

APPENDIX E
CONTINGENCY PLAN

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LIST OF ABBREVIATIONS/ACRONYMS

20.4.1 NMAC	New Mexico Administrative Code, Title 20, Chapter 4, Part 1
BEP	building emergency plan
CAS	Central Alarm Station
DOE	U.S. Department of Energy
EM&R	Emergency Management and Response
EMP	Emergency Management Plan
EOC	Emergency Operations Center
ENV	Environmental Protection Division
HAZMAT	Hazardous Materials
IC	Incident Commander
ICS	Incident Command System
KSL	KBR-Shaw-LATA
LACFD	Los Alamos County Fire Department
LACPD	Los Alamos County Police Department
LAMC	Los Alamos Medical Center
LANL	Los Alamos National Laboratory
LASO	Los Alamos Site Office
NAWAS	National Warning System
NIIMS	National Interagency Incident Management System

LIST OF ABBREVIATIONS/ACRONYMS (continued)

NMED	New Mexico Environment Department
NNSA	National Nuclear Security Administration
PA	public address
PPE	personal protective equipment
PTLA	Protection Technology Los Alamos
TA	technical area
TRUWF	Transuranic Waste Facility

APPENDIX E

CONTINGENCY PLAN

This appendix presents general contingency measures applicable to all hazardous or mixed waste units at Los Alamos National Laboratory (LANL) and specific information for the proposed container storage/treatment unit to be located at the Transuranic Waste Facility (TRUWF) at Technical Area (TA) 52. This Contingency Plan is intended to meet the requirements specified in the New Mexico Administrative Code, Title 20, Chapter 4, Part 1 (20.4.1 NMAC), Subpart V, Part 264, Subpart D, revised October 1, 2003 [10-01-03], and 20.4.1 NMAC § 270.14(b)(7) [10-01-03], for hazardous waste treatment and storage facilities. In addition, this plan is consistent with the LANL Emergency Management Plan (EMP) (LANL, 2002), prepared by LANL Emergency Management and Response (EM&R) personnel. The provisions of this plan will be carried out immediately to minimize hazards whenever there is a fire, explosion, or release of hazardous or mixed waste or hazardous or mixed waste constituents that could threaten human health or the environment, as required by 20.4.1 NMAC § 264.51(b) [10-01-03]. Other individual facilities at LANL may have their own facility-specific emergency plans and/or procedures to follow in the event of a fire, explosion, or release of hazardous and/or mixed waste.

E.1 HAZARDOUS AND MIXED WASTE EMERGENCY RESPONSE RESOURCES [20.4.1 NMAC §§ 264.52(c) AND 264.53]

The responsibility for hazardous and mixed waste emergency incidents at LANL resides with EM&R personnel. During an emergency situation, line management (i.e., the Group Leader of the affected area) works with the Duty Emergency Manager from EM&R personnel. The Emergency Manager has primary responsibility for managing emergency response operations, making appropriate notifications, activating the emergency response organizations, and proceeding to the scene. The Emergency Manager has authority to assume the role of Incident Commander (IC) during an emergency and typically assumes full responsibility for management of the emergency response operations at the scene. (Personnel from other organizations, such as the Federal Bureau of Investigation or the Los Alamos County Fire Department [LACFD], may also assume the role of IC, depending upon the type of emergency and responding organizations.) Additional LANL resources that may provide assistance in an emergency include personnel from health physics, industrial hygiene, environmental compliance, emergency response, and radiation protection groups. These personnel as well as other resources are discussed in Sections E.1.2, E.1.3, and E.1.6.

Laboratory-contracted support services and other agencies are also available for assistance during emergencies. These are discussed in Section E.1.5 and include the contracted services of Protection Technology Los Alamos (PTLA) for security and the LACFD. Facility maintenance and heavy equipment operation are provided by KBR-Shaw-LATA (KSL). These contracted services, if changed, will be replaced and/or supplemented with functionally equivalent contracted services required to assume the same duties and responsibilities described in this section. Other outside response agencies are discussed in Section E.1.7 and include the Los Alamos County Police Department (LACPD) and the Los Alamos Medical Center (LAMC). The LACPD and the LAMC each provide assistance under a memorandum of understanding with the U.S. Department of Energy (DOE).

The Laboratory, as required by DOE and the State of New Mexico, uses the Incident Command System (ICS) in response to all emergencies. The ICS is based on the on-scene management structure protocols of the National Interagency Incident Management System (NIIMS). The NIIMS is a national standard that provides consistency in terminology/methodology and allows for an integrated emergency response both locally and nationally, if necessary. Consequently, this Contingency Plan may undergo modification.

The IC (e.g., Duty Emergency Manager) coordinates all groups and agencies responding to the emergency and personnel operating at the scene using the ICS. The general emergency notification structure, illustrated on Figure E-1, is designed to expand and contract, as appropriate, to include the response groups/agencies needed to address any particular emergency.

The IC may appoint and utilize a network of support personnel to assess, plan for, and mitigate emergencies. These personnel can include, but are not limited to, a Safety Officer, a Public Information Officer, and a Liaison Officer that report directly to the IC and are responsible for issues related to safety, information, and the interaction of various groups associated with the overall emergency. Also reporting directly to the IC are an Operations Section Chief, Logistics Section Chief, Planning Section Chief, and an Administrative Section Chief. The Operations Section Chief oversees the Fire Branch and the Emergency Medical Services Branch, and is responsible for the actual emergency response. The Logistics Section Chief is responsible for providing support personnel and equipment necessary for the emergency response. The Planning Section Chief is responsible for planning the active mitigation and recovery for the emergency. The Administrative

Section Chief is responsible for keeping records of expenditures. In some instances, some or all of these positions may be activated, as the emergency warrants. During an emergency at LANL, assistance may be provided to the IC and the IC's appointees by a large variety of response groups/agencies. The responsibilities and/or assistance available from the various response groups/agencies are listed in Table E-1 and discussed briefly in Sections E.1.2 through E.1.7.

A copy of this Contingency Plan and any revisions will be provided to each of the emergency response groups/agencies (including the LACPD, LACFD, and LAMC). LANL's hazardous waste compliance personnel are responsible for the controlled distribution of this plan. Amendments to this plan are discussed in Section E.12.

E.1.1 Emergency Management and Response Office [20.4.1 NMAC §§ 264.52(d) and 264.55]

The Director of LANL has delegated the authority and responsibility for administering and implementing LANL's emergency management program to the Emergency Response Division, which includes EM&R personnel. EM&R personnel coordinate and issue LANL's EMP and provide response coordination for emergencies. EM&R personnel also provide a 24-hour Duty Emergency Manager to respond to emergencies, including hazardous and mixed waste releases. The LANL Emergency Manager is the functional equivalent of the Emergency Coordinator (20.4.1 NMAC § 264.55 [10-01-03]). EM&R personnel maintain an Emergency Operations Center (EOC) in a ready condition, should a center be required. The primary EOC is located at TA-69, Building 33 (TA-69-33). An alternate EOC is located at TA-49-113. Should an EOC be activated during an emergency, additional emergency personnel can be requested by the IC through the EOC.

Assignment as the Duty (i.e., primary) Emergency Manager is rotated. The Duty Emergency Manager can be reached 24 hours a day by calling the EM&R phone number at 667-6211 or the Central Alarm Station (CAS) operator (911).

The Duty Emergency Manager will respond to emergency incidents involving the release of hazardous or mixed waste to the environment, including spills, fires, and explosions. With input from the appropriate LANL groups, the Duty Emergency Manager will initially assess the possible hazards to human health or the environment and, if assuming incident command, will use whatever response personnel and/or emergency equipment necessary to control and contain the waste. In the event of an emergency, the Emergency Manager typically becomes the IC with full responsibility for field activities (including safety, operations, and planning, or establishing these positions within the ICS). As described previously, the exception to this is when on-site personnel can adequately

address the emergency and maintain incident command internally. At the scene of the emergency, the IC will assemble the ICS, as required, for response to the emergency.

The Duty Emergency Manager responding to an emergency will have access to a copy of the appropriate building emergency plan(s) (BEP) for the area in which the incident is occurring. These plans are maintained by the facility manager where a waste management unit is located and are available at the EOC at TA-69; they are also located on site for use by emergency response personnel. The various response groups will obtain specific information relating to the facilities involved (including the layout of all affected buildings; the location of evacuation routes, equipment, and personnel; properties of the materials/wastes managed at the facility; and the hazards associated with these materials/wastes) from the BEP(s) and other site-specific information.

Listed below is the name, address, and phone number of the current Primary and Alternate Emergency Coordinators, as required by 20.4.1 NMAC § 264.52(d) [10-01-03].

Primary

Brenda Andersen
3926 A Alabama
Los Alamos, NM 87544
(H) 505-662-4173
(W) 505-667-6211

Alternates

Manny L'Esperance
13 Pasel Paltron
Los Alamos, NM 87544
(H) 505-455-9138
(W) 505-667-6211

Roy Van Tiem
114 Azure Drive
Los Alamos, NM 87544
(H) 505-672-6296
(W) 505-667-6211

Ruth Larkin
315 Joya Loop
Los Alamos, NM 87544
(H) 505-672-9860
(W) 505-667-6211

To assure timely notifications and immediate response during an emergency, one must call 911 or

667-6211 to obtain the on-call Duty Emergency Manager.

E.1.2 Hazardous Materials Response

The Hazardous Materials Response (HAZMAT) Team is responsible for the aggressive mitigation of chemical, radiological, hazardous waste, and mixed waste emergencies, including field decontamination of responders and response equipment. At the request of the IC, the HAZMAT Team may provide limited field decontamination support for victims. The HAZMAT Team is capable of providing a decontamination station at the scene of a hazardous material incident to process people working in a contaminated area and is prepared to perform decontamination of personnel. LANL standards require that the HAZMAT Team meet the training criteria for emergency response personnel specified in the Code of Federal Regulations, Title 29, §1910.120(q)(6)(iii), (iv), and (v). The HAZMAT Team acts as part of the ICS reporting through the HAZMAT Supervisor via the Operations Section Chief. The LANL HAZMAT Supervisor coordinates the HAZMAT Team and radiological field monitoring activities.

During an emergency response, the HAZMAT Team may also provide site field monitoring to determine the nature and extent of contamination, provide information on correct handling of chemicals, make recommendations on protective clothing and equipment, and provide exposure and treatment information to responders. To operate effectively, the HAZMAT Team may obtain resources from environmental monitoring groups, such as health physics and industrial hygiene personnel.

E.1.3 Environmental Protection Division Response Groups

At the scene, representatives and technical advisors from environmental protection groups and other response personnel are coordinated by the IC. In addition to their post-emergency duties, they may also be responsible for on-scene emergency operations such as planning. Depending on the type of emergency and the associated hazards, an individual from the most relevant group in the Environmental Protection Division (ENV) will assume the position of the Environmental Safety and Health Advisor, will provide technical support, and will ensure LANL compliance with applicable federal, state, and local regulations.

E.1.3.1 Ecology Personnel

Ecology personnel provide field surveys of soil, foodstuffs, and biota to determine environmental effects of exposure after an emergency.

E.1.3.2 Meteorology and Air Quality Personnel

Meteorology and air quality personnel provide field surveys of air to determine environmental impacts and dose equivalent to members of the public after a radiological emergency. In addition, they provide expertise in meteorology to project short- and long-term environmental effects of emergency conditions.

E.1.3.3 Hazardous Waste Compliance Personnel

The hazardous waste compliance personnel provide guidance on regulatory requirements for proper treatment, storage, and transportation of hazardous and mixed wastes to other LANL groups. After an emergency, hazardous waste compliance personnel may provide field sampling (e.g., of soil, spills, or potentially hazardous waste) to determine environmental effects of exposure.

E.1.3.4 Water Quality and Hydrology Personnel

After an emergency, the water quality and hydrology personnel provide sampling of surface water runoff and sediments to determine environmental effects of an emergency and perform assessments for regulatory reporting requirements. Personnel also provide expertise in hydrogeology to establish short- and long-term environmental effects of emergency conditions.

E.1.4 Other LANL Response Resources

Emergency response personnel from each of the groups that operated hazardous waste management units at LANL have been trained to respond to emergencies at that facility.

E.1.5 Contracted Response Groups

Contracted response groups' representatives may report directly to the IC Post, if requested. If the IC deems it necessary, the IC may designate an Operations Section Chief to aid in the coordination and direction of these groups. In addition, contracted response groups may report to a staging area, with a representative going either to the IC Post or, if activated, to the EOC.

E.1.5.1 Protection Technology Los Alamos

PTLA is the subcontractor for LANL security and provides this service under contract to LANL. During an emergency, PTLA activities include maintaining security, directing traffic within LANL, and controlling access to the emergency scene. PTLA maintains the necessary equipment (such as crowd-control equipment and patrol vehicles) to perform these functions.

E.1.5.2 KBR-Shaw-LATA (KSL)

KSL provides a maintenance support force under contract to LANL. This support force is under LANL's direction in an emergency. KSL also provides a representative to LANL in the event of an emergency and participates, as necessary, in post-emergency cleanup under the direction of a Recovery Manager designated by the IC. The duties of the Recovery Manager are discussed in Section E.10.

E.1.5.3 Los Alamos County Fire Department

The LACFD provides fire protection and ambulance coverage for the residential communities of Los Alamos and White Rock and for LANL. In the case of an emergency within LANL, the LACFD coordinates fire suppression and Emergency Medical Services. The IC retains overall responsibility for the emergency response effort.

E.1.6 LANL Support Groups

Radiation Protection Personnel

The radiation protection personnel provide to perform routine site evaluation and monitoring to determine radiological conditions in facilities. The radiation protection personnel also provide guidance on radiological decontamination. In addition, this group augments the assessment and monitoring functions of the HAZMAT Team.

E.1.6.1 Occupational Medicine Personnel

LANL maintains its own medical facility operated by occupational medicine personnel. Occupational medicine personnel provide appropriate medical treatment for occupation-related illnesses and injuries and monitors employees to assess the effectiveness of health protection programs. In addition to promoting early identification and prevention of illnesses or injuries that may arise from exposures to hazardous or radioactive materials, occupational medicine personnel maintain records of the health status of employees and related occupational medicine activities.

Although occupational medicine is not routinely involved with on-scene emergency response, the group maintains a central medical facility with a fully equipped emergency room and decontamination facilities at TA-3, Building 1411. The location of this and other emergency facilities are shown on Figure E-2. Medical staff at these facilities includes physicians, physician's assistants, nurses, technicians, and counselors. All full-time physicians and nurses receive

radiation accident training. Occupational medicine personnel also maintain access to a database that provides the clinical staff with timely toxic exposure and treatment information.

E.1.6.2 Industrial Hygiene and Safety Personnel

Industrial hygiene and safety personnel assist medical personnel with its ability to obtain additional exposure and treatment information. In addition, industrial hygiene personnel maintain computer access to the National Institute of Occupational Safety and Health Technical Information Center and the Registry of Toxic Effects of Chemical Substances. During routine operations, these personnel perform site evaluations and field testing to determine the nature and extent of chemical contamination and specify protective clothing and equipment.

E.1.7 Outside Response Agencies

During an emergency, outside response agencies report directly to the IC. An Operations Section Chief, designated by the IC, may aid in coordinating and directing the groups responding to an emergency.

E.1.7.1 Los Alamos County Police Department

The LACPD may assume IC under unique circumstances, but usually has only minimal interaction with LANL in an on-site emergency. This interaction normally involves traffic control on DOE roads with public access, handling criminal activity, and criminal investigations.

E.1.7.2 Los Alamos County Emergency Management Coordinator

Los Alamos County has an agreement with LANL's EM&R Office to provide assistance in certain emergency situations. If an emergency occurs on LANL property that may affect the communities of Los Alamos and White Rock, EM&R personnel will notify the Los Alamos County Emergency Management Coordinator, who will coordinate necessary emergency actions throughout the county.

E.1.7.3 Los Alamos Medical Center

LANL maintains a fully equipped decontamination room adjacent to the emergency room at LAMC. In the event that a case is sent to LAMC, support for the emergency room staff is provided by occupational medical personnel. Industrial hygiene and safety and radiation safety personnel also provide assistance to the emergency room staff; assistance from additional LANL resources is provided, as necessary. Assistance is coordinated through EM&R personnel.

E.2 EMERGENCY EQUIPMENT AND COMMUNICATIONS [20.4.1 NMAC § 264.52(e)]

E.2.1 Emergency Equipment

20.4.1 NMAC, Subpart V, Part 264, Subpart D [10-01-03], requires a listing of all emergency response equipment available that can be used in the event of an emergency. Table E-2 lists emergency equipment available for use at any of LANL's hazardous or mixed waste management units. The list includes emergency equipment available in the HAZMAT vehicles and trailers as well as supplemental emergency equipment maintained by the LACFD, KSL, and occupational medicine personnel. A list of emergency equipment that will be made available for use at the proposed TRUWF facility is presented in Table E-3. Emergency equipment listed in Tables E-2 and E-3 may be replaced and/or upgraded with functionally equivalent components and equipment, as necessary, for routine maintenance and repair.

E.2.2 Emergency Communications [20.4.1 NMAC § 264.56(a)]

Effective emergency response at LANL requires an efficient communication system that will integrate required personnel into the emergency response. The initial phase of an emergency may involve a small number of individuals at the affected area, require notification of the Duty Emergency Manager, and utilize local communication equipment and/or systems. When responding to hazardous and/or mixed waste emergencies, EM&R personnel can provide communications between response units and emergency organizations.

E.2.2.1 Central Alarm Station

The LANL CAS is manned by PTLA or security personnel 24 hours a day and is equipped with telephones (including direct-line telephones), medium- and short-range radios, a National Warning System (NAWAS) station, and an emergency power system. The fire alarm board at the control room gives the location of automatic and manual fire alarm equipment. The CAS receives alarms from several sources and, in turn, notifies the Duty Emergency Manager of a hazardous or mixed waste emergency. Sources include:

- Telephone communication (911)
- Automatic fire alarms
- Manual pull alarms
- Computer interface (to warn of critical events at selected facilities)
- Security alarms
- Radio communications.

Upon receipt of an alarm, the CAS operator notifies the LACFD and the Duty Emergency Manager. The Emergency Manager, the EOC communicator, and/or the CAS operator may request emergency response groups to respond. Should the LANL 911 system fail, the Los Alamos County System, located at the LACPD Station, will be used to activate emergency response groups.

E.2.2.2 Power Dispatch

The Power Dispatch is maintained 24 hours a day. Alarms at this facility are connected to LANL experiments, equipment, and/or buildings to record outages and hazardous conditions. Any conditions that activate these alarms will be reported immediately to the building management or to the CAS operator for notification and response.

E.2.2.3 Additional Communication Systems

Internal communication systems at LANL include:

- The Centrex telephone system
- A telephone paging system
- A variety of frequency modulated very high frequency simplex repeater systems, including:
 - Multiple base stations
 - Mobile and hand-held units
 - Links to New Mexico public safety agencies
- An ultrahigh frequency radio system, including:
 - Multiple antenna sites
 - Mobile and base units
 - Links with the LACPD, the LACFD, and the State Medical System
- A 400-megahertz trunked radio system that includes a link with the LACFD
- Transmission and reception (through the EOC) for:
 - Secure telephone
 - Secure fax
 - Secure still video
 - Secure videoconference system (to all DOE EOCs and DOE Headquarters)

- Access to all radio systems outlined above (through the EOC).

Off-site communications with federal, state, tribal, county, and other agencies are available through the following:

- A Centrex telephone system
- Private telephone lines (if Centrex fails)
- Two NAWAS stations
- A link to KRSN radio (local radio station)
- The local cable television
- The Community Alert Network

The LANL EOC, maintained by EM&R personnel, operates radio systems on key LANL and off-site channels. Emergency personnel responding to on-site incidents have the benefit of wide-area radio coverage using EOC facilities. The Duty Emergency Manager is responsible for activating whatever support personnel, equipment, or services are needed 24 hours a day.

E.3 CONTINGENCY PLAN IMPLEMENTATION [20.4.1 NMAC § 264.56]

The following sections discuss guidelines used to implement this plan, emergency notification, emergency manager actions, and actions to be taken in response to fires, explosions, or any unplanned sudden or non-sudden release of hazardous waste or hazardous waste constituents into the environment at LANL.

E.3.1 Guidelines for Implementation [20.4.1 NMAC §§ 264.51(b) and 264.56]

The decision to implement this plan depends upon whether an emergency exists, which for the purposes of this section is defined as an imminent or actual incident arising from fires, explosions, or any unplanned sudden or non-sudden release of hazardous waste or hazardous waste constituents that could threaten human health or the environment. The Duty Emergency Manager or IC will use the guidelines listed below to decide whether to implement this plan. All adverse environmental, safety, health, and operational occurrences (on-site and off-site) will be investigated to determine the causal factors and identify the appropriate corrective actions.

This plan will be implemented immediately in the following situations involving releases or potential releases of hazardous or mixed waste:

- Spills:

- If a hazardous or mixed waste spill cannot be contained with secondary containment or application of sorbents
- If a hazardous or mixed waste spill causes the release of flammable material, creating a fire or explosion hazard
- If a hazardous or mixed waste spill results in toxic fumes that threaten human health
- Explosions:
 - If an unplanned explosion involving hazardous or mixed waste occurs
 - If an imminent danger of an explosion involving hazardous or mixed waste exists.
- Fires:
 - If a fire involving hazardous or mixed waste occurs
 - If any building, grass, forest, or nonhazardous waste fire exists that threatens to volatilize or ignite hazardous or mixed waste.
- Other Acts of Force Majeure (i.e., acts of God)
 - If an earthquake or other natural disaster threatens containment integrity, including precipitation that threatens to move spilled material off site.

E.3.2 Emergency Notification [20.4.1 NMAC § 264.56(a) and (b)]

Emergency notification requires immediate notification of 911 or EM&R personnel upon discovery of an imminent or actual incident involving hazardous and/or mixed waste. During nonworking hours, personnel will report all imminent or actual incidents involving hazardous and/or mixed waste to the Emergency Manager or the CAS operator at 667-6211. In the case of fire, notification of these individuals is superseded by the LANL fire alarm system. A fire is reported by dialing 911 (from telephone exchanges 667 and 665) or 667-7080 (from all exchanges, including cellular phones), activating automatic alarms, or activating a fire alarm pull box. All fire alarms alert the CAS operator, the LACFD, and PTLA, who in turn notify the Duty Emergency Manager.

Upon recognition of a hazardous or mixed waste emergency, the first arriving emergency-trained person will become the Facility Command Leader. Once EM&R personnel is notified of the

emergency, the Duty Emergency Manager will proceed to the scene and be briefed by the Facility Command Leader, building/area personnel, and/or other emergency units/teams. The Emergency Manager will then assume the position of IC. If necessary, the IC may recommend that the EOC be activated and that the necessary members of the emergency management team be determined. The IC will form an ICS and contact the HAZMAT Supervisor. The HAZMAT Supervisor will notify the appropriate emergency response groups. The IC may determine from the list of response groups described in Table E-1 which groups to contact in an emergency. Each response group maintains an on-call person and/or a call-down procedure to respond to emergencies.

EM&R personnel will be notified of any potential hazardous or mixed waste emergency. The IC and the HAZMAT Supervisor will use whatever means are available (including the assistance of other response groups, computer data searches, and sampling) to determine if a hazardous or mixed waste emergency exists.

E.3.3 Emergency Manager Actions [20.4.1 NMAC § 264.56(b-h)]

Upon notification of an emergency incident, the Duty Emergency Manager may:

- Make an initial assessment of the incident and, in conjunction with the IC, obtain resources to determine the source, quantities, and types of hazardous and/or mixed waste involved and the areal extent of any released materials.
- Request resources needed and have EOC staff begin notifications.
- Proceed directly to the scene.
- Assess the nature of the incident (e.g., through communication with the IC).
- Assume incident command after a direct briefing with the Facility Command Leader.
- Based on the guidelines in Section E.3.1 of this plan, determine if implementation of this plan is warranted.
- Activate the EOC, if necessary.

Upon deciding to implement this plan, the IC will, when appropriate:

- Assess the hazards to human health and the environment, including both direct and indirect effects, such as generation of toxic, irritating, or asphyxiating gases and/or hazards of runoff of water or chemicals used for fire suppression. An individual designated by the IC will use the guidelines in Section E.3.1 to assess the hazards to human health and the environment. If any of the criteria under Section E.3.1 are met and if the responsible Group Leader (or his/her designee) has not already accomplished evacuation of the area, the IC will initiate shelter in place or evacuation of the immediate area.
- Direct the EOC staff to initiate protective actions and immediately notify appropriate response groups and personnel as per the EM&R Guidelines. The IC may activate one or more of the following community alert mechanisms: the Community Alert (telephone) Network, the KRSN radio remote input system, or the cable television capture system, sitewide area network radios, and public radio and television channels.
- In the case of fire or release of any type, make reasonable efforts to confirm that all response personnel at the scene are aware of actual or imminent special hazards associated with hazardous or mixed waste.
- In emergency situations, contact the appropriate ENV representative to notify the New Mexico Environment Department (NMED) at (505) 827-9329 and the National Response Center at (800) 424-8802, reporting:
 - The name and telephone number of the ENV representative
 - The name and address of the facility
 - The time and type of incident
 - The name and quantity of material involved, to the extent known
 - The extent of injuries, if any
 - The possible hazards to human health or the environment outside the facility.
- When an emergency occurs at hazardous or mixed waste treatment units, ensure that appropriate LANL personnel monitor for leaks, pressure buildup, gas generation, or equipment ruptures.

Once control of the emergency is established, the IC will take all reasonable measures to minimize the occurrence, recurrence, or spread of fires, explosions, or releases. In addition, the IC will delegate cleanup and decontamination responsibilities to the Recovery Manager. These responsibilities may include:

- Arranging for site cleanup.
- Assisting with arrangements for proper handling of recovered waste, contaminated soil, or contaminated surface/groundwater.
- Assisting with arrangements for decontamination of equipment, as needed.
- Arranging for replacement and/or repair of equipment, as needed.
- Requesting that testing is conducted to verify successful cleanup.

Within 15 days of the incident, DOE National Nuclear Security Administration (NNSA) Los Alamos Site Office (LASO) will submit a report to the Secretary of the NMED. The contents of this report are generated by several LANL groups responding to the emergency, as detailed in Section E.11.

E.4 SPILLS [20.4.1 NMAC § 264.56(e)]

Sudden releases may include spills of hazardous or mixed waste that pose a significant threat to human health or the environment. Spill incidents resulting in a sudden release of hazardous or mixed waste that present a potential threat to human health or the environment, as listed in Section E.3.1, require implementation of this plan.

Hazardous and mixed wastes are stored on site at LANL in a variety of containers. Volumes of hazardous or mixed waste managed will vary from unit to unit. The general steps in handling hazardous and/or mixed waste spills are as follows:

- Isolate the immediate area and deny entry to all unauthorized personnel.
- Contain the spill by spreading sorbents or forming temporary dikes to prevent further migration (performed by properly trained personnel, if safe).
- Monitor the spill area and sample the spilled waste and contaminated media.
- Package the waste and contaminated media in sound containers.
- Decontaminate the area and all involved equipment and personnel (followed by testing to assure adequate cleanup).

- Remove the waste and contaminated media (performed by appropriate waste management personnel).

The IC will determine the steps to be taken for spill mitigation. If initial mitigation of the spill is necessary and can be accomplished safely (by appropriately trained personnel) before the Emergency Manager arrives, a qualified member of the affected area's operating group will serve as the Facility Command Leader.

Hazardous and/or mixed waste spills will be stabilized, if necessary, and cleaned up. During spill control and cleanup, all personnel will wear appropriate personal protective equipment (PPE). Monitoring will be conducted to ensure that chemical and, as appropriate, radiological exposure is minimized. The collected material may be treated as hazardous or mixed waste, depending on the components present. Runoff from spills of listed hazardous or mixed waste that have migrated outside hazardous waste management areas must be contained and managed as hazardous or mixed waste, as appropriate. If the spill was from a characteristic hazardous or mixed waste and if it is determined that the runoff does not exhibit the characteristic (i.e., ignitability, corrosivity, reactivity, and/or toxicity), the runoff need not be managed as characteristic waste. Temporary dikes may be constructed to contain runoff.

E.4.1 Spill Control Procedures

When a flammable organic solvent spill, a highly acidic spill, or a highly caustic spill has been stabilized with the contents of an organic solvent spill kit, an acid spill kit, or a caustic spill kit, respectively, the resulting material may be sorbed using a nonbiodegradable sorbent. Nonbiodegradable sorbent can be used to control any spill if it is known to be compatible with the spilled material. Appropriate containers or packaging will be used to collect all spilled material and contaminated sorbent. Table E-3 lists emergency equipment that will be made available for spill control at the unit proposed at the TRUWF. The ultimate disposition of any contaminated sorbent or waste material will be determined by appropriate waste management personnel, according to hazardous waste management regulatory requirements.

E.4.2 Decontamination Verification

Decontamination will be accomplished at the spill site. After the spilled material has been sorbed, the material will be containerized. If the spill occurs on a concrete or asphaltic-concrete area, water or an appropriate solvent will be used to clean the area. Liquids (i.e., spilled material and cleaning

water or solvents used to clean a spill) may be sorbed with a compatible, nonbiodegradable sorbent and containerized. If a spill is from an identifiable source, the spilled material may be characterized as a newly-generated waste using acceptable knowledge or may be analyzed, as applicable, for the hazardous waste constituents known to be components of the waste managed at that unit. Analytical method(s) given in Table E-4 will be utilized, as appropriate. If the spill is from other than an identifiable source, the spilled material will be analyzed for the appropriate parameters listed in Table E-4. All personnel conducting decontamination verification will wear appropriate PPE. Radiation protection personnel will conduct health physics monitoring whenever mixed waste is involved to ensure that radiation exposure is maintained as low as reasonably achievable. Any hazardous or mixed waste collected from decontamination activities will be handled appropriately.

In order to establish baseline data, a sample of decontamination water or solvent (and nonbiodegradable sorbent material, as applicable) will be taken prior to the start of the decontamination effort. A sample of the final wash water (or the used sorbent) will then be taken. The baseline samples and final wash water/used sorbent samples will be analyzed for the applicable parameters given in Table E-4. If the decontamination samples contain hazardous constituents that are not present in the baseline samples and the levels exceed established health-based levels, the decontamination procedure may be repeated. An alternative demonstration of decontamination may be proposed and justified to NMED, who will evaluate the proposed alternative in accordance with the standards and guidance currently in effect. If the proposed alternative is accepted, decontamination levels will meet the levels approved by NMED. Each sample will be collected with an appropriate sampling device (e.g., a thief or trier) as specified in "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods" (EPA, 1986), and approved updates, as applicable.

If a hazardous/mixed waste spill occurs on soil, any free liquid present will be collected and containerized. Liquids may be sorbed with a compatible nonbiodegradable sorbent prior to containerization. For such a spill, contaminated soil will either be excavated and containerized or remediated in situ. Industrial health and safety personnel will conduct industrial hygiene monitoring and, if mixed waste is involved, radiation protection personnel will conduct health physics monitoring, if deemed necessary, to minimize exposure during soil removal or remediation operations. To establish comparative background data, one or more samples will be collected from an unaffected area near the spill site. The spill site will then be characterized, and the data will be compared to the background data to ensure that contaminated material from the spill has been removed or remediated.

If a hazardous/mixed waste spill occurs in an area with flooring, the floor will either be removed in lieu of decontamination, or the floor will be decontaminated. If the decision is made to decontaminate the floor, swipe samples or other types of sampling appropriate for the contaminant will be collected at random and characterized for decontamination verification. If, after several decontamination efforts, it is subsequently determined that the affected floor area cannot be decontaminated, the floor material will be removed. In all cases, wastes generated during the decontamination and/or removal process will be managed appropriately.

E.5 EXPLOSION

Explosions and resultant releases may result in a significant threat to human health or the environment. The potential exists for hazardous or mixed waste to be released during an explosion. Implementation of this plan is required whenever a sudden release that cannot be contained or that presents a threat to human health or the environment occurs as a result of an explosion.

In the event of an explosion at LANL, all personnel will immediately evacuate the area. Any injured personnel will be decontaminated at the site, if required and if time allows. An LACFD ambulance will transport these personnel to LAMC for treatment. If an injury is severe and requires immediate medical evacuation, the injured person will be wrapped to contain contamination, if necessary. In the case of an actual or potential explosion, on-site personnel will contact EM&R personnel immediately so that the Emergency Manager can ensure that all necessary emergency response personnel are alerted. The LACFD is notified automatically upon central alarm system activation. The Emergency Manager assumes incident command and will remain near but at a safe distance from the site in order to inform personnel responding to the explosion of the known hazards.

If a fire results from an explosion, the LACFD Senior Officer will, upon arrival at the scene, evaluate all available information and determine the appropriate firefighting methods and tactics. The LACFD Senior Officer will direct firefighting operations as the acting IC until EM&R formally assumes command.

E.6 FIRE

Fires and resultant releases of hazardous or mixed waste may result in a significant threat to human health or the environment. Implementation of this plan is required whenever a fire incident results in a sudden release of hazardous or mixed waste that cannot be contained or that presents

a threat to human health or the environment.

Fire alarms will be sounded automatically or manually to alert personnel that a fire hazard exists and to evacuate the area immediately if in the vicinity. Information related to the various fire alarms at the specific unit is included in Table E-3.

Depending on the size of the fire and the fuel source, portable fire extinguishers may be used. However, LANL policy does not encourage the use of portable fire extinguishers by employees unless they are properly trained. Instead, LANL policy encourages immediate evacuation of the area and notification of the CAS operator by dialing 911. For any fire, including a fire that involves hazardous or mixed waste, the responsible Group Leader and EM&R personnel must be contacted immediately. The Emergency Manager will alert the LACFD and all other necessary emergency response personnel. If the fire spreads or increases in intensity, all personnel must follow protective actions as designated by the Emergency Manager. The Emergency Manager assumes incident command and will remain near the scene to advise personnel responding to the fire of the known hazards.

Upon arrival at the scene, the LACFD Senior Officer will evaluate all available information and determine the appropriate firefighting methods and tactics. The LACFD Senior Officer will direct firefighting operations as the acting IC until EM&R formally assumes command.

E.7 UNPLANNED NONSUDDEN RELEASES

Nonsudden releases include those incidents that, if uncontrolled, impact the environment over a long period of time. Such incidents include minor leaks from containers and loss of secondary containment integrity.

E.7.1 Responsibility

Appropriate LANL personnel are responsible for correction of a nonsudden release from a hazardous or mixed waste unit if the correction can be performed safely with normal maintenance and management procedures. Personnel from EM&R may provide assistance in mitigating releases. Any correction methods for nonsudden releases that have resulted in an impact to the environment will be coordinated with the NMED.

E.7.2 Nonsudden Releases

In general, the response to a nonsudden release will be to contain the release, to correct the cause of the release, and to clean up any release to a level that protects human health and the environment.

Appropriate LANL personnel will conduct regularly scheduled inspections to detect failure of containment at the proposed container storage/treatment unit addressed in this permit modification request package. Secondary containment systems will be inspected regularly to ensure that the integrity of the containment systems has not deteriorated. If an inspection reveals that containers are leaking or that secondary containment has deteriorated, LANL personnel will ensure that maintenance or replacement of containment is performed, as appropriate. Inspections will be conducted in accordance with the facility's inspection plan.

E.7.3 Nonsudden Release Surveillance

In addition to routine inspection and site-specific sampling and testing, LANL has established an area-wide environmental monitoring network maintained by ENV. Monitoring and sampling locations for various types of measurements are organized into three main groups. Regional monitoring stations located within the five counties surrounding Los Alamos County are placed up to 80 kilometers (50 miles) from LANL. These stations serve to determine background conditions. Perimeter stations, located within approximately 4 kilometers (2.5 miles) of the LANL boundary, document conditions in residential areas surrounding LANL. On-site stations, most of which are accessible only to employees during normal working hours, are within the LANL boundary.

Routine surveillance conducted at these stations includes measuring radiation and collecting samples of air particulates, surface waters, groundwater, soil, sediment, and foodstuffs for subsequent analysis. Additional samples provide information about particular events, such as major runoff events and nonroutine releases. Data from these efforts are used for comparison with standards, for determining background levels, and for radiation dose calculations.

E.8 EXPOSURE TO HAZARDOUS OR MIXED WASTE

If a person is exposed to hazardous or mixed waste, the affected person, a co-worker, or line management will notify EM&R personnel. Appropriate first aid should be administered immediately. An EM&R representative will make appropriate notifications as soon as possible so that exposure levels and decontamination requirements can be established. The affected person will then be

transported to the occupational medical facility or to LAMC for evaluation. If possible, the material involved in the exposure will be ascertained, and the information will be given to the medical staff.

Other potential exposures will necessitate evacuation of the area, if appropriate, or under any of the following conditions:

- Irritation of the eyes, breathing passages, or skin
- Difficulty in breathing
- Nausea, lightheadedness, vertigo, or blurred vision.

The affected person will be transferred to the occupational medical facility or to LAMC. An industrial health and safety, radiation protection, or HAZMAT representative will attempt to ascertain what, if any, exposure occurred and what corrective measure is appropriate.

E.9 EVACUATION [20.4.1 NMAC § 264.52(f)]

A facility will be evacuated upon the voice command to evacuate the area or upon the sounding of the evacuation or fire alarm. The IC may call for sheltering in place when evacuation is impractical due to significant airborne hazards. Shelter in place may be possible in a designated area or in a building where all exterior windows and doors may be closed and outdoor air ventilation equipment turned off. Once the airborne hazard has decreased, personnel would then be evacuated.

E.9.1 Emergency Process Shutdown Prior To Evacuation

Personnel are instructed to shut down equipment prior to evacuating a building/area unless an immediate building/area evacuation is announced or signaled. To ensure efficient shutdown, training and exercises addressing the shutdown process are performed. In the case of an immediate evacuation, a selected team may shut down designated equipment in an evacuated area. The team will be equipped with proper equipment and PPE. If they are on location, industrial hygiene and safety, radiation protection, and/or HAZMAT personnel will provide advice and assistance. Process-shutdown procedures apply mainly to hazardous or mixed waste treatment units and are addressed, as appropriate, in Attachment E of TA-specific permit applications, permit modification requests, or permit renewal applications.

E.9.2 Evacuation Plan

Emergency situations may warrant the shutdown and evacuation of areas or buildings in order to protect personnel and property, to anticipate the emergency condition, or to enhance the

appropriate response. Table E-5 lists the criteria for evacuation, persons responsible for initiating evacuations, and reentry conditions. Figure E-3 shows evacuation routes and assembly/muster areas for the proposed container storage/treatment unit at the TRUWF facility.

To initiate the evacuation of a building/area, the evacuation or fire alarm is sounded and/or the public address (PA) system may be used. Evacuation alarms cannot be silenced and reset by site personnel. Only the Fire Alarm Maintenance Section and the LACFD Battalion Chief can silence and reset alarms. To evacuate a portion of a building or area, use of the PA system may be more appropriate. The PA system will notify the occupants of the area to be evacuated and will advise personnel throughout the building of the existence of a problem in a specific area. Once evacuation has been initiated and if conditions allow, personnel will turn off all equipment that could contribute to the hazard if left unattended. All personnel will then proceed from the affected area to the assembly/muster area.

In the event of evacuation of a building, an outbuilding, or an outlying work area, the responsible Group Leader (or his/her designee) will determine a control point at the closest safe location (e.g., considering wind direction). The designated area will be outside the affected area and will serve as an assembly/muster area where the Group Leader (or designee) can oversee evacuation operations and work to prevent further spread of the hazard.

As personnel exit an affected building/area, a primary sweep of the building/area will be performed to ensure that all personnel have evacuated. If the building/area is evacuated, a Group Leader designee will take attendance at the assembly/muster area and report personnel accountability to the IC. The evacuation procedure is as follows:

- The person discovering the accident or emergency will call 911 to ensure that line management and EM&R personnel are notified.
- Site-specific BEPs and/or emergency action procedures will be followed concerning evacuation, sweep, personnel accountability, and equipment shutdown procedures.

A responsible on-site person may direct the initial evacuation and the central alarm system may be activated. EM&R personnel will be notified immediately and will dispatch the Duty Emergency Manager. A responsible on-site person may implement the evacuation process until the Duty Emergency Manager arrives at the scene to assume that responsibility.

E.10 SALVAGE AND CLEANUP [20.4.1 NMAC § 264.56(g) AND (h)]

Appropriate representatives from the ENV groups will survey the affected area before salvage and cleanup begin. They will conduct visual inspections and sampling, as appropriate, of the affected area to determine whether cleanup is complete. If gases or fumes, electrical or radiological problems, or other conditions present a hazardous situation, personnel or selected teams equipped with proper PPE will reenter the area to perform designated decontamination tasks, repairs, and salvage to allow the return to normal operations. After an emergency, the IC will turn the operation over to a designated Recovery Manager, who will:

- Provide for proper handling of recovered waste, contaminated soil or surface water, or any other material that results from a spill, fire, or explosion. Contaminated material will be managed appropriately and temporarily stored at one of the hazardous or mixed waste storage areas at LANL. Waste management personnel will be responsible for determining the final disposition of the waste. This determination will be made in compliance with hazardous waste management regulations.
- Arrange to monitor for damage or improper operation of the unit and associated equipment as a result of the emergency or of plant shutdown in response to the emergency.
- Arrange for site cleanup procedures to be completed and ensure that no waste that may be incompatible with the released material is treated or stored in the same area.
- Ensure that emergency equipment is cleaned, decontaminated, and fit for its intended use before operations are resumed. Equipment will be inspected visually and then sampled, if necessary, to determine the type and degree of contamination and to determine appropriate cleanup measures.

Prior to resuming operations, the appropriate facility management at LANL will verify that the previously mentioned tasks have been performed. The owner/operator (DOE NNSA/LASO) will notify appropriate state and local authorities that cleanup procedures are completed and that emergency equipment is clean and fit for its intended use.

The IC assumes the coordination of post-emergency actions (particularly during the time period immediately following the emergency) until a Recovery Manager is appointed. The Recovery Manager then assumes this coordination role. The Recovery Manager is the functional equivalent

of the Emergency Coordinator for post-emergency actions. The post-emergency actions include cleanup operations, vital equipment repair, or interim hazard-removal operations (such as arranging for demolition of unstable walls). The services of affected operational organizations, ENV groups, KSL, and other on-site resources will also be used to estimate cleanup costs and operational impact.

E.11 EMERGENCY RESPONSE RECORDS AND REPORTS [20.4.1 NMAC § 264.56(j)]

Any emergency that requires implementation of this plan will be documented by the Group Leader (or his/her designee) responsible for the hazardous or mixed waste unit associated with the emergency, and reported in writing within 15 days of the incident to the NMED. The incident report, submitted by DOE NNSA/LASO, will include the following data:

- Name, address, and phone number of owner or operator
- Name, address, and phone number of the facility
- Date, time, and type of incident (e.g. fire, explosion, spill)
- Name of material(s) involved
- Quantity of material(s) involved
- Extent of injuries (if any)
- Assessment of actual or potential hazards to human health or the environment
- Estimated quantity and disposition of material recovered from the incident.

In addition, LANL personnel responding to any emergency requiring implementation of this plan will record the date, time, location, and details of the incident. This information will be maintained in the facility operating record.

E.12 CONTINGENCY PLAN AMENDMENT [20.4.1 NMAC § 264.54]

This plan will be reviewed periodically by appropriate division personnel. The plan will be amended immediately if determined to be inadequate to handle releases (spills, explosions, and/or fires) and whenever:

- The facility permit is revised.
- There is change in the design or operation of the facility (e.g., quantities of waste handled and handling techniques) that increases the likelihood of an emergency and requires changes in emergency response.
- The Primary Emergency Manager changes.

- The list of emergency equipment changes significantly.

E.13 REFERENCES

EPA, 1986 and all approved updates, "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods," EPA-SW-846, U.S. Environmental Protection Agency, Office of Solid Waste and Emergency Response, U.S. Government Printing Office, Washington, D.C.

LANL, 2002, "Los Alamos National Laboratory Emergency Management Plan," LIR 403-00-01.0, Los Alamos National Laboratory, Emergency Management and Response Office, Los Alamos, New Mexico.

Table E-1

**Response Groups and Agencies Available to the
Emergency Management and Response Office for
Guidance and/or Emergency Assistance**

LANL ^a -Controlled Response Group	Telephone	Responsibilities
Radiation Protection Personnel	665-7797	Provides routine guidance on radiological decontamination. Provides routine site evaluation and monitoring to determine the nature and extent of contamination (radiological).
Occupational Medicine Personnel	667-0660	Provides emergency medical treatment.
Industrial Hygiene and Safety Personnel	667-5231	Provides guidance on industrial hygiene equipment and operational safety. Provides routine site evaluation/support field testing to determine the nature and extent of contamination (chemical).
Hazardous Materials Team	665-5237	Provides emergency site evaluation/field monitoring (chemical and radiological). Specifies protective clothing and equipment. Dispatches Hazardous Materials Response Team. Provides support for chemical, radiological, hazardous, and mixed waste incidents and decontamination of responders and response equipment.
Meteorology & Air Quality Personnel	665-8855	Provides information on meteorological conditions.
Water Quality and Hydrology Personnel	667-0666 or 665-0453	Provides information on hydrologic conditions.
Hazardous Waste Compliance Personnel	667-0666 or 665-0453	Provides guidance on regulatory requirements. Provide guidance on proper treatment, storage, and off-site shipment of hazardous and mixed waste. Conducts field surveys to determine spread of contamination and adequacy of cleanup.
Ecology Personnel	665-8855	Provides information on biotic conditions.
PTLA, Protection Technology Los Alamos	667-4531	Provides traffic control and security.
KSL ^b	667-2300	Dispatches maintenance personnel and equipment. Assists in waste cleanup under the direction of the Recovery Manager.
Los Alamos County Fire Department	911 662-8301	Dispatches firefighting personnel and equipment and provides Emergency Medical Services.
Los Alamos County Police Department	662-8222	Provides traffic control on public access roads.
Los Alamos Medical Center ^c	662-4201	Provides medical services. Provides and maintains Emergency Room.

^a Los Alamos National Laboratory.

^b KBR-Shaw-LATA.

^c Medical services related to hazardous waste injuries are provided under the direction of Occupational Medicine Personnel.

Table E-2
Los Alamos National Laboratory-Wide Emergency Equipment

Hazardous Materials (HAZMAT) Vehicles and Associated Emergency Equipment:

HAZMAT vehicles and trailers are located at Technical Area (TA) 64, Building 39 (TA-64-39). They are available to the Hazardous Materials Response Team for emergency response to all of the TAs at Los Alamos National Laboratory (LANL). HAZMAT is responsible for maintaining the supplies of appropriate emergency equipment in each vehicle and trailer.

The HAZMAT vehicles and trailers are equipped with safety and emergency equipment, personal protective clothing, and other supplies, which may include, but are not limited to, some or all of the following:

- Assorted personal protective equipment, T-shirts, and gloves
- Safety goggles, safety glasses, and face shields
- Boots and booties
- Totally encapsulating suits and boots
- Level A and B suits
- Flash suits
- Self-contained breathing apparatus (SCBA) and SCBA bottles
- Respirators and cartridges
- Hazardous chemical reference books and other reference materials
- Shovels
- Siphon pumps
- Assorted spill kits and sorbents
- Neutralizing solutions: acids, bases, and caustics
- Two-way radios, cellular phones, facsimile, and other communication equipment
- Bottles of leak detector and leak repair kits
- Emergency repair packs
- HAZMAT bags
- Gas detectors and chemical monitoring equipment
- Radiological monitoring equipment
- Sponges and cleaners
- Warning signs and barricade tape
- Traffic control barriers
- Flashlights
- Cameras and film
- Knives
- Portable power supplies
- Warning and signal horns
- Harnesses and belts
- Decontamination equipment
- Sampling equipment
- Lifting equipment and vetter bags
- Assorted tools, tape, and other supplies
- Non-sparking tools
- Biological detection equipment
- Chemical vacuums
- Sandia foam
- Plugging and diking equipment
- Sample van equipped with a glovebox and analysis equipment

Table E-2 (Continued)

Los Alamos National Laboratory-Wide Emergency Equipment

Supplemental emergency equipment and personnel available from the Los Alamos County Fire Department (LACFD):

Supplemental emergency equipment available from the LACFD may include, but is not limited to, some or all of the following:

- Fire engines
- Mini-tankers with compressed air foam capability
- Modular ambulances
- Rescue vehicles
- Crash-Fire-Rescue (CFR) unit
- Water tankers with compressed air foam capability
- Incident Command vehicles
- SCBA units
- SCBA air tanks
- Remote air system for confined space rescue
- Ladder truck with pump
- Personnel with Hazardous Material First Response Operational Level training
- Personnel with Basic Emergency Medical Technician training
- Personnel with Advanced Life Support training

Table E-2 (Continued)

Los Alamos National Laboratory-Wide Emergency Equipment

Supplemental emergency equipment and personnel available from KBR-Shaw-LATA (KSL):

Supplemental emergency equipment available from KSL may include, but is not limited to, some or all of the following:

TRANSPORTATION EQUIPMENT:

- Pickups, 1/2 through 3/4 ton
- Trucks, 1 through 3 ton
- Vans, panels, and carryalls
- Buses

SPECIAL EQUIPMENT:

- Graders
- Loaders
- Snowplows and snow blowers
- Bulldozers
- Scrapers
- Semitrailers
- Chain saws
- Street flushers
- Mobile transceivers
- Generators
- Handsets (2-way)
- Pageboys (1-way)
- Welders
- Mobile site logistics support equipment/associated heavy equipment
- Fully equipped spill response unit
- Utilities equipment and emergency utility support
- Fuel trucks
- Light banks
- Dump trucks
- Backhoes
- Potable water trucks
- Cranes
- Forklifts

TRAINED PERSONNEL:

- Heavy equipment operators
- Dispatchers
- Mechanics
- Power saw operators
- Radio and telephone operators
- Truck drivers
- Rodent/Pest Control personnel
- HAZMAT response/cleanup personnel
- Welders
- Electricians

Table E-2 (Continued)

Los Alamos National Laboratory-Wide Emergency Equipment

Emergency equipment and personnel at the Occupational Medicine Clinic:

At TA-3 (SM-1411) Central Clinic:

Emergency equipment and supplies available from Occupational Medicine Personnel may include, but are not limited to, some or all of the following:

PERSONNEL:

- Physicians
- Physician's Assistants
- Nurses
- X-ray Technician
- Clinical Laboratory Technicians
- Clinical Testing Technicians
- Clinical Psychologist
- Counselors

SPECIAL EQUIPMENT-PORTABLE:

- Multichannel emergency receiver-base station
- Two-way radio on the State Med Net, the LANL Emergency Management channel, and the LANL Health-Safety Net
- Cardiac monitors and defibrillators
- Crash cart emergency equipment with E-tank oxygen (O₂)
- Portable physicians' bag with medications
- Portable suction unit
- Portable stretchers (ambulance, gurney, folding)
- Wheelchairs
- O₂ tanks
- Manual resuscitators
- Intravenous (IV) stands
- IV solutions
- Otoscopes/ophthalmoscopes
- Portable sphygmomanometers
- Stethoscopes
- Anticontamination apparel
- Eye irrigation solution
- First-aid kits
- Extrication and cervical collars, crutches, canes
- Suture sets
- Protective apparel
- Morgan lens irrigation sets
- Decontamination equipment (portable)

Table E-2 (Continued)

Los Alamos National Laboratory-Wide Emergency Equipment

Emergency equipment and personnel at the Occupational Medicine Clinic (Continued):

At TA-3 (SM-409) Central Clinic (continued):

SUPPLIES-GENERAL:

- Bedding/pillows
- Rescue blankets
- Burn blankets
- Thermal/icing pouches
- Multitrauma dressings, surgical and first aid supplies
- Disposable ice bags

SPECIAL FACILITIES - NONPORTABLE:

- Fully equipped decontamination room at the Occupational Medicine Clinic
- Completely equipped emergency room with ambulance entrance
- Emergency lighting system
- Complete X-ray suite
- Protective clothing and wound counters
- 12-lead electrocardiograph
- Fully equipped crash cart with Life Pak defibrillator/external pacer, intubation equipment, emergency medications
- Fully equipped decontamination room at Los Alamos Medical Center (LAMC) adjacent to the LAMC emergency room

TRANSPORTATION:

Full ambulance service is available within minutes to the central facility.

COMMUNICATION:

Base station on State Medical Net and Los Alamos County Fire Department trunked radio system.

Table E-3 ^a
Emergency Equipment at
Transuranic Waste Facility (TRUWF), Container Storage/Treatment Unit

FIRE CONTROL EQUIPMENT:

ABC fire extinguishers will be located in the TRUWF (TA-52-190) within the main storage area, the indoor shipping and receiving area, the characterization trailer parking area, and the treatment/repackaging/resizing area.

Description of General Capabilities:

The fire extinguishers will be portable, manually-operated units and can be used by any employee in case of fire.

Fire alarm pull boxes and push button stations will be available in the main storage and staging area, the size reduction, decontamination, and repackaging area, and the receiving and shipping area at the TA-52 TRUWF.

Description of General Capabilities:

Fire alarms can be activated by any employee in the event of fire to notify the Central Alarm Station.

The sprinkler systems will automatically activate in the event of a fire and will be located at the treatment/repackaging/resizing area. The facility will have a wet pipe sprinkler system with an alarm.

Automatic thermal alarms will be located in gloveboxes in the size reduction, decontamination, and repackaging area.

Fire hydrants are located outdoors on the north, south, and west sides of TA-52-190.

Description of General Capabilities:

The fire hydrants will supply water at adequate volume and pressure (i.e., approximately 800 gallons per minute and 90 pounds per square inch) to satisfy the requirements of the New Mexico Administrative Code, Title 20, Chapter 4, Part 1, Subpart v, 264.32, revised October 1, 2003.

SPILL CONTROL EQUIPMENT:

Any drum found to contain liquid waste will be protected using secondary containment pallets. Spill control stations and/or portable spill kits will be located in the main storage and staging area; the size reduction, decontamination, and repackaging area; and the receiving and shipping area at the TA-52 TRUWF as necessary.

Description of General Capabilities:

Spill kits may include items such as: bags of absorbent, absorbent pads or socks, and an inventory of tools and supplies.

Refer to footnote at end of table.

Table E-3 ^a (continued)
Emergency Equipment at
Transuranic Waste Facility (TRUWF), Container Storage/Treatment Unit

COMMUNICATION EQUIPMENT:

Public address (PA) systems will be used locally to notify personnel of an emergency. Personnel may use building and cellular telephones for communication.

Description of General Capabilities:

PA telephones may be used for internal communication and are available for use by any employee.

Telephones will be available that will be capable of handling incoming/outgoing calls and paging. Two-way radios are available from the Nuclear Materials Technology Facility Incident Command located at TA-52-190, for personnel working in the facility.

Description of General Capabilities:

External telephones may be used to notify LANL support agencies outside of TA-52-190 and are also available for use by any employee.

Alarms at TA-52-190:

The fire alarm will be a zone-wide whooping sound.

If a drop-box pushbutton station is used, a zone-wide, high-pitched constant tone will be activated and then switch to the standard whooping sound.

Description of General Capabilities:

Fire and evacuations alarms will be activated in the event of a fire or in case of an evacuation. When activated, the fire alarm notifies the Central Alarm Station.

The facility will have a Continuous Air Monitoring System (CAMS) to detect and warn workers of the presence of contamination.

DECONTAMINATION EQUIPMENT:

A change room equipped with showers will be available during retrieval, characterization, treatment and drum venting operations. Eyewash stations will also be available onsite during these operations. The facility will have one self-contained hard-piped decontamination shower located in the treatment, decontamination and repackaging area of the building.

Description of General Capabilities:

Safety showers and eyewashes are available for decontamination of personnel who receive a chemical splash to the skin or eyes.

Material Safety Data Sheets (MSDS) will be available in the administrative area at TA-52-190. Specific MSDSs may be obtained prior to working with any hazardous waste to determine if the application of water is indicated for decontamination.

Refer to footnote at end of table.

Table E-3 ^a (continued)
Emergency Equipment at
Transuranic Waste Facility (TRUWF), Container Storage/Treatment Unit

PERSONAL PROTECTIVE EQUIPMENT:

Appropriate personnel protective equipment (specified in a Health and Safety Plan or Integrated Work Document) will be worn during retrieval, characterization, treatment and drum venting operations. Personnel involved in waste handling will be required to wear protective coveralls and steel-toed shoes. Hard hats and gloves will be worn as prescribed in the Health and Safety Plan.

OTHER:

If transportation is needed for evacuation, vehicles may be obtained through the Emergency Management and Response Group.

^a Equipment types and locations are subject to change.

**Table E-4
Waste Analysis Parameters and Test Methods^a**

Parameter	Test Method	Reference ^b
Ignitability	Pensky-Martens closed-cup method Setaflash closed-cup method Ignitability of solids	(L, S) SW1010, SW1020A (S) SW1030 (L, S) ASTM D93-02a
Reactivity	Test method to determine hydrogen cyanide released from waste Test method to determine hydrogen sulfide released from waste	(L, S) SW, Section 7.3
Corrosivity	Electrometric (pH of aqueous solution)	(L) SW9040B
Toxicity characteristic (TC)	Toxicity characteristic leaching procedure (TCLP) extraction	(S) SW1311
TC Metals:	Flame atomic absorption spectroscopy (FLAA), Gas chromatography/mass spectrometry (GC/MS), Cold vapor atomic absorption spectroscopy (CVAA)	
Arsenic		(L, S) SW7060A ^c , SW7061A
Barium		(L, S) SW7080A, SW7081 ^c
Cadmium		(L, S) SW7130 ^d , SW7131A ^c
Chromium		(L, S) SW7190 ^d , SW7191 ^c
Lead		(L, S) SW7420 ^d , SW7421 ^c
Selenium		(L, S) SW7740 ^c , SW7741A
Silver		(L, S) SW7760A ^d , SW7761 ^c
Mercury	Manual cold-vapor technique	(L) SW7470A, (S) SW7471A ^e
Volatile organics	Gas chromatography (GC)/mass spectrometry (MS) GC/MS capillary column technique	(L, S) SW8260B
Semivolatile organics	GC/MS GC/MS capillary column technique	(L, S) SW8270D ^f (S) SW8275A
Organochlorine pesticides	Thermal extraction/GC/MS	(L, S) SW8081A
Chlorinated herbicides	GC	(L, S) SW8151A
Cyanide, free and total	Distillation and colorimetric ultraviolet	(L, S) SW9010B, SW9012A
Total chromium	Colorimetric method for hexavalent chromium	(L, S) SW7196A
Sulfide	Colorimetric titration	(L, S) SW9030B

Table E-4 (Continued)
Waste Analysis Parameters and Test Methods^a

Parameter	Test Method	Reference ^b
Total RCRA metals ^{f,g}	Acid digestion Inductively coupled plasma atomic emission spectroscopy	(L) SW3010A, (S) SW3050B (L, S) SW6010B
Arsenic		(L, S) SW6010B
Barium		(L, S) SW6010B
Cadmium		(L, S) SW6010B
Chromium		(L, S) SW6010B
Lead		(L, S) SW6010B
Selenium		(L, S) SW6010B
Silver		(L, S) SW6010B
Mercury	Manual cold-vapor technique	(L) SW7470A, (S) SW7471A
Free liquids	Paint Filter Liquids Test	(L, S) SW9095A

^a At Los Alamos National Laboratory, current analytical capabilities include limited analyses of mixed waste samples. These analyses include gross alpha, beta, and gamma screening.

^b "A" (e.g., A006) refers to U.S. Environmental Protection Agency, 1984, "Sampling and Analysis Methods for Hazardous Waste Combustion," EPA-600/8-84-002.

"ASTM" refers to American Society for Testing and Materials standards.

"SW" refers to U.S. Environmental Protection Agency, 1986 and all approved updates, "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods," SW-846.

(L) refers to liquid waste.

(S) refers to solid waste.

^c Method being integrated into Method 7010, per the May 1998 SW-846 Draft Update IVA

^d Method being integrated into Method 7000B, per the May 1998 SW-846 Draft Update IVA

^e Method being integrated into Method 7471B, per the May 1998 SW-846 Draft Update IVA

^f See also atomic absorption methods. Total metals may be substituted for TCLP metals, if appropriate.

^g RCRA = Resource Conservation and Recovery Act.

Table E-5

Evacuation Determination and Reentry Conditions

Reason for Evacuation	Evacuation Determination Made by	Reentry Conditions ^a
Fire	¹ Fire or evacuation alarm, Group Leader or alternate, Lead Engineer, Senior Staff Member present, Senior Technician, or Emergency Manager	Following survey by the person designated by the IC ^b
Explosion	Same as 1 above	Same as above
Loss of ventilation	² Group Leader or alternate, Senior Staff Member, Lead Engineer, or Senior Technician	Same as above
Loss of electric power	Same as 2 above	Same as above
Extensive contamination	Same as 2 above or a Radiation Protection Representative	Same as above
Airborne contamination	Same as 2 above or Radiation Monitor	Same as above
Escape or release of toxic or hazardous gas or fumes	Group Leader or alternate, Senior Staff Member, Lead Engineer, Senior Technician, or Emergency Manager	Same as above
Bomb or bomb threat	EM&R ^c or PTLA ^d representative, R&D ^e Section Leader or alternate, Senior Staff Member, or Lead Engineer	Same as above

^a All reentries are authorized by the EM&R Incident Commander.

^b "IC" refers to the Incident Commander as defined in 29 CFR § 1910.120.

^c "EM&R" refers to the Emergency Management and Response Personnel.

^d "PTLA" refers to Protection Technology Los Alamos.

^e "R&D" refers to the Research and Development Section.

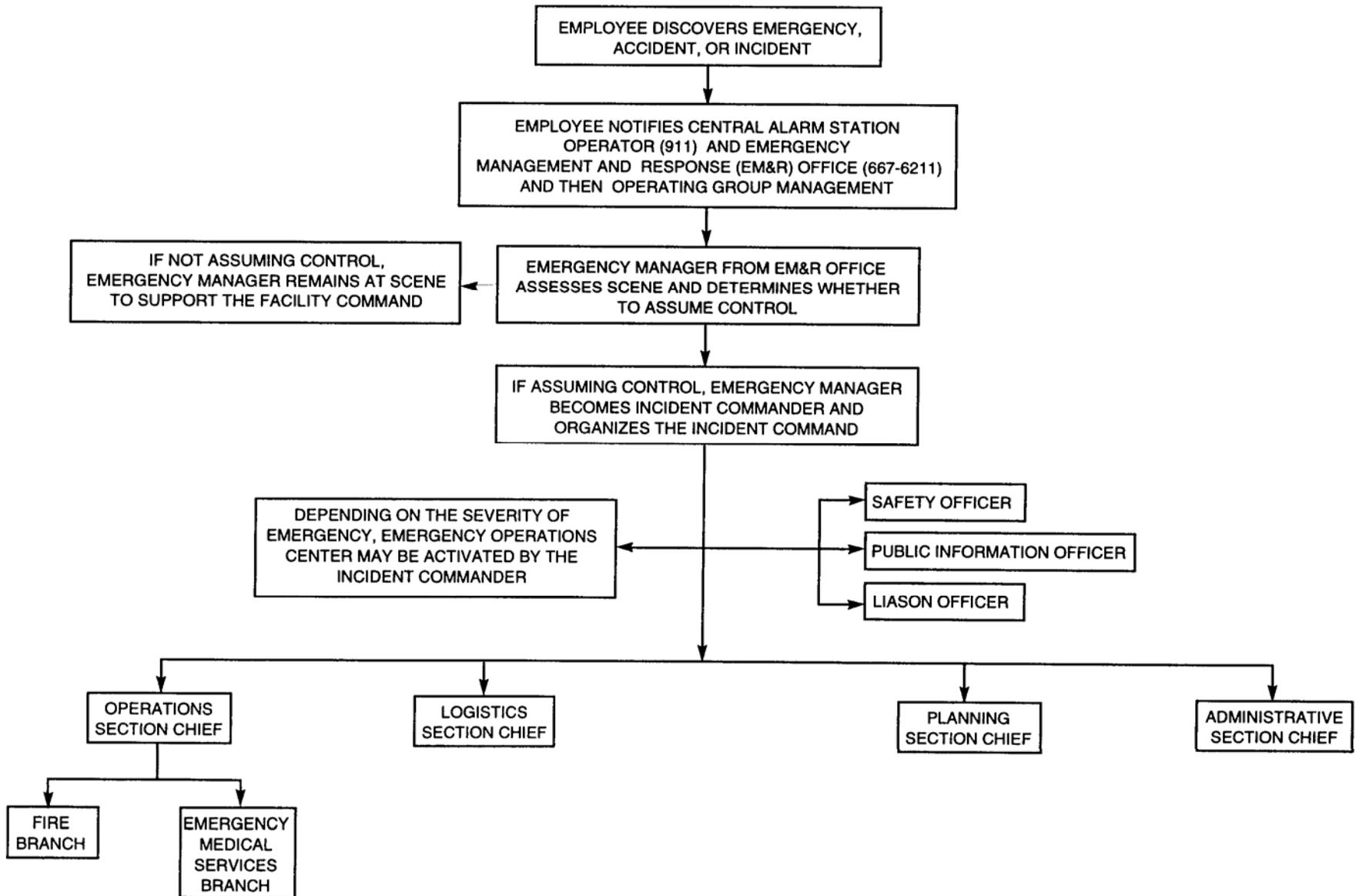


Figure E-1

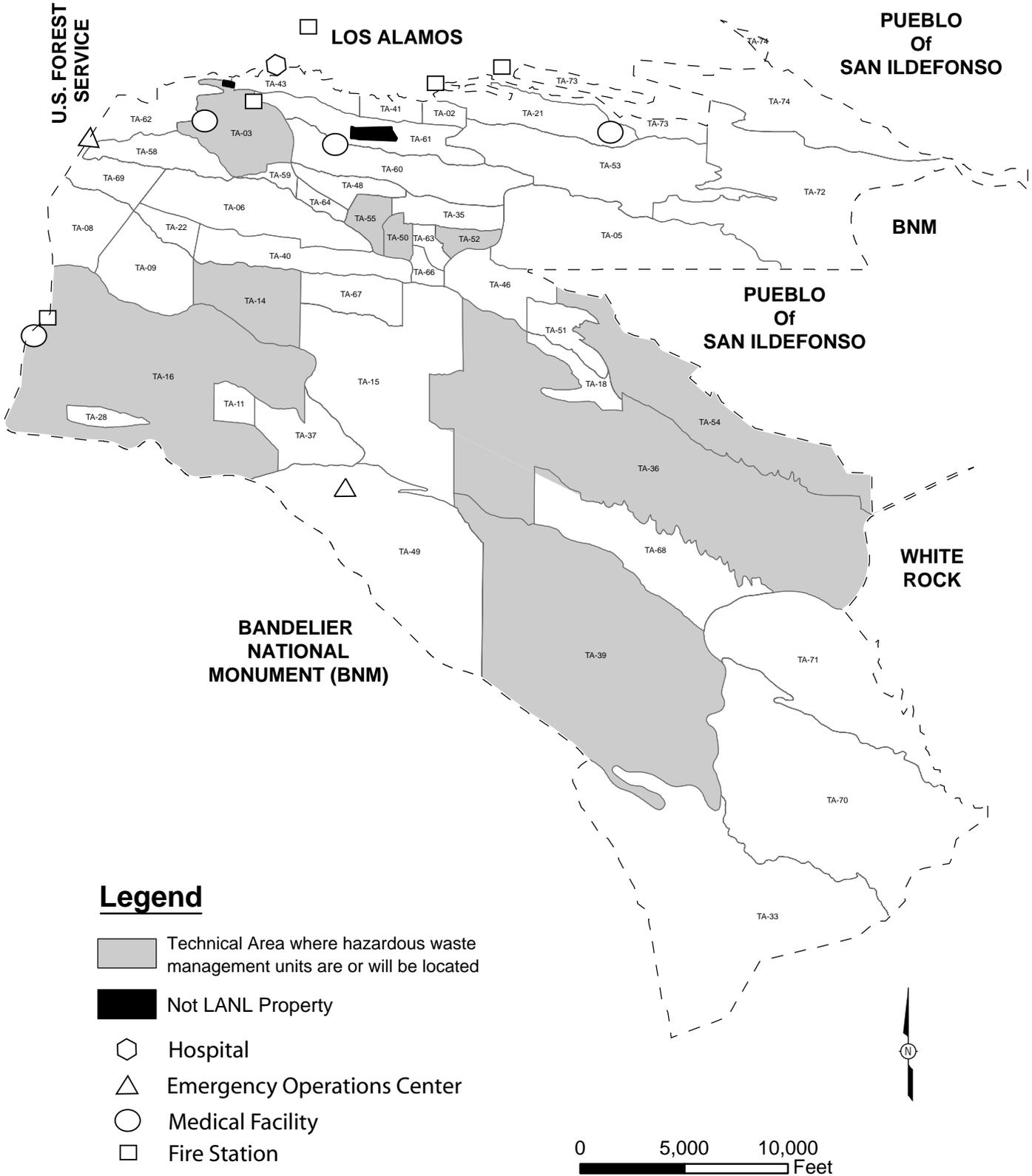


Figure E-2

Emergency Facilities

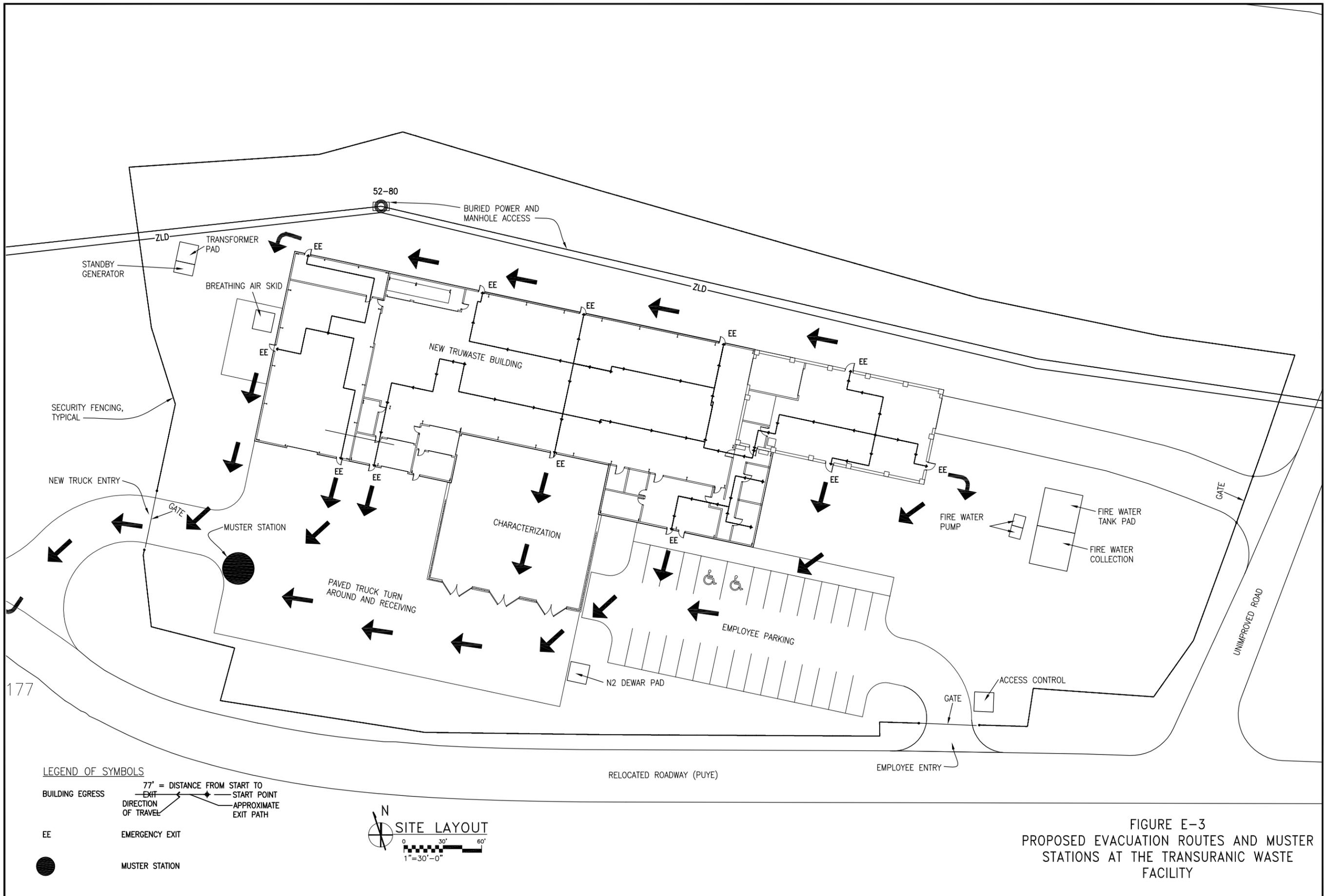


FIGURE E-3
 PROPOSED EVACUATION ROUTES AND MUSTER STATIONS AT THE TRANSURANIC WASTE FACILITY