End Station B Area
FACILITY EMERGENCY PLAN

End Station B (B062)
B-Target Room, B-Line (B062A)
NLCTA Control Room and Annex (B128, B129)
Building 225 (B225)
Storage Trailers (B483, B484, B485, B486, B4105, B4106)

1. Building Contacts

	Name:	Office Telephone:
Safety Officer	Keith Jobe	2084
Facility Manager	Carsten Hast	8556

A more complete call-in list for emergency situations is available from security (x2551). Ask for the NLCTA information from the Emergency Management Database.

A directory of all operators and other emergency contacts is posted on the wall of the NLCTA Control Room (Building 128) behind the copy machine.

2. Industrial Hazards

End Station B (Building 062)

- End Station B contains power supplies, modulators, high-voltage power supplies, and lasers.
- Several electrical power distribution systems and powered equipment devices may present arc flash hazards while operating. The PPE requirements are posted on the devices.
- A laser room contains Class IV Lasers. Emergency entrance of the room will automatically disable the lasers.
- High power electrical equipment (power supplies, modulators), RF sources, and waveguides are located throughout the facility.

B-Target Room and B-line (Building 062A)

The "B-Target Room" and the "B-line" extend from the west wall of ESB into and under the BSY berm – ending in a concrete wall at the west end. Before being decommissioned, an electron beam was transported through the B-line and stopped on the target (dump) that was once located inside the target room. Most of the beamline, the target, and the shielding wall immediately downstream of the target have been removed. The building area and many of the components within this area remain radioactive. Any modifications or removal of legacy components must be done with the corporation of the Field Operations Group (OHP).

NLCTA Accelerator Enclosure

NLCTA Accelerator Enclosure (inside ESB) contains an electron-beam source and accelerator (a prompt radiation hazard), electromagnets, laser light, and high-voltage ion (vacuum) pumps.

Emergency entrance of the room will automatically disable the electrical hazards, radiation hazards, and lasers.

All of these electrical, laser, and radiation hazards are disabled by the electrical substation shutoff buttons identified in Section 2.3.

Experimental Enclosure

The Experimental Enclosure (inside ESB) contains electromagnets, lasers, and high-voltage ion (vacuum) pumps.

Emergency entrance of the enclosure will automatically disable the high-power electrical hazards, radiation hazards, and lasers.

All of these electrical and radiation hazards are disabled by the electrical substation shutoff buttons identified in Section 2.3.

Buildings 128 & 129 (NLCTA Control)

Contain no special hazards (other than 110 VAC).

Building 225

Is a light industrial shop area.

Building 485

Is a light industrial shop area with powered metalworking equipment.

Storage Containers 483, 484, 486, 4104, 4105

These are storage containers. No chemicals or powered equipment in these buildings.

3. Hazardous Materials

End Station B (Building 062)

The klystrons and klystron modulators are oil-filled equipment. The oil is white mineral oil (similar to the makeup remover available at the local drug store) which must not be allowed to spill into the storm drain systems.

- Each of the NLCTA modulators on the south side of the building is filled with 612 gallons of oil. The modulators are double-walled devices with integrated secondary containment. Each modulator is water cooled with an oil-water heat exchanger internal to the modulator. The oil tanks are made of unpainted aluminum and are located just south of the NLCTA accelerator housing.
- The injector klystron is filled with 65 gallons of oil. It is a single-walled device which has a secondary containment bucket below the klystron. The injector klystron is located on the south side of the accelerator housing and east of the big concrete door.

- The injector power supply is located just east of the klystron. It is an aluminum box. The power supply has a circulating oil system with approximately 27 gallons of oil. The modulator is water cooled with an oil-water heat exchanger internal to the modulator.
- The 8-pack modulator is filled with 1643 gallons of oil. It is a single-walled device, and is surrounded by a low berm that serves as secondary containment. The modulator is water cooled with an oil-water heat exchanger mounted on the south side of the modulator. The oil tank of the 8-pack is located within and below the raised floor on the north side of the end station.
- The SNS Modulator is filled with 1123 gallons of oil. It is a single-walled device closely surrounded with a low berm that is shared with the "8-pack modulator". The SNS oil tank is a blue steel tank located near the middle of the end station and north of the NLCTA accelerator housing.
- The Marx-modulator klystron is filled with 413 gallons of oil. It is a double-walled stainless-steel tank with a space below the oil tank allowing full secondary containment. The Marx modulator is located on the far-west wall of ESB – nearly in the B-Target room.

Note: If water enters the modulator enclosures, the water can displace the oil which will be first captured into the secondary containment and then (once the containment is full) onto the floor.

Building 225

Contains small quantities of solvents, cleaning materials and lead-based solders.

Buildings 128 & 129 (NLCTA Control)

Contains small quantities of solvents and lead-based solders.

Building 485

Contains small quantities of solvents and lead-based solders, paints, cutting oils and adhesives.

4. Gas Hazards

End Station B (Building 062)

Contains cylinders of compressed, non-flammable gas.

Nitrogen gas is supplied throughout the End Station, accelerator enclosure, experimental hall and the tall soft-sided cleanroom from a large nitrogen dewar in the research yard. Oxygen deficiency hazards for the accelerator enclosure and experimental hall are addressed with an oxygen concentration monitor that shuts off all nitrogen service for the building if an ODH hazard is detected. The tall soft-sided cleanroom monitors the performance of an HEPA air filteration module and shuts of nitrogen supplied to the cleanroom whenever the HEPA filter is shut off. The ESB is large enough with sufficient natural ventilation to preclude the possibility of any ODH hazard in the larger building areas.

Building 485

Contains oxygen and acetylene, propane canisters.

5. Emergency Response Kit

The oil spill prevention kit is located in the south entrance of End Station B. The kit consists of:

- Oil absorbent materials. The spill kit is in a grey roll around bin

Additional spill response equipment is located in ESB

- Two 55-gallon barrel wet-dry vacuum cleaners for oil and water
- Two barrels (30 gallon and 55 gallon) with flip-top lids for oily waste
- One funnel-top barrel located in a roll-around plastic yellow containment barrel for liquid oil waste.

In the event of a significant release that poses a threat to employees and/or the environment, immediately evacuate the area and notify the emergency operator (x911). The Palo Alto Fire Department will respond. Then call Incident Notification (x5555) and notify your supervisor.

6. Assembly Point

The Assembly Point for this Facility is the parking lot south of End Station B (bldg. 062).

7. Utility and Building Alarms System Shutoffs

There are two types of alarms in this Facility: emergency alarms (for fire), and equipment status alarms (all other alarms).

3.1 Fire Alarms

There are fire detectors and annunciators in the NLCTA Control Room (bldg. 128) and the End Station B (ESB, bldg. 062). All personnel, excepting to those directly responding to the alarm, are required to evacuate the building.

The modulators in the south section of the building are equipped with an automatic carbon-dioxide fire suppression system.

In the event of a false alarm (such as from soldering near a sensor point), call x911 immediately and inform them followed by a call to x5555. Following your call, the level of the alarm will be lowered and the responders will understand that their response time is no longer critical.

3.2 Status Alarms

An equipment alarm system is installed in Rack B062-40 level 17. All alarms are annunciated in this panel. The alarm location is shown on Map 3. Additionally, the alarm system is relayed into the NLCTA Control Room and triggers an alarm at the Sector 30 guard shack.

The inputs for the alarm chassis are:

- NLCTA Modulator Station 0 Oil Level Alarm
- NLCTA Modulator Station 1 Oil Level Alarm
- NLCTA Modulator Station 2 Oil Level Alarm
- 8-Pack Oil Level Alarm (located under 8-Pack floor)

8. Shutdown/Shutoff

forthcoming

9. Background

This document is owned and authorized by the PPA/ARD/Test Facilities Department.

Document source is located at:

V:\NLCTA\Controlled Operations Documents\02-05 Emergency\02-05-01-010 ESB Area Facility Emergency Plan.doc

Document has been reviewed and approved by:

Name	***Signature***	***Date***	***Review Type***
_____ PPA/ARD/TF Department Head	_____	_____	☐ Administrative ☐ Technical
_____ NLCTA Operations Manager	_____	_____	☐ Administrative ☐ Technical
_____ PPA/ARD Safety Officer	_____	_____	☐ Administrative ☐ Technical

FIRE

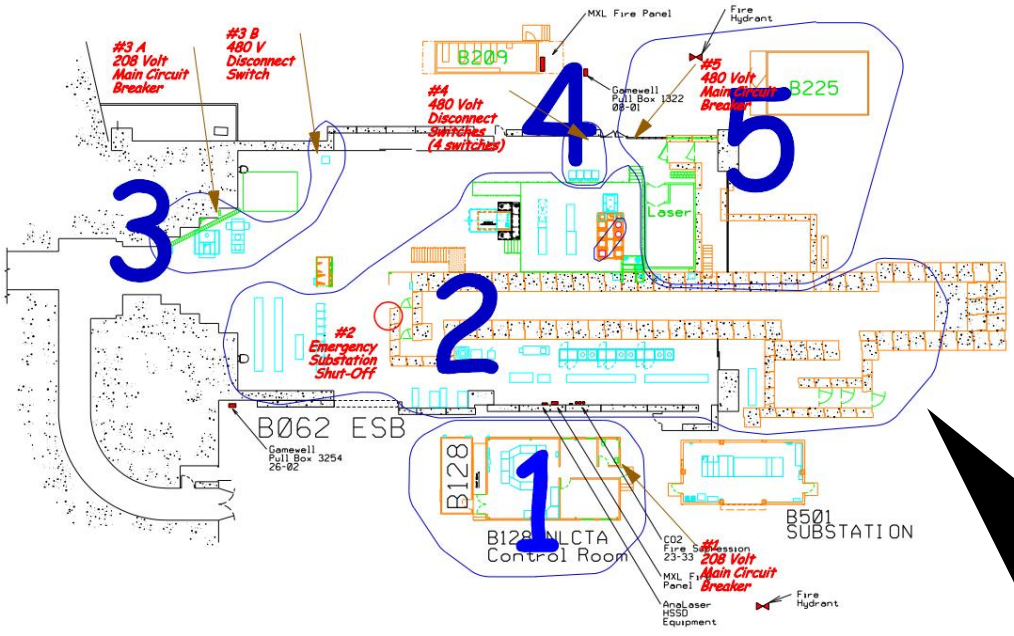
9 Roof Fans

- Press BLACK BUTTONS to start
- Open doors for best air intake
- 2 minutes per air exchange with all fans on (25,000 CFM per fan)

FIRE

Power Shut Off

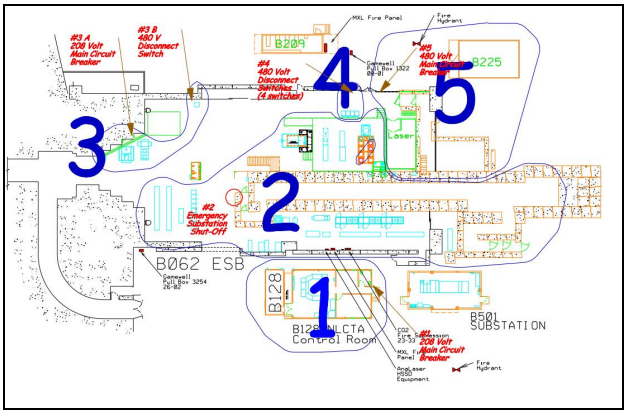
Powers off all racks, power supplies and fluorescent lights in Zone 2



FIRE

LASER Room

- Clean Extinguishing Agents ONLY (CO_2, Halon)
- Break glass – door key in keybox



- Lasers shut off when inner door is opened
- Power shutoff for Area 5 (including lasers and lights) – Main Fire Pull Box at nearest exit doors

FIRE

Power Shut Off

This Fire Pull Box – Powers off all lasers, racks, power supplies and lights in Zone 5.