term Recommendations" (July 1979)
5. NUREG-0654/FEMA-REP-1, "Criteria for Preparation and Evaluation of Radiological Emergency Response Plans and Preparedness in Support of Nuclear Power Plants," Rev. 1
6. Regulatory Guide 1.101, "Emergency Planning and Preparedness for Nuclear Power Reactors"
7. Certificate of Compliance No. 1014, Amendment 2 for the HI-STORM 100 Cask System, dated June 7, 2005 (ADAMS Accession No. ML051580459)
8. Certificate of Compliance No. 1014, Amendment 10 for the HI-STORM 100 Cask System, dated May 25, 2016 (ADAMS Accession No. ML16144A177)
9. Holtec International Final Safety Analysis Report for the HI-STORM 100 Cask System Revision 3, dated April 10, 2006, for Certificate Number 1014, Docket No. 72-1014, Amendment 2, Effective Date June 7, 2005 (ADAMS Accession No. ML063240599)
10. Holtec International Final Safety Analysis Report for the HI-STORM 100 Cask System Revision 14, dated January 5, 2015, for Certificate Number 1014, Docket No. 72-1014, Amendment 10, Effective Date May 31, 2016 (ADAMS Accession No. ML15007A435)
11. Vermont Yankee Nuclear Power Station, 10 CFR 72.212 Report for the HI-STORM 100 System, Revision 7
12. NRC Bulletin (BL) 2005-02, "Emergency Preparedness and Response Actions for Security Based Events," dated July 18, 2005 (ADAMS Accession No. ML051740058)
13. Nuclear Energy Institute (NEI) 99-01, Revision 6, "Development of Emergency Action Levels for Non-Passive Reactors," dated November 2012 (ADAMS Accession No. ML12326A805)
14. EPA's "Protective Action Guides and Planning Guidance for Radiological Incidents, dated January 2017 (EPA PAG Manual)
15. Letter, Entergy Nuclear Operations, Inc. to USNRC, "Certifications of Permanent Cessation of Power Operations and Permanent Removal of Fuel from the Reactor Vessel," BVY 15-001, dated January 12, 2015 (ADAMS Accession No. ML15013A426)
16. Letter, USNRC to Entergy Nuclear Operations, Inc., "Vermont Yankee Nuclear Power Station – Exemptions from Certain Emergency Planning Requirements and Related Safety Evaluation (CAC No. MF3614)," dated December 10, 2015 (ADAMS Accession No. ML15180A054)
17. NUREG-0586, "Generic Environmental Impact Statement of Decommissioning of Nuclear Facilities," Supplement 1, Volume 1, November 2002

18. NRC Information Notice No. 90-08: KR-85 Hazards from Decayed Fuel
19. 10 CFR 72.13, "Applicability"
20. 10 CFR 72.32, "Emergency Plan"
21. 10 CFR 72.44, "License Conditions"
22. 10 CFR 72.106, "Controlled Area of an ISFSI or MRS"
23. ISFSI Physical Security Plan
24. ISFSI EAL Technical Bases Document

## 5.0 ASSIGNMENT OF RESPONSIBILITY

Primary responsibilities for emergency response 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.

### 5.1. Emergency Response and Responsibilities

ENO is responsible for the safe storage of spent fuel in accordance with the State of Vermont and NRC regulations. Responsibility for planning and implementing all emergency measures rests with ENO. The VY ISFSI Organization has complete capability at all times to perform the detection, classification, initial response, and notification functions required during an emergency. The organization has an inherent emergency response and recovery function in its overall management and operation.

The ISFSI Shift Supervisor (ISS) is at VY on a continuous, 24-hour per day basis, and is the senior management position during off-hours. This position is responsible for monitoring ISFSI conditions and managing the activities at the VY ISFSI. The ISS has the responsibility and authority to declare an emergency and initiate appropriate actions in accordance with written procedures to mitigate the consequences. When an off-normal, natural phenomenon, or accident event becomes apparent, the ISS shall assess the condition and assume the position of Emergency Director once an emergency declaration has been made.

The Emergency Director is responsible for the direction of all activities at the ISFSI site during an emergency. Should evaluation indicate the need, the Emergency Director has the authority to direct any or all personnel to relocate from the ISFSI and surrounding area and to notify all applicable agencies of the ISFSI status. The Emergency Director ensures that appropriate actions are taken and management and applicable offsite supporting organizations and regulatory agencies are notified, as necessary. The functions associated within the Emergency Director's scope of responsibilities are specified on Table 6-1.

The Emergency Director does not have concurrent duties which conflict with the above responsibilities.

The on-shift staff positions are staffed on a 24-hour per day basis. The on-shift staff can perform all required IEP actions. At the direction of the Emergency Director, additional personnel will be activated to support the on-shift staff.

A Resource Manager assists in assessing the event and obtaining additional resources needed to respond to the event.

## 5.2. Offsite Response Organization

The Emergency Director coordinates the Offsite Response Organization (ORO) response (fire, ambulance, local law enforcement agencies (LLEA), and medical), access, and radiological controls with the onsite activities. The OROs listed below are capable of emergency response on a 24-hour per day basis.

The response of the State of Vermont and local government agencies are in accordance with each agency's plans and procedures, and are commensurate with the hazard posed by the emergency.

Letters of Agreement are in place for those local organizations that will respond.

### 5.2.1. Vermont, New Hampshire, and Massachusetts

Notification of an emergency declaration or change in classification is provided to the States of Vermont and New Hampshire and the Commonwealth of Massachusetts via the commercial telephone system. The State Police dispatching points receiving the notification are staffed on a 24-hour per day basis.

### 5.2.2. Vernon and Brattleboro Fire Departments

Arrangements exist with the Vernon and Brattleboro Fire Departments to provide response and support services as requested. The fire departments are located approximately 1.5 and 6.5 miles, respectively, from VY, allowing for a timely response.

### 5.2.3. Rescue, Inc. Ambulance Service

Arrangements exist with Rescue, Inc., to provide 24-hour per day ambulance service for emergency transportation of plant personnel for offsite treatment. The agreement includes a commitment for transportation of contaminated injured workers.

### 5.2.4. Brattleboro Memorial Hospital

Arrangements exist with Brattleboro Memorial Hospital for the treatment of radioactively contaminated and injured personnel. The agreement includes a commitment by the hospital to accept and treat personnel with routine industrial injuries as well as injuries complicated by radioactive contamination or radiation exposure. The hospital maintains the capability and facilities to provide radioactive decontamination. These services and facilities are available on a 24-hour per day basis.

### 5.2.5. Law Enforcement

Law enforcement support services are provided by local, State of Vermont, and federal law enforcement authorities as appropriate, and response capabilities are documented in the Letters of Agreement maintained by Security.

5.2.6. Nuclear Regulatory Commission

In the event of an emergency at the VY ISFSI, the NRC Operations Center in Rockville, Maryland will be notified immediately after notification of Vermont. New Hampshire, and Massachusetts and not later than 60 minutes after an emergency declaration or change in classification. Classification and radiological information are communicated to this office over a dedicated telephone line from the VY ISFSI Emergency Response Facility (ERF). Emergency notification, ISFSI status information, and radiological information is communicated via the Emergency Notification System (ENS). Information may be communicated via commercial telephone.

The NRC is the primary Federal agency providing coordination and support to the licensee in the event of an emergency at the VY ISFSI. NRC responsibilities are directed toward a coordination of Federal efforts to provide assistance to the licensee and State and local governments in their planning and implementation of emergency preparedness procedures.

The NRC response must be regarded primarily as supportive of, and not a substitute for, responsible action by VY and other key response organizations. The NRC must be continually informed of status and possible radiological consequences, and be frequently updated on plans for emergency and recovery actions and needs for assistance.

## 6.0 EMERGENCY RESPONSE ORGANIZATION

Emergency Response Organization (ERO) responsibilities for emergency response are identified in Table 6-1, "Emergency Response Organization Staffing and Responsibilities."

### 6.1. On-Shift Positions

VY maintains on-shift personnel capable of providing the initial response to an off-normal, natural phenomenon, or accident event on a 24-hour per day basis. Members of the on-shift organization are trained on their responsibilities and duties in the event of a declared emergency and are capable of performing all necessary response actions until any necessary augmenting staff arrives or the event is terminated. The on-shift staffing assignments include the roles and responsibilities for their emergency response functions.

6.1.1. ISFSI Shift Supervisor/Emergency Director

The ISS is at the VY ISFSI on a 24-hour per day basis and is the senior management position during off-hours. This position is responsible for monitoring conditions and approving all onsite activities and has the requisite authority, management ability, technical knowledge, and staff to manage the site, emergency response, and recovery organizations.

The ISS has the responsibility and authority to declare an emergency and to initiate appropriate actions to mitigate the consequences of the emergency in accordance with written procedures. The ISS assumes the position of Emergency Director with overall command and control once an emergency classification has been made. The Emergency Director is responsible for the direction of the total emergency response effort and has the company authority to accomplish this responsibility.

The Emergency Director cannot delegate the following responsibilities:

- Classification of an event
- Approval of emergency notifications to Vermont, New Hampshire, Massachusetts, and the NRC (although the task of making the notifications may be delegated)
- Authorization of radiation exposures in excess of 10 CFR Part 20 limits

The Emergency Director is responsible for assuring that appropriate corrective and protective actions are taken to mobilize emergency response personnel and for notifying management, OROs, and regulatory agencies, as necessary. Other responsibilities assumed by the Emergency Director associated with the functions listed in Table 6-1 include:

- Notification of the emergency classification to the NRC and Vermont, New Hampshire, and Massachusetts
- Management of available station resources

- Initiation of mitigative actions
- Initiation of mitigative, corrective, and onsite protective actions
- Decision to call for LLEA, fire, or ambulance assistance
- Augmentation of the emergency staff, as deemed necessary
- Coordination of security activities
- Termination of the emergency condition when appropriate
- Performance of initial radiological assessment
- Maintaining a record of event activities
- Suspending security measures

6.1.2. Security

Security is maintained in accordance with the ISFSI Physical Security Plan. Security performs accountability as directed by the ISS or Emergency Director.

## 6.2. Augmented ERO Positions

VY maintains the necessary personnel and resources to support the VY ISFSI Emergency Director in responding to an emergency.

In addition to the resources listed below, additional personnel resources may be directed to report to the VY ISFSI by the Emergency Director to provide additional support as needed to assess radiological conditions, support maintenance and repair activities, develop and implement corrective action plans, and assist with recovery actions. The augmentation personnel are available from VY staff and can be requested from various contractors.

6.2.1. Resource Manager

The Resource Manager will be in contact with the Emergency Director within two (2) hours of an emergency declaration. The Resource Manager will augment the Emergency Director by assisting in the assessment of the emergency condition and coordinating any required resources, including serving as the public information interface. The Resource Manager does not need to physically report to VY to perform the assigned responsibilities.

6.2.2. Augmented Responder

For a declared emergency involving radiological consequences, a minimum of one person trained in radiological monitoring and assessment will report to the VY ISFSI within four (4) hours of the emergency declaration.

6.2.3. Offsite Response Organizations

Additional support is available from OROs, as described in Section 5.2 of this Plan.

## 6.3. Functional Responsibilities

Table 6-1 lists the functional responsibilities that fulfill emergency staffing capabilities.

## TABLE 6-1

### Emergency Response Organization Staffing and Responsibilities

| FUNCTIONAL AREA | LOCATION | ON-SHIFT STAFF | AUGMENTED RESPONSE |
|---|---|---|---|
| Assessment of Condition (Emergency Declaration) | Emergency Response Facility | Emergency Director | Resource Manager |
| Emergency Direction and Control | Emergency Response Facility | Emergency Director | --- |
| Notifications / Communications | Emergency Response Facility | Emergency Director | --- |
| Radiological Accident Assessment and Protective Actions | Emergency Response Facility / On Scene | Emergency Director | Resource Manager ** |
| Corrective Actions | Emergency Response Facility / On Scene | Emergency Director | --- |
| Fire Fighting | On Scene | Per Fire Protection Plan | Offsite Response Organization |
| Rescue and First Aid Treatment | On Scene | * | Offsite Response Organization |
| Site Access Control and Accountability | Security Station | Per ISFSI Physical Security Plan | --- |

* Provided by on-shift personnel who may be assigned other functions

** Augmented responder as described in Section 6.2.

## 7.0 EMERGENCY RESPONSE SUPPORT AND RESOURCES

Arrangements for requesting and effectively using resources have been made and other organizations capable of augmenting the planned response have been identified. Letters of Agreement are in place for those local organizations (fire, ambulance, LLEA, and medical) listed in Section 5.2 that will respond to an emergency at the VY ISFSI. Letters of Agreement for each organization are maintained on file.

The Emergency Director coordinates the fire, ambulance, and LLEA response as previously discussed in Section 5.2.

The Emergency Director is authorized to request Federal assistance as needed. The NRC will act as the lead Federal agency providing coordination and support in response to an emergency at VY as described in Section 5.2.6.

## 8.0 EMERGENCY CLASSIFICATION SYSTEM

A standard emergency classification and emergency action level scheme is in use. This section describes emergency classifications, Initiating Conditions (ICs), EALs, and postulated emergency situations.

### 8.1. Emergency Classification System

The emergency classification system covers the entire spectrum of possible radiological and non-radiological emergencies at the VY ISFSI. The emergency classification system categorizes accidents and/or emergency situations into one of two emergency classification levels depending on emergency conditions at the time of the incident: Unusual Event and Alert. Each of these emergency classes require notification to the Resource Manager, Vermont, New Hampshire, Massachusetts, and the NRC.

The emergency classification system is based on NEI 99-01, "Development of Emergency Action Levels for Non-Passive Reactors", Revision 6. The classification system referenced in NEI 99-01, Revision 6 has been endorsed by the NRC and provides a standard method for classifying emergencies.

Once indications are available that an EAL is met, the event is classified, and the corresponding emergency classification level is promptly declared. Refer to the ISFSI Emergency Action Level Technical Bases for actual parameter values, and status used to classify emergencies.

Incidents may initially be classified as an Unusual Event and then escalated to an Alert if the situation deteriorates. The following Sections outline the actions at each emergency classification level.

Refer to the ISFSI EAL Technical Bases Document for actual parameter values and status used to classify emergencies.

8.1.1. Unusual Event

> EVENTS ARE IN PROGRESS OR HAVE OCCURRED WHICH INDICATE A POTENTIAL DEGRADATION OF THE LEVEL OF SAFETY OF THE ISFSI OR INDICATE A SECURITY THREAT TO FACILITY PROTECTION HAS BEEN INITIATED. NO RELEASES OF RADIOACTIVE MATERIAL REQUIRING OFFSITE RESPONSE OR MONITORING ARE EXPECTED UNLESS FURTHER DEGRADATION OF SAFETY SYSTEMS OCCURS.

The purpose of the Unusual Event declaration is to: 1) provide for an increased awareness of abnormal conditions; 2) provide for systematic handling of information and decision-making, and 3) augment on-shift personnel, if deemed necessary by the Resource Manager.

Upon declaration of an Unusual Event, offsite authorities will be informed of the emergency declaration and the necessary documentation will be completed as specified in the EPIPs. The classification shall be maintained until the emergency is terminated or the emergency escalates to an Alert. If an escalation to an Alert occurs, offsite authorities will be informed of the change within 60 minutes of the change in classification.

8.1.2. Alert

EVENTS ARE IN PROGRESS OR HAVE OCCURRED WHICH INVOLVE AN ACTUAL OR POTENTIAL SUBSTANTIAL DEGRADATION OF THE LEVEL OF SAFETY OF THE ISFSI OR A SECURITY EVENT THAT INVOLVES PROBABLE LIFE THREATENING RISK TO SITE PERSONNEL OR DAMAGE TO ISFSI EQUIPMENT BECAUSE OF HOSTILE ACTION. ANY RELEASES ARE EXPECTED TO BE LIMITED TO SMALL FRACTIONS OF THE EPA PAG EXPOSURE LEVELS.

The purpose of the Alert declaration is to: 1) perform event mitigation and radiation monitoring, if required, and 2) ensure that all necessary resources are being applied to accident mitigation.

Upon classification of an Alert, offsite authorities will be informed of the emergency and the necessary documentation will be completed as specified in the EPIPs. The classification shall be maintained until the emergency is terminated. VY may enter Recovery operations while in the Alert classification.

## 8.2. Emergency Action Levels and Postulated Accidents

Both emergency classifications are characterized by EALs consisting of specific instrument readings and/or observations which indicate to the ISS that an IC has been met. These EALs are used to ensure that the initial classification of emergencies can be accomplished rapidly, allowing for the prompt identification of the necessary mitigating actions.

EALs and ICs are provided under the following categories:

- ISFSI Malfunction
- Hazards and Other Conditions

The Holtec HI-STORM FSAR describes the DBAs applicable to the VY ISFSI and the radiological dose calculation results. Specific guidance for classifying emergencies is found in EPIPs and the ISFSI EAL Technical Bases Document.

The emergency classification system and the EALs are reviewed with the authorities of Vermont, New Hampshire, and Massachusetts on an annual basis.

## 9.0 NOTIFICATION METHODS AND PROCEDURES

Procedures are established for the prompt notification to Vermont, New Hampshire, Massachusetts, and local organizations and for notification of VY emergency personnel in the event of an emergency declaration. VY has established the means for notification and dissemination of emergency messages. The content of initial and follow-up messages to response organizations has been established.

### 9.1. Basis for Notification

The notification of personnel and emergency response organizations is commensurate with the hazard posed by the emergency. The emergency classification system described in Section 8.0 is the primary bases for notification and has been mutually agreed upon by applicable State and Federal organizations.

### 9.2. Emergency Messages

The Emergency Director is responsible for the notification of an emergency declaration to Vermont, New Hampshire, Massachusetts, and the NRC within 60 minutes of the event classification or change in classification.

The format and content of the initial message between VY and Vermont, New Hampshire, and Massachusetts are specified in EPIPs and have been established with the review and agreement of responsible state authorities. The initial notification contains the following information, as available:

- Identification of the facility
- Identification of the message sender
- Date and Time of the emergency declaration
- Emergency classification, including EAL

Follow-up reports are provided as additional information describing the emergency situation becomes available, or as requested by Vermont, New Hampshire, or Massachusetts, until such time that the emergency condition has been terminated. The follow-up messages will contain the following information, as available:

- Identification of the facility
- Identification of the message sender
- Date and Time of the emergency declaration
- Emergency classification, including EAL
- Radiological conditions, including an assessment of any radioactive release
- Emergency response actions underway
- Request for any needed support from offsite agencies
- Prognosis for worsening or termination of the event based on available information

## 9.3. Means of Providing Emergency Notification

Various communications systems, as described in Section 10.0 are available to perform emergency notifications. The Emergency Director is the primary individual for initiating notifications. However, the Emergency Director may designate an individual to perform the notifications. EPIPs and emergency telephone directories identify organizations and individuals to be notified and contain appropriate listings of telephone numbers.

The following sections describe the means of notifying, alerting, and mobilizing the various organizations or individuals.

### 9.3.1. Vermont, New Hampshire, and Massachusetts

Notification of an emergency declaration, and specific emergency information, is conveyed to Vermont, New Hampshire, and Massachusetts using the commercial telephone system. This system is available in the ERF on a 24-hour per day basis and is staffed continuously in the State Police dispatching points.

Other commercial means, including the use of wireless communications, will serve as a backup to the commercial telephone system.

### 9.3.2. NRC Emergency Notification System

The NRC utilizes the Federal Telecommunications System (FTS) telephone network. The FTS system provides a dedicated telephone. The Emergency Notification System (ENS) utilizes an FTS line which exists between the NRC Operations Office in Rockville, Maryland and the VY ISFSI. Emergency notification, plant status information, and radiological information are communicated via the ENS.

The NRC will be notified as soon as possible after State notifications and within 60 minutes of event declaration or change in classification.

The commercial telephone system serves as a backup to the ENS.

### 9.3.3. ERO Notification

The Resource Manager is notified of an emergency declaration by an onsite announcement and the commercial telephone system, or other commercial means which may include land line and/or wireless devices. The Emergency Director is responsible for the notification to the Resource Manager. As described in Section 5.1 of this Plan, the on-shift staff positions are staffed on a 24-hour per day basis and can perform all required IEP actions.

As described in Section 6.2, the Resource Manager will be in contact with the Emergency Director within two (2) hours of an emergency declaration. At the direction of the Emergency Director, additional personnel will be activated to augment the on-shift staff.

9.3.4. Notification of Offsite Response Organizations

The ORO support services described in Section 5.2 of this Plan are primarily notified of the need for assistance via 911 utilizing the commercial telephone system. Requests for ORO support services are the responsibility of the Emergency Director.

## 10.0 EMERGENCY COMMUNICATIONS

Provisions exist for prompt communications between principal response organizations and emergency response personnel. The communications systems listed in Table 10-1 provide 24-hour onsite and offsite communications capability allowing for prompt notification and activation of emergency personnel. In the event of an emergency declaration, these communications systems provide the appropriate means for alerting or activating emergency personnel in each response organization and allow continued means for contact throughout the emergency.

Communications systems providing the capability for onsite and offsite communications are tested to verify proper operation at the frequencies specified in Table 10-1. A testing frequency of "Frequent Use" indicates that the associated equipment is normally used at a sufficiently high regularity (e.g., multiple times each day), such that a dedicated testing frequency is not needed. Functionality is verified through normal (frequent) use of the system.

**TABLE 10-1**

**Communications Systems**

| Communications System | Testing Frequency |
|---|---|
| Commercial Telephone System | Frequent Use |
| Portable Radios | Frequent Use |
| NRC ENS | Monthly |

## 11.0 PUBLIC INFORMATION

The Emergency Director or Resource Manager will notify the corporate public affairs office of an emergency declaration. Public affairs office personnel will monitor media activity and coordinate with senior management to address rumors and disseminate information to the public.

To ensure timely dissemination of information to the public, news conferences can be conducted onsite or at other locations, as necessary. Corporate public affairs personnel, or senior VY or corporate management will represent the facility as the company spokesperson.

## 12.0 EMERGENCY FACILITY AND EQUIPMENT

Adequate emergency facilities and equipment to support the emergency response are provided and maintained. This section of the IEP identifies and describes the ERF, assessment equipment, the first aid and medical facilities, and protective equipment and supplies that can be utilized during an emergency.

### 12.1. Emergency Response Facility

During an emergency, command and control functions are managed within the ERF. From this location, the Emergency Director (or other personnel, as directed) can assess ISFSI conditions; evaluate the magnitude and potential consequences of abnormal conditions; initiate preventative and corrective actions; and perform emergency notifications.

The ERF is staffed in accordance with Section 6.0 of this Plan. The facility provides sufficient space to accommodate anticipated response personnel and provides 24-hour availability of the communications systems specified in Section 10.0.

Radiological conditions resulting from the DBAs specified in the Holtec HI-STORM FSAR do not inhibit staffing of the ERF.

### 12.2. Emergency Equipment and Supplies

This section describes the monitoring instruments used to initiate emergency measures and provide continuing assessment of conditions throughout the course of an emergency.

12.2.1. Portable Radiation and Contamination Monitoring Instruments

VY maintains portable radiation and contamination monitoring equipment necessary for monitoring the conditions of the ISFSI. These instruments are normally utilized and maintained by radiation monitoring personnel and are available for emergency use.

12.2.2. Communications Systems

Communications systems providing for 24-hour per day onsite and offsite communications capabilities are identified and tested as described in Section 10.0.

12.2.3. Emergency Supplies

Emergency equipment and supplies necessary to carry out the provisions of the IEP and support procedures are maintained in the ERF.

Appendix A, "Emergency Equipment, Supplies, and Reference Materials," lists equipment, supplies, and reference materials that are to be maintained in the ERF and other onsite locations.

## 13.0 ACCIDENT ASSESSMENT

Effective response to a potential emergency situation requires assessment to determine the nature of the emergency and its actual and potential consequences. VY has established various methods to evaluate and monitor the effects of a potential emergency and has the appropriate means to ensure adequate assessment.

The assessment activities required to evaluate a particular emergency depend on the specific nature and classification of the emergency. The Emergency Director is responsible for the initial measurement of ISFSI dose rates after off-normal, natural phenomena, or accident events. The EALs identify the parameter value to determine the emergency condition. Classification of events is performed by the ISS/Emergency Director in accordance with the EAL scheme.

If the measured ISFSI dose rates exceed the EAL threshold, the Emergency Director ensures a radioactive release assessment in the vicinity of the affected storage module or cask is performed. After the assessment is complete, the Emergency Director contacts the Resource Manager for assistance in interpreting the results of the radioactive release assessment.

Notification of the radiological release assessment is performed in accordance with Section 9.0.

## 14.0 PROTECTIVE ACTIONS

Protective actions for onsite personnel are provided for their health and safety. Implementation guidelines for onsite protective actions are provided in EPIPs.

Additionally, implementing procedures provide for a range of protective actions to protect onsite personnel during hostile actions.

### 14.1. Accountability

The Emergency Director has the authority to initiate personnel accountability.

Accountability should be considered and used as a protective action whenever a risk to health or safety exists, or at the discretion of the Emergency Director. If personnel accountability is required, at the direction of the Emergency Director, all individuals at the facility (including employees without emergency assignments, visitors, and contractor personnel) shall be notified of the emergency and provided with instructions.

Accountability of all personnel inside the ISFSI Protected Area should be accomplished within 60 minutes after event declaration and maintained thereafter at the discretion of the Emergency Director. Following announcement of an emergency declaration, onsite personnel are responsible for reporting to designated areas and aiding the accountability process. If personnel are not accounted for, the Emergency Director is notified and onsite announcements are made. If personnel are still unaccounted for following the onsite announcements, Security will initiate sweeps to locate the missing individual(s).

Accountability may be modified or suspended if the safety of personnel could be jeopardized by a security event or other event hazardous to personnel health and safety.

### 14.2. Personnel and Visitors Located Outside the ISFSI Protected Area

Other areas within the Site Boundary may be affected by the need to relocate personnel. If required, the Emergency Director will determine the specific areas requiring protective actions. Personnel and visitors located outside of the ISFSI Protected Area but within the Site Boundary will be directed to report to an assembly area or exit the site as appropriate, in accordance with EPIPs. The Emergency Director is responsible for controlling access to the site when the IEP is activated.

## 15.0 RADIOLOGICAL EXPOSURE CONTROL

The means for controlling radiological exposures during an emergency are established for emergency workers. The means for controlling radiological exposures include exposure guidelines consistent with the Environmental Protection Agency's (EPA) Emergency Worker and Lifesaving Activity Protective Action Guides (PAGs).

### 15.1. Exposure Guidelines

During an emergency, doses above normal occupational radiation exposure limits may be authorized by the Emergency Director for activities such as saving a life, preservation of valuable equipment, or controlling exposure.

All reasonable measures shall be taken to control the radiation exposure to emergency response personnel providing rescue, first aid, decontamination, emergency transportation, medical treatment services, corrective actions, or assessment actions within applicable limits specified in 10 CFR Part 20. The Emergency Director is responsible for authorizing emergency response personnel to receive doses in excess of 10 CFR Part 20 limits. This authority cannot be delegated.

Table 15-1 contains the guidelines for emergency exposure criteria, which is consistent with Table 2-2, "Response Worker Guidelines," of the EPA's "Protective Action Guide and Planning Guidance for Radiological Incidents."

### 15.2. Radiation Protection

VY maintains a radiological exposure control program to ensure that protection against radiological exposure, as set forth in 10 CFR Part 20, is provided. Exposure to individuals providing emergency functions will be consistent with the limits specified in Table 15-1 with every attempt made to keep exposures As Low As Reasonably Achievable (ALARA).

#### 15.2.1. Access Control

During a classified emergency, radiological surveys of the ISFSI and its immediate vicinity will be performed to determine the extent of the radiological concern. The Emergency Director will ensure Radiological Control Areas (RCAs) and access controls are established to prevent personnel from entering the area. Recovery and corrective actions will be planned and executed in a manner that minimizes personnel exposure.

#### 15.2.2. Personnel Exposure Monitoring

Personal dosimeters are utilized to monitor the exposure of personnel during normal or emergency conditions. Adequate supplies of dosimeters are maintained for use during an emergency. Procedures describe the types of personal dosimeter devices, the manner in which they are to be used, who is to wear them, and how they are to be cared for.

Emergency worker dose records are maintained in accordance with Radiation Protection procedures.

**15.3.** Personnel Contamination Control

Various contamination control measures are utilized. These include access control measures and the means for the decontamination of personnel, areas, and equipment. These activities are addressed in facility procedures and are briefly described below.

All personnel are monitored for radioactive contamination prior to leaving the site. Portable contamination monitoring instruments are available to frisk personnel for potential contamination.

During normal or emergency conditions, contamination should be removed from any part of a person's body prior to leaving the RCA. All personnel decontamination, including during an emergency, will be performed in accordance with established Radiation Protection procedures.

Documentation of surveys, contamination, and decontamination activities shall be maintained in accordance with Radiation Protection procedures.

## TABLE 15-1

### Response Worker Emergency Dose Limits

| Guideline | Activity | Condition |
|---|---|---|
| 5 rem | All occupational exposures | All reasonably achievable actions have been taken to minimize dose. |
| 10 rem[(a)] | Protecting valuable property necessary for public welfare | Exceeding 5 rem unavoidable and all appropriate actions taken to reduce dose. Monitoring available to project or measure dose. |
| 25 rem[(b) (c)] | Lifesaving or protection of large populations | Exceeding 5 rem unavoidable and all appropriate actions taken to reduce dose. Monitoring available to project or measure dose. |

(a) For potential doses > 5 rem, medical monitoring programs should be considered.
(b) In the case of a very large incident, consider the need to raise the property and lifesaving Response Worker Guideline to prevent further loss.
(c) Response actions that could cause exposures in excess of the 25 rem should only be undertaken with an understanding of the potential acute effects of radiation to the exposed responder and only when the benefits of the action clearly exceed the associated risks.

**Note:** Reference for this table is Table 2-2 of the EPA PAG Manual.
**Note:** The dose limits in Table 15-1 are in addition to any annual occupational dose already received.

## 16.0 MEDICAL AND HEALTH SUPPORT

Arrangements are made for medical services for injured individuals and/or contaminated injured individuals. VY maintains on-shift personnel and supplies to provide first-aid for personnel working at the site. Medical emergency supplies are located in various locations.

If immediate professional medical help is required, arrangements exist with local ambulance and medical services to assist in the transport and treatment of injured personnel, as described in Section 5.2. Assistance is requested via 911 utilizing the commercial telephone system.

### 16.1. Onsite First Aid

First aid assistance at the VY ISFSI is designed to address a wide range of common injuries. This task is accomplished by on-site individuals trained in basic first aid.

### 16.2. Medical Transportation

Rescue, Inc. provides 24-hour per day ambulance service for emergency transportation of personnel for offsite treatment, including the transport of contaminated injured workers. Transportation is also available via VY vehicles or private vehicles, if necessary.

When personnel are transported to Brattleboro Memorial Hospital in a contaminated condition, personnel trained in radiological monitoring will be dispatched to monitor and maintain radiological controls.

### 16.3. Offsite Medical Support

Brattleboro Memorial Hospital accepts and treats personnel with routine industrial injuries as well as injuries complicated by radioactive contamination or radiation exposure. The hospital maintains the capability and facilities to provide radioactive decontamination. These services and facilities are available 24 hours per day.

## 17.0 EMERGENCY TERMINATION AND RECOVERY

VY has established general plans described in the following sections to address recovery from potential emergencies at the VY ISFSI. The recovery organization will be based on the normal VY ISFSI organization. The senior management position directs the recovery organization and is responsible for:

- Ensuring the VY ISFSI is maintained in a safe condition;
- Managing onsite recovery activities during the initial recovery phase;
- Keeping corporate support apprised of VY ISFSI activities and requirements.

### 17.1. Emergency Termination and Notification

Termination of a declared emergency is the responsibility of the Emergency Director. The Emergency Director is also responsible for providing notification of the emergency termination and initiation of recovery operations to Vermont, New Hampshire, Massachusetts, VY ISFSI personnel, the NRC, and other organizations that may be providing on-site support.

At the discretion of the Emergency Director, VY may enter recovery operations and the ISFSI could be returned to a stable condition before terminating the emergency.

### 17.2. Recovery Operations

VY is responsible for recovery measures and restoring the ISFSI to a stable condition. In an emergency event, immediate response actions are directed towards limiting the consequences of the emergency in a manner that will afford maximum protection to onsite personnel. Once the immediate assessment and protective actions have been implemented, the restoration and recovery measures can be initiated.

The extent and nature of the corrective and protective actions and the extent of recovery will depend on the emergency conditions and the status of the ISFSI. The general goals for recovery include:

- An orderly evaluation of the cause and effect of the emergency and implementation of solutions to prevent immediate recurrence of the incident
- A planned approach for returning the ISFSI to a stable condition by obtaining the appropriate resources, materials, and equipment
- A planned approach to coordinate with offsite authorities to identify and resolve situations that may impact the general public
- An evaluation of the radiation exposure records for all onsite emergency response personnel involved in the incident
- A planned approach to ensure that radiation exposures and contamination controls are consistent with the ALARA program

ISFSI recovery activities shall be in accordance with the ISFSI Technical Specifications and other licensee documents. During ISFSI recovery, the radiation exposure limits of 10 CFR Part 20 shall apply.

If, during recovery operations, an emergency situation occurs, recovery efforts will be suspended until the emergency condition is resolved. The Emergency Director will re-evaluate ISFSI conditions prior to resuming recovery.

### 17.3. Termination of Recovery Operations

The recovery operations will be terminated by VY's senior management position directing the recovery organization after the ISFSI is returned to a stable condition.

## 18.0 EXERCISES AND DRILLS

Periodic exercises are conducted to evaluate major portions of VY's emergency response capabilities. Periodic drills are conducted to develop and maintain key skills. Deficiencies as a result of exercises or drills are identified and corrected.

An exercise tests the execution of the overall emergency preparedness and the integration of this preparedness. A drill is a supervised instruction period aimed at testing, developing, and maintaining skills in a particular response function. A summary of exercises and drills, including the associated elements for each, is outlined below.

### 18.1. Emergency Plan Exercises and Drills

A Biennial Exercise is conducted for the purposes of testing: 1) the adequacy of timing and content of implementing procedures and methods; 2) emergency equipment and communication networks, and; 3) to ensure that emergency personnel are familiar with their duties. VY offers the following organizations the opportunity to participate to the extent that their assistance would be expected during an emergency declaration. However, participation is not required.

- Vermont, New Hampshire, and Massachusetts
- Vernon Fire Department
- Brattleboro Fire Department
- Rescue, Inc.
- Brattleboro Memorial Hospital
- LLEAs

At least one drill involving a combination of some of the principal functional areas of emergency response shall be conducted in the interval between Biennial Exercises for the purpose of testing, developing, and maintaining the proficiency of emergency responders.

Exercise and Drill scenarios will include, at a minimum, the following:

- The basic objective(s) of the exercise/drill
- The date(s), time period, place(s), and participating organizations
- A time schedule of real and simulated events
- A narrative summary describing the conduct of the drill to include such items as simulated casualties, offsite fire assistance, rescue of personnel, and use of protective clothing

### 18.2. Equipment and Proficiency Drills

Drills are conducted for the purpose of training, developing, and maintaining the proficiency of emergency responders. Additionally, drills may be used to test and evaluate the

adequacy of the ERF, equipment, procedures, communication channels, actions of emergency response personnel, and coordination between OROs and the facility.

18.2.1. Communications Drills

To ensure that emergency communications systems described in Section 10.0 are operable, communications tests are conducted as outlined below.

1. To test the capability to notify Vermont, New Hampshire, and Massachusetts utilizing commercial telephone system, the capability is functionally tested annually. This drill will include the aspect of understanding the content of the message.

2. To test the capability to communicate with the NRC, ENS is functionally tested annually.

3. The following communications systems, as detailed in Section 10.0, are used on a frequent basis, therefore periodic testing of these systems is not necessary:

    - Commercial Telephone System
    - Portable Radios

Performance of the Communication Drills satisfies the testing requirements specified in Section 10.0.

18.2.2. Staff Augmentation Drills

An unannounced, off-shift, staff augmentation drill shall be conducted annually. These drills shall involve implementation of the ERO callout system procedure and documentation of the estimated response time for each responder. This drill shall serve to demonstrate the capability to augment the Emergency Director after an emergency declaration.

18.2.3. Radiological Monitoring Drills

Radiological monitoring drills are conducted annually. These drills demonstrate the ability to perform radiological survey and assessment and can be performed separately or as part of an Emergency Plan exercise or drill.

18.2.4. Medical Emergency Drills

To evaluate the training of medical response personnel, a medical drill is conducted annually involving a simulated contaminated injured individual and may also contain provisions for participation by Rescue, Inc. and Brattleboro Memorial Hospital. This drill may be performed separately or as part of the Biennial Exercise.

### 18.3. Critique and Evaluation

Critiques are used to evaluate the performance of participating facility personnel and the adequacy of the ERF, equipment, and procedures. The ability of emergency response personnel to self-evaluate weaknesses and identify areas for improvement is key to successful exercise or drill conduct.

Exercise and drill performance objectives are evaluated against measurable demonstration criteria. As soon as possible following the conclusion of each exercise or drill, a critique, including participants and evaluators, is conducted to evaluate the ability of the ERO to implement the IEP and associated procedures. Deficiencies identified during exercises or drills are entered into the corrective actions program.

A written report is prepared following an exercise or drill involving the evaluation of designated objectives. The report evaluates and documents the ability of the ERO to respond to a simulated emergency situation. The report will also contain reference to corrective actions and recommendations for revisions to the IEP, EPIPs and/or the upgrade of emergency equipment and supplies resulting from the exercise or drill.

## 19.0 RADIOLOGICAL EMERGENCY RESPONSE TRAINING

Radiological emergency response training is provided to those who may be called on to assist in an emergency. All personnel at the VY ISFSI who fill required positions in the ERO will take part in a training program to ensure adequate preparedness to assist in an emergency situation. OROs that may be called upon for emergency assistance will also be invited to participate in appropriate training programs.

### 19.1. Emergency Response Personnel Training

Requirements for emergency preparedness training are specified in the Emergency Preparedness Training Program. This program identifies the level and the depth to which individuals are to be trained. The training program for emergency response personnel is based on position-specific responsibilities as defined in the IEP. Emergency response personnel in the following categories receive initial training and annual retraining:

#### 19.1.1. ISFSI Shift Supervisors/Emergency Directors and Resource Managers

The ISS/Emergency Directors and Resource Managers shall have training conducted such that proficiency is maintained on the topics listed below. These subjects shall be covered as a minimum on an annual basis.

- EAL classification
- Offsite notification procedures
- ERO activation
- Dose rate meter operation
- Radioactive release assessment
- Emergency exposure control
- Protective actions for onsite personnel
- ISFSI DBAs
- Review of applicable drill and exercise-identified deficiencies

Personnel available during declared emergencies who may be called upon to perform emergency response activities as an extension of their normal duties receive duty-specific training. Additional emergency preparedness training is provided as part of annual access training.

#### 19.1.2. First Aid Personnel

First Aid training is provided to personnel assigned on-shift. This training includes Red Cross First Aid/CPR/AED training, or equivalent courses.

19.1.3. Radiation Monitoring Personnel

Radiation monitoring personnel shall have training conducted such that proficiency is maintained on the topics listed below. These subjects shall be covered as a minimum on an annual basis.

- Use of Radiation Protection procedures
- Use of emergency survey equipment
- Communications
- Field Surveys
- Role of dose assessment in an emergency
- Monitoring of radioactive releases
- Protective actions for onsite personnel
- Review of applicable drill and exercise-identified deficiencies

19.1.4. Personnel Badged for Unescorted Access

Personnel who are badged for unescorted access receive access training annually. Information pertaining to their safety and the safety of visitors under escort during a classified emergency is included in this training.

Access training shall include the following emergency preparedness topics:

- Basic Emergency Plan and implementing preparedness topics
- Emergency classification levels
- Call out of personnel during an emergency
- Personnel accountability procedures

## 19.2. Non-Vermont Yankee Emergency Response Support Organizations

Training is offered annually to OROs that may be requested to provide assistance in the event of an emergency at the VY ISFSI (e.g., law enforcement, fire-fighting, rescue, medical services, transport of injured, etc.). The training shall be structured to meet the needs of the particular organization with respect to the nature of their support. Training topics such as event notification, site access procedures, basic radiation protection, and interface activities between the ORO and VY are included in the training.

## 19.3. Annual Emergency Action Level Training

The emergency classification system specified in Section 8.0 and the EALs are reviewed with the authorities of Vermont, New Hampshire, and Massachusetts, annually.

## 20.0 RESPONSIBILITY FOR THE PLANNING EFFORT: DEVELOPMENT, PERIODIC REVIEW, AND DISTRIBUTION

Responsibilities for IEP development and review and for distribution of the IEP are established and planners are properly trained.

### 20.1. Emergency Preparedness Responsibilities

20.1.1. Overall Authority and Responsibility

A member of VY's senior management has the overall authority and responsibility for emergency response planning and implementation of the IEP. This responsibility includes ensuring that the emergency preparedness program is maintained and implemented as described in the IEP, and that applicable requirements and regulations are met.

20.1.2. Maintaining the IEP

A VY ISFSI position is designated the responsibility for maintaining an adequate knowledge of emergency preparedness regulations, emergency planning techniques, and the latest applications of emergency equipment and supplies. The position is responsible for the following tasks:

- Maintaining and updating this Plan and associated procedures
- Ensuring exercise and drill commitments stated in this Plan are met
- Ensuring material readiness of the ERF
- Overseeing the Emergency Preparedness Training Program
- Maintaining Emergency Preparedness interfaces with OROs
- Performing and documenting appropriate evaluations of the Emergency Preparedness program and classified emergency events

Individuals assigned the duties of maintaining the IEP are required to maintain an adequate knowledge of regulations, planning techniques, and the latest applications of emergency equipment and supplies. Training for these individuals includes 10 CFR 50.54(q) Evaluation Qualification.

20.1.3. Audits

Independent audits of the emergency preparedness program meeting the requirements of 10 CFR 50.54(t) will be performed. All aspects of emergency preparedness, including exercise documentation, capabilities, procedures, and interfaces with state and local governments are audited.

### 20.2. Review and Updating of the IEP

The IEP, the associated EPIPs, and the ISFSI EAL Technical Bases Documents are reviewed at least annually, and updated as needed, in accordance with the requirements of

10 CFR 50.54(q). The review shall encompass the need for changes based upon the following:

- Written critiques and evaluations of drills and exercises
- Changes in the organizational structure
- Changes in the functions and capabilities of supporting agencies
- Changes in Federal or State regulations
- Modifications to the facility which would affect emergency planning
- Recommendations or agreement changes received from other organizations

Any changes shall be incorporated in the IEP, EPIPs, and the ISFSI EAL Technical Bases Document. Proposed activities that may impact the IEP must be evaluated per 10 CFR 50.54(q).

20.2.1. Emergency Telephone Directory

Names and telephone numbers of the ERO and supporting OROs shall be reviewed at least annually and updated as necessary.

20.2.2. Letters of Agreement

Written agreements with outside support organizations listed in Section 5.2 are evaluated biennially to determine if these agreements remain valid. If agreements are determined to no longer be valid, then they are updated and renewed with the applicable organization.

## 20.3. Training

The Emergency Preparedness position shall assist senior management in coordinating and/or providing emergency planning-related training. The position shall ensure that the training described in Section 19.0 is properly coordinated to ensure adequate qualifications, training, and retraining of personnel.

## 20.4. Maintenance and Inventory of Emergency Equipment and Supplies

Specific emergency response equipment and reference materials are listed in Appendix A. The items listed in Appendix A are inspected, inventoried, and operationally checked quarterly and after each use. Sufficient reserves are maintained to replace those which are removed for calibration or repair. Equipment in these inventories is checked and calibrated in accordance with approved procedures.

# APPENDIX A

# EMERGENCY EQUIPMENT, SUPPLIES, AND REFERENCE MATERIALS

APPENDIX A

## EMERGENCY EQUIPMENT, SUPPLIES AND REFERENCE MATERIALS

### EMERGENCY RESPONSE FACILITY

**Procedures / Reference Materials**

ISFSI Emergency Plan

ISFSI EAL Technical Bases Document

Emergency Telephone Directory

EPIPs

**Equipment**

Portable radiation monitoring instrument

Portable emergency lighting

Medical emergency response kit

### ONSITE LOCATIONS

**Equipment / Supplies**

Portable radiation and contamination monitoring instruments

Contamination control supplies

Decontamination control supplies

Protective clothing

Dosimeters

Radiological postings and barricades

# APPENDIX B

## CROSS REFERENCE IEP SECTION TO PLANNING STANDARDS/REQUIREMENTS/CRITERIA AND EPIPS

APPENDIX B

## TABLE B-1

### Cross Reference IEP Section to Planning Standards/Requirements/Criteria and EPIPs

| VY IEP Section | Planning Standard (10 CFR 50.47)** | Planning Requirement (Appendix E.IV)** | NUREG-0654, Section II Evaluation Criteria | Procedure |
|---|---|---|---|---|
| 5.0 | (b)(1) | A.1, 2, 4, 7 | A | TBD |
| 6.0 | (b)(2) | A.1, 2, 4; C.1 | B | TBD |
| 7.0 | (b)(3) | A.6, 7 | C | TBD |
| 8.0 | (b)(4) | B.1, 2; C.1, 2 | D | TBD |
| 9.0 | (b)(5) | A.6, 7; C.1; D.1, 3; E | E | TBD |
| 10.0 | (b)(6) | C.1; D.1, 3; E | F | TBD |
| 11.0 | (b)(7) | Exempt | G | TBD |
| 12.0 | (b)(8) | E; G | H | TBD |
| 13.0 | (b)(9) | A.4; B.1; C.2; E | I | TBD |
| 14.0 | (b)(10) | C.1; E | J | TBD |
| 15.0 | (b)(11) | E | K | TBD |
| 16.0 | (b)(12) | A.6, 7; E | L | TBD |
| 17.0 | (b)(13) | H | M | TBD |
| 18.0 | (b)(14) | E9; F | N | TBD |
| 19.0 | (b)(15) | F | O | TBD |
| 20.0 | (b)(16) | G | P | TBD |

**as exempted