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CERTIFIED MAIL
 RETURN RECEIPT REQUESTED

July 8, 1996

Mr. G. Thomas Todd, Area Manager
 Department of Energy
 Los Alamos Area Office
 Los Alamos, New Mexico, 87544

RE: Classes II Modification for the Packed Bed Reactor/Silent
 Discharge Plasma Research, Development and Demonstration
 Operational Permit
 EPA ID No. EPA ID No. NM0890010515-RDD1

Dear Mr. Todd:

The New Mexico Environment Department (NMED) Hazardous and Radioactive Materials Bureau (HRMB) has completed review of the US Department of Energy (DOE), Los Alamos National Laboratory (LANL) Research, Development and Demonstration (RD&D) Packed-Bed Reactor/Silent Discharge Plasma (PBR/SDP) Treatment Unit Operational Permit request for Class II permit Modification. You indicated in your letter of August 25, 1995 that the modifications you are seeking are as a result of the relocation of the unit from Technical Area 35 (TA-35), Building 128, to TA-35, Building 421. You also explained that you need changes to be made in the contingency plan to include a required equipment list that was inadvertently omitted from the original plan.

Based upon the above explanation, NMED hereby approves the Class II permit modification for the LANL's PBR/SDP Treatment Unit. The effective date of the approval is your date of receipt of this letter. The changes made to the RD&D operational permit are shown on the first twenty (20) sheets of the attached pages. The next two sheets are NMED's response to comments received from the public during the 60 day public comment period that started on April 26, 1996, and ended on June 24, 1996.

The corrected portions of the permit text (and maps), with the modifications incorporated can be found on the last twenty four (24) sheets. These changes have been incorporated into the LANL RD&D permit text of April 21, 1994, EPA ID #: NM0890010515-RDD1. You are required to incorporate the enclosed copies of the permit modification into LANL's copy of the RD&D Permit originally issued by NMED.



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Todd, LANL
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If you have any questions on this matter you may contact either Barbara Hoditschek or Cornelius Amindyas at (505) 827-1561.

Sincerely,



Ed Kelley, Ph.D.
Director, Water and Waste Management Division

Enclosures

cc: Benito Garcia, Chief HRMB (w/o encl.)
David Neleigh, EPA Region VI (6PD-N)
Files: Red and Reading 96

TABLE OF PERMIT MODIFICATIONS AND THEIR CLASSIFICATIONS

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• **Permit Attachment H - Procedures for Handling Ignitable,
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• **Permit Attachment I - Required Equipment and
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Page I-1, fifth paragraph	1
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**Permit Section
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• **Permit Attachment J - Contingency Plan**

(New plan due to numerous organizational changes and changes in organizational functions. See new text, tables, and figures for details.)

Table of Contents, pages i, ii, and iii	1
List of Acronyms	1
Changes in names, addresses, or phone numbers of coordinators or other persons or agencies identified in the plan	1
Addition of emergency equipment list	2
Changes in emergency response resources and organizations	2
Addition of new sections to plan:	2
- 3.1 Emergency Equipment	
- 3.2.2 Utilities Control Center	
- 3.2.3 Additional Communication Systems	
- 8.0 Unplanned Nonsudden Releases	
- 9.0 Exposure to Hazardous Waste	
Addition of Tables 3,4, and 5	2

• **Permit Attachment K - Closure Plan**

Page K1, first and fifth paragraphs	1
Page K2, second, fourth, and fifth paragraphs	1
Page K3, first and third paragraphs	1

• **Permit Attachment M - Figures**

Figure 2 - Unit Key Map See new figure including TA-35, Building 421.	1
Figure 3 - Location Map See new figure including TA-35, Building 421.	2
Figure 4 - Layout of Building 421 See new figure including layout of northeast corner of first floor of Building 421.	2
Figure 5 - Topographic Map See new figure including a topographic map with a scale of 1 inch equal to 200 feet and with contour intervals of 2 feet. Additionally, the map shows a 1000 foot radius around the RD&D unit in Building 421, and provides the nearest seismic fault lines, superimposed on the topographic map.	1

Approved LOS ALAMOS NATIONAL LABORATORY
PAGES FOR INCORPORATION INTO
THE ORIGINAL PBR/SDP PERMIT ISSUED APRIL 21, 1994

*These Pages will be
incorporated into
the original Permit,
into Pages shown
at the footers at
the end/bottom of
each Page (see highlights)*

The pH of the scrubber water will be monitored using an on-line pH meter to determine when the neutralization solution is spent and, consequently, when the scrubber wastewater reservoir should be emptied. At a minimum, the scrubber wastewater reservoir will be emptied whenever the RD&D waste stream being studied is changed.

The piping from the SDP cells to the second treatment system scrubber will be constructed of stainless steel material. Since the acid scrubber will reduce the corrosivity of the effluent gases, less corrosion-resistant material is required for those portions of the system downstream of the scrubber. The piping leading from the scrubber to the Building 421 vent (for open loop) or back to the waste feed portion of the system (for closed loop) will be constructed of either PVC or copper material.

The effluent exiting the final scrubber in the system is compatible with both copper and PVC piping and will not react with these materials. There is no particular distinction between the use of one type of material over the other. Rather, copper and PVC piping were selected because they are both easy to work with and are easily available. Copper piping has a slight advantage over PVC in that commercial fittings are easily obtained. PVC has a slight advantage over copper in that it is lighter and less expensive. Either material may be used in this portion of the system configuration without impacting the experimental results.

Pollution Control

The following description of the method of pollution control to prevent the release of any effluent hazardous wastes from the PBR/SDP Treatment Unit to the atmosphere are in accordance with the requirements of the HWMR-7, Part IX, § 270.14(b)(8)(vi).

A backup safety pollution control device is necessary only when the PBR/SDP system is operated in an open loop configuration, with effluent gases vented to the atmosphere. Figure 9 shows the treatment system components in an open loop configuration. Prior to being exhausted through the Building 421 vent, the effluent gas stream will pass through a granular activated carbon unit. The carbon unit is in place to prevent the accidental release of hazardous substances to the atmosphere, in case of PBR/SDP unit malfunction. The carbon unit will also serve to absorb unreacted wastes or organic waste decomposition by-products. A carbon unit change-out program will be implemented to replace the unit in accordance with the manufacturer's recommendations, based on any flow into the carbon unit of effluent gas, unreacted wastes

SAFETY PLAN:

An analysis of hazards related to the PBR/SDP unit must be performed by project personnel, group safety personnel, the building manager, and interactions with Health, Safety and Environmental Management personnel. Administrative control measures shall include personnel training and development of Standard Operating Procedures (SOP).

Access to communications or alarm systems

Engineering control measures must include warning lights and alarm systems, electrical current breakers, protective shielding panels, electrical circuit designs, and pollution control equipment.

The PBR/SDP unit must be configured to minimize hazards and appropriate measures shall be taken to conduct safe operations and to minimize potential emissions. Building ~~128~~ 421, where the RD&D unit is located, must be equipped with the following safety systems:

- Fire detection/alarm/annunciator system;
- Fire suppression (sprinkler) system;
- Aisle space

Design and Operation of Facility

The PBR/SDP unit shall operate with the following safety features:

- Containers of hazardous wastes must be covered and stored in a secondary containment to minimize leakage hazards and precipitation run-on/run-off problems.
- Waste injection line shall be equipped with a solenoid valve that will automatically shut off waste flow into the PBR, in the event that there is a cessation of oxidizing gas (oxygen and argon, or air) into the unit.
- External shielding around the PBR unit to prevent contact with the heating elements.

Cleaning agents and solvents shall be stored in the chemical cabinet. MSDSs shall be kept in a notebook file at the RD&D unit. Rags containing cleaning solvents will be disposed of in approved containers. Containers shall be emptied by personnel with waste generator training at the Building 421 satellite storage area.

Additional local exhaust ventilation or general building ventilation is not required for the PBR/SDP Unit. The unit will not be operated unattended, and any malfunctions or leaks will be immediately identified and corrected. Critical connections in the unit also will be leak-checked with helium prior to each treatment process. In addition, airborne leaks are very unlikely since the unit operates at ambient pressure. If a significant leak were to occur, the computer diagnostics will recognize changes in feed-rate/effluent flow and changes in destruction efficiencies. Furthermore, in closed-loop system configuration, the unit is a closed, non-pressurized system. All vapors and gases are created and contained within the system, and no effluents are vented to the atmosphere.

In open-loop system configuration, all effluents from the PBR/SDP Unit will be properly captured or exhausted to the building exterior. The PBR/SDP exhaust stack will be equipped with a back-up activated carbon canister to prevent accidental release of hazardous constituents in case of equipment malfunction during open-loop system operation. Concentrations of hazardous gaseous effluents shall be monitored by associated diagnostic instruments.

Building 421 shall be equipped with an emergency eye wash station. Chemical residues generated during RD&D treatment will be managed in approved containers and temporarily in Building 421 satellite storage area. Wastes will be removed from the satellite storage area by LANL's Waste Management Services Group (CST-17) in accordance with procedures outlined in the existing RCRA permit for the facility.

● **MECHANICAL HAZARDS**

Hazard Description:

Routine mechanical assembly and lifting operations are carried out at the RD&D unit.

8.0 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, loss of secondary containment integrity, and incomplete treatment.

8.1 Responsibility

The operating group is responsible for correction of a nonsudden release from the RD&D unit if the correction can be performed safely with normal maintenance and management procedures. Otherwise, the operating group will call the EM&R Office for assistance. Any correction methods for nonsudden releases that have resulted in an impact to the environment will be coordinated with the NMED.

8.2 Nonsudden Releases

Not all failures can be predicted. In general, the response to a nonsudden release will be (1) to contain the release, (2) to correct the cause of the release, and (3) to clean up any release to a level that protects human health and the environment.

The operating group will conduct regularly scheduled inspections to detect failure of containment at the ancillary hazardous waste storage area addressed in the RD&D permit and to ensure that the containers are not leaking. In addition, the operating group will inspect the secondary containment systems 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, the operating group will ensure that maintenance or replacement of containment is performed, as appropriate.

8.3 Nonsudden Release Surveillance

In addition to routine inspection and site-specific sampling and testing, LANL has established an areawide environmental monitoring network maintained by ESH. 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, ground waters, 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 background levels, and for radiation dose calculations.

9.0 EXPOSURE TO HAZARDOUS WASTE

If a person is exposed to hazardous waste, the affected person, a co-worker, or line management will notify the EM&R Office. Appropriate first aid should be administered immediately. An EM&R Office representative will notify ESH-10 directly, as soon as possible, so that exposure levels and decontamination requirements can be established. The injured person will then be quickly transported to the ESH-2 medical facility or to LAMC for evaluation. If possible, the material involved in the injury will be ascertained and the information 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, light-headedness, vertigo, or blurred vision.

The affected person will be transferred to the ESH-2 medical facility or to LAMC. An ESH-1, ESH-5, or ESH-10 representative will attempt to ascertain what, if any, exposure occurred and what corrective measure is appropriate.

3.0 EMERGENCY EQUIPMENT AND COMMUNICATIONS

3.1 Emergency Equipment

HWMR-7, Part V, Subpart D, requires a listing of all emergency response equipment available that can be used in the event of an emergency. Table 3 lists all emergency equipment available at the RD&D unit (located in TA-35, Building 421, first floor) and in the HAZMAT vehicles and trailers. Table 3 includes supplemental emergency equipment maintained by JCI, the LACFD, and ESH-2 as well. The locations of emergency facilities are shown on Figure 2.

3.2 Emergency Communications

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 will involve a small number of individuals at the affected area and notification of the duty Emergency Manager. When responding to hazardous or mixed waste emergencies, the EM&R Office provides communications between response units and emergency organizations.

3.2.1 Emergency Central Alarm Station

The emergency CAS is located at TA-64-1. This station is manned by PTLA 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 then notifies the LACFD and the duty Emergency Manager. The Emergency Manager, the HMGS, 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.

3.2.2 Utilities Control Center

JCI personnel maintain the UCC at TA-3-223. This facility 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 building management or to the CAS operator for notification and response.

3.2.3 Additional Communication Systems

Internal communication systems at LANL include:

- The Centrex telephone system
- A telephone paging system
- A variety of FM VHF simplex repeater and trunked radio systems, including:
 - Multiple base stations
 - Mobile and hand-held units
 - Links to New Mexico public safety agencies
- A UHF radio system, including:
 - Multiple antenna sites
 - Mobile and base units
 - Links with the LACPD, LACFD, and the State Medical System
- A 400-megahertz trunked radio system that includes a link with the LACFD
- Transmission and reception (through EOC) for:
 - Secure telephone
 - Secure fax
 - Secure still video
- Access to all radio systems outlined above (through 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
- A link to KRSN radio (local radio station)
- The local cable television
- A Community Alert Network.

The LANL EOC, maintained by the EM&R Office, 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. After hours, the duty Emergency Manager is responsible for activating whatever support personnel, services, or equipment is needed.

TABLE 3

Emergency Equipment

TABLE 3

Emergency Equipment

Emergency equipment available at TA-35, Building 421, at the PBR/SDP Unit site:

	<u>Number</u>
Fire extinguishers	2
Spil-KART Chemical Spill Kit (Lab Safety Supply Co. Part #17-920) (Goggles, gloves, spill pigs, absorbent)	1
Eyewash station	1
First aid kit	1

TABLE 3

Emergency Equipment

Hazardous Materials (HAZMAT) Vehicles and Associated Emergency Equipment:

Hazardous Materials (HAZMAT) vehicles and trailers are located at Technical Area (TA) 52. They are available to the Environment, Safety, and Health (ESH) Hazardous Materials Response Group (ESH-10) for emergency response to all of the TAs at Los Alamos National Laboratory (LANL). ESH-10 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: assorted coveralls, T-shirts, and gloves; safety goggles and glasses; boots and booties; face shields; totally encapsulating suits and boots; Level A and B suits; flash suits; self-contained breathing apparatus (SCBA) and SCBA bottles; hazardous chemical reference books and other reference materials; shovels; siphon pumps; assorted spill kits and sorbents; chemical burn and neutralizing solutions; communication radios; bottles of leak detector; leak repair kits; emergency repair packs; HAZMAT bags; gas detectors; respirators and cartridges; sponges and cleaners; warning signs; traffic control barriers; flashlights; timers; cameras and film; knives; warning and signal horns; harnesses and belts; portable emergency oxygen; and assorted tools, tape, and other supplies.

TABLE 3

Emergency Equipment

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

	<u>Number</u>
Engine companies - 1,250 gallons per minute	
Engines 1, 3, 4, 5, 6, 10, and 40	7
Engine 50 (Reserve) - 1,000 gallons per minute	1
Mini-pumpers	
MT-1, -3, -4, and -5	4
Modular ambulances	4
3 First line - M1, M3, M4	
1 Reserve Unit - M10	
Rescue vehicles	3
1 First Line	
1 Stored at Station #5, Out of Service	
1 Newly Purchased	
Crash-Fire-Rescue (CFR) units	2
CFR 6	
SCBA units 44	
SCBA air tanks	130
105-foot tower ladder with pump - 1,500 gallons per minute	1
Personnel with 120 hours Emergency Medical Technician training	90
Personnel with Advanced Life Support training	14
Water tankers	5
T-1 = 1,500 gallons	
T-3 = 2,500 gallons	
T-4 = 3,000 gallons	
T-5 = 2,500 gallons	
T-50 = 1,500 gallons	

TABLE 3

Emergency Equipment

**Supplementary emergency equipment and personnel available from
Johnson Controls World Services Inc.:**

	<u>Number</u>
<u>TRANSPORTATION:</u>	
Pickups, 1/2 through 3/4 ton	183
Trucks, 1 through 3 ton	25
Buses (11-passenger)	2
Vans, panels, and carryalls	24
<u>SPECIAL EQUIPMENT:</u>	
Road grader, Cat, self-propelled blade, with radio	1
Grader, John Deere, self-propelled, with radio	2
Loaders, bucket, Melroe, Bobcat, 1/3 cubic yards	3
Loader, bucket, Cat, 2-3/4 cubic yards, with radio	1
Loader, Fiat-Allis, 3 cubic yards	1
Loader, bucket, Cat, 2-1/2 cubic yards	1
Loader, bucket, Cat, 3-1/4 cubic yards	1
Loader, bucket, Yale, 3 cubic yards, with radio	1
Loader, bucket, backhoe, Case, 1-1/2 cubic yards	1
Loaders, bucket, backhoe, Case, 7/8 cubic yards	2
Loader, backhoe, Ford, 1 cubic yard	1
Snowplows, Bombardier, with blade	2
Bulldozer, D-8, Crawler	1
Bulldozers, TD-25, International	2
Scraper, Terex, self-propelled	1
Scraper, Fiat-Allis, self-propelled	1
Bulldozer, 280, rubber-tired, with radio	1
Semitrailers	7
Chain saws	(approx) 6
Flusher, street, 3,000-gallon truck, tanker, 500-gallon, FMC	1
Mobile transceivers (2-way, KOB-753)	144
Generators	6
Handsets (2-way)	113
Pageboys (1-way)	398
Welders, mounted on trailers and trucks	32

TABLE 3

Emergency Equipment

Supplementary emergency equipment and personnel available from
Johnson Controls World Services Inc., (continued):

	<u>Number</u>
<u>PERSONNEL:</u>	
Heavy equipment operators	14
Clerks	10
Dispatchers	1
Mechanics	17
Power saw operators	8
Radio and telephone operators	1
Truck drivers	13

TABLE 3

Emergency Equipment

Emergency equipment and personnel at the Central Medical Facility and Satellite First-Aid Stations, ESH-2:

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

<u>PERSONNEL:</u>	<u>Number</u>
Physicians (2 casual)	7
Physician's Assistants (2 casual)	4
Nurses (3 casual and 1 at 75%)	10
X-ray Technicians	1
Clinical Laboratory Technicians (4 part-time)	5
 <u>SPECIAL EQUIPMENT-PORTABLE:</u>	
Multichannel emergency receiver	1
Two-way radios on the State Med Net, the LANL Emergency Management channel, and the LANL Health-Safety Net	5
Cardiac monitors and defibrillators (1 backup)	2
Crash cart emergency equipment with E-tank oxygen (O ₂)	1
Portable physicians' bag with medications	1
Portable suction unit	1
Portable stretchers, 1 ambulance, 2 gurney, 1 folding	4
Wheelchairs	3
O ₂ tanks	3
Manual resuscitators	2
Intravenous (IV) stands	2
IV solutions	q.s.*
Otoscope/ophthalmoscopes	4
Portable sphygmomanometers	6
Stethoscopes	20
Anticontamination apparel	q.s.
Eye irritation solution	q.s.
Full set air splints	1
Industrial first-aid kits	3
Extrication and cervical collars, crutches, canes	q.s.
Suture sets	4
Protective apparel	4

*q.s. - inventory varies as needed.

TABLE 3

Emergency Equipment

Emergency equipment and personnel at the Central Medical Facility and Satellite First-Aid Stations, ESH-2 (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:

Completely equipped emergency room with ambulance entrance
Emergency lighting system
Complete X-ray suite
Protective clothing, and wound counters
12-lead electrocardiograph (2)
Fully equipped crash cart with Life Pak, intubation equipment, emergency medications, etc.
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 and all satellite clinics.
1983 Dodge Van

COMMUNICATION:

Base station on State Medical Net

At TA-53 Satellite First-Aid Station:

PERSONNEL:

Physician's Assistant (part-time)	1
Nurse (half-time)	10

*q.s. - inventory varies as needed.

TABLE 3

Emergency Equipment

Emergency equipment and personnel at the Central Medical Facility and Satellite First-Aid Stations, ESH-2 (continued):

At TA-53 Satellite First-Aid Station (continued):

SPECIAL EQUIPMENT - PORTABLE:

Beeper	1
Stretcher	1
Wheelchair	1
O ₂ tank	1
IV solutions	q.s.
Otoscope/ophthalmoscopes	2
Sphygmomanometer	1
Stethoscope	2
Anticontamination apparel	q.s.
Eye irrigation solution	q.s.
Industrial first-aid kit	1
Extrication and cervical collars	1
Crutches	1
Suture set	1

SUPPLIES:

Ample first aid supplies

At TA-16 (S-Site) Satellite First-Aid Station:

PERSONNEL:

Nurse (half-time)

*q.s. - inventory varies as needed.

TABLE 3

Emergency Equipment

Emergency equipment and personnel at the Central Medical Facility and Satellite First-Aid Stations, ESH-2 (continued):

At TA-16 (S-Site) Satellite First-Aid Station (continued):

SPECIAL EQUIPMENT - PORTABLE:

Ambu bag	1
Stretcher	1
Wheelchair	1
O ₂ Tank	1
IV solutions	q.s.
Otoscope/ophthalmoscopes	1
Sphygmomanometer	2
Industrial first-aid kit	1
Crutches	1
Cane	1
Disposable suture set	1
Full face shields, vinyl apron	1
Endotracheal tube laryngoscope	1
Digital thermometer	1

SUPPLIES:

Ample first aid supplies

At TA-55 Satellite First-Aid Station:

PERSONNEL:

Nurse (half-time)	1
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*q.s. - inventory varies as needed.

TABLE 3

Emergency Equipment

Emergency equipment and personnel at the Central Medical Facility and Satellite First-Aid Stations, ESH-2 (continued):

At TA-55 Satellite First-Aid Station (continued):

SPECIAL EQUIPMENT - PORTABLE:

Beeper	1
Stretcher	1
Wheelchair	1
O ₂ tank	1
Otoscope/ophthalmoscopes	1
Sphygmomanometer	1
Stethoscope	1
Contamination apparel	q.s.
Eye irrigation system	1
Inflatable limb traction splints (set)	1
Industrial first-aid kit	1
Cervical collar	1
Crutches (pair)	1
Ambu bag	2

SUPPLIES:

Ample first aid supplies

*q.s. - inventory varies as needed.

Table 4
Waste Analysis Parameters and Test Methods^a

Parameter	Test Method	Reference ^b
Ignitability	Pensky-Martens closed-cup method	(L) SW1010 (L) ASTM D93-80
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) SW9040
Toxicity characteristic:	Toxicity characteristic leaching procedure (TCLP) extraction and graphite furnace atomic absorption (AA) spectroscopy, gaseous hydride AA, or direct aspiration AA	(L,S) Method SW1311
Arsenic		(L) SW7060, SW7061A
Barium		(L) SW7081, SW7080
Cadmium		(L) SW7131, SW7130
Chromium		(L) SW7191, SW7190
Lead		(L) SW7421, SW7420
Selenium		(L) SW7740, SW7741
Silver		(L) SW7761, SW7760A
Mercury	TCLP extraction or dissolution steps and manual cold-vapor technique	(L) SW7470, (S) SW7471
Volatile organics	TCLP extraction and gas chromatography/mass spectrometry (GC/MS) GC/MS capillary column technique	(L) SW8240A (L) SW8260
Semivolatile organics	TCLP and GC/MS packed column technique GC/MS capillary column technique	(L) SW8250 (L) SW8270A

Refer to footnotes at end of table.

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

Parameter	Test Method	Reference ^b
Organochlorine pesticides	TCLP extraction and GC	(L) SW8080
Chlorinated herbicides		(L) SW8150A
Chemical composition	95% organic composition by GC/flame ionization detector (FID)	(L) SW8100
Trace organic analysis	Any of the following: Volatile organic compounds-GC/MS - Capillary column technique Semivolatile organic compounds-GC/MS - Packed column technique - Capillary column technique	(L) SW8240A (L) SW8260 (L) SW8250 (L) SW8270A
Heat value	Bomb calorimeter	(L) A006, ASTM D240
Organic chloride	Halide titration of combustion residue	(L,S) A004, ASTM D2361
Ash content	Residue after combustion in muffle furnace	(L) A001, ASTM D482 (S) A001, ASTM D3174
Cyanide, free and total	Distillation and colorimetric ultraviolet	(L) SW9010A, SW9012
Total chromium	Colorimetric method for hexavalent chromium	(L) SW7196A
Sulfide	Colorimetric titration	(L) SW9030A

Refer to footnotes at end of table.

Table 4 (Continued)

Waste Analysis Parameters and Test Methods^a

Parameter	Test Method	Reference ^b
Total metals ^c	Acid digestion Inductively coupled plasma emission spectroscopy	(L,S) SW3010A, SW3050A (L) SW6010A
Arsenic		(L) SW6010A
Barium		(L) SW6010A
Beryllium		(L) SW6010A
Cadmium		(L) SW6010A
Chromium		(L) SW6010A
Lead		(L) SW6010A
Nickel		(L) SW6010A
Selenium		(L) SW6010A
Silver		(L) SW6010A
Thallium		(L) SW6010A
Zinc		(L) SW6010A
Mercury	Manual cold-vapor technique	(S) SW7471 (L) SW7470
Free liquids	Paint Filter Liquids Test	(S) SW9095

^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 "Sampling and Analysis Methods for Hazardous Waste Combustion", EPA-600/8-84-002 (EPA, 1984b).

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

"SW" refers to U.S. Environmental Protection Agency, 1992, "Test Methods for Evaluating Solid Waste", SW-846, Physical/Chemical Methods.

(L) refers to liquid waste.

(S) refers to solid waste.

See 55 FR 11863.

^c See also Atomic Absorption Methods listed under TCLP.

Table 5

Evacuation Determination and Reentry Conditions

Reason for Evacuation	Evacuation Determination Made by	Reentry Conditions ^a
Fire	Fire or evacuation alarm, Group Leader or alternate, Lead Engineer, Senior Staff Member present, Senior Technician, or Emergency Manager	Following survey by the Chief Fire Officer, ESH-1 ^b , ESH-5 ^c , and/or ESH-10 ^d , and R&D ^e supervision
Explosion	Same as above	Same as above
Loss of ventilation	Group Leader or alternate, Senior Staff Member, Lead Engineer, or Senior Technician	Following survey by ESH-1 and/or ESH-5, and R&D supervision
Loss of electric power	Same as above	Same as above
Extensive contamination	Same as above or ESH-1 Representative	Same as above or ESH-10
Airborne contamination	Same as above or Radiation Monitor	Same as above or ESH-10
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 plus ESH-5 or ESH-10
Bomb or bomb threat	EM&R ^f or PTLA ^g representative, R&D Section Leader or alternate, Senior Staff Member, or Lead Engineer	Following determination by the Emergency Manager or HDT ^h Leader

^a All reentries are authorized by the Incident Commander.

^b "ESH-1" refers to the Health Physics Operations Group.

^c "ESH-5" refers to the Industrial Hygiene and Safety Group.

^d "ESH-10" refers to the Hazardous Materials Response Group.

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

^f "EM&R" refers to the Emergency Management and Response Office.

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

^h "HDT" refers to the Hazardous Devices Team.

FIGURE 3

LOCATION MAP

FIGURE 3

Location Map

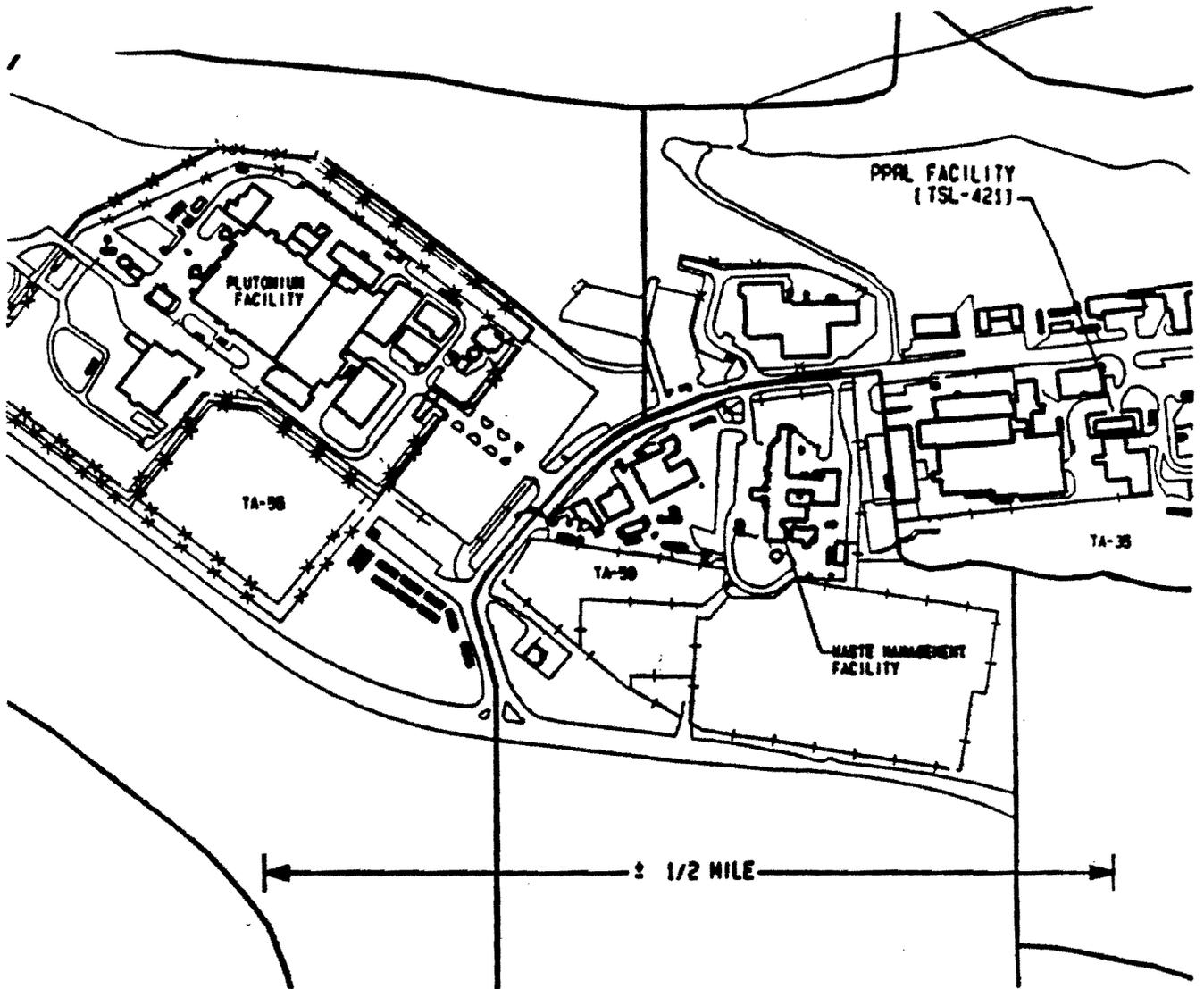
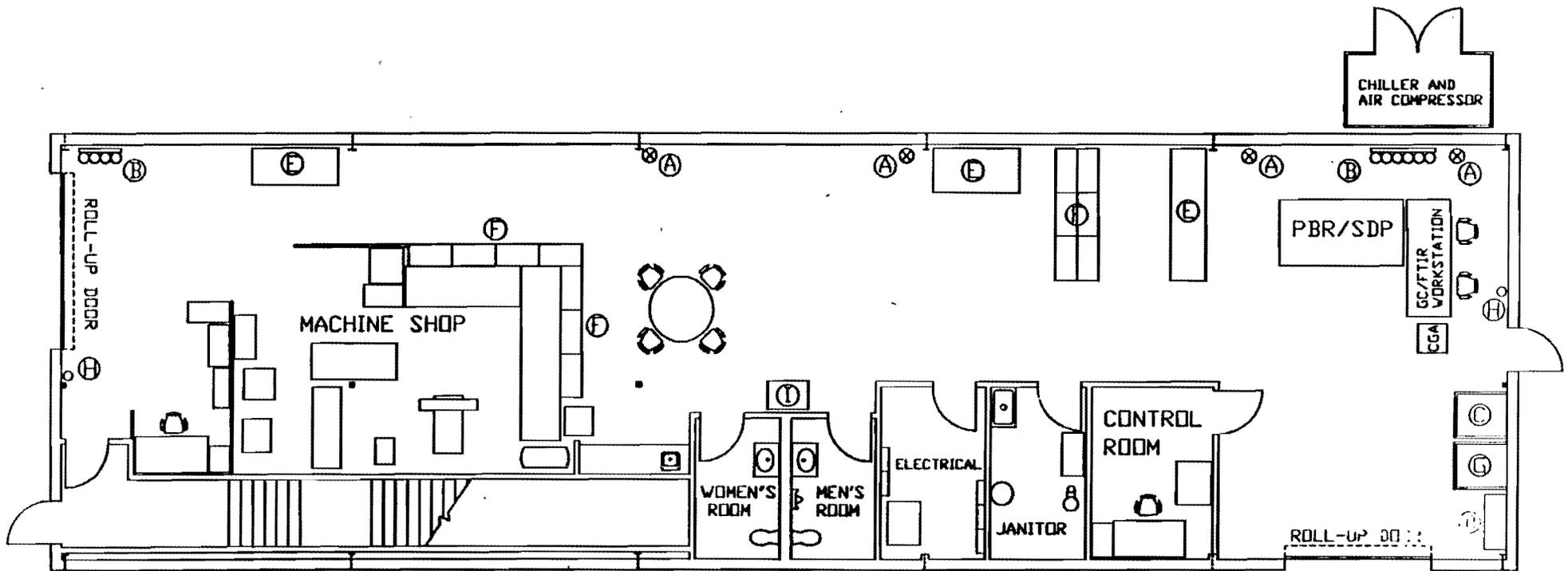


FIGURE 4

LAYOUT OF

BUILDING 421

FIGURE 4
LAYOUT OF BUILDING 421



○ KEYED NOTES

- A. PORT FOR VENT STACK
- B. GAS BOTTLE RACK
- C. SATELLITE WASTE STORAGE / SPILL KIT
- D. CHEMICAL STORAGE CABINET
- E. WORKBENCH
- F. STORAGE CABINET
- G. RD&D WASTE STORAGE AREA
- H. FIRE EXTINGUISHER
- I. EYEWASH



Graphic Scale

0' 4' 8' 16' 24'