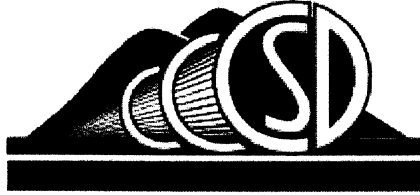



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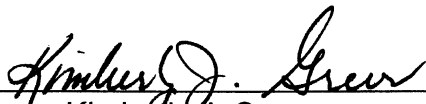
LOCKOUT / TAGOUT CONTROL OF HAZARDOUS ENERGY SOURCES



CENTRAL CONTRA COSTA SANITARY DISTRICT

**LOCKOUT / TAGOUT
CONTROL OF HAZARDOUS ENERGY SOURCES**

SUBMITTED: 
Chairperson,
District Safety Committee

RECOMMENDED: 
Kimberly J. Greer
Safety & Risk Management Administrator

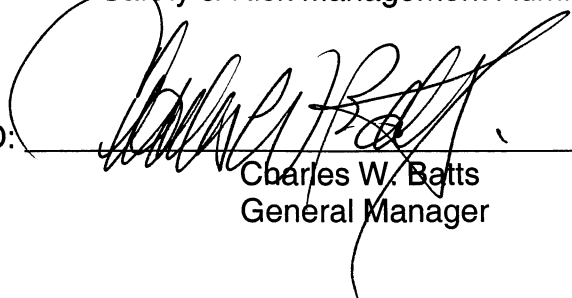
APPROVED: 
Charles W. Batts
General Manager

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Effective Date: July 2, 2005

CENTRAL CONTRA COSTA SANITARY DISTRICT
SAFETY DIRECTIVE 2.0
LOCKOUT / TAGOUT
(CONTROL OF HAZARDOUS ENERGY SOURCES)

2.1 PURPOSE

The purpose of this directive is to establish the policy, procedures, and responsibilities for implementation of Lockout/Tagout when the activity involves control of hazardous energy sources. The intent of this safety directive is to provide a safe work environment and to comply with applicable federal and state regulations.

Failure to lock out and block out machinery before working on it is a major cause of serious injury and death in California. Workers are electrocuted—or lose fingers, hands, and arms—or suffer severe crushing injuries—because machinery is inadvertently turned on while it is being maintained, repaired or adjusted. Establishing and using an effective lockout program can prevent these injuries.

2.2 AUTHORITY

California Code of Regulations, Title 8, Chapter 4, Subchapter 7, General Industry Safety Orders, Group 2, Article 7, Section 3314: *The Control of Hazardous Energy for the Cleaning, Repairing, Servicing, Setting-Up, and Adjusting Operations of Prime Movers, Machinery and Equipment, Including Lockout/Tagout.*

2.3 SCOPE

This Directive applies to all District employees and contractors that engage in the installation, inspection, cleaning, repairing, servicing, setting-up, overhauling, and/or adjusting of equipment, machinery, and prime movers, where there is a potential to release any form of energy which may endanger personnel, process, equipment or materials. Equipment that is capable of movement must be stopped, de-energized, or disengaged to prevent inadvertent movement or the release of stored energy

This Directive applies when:

- An employee or contractor is required to remove or bypass a guard or other safety device; or
- An employee or contractor is required to place any part of his or her body into an area on a machine or piece of equipment where work is actually performed upon the material

being processed (point of operation) or where an associated danger zone exists during a machine operating cycle.

2.6 DEFINITIONS

Accident Prevention Sign or Tag – A warning device placed on the controls of equipment or machinery to warn that the equipment should not be operated due to work involving cleaning or setting up of the equipment. Such devices are not a replacement for a lockout and should never be used when the work involves an employee being exposed to moving parts.

Affected Person/Employee - A person whose job requires them to operate or use a machine or equipment on which cleaning, repairing, servicing, setting-up or adjusting operations are being performed under lockout or tagout, or whose job requires the person to work in an area in which such activities are being performed under lockout or tagout.

Area Operator - The employee immediately responsible for the equipment and processes within the affected area (e.g. Plant Shift Supervisor, Pump Station Operator, Solids Conditioning Building Operator, Crew Leader).

Authorized Person/Employee - A qualified person who locks out or tags out specific machines or equipment in order to perform cleaning, repairing, servicing, setting-up, and adjusting operations on that machine or equipment. An affected employee becomes an authorized employee when that employee's duties include performing cleaning, repairing, servicing, setting-up and adjusting operations covered under this section.

Blind - The placement of a physical device (e.g. flange, cap, plug) to stop the movement of product (gasses, liquids, sludge, etc.) in a pipeline.

Block - The placement of a physical device to stop the movement of mechanical parts subject to potential energy (e.g. suspended parts, parts subject to gravity, energy stored in springs, or hydraulic and pneumatic systems).

"Capable of being locked out" – An energy isolation device will be considered to be capable of being locked out if:

1. It is designed with a hasp or other attachment or integral part to which, or through which, a lock can be affixed,
2. It has a locking mechanism built into it, or
3. If a lockout can be achieved without the need to dismantle, rebuild, or replace the energy-isolating device or permanently alter its energy control capability.

Energy Isolation Device - A mechanical device that physically prevents the transmission or release of energy, including, but not limited to, the following: a manually operated electrical circuit breaker, a disconnect switch, a manually operated switch, a slide gate, a slip blind, spectacle flange, a line valve, blocks, and similar devices with a visible indication of the position of the device. **(Push buttons, selector switches, and other control-circuit type devices are not energy isolation devices.)**

Hazardous Energy Control Procedure (HECP) – A procedure developed and used by employers to ensure the safety of employees engaged in the cleaning, repairing, servicing, setting-up or adjusting of prime movers, machinery or equipment.

Hazardous Energy Sources - For the purpose of this directive hazardous energy sources may be classified as mechanical (kinetic or potential), electrical, thermal (furnace, steam, etc.), chemical, combustible/flammable gas, pneumatic (compressed air), and hydraulic, or any combination of the above. Common objects for lockout / tagout include electrical systems, piping systems, motors, and machinery.

Hot Tap - A procedure used in a repair or maintenance activity that involves welding on a piece of equipment (pipelines, vessels or tanks) under pressure, in order to install connections or appurtenances. It is commonly used to replace or add sections of pipeline without the interruption of service for air, gas, water and steam distribution systems. Other methods of attachment can also be used.

Key Tag - A primary lockout point that disconnects the main energy source from the prime mover on a piece of equipment (usually the main electrical breaker located at the switchboard or MCC).

Kinetic Energy - Moving energy (e.g. turning shafts, rolling belts, spinning flywheels).

Locks – Operations Master Set – A set of locks used to lockout systems or equipment under the Lockout / Tagout procedure. The keys are under the supervision and control of Operations through a Shift Supervisor.

Locks – Individual Lockout – A set of locks individually assigned to a particular employee used exclusively by that employee whenever he or she is directly involved in work where his or her safety is dependant on the control of hazardous energy. The lock is to be attached to the key tag position(s) as defined by the Hazardous Energy Control Procedure (HECP) for the applicable equipment.

Lockout – The use of devices, positive methods, and procedures that effectively isolate or secure the equipment from mechanical, hydraulic, pneumatic, chemical, electrical, thermal, or any other hazardous energy source.

Lockout Device – A substantial and durable appliance capable of being secured that prevents the operation of an energy controlling mechanism such as a breaker or valve. A chain through one or more valves with one lock will serve as a lockout device if properly applied. When more than one worker is servicing a piece of equipment that must be locked out, a lockout adaptor or hasp can be used which allows all the workers to place their locks on the lockout device.

Lockout/Tagout Procedure - A written, standardized plan of action, clearly and specifically outlining the scope, purpose, authorization, rules, and techniques to be utilized for the control of potentially hazardous energy source(s). It is synonymous with Hazardous Energy Control Procedure (HECP).

Lockout Tag - A durable, distinctive warning tag, which shall be attached to the de-energized energy source. The tag must provide the name and department of the user and the date the tag was initiated written with a permanent marker. Tags anticipated to hang for an extended period should include a brief description of the work being performed (reason for the lockout). Tags shall be capable of enduring at least 50 pounds of pull without tearing and be weather resistant.

Potential Energy - Stored energy (e.g.. gravitational, springs, capacitors) that must be considered during the initiation and in the application of a lockout / tag out procedure.

Prime Mover - An engine or motor whose main function is to drive or operate other mechanical equipment; it is the source of mechanical power for a machine.

2.5 GENERAL REQUIREMENTS (POLICY)

It is the policy of the District to establish and maintain effective plans and procedures designed to protect personnel from injury through the control of hazardous energy sources in compliance with applicable federal and state regulations [California Code of Regulations, Title 8, Chapter 4, Subchapter 7, General Industry Safety Orders, Section 3314].

Whenever work is to be performed on any equipment or system which requires any person to be exposed to potential movement or energy source (including electrical, thermal (furnace, steam, etc.), gas, chemical, hydraulic, mechanical (kinetic or potential), pneumatic (compressed air), all sources of that movement or energy shall be effectively blinded, blocked, locked and tagged.

In the case of required repetitive minor adjustments or certain normal production operations where it is not feasible to de-energize the energy source (main electrical disconnect), maintenance activities will be accomplished under the protection of specially designed control circuits, tools and operational procedures that provide proven protection of personnel. Accident Prevention Sign or tags will be used whenever possible to reduce the risk of inadvertent operation of the machine or equipment. Examples of such operations include machinery mechanical alignment, the rodder rod loading procedure and electrical troubleshooting.

2.6 RESPONSIBILITIES

Success in all safety and health matters depends upon the cooperation among management, supervisors and all employees, and also between each employee and their fellow workers. Every District employee has a duty and an obligation to be watchful and aware of hazardous conditions and to make others aware of any hazardous condition that could effect or compromise the safety and health of any other employee, the public or the environment. A recommendation to stop work in the interest of personnel safety should not be considered lightly but given proper consideration and review before work can proceed. Only through such cooperation can a safety program be established and preserved in the best interest of all.

2.6.1 Managers and Supervisors

It is the responsibility of Managers and Supervisors to:

- A. Ensure that the affected employees (persons) know the appropriate Lockout/Tagout Procedures for the equipment on which work is being performed.
- B. Ensure that the affected employees and authorized persons, including contractor personnel, follow the appropriate Lockout/Tagout Procedure for the equipment on which work is being performed.
- C. Ensure that all appropriate permits are completed and signed before work begins.

- D. Provide all equipment necessary to implement the plans and procedures used to protect their employees from hazardous energy sources.
- E. Ensure that information from equipment manufacturers is obtained to formulate plans/procedures for positive control of hazardous energy sources.
- F. Audit their Section's compliance with the District's Lockout/Tagout Program (if applicable) at least annually. Document the audit using the Lockout / Tag Out Procedure Safety Audit form (L/T Form 5).

2.6.2 Employees

It is the responsibility of employees to:

- A. Know the specific lock and tag procedure for the jobs to which he or she has been assigned, (asking for supervisory assistance when specifics are not known).
- B. Adhere to the Lockout/Tagout Directive.
- C. Complete all required entries, obtain the authorizing signatures and file the Equipment Lockout / Tag out permit (LT Form 1) in the appropriate section of the Lockout binder. Shift Supervisors will review the binder to stay current with lockout status checking for equipment removed from service as well as equipment returned to service.
- D. Report to supervision, any operation with potential for exposure to hazardous energy sources not covered by a Lockout/Tagout procedure. (A Report of Hazardous Condition of or Near-Miss IIPP Form 3 may be used for this purpose).
- E. When assigned, request information from equipment manufacturers to formulate plans/procedures for positive control of hazardous energy sources.

2.6.3 Safety and Risk Management Division

It is the responsibility of the Safety and Risk Management Division to:

- A. Coordinate and conduct initial, general training for all Affected and Authorized Persons.
- B. Assist and provide technical support to supervisors and employees in meeting their responsibilities identified in this Directive.
- C. Audit the effectiveness and compliance of Lockout/Tagout procedures/plans used for the protection of employees from hazardous energy sources. Document the audit using the Lockout / Tag Out Procedure Safety Audit form (LT Form 5). This is in addition to the supervisors' auditing responsibilities.
- D. Maintain records of training provided to employees.
- E. Assign and issue individual lockout locks and keys, and assist in the control of master keys for all lockout locks. Provide guidance in the use of lock boxes and lockout devices.

2.7 TRAINING

All District employees will receive an overview of the District's Lockout/Tagout Safety Directive during their New Employee Safety Orientation Training. Prior to initial involvement in Lockout/Tagout procedures, affected employees will be formally trained in Lockout/Tagout procedures. The Safety and Risk Management staff may assist. The employee's immediate supervisor is responsible for ensuring this is accomplished prior to assigning work that might involve lockout/tagout.

Training will also be given whenever there is a change in job assignments, equipment, processes, or energy control procedures that would create a new hazard, or whenever a change occurs in the District's Lockout/Tagout Directive. Supervisors are responsible for ensuring this training is accomplished for all affected employees.

The Safety & Risk Management Division will maintain training sign-up sheets. Names of persons trained will be entered and maintained on the District's Training Database.

2.8 LOCKOUT PROCEDURE

2.8.1 Lockout Preparation

Any piece of equipment may be tagged and locked out to prevent damage to the equipment, prevent personnel injury or to protect the process, the public or the environment. The purpose and intent of this directive is not for the protection of the equipment but specifically to ensure the safety of the employee tasked to perform work on the equipment. A thorough review of the procedural steps to shut down, isolate, blind, block and secure the machine from all possible energy sources shall be performed. The result of that analysis shall be written as a Hazardous Energy Control Procedure (HECP).

- A. A Hazardous Energy Control Procedure (HECP) is required to be developed for all machinery or equipment. The procedure shall clearly and specifically outline the scope, purpose, rules, authorization and techniques to be utilized for the control of hazardous energy. Equipment or machinery items of a comparable type and configuration where the energy control procedure would be similar except for the specific identification of the lockout points, may reference the same Hazardous Energy Control Procedure. A special Hazardous Energy Control Procedure (HECP) may be written to cover all machinery equipment not capable of storing any hazardous energy and having a single, readily identified energy source. Examples would include machinery items in the Machine or Maintenance Shops. This special HECP will list all machinery items covered by that procedure.
- B. The Hazardous Energy Control Procedure will identify all energy sources capable of being locked out and will associate each source with the required energy isolation device. Additionally, the procedure will identify the primary energy source for the prime mover (usually the main electrical switchboard breaker) and will distinguish that as the key tag(s). Any employee performing a lockout will refer to the HECP to verify the key tag positions.
- C. A file of all Hazardous Energy Control Procedures (HECP) (LT Form 2) will be kept in the plant operations control room and a copy in maintenance. If a Hazardous Energy Control Procedure (HECP) does not exist for a machine or equipment item, a procedure shall be developed and approved before work may begin on the equipment. For the purpose of this

Directive, work is defined as repairing, servicing, setting-up or adjusting of the prime mover or the cleaning of moving machinery parts or any other operation or task that may subject an employee to unnecessary risk of harm.

- D. Certain tasks such as testing or troubleshooting may require the equipment to be in operation during the task. Performing a hot tap falls into this category. Each occurrence will be analyzed on an individual basis and given consideration to alternate methods of testing. Special safe guards including specific training of the additional hazards should be used to ensure no employee is unduly subjected to hazards or to any unnecessary risk of harm.
- E. All authorized employees (persons) will be issued the quantity and type of locks and tags appropriate for their department. The lock set will be so identified to distinguish between the Operations Division, engineering, pump stations and each maintenance shop. Every individual will be issued the key to his or her assigned locks. Only Superintendent level positions will retain a copy of the key. **It would be contrary to the intent of the individual lock out procedure for any other keys to be available for those locks.** The safe guards taken to ensure the integrity of your locks will assure your individual safety.
- F. Two levels of lockout / tagout will be authorized: 1) Short-term Maintenance Lockout procedure of Section 2.8.2 and 2) Extended Shutdown Operations Lockout procedure of Section 2.8.3. The scope of work to be performed will be the controlling factor to determine the level of lockout and the documentation required.
- G. Whenever a lockout is required, the lead shop Supervisor with the concurrence of the Shift Supervisor will specify the level of lockout required using the following guidelines.
 - 1. The Short-term Maintenance Lockout may be used if the work involves a single equipment item, is under the primary job control of a single shop and is anticipated to complete in three (3) calendar days or less. Examples include preventive maintenance, inspections and routine repairs.
 - 2. The Extended Shutdown Lockout will be used where the work involves more than one equipment item, where primary job control may transfer to more than one shop, or when the job could not reasonably be completed within three (3) calendar days.
 - 3. Any work involving an outside contractor will use the Extended Shutdown Lockout procedure.
- H. The Shift Supervisor is responsible for logging the information on the Computer Room Log and ensuring that, if applicable, the information is transferred to the Night Order Log, or any other applicable working log.

2.8.2 Procedure for Short Term Maintenance Lockout

- A. The employee may act as the authorized person and may employ the lockout/tag out to the equipment directly. The authorized employee will notify all affected employees that a lockout is required and the work is to be performed. Notification can be satisfied through a pre-shift briefing, direct contact with the control room or on site with an operator on shift.
- B. Contact the Shift Supervisor to authorize the shutdown of the equipment.

- C. Determine the Key Tag requirements from the Hazardous Energy Control Procedure (HECP). If a HECP does not exist, a HECP shall be developed before work may begin.
- D. Shut down the equipment by the normal stopping procedure (depress stop button, open toggle switch, etc.). Disconnect switches should never be pulled while under load, because of the possibility of arcing or even explosion.
- E. The authorized employee will lock and tag the equipment using his or her own assigned locks and the appropriate lockout device. Use the HECP as a guide ensuring to secure and lock out all components of the equipment required for the scope of maintenance. All key tag positions will be locked using a multi-lock hasp to allow for additional individual locks if necessary.
- F. Perform the required maintenance.
- G. If during the course of the maintenance it is determined that the equipment will require an extended shutdown or repairs beyond the scope of routine preventative maintenance, a full Lockout / Tagout Permit (LT Form 1) must be completed and an operations lock out performed.
- H. When maintenance is complete, return all guards and ensure all tools are removed and properly stowed. Clean up the area and ensure the equipment is ready of operation.
- I. Remove your lock and tag and inform the shift supervisor that the equipment is ready to be returned to service.
- J. Follow the instructions of the shift supervisor for re-energizing the equipment.

2.8.3 Procedure for Extended Shutdown Operations Lockout

- A. The authorized person shall enlist the assistance of Plant Operations, through the Area Operator. The authorized employee will notify all affected employees that a lockout is required and the work to be performed. Notification can be satisfied through a pre-shift briefing, direct contact with the control room or on site with an operator on shift.
- B. Contact the Shift Supervisor to authorize the shutdown of the equipment. If the work involves a contractor, complete a Contractor Shutdown Request form (LT Form 3) to describe the scope of the shutdown and the work to be performed.
- C. Fill-out an Equipment Lockout / Tagout Permit (LT form 1)
- D. Refer to the Hazardous Energy Control Procedure (HECP) (LT Form 2) and determine the lockout required consistent with the scope of work. Determine the Key Tag requirements. The key tag positions must be lockout at a minimum. If a HECP does not exist, a procedure will need to be developed before work may begin.
- E. Shut down the equipment by the normal stopping procedure (depress stop button, open toggle switch, etc.). Disconnect switches should never be pulled while under load, because of the possibility of arcing or even explosion.

- F. An authorized employee from the Operations Division will lock and tag the equipment using Operations master locks or an Operations master lock set using the appropriate lockout device. Use the HECP as a guide ensuring to secure and lock out all components of the equipment required for the scope of work. All key tag positions will be locked using a multi-lock hasp to allow for additional individual locks as necessary.
- G. The Area Operator is responsible for notifying the Shift Supervisor of the shutdown. The affected system lines shall be isolated, bled and drained. Apply blocks if required.
- H. Any mechanism under load or pressure, such as springs, must be released or blocked.
- I. When the lockout is complete, the forms are returned to the control room for filing in the lockout binder. The Shift Supervisor should record an entry in the Computer Room Log (and transferred to the Night Order Log, or any other applicable working log) to note the equipment out of service and authorize work to begin.
- J. Each authorized person who will be working on the equipment must put a lock and tag on the equipment at any time he or she is performing work on the equipment. Each individual's Accident Prevention Sign or tag and lock will be added to the multi-hasps lockout device at the key tag position usually at the main energy source (electrical disconnect).
- K. Each individual's lock should be removed when their portion of the work is complete, or at the end of the shift, whichever comes first. If at the end of their shift, the equipment is not ready to return to service, the employee's lock may remain on the equipment to maintain custody of the work in progress, not to exceed three (3) calendar days. An out of service tag will be hung on the lockout device indicating why the equipment should remain out of service. The individual employee lock should be removed from the lockout in any of the following conditions:
1. Custody of the job has been transferred to another maintenance person in which case the locks should be exchanged.
 2. The employee is not scheduled to work on that job the next day.
 3. The employee is scheduled off work the following day.
- L. Operators MUST apply their own individual locks if they will be performing work on the equipment themselves. The equipment will remain under the Operations master lock and tag until the work is completed and the shift supervisor has authorized the lock out to be cleared, removed and the equipment returned to service.

2.8.4 Test Equipment During Lockout Conditions

All sources of energy must be tested to be sure that the power to the machine is off, with the equipment in a de-energized state. Electrical grounding (by qualified personnel) may be needed. Cal-OSHA requires that the effectiveness of the lockout be tested and verified for each machine or equipment item.

- A. Complete the lockout following the Hazardous Energy Control Procedure.
- B. Just prior to beginning work, ensure all employees are standing clear of the machine and attempt to start the machine at the local start control station. The machine should not start.

- C. If the machine has a remotely controlled starting feature, contact the control room to request they attempt to start the equipment. The machine should not start.
- D. If either of these tests causes the equipment to start, stop all work from proceeding on the machine and review the lockout for accuracy using the HECP. Correct any errors in the lockout and repeat the tests.
- E. If the errors were in the HECP, complete a Hazardous Condition Report (IIPP Form 3) and inform your supervisor that the HECP is in error and must be corrected. Do not perform any work or repairs on the equipment until the HECP has been corrected and verified.

CAUTION: Return all operating controls to the off position after each test.

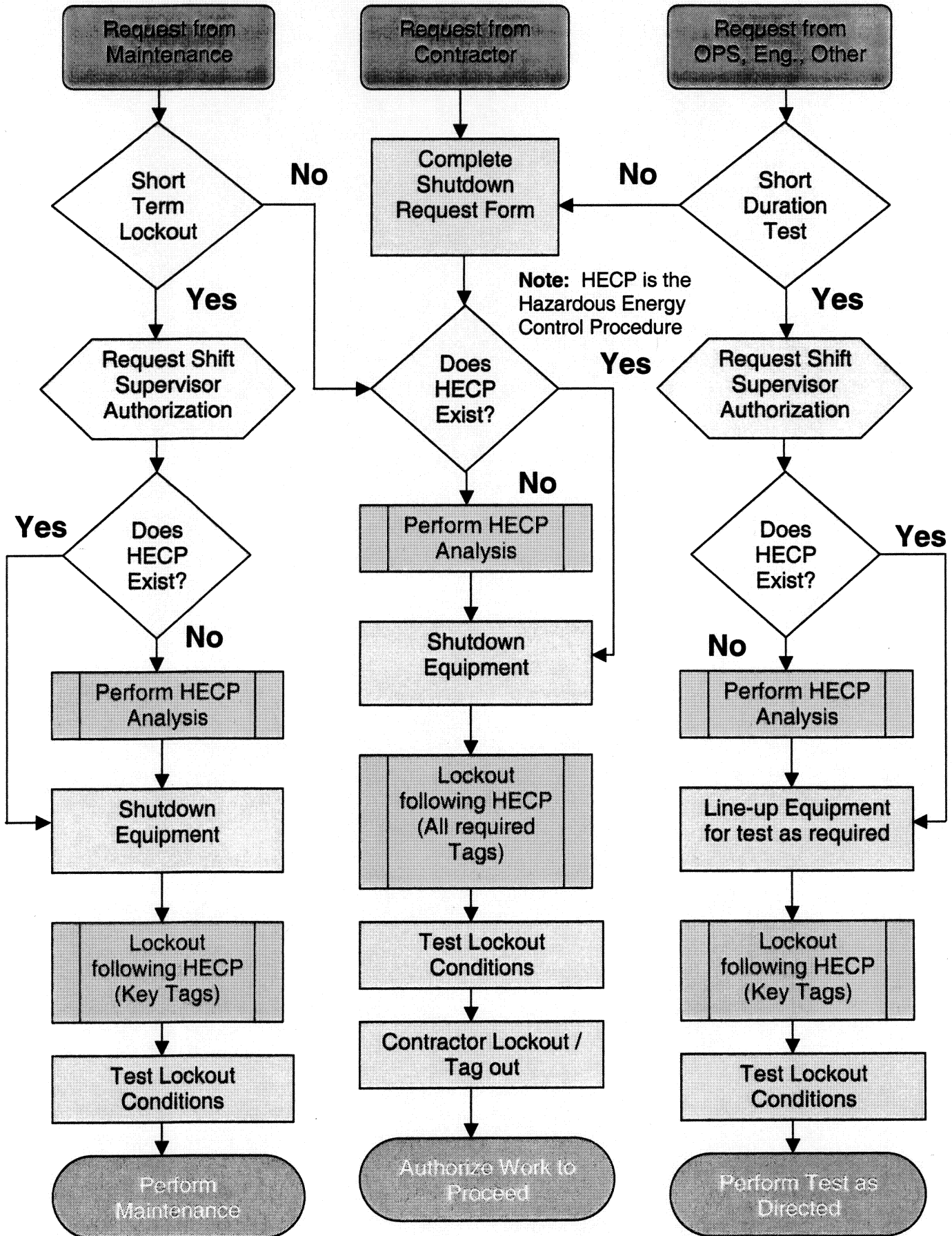
2.8.5 Restoring Equipment to Service

Before circuits or equipment are re-energized, even temporarily, the following requirements shall be met in this order:

- A. Visual inspections will be conducted to verify that all tools, electrical jumpers, grounds, and other such devices have been removed.
- B. The Area Operator and all affected employees will be notified of the intention to re-energize the circuit or equipment.
- C. All persons exposed to the hazards associated with re-energizing the circuit or equipment will be warned to stay clear of the circuits and equipment, and a visual determination will be made ensuring the safety of all personnel.
- D. Remove locks and tags. Individual locks will be removed by the person assigned to the lock. The Operations master locks can be removed after the Shift Supervisor signs and authorizes the lockout to be cleared. Any person may remove the Operations master locks under the instruction and authorization of the Shift Supervisor.

Exception: When the authorized employee who applied the individual lockout device is not available to remove it, a Lockout / Tagout Removal Request Document (LT Form 4) must be completed before the locks may be removed. The Superintendent will maintain a spare set of keys to be used in place of cutting a lock if at all possible. . The Lockout / Tagout Removal Request Document (LT Form 4) has precautionary steps to follow to ensure the safety of all personnel is safe-guarded prior to the removal of any individual lock.

LOCKOUT / TAG OUT FLOW CHART



APPENDIX A – FORMS

L/T Form 1 Equipment Lockout / Tag out Permit

This form is used to initiate and document through completion the Extended Shutdown Operations Lockout. It is not required for a Short-term Maintenance Lockout. The form is used as the communication tool to provide the necessary information to brief all affected employees on the details of a job that requires a lockout procedure.

L/T Form 2 Hazardous Energy Control Procedure (HECP) – Part 1

This sample page identifies the four areas the need to be considered to ensure all energy sources are identified and the methods to secure them have been addressed. The actual form may have any appearance so long as each area has been given thought as to the potential hazards to employees working on that equipment.

L/T Form 2 Hazardous Energy Control Procedure (HECP) – Part 2

This page is used to specifically identify the breakers, valves or any other energy-controlling device that must be considered or required to completely secure the equipment. The key tag column identifies the items that must always be locked out and allows for any additional key tags

L/T Form 3 Contractor Shutdown Request

This form is completed by any contractor or contractors' representative from engineering to request a shutdown and lockout of equipment. The form is designed to detail the scope of the work involved and to provide the Operations Department a place to list any special conditions or operational constraints that must be adhered to before, during or at the completion of the work.

L/T Form 4 Individual Lock Removal Request

A supervisor requesting to have an Individual Lock removed when the individual is not available to remove the lock completes this form. The form stipulates the steps to be taken to ensure the safety of all personnel prior to the removal of a lockout device.

L/T Form 5 Lockout Audit Form

This form is provided as an aid for supervisors or Safety personnel to perform periodic audits of the lock and tag procedure.

Central Contra Costa Sanitary District

Equipment Lockout / Tag Out Permit

Number _____

Purpose for LO/TO: _____ Work Order #: _____

Major Maintenance Electrical Mechanical Operations

Requested By: _____ Date: _____

Scope of work: _____

Duration of work: _____

Are Contractors involved in this scope of work? YES NO

If YES, list Contactors affected. _____

Equipment or systems to be removed from service:

Equipment Number	Equipment Description	HECP Attached	Shift Supervisor Authority to Tag	Operator / Tech. Performing LO/TO
		Yes		
		Yes		
		Yes		

LO/TO Hazardous Energy Control Procedure (HECP) for EACH piece of equipment affected MUST be attached.

LOCKOUT / TAG-OUT is complete and verified to commence work. Notice to proceed.

Shift Supervisor: _____ Date: _____

File the Permit in the Lockout /Tag-out Binder in the OPEN section.

Equipment Lock out / Tag out Removal Authorization

	Yes	N/A	Operator
All work is complete and the equipment is ready for service.			
Maintenance has verified equipment is ready to operate.			
All effected contractors have reported work complete.			
Equipment has been inspected for operational readiness.			

Contractor work complete: _____ N/A

Removal of Locks and Tags authorized. Return all breakers and valves to their normal positions unless advised differently by the Shift Supervisor.

Shift Supervisor: _____ Date: _____

File the completed Permit in the Lockout /Tag-out Binder in the CLOSED section

Hazardous Energy Control Procedure (HECP) – Part 1

Procedure for: _____
(Identify equipment or system including location)

Instructions: Under each heading, list the procedural steps necessary to control all hazardous energy sources and lockout the piece of equipment.

Purpose

This procedure establishes the minimum requirements for energy control lockout.

Preparation for Lockout

Sequence of Lockout Procedure

Lockout Procedure Involving More Than One Person

Restoring Equipment to Service

Central Contra Costa Sanitary District

Hazardous Energy Control Procedure (HECP)– Part 2

A thorough Hazardous Energy Control Procedure (HECP) has been performed on the following machine or equipment item using plant drawings, schematics, manufacturers technical manuals and a physical walkthrough to identify all of the energy sources required to be isolated to ensure the equipment will be safe for personnel to perform any inspection, maintenance or repairs.

Equipment Number	Equipment Description	Equipment Location

The following breakers, switches, valves or control devices are required to be locked and tagged in the indicated position to ensure complete removal of all energy sources prior to any work being performed on the subject equipment. Effected workers must hang a personal lock and identifying tag at all locations indicated as key lock out devices.

Key Tag	Breaker, Switch, Valve or Device	Description	Position
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			

Lockout HECP analysis performed by: _____ Date: _____

The following individuals have reviewed the Lock out HECP analysis and concur to its accuracy.

 Electrical Shop Supervisor Mechanical Shop Supervisor Operations Shift Supervisor

Approved: _____ Date: _____
 Plant Maintenance Superintendent

Copies of the completed forms will be kept available in the control room, maintenance, and the safety office.

Central Contra Costa Sanitary District

Contractor Shutdown Request

Date: _____

Project Name and Number:	Request Start: Date: _____ Time: _____
Requesting Party:	Estimated Completion: Date: _____ Time: _____
Signature:	Company: _____
Notice to Proceed on: Date: _____ Time: _____	Work must be completed by: Date: _____ Time: _____

WORK TO BE DONE – CHECK ALL BOXES THAT APPLY

- | | | |
|--|---|--|
| <input type="checkbox"/> Electrical | <input type="checkbox"/> Lockout / Tagout | <input type="checkbox"/> Digging / Trenching |
| <input type="checkbox"/> Mechanical | <input type="checkbox"/> Hot Work Welding / Burning | <input type="checkbox"/> Hazardous Materials |
| <input type="checkbox"/> Instrumentation | <input type="checkbox"/> Confined Space | |
| <input type="checkbox"/> Other _____ | | |

DESCRIPTION OF SYSTEMS TO BE SHUT DOWN

DESCRIPTION OF WORK TO BE PERFORMED DURING SHUTDOWN (INCLUDE LOCATION)

SPECIAL CONDITION REQUIRED PRIOR TO WORK, DURING OR PRIOR TO COMPLETION

DISTRICT RESPONSE/CONDITIONS:

APPROVAL		COMMENTS
OPERATIONS		
MAINTENANCE		
POD PROJECT MANAGER		
CONSTRUCTION MANAGER		SEE ATTACHED SHEET

CONTRACTOR CONDITIONS TO BE MET:

You must coordinate through the Shift Supervisor before work begins. The Plant Operations Department will have to shut down, tag and lock out the system. You will also have to lockout and tag prior to work.

ADDITIONAL COMMENTS:

Contractor	Print Name	Signature	Date
Agree to conditions:			
Work Complete:			

Lockout / Tagout Removal Request

This document must be completed to authorize the removal of a lockout / tag out by someone other than the authorized person who attached the lockout device. The lockout procedure is designed to protect the employee from hazardous energy that may cause harm or injury. To remove a lockout without due process could compromise the integrity of the lockout system and cause a serious injury.

Individual requesting a lockout to be removed: _____

Equipment locked out: _____

Equipment Lockout / Tag out Authorization Number (Control Room Logbook) _____

Reason the lockout must be cleared:

Authorized person with locks still attached:

Employee Name	Supervisor

Reason the lockout was not cleared:

Supervisor performing the investigation: _____

Yes No

Has the employee been contacted with regards to his lockout?		
Has the employee confirmed all assigned work is complete?		
Has the employee confirmed he or she is clear of the equipment?		
The Employee has acknowledged the lock out will be removed?		

At least one Supervisor level or above

	Name	Title
Lockout Removal Recommended		
Lockout Removal Recommended		

Authorized Signature

Superintendent or above		
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Return completed form to Safety and Risk Management for filing

Lockout / Tagout Procedure Safety Audit

Name of equipment and/or system: _____

Location: _____

Number of Affected Persons: _____

Number of Authorized Persons: _____

Number of locks and/or tags: _____

Has the Affected/Authorized Person been trained in lockout/tagout?

Is the Authorized Person's lock on the equipment?

Is the equipment locked out at the source (main electrical disconnect)?

Is the lock appropriately labeled/identified?

Is the tag filled out completely?

Has the Area Operator been notified? How?

Was the energy source tested? How?

Permits (check all that apply)

Special Conditions

Request for System Shutdown

Daily Permit to Blind Hazardous or Pressurized System

Was the permit(s) filled out completely and correctly?

Yes	No	N/A	Comments

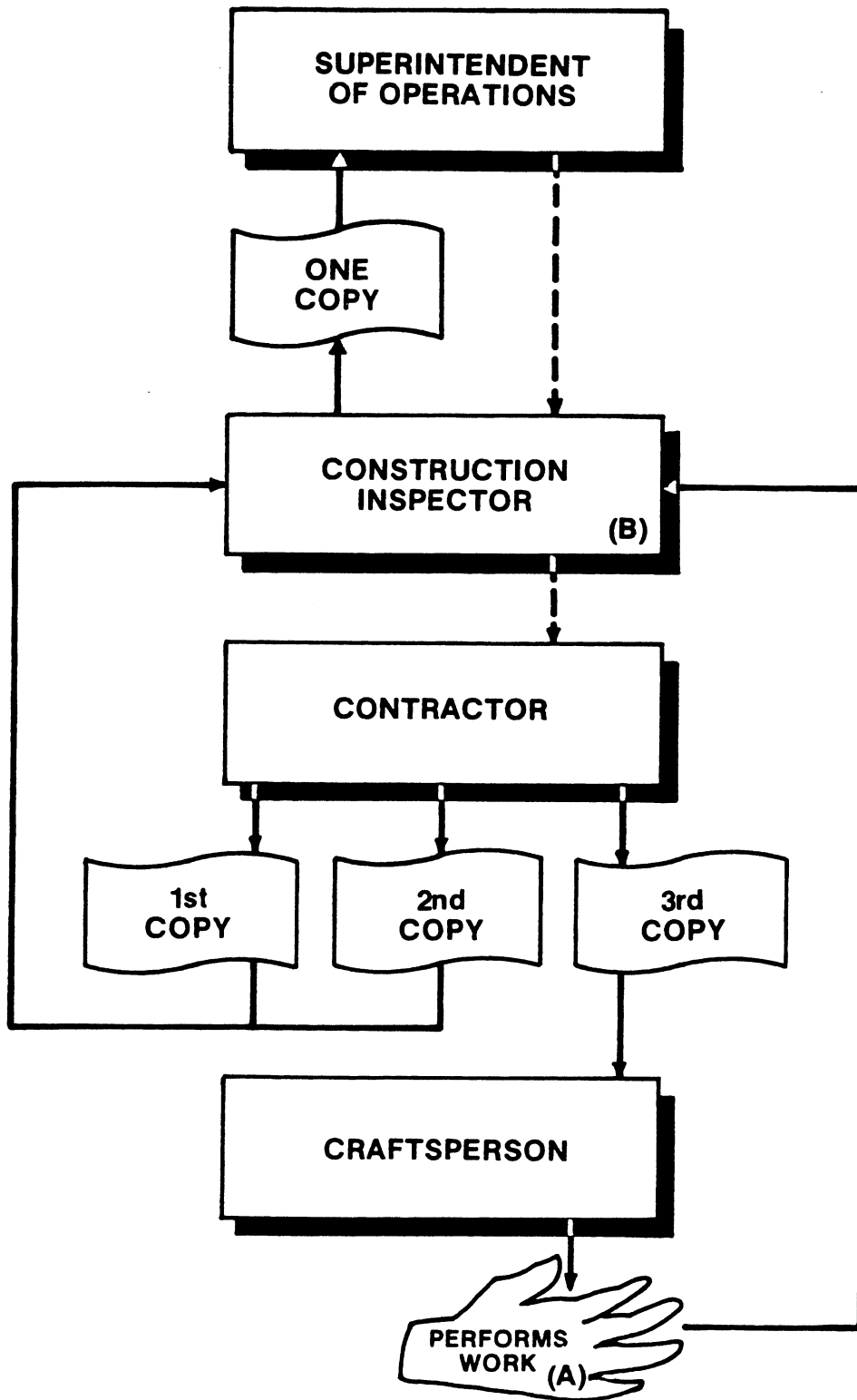
Signed: _____ Date: _____
(Name of person performing the audit)

Original: Safety & Risk Management cc: Operations Superintendent, Maintenance Superintendent

EXHIBIT C

HOT WORK PERMIT

HOT WORK PERMIT FLOW DIAGRAM



- A. Craftsperson's copy signed by Contractor and filed by Contractor
- B. Construction Inspector signs both copies, retains one, and sends the other copy to the Superintendent of Operations

CENTRAL CONTRA COSTA SANITARY DISTRICT HOT WORK PERMIT

PERMIT ISSUED TO: _____

- Contractor
 Maintenance Division
 Operations Division

Job Description: _____

Date: _____

Time Issued: _____

Expiration Time: _____

Department or Company: _____

CHECKED PRECAUTIONS SHALL BE OBSERVED	PROTECTIVE EQUIPMENT REQUIRED
<input type="checkbox"/> Gas test _____% LEL <input type="checkbox"/> O ₂ _____% <input type="checkbox"/> Drains Covered <input type="checkbox"/> Plugged	<input type="checkbox"/> Wear goggles-face shield <input type="checkbox"/> Wear gloves-rubber/thermal <input type="checkbox"/> Wear hood-acid/thermal <input type="checkbox"/> Wear suit-rubber/thermal <input type="checkbox"/> Wear rubber boots <input type="checkbox"/> Wear safety belt and line <input type="checkbox"/> Wear respirator-air purifying <input type="checkbox"/> Wear SCBA <input type="checkbox"/> Stand by with SCBA <input type="checkbox"/> Wear hearing protection
<input type="checkbox"/> Tag & Disconnect electrical equipment <input type="checkbox"/> Lock out <input type="checkbox"/> Fire extinguisher at site	
<input type="checkbox"/> Lines blinded <input type="checkbox"/> Lines disconnected <input type="checkbox"/> Charged fire hose <input type="checkbox"/> Fire watch	
<input type="checkbox"/> Valves closed, tagged, and locked with Personal lock <input type="checkbox"/> Contain sparks <input type="checkbox"/> Temperature Controlled	
<input type="checkbox"/> Bleeders open <input type="checkbox"/> Shield arc	
<input type="checkbox"/> Grounded air mover operating <input type="checkbox"/> Grounded welding machine to piece being welded at proper location	
<input type="checkbox"/> Safety lookout/firewatch <input type="checkbox"/> Line standing full _____PSI <input type="checkbox"/> Flowing	
<input type="checkbox"/> Barricade area <input type="checkbox"/> Cold cut, plug, and vent	
<input type="checkbox"/> Stop work and shut down motor equipment if leak occurs <input type="checkbox"/> Keep area free of combustibles	
<input type="checkbox"/> Do not leave motor running unattended <input type="checkbox"/> No sampling, venting, or draining	
<input type="checkbox"/> Shut down engines to refuel <input type="checkbox"/> Smoke in designated area only	

Other Precautions: _____

PERMIT CONDITIONS AND REQUIREMENTS UNDERSTOOD	PERMIT ISSUED BY:
Signed _____ <div style="text-align: center; margin-left: 100px;"><i>Craftsperson</i></div>	Signed: _____ _____ Title: _____ _____ Division: _____ _____

Foreman, craftsman, or supervisor must indicate equipment condition to shift supervisor when job is complete.

- Job completed _____
 Job incomplete _____

TO BE KEPT ON THE JOB UNTIL WORK IS COMPLETED, PERMIT EXPIRES, OR PERMIT IS REVOKED