PLAINTIFF'S EXHIBIT

CHV-579

PROCEDURE FOR WORK PERFORMANCE DURING SHUTDOWN OF THE ALKYLATION PLANT

October 19 - November 5, 1959

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D. M. O'NEILL

SHUTDOWN SCHEDULE

Area of Plant	Off Stream	Ready for Maintenance	Maintenance Complete
Rerun Area	October 18	8:00 AM October 19	4:30 PM November 5
Distillation Area	October 24	8:00 AM October 26	4:30 PM November 5
Reaction Area and Bal. of the Plant	October 24	8:00 AM October 28	4:30 PM November 5

During the first week, October 19 to October 23, a second shift only will be at work in the rerun area. A small maintenance force will be on hand Saturday, October 24, and Sunday, October 25, to install blinds etc. It is planned to have 3 shifts working between October 26 and November 5, with the exception of Saturday and Sunday October 31 and November 1, in which only a number 2 shift will be working.

Work starting & quitting whistle schedule for No. 2 Shift will be as follows:

7:50 AM	Warning	2 short
8:00 AM	Starting	1 long
11:25 AM	Stop Work	1 long
11:55 AM	Warning	2 short
12:00 N	Starting	1 long
4:20 PM	Stop Work	2 short
4:30 PM	Shift End	1 long

OPENING OF LINES AND EQUIPMENT

To insure that equipment is safe to work on, maintenance men must obtain clearance from Shutdown Head Operator before opening any line or piece of equipment.

TESTING AFTER HEAD-UP

The Shutdown Head Operator will witness and approve the testing of exchangers after head-up.

FIRE PERMITS

1. Requests:

A fire permit (Mfg. 2325-1) will be required where any hot work is to be done. Reques for fire permits are to be submitted to the Head Operator in charge of each plant the day previous to that on which the work is to be done. Every effort is to be made to

get these in by 11:00 A.M. Requests for fire permits will be initialed by the Refinery or Contract Foreman assigned to work requiring a permit. For those jobs which require a fire permit of more than one days duration, the same fire permit may be used, but it must be revalidated each morning before starting work. See attached Refinery Instruction #1 and Mfg. 2325-1 for additional information.

2. Clean up of Area for Permits:

The Operating Foreman or his representative, upon receipt of requests for fire permits for his area, will initiate such action as is required to clean up the areas for the fire permits during the night previous to the start of work. Every effort is to be made to have the fire permit areas ready to work by 8:00 A.M. each morning.

3. Approvals:

The Shutdown Head Operator will obtain the approval of the Plant Foreman or his Representative, after which the permit will be filed in control room for validation by gas tester and shift foreman prior to start of work. The Gas Tester will together with the shift foreman or his delegated representative test the equipment and surrounding area. If the area is safe, they will sign the permit and place it in the plant control room. The Maintenance Foreman, or Contractor Foreman whichever applicable, will pick up one copy of the signed permits from the control room and see that all precautions have been complied with before starting work. One copy is to be retained in the control room of the area in which the work is being done.

4. Welding Bays:

Certain areas adjacent to the plants will be designated as welding bays and welding work may be done in these areas under a welding area permit which must be obtained and revalidated each day for each such welding bay. These welding bays may be closed down at any time that a hazardous condition exists. Smoking posts shall be closed down also when the welding bay is closed.

CLEARANCE REQUIRED TO START WORK OTHER THAN FIRE PERMIT WORK

Before entering any vessel, safety permits shall be obtained in accordance with attached Refinery Instruction #2. Only one permit for each vessel will be required for duration of shutdown. These will be revalidated each day by Gas Tester & Shift Foremen or his delegated representative. A green and white tag will be attached to each manhole of each vessel approved for entry. The green side will be approved for fire permits and the white side for entry permits. Before entering a vessel the tag is to be checked to see that it is approved for that date.

For all work other than that requiring a fire permit or a safety permit verbal approval from the Shutdown Head Operator shall be obtained before starting any new job.

SMOKING

No smoking will be permitted inside the Refinery limits except in those areas designated specifically as smoking areas. These areas will be so marked with "Smoking Permitted" signs.

Smoking is a privilege extended by Refinery Management, where practical, to employees working in Plant Areas. It is expected that time spent smoking will be limited to 10 minutes in each 4 hour work period.

HEAD UP PERMITS

The following procedure shall be followed before any column, vessel, tank, or heat exchanger is headed up:

1. For each Plant a supply of TXM-466, "Approval to Head-Up Equipment" Forms shall be incorporated in booklet form protected by cardboard covers. This booklet shall be left in the shutdown office. It is not to be removed by anyone without the prior approval of the Plant Engineer.

2. As equipment is opened, the Shutdown Planning Section shall be responsible for entering the equipment number and description on the TXM-466 Form in the Head-up Approval Booklet for the particular plant involved.

3. When all work is complete within or upon a given piece of equipment, the responsible Maintenance Foreman shall place his initials in the column provided under "Approved for Head-up." This will signify that to the best of his knowledge all shutdown work is complete on this particular piece of equipment.

4. In a like manner both the Plant Inspector & Shutdown Operator shall place their initials in the space provided after each piece of equipment when they are satisfied that all shutdown work on the particular equipment in question has been completed.

5. The Plant Engineer shall be the last person to initial the "Approved for Head-up" list, at which time he or his designated representative will prepare individual head-up approval tags which shall be affixed to each Column or Drum manhole or Exchanger approved for head-up.

6. When a piece of equipment has more than one manhole, a tag shall be prepared and affixed to each manhole on that particular piece of equipment.

7. Head-up tags shall not be removed from equipment until after the shutdown is over.

8. Under no circumstances shall a man enter a piece of equipment bearing a head-up tag.

SCHEDULING & ASSIGNMENT OF REPAIR JOBS

Operating, Engineering & Maintenance shall prepare shutdown check lists (TXM-303) for work items to be considered for the shutdown. These lists shall be reviewed by responsible personnel from each section and a final work list approved. Following approval of jobs, they shall be placed by the Plant Engineer on the Maintenance

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Shutdown Work List (Form TD-159) which is to be maintained by the Engineering and Maintenance Division. An up-to-date copy of the maintenance work list shall be kept at plant area throughout the working hours. All scheduling of manpower and jobs will be by the Maintenance Planning Section. These schedule sheets will be for the information of both Operators and Maintenance personnel to designate when each job is to be done and who is responsible for its execution, and to show approvals of both Maintenance Leadmen and the Head Operator for the completion.

ADDITIONAL WORK REQUESTED DURING SHUTDOWN

All additional items of work requested during plant shutdown shall be written on shutdown repair list TXM-343 stating scope of work, equipment number or description and safety precautions, and forward to the responsible plant engineer. The plant engineer shall review, prepare drawings, sketches or instructions as required, get proper approvals and post to maintenance shutdown schedule TD-159.

COMMUNICATIONS

There will be a temporary loud speaker system installed in the shutdown area. The microphone for the loud speaker will be located in the Maintenance Shutdown Office. The system will be used to issue instructions to all areas, paging individuals, stopping hot work when fire hazards arise, giving all-clear signals, etc. A temporary phone, number 418, will be installed in the shutdown tool house.

ORGANIZATION

The Maintenance Department will supply an organization chart for each shutdown showing individuals responsible for completion of work in each area.

EMERGENCY EVACUATION OF THE PLANT AREA

Normally, all emergency situations and the procedures to be followed, will be announced over the loud speaker system.

As a supplementary precaution, if Refinery Fire Whistle sounds (7 short blasts on starting whistle), all hot work and smoking is to stop immediately and all workmen are to leave the shutdown area.

All clear will be one 3 second blast on the fire whistle.

Paul Mustain

P. P. MUSTAIN
OPERATIONS SUPERINTENDENT

J. E. Hayden

J. E. HAYDEN, SUPERINTENDENT
ENGINEERING AND MAINTENANCE

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FIRE PERMITS

urpose	1. This instruction states the rules governing the use and processing of Fire Permits within the Refinery.
ype of Work nvolved and uration	2. A Fire Permit, green form MFG-2325-1, is required for all hot work (cutting, burning, welding or any other type of work involving an open flame) and is not valid after the start of the following day shift. (For permission to smoke, use white permit form MFG-2325-2.)
alid Permit	3. To be valid, a Fire Permit must bear four signatures, except as noted in 10 below. These are: a. Appropriate Company Engineer or appropriate Maintenance Dept. Foreman, who initiates the request. b. Plant Foreman c. Division Shift Foreman or Plant Foreman's delegated representative. d. Gas Tester.
reparation	4. Fire Permits shall be prepared by the Maintenance or Engineering Dept. the day before the work is to be done and left in the Plant Foreman's office. Prior to starting hot work, Maintenance or Contractor's representative will pick up approved permits from Shift Foreman's office. (Exception: During plant shutdowns, approved permits will be picked up from area control house.)
esponsi- bilities	5. The Plant Foreman is responsible for considering the hazard involved in use of the permit and for outlining on the permit the conditions under which the permit is valid. The Shift Foreman or Plant Foreman's delegated representative, together with the Head Operator, are responsible for reviewing the area of the hot work tosee that there are no oil spills, leaks, or gas present in the area, and that all sewers are covered, blinds installed, etc. They shall also see that all conditions as required by Plant Foreman are complied with. The Gas Tester is equally responsible with the Shift Foreman for the same review, and also for determining that the equipment to be worked on is gas free. The above will be done just prior to start of the hot work.
	6. The Plant Foreman will decide whether a continuous fire watch is required on the job, and if so, see that provision is made for one. He must ascertain whether another operating area is jointly involved and if so, secure the proper clearance thru the signature of the Plant Foreman of the other area.
isposition	7. Copies of Fire Permits shall be distributed as follows: a. One copy to the Head Operator of Plant or Area. b. One copy to Mechanic performing work or fire watch, if any. c. One copy to the Tester.
ime Limit xtending Ov- r Shift Chg.	8. When the time limit of a Fire Permit extends over a shift change, the Shift Foreman and the Head Operator must give their reliefs all the facts concerning the Fire Permit. If acceptable, the oncoming Shift Foreman shall sign the permit.
ush Jobs	9. Requests for Fire Permits on emergency or unscheduled work shall conform to the above, excepting par. 4.
evalidation	10. A Fire Permit issued to cover a job that will require more than one day to complete, must be revalidated each day by following this instruction, except that part (a) and (b) under par. 3 may be omitted. Such requests for revalidation may then be made by the proper Maintenance personnel or by the responsible contractor foreman. (The revalidation will require the signatures of the Shift Foreman and the Gas Tester, per item 5 above.) The use of tags, when approved by the Operating Dept. concerned, shall be supplementary to this instruction, only.
Blanket Permit	11. Certain well defined, non-operating areas may obtain blanket Fire Permits. These permits shall be renewed at the first of each year.
Permit Cancellation	12. Should a hazardous condition arise in an area where a Fire Permit is in effect, all hot work covered by this Permit shall be stopped immediately. It shall be the duty of the Fire Watch or the Head Operator to collect the Mechanic's copy of the Fire Permit and to retain control of it until clearance is obtained from the Operation Dept. and the Safety Dept.
Completion of Work	13. When a given job, covered by a Fire Permit, has been completed, the Plant Head Operator shall mark his copy "C" for complete and forward the copy to the Plant Foreman.

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J. H. Kitchen
Refinery Manager

STANDARD OIL COMPANY OF TEXAS
EL PASO, TEXAS

SAFETY PERMITS

EL PASO REFINERY
INSTRUCTION #2

Purpose

1. This instruction outlines those circumstances under which a Safety Permit is required to perform work and the process for obtaining this permit. (Form MFG-2325-2)

Type of Work Requiring a Safety Permit

2. Safety Permits are required for unusual construction or maintenance work that might interfere with normal activities of another division or create hazards to men or equipment, as outlined below. (Fire Permits, ElPaso Refinery Instruction #1, are required for work involving an open flame.) Safety Permits are required to:
   a. Excavate in process plant areas.
   b. Block roads or access ways to equipment.
   c. Perform cold repairs in an operating process area or any other area where gassy conditions are probable, and where there is a possibility of creating a source of ignition. (See footnote for list of possible sources of ignition.)
   d. Use flammable or explosive material.
   e. Get permission to smoke.
   f. Cut fire walls
   g. Tie water lines to processing equipment
   h. Enter enclosures such as tanks, sumps, furnaces, vessels, boiler water drums and cooling towers.
   i. Operate motorized equipment within process area. (Exception: motorized equipment approved by Operations Dept. as being free of ignition sources.)
   j. Operate cranes within 30 ft. of power lines or processing lines or equipment.
   k. Cover other unusual circumstances not covered by a Fire Permit.

Valid Permit

3. To be valid, a Safety Permit must bear signatures, as follows:
   a. Appropriate Company Engineer or appropriate Maintenance Dept. Foreman, who initiates the request.
   b. Plant Foreman or his delegated representative.
   c. Safety Division representative when requested by Plant Foreman.
   d. Stocks & Utilities Plant Foreman (when work is to be performed on utility mains or where excavators might come in contact with such lines.)

Preparation of Permit

4. Before starting work of the above nature, a Safety Permit shall be prepared by the Maintenance Division or Engineering Dept. and sent to the appropriate Plant Foreman.

Responsibilities

5. The Plant Foreman or his delegated representative shall review the Safety Permit. If acceptable, he shall initial the permit and pass it on to the Shift Foreman who, together with the Head Operator (if possible) shall review the work and sign the permit, if it is satisfactory.

   It shall be the responsibility of the Plant Foreman to ascertain whether another operating area is jointly included and if so, secure the proper clearance thru the signature of the Plant Foreman of the other area.

Disposition of Permit

6. Safety Permits shall be distributed as follows:
   a. One copy to the Head Operator of the plant involved, or to the Area Foreman's office.
   b. One copy to Mechanic performing work.
   c. One copy to Safety Division when signed by this division.

Time Limit Extending over Shift Change

7. A time limit shall be established by agreement between the parties concerned, taking into account the nature of the work, probable duration, possible hazards and feasible means of maintaining effective controls. All necessary controls to insure safety for the entire duration of any permit shall be written on the permit or attachment. Final decision in these matters shall rest with the Foreman having jurisdiction over the area or equipment involved.

   When the time limit of a Safety Permit extends over a shift change, the Shift Foreman and the Head Operator shall give their reliefs all the details concerning the permits. If conditions are still satisfactory, the oncoming Shift Foreman and Head Operator shall sign the permit.

Tags

8. The use of tags, when approved by the Operating Department concerned, shall be supplementary to this instruction, only.

Completion of Work

9. When a given job, covered by a Safety Permit, has been completed, the Plant Head Operator shall mark his copy "C" for complete and forward the copy to the Plant Foreman.

Footnote:

Sources of Ignition

1. Open flame
2. Automotive and electric driven equipment
3. Electric and static sparks
4. Portable electric tools, extension cords and portable electric lights
5. Pyrophoric iron sulfide
6. Overloaded electric equipment
7. Spray painting
8. Sandblasting
9. Hot surfaces (soldering irons, electric stove, etc.
10. Spontaneous ignition (oxidizing vegetable oils)

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J. H. Kitchen

ORIGINAL

No. 129543

FIRE PERMIT

Permit must be properly approved and posted on job or in possession of mechanic performing work.

Date_____ 19____ For period between_____ AM and_____ PM Req. No._____

Permission is given_____ S. O._____

To use_____ Item_____

Within following limits_____

Description of work to be performed_____

Conditions_____

Requested by_____ Notes_____

Approved_____ Approved_____

Oper. Dept. Foreman

INSTRUCTIONS

If permit is needed at start of day's work, apply before quitting time of preceding day.

Fires must be extinguished when unattended.

Combustible material, drainage systems, etc., must be protected from sources of ignition.

Welding machines must be shut down when welder leaves job.

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