CALIFORNIA STATE UNIVERSITY,

LOS ANGELES

WELDING, CUTTING, AND HOT WORK OPERATIONS

October 2007

PROGRAM APPROVAL AND AUTHORIZATION

_____ _____

James M. Rosser, President **Date**

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1.0. PURPOSE

Welding and hot work presents a significant opportunity for fire and injury. University employees or contractors must apply all precautions of this program prior to commencing any welding or hot work.

2.0. ORGANIZATIONS AFFECTED

The following areas are affected by these procedures:

Facilities Services
Facilities Planning and Construction
Outside Contractors
College of Natural and Social Sciences
College of Engineering, Computer Science and Technology
College of Arts and Letters

3.0. REFERENCES

California Code of Regulation, Title 8, Sub Chapter 7, Sections 4794 through 4848, and Sections 4850 through 4853.

California Code of Regulation, Title 19, Section 1.09 (b), Standard Provision Practices.

4.0. POLICY

It shall be the policy of California State University, Los Angeles to operate in a safe and healthful manner adhering to the safety standards established by Cal/OSHA and the University's internal hot work procedures. All employee(s) or contractors engaged in work defined under this program shall adhere to all provisions as established by the Risk Management and Environmental, Health & Safety (RM/EHS) Office.

5.0. DEFINITIONS

Hot work: Work that may generate heat, flames, or sparks. This may include, but is not limited to, welding, torch cutting, brazing, soldering, grinding, and the use of flares or other incendiary devices.

6.0. RESPONSIBILITIES

6.1. The RM/EHS Office:

6.1.1. Periodically reviews these procedures for consistency with regulatory changes and recommends appropriate procedure amendments.

6.2. Facilities Services:

6.2.1. Insures that all staff comply with the provisions of the program.

6.2.2. Insures that annual training is conducted for all staff responsible for hot work procedures.

6.3. Facilities Planning and Construction:

6.3.1. Insures that independent contractors are instructed to follow the provisions of this program during the performance of hot work procedures.

7.0. PROCEDURES

7.1. Welding, Cutting or Hot Work Permit:

7.1.1. A written permit (see Appendix 8.1.) must be obtained from one of the following individuals prior to initiating any welding, cutting or hot work operation.

(a) RM/EHS staff member.
(b) Facilities Services Director
(c) Facilities Services Manager.
(d) Facilities Services Shop Supervisor.

7.1.2. Exceptions to written permit requirement. The following activities do not require a written permit.

7.1.2.1. Welding, cutting, and hot work operations carried out in pre-established maintenance shop areas or academic department shop areas.

7.1.2.2. Soldering operations carried out by employees performing plumbing maintenance activities outside of buildings.

7.1.3. The individual issuing the permit must personally examine the location where the work is to be done and insure that all safety precautions have been met. Specific fire requirements are outlined on the Hot Work Permit. The permit will be issued to one person responsible for the work to be accomplished. The Hot Work Permit must be displayed at the job site, preferably attached to or near the welding or cutting equipment.

7.1.3.1. Contractor permits may be issued for the duration of the contract or specific job. Periodic inspections may be made. This requirement applies to all contract work, no matter what department the work is being performed in.

7.1.4. After completion of the job, a copy of the Hot Work Permit must be sent to the campus RM/EHS Office for retention.

7.2. General Safety Rules for Welding, Cutting and Hot Work

7.2.1. No device or attachment facilitating or permitting mixture of air or oxygen with combustible gases prior to consumption, except at the burner or in a standard torch or blowpipe, shall be allowed unless approved for that purpose.

7.2.2. The user shall not transfer gases from one cylinder to another in order to mix gases in a cylinder.

7.2.3. Oxygen shall never be used from cylinders through torches or other devices equipped with shutoff valves, without reducing the pressure through a suitable regulator attached to the cylinder valve or manifold.

7.2.4. Acetylene gas shall not be brought into contact with unalloyed copper except in blowpipe or torch.

7.2.5. Fuel gas shall never be used from cylinders through torches or other devices equipped with shutoff valves, without reducing the pressure through a suitable regulator attached to the cylinder valve or manifold. Exception: low pressure containers of propane or MAPP gas.

7.2.6. Cylinders, valve regulators, hose and other apparatus and fittings containing or using oxygen shall be kept free from oil and grease. Oxygen cylinders and apparatus and fittings shall not be handled with oily hands, gloves or greasy materials.

7.2.7. When moving compressed gas cylinders by crane or hoist, suitable cradles shall be used in order to reduce the possibility of dropping. Ordinary rope slings or electro-magnets shall not be used.

7.2.8. Oxygen and fuel gas cylinders shall be placed far enough away from the welding position so they will not be unduly heated by radiant heated materials, by sparks or slag, or by misdirection of the torch flame.

7.2.9. No gas welding or cutting shall be done in or near rooms or locations where flammable liquids/vapors, lint, dust or loose combustible stock are so located or arranged that sparks or hot metal from the welding or cutting operations may cause ignition or explosion of such materials.

7.2.10. When such welding or cutting must be done above or within ten feet of combustible construction or material, or above a place where workers are employed, or where persons are likely to pass, noncombustible shields shall be interposed to protect such materials and persons from sparks and hot metal or oxide.

7.2.11. One or more portable fire extinguishers of a suitable type shall be staged near/at the location where welding or cutting is being done.

7.2.12. When welding or cutting is done above or within ten feet of combustible construction or material, a fire watch shall be prepared to use fire-extinguishing equipment, if needed.

7.2.13. A fire watch shall be maintained for at least one half hour (30 minutes) after completion of cutting or welding operations to detect and extinguish possible smoldering fires. This time may be increased in extremely flammable areas or wood frame buildings.

8.0. APPENDIX

8.1. Hot Work Permit

CALIFORNIA STATE UNIVERSITY, LOS ANGELES
Welding, Cutting, or Hot Work Permit

BEFORE STARTING HOT WORK, REVIEW AND COMPLETE ALL CHECKLIST ITEMS.
(Revision 9/07)

THIS PERMIT IS REQUIRED FOR TEMPORARY OPERATIONS INVOLVING OPEN FLAME OR PRODUCING HEAT AND/OR SPARKS: WELDING, CUTTING, BRAZING, GRINDING, SOLDERING, OR USING A TORCH TO THAW PIPING OR TO HEAT MATERAL. THE PERMIT APPLIES ONLY TO THIS JOB, IN THE AREA SPECIFIED, DURING THE TIME AND DATE NOTED.

INSTRUCTIONS

SUPERVISOR SHALL:

1. Complete PRECAUTION & SAFEGUARD →
2. Complete this permit form and issue to person performing hot work procedure
3. Verify FIRE WATCH

HOT WORK PERFORMED BY:

☐ University Employee

☐ Contractor: _____

WORK ORDER NO.:

LOCATION/BLDG./ROOM/FLOOR:

WORK TO BE PERFORMED:

_____

_____

PERSON PERFORMING WORK/DEPT:

_____

SUPERVISOR SIGNATURE: (obtain prior to job)

_____

I have verified that the above location has been inspected and the required PRECAUTIONS & SAFEGUARDS have been taken. Authorization only for work described ABOVE.

PERMIT EXPIRES	DATE:	TIME:
WORK COMPLETE	DATE:	TIME:

EMPLOYEE SIGNATURE:

PRECAUTION & SAFEGUARD CHECKLIST

☐ Fire extinguisher available.

☐ Hot work equipment in good repair.

☐ Hazardous energy locked out**.**

REQUIREMENTS WITHIN 35 FT. OF WORK

☐ Flammable liquids and combustible material removed from area.

☐ Floor swept and overhead structure cleaned of dust, lint and debris.

☐ Fire-resistive covers and metal shields provided as needed.

☐ All floor and wall openings covered and or protected.

☐ WALLS/CEILINGS: remove combustibles away from opposite side/adjacent structure.

WORKS ON ENCLOSED EQUIPMENT

☐ Adequate ventilation is provided.

☐ Atmosphere checked with gas detector.

☐ Purge any flammable vapors.

☐ Confined Space Permit obtained, if required.

FIRE WATCH

☐ Trained and equipped Fire Watch provided during operations and at least 30 minutes after.

SPECIAL INSTRUCTIONS: _____

_____

FINAL CHECK	DATE:	TIME:

SUPERVISOR SIGNATURE: