Hazardous Equipment

Lab and field work often utilizes equipment and custom-built systems that are hazardous, but are not automatically identified by formal work authorization or procurement policies. Hazardous equipment has specific requirements, including safety features, construction codes, operator training and maintenance records.

Finding out that your equipment requires safety features after you have purchased it can be expensive and time-consuming. For field work, you must ensure that hazardous equipment is used only by trained operators. Advance planning and hazard analysis will help you save money and time.

Some criteria to identify Hazardous Equipment & examples

- ✓ Equipment that develops significant pressure (liquid pressure > 1500 psi; gas pressure > 150 psi) and/or heat (e.g., compressed gas tanks, autoclaves, high pressure pumps, some water purification systems –some specific guidelines are noted on the back of this page!)
- ✓ Equipment that runs at high speeds (e.g. centrifuges)
- ✓ High voltage/power equipment (pulse generators, high hp motors)
- ✓ High-value equipment where improper use or lack of regular maintenance would result in costly damage to equipment or surroundings
- ✓ Specialized vehicles, cranes, winches, generators, etc.

Pub 3000, the Lab's health and safety manual, <u>http://www.lbl.gov/ehs/pub3000/pub3000c.html</u>, covers most of the criteria for identifying hazardous equipment/systems, and safety requirements. However, it can be difficult to interpret, so do not hesitate to contact Jil and EH&S Subject Matter Experts <u>http://www.lbl.gov/ehs/html/subject_matter.shtml</u> to identify the safety requirements for your equipment and systems.

All labs and field operations should keep records of their hazardous equipment or systems in their lab safety primers, including authorized operators, training documentation and maintenance records. The following tags are available from Jil to identify these items.

CAUTION			Record of Maintenanc		
Only Authorized ESD Personnel May Operate		ersonnel	Date	Service Provider	Description
AUTHORIZED PERSONNEL			11		
Name	and the second second second second	Extension	11		
Name	Email	Extension	11	<u></u>	
			- <u></u>		
Principal Investigator			-11		
			11		
Location of Operation / Maintenance Manual			. Y 7		
			211	<u></u>	
			11		
INCIDEN	T / USE RE	PORT	11		
(indicate any known problems)			99		
Date User		and the second se	27		
7.7			27.2		
1.1			27.9		
901			27		
			111111		

A FEW PRESSURE SAFETY NOTES

Pressure relief valves (PRV) must have their relief pressures set by the factory (stamped on the PRV) or set by LBNL'S Regulator Shop (contact Jimmy Abenojar x7669, bldg 76, room 202). Do not set them yourself.

Hydraulic pressure systems that use water (as opposed to oil): use degassed water to reduce potential for stored energy release, and improve system response. Systems with pressures > 1500 psi require that the appropriate pressure rating of all components be documented, either via an "Activity Hazard Document" (AHD), an Engineering Note, or manufacturer's certification (stamp). If you have plumbed a system into a pressure-certified vessel, you need to document that the plumbing components have the required pressure rating via an AHD.

Hydraulic pressure systems that use oil have less potential than water for stored energy release so the pressure limit for documentation of pressure rating is 5000 psi.