

PLAINTIFF'S EXHIBIT

B&R-366

**CONTRACTORS' RESPONSIBILITIES
FOR SAFETY, PLANT SECURITY,
AND TRAFFIC REGULATIONS**

BAYTOWN REFINERY

APRIL 1, 1978

Table of Contents - Continued

	Page
Section 10	
General Regulations	10-1
Authorization to Start Work	10-1
Contractor's Equipment	10-1
Explosives	10-1
Use of Lines, Conduits, or Structures as Supports	10-1
Use of Stanchions or Equipment for Anchors	10-1
Damage to Owner's Property	10-1
Operating Owner's Equipment	10-2
Use of Special Vehicles	10-2
Fire Extinguishers	10-2
Welding	10-2
Securing of Temporary Buildings	10-3
Exit from the Plant	10-3
Non-English-Speaking Personnel	10-3
Hurricane Precautions	10-3
Contractor Accident Reporting	10-3
Emergency Evacuation Procedure	10-4
Contractor Safety Meetings	10-4

Foreword SAFETY POLICY

GENERAL

Safety is an integral part of the planning and execution of every job. It is the hallmark of efficient operations. An interested management, a knowledgeable and responsible supervisory staff, and a conscientious, well-trained work force, all concerned with the elimination of accidents in the overall performance of our work, will combine to make our organization safe and effective.

Exxon Management recognizes its responsibility for healthful and safe working conditions and, through its technical and supervisory personnel and through various committee assignments, strives to provide those conditions. This is accomplished through safe working rules based on experience, safety knowledge, and competent work direction.

Each employee has a personal responsibility for his own safety and for the safety of his fellow employees. He is expected to exercise good judgment, properly use and maintain the tools provided, adhere to the established working rules, and follow the directions of well-grounded supervision.

Information on the application of safety rules and procedures is available in this Safety Manual, Exxon Engineering Standards, and various Process and Mechanical manuals. Technical help in the application of safety principles and safety equipment to specific situations is available through the Safety Coordinator, Industrial Hygienists, the Technical Division, and the Safe Operations Committee.

The safety rules contained in this manual apply to all employees of Exxon Company, U.S.A. and all contractor employees working in the Baytown Refinery. These rules specify minimum safety requirements that must be followed. Willful or negligent violation of any of these safety rules may result in disciplinary action, including discharge without notice or in the case of contractor, cancellation of the contract.

Overlapping Permits

Work permit procedures are established to promote effective communications and to insure that work is performed in a safe environment. Since the permit is issued for the job, only one work permit should be in effect for one job in one area at one time. When more than one work group is involved on the same job in the same area, the "One Work Permit Rule" may lead to some confusion. Therefore, the Chief Operator will determine which of the two following alternatives is better for controlling the work in his area.

1. Issue one work permit for the job and have each Maintenance Supervisor who will perform work on the job sign the permit. The last work group to finish or the last Maintenance Supervisor to sign must turn in the work permit.

2. Issue a permit for the work each work group is to perform; but in absolutely no instance, must the permits conflict (i.e., work on one permit making work by another permit unsafe). For example: a permit to perform hot work and a permit to perform opening and blinding work.

PROCEDURE FOR DEVIATING FROM THIS SAFETY MANUAL IN SPECIAL SITUATIONS

Where special conditions or situations exist that make the requirements stipulated in this manual impractical to follow on a routine basis, an alter-

ate procedure may be developed. This alternative must be written, reviewed with the Safety Coordinator and approval obtained from the Process and/or Mechanical Superintendent before implementing. The approved alternate procedure must be filed in the Unit Area Section of the Process Unit Instructions Manual and/or the Mechanical Safety Notebook.

**PROCEDURE FOR MAKING CHANGES
TO THIS SAFETY MANUAL**

It is the prerogative of Management to set aside any of these rules. However, before doing so, the approval of the Superintendent in charge must be obtained and the situation discussed with the Safety Coordinator *and with the Contract Administrator in case of contractors.*

The Refinery Safety Coordinator is responsible for keeping this Safety Manual up to date, and he should be notified of desired additions or revisions. He will arrange for the preparation of additions or changes and obtain Management approval before inclusion into the Safety Manual.

Section 1 GENERAL DEFINITIONS FOR SAFETY MANUAL

PERSONS

1. **Chief Operator** — The Process person who is responsible for Process operations in a processing area and has the authority to supervise Process personnel and issue work permits.

2. **Contract Administrator** — The Exxon Mechanical or Process supervisor assigned by the owner to assure that the contractor adheres to the plans, specifications, and Refinery safety rules.

3. **Contractor** — The firm under contract to Exxon Company, U.S.A. to perform work at the Baytown Refinery. The term also includes those firms employed as subcontractors by the prime contractor.

4. **Department Head** — The person in charge of a Process department, i.e., Fuels, Specialties, Oil Movements, Utilities and Environmental Control, or Baytown Fuels Expansion.

5. **Maintenance Supervisor** — The Mechanical person, either Exxon or contractor, who has the authority to supervise the Mechanical work crew and is responsible for their work execution.

6. **Mechanical Personnel or Person** — Any of the Mechanical work crew (Supervisor, Craftsman, Trainee), either Exxon or contractor, performing work in the Refinery.

7. **Owner** — Exxon Company, U.S.A., Baytown Refinery.

8. **Operating Supervisor** — The second-line supervisor in Process and the immediate supervisor of the Chief Operators.

9. **Process Personnel or Person** — Any of the Process work crew (Chief Operator, Process Technician, or Process Technician Trainee) who has job responsibility for the assigned processing area.

10. **Designated Representative** — An Exxon Process Person, if designated by Chief Operator, or an Exxon Mechanical Person if designated by Maintenance Supervisor.

11. **Standby** — The person designated by the Chief Operator and/or the maintenance supervisor to warn persons of hazardous or emergency conditions that could affect their safety.

PLACES

1. **Enclosed Space** — Any space that can be closed or has restricted entry or exit, such as vessels, tanks, boilers, furnaces, etc. Also included are confined spaces, such as pits, sewers, excavations, where the heads of personnel working are below the top of the confined space.

2. **Processing Area** — Any area under the jurisdiction of Process personnel

3. **Refinery** — The manufacturing facilities of Exxon Company, U.S.A. located in Baytown, Texas.

ACTIVITIES — CONDITIONS

1. **Cold Work** — Any mechanical work that does not involve hot work or opening, blinding, and entering processing equipment.

2. **Hot Work** — Any work requiring the use of burning or welding and brazing equipment, explosives, open fires, portable grinders, untended internal combustion engines, concrete

busters, soldering irons, nonexplosionproof electric motors (including motor chippers, drills, and saws), nonexplosionproof floor or string lights, sandblasting, explosion actuated tools, electric hot plates, or any other flame- or spark-producing equipment.

3. Hot Tap — Any connection made to a pipeline or other equipment that is under pressure or has not been cleared and prepared for tapping using conventional construction methods.

4. Opening — Exposing the interior of any processing equipment, including piping, to the atmosphere. This includes removing covers, breaking flanges, pulling plugs, etc. It does not include draining or venting through a valve.

5. Blinding — Installing temporary slip blinds into piping or blind flanges onto equipment for the purpose of isolating or closing processing equipment.

6. Flammable Material — Any material that will ignite and continue to burn in air

7. Explosive Mixture — Any mixture of gas or vapor that will ignite (explode) when exposed to a source of ignition. Hot work or entry must not be permitted if tests indicate that the atmosphere contains greater than five percent of the lower explosive concentration of the combustible material (five percent of lower explosive limit).

8. Oxygen Deficiency — Any atmosphere that has oxygen concentration of less than 19.5 percent.

9. Toxic Materials — Any substance (other than a radioactive substance) that has the capacity to produce personal injury or illness to man through ingestion, inhalation, or absorption through any body surface. If test for toxic vapors shows a

concentration greater than 10 percent of the published eight-hour limit for the substance, entry without protective equipment must not be permitted.

10. Must and May — "Must" is used in the manual to indicate mandatory compliance. "May" is used to indicate that good judgment shall be exercised.

Section 2 SAFETY RULES

PURPOSE

The purpose of these personnel, equipment, and traffic safety rules is to specify minimum safety requirements that must be followed to prevent injury or death to persons and damage to property. These rules in their entirety apply to all persons, including the contractor employees working in Exxon Company, U.S.A.'s Baytown Refinery. Additional requirements for contractors and their employees are shown in italic type throughout the manual.

DEFINITIONS

Definitions of terms used throughout this manual will be found in Section 1. Special definitions that apply to a specific permit or work procedure are in the applicable section of this manual.

RESPONSIBILITIES

1. Supervisors are responsible for the health and safety of the people under their work direction. They must:

- a. Set a good example.
- b. Provide adequate instruction in and require compliance with:
 - (1) Accident prevention aspects of each job.
 - (2) Use and application of appropriate protective clothing, equipment, and devices.
 - (3) Use or application of tools and equipment.

c. Cooperate with others where the safety aspects of a job require coordinating the efforts of one or more work groups. This includes, but is not limited to, the securing and/or issuing of a yellow PERMIT TO ENTER, green HOT WORK

PERMIT, white OPENING AND/OR BLINDING PERMIT, blue COLD WORK PERMIT, or ELECTRICAL LOCKOUT PROCEDURES.

d. Develop a safe work plan for the job to be done and see that the plan is well understood and followed.

e. Require additional accident prevention measures, other than those contained in this safety manual, if, in any supervisor's opinion, they are necessary. In instances or situations not specifically covered herein, it is expected that they will be handled within the guidelines contained in this manual. Safety is not to be sacrificed for production.

2. Individuals, Exxon and contractor, working in the Baytown Refinery are responsible for their own safety and for the safety of other workers and for reporting injuries to themselves or others to their appropriate supervisor. Each person must assure himself that his work situation is safe and that he has adequate instructions, proper tools, and proper protective clothing and equipment. He must also make sure that necessary work permits have been obtained and are valid over the term of his shift.

As a minimum, each person must adhere to the following safety regulations:

a. Clothing and Protective Equipment

(1) Clothing contaminated with oil, hazardous liquids, or chemicals must not be worn. If a person is inadvertently sprayed or contacted by oils, hazardous liquid, or chemicals, the clothing must be removed as quickly as practical, the affected parts washed with soap and water, and the situation reported to the supervisor and to the Exxon supervisor in charge or Contract Administrator in case of contractors.

(2) Protective clothing that fully covers the

body (arms, legs, shoulders, feet, etc.) must be worn in work areas. This includes long sleeves unless wearing long sleeves creates a greater hazard than not wearing them — such as Machinists around rotating equipment or Linemen working on overhead electrical lines on poles. The wearing of canvas-type shoes, thongs, and similar type footwear in work areas is prohibited. Exceptions must be approved by the Department Head after consultation with the Safety Coordinator.

(3) Loose clothing, loose sleeves, neckties, or gloves must not be worn where there is a probability of their being caught in moving machinery.

(4) Safety hats and safety glasses must be worn in all areas of the Refinery except at certain locations specified by the Department Head after consultation with the Safety Coordinator.

EXCEPTION: Welders need not wear safety hats while welding.

(5) Contact lenses must not be worn inside the Refinery. Employees with unusual visual problems requiring the wearing of contact lenses must use appropriate eye protection as recommended by a medical doctor depending on occupational exposure. (For Exxon employees, the Medical Department will recommend appropriate eye protection.)

(6) Goggles and/or safety glasses with side shields must be worn in those areas where the possibility of flying objects exists.

(7) Chemical goggles must be worn in those areas where exposure to chemicals or liquid hazards exist.

(8) Respiratory protection must be worn

where the atmosphere of the work area is contaminated by hazardous dust, toxic gases, excess vapors or fumes, or where an oxygen deficiency exists (for example, a vessel blanketed with nitrogen).

(9) Special protective clothing for the particular hazard must be worn where there is a possibility of exposure to acid, caustic, or other hazardous material.

(10) Bright-colored vests or equivalent highly visible attire must be worn by members of survey parties when working on or adjacent roads.

(11) Safety belts attached to an independently supported line must be worn:

(a) When working from scaffolds, platforms, or any other surfaces that may not afford sufficient protection against falling.

(b) While working on any roof with a slope greater than one on four.

(c) When working within six feet of the edge of any roof.

(d) Where an oxygen deficiency exists or where the surrounding atmosphere is immediately hazardous to life.

(12) Approved ear protection such as ear plugs, disposable plugs, Swedish wool (cotton is unacceptable), or ear muffs must be worn when working in areas designated with warning signs as "high noise area." Ear protection is required when using tools marked "caution-hearing protection required when using this tool" and in areas where equipment or tools generate sufficient noise to make normal conversation difficult.

b. Entering Processing Area

No person shall enter a processing area (including firewalls of operating tanks) without the permission of the Chief Operator or his designated representative. Chief Operator permission is also required when motorized equipment initially enters a closed processing area (radio or telephone approval by dispatcher is acceptable). No further permission is required as long as mechanical work is continuous. Once work is interrupted, such as for lunch breaks, permission must again be obtained. Vehicles entering these areas may be required to have sparkproof mufflers or their equivalent as required by the Chief Operator or the Contract Administrator in the case of contractor vehicles.

c. Working Over or Near Water

The U.S. Coast Guard approved life preservers must be worn when working on barges or directly over water, such as under the docks, from a boat, above pits, etc.

d. Working On or Over Machinery

(1) Do not work on moving machinery or above open operating machinery unless it is impractical to shut down the equipment. In such instances, secure Maintenance Supervisor's and/or Chief Operator's approval and take necessary precautions before proceeding.

(2) Do not start up machinery unless all guards are in place.

EXCEPTION: In temporary situations where guards must be removed to make running adjustments, secure Maintenance Supervisor's and/or Chief Operator's approval before proceeding.

e. Guarding

(1) Temporary openings in floors, handrails, etc., must be guarded to prevent falling. Restore permanent handrails and guardrails immediately after need for opening has ended.

(2) Open excavations or manholes must be guarded or covered before leaving the job and during the job if practical.

(3) Areas into which materials or tools are to be deliberately dropped or thrown must be guarded or protected.

f. Housekeeping

(1) Aisles, passageways, stairs, platforms, and ladders must be kept clear of all unnecessary obstructions.

(2) Protruding nails that present a snag or puncture hazard must be removed or bent down.

(3) Worksite must be kept clean and orderly.

(4) Debris (including mud from wheels) that falls from transporting vehicles must be picked up.

g. Smoking and Matches

Smoking in the Refinery except at approved locations is prohibited. "Strike-anywhere" matches must not be brought into the Refinery.

h. Hand and Power Tools — Portable Machinery

(1) Defective tools must not be used.

(2) Tools must not be subject to undue stress or used for purposes for which they are not designed. Makeshift tools must not be used.

(4) Loads suspended from mobile equipment must be secured to prevent swinging and the hoisting operator must remain at the controls.

(5) Guy lines, mooring lines, or lead lines must not be placed in such a position that they will tighten against operating equipment, pipelines, tanks, or machinery.

(6) Insulating swivels must be used on all bosun chairs or baskets when supporting a welder.

o. Hazardous Materials

(1) Note locations of eyewash fountains and safety showers and know how they work.

(2) Labeled containers must be used for handling hazardous materials.

(3) Dismantled or relocated equipment that has been in "hazardous material" service must be identified by tagging or other physical marking.

(4) Solvents for cleaning purposes must be varsol, or other approved materials.

(5) High boiling point materials (above 700°F) from catalytic cracking operations or other highly aromatic or toxic materials are hazardous and precautions must be taken to prevent breathing of vapor or contacting the skin. If these oils do come in contact with the skin, they must be washed off promptly with soap and water.

(6) Appropriate Process Unit Instructions (PUI) or Mechanical Operating Practices (MOP) must be followed when working in areas where toxic materials are present.

2-11

p. Compressed Air — Yard System

(1) Compressed yard air must not be used to clean clothing or personnel except at outlets that are especially equipped to permit a maximum pressure of 30 psi.

(2) Compressed air must not be used to open plugged sewers.

(3) Compressed yard air must not be used for breathing purposes.

q. Warning Signs

Caution and warning signs must be obeyed including use of specified protective or safety equipment.

r. Compressed Gas Cylinders — Transportation, Storage, and Use

Observe the following in the transportation, storage, and use of compressed gas cylinders:

(1) Protective caps must be in place when cylinders not in use.

(2) Full cylinders (except chlorine) must be stored and transported in vertical position with caps on. Chlorine cylinders must be transported in the horizontal position. Separate oxygen cylinders in storage from fuel gas cylinders or combustible materials (especially oil or grease), a minimum distance of 20 feet or by a noncombustible barrier at least five feet high, having a fire-resistance rating of at least one-half hour.

(3) Holders, chains, or keepers must be used to prevent overturning.

(4) Empty cylinders, except acetylene, may be stored and transported in a horizontal position. Acetylene cylinders must be vertical at all times.

2-12

(5) Cylinders in a vertical position must be secured with a suitable keeper while connected to equipment.

(6) Pure oxygen and chlorine must not be allowed to contact hydrocarbons in any form.

(7) Rough handling of cylinders must be avoided.

(8) Oxygen or acetylene must not be used for testing purposes.

(9) Hazardous compressed gases must not be released into enclosed spaces.

(10) Compressed bottled gases must not be used to clean clothing or personnel.

(11) Oxygen or acetylene cylinders must not be taken into enclosed spaces except into storage tanks where door sheet has been removed.

(12) Repair of leaking compressed gas cylinders must not be attempted. If cylinder can be moved, move to a safe location and allow to depressure itself. If it cannot be moved safely, clear area and allow the cylinder to depressure. If the cylinder is chlorine, evacuate the area and initiate procedure outlined in MOP-C4. If leak involves contractor cylinders, the Contract Administrator must be immediately notified.

s. Fire Prevention — Fire Fighting

(1) No one shall go to the scene of a fire unless directly involved or assigned to fire-fighting activities. Others not having operating duties shall evacuate the fire area. Contractor employees must proceed to a prearranged assembly area.

(2) Fire-fighting equipment access must not be blocked by traffic or other equipment.

(3) Electrical fires must not be fought with a solid stream of water. Water fog may be applied to an electrical fire only by an Exxon fire fighter.

t. Working in the Vicinity of Electric Lines

When it is necessary to operate cranes or derricks or perform other work within 10 feet of open electric lines (measured radially), the Maintenance Supervisor must consult the Utilities Chief Operator or the Contract Administrator in the case of contractor work to determine whether the electric lines can be deenergized. No work can proceed until the electric lines have been deenergized or until guards have been installed. Install approved guards when it is necessary to install guy lines across any electric lines to prevent guy lines from coming in contact with the electric lines. All work on open electric lines must be done in accordance with Mechanical Safety Procedure No. 8.

u. Refueling Vehicles and Equipment

Dispensing gasoline and fuel must be done through a pump and hose. If not possible, approved (Underwriters Laboratory or Factor Manual approved container for flammable liquid) safety cans with flexible spouts must be used. Vehicles and equipment engines must be turned off during refueling.

v. Potable Water

Drink water only from potable water outlets or from authorized containers or drinking fountains.

w. Asbestos Cement Roof

When installing or working on an asbestos cement roof, workers must use a spreader board or roofer ladder to distribute their weight over a minimum of two purlins.

TRAFFIC SAFETY REGULATIONS

Unless covered by a specific regulation in this Safety Manual, traffic regulations for safe driving inside the Refinery are the same as the regulations of the State of Texas Motor Vehicle Laws.

1. Equipment and Identification Required on Motor Vehicles

All motor vehicles in the Refinery must be in safe operating condition. When entering the Refinery, all non-company vehicles must display a valid state inspection sticker on the windshield. As a minimum, the following equipment must be in proper working condition for the vehicle to be considered safe: (a) brakes; (b) lights — two headlights, tail lights, brake lights; (c) horn; (d) muffler; (e) safety glass; (f) windshield wiper and rear-view mirror; and (g) turn signals. Vehicles having dual wheels must be equipped with suitable flaps on each dual wheel so that objects will not be ejected past the flaps to the rear when the vehicle is in motion. Contractors' self-propelled, rubber-tired equipment must have contractor's name or insignia prominently displayed on both sides of the vehicle.

2. Driver's License

Persons operating motor vehicles in the Refinery must have a valid operator's (automobile) license as a minimum.

3. Warning Flags

Red flags must be used on any load that extends beyond the front, side, or rear of any vehicle.

4. Traffic Signs

All traffic signs and signals, whether fixed or portable, must be obeyed; and drivers must cooperate with owner's security officers and others appointed to direct traffic.

5. "Road Closed" Signs

Areas blocked by traffic barriers and/or "road closed" signs are closed to all traffic. Follow procedure specified in PUI-S5 for blocking Refinery streets.

6. Speed Limit

All vehicles must be operated within the Refinery's maximum speed limit of 30 miles per hour, unless a lower speed is posted.

7. Driving and Parking

Vehicles must be driven on the right side of the street and parked on the right side of the street, except when parking in designated parking areas or when directed otherwise by traffic signs or during emergencies. Vehicles must not be parked on streets or roadways in such a manner as to slow down, hinder, or interfere with the free flow of traffic. Vehicles must not be parked so as to block or interfere with the use of fire hydrants or fire equipment.

8. Right-of-Way

All motor vehicles must give the right-of-way to pedestrians, ambulances, fire-fighting equipment and firemen (who will be identified by driving with lights on and horn sounding), and bicycles. Vehicles must pull to one side and be brought to a complete stop when approached from any direction by an ambulance or fire equipment and firemen. Ordinary driving courtesy must be practiced by all drivers of motor vehicles.

9. Passengers

a. Passengers must be limited to a reasonable number so that vehicles will not be overcrowded.

b. Drivers of motor vehicles must not permit passengers to ride on fenders, running boards, tops, or bumpers of motor vehicles. Passengers must keep all parts of their bodies inside the car or body of vehicles and must be seated while vehicle is in motion.

c. Drivers of mobile equipment must not permit passengers unless special accommodations have been provided.

d. Passengers must not get on or off a vehicle while it is in motion.

10. Vehicles Prohibited

Motor bicycles or motorcycles are not permitted inside the Refinery except to and from the designated "motorcycle only" parking areas provided near gates. Campers and recreational vehicles are not permitted in the Refinery if loaded with gear or if they are otherwise difficult to inspect. Pressurized fuel containers shall be disconnected from refrigerators, stoves, etc., when a camper or recreational vehicle is in the Refinery.

11. Vehicle Entry Into Processing Areas

Vehicles must not enter processing areas, including tank firewalls, without the permission of the Chief Operator or his designated representative.

EXCEPTION: Roadways through processing areas where entry is not prohibited by a sign or barrier may be used without permission of the Chief Operator.

12. Windshield or Window Obstruction

Vehicles having nontransparent materials that interfere with clear visibility through any side window or windshield must not be operated in the Refinery. All vehicles must be equipped with adequate rear-view devices.

13. Failure To Comply With Regulations

Any person may have his in-plant driving privileges canceled or be subject to disciplinary action, or both, for failure to comply with these traffic regulations or for the improper use of his vehicle.

Section 3

CONTRACTOR'S SAFETY RESPONSIBILITIES

PURPOSE

The purpose of the personnel and equipment safety regulations contained in this section is to set out safety requirements for contractors, which are in addition to those contained in other sections of this manual. Each contractor must take any additional precautions necessary or proper under the circumstances to prevent injury or death to persons or damage to property.

SPECIAL DEFINITIONS

1. **Owner** - For purposes of these safety regulations, "owner" shall mean Exxon Company, U.S.A. (a division of Exxon Corporation).
2. **Contract Administrator** - The person assigned by the owner to assure contractor adherence to the contract provisions.
3. **Contractor** - The firm that has been contracted by the Exxon Company, U.S.A. to perform work at the Baytown Refinery. The term also includes those firms employed as subcontractors to the prime contractor.
4. **Maintenance Supervisor** - The Mechanical person, either Exxon or contractor, who has the authority to supervise the Mechanical work crew and the responsibility for their work execution. As used in this section, the Maintenance Supervisor refers specifically to the contractor first line supervisor.

RESPONSIBILITIES

1. **Contractor**, as an independent contractor, is responsible for performing work under the contract in a healthful and safe manner including protecting the safety and welfare of other contractors and the owner's personnel and equipment. These regulations are to be considered as an addition to any safety rules or regulations of the contractor. Neither compliance with the

regulations by contractor nor owner's approval of any actions or procedures of contractor as provided therein shall relieve contractor of its obligation always to use due care in performing work.

- a. The contractor is responsible for informing his employees of the required safety rules and that the employees adhere to said rules.

- b. The prime contractor is responsible for assuring compliance with these regulations by all subcontractors and their employees. Contractor must notify its employees, its subcontractors, and the employees of its subcontractors of these provisions of the regulations and shall secure compliance therewith by all such parties; and contractor must not allow any of such persons to begin work inside the Baytown Refinery until such notification has been given them.

- c. Contractor must observe and comply with the Texas Occupational Safety Act (Article 5182a, V.C.S.) and with all safety and health standards promulgated by the Secretary of Labor under Section 107 of the Contract Work Hours and Standards Act, published in 29 CFR Part 1926 and adopted by the Secretary of Labor as occupational safety and health standards under the Williams-Steiger Occupational Safety and Health Act of 1970, and to any other legislation enacted for the safety and health of contractor employees. Such safety and health standards apply to all subcontractors and their employees as well as to the contractor and its employees.

- d. Nothing contained in these regulations shall be interpreted to enlarge the legal duty of the owner to the contractor, his agents, employees, or subcontractors.

2. **Maintenance Supervisors** are responsible for the safe conduct of their jobs and for the safety of the persons under their direction. Specific supervisory responsibilities are contained in Section 1-2 of this manual. Each Maintenance Supervisor is responsible for assuring that each individual under his direction un-

derstands and adheres to the safety rules contained in Section 1-2 of this manual.

3. Individual person doing work in the Refinery must assure himself that the work situation is safe and that he has the proper instructions, tools, and protective equipment. Each person must become familiar with and adhere to the safety rules contained in Section 1-2 of this manual.

4. Contract Administrator will monitor the contractor's performance to assure safe execution of the work specified in the contract. He will, on proper request, assist the contractor in dealing with other owner personnel to obtain safety permits and to implement other safety related procedures. He will insure that all contractor's Maintenance Supervisors are properly indoctrinated in the relevant safety regulations.

PROCEDURES

1. Work Execution

All work in processing areas must be performed with the approval of the Chief Operator responsible for the area. The Maintenance Supervisor must coordinate his work through the Chief Operator and must keep him informed as to the number, location, and activities of contract personnel. Any work performed after normal working hours and on weekends and holidays requires authorization by the owner. Such authorization will be obtained by the Contract Administrator.

2. Required Work Permits and Procedures

Before beginning any work in processing areas, an appropriate permit must be obtained from the Chief Operator or his designated representative. Required work permits and procedures are:

- a. Electrical Lockout Procedures - Section 4.
- b. Hot Work Permits - Section 5.
- c. Permit to Enter Enclosed Spaces - Section 6.

d. Opening or Blinding Permit - Section 7.

e. Cold Work Permit - Section 8.

Other work procedures may be specified in specialized work situations such as hot tap procedure, procedure for cleaning tanks, etc.

3. Oil and Chemical Spills

Any hydrocarbon or chemical spill, whether accidental or otherwise, must be reported to the Chief Operator and the Contract Administrator.

4. Connections Into Owner's Utilities Systems

Permission must be obtained from Contract Administrator prior to connecting into owner's utility system such as, but not limited to, water, air, nitrogen, and steam systems. Each connection shall be guarded by a check valve. When taking water from fire hydrants, the center valve must be opened completely.

5. Contractor's Equipment

a. All equipment brought into the Refinery by contractors must be in safe operating condition. Authorized owner personnel may at any time inspect contractor's equipment. Such inspection or failure to inspect does not relieve the contractor of its responsibilities for the safe condition of its equipment.

b. Equipment must be operated only by properly licensed persons.

c. Load limits for the San Jacinto Street overpass are a maximum axle load of 32,000 pounds and a maximum gross load of 72,000 pounds. A tandem axle load vehicle will be considered as being a single axle.

6. Working Over or Near Water

a. Ring Buoys with at least 90 feet of line must be readily available for rescue operations. Distance between ring buoys must not exceed 200 feet.

b. A life saving skiff must be immediately available

at locations where persons are working over or adjacent water.

7. Work Involving Use of Ionizing Radiation

Contractors must not perform any work involving the use of ionizing radiation without notification to the Exxon Supervisor in charge or the Contract Administrator. A COLD WORK PERMIT must be obtained if radio isotopes are used, a HOT WORK PERMIT is required if an Industrial Xray Unit is used to perform this type work in processing areas. Contractors must comply with "Texas Regulations for Control of Radiation," latest edition, Texas State Department of Health, Division of Occupational Health and Radiation Control, Austin, Texas, together with all future amendments, additions, and revisions to said regulations and standards. Owner reserves the right to conduct independent and unannounced radiation energy surveys of contractor's equipment and their uses on owner's premises.

Section 4 ELECTRICAL LOCKOUT PROCEDURES

ELECTRICAL CIRCUITS AND ELECTRICALLY POWERED EQUIPMENT

PURPOSE

The purpose of these procedures is to protect anyone who works on either electrical circuits or electrically powered equipment from injury or death.

SPECIAL DEFINITIONS

Electrical circuits and electrically powered equipment do not include (1) lighting circuits for the purpose of relamping, (2) circuits of less than 100 volts, or (3) circuits that must remain energized. For circuits that must remain energized, a blue COLD WORK PERMIT may be required (see section 8).

RESPONSIBILITIES

1. Process person is responsible for isolating and preparing the equipment to assure it is in safe condition for mechanical work.
2. Person performing work is responsible for assuring himself that the equipment is safe for him to do his prescribed work, and that he has tagged and locked out the equipment in accordance with the electrical lockout procedures.
3. *Contractor Administrator* is the contractor's contact with Process personnel for performing work under the electrical lockout procedure.

PROCEDURE

1. **Lockout Procedures** — Before anyone works on electrical circuits or electrically powered equipment where they could be endangered, the

electrical supply must be turned off and locked out in accordance with the following procedures:

a. **Shut Equipment Down** — The Process person must shut the equipment down at the local start-stop switch or local "Hand-Off-Auto" switch. In case there are remote start-stop switches on this equipment, he must notify other operating personnel responsible for operating the remote start-stop switches and request that a white DO NOT OPERATE tag be placed on the start-stop switches. If the start-stop switch is located on a control panel, then it must be covered with a section of DO NOT OPERATE pressure-sensitive tape.

b. **Lock and Tag Disconnect Switch** — The Process person must turn the disconnect switch to the off position, lock it with a Process lock, and tag it with the white DO NOT OPERATE tag. If a Process or another person is to work on the equipment, the Process person must use a multiple lockout adapter. The Process operations lock must be in the position closest to the switch. All Process locks will be identical, and the same key will unlock all of them.

c. **Check Disconnect and Tag** — The Process person must try the local pushbutton station to be sure the correct disconnect switch is locked out. When the local control station is a "Hand-Off-Auto" selector switch the process person must lock the switch in the "Off" position. He must then tag the pushbutton or selector switch with a white DO NOT OPERATE tag.

d. **Enter in Log** — The Process person must enter the "lockout" in the Process log book.

e. **Apply Mechanical Lock** — Before mechanical work is performed on equipment, a mechanical lock must be applied by the person performing the work.

(1) **Mechanical Person** — Each Mechanical person who works on the equipment must first add his own lock and a red DO NOT OPERATE tag on which he will write his name, skill, and the date. It is the responsibility of each person working on the equipment to assure his own safety by keeping his tag and individual lock on the disconnect switch while he works on the equipment. If two or more people in the same craft are working together on the equipment, only one mechanical lock and red DO NOT OPERATE tag are required. *If a contractor employee is doing the work, he must use an Exxon mechanical-type lock and the appropriate electrical lockout procedures tag obtained from the Contract Administrator. He must write on the tag his name and the name of the contractor firm.*

(2) **Process Person** — When a Process person is to perform work on the equipment, he must obtain his individual mechanical-type lock and key from the supply in the control room or center and then follow the above procedures in c(1).

1. Remove Lock and Tag — Locks and DO NOT OPERATE tags must be removed as follows:

(1) **Remove Mechanical Lock and Tag** — As each person finishes his work, he must remove his own lock and red DO NOT OPERATE tag. At the end of his work shift, he must remove his lock and tag whether his work is finished or not. This does not include the original Process lock or white DO NOT OPERATE tag.

(2) **Remove Process Lock or Locks and Tags** — The Process lock or locks must be the last to be removed. When the local control station is a "Hand-off-Auto" selector switch the lock on this selector switch must be the last removed. The Process person, after determin-

ing that it is safe to do so, must remove the Process lock or locks and white DO NOT OPERATE tags and must notify other operating personnel to remove the white DO NOT OPERATE tags or DO NOT OPERATE pressure-sensitive tape from remote start-stop switches. He must then enter the lock removal in the log book.

(3) **Emergency Lock Removal** — If it becomes necessary to remove a lock by other than the Mechanical person who installed it, only the Shift Superintendent is allowed to remove it. Upon removal of the lock, the Shift Superintendent must send a note to the Department Heads of the Process and Mechanical Departments stating whose lock was removed, where it was located, and why it was removed. A log of the same information must be maintained in the Shift Superintendent's office. A master key for the mechanical person's locks must be kept at the Shift Superintendent's office only.

2. Wiring Disconnect Procedures — For some types of work, the lockout procedure alone is not adequate. Such work includes, but is not restricted to, the following: (1) work on fans inside cooling towers, (2) work inside confined spaces containing electrically powered equipment such as mixers or filters or electrodes (desalters), and (3) work on equipment where the switch controls more than the one piece of equipment. In such cases, this wiring disconnect procedure must be followed:

a. **Lockout Equipment** — The disconnect switch must be locked out in accordance with the electrical lockout procedure in Paragraph 4a of this section.

b. **Check and Disconnect Circuit** — After making sure the circuit is clear by checking with a

voltage tester, the Mechanical or Process person must disconnect the wires and tape them together.

c. Tag Circuit— The Mechanical or Process person must tag the disconnect switch with a yellow WIRING DISCONNECTED tag. On the tag, he must note where the wiring is disconnected and must sign and date the tag.

d. Remove Lock and Red DO NOT OPERATE Tag — After the wiring has been disconnected, and taped together, the Mechanical or Process person must remove his individual lock and red DO NOT OPERATE tag unless he must do other work on the equipment. Do not remove the yellow WIRING DISCONNECTED tag.

e. Wiring Reconnect — The Mechanical or Process person who reconnects the wiring must place his individual lock and red DO NOT OPERATE tag on the disconnect switch, reconnect the wiring, and then remove his lock and the red DO NOT OPERATE and yellow WIRING DISCONNECTED tags. *If a contractor employee is doing the work, he must obtain the required tags from the Contract Administrator and follow the above wiring disconnect procedures a through e. He must also include on the tags the name of the contractor's firm.*

3. Abnormal Condition Procedures — Conditions may exist that appear normal but actually are not. The following are examples of such abnormal conditions that require use of the pink ABNORMAL ELECTRICAL CONDITION tag. Such abnormal conditions include but are not limited to the following: (1) temporary power to equipment; (2) inside plastic handle broken off switch so outside handle will not operate switch; (3) one pushbutton inoperative but another will operate equipment; (4) a switch is left energized but a part of the equipment supplied by it is disconnected,

(MOVs) supplied by one circuit breaker; and (5) a switch is off and tagged out but a separate circuit is still supplying power to the switch housing for controls, lights, heaters, etc.

e. Application of Pink ABNORMAL ELECTRICAL CONDITION Tag — Before a Mechanical Person leaves electrical equipment with temporary wiring connected or with any other abnormal condition existing, he must tag the equipment with pink ABNORMAL ELECTRICAL CONDITION tags; he must place one tag on the outside of the equipment and one inside on the wiring if it is practical to do so. He must describe the abnormal condition on the tags and must sign and date them. The abnormal condition must be entered in the log book. *If a contractor employee is doing the work, he must obtain the tags from the Contract Administrator and proceed according to a and b. In addition, he must also include on the tag the name of the contractor's firm.*

b. Removal of ABNORMAL ELECTRICAL CONDITION Tags — The tags must remain in place until the equipment has been returned to its normal condition. The Mechanical person who removed the temporary wiring or eliminates the abnormal condition must remove the tags and notify the Chief Operator responsible for the equipment, who must enter the action in the log book.

POWER LINES

PURPOSE

The purpose of these procedures is to protect anyone who works on or near power lines and on direct-connected Process equipment from injury or death.

SPECIAL DEFINITIONS

1. Power Lines — Those electrical lines that radiate

from generating stations and distribution substations.

2. **Direct-Connected Process Equipment** — A piece of electrical equipment on a Process unit supplied by a single power line having its electrical disconnect switch at an electrical substation or at a power plant.

3. **Electrical Maintenance Supervisor** — The Line Crew Supervisor or the Power Systems Maintenance Supervisor or their designated representative.

4. **Utilities Chief Operator** — The Process person responsible for the operation of the power system.

5. **Electrical Mechanical Person** — Any lineman, electrician, or Mechanical person working on the power system or on the direct-connected Process equipment.

6. **Power Plant Process Person** — The Process person who operates the power plant.

RESPONSIBILITIES

1. **Electrical Maintenance Supervisor** is responsible for requesting that power lines be removed from service and returned to service and for determining that the lines to be worked on are deenergized and tagged out.

2. **Process Chief Operator or His Designated Representative** is responsible for the removal and return to service of direct connected process equipment. He is also responsible for requesting the Utilities Chief Operator to deenergize the circuit serving the equipment and tag out.

3. **Utilities Chief Operator** is responsible for authorizing the removal and return to service of the power lines to be worked on.

4. **Electrical Mechanical person** is responsible for assuring himself that the equipment is safe for

him to do the prescribed work and that the following provisions of these procedures for which he is responsible are carried out.

5. **Power Plant Process person** is responsible for removing from service and returning to service power lines to be worked on and for properly tagging.

PROCEDURES

Procedure for Removing Power Lines or Direct-Connected Process Equipment from Service.

a. **Request for Removal of Power Lines or Direct-Connected Process Equipment from Service:** For power lines, the Electrical Maintenance Supervisor must make his request in person to the Utilities Chief Operator. For direct-connected Process equipment, the Process Chief Operator or his designated representative must request the Utilities Chief Operator for removal of these particular power lines from service. If a contractor employee is to work on power lines or do electrical work on Process equipment, the Contract Administrator must make the arrangements for removing the lines from service and for returning them to service.

b. **Removal of Power Lines or Direct-Connected Process Equipment from Service:** The Utilities Chief Operator must make the necessary arrangements with the Power Plant Process person to remove the power lines or the direct-connected Process equipment from service.

c. **Check Circuit Removal before Work Begins:** For power lines, the Utilities Chief Operator, the Electrical Maintenance Supervisor, and a representative of the group actually doing the work must personally observe that the line has been removed from service by lowering the circuit breaker or opening the dis-

connect switches at each substation and power plant involved. They must then tag on the equipment by attaching the red POWER LINE DISCONNECT tags filled out and signed by the Utilities Chief Operator and signed by the Electrical Maintenance Supervisor on the equipment at each substation or power plant involved.

If work is being done on a line by more than one group, then each group must be protected by separate red POWER LINE DISCONNECT tags.

For direct connected process equipment, the Process Chief Operator or his designated representative shall notify the Utilities Chief Operator that this equipment has been removed from service and is ready for tagging. The Utilities Chief Operator will proceed to the site of the direct connected equipment, where he will meet the Process Chief Operator or his designated representative and a representative of the group which will actually work on the equipment. The Process Chief Operator or his designated representative will fill out and sign a red POWER LINE DISCONNECT tag and personally give that tag to the Utilities Chief Operator, verifying the equipment is ready for tagging on. The Utilities Chief Operator will keep that tag, and along with the representative of the group which will actually work on the equipment he must then proceed to the electrical substation and observe that the circuit serving the equipment has been removed from service by lowering the circuit breaker or opening the disconnect switches. They must then tag on the appropriate circuit breaker with a red POWER LINE DISCONNECT tag filled out and signed by the Utilities Chief Operator and the representative of the group which will

actually work on the equipment. After completing that step, they must proceed to the Power Plant and tag on a red POWER LINE DISCONNECT tag filled out and signed by the Utilities Chief Operator and a representative of the group actually doing the work on the equipment to the remote switch serving the equipment. Finally, the Utilities Chief Operator and the representative of the group actually doing the work will return to the site of the direct connected process equipment and sign and tag on to the local start-stop switches the red POWER LINE DISCONNECT tag originally signed by the Process Chief Operator or his designated representative. After completing this procedure the work can begin.

In the case of contractor personnel the contractor's Supervisor and the Contract Administrator must accompany the Utilities Chief Operator in the inspection and the Contractor's Supervisor along with the Utilities Chief Operator must sign on the disconnect tags.

Before any work is done on an open power line up to and including 13,800 volts, the line must be checked with a voltage tester and a ground chain must be pulled across the line to assure that it is deenergized.

d. Return Power Lines or Direct-Connected Process Equipment to Service: To return a power line to service, the Electrical Maintenance Supervisor must personally report to the Utilities Chief Operator that the work has been completed and accompany the Utilities Chief Operator to the substations and main power plants and properly tag off the power lines by signing and removing the red POWER DISCONNECT tags at the electrical substations and at the main power plants. The lines may

then be energized by the Power Plant Process Operator.

In the case of direct connected process equipment, the Process Chief Operator or his designated representative must report to the Utilities Chief Operator that the work has been completed. The Utilities Chief Operator and a representative of the group actually working on the equipment will proceed to the site of the equipment and personally meet with the Process Chief Operator or his designated representative who will tag off the local start-stop switches by signing and removing the red POWER LINE DISCONNECT tag. He will give the tag to the Utilities Chief Operator who will also sign it, along with the representative of the group actually working on the equipment. The Utilities Chief Operator and the representative of the group actually doing the work must then proceed to the electrical substation and properly tag off the disconnect switches by signing and removing the red POWER LINE DISCONNECT tags. Finally, they must proceed to the Power Plant and tag off the remote control switch by signing and removing the red POWER LINE DISCONNECT tag from the remote control switch. The Utilities Chief Operator will keep the signed tags and notify the Process Chief Operator or his designated representative that the tag off procedure has been completed.

In the case of Contractor personnel the Contractor's Supervisor and the Contract Administrator must accompany the Utilities Chief Operator in the inspection and the Contractor's Supervisor along with the Utilities Chief Operator must sign off the disconnect tags.

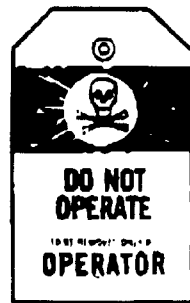
2. Procedure for Working on or Adjacent 2,300-Volt Power Lines

a. Tag Power Lines — Before beginning work on live uninsulated 2,300-volt power lines or working adjacent to any live uninsulated power line, the Maintenance Supervisor or his designated representative must notify the Utilities Chief Operator about the nature and location of the work to be performed.

The Utilities Chief Operator must request the appropriate Power Plant Process person to attach a yellow CAUTION-PEOPLE WORKING ON THIS CIRCUIT tag to the switch or switches controlling the power lines. In the case of contractor linemen, the Contract Administrator must contact the Utilities Chief Operator.

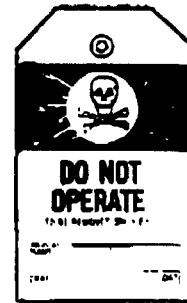
b. In Case of Circuit Trouble — In the event of circuit trouble at the jobsite, the Mechanical Supervisor must immediately notify the Power Plant Process person. In the case of contractor linemen, the Contract Administrator must contact the Power Plant Process person. If any switch to which a tag is attached is tripped, it must not be reclosed until the Power Plant Process person is notified that it is safe to reclose.

c. Removal of Tags — Upon completion of the job, the Maintenance Supervisor who made the original request must notify the Power Plant Process person to remove the tags. In the case of contractor linemen, the Contract Administrator must contact the Power Plant Process person.



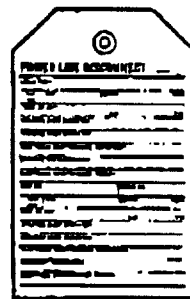
Red Lettering
On White Tag

Red Tag



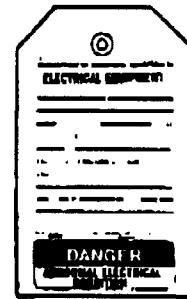
Yellow Tag

Yellow Tag



Red Tag

Pink Tag



Section 5 HOT WORK PERMIT

PURPOSE

The purpose of this permit procedure is to protect personnel and equipment from fires and/or explosions that could result from hot work performed in a hazardous area. This section outlines minimum precautions for safety when performing hot work in any location not designated as a routine hot work area. In all such areas, a green HOT WORK PERMIT is required for all hot work.

SPECIAL DEFINITIONS

1. Hot Work — Any work requiring the use of burning, welding, or brazing equipment, explosives, open fires, portable grinders, unattended internal combustion engines, concrete busters, soldering irons, nonexplosionproof electric motors (including motor chippers, drills, and saws), nonexplosionproof floor or string lights, sandblasting, explosion-actuated tools, electric hot plates, or any other flame- or spark-producing equipment.

EXCEPTION: work on energized intrinsically safe circuits, electrical instruments and electrical power circuits covered under Cold Work Permits in Section 8.

2. Hot Tap — Any connection made to a pipeline or other equipment that is under pressure or has not been cleared and prepared for tapping using conventional construction methods.

RESPONSIBILITIES

1. Chief Operator is responsible for issuing the green HOT WORK PERMIT for his equipment. He or his designated representative must designate boundaries within which the permit applies and must insure that all necessary safety precau-

tions have been completed prior to the Chief Operator signing the permit.

When hot work is to be performed on equipment passing through or adjacent one processing area, but controlled from another, the Chief Operators from both processing areas are responsible for issuing the permit. This rule applies if the hot work to be performed is within approximately 50 feet of operating equipment. (Example: Oil Movements line in pipe rack adjacent a process unit.)

When hot work is to be performed on equipment in a non-processing area adjacent a processing area both the Chief Operator from the adjacent processing area and the Basic Equipment Owner of the non-processing area or his authorized representative are responsible for issuing the green HOT WORK PERMIT. (Example: road work adjacent a process unit.)

2. Maintenance Supervisor is primarily responsible for seeing that only the type of work covered by the permit is performed, and that conditions at the jobsite are safe for the scheduled work; also that hot work is confined to the area covered by the permit.

3. Mechanical personnel performing the work are responsible for checking the green HOT WORK PERMIT to be sure it is current, valid, and properly signed by the Chief Operator and Mechanical Supervisor. If any of the signatures are missing, work must not begin.

4. All persons at or near the hot work site must be constantly alert for any condition that could make hot work hazardous. If such a condition develops, all hot work and machines must be stopped at once. All personnel must immediately vacate the area and notify the Chief Operator or the nearest Process person of the hazardous condition. The green HOT WORK PERMIT is no longer valid and

must be removed. All persons associated with the work must be notified. Before work may resume, a new green HOT WORK PERMIT must be issued. When Mechanical personnel leave the job (such as lunch break), they must check to see that conditions have not changed and the permit has not been removed before resuming hot work.

PROCEDURES

1. Area Other than Enclosed Spaces and on Marine Docks — For performing hot work in any area not designated as safe for routine performance of hot work, the following requirements apply:

a. Hot Work Planning — The Maintenance Supervisor will advise the Chief Operator of the nature and location of the hot work to be performed as well as the proposed timing. Normally this should be done at least one day before hot work is scheduled to begin.

b. Preparing for Hot Work — The Chief Operator will work with the Maintenance Supervisor to see that the area is prepared properly for hot work. The Chief Operator will see that the following work is completed:

(1) Clearing and Blinding — Check to make sure all blinding and clearing of equipment necessary for execution of hot work is completed. Equipment which has been removed from service for hot work and has contained flammable material or is connected to equipment that contains flammable material must be (1) blinded inerted and vented (2) blinded and cleaned or (3) disconnected and cleaned before issuing a green hot work permit. Opening and blinding of equipment requires a white opening or blinding permit as stipulated in Section 7.

(2) Remove Flammable Material — Check to make sure that no flammable liquids or solids

are spilled or trapped in or around equipment at the site of the proposed hot work.

(3) Prepare Sewers — Cover all sewer catch basins and manholes in vicinity of hot work. Catch basins containing flammable material must be flushed with water before covering. Also, check for and seal off sewer vents in the area that may present a hazard.

(4) Remove Trash — Remove other flammable materials such as trash, wood, or dry grass. Where hot work is to be carried out over dry grass, the area must be saturated with water before performing hot work, and a water hose left connected and readily accessible.

(5) Provide Fire-Fighting Equipment — Make sure that adequate fire-fighting equipment is at the jobsite. At least one fully charged fire extinguisher of a type and size designated as suitable must be provided where hot work is to be performed.

(6) Make Surrounding Area Safe — Check surrounding area for possible release of flammable vapors in the hot work area. Such things as safety valve discharges, leaks from pumps and/or compressors, valve packing leaks, etc., must be identified and necessary corrective action taken.

(7) Prepare for Hot Taps — For hot taps or other jobs requiring hot work on equipment in service, all requirements of the "Hot Tap Procedure Safety Standard" (Mechanical Division Safety Procedure No. 11) must be satisfied. Before the green HOT WORK PERMIT can be issued, the checklist attached to the above mentioned standard must be completed. The Chief Operator must make sure that his Operating Supervisor has ap-

proved the work to be done and so note in the space provided on the back of the permit. Also, he must see that the Mechanical Engineering Department Inspector has checked for adequate metal thickness and initialed the space provided on the back side of the tag.

(8) Check Other Work in Area — The Chief Operator must check for active white OPENING AND/OR BLINDING PERMITS in the area of the hot work. A HOT WORK PERMIT must not be issued if work associated with existing white OPENING AND/OR BLINDING PERMIT could create a hazard by spill or gas release. All openings from which release of flammable material could occur are to be considered hazardous. The area of concern must cover the geographical limits where there is a remote possibility that sparks from hot work could come in contact with flammable materials from any opening. If such a possibility exists in the proposed hot work area, the white OPENING AND/OR BLINDING PERMIT must be killed. The green HOT WORK PERMIT shall not be issued until all openings from which flammable material could be released are blinded, and the area is cleared of flammable liquid or vapor.

(9) Provide for Overhead Hot Work — When hot work is to be performed in overhead locations, a suitable method for catching hot metal, electrode stubs, etc., must be provided where these materials would cause a fire hazard or when they would create a safety hazard when work is going on below.

(10) Safe Location of Welding Equipment — When electric welding is to be performed, the ground lead connection must be attached at a point within the area covered by the permit. The welding machine must be in the same area or an adjacent area approved

for nonrestricted movement of motorized equipment.

(11) Perform Gas Tests — The Chief Operator shall perform gas tests for explosivity, oxygen deficiency and toxic materials depending on the nature of the job.

c. Filling Out Green Card — After completion of all items covered in b above, the Chief Operator must double check the hot worksite. He and the Maintenance Supervisor will determine if a standby man or other special precautions are necessary. The Chief Operator or his designated representative will then fill out the green HOT WORK PERMIT and the checklist on the back side of the tag.

d. Maintenance Supervisor Site Inspection — The Maintenance Supervisor must also inspect the site to make sure all necessary work and checks have been completed. His signature on the green HOT WORK PERMIT indicates he checked the work area and agrees all is safe for hot work.

e. Chief Operator Site Inspection — When all is considered ready by both the Chief Operator and Maintenance Supervisor, and the Maintenance Supervisor has signed the permit, the Chief Operator will make a final site inspection and if all is safe for hot work, he will sign the permit signifying that hot work can begin.

f. Permit Duration and Disposition — Before the green HOT WORK PERMIT is issued, the Chief Operator and Maintenance Supervisor must agree on the expiration time and note same in the space provided on the permit. This decision on duration as well as disposition of the permit copies must be in accordance with the following guidelines:

(1) Eight-Hour Permit — Permits to do hot

work in or around processing areas where flammable or toxic materials exist are normally eight-hour permits. Such a permit is good for the shift in which it was issued. It can be continued into the next mechanical shift only after the Chief Operator and Maintenance Supervisor for the new shift have inspected the site and are confident no changes have taken place. If there is any question, the Chief Operator must make a new gas test. Hot work on the new shift must not begin until the Chief Operator and the Maintenance Supervisor have signed the cardboard portion of the green permit. They must also sign the control center copy. If work continues into the third shift, the same procedure must be followed. Eight-hour permits are void at the end of 24 hours, and a new permit must be obtained if work is to continue.

When a green HOT WORK PERMIT is issued the cardboard portion must be placed in a conspicuous location at the jobsite by the Chief Operator or his designated representative. The original is to be kept in the Process Permit file. At the end of the Mechanical shift or at job completion, whichever comes first, the Mechanical Person must sign the cardboard section of the permit, check appropriate box as to job completion, and return it to the Chief Operator. Both copies must be retained for at least 24 hours after expiration and then discarded.

(2) Job Completion — Under certain conditions, a green HOT WORK PERMIT may be issued for the job duration. In general, it is when the job conditions at and surrounding the work area will not change and create a flammable or toxic material hazard. Examples of such jobs are: (1) construction of a new

Process unit; (2) a field pipe fabrication shop in an open area; (3) construction of a new tank in an open area; (4) during turnarounds when oil, gas, and chemical lines are blinded at the unit limits; and (5) no job completion cards can be issued inside an operating Process unit. The cardboard portion of the permit must be placed at the Maintenance Supervisor's jobsite office. The Chief Operator will keep the original on file in the Process permit file. Upon job completion, the Maintenance Supervisor must sign the cardboard section of the permit, check appropriate box as to job completion, and return it to the Chief Operator. The Operating Supervisor must approve all job completion permits including *contract jobs*.

g. Hot Work Authorization — Only after all of the above items have been completed and green HOT WORK PERMIT has been signed by the Chief Operator and Maintenance Supervisor is hot work authorized. After the Chief Operator or his designated representative has personally hung the cardboard portion of the permit in a conspicuous location at the job site, hot work can begin.

2. Marine Docks — For performing hot work on or under Marine Docks, all provisions given in the basic procedure above shall apply. In addition, the following work shall be completed and checks made before a green HOT WORK PERMIT can be issued.

a. Safe Tide Level — When hot work is to be performed under a dock, the tide level must be below any pipelines at the water level to prevent trapping oil between the pipelines, thus eliminating a possible source of combustible material.

b. Avoid Falling Materials — The hot work

area must be isolated to prevent molten metal and/or any combustible material from falling into the water.

c. **Remove Grating** — Grating in the fender system must be removed in the hot work area when work is to be performed under a dock.

d. **Secure Coast Guard Approval** — The Docks' Operating Supervisor must secure approval of the Houston Coast Guard Port Captain prior to any hot work.

e. No hot work can be performed on any dock while a ship is berthed at that dock.

EXCEPTION: At Dock No. 1, hot work will be permitted 150 feet or more from vessels handling materials with a flash point of above 150F.

3. **Enclosed Spaces** — For performing hot work in enclosed spaces, all provisions given in the basic procedure above apply. In addition, the following work must be completed and/or checks made before a green HOT WORK PERMIT can be issued:

a. **Obtain Yellow PERMIT TO ENTER** — It may be necessary to enter an enclosed space to prepare for hot work. Before entering, a yellow "Permit to Enter" must be secured (see Section 6). Once the enclosed space has been prepared for hot work and a green "Hot Work Permit" has been issued, no yellow Permit to Enter tag is required for entering as long as the hot work permit is valid.

b. **Other Requirements for Hot Work in Enclosed Spaces** — After entry is made into the enclosed space, applicable portions of the basic Procedure above can be completed. In addition, the following must be performed and/or checks made before a green HOT WORK PERMIT can be issued:

(1) **No Cylinders In Enclosed Spaces** — Cylinders containing any type of flammable material must not be placed in an enclosed space where hot work is to be done.

EXCEPTION: In storage tanks where door sheets have been removed.

(2) **Thoroughly Clean** — The enclosed space, including all internals, must be thoroughly cleaned and made safe for hot work. This includes freeing the container of all flammable gases, liquids, and solids as well as inert atmospheres and toxic materials.

(3) **Provide Adequate Ventilation** — A fresh air ventilation system must be provided and shall be adequate to remove fumes and gases created by the proposed hot work. If adequate ventilation is not possible, suitable respiratory protection must be used.

SPECIAL REQUIREMENTS

1. **Work on Tank Cars** — Hot work must not be done on tank cars while located at a loading rack.

2. **Venting Hollow Equipment** — Before burning into or heating any hollow vessel or equipment such as ball floats, pistons, impellers, vessels, pipes, valves, fittings, or similar equipment: that has been in service of any kind, the vessel or equipment must be properly vented (unless the operation is performed under controlled conditions so that any over-pressuring will be avoided).

3. **Gas Hoses In Confined Spaces** — When gas hoses are used in connection with welding and/or burning in an enclosed space, the hoses must either (1) be removed from the enclosed space or (2) disconnected at the regulators at any time when positive ventilation is discontinued. A torch or other gas-consuming device must never be removed from a hose while inside a confined space. When torches are left unattended (such as lunch

5. Hot Work by Process — When hot work is to be performed by Process personnel, the Chief Operator will assume the responsibilities and functions of the Maintenance Supervisor including signing the green Hot Work Permit in space marked Maintenance Supervisor.

HOT WORK PERMIT									
BOLSON COMPANY, U.S.A.					DAYTOWN REFINERY				
LOCATION _____									
REASON FOR WORK _____									
WAS TEST MADE		A.M.		WAS TEST MADE BY		P.M.			
DATE		TIME		DATE		TIME			
SPECIAL PRECAUTIONS _____									
EQUIPMENT AND THE EQUIPMENT REQUIRED _____									
TO BE CUT OFF		DATE ISSUED		TIME		A.M.		PERMIT EXPIRATION	
BY WHOM						P.M.			
REASON FOR WORK		MAINTENANCE SUPERVISOR		ISSUED		BY WHOM		A.M.	
DATE EXTENDED		TIME		DATE EXTENDED		TIME		A.M.	
P.M.				P.M.					
WAS COMPLAINT		DATE		DATE		DATE		DATE	
BY WHOM		BY WHOM		BY WHOM		BY WHOM		BY WHOM	
DATE EXTENDED		TIME		DATE EXTENDED		TIME		A.M.	
P.M.				P.M.					
MAINTENANCE SUPERVISOR									
ISSUED									
WHY OPERATOR									
WHY									
WAS COMPLAINT		DATE		DATE		DATE		DATE	
BY WHOM		BY WHOM		BY WHOM		BY WHOM		BY WHOM	
DATE EXTENDED		TIME		DATE EXTENDED		TIME		A.M.	
P.M.				P.M.					
MAINTENANCE SUPERVISOR									
ISSUED									
WHY OPERATOR									
WHY									
WAS COMPLAINT		DATE		DATE		DATE		DATE	
BY WHOM		BY WHOM		BY WHOM		BY WHOM		BY WHOM	
DATE EXTENDED		TIME		DATE EXTENDED		TIME		A.M.	
P.M.				P.M.					
MAINTENANCE SUPERVISOR									
ISSUED									
WHY OPERATOR									
WHY									
WAS COMPLAINT		DATE		DATE		DATE		DATE	
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MAINTENANCE SUPERVISOR									
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BY WHOM		BY WHOM		BY WHOM		BY WHOM		BY WHOM	
DATE EXTENDED		TIME		DATE EXTENDED		TIME		A.M.	
P.M.									

Green Tag

Section 6 PROCEDURE FOR ENTERING ENCLOSED SPACES

PURPOSE

This procedure is designed to protect personnel against such hazards as oxygen deficiency, toxic materials, flammable substances, and power-driven equipment when working in enclosed spaces. A yellow PERMIT TO ENTER tag is required to initially enter any enclosed space. If hot work is to be performed in an enclosed space, a yellow PERMIT TO ENTER tag is required to initially enter the enclosed space. This procedure is to be considered the minimum precautions for the safety of personnel entering enclosed spaces.

SPECIAL DEFINITIONS

1. **Enclosed Space** — Any space that can be closed or has restricted entry or exit, such as vessels, tanks, boilers, furnaces, etc. Also included are confined spaces, such as pits, sewers, excavations, where the heads of workmen are below the top of the confined space.

2. **Oxygen Deficiency** — Any atmosphere that has oxygen concentration of less than 19.5 percent.

3. **Standby** — The person designated by the Chief Operator and/or the Maintenance Supervisor to warn persons in enclosed spaces of hazardous or emergency conditions that could affect their safety.

RESPONSIBILITIES

1. Chief Operator is responsible for issuing the yellow PERMIT TO ENTER for entry into enclosed spaces in his processing area. He or his designated representative is responsible for insuring that all necessary safety precautions have

been completed prior to issuance of the permit. The Chief Operator must make the necessary gas tests for explosivity, oxygen content and toxic materials depending upon the nature of the job. After the Maintenance Supervisor has signed the yellow Permit to Enter tag the Chief Operator must sign the permit signifying that all is safe for entry.

2. Maintenance Supervisor is responsible for obtaining the yellow PERMIT TO ENTER and assisting in final preparation of the enclosed space for entry. He must inspect the area and sign the tag to indicate his approval of the required safety precautions. He must see that all proper job safety precautions are followed and be alert for changing conditions that might affect the safety of the job.

3. Individual, before entering an enclosed space, shall assure himself that the necessary safety preparations have been made and that a current yellow PERMIT TO ENTER, properly filled out and signed by the Chief Operator and the Maintenance Supervisor has been posted at the job site.

4. Standby is responsible for assuring the well-being of persons working in enclosed spaces when breathing equipment is in use or when conditions are such that outside warning may be necessary.

PROCEDURE

1. **Entering an Enclosed Space Without Protective Equipment**

a. **Preparing Enclosed Spaces for Entry** — The Chief Operator will see that the enclosed space is emptied and purged in preparation for opening. Process personnel may also physically disconnect or blind the enclosed space in accordance with Section 7.

b. **Requesting PERMIT TO OPEN AND/OR**

BLIND — The Maintenance Supervisor will request a white **OPENING AND/OR BLINDING PERMIT** from the Chief Operator in accordance with provisions of Section 7.

c. Isolating the Enclosed Space — If not already done by Process, the Maintenance Supervisor will insure that all connecting lines to the enclosed space are physically disconnected or blinded at a point as near to the enclosed space as is safely practical. Double block valves with an intervening bleeder are not considered equivalent to a blind where personnel bodily enter the space.

EXCEPTION: In steam, water, and air service, the use of double block valves with an intervening bleeder is acceptable provided the bleeder is open and clear and is at least one inch in size for lines four inches and larger. The double block valves shall be locked closed and the intervening bleeder locked open. Mechanical-type locks must be used.

d. Immobilizing of Power-Driven Equipment — Before entry, the Maintenance Supervisor will arrange for electrical equipment to be immobilized in accordance with the electrical lockout procedure. The power supply to other equipment driven by air, steam, internal combustion engines, or hydraulic fluid shall be blinded or disconnected.

e. Cleaning and Establishing Ventilation of Enclosed Space — The Maintenance Supervisor will clean the space if necessary and establish and place in operation a fresh air ventilating system.

EXCEPTION: No forced ventilation system is required where a natural draft is established and the Chief Operator and Maintenance Supervisor agree that entry is safe.

f. Gas Testing the Atmosphere of the Enclosed Space — The Chief Operator must satisfactorily test for explosivity, oxygen deficiency, and toxic materials.

(1) **Explosivity** — Entry will not be permitted unless the test indicates a safe range.

(2) **Oxygen Deficiency** — Entry will not be permitted unless oxygen concentration is greater than 19.5 percent.

(3) **Toxic Materials** — Entry will not be permitted unless test indicates a safe range.

Additional checks are to be made as work proceeds in the enclosed space if a possibility of release of fumes or depletion of oxygen exists.

g. Standby Requirement — A standby must be required and noted on the yellow **PERMIT TO ENTER** when the Chief Operator and/or the Maintenance Supervisor determines that an unsafe condition may develop during the course of the work. The standby must be equipped with a claxon horn and a unit radio for communications. A complete standby kit is required if the Chief Operator and/or the Maintenance Supervisor believe that a breaking hazard may develop.

h. Issuance of PERMIT TO ENTER — When the Maintenance Supervisor is satisfied that all requirements and safety precautions have been completed satisfactorily, he must complete applicable portions of the checklist and sign the permit. The Chief Operator will complete the permit, including the checklist, and sign the permit signifying that entry can be made. He or his designated representative will then post the cardboard portion of the permit in a conspicuous location at the jobsite and file the original paper portion in the Process permit file.

1. Permit Duration and Disposition — A yellow PERMIT TO ENTER will have the same requirements for duration and disposition as a green HOT WORK PERMIT except that no Job Completion type permits will be allowed. At the end of the Mechanical shift or at job completion, whichever comes first, the Mechanical Person must sign the cardboard section of the permit, check the appropriate box as to job completion, and return it to the Chief Operator.

2. Entering an Enclosed Space with Protective Equipment

Enclosed spaces to be entered with protective equipment must be emptied, cleaned of hazardous materials, and purged, insofar as practical, prior to entry. It must be physically isolated and all power-driven equipment immobilized as required in Part 1.

a. Required Tests — A yellow PERMIT TO ENTER will be issued only when the atmosphere in the enclosed space meets the following tests:

(1) **Explosivity** — Entry will not be permitted unless the test indicates a safe range.

(2) **Oxygen Deficiency** — If oxygen level is below 19.5 percent, entry will be permitted only with a pressure-demand, hose-line air mask.

(3) **Toxic Materials** — Entry will be permitted only with appropriate protective equipment.

Additional checks are to be made as work proceeds in the enclosed space if a possibility of release of fumes exists.

b. Required Protective Equipment — All personnel entering enclosed spaces must wear protective equipment appropriate for the hazard involved. Use of respiratory masks and other

protective equipment (such as rubber suits, goggles, gloves, etc.) inside closed spaces is to be determined by the Chief Operator and the Maintenance Supervisor and indicated on the yellow PERMIT TO ENTER permit. The cardboard section of the permit must be posted at a conspicuous location at the jobsite. In the case of oxygen-deficient atmospheres, pressure-demand, hose-line air masks with self-contained life lines must be used and Operating Supervisor approval obtained for entry.

A standby is required when personnel are required to wear pressure-demand, hose-line air masks inside an enclosed space or the situation is such that outside warning is necessary. Scott Air-Paks are permissible in place of the pressure-demand, hose-line air masks for emergency or rescue use where life is in immediate danger.

3. Duties of Standby

a. Accounting for personnel working in the enclosed space.

b. Preventing fouling of air or life lines.

c. Being alert for hazards to workers.

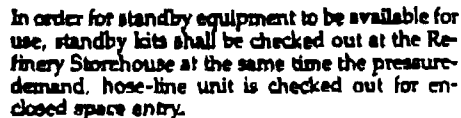
d. Providing normal assistance in handling materials, tools, messages, etc.

e. Evacuating the enclosed space in case of fire or disaster alarm.

f. Being well trained in the operation of respiratory equipment and administering of artificial respiration.

g. Maintaining an adequate air supply.

h. The standby should never attempt to enter the enclosed space even in an emergency until help has arrived.



1. Entry to Prepare for Hot Work — A yellow PERMIT TO ENTER is required to initially enter an enclosed space where hot work is to be performed. Once the necessary requirements have been met and a green HOT WORK PERMIT has been issued, no yellow PERMIT TO ENTER is required as long as a valid green HOT WORK PERMIT is in effect.

2. Entry by Process without Mechanical Involvement -- When entry is made by Process personnel without mechanical personnel involvement, the Chief Operator will assume the responsibilities and functions of the Maintenance Supervisor including signing the yellow PERMIT TO ENTER in the space marked Maintenance Supervisor.

3. Entry by Process Into Enclosed Pump Pits — A Process person may enter enclosed pump pits for Process functions without a written permit, provided the Process person performs a gas test to determine that the atmosphere is safe prior to entry.

4. Entry Into Boilers, Steam Generators, and Furnaces — For boilers, steam generators, and furnaces, the limits of the enclosed space must be

clearly defined and agreed to by both Chief Operator and Maintenance Supervisor and so indicated on the permit tag. The limits of the enclosed space must be physical barriers which separate the enclosed space from other parts of the boiler, steam generator, or furnace. All the provisions of Section 6 "Procedure for Entering Enclosed Spaces" of the Safety Manual must be met for the defined enclosed space and, in addition, the provisions of Section 6-1C "Isolating the Enclosed Space" must be met for the entire boiler, steam generator, or furnace.

[illegible]

Yellow Tag

Section 7 OPENING AND/OR BLINDING PERMIT

PURPOSE

This permit procedure is designed to prevent accidents by insuring adequate communications between Process and Mechanical Personnel when opening and/or blinding equipment in a processing area. A white OPENING AND/OR BLINDING PERMIT shall be obtained before beginning such work.

SPECIAL DEFINITIONS

1. **Opening** — Exposing the interior of any processing equipment, including piping, to the atmosphere. This includes removing covers, breaking flanges, pulling header plugs, etc. It does not include draining or venting through a valve.

2. **Blinding** — Installing temporary slip blinds into piping or blind flanges onto equipment to isolate or close for mechanical work.

RESPONSIBILITIES

1. **Chief Operator** is responsible for issuing the white OPENING AND/OR BLINDING PERMIT. He or his designated representative has the responsibility for preparing the equipment, determining if the surrounding area is safe for the proposed work, and listing any special safety precautions required.

2. **Maintenance Supervisor** is responsible for seeing that a permit is secured to perform work involving opening or blinding. He is also responsible to see that Mechanical Personnel work within the limits of the permit and that all stipulated safety precautions are taken.

PROCEDURES

1. **Requesting Permit** — The Maintenance Supervisor or his designated representative must request a permit from the Chief Operator.

2. **Initiating Safety Inspection** — The Chief Operator or his designated representative must perform a safety inspection of the area. He must check for other active permits, prepare the equipment, and identify all locations to be opened. If blinding is required, he must also prepare a blinding list.

3. **Blinding Requirements** — Generally all opened equipment must be blinded for hot work (see Section 5), for entering (see Section 6), and piping left unattended. The installation and removal of slip blinds and blind flanges (except daily closure blinds) shall be recorded on the blinding list.

Specific blinding requirements and exceptions are as follows:

a. **Pumps** — Minor repairs, such as small piping and seal replacement, may be performed without blinding provided (1) the suction and discharge valves are tightly closed and tagged with "DANGER — DO NOT OPEN" tags, (2) the case has been depressured through bleeders, (3) the driver has been properly immobilized, and (4) the work can be completed in one shift.

Pumps taking suction on vessels operating below atmospheric pressure must be blinded on the suction side.

b. **Compressors** — Minor repairs, such as cover plate gasket and valve replacements and bearing inspections may be performed without blinding provided (1) the compressor can be isolated by block valves, (2) block valves are tagged with "DANGER — DO NOT OPEN"

tags, (3) the case is depressured through bleeders, (4) the driver has been properly immobilized, (5) the work is continuous until completion, and (6) no more than one cover plate and valve is open at any time.

c. **Drivers** — To perform major work on drivers, the driven end must be disconnected or blinded. Additional isolation must be as follows:

(1) Electric motors must be immobilized, using Electrical Lockout Procedure (see Section 4).

(2) Gas engines must be blinded and the fly wheel blocked.

(3) Combustion turbines must have fuel lines blinded and the auxiliary motors immobilized.

(4) Expansion gas turbines must be blocked by closing the inlet and exhaust valves, tagging the valves with "DANGER — DO NOT OPEN" tags, and depressuring through bleeders.

(5) Steam turbines must be blocked by closing the inlet and exhaust valves, tagging the valves with "DANGER — DO NOT OPEN" tags, and opening bleeders.

d. **Piping** — Unattended open Piping must be isolated with slip blinds or closed with blind flanges.

EXCEPTION: Lines in water and air service of less than 100 psig may be left unattended without blinding.

e. **Vessels** — Isolation blinds must be installed as close to the vessel as safely practical and in a manner to insure that no liquid or vapor can be trapped between the blind and vessel.

f. **Cooling Towers** — Individual cells and stacks on cooling towers may be isolated for entry by closing the water inlet valve to the cell. The valve must be secured with a "DANGER — DO NOT OPEN" tag attached by Process and a Mechanical lock placed on the valve by the Mechanical person who will enter the cooling tower. If any chemical lines are connected to the cell to be entered, the line must be blinded or disconnected before entry.

g. **Cursory Inspections** — Equipment may be opened for cursory inspections without blinding under the following conditions:

(1) The equipment must be isolated by block valves tightly closed and tagged with "DANGER — DO NOT OPEN" tags.

(2) The equipment must be depressured and safe to open.

(3) Only one opening at a time must be made.

(4) No personnel entry allowed.

(5) When applicable, proper protection must be provided for individuals adjacent to the opening.

(6) The open equipment must not be left unattended.

4. **Preparing Blinding List** — Before blinding begins, Process Personnel must prepare a blinding list indicating the size and location for all slip blinds and blind flanges to be installed.

5. **Issuing Permit** — Process and Mechanical Personnel must make a safety tour of the job site, identify and mark the places to be opened and/or blinded, and review the limitations and safety requirements stipulated on the permit including filling out the checklist on the back of the cardboard section. When both Process and Mechanical Persons are satisfied that the provisions of Section 5 Item b(8) have been met and the task

can be safely accomplished, then both will sign the permit.

The Process person must post the cardboard portion in a conspicuous place at the job site and file the original copy in the permit file.

EXCEPTIONS:

Process Personnel — Mechanical work by Process may be done without a written permit provided the Chief Operator has authorized the work.

Dock Personnel — Marine hookups on the dock may be performed by the Dock Connection Crew working under the direction of the Chief Operator without a written OPENING AND/OR BLINDING permit.

Unit Turnaround — During a unit turnaround, cleared items of equipment may be opened by verbal authorization of the Process Person designated as the Process Mechanical contact coordinator, provided the following conditions are met:

a. All hydrocarbon and chemical lines are blinded at the unit limits.

b. Opening of equipment will not create a safety hazard for other work in progress.

c. All hot work in the area must be suspended while the equipment is being opened.

(1) If no hazard was created by the opened equipment, the Process contact coordinator may authorize the resumption of the hot work under the existing hot work permit.

(2) If a hazard was created (spill of hydrocarbons, flammable gas release, etc.), the hot work permit must be terminated. To resume work after the hazard has been eliminated, a new hot work permit must be issued.

6. Blinding — The Mechanical Person must re-

cord each slip blind installed by signing and dating the blinding list. At the end of the mechanical shift or at completion of the blinding list, whichever comes first, the Mechanical Person must return the blinding list to the Chief Operator.

7. Permit Duration and Disposition — The permit is issued for one Mechanical shift. It may be extended into the next shift by both Process and Mechanical signing the extension block. No blinding permit shall be valid for more than 24 hours. At the end of the Mechanical shift or at job completion, whichever comes first, the Mechanical Person must sign the cardboard section of the permit, check appropriate box as to job completion, and return it to the Chief Operator. The permit may be extended into the next shift by both Process and Mechanical signing the extension block. No blinding permit shall be valid for more than 24 hours.

8. Removing Blinds — The removal of blinds requires a new permit unless the work at the job site is continuous and is completed in 24 hours. The Process Person issuing the permit and the Mechanical Person accepting the permit must tour the area and physically identify the blinds to be removed. The Mechanical Person must sign and date the blinding list as each slip blind and blind flange is removed. After the last blind has been removed or at the end of the Mechanical shift, the Mechanical Person must sign and date the cardboard portion and return both the permit and blinding list to the Chief Operator.

9. Filing of Permits and Blinding Lists — Each permit must be filed for 24 hours after its expiration and then discarded. Blinding lists must be filed until all blinds have been removed. The blinding list may be discarded 24 hours after the last blind is removed.

Section 8 COLD WORK PERMIT

PURPOSE

This permit procedure is designed to prevent accidents by giving Process Personnel control over cold work activities taking place in their processing area. To insure proper communications between Process and Mechanical, a blue COLD WORK PERMIT must be completed before work is started in a Process area.

SPECIAL DEFINITIONS

1. Cold Work — Any mechanical work on processing equipment including work on intrinsically safe circuits and energized electrical instruments and electrical power circuits that does not involve opening, blinding, entering, hot work, or electrical lockout.

RESPONSIBILITIES

1. Chief Operator or his designated representative is responsible for approving blue COLD WORK PERMITS. He or his designated representative is responsible for insuring that all safety precautions have been completed prior to issuance of the permit.

2. Maintenance Supervisor or his designated representative has the responsibility for initiating the blue COLD WORK PERMIT and securing approval from Process personnel. He is responsible for seeing that only the work authorized by the permit is performed.

PROCEDURE

1. Initiating COLD WORK PERMIT — The Mechanical Person assigned to perform mechanical work in a processing area must fill in the date, time, area, equipment, and description of work

on the blue COLD WORK PERMIT. He will then contact the Chief Operator and secure approval before starting to work.

EXCEPTIONS: Blue COLD WORK PERMITS are not required:

a. When Process Personnel are performing mechanical work.

b. When the Dock Connection Crew is working in the dock area under instructions from the Chief Operator.

c. When instrument technicians and electricians who are regularly assigned to the processing area perform routine work authorized by the Chief Operator.

NOTICE: A COLD WORK PERMIT is required to work on energized electrical instruments and electrical power circuits above 100 volts.

d. When Technical or Laboratory personnel perform sampling and/or test work authorized by the Chief Operator.

e. When janitors perform janitorial-type work in the processing area.

f. When contractor employees take work direction from Process Personnel.

g. When Mechanical performs cold work in preparation for the issuance of other work permits on the same shift. Samples of such work are covering sewers, hooking up hoses, securing fire-fighting or safety equipment, hanging tarps, electrical lockout, etc.

h. When oil, gas and chemical lines are blinded at unit limits during unit turnarounds and work is being performed in accordance with the turnaround procedure.

2. Making Safety Inspection — The Process Person designated to approve the permit must assure himself that the conditions at the job site are safe for the work. He must determine if a gas test is required and may make the gas test himself.

3. Issuing Permit — When both Process and Mechanical Persons are satisfied that the work can be safely performed in the area, each must sign the permit.

4. Posting Permit — The Mechanical person must display the cardboard portion in a conspicuous place at the job site. The Process Person must file the original portion in the permit file.

5. Permit Duration And Disposition — Blue COLD WORK PERMITS are issued for one mechanical shift. At the end of the mechanical shift or at job completion, whichever comes first, the Mechanical Person must sign the cardboard section of the permit, check appropriate box as to job completion, and return it to the Chief Operator. The permit must be filed for 24 hours after its expiration and then discarded.

6. Extension of Permit — The permit may be extended by determining that the job conditions remain unchanged and by both Process and Mechanical signing the permit. No permit shall be extended beyond 24 hours' total duration.

DISPLAY PERMIT AT JOB SITE

COLD WORK PERMIT

ELECON COMPANY, U.S.A. DAYTOWN REFINERY

LOCATION _____

EQUIPMENT _____

DESCRIPTION OF WORK _____

IS GAS TEST REQUIRED? ☐ YES ☐ NO GAS TEST MADE BY _____

☐ YES ☐ NO SIGNED _____

SPECIAL PRECAUTIONS _____

DATE ISSUED: YEAR _____ A.M. _____ P.M. PERMIT EXPIRES: YEAR _____ A.M. _____ P.M.

REQUESTED MECHANICAL PERSON: _____

APPROVED PROCESS PERSON: _____

APPROVED MECHANICAL PERSON: _____

JOB COMPLETED ☐ YES ☐ NO MECHANICAL PERSON: _____

DATE EXTENDED: YEAR _____ A.M. _____ P.M. PERMIT EXPIRES: YEAR _____ A.M. _____ P.M.

MECHANICAL PERSON: _____

PROCESS PERSON: _____

APPROVED MECHANICAL PERSON: _____

JOB COMPLETED ☐ YES ☐ NO MECHANICAL PERSON: _____

DATE EXTENDED: YEAR _____ A.M. _____ P.M. PERMIT EXPIRES: YEAR _____ A.M. _____ P.M.

MECHANICAL PERSON: _____

PROCESS PERSON: _____

APPROVED MECHANICAL PERSON: _____

JOB COMPLETED ☐ YES ☐ NO MECHANICAL PERSON: _____

DATE EXTENDED: YEAR _____ A.M. _____ P.M. PERMIT EXPIRES: YEAR _____ A.M. _____ P.M.

MECHANICAL PERSON: _____

PROCESS PERSON: _____

APPROVED MECHANICAL PERSON: _____

**RETURN PERMIT TO CHIEF OPERATOR AT
JOB COMPLETION OR END OF MECHANICAL SHIFT.**

Light Blue Tag

SECTION 9
SECURITY REGULATIONS

1. Parking Locations

Parking locations will be designated for each Contractor by Owner. If Contractor desires to park on Owner's property, all parking shall be in the lot, or area designated. Posted regulations governing the use of the lot shall be followed. All vehicles on Owner's property shall be at the risk of the vehicle owner and Owner accepts no responsibility for paint or other damage to or theft of or from such vehicles.

2. Entrance Gate

Owner will designate a gate or gates for the use of Contractor and for the delivery of its material and supplies. Contractor and vehicles serving the Contractor shall use only the designated gate for entrance and exit to and from the Contractor's job site. Contractor shall make arrangements so that vehicle drivers will know which gate to enter and the appropriate job site location.

3. Walks and Roadways

Walks and roadways will be designated for the use of Contractor when entering or leaving the job site, when moving from one area to another, or when obtaining material from Owner. Contractor shall use only designated roadways and walks. The use of shortcuts or nondesignated pathways is prohibited.

4. Contractor Employee Badges

Contractor's employees shall wear their Contractor's badge at all times they are in the Plant. Badges shall bear the firm's name and each badge shall be numbered with a different number. Contractor shall supply these badges and maintain a record of badge numbers with employees' names. Employees engaged for engineering services shall be required to wear badges furnished by Owner showing a number only. Badges must be shown to the gate Security Officer each time any employee of Contractor enters or leaves the Plant. When Subcontractors to the prime Contractor do not have their own badges, they may use the prime Contractor's badges.

When contract employees enter the Plant, the Contractor's supervisor is responsible for checking that every contract employee has a Contractor badge.

6. Contractor Vehicle Identification

Contractor's vehicles must bear the Contractor's name or insignia prominently displayed, and the driver must have a badge. Such vehicles shall be restricted to the use of designated street or streets and Plant entrance or entrances assigned for use of Contractor. All equipment on rubber tires, such as mobile cranes, backhoes, air compressors, welding machines, etc., must have Contractor's name prominently displayed on both sides when being used by Contractor.

6. Material Passes

All tools and materials that the Contractor removes from the Plant shall be accompanied by a material pass obtained from the Contract Administrator. The material pass shall be completely filled out and shall be signed by a designated representative of Contractor and the Contract Administrator. The Contract Administrator retains one copy, and the original and one copy shall accompany the material to the gate. Both copies are to be surrendered to the gate Security Officer.

7. Thefts

Owner accepts no responsibility or liability for the theft of any property or material belonging to Contractor or its employees. It shall be the responsibility of Contractor to furnish any police protection it deems necessary to supplement the guard and patrol service provided by Owner. Owner maintains an investigative service and will cooperate with Contractor by assisting in the investigation of all reported thefts within the Plant. Theft of property or automobiles from Owner's outside parking lots should be reported to local law enforcement officials. Contractor may obtain forms for reporting thefts from within the Plant from the Contract Administrator.

8. Gambling

All forms of gambling are prohibited on Owner's property.

9. Business Visitors, Applicants, and Delivery Trucks

Contractor shall furnish Plant Security with a list of persons who are authorized to pass business visitors, new employees, and delivery trucks to the job site. Plant Security will obtain authorization from one of these people before passing such individuals into the

Plant. Special permission shall be obtained from the Contract Administrator to admit union business agents or safety inspectors other than contractor employed into the Plant.

10. Ambulance Service

Contractor, when working in Plant, shall make any arrangements Contractor deems necessary for ambulance service from an outside firm. Requests for an ambulance shall be called in to 427-5711, extension 3600. Accident location, ambulance firm and hospital desired, and Contractor's name shall be given. Plant Security will escort the ambulance to the scene of the accident. All accidents shall be reported to the Contract Administrator as soon as possible, whether resulting in injury to a person or damage to the equipment of Owner or Contractor.

11. Inspection of Lunch Boxes, Packages, Motor Vehicles, etc.

Security Officers have the right to inspect lunch containers, packages, bundles, tools, equipment, and motor vehicles in the Plant at any time.

12. Cameras and Photographs

Unauthorized individuals shall not be permitted to enter the Plant with a camera. When Contractor desires to have photographs taken in the Plant, approval must be obtained from Public Relations Department.

13. Liquor, Drugs, Firearms, and Explosives

Any person possessing intoxicating liquors or drugs, or who is under the influence of such, will not be permitted to enter the Plant or loiter on Owner's property.

Firearms and explosives will not be permitted in the Plant.

14. Visiting and Loitering

Visiting and loitering by Contractor's employees at or around entrance gates or other places on Owner's property will not be permitted.

15. Fingerprinting

If requested by Owner, Contractor shall furnish the Owner two sets of fingerprints on each of his employees and each of his Subcontractors' employees.

SECTION 10
GENERAL REGULATIONS

1. Authorization to Start Work

Contractor and Subcontractors shall not start work until authorized by the Contract Administrator at the job site. Such authorization does not constitute authority to proceed with any work involving special permits as outlined in Exxon Refinery's Safety Manual. Contractor shall also secure approval from Contract Administrator before any materials are delivered to job site when material deliveries precede Contractor's arrival on site.

2. Contractor's Equipment

All Contractors moving trailer-type equipment within the Plant shall use a hitch equal to Premier's automatic latching hitch No. 105 for one-ton loads, or No. 580 for one-and-one-half-ton loads, except that properly rated ball hitches may be used when provided with safety chains.

3. Explosives

Explosives shall not be used without prior written approval of Owner.

4. Use of Lines, Conduits, or Structures
as Supports

Contractor shall not use Owner's pipe lines, electrical conduits, handrails, or structures as supports for loads, for ladders, or for scaffolds without authorization from the Contract Administrator.

5. Use of Stanchions or Equipment for
Anchors

Contractor shall not use Owner's pipe stanchions or other equipment for attaching snatch blocks, guy lines, or for other services which apply loads on equipment without written approval of the Contract Administrator.

6. Damage to Owner's Property

If Contractor damages any of Owner's property, or property of any other contractor

or subcontractor, the damage shall immediately be reported to the Contract Administrator.

7. Operating Owner's Equipment

Contractor shall not operate any of Owner's equipment, such as electric power switches, valves, etc., without prior specific approval of the Contract Administrator.

8. Use of Special Vehicles

No vehicle or piece of equipment having metallic-lugged wheels or tracks shall be operated on any hard surface street without adequate protection to the street, as approved by Contract Administrator. No tracked equipment having flat pavement treads shall be operated on a paved street without approval of the Contract Administrator.

9. Fire Extinguishers

Welding machines and tar pots shall have a 12-pound CO₂ or 20-pound dry chemical-type fire extinguisher in proper working condition located adjacent to the equipment. An extinguisher shall be located in each working area where "hot work" is being done.

Fire Hose -- Where fixed hose reels are not available, the Contractor shall furnish and maintain a minimum of one fire hose in each working area where hot work is being done. Each hose shall be 1-1/2" diameter with threaded coupling and NYC Fire Department threaded adapter suitable for 150 psi pressure. Each hose shall be equipped with a 1-1/2" combination fog, straight stream, and shut-off nozzle equal to American LaFrance or Elkhart L-200. Hoses shall be connected to a hydrant. The Contractor shall be responsible for opening the water supply valve at the hydrant in full open position while hot work is in progress, but pressure is not to be left on hose overnight.

10. Welding

Contractor shall not weld on oil or gas lines or equipment in service unless there is an internal cooling agent to remove heat, such as flowing liquid or gas, and there is sufficient metal, as approved by the Contract Administrator, to prevent a burn-through.

Exception: No hot work is to be done on air lines in service between the reciprocating compressor discharge and the knockout drum or drier. Hot work can be done on air lines downstream of knockout drum or drier, or on air lines pressurized by centrifugal equipment, after a gas test shows the air in the line to have no hydrocarbons present.

11. Securing of Temporary Buildings

All temporary buildings shall be tied down by the Contractor in accordance with the Contract Administrator's instructions, and applicable Raytown Engineering Standards.

12. Exit from the Plant

Contract employees, except for the driver, must dismount and walk through the gate when leaving the Refinery.

13. Non-English-Speaking Personnel

The ability to communicate with Contractor employees is essential to safe job execution. When the contract employee cannot speak English, the job foreman must be able to speak both English and the employee's language fluently. If there is reason to doubt the foreman's ability in this regard, a practical demonstration is in order. When the foreman cannot speak both English and the employee's language, the employee must either be placed under a foreman who can, or he must be prohibited from working in the Raytown Refinery.

14. Hurricane Precautions

The period between June 15 and October 15 is recognized as the hurricane season. Prior to this time, all material that is not needed for the job and that might become wind-borne in hurricane winds should be removed. That material still needed should be piled as compactly as possible. Provision should be made for tying down lightweight objects should the need arise. Scaffolds and some open-type structures should be dismantled if a hurricane approaches. Thus, there should be a plan formulated in advance to handle necessary actions, particularly in terms of the time and manpower required.

15. Contractor Accident Reporting

The contractor is responsible for notifying the Contract Administrator immediately:

- a. Any time an ambulance is called;
- b. In the event of any injury which could possibly result in lost time;
- c. In the event of any incident which had serious potential, such as mobile equipment overturning, equipment contacting electric supply lines, etc.

All injuries shall be reported on the Industrial Accident Board Standard Form for Employee's First Report of Injury or Illness -- latest revision.

16. Emergency Evacuation Procedure

An emergency evacuation procedure form shall be completed by each Contractor prior to starting a contract. An assembly point should be chosen to provide a relatively safe, open area, in the event an emergency occurs that requires evacuation of all or part of the Refinery.

17. Contractor Safety Meetings

Each Contractor is strongly encouraged to hold a weekly safety meeting for his employees. Either a combined meeting of all the Contractor's employees in the Refinery or smaller meetings for each job or each foreman is suitable.