

SHELL
DEER PARK MANUFACTURING COMPLEX - NORTH

FIRE AND SAFETY PERMITS
(HOT WORK PERMITS)

SAFETY S-102
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APRIL 26, 1985 (R)

I. GENERAL INFORMATION

All maintenance and construction work performed by nonoperating personnel in Refinery operating areas must be authorized by Operating personnel. This authorization will be in accordance with the procedures set forth in this order or in the companion Refinery Safety Order S-103, Departmental Work Permits. The purpose of both Safety Orders is to establish standardized authorization procedures for all maintenance or construction work in operating areas. The procedures are intended to provide the communications and job preparations necessary to ensure safe work conditions. The specific authorization procedures to be followed depend on the type of work to be performed.

Safety and the application of safe work practices within the work place are the responsibility of the line organizations.

Operating Departments are responsible for setting the conditions for the initiation of the work, monitoring the conditions while the work is in progress, and doing whatever is required to maintain the conditions until the work is completed. The work is not completed until the permit is signed off.

Maintenance - North is responsible for knowing what conditons are required for the safe completion of the work and for the application of safe work practices and procedures during the execution of maintenance and/or construction work.

Safety Department provides expertise and staff support in the field of safety and provides an independent safety auditing function.

II. TYPES OF WORK REQUIRING FIRE AND SAFETY PERMITS

As a general rule, high-risk work in operating areas should be avoided, where practicable, by relocating the work to unrestricted areas. This order recognizes that certain work with identifiable risk exists and must be performed inside operating areas. As the identifiable risk increases the level of authorization increases. Low-risk work involving spark-producing procedures or equipment requires authorizing with a Fire and Safety Permit, signed by a "qualified" Operations Foreman. (i.e., Those foremen who have attended a one-week training session conducted by the Safety Department on Fire and Safety Permitting.)

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High-risk work involving flame or arc, or personnel entry into equipment, requires authorizing with a Fire and Safety Permit signed by an Operating Shift Foreman, with a mandatory separate audit and approval by a Safety Inspector.

Basically, Fire and Safety Permits are required for all work which may result in producing sparks, work which requires generating an arc or flame, or work which requires personnel entry into a confined space or any other area where there is poor ventilation.

A Fire and Safety Permit is required before starting the types of work described below, except when such work is performed in the shops and other specifically designated areas. It should be noted that such a Permit is required whether the work is performed by Operating or Maintenance personnel.

1. Flame-producing tasks such as gas welding, gas torches, melting pots, lead burning, metallizing, electric welding, or any other flame. A Fire and Safety Permit is required in shops when welding, burning, etc., is to be performed on closed equipment (pumps, vessels, etc.,) whether or not such equipment has been in service.
2. Personnel entry into enclosed or confined (including cooling water towers) spaces, including but not limited to tanks, vessels, towers, furnace fireboxes, column skirts, sewer and electrical manholes, or lube oil reservoirs, for any purpose.
3. Spark-producing tasks such as sawing, chipping, grinding, concrete-breaking, sand blasting, etc., (air-powered equipment preferred).
4. Operation of spark-producing electrical equipment such as electric drills, portable electric motors, open electric switches, ordinary electric plug-in connections, soldering irons, and camera flash equipment, where flammable materials may be present.
5. Drilling on tanks, vessels, lines, pumps, or other closed equipment.
6. Smoking Permits.

TYPICAL JOBS REQUIRING A FIRE AND SAFETY PERMIT

- A. (1) Shift Foreman/Safety Inspector Permit for-High-Risk Work

The following types of jobs will be authorized by a Fire and Safety Permit, signed by an Operating Shift Foreman (qualified or

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- (1) References to Shift Foreman include the TMC (Tank Maint. Coordinator) in Dispatching Operations only.

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non-qualified), with a mandatory separate audit and approval by a Safety Inspector. During off hours, weekends and holidays the Refinery Supervisor will assume the role of Safety Inspector for purposes of the permit procedure.

1. Flame - gas welding, gas torches, melting pots, electric welding, or any other flame. See General Order M-101 for special conditions to be met for hot taps.
2. Personnel entry into equipment - to enter a vessel, furnace, tank, sump, or any enclosed space. See Safety Order S-119 for special conditions to be met for entering equipment.
3. Sandblasting on atmospheric storage tanks.

B. Operations-Foreman-Permit

The following types of jobs can be authorized by a Fire and Safety Permit, signed by a "qualified" Operating Shift Foreman. (Audit by Safety Inspector is not required.) The term "qualified" is used to designate those personnel who have attended a one-week training session conducted by the Safety Department on Fire and Safety Permitting.

1. Sandblasting. (Except atmospheric storage tanks, see Item 3 above.)
2. Spark-producing jobs, such as grinding, chipping, concrete breaking, and electric drilling on non-process equipment. (Air-powered equipment preferred.)
3. Spark-producing electrical equipment, such as electric drills, portable electric motors, open electric switches, ordinary electric plug-in connections, soldering irons, electric heating devices, and camera flash equipment.
4. Operation of internal combustion engines, except for short-term vehicular entry which can be authorized on a Departmental Work Permit (S-103).

In the event no "qualified" Operating Shift Foreman is available, a "qualified" Operations Supervisor can authorize the permit, but the Shift Foreman must also sign. In the event neither an Operating Supervisor nor Shift Foreman who is "qualified" is available, a Shift Foreman/Safety Inspector Permit shall be required. Additionally, a "qualified" Shift Foreman may at his discretion elect to secure a separate audit by a Safety Inspector.

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III. DESIGNATION OF PERSONNEL REQUIRED FOR AUTHORIZATION PROCEDURE

Throughout the permit-issuing procedures that follow, ⁽¹⁾Operating Shift Foreman is used to denote the Shell supervisory personnel responsible for the operating equipment in the area where the work will be performed. Maintenance Foreman is used to denote the Shell or contractor supervisory persons responsible for the maintenance and/or construction job for which a Fire and Safety Permit is required. The Maintenance Foreman (or contractor supervisory personnel) may, at his discretion, delegate to the craftsmen the authority to sign and accept the permit at the time the job is to begin. Under normal circumstances the Operations Supervisor will be responsible for coordinating the permitting procedure. The Operating Foreman may delegate his authority responsibility to the Operator for a Shift Foreman/Safety Inspector Permit For High-Risk Work. The Operating Foreman may not delegate his authority responsibility to the Operator for an Operations Foreman Permit.

IV. PROCEDURES FOR ISSUING FIRE AND SAFETY PERMITS

Attachment I shows a facsimile of the Fire and Safety Inspection Permit form. The actual permit form consists of three copies (the original white copy, a yellow copy, and a pink copy). The copies of the permit shall be handled as follows:

White (Original Copy) - Given to the employee or employees doing the work.⁽²⁾

Yellow Copy - Retained by the Operating Department. This copy should be posted in the control room on a prominent "permit board" specifically designated for posting of Fire and Safety Permits.

Expired permits and completed permits shall be retained on a designated area of the permit board for pick-up daily by the Safety Inspector.

Pink Copy - Given to the Safety Department. This copy (and the corresponding yellow copy) shall be retained for a period of two years.

⁽²⁾In Dispatching Operations for tank turnaround work this copy will stay at the job site.

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Step 1: Initiating Permit Procedure

- A. The Operations Supervisor and/or Maintenance Supervisor who are responsible for the operations, maintenance or construction job to be performed in their assigned areas will initiate the permitting procedure. In areas that are assigned to operations, the Operations Supervisor in that area will function as the coordinator for the permitting procedure. In non-operating areas or areas not assigned to Operations, the Maintenance Supervisor will function as the coordinator for the permitting procedure.
- B. The Coordinator (Operations or Maintenance Supervisor) for the permitting procedure will contact the Safety Department and inform the area Safety Inspector that a Fire and Safety Permit will be issued. The Coordinator will then contact the Operating or Maintenance Foreman in the area where the work will be performed and inform him that a Fire and Safety Permit will be issued. Job will be posted on the safety work sheet the day before the permit is required.
- C. In order to implement the procedures for issuing Fire and Safety Permits in an orderly manner, it is essential that jobs requiring this type of permit be properly planned. The individual initiating the permit procedure should inform the Safety Department and the Operations and Maintenance Foreman of the request as early as practicable to ensure that safe work conditions are achieved in advance of the actual need for the permit.

Step 2: Setting Job Conditions

The Operations Foreman will decide on the unit or equipment conditions which must be met to achieve safe working conditions. The Operations Foreman is encouraged to include the Maintenance Foreman and Safety Inspector in these discussions.

The Maintenance Foreman, Safety Inspector, and Operations Foreman will discuss the safety aspects pertinent to the maintenance or construction procedures to be employed.

Step 3: Achieving Conditions and Issuing the Permit

- A. The Operations Foreman will be responsible for achieving the plant and process equipment conditions specified in Step 2.
- B. The Maintenance Foreman will be responsible for achieving the job preparation conditions in Step 2.

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- C. The Operations Foreman will fill out the permit and sign it when the safe work conditions are achieved. The Operations Foreman will write on the permit any special instructions, conditions or precautions to be observed. The period of time the permit is to be in effect will also be written on the permit by the Operations Foreman (see Step 7: Continuation of Permit; for additional information on duration of the permit).
- D. When the equipment preparations specified in Step 2 have been completed, the Operations Foreman will inform the Safety Inspector (High-Risk jobs only). High-risk jobs will require a mandatory audit of the job conditions.
- E. The Operator responsible for the area in which the work is to be performed will also sign the permit to indicate that he is aware of the job and the safe work conditions specified. If operator responsibilities overlap in the immediate work area, each operator shall sign the permit.

Step 4: Beginning the Job

- A. The Maintenance Foreman and the craftsman will accept and sign the permit at the work location to acknowledge that the safety precautions specified are fully understood.

Normally, this acceptance and signing of the permit will take place immediately following the issuing of the permit by Operations. In cases where the craftsman and Maintenance Foreman are not at the work location when the permit is issued, it shall be the responsibility of the Maintenance Foreman or the craftsman to obtain the permit from Operations, inspect the work area and the safe work conditions, and sign the permit to acknowledge that the safety precautions are fully understood. An Operations Representative shall be present at the work location during this process. Operations shall then post the yellow copy on the control room permit board, and the work may begin.

- B. Unless otherwise specified on the permit by the Operations Foreman, a Safety Permit will automatically become invalid unless the work commences within two (2) hours of the time Steps 3C and 3D were completed. In this context "commence work" means the arrival of personnel at the job site with the tools required to begin performing the work.
- C. When appropriate to do so, it will be the responsibility of Operations to notify adjacent units of the pending work.

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Step 5: Maintaining Conditions of Permit

- A. The Operator in whose area the work is being performed and the Operations Foreman are responsible for maintaining the conditions of the permit from the time it is originally signed throughout the duration of the job, insofar as operating conditions or conditions in the general area around the work location are concerned.
- B. The Craftsmen performing the work and the Maintenance Foreman are responsible for working within the conditions of the permit throughout the duration of the job.
- C. The Safety Inspector shall make random audits of jobs in progress, as appropriate.

Step 6: Continuation of Permit

- A. A Fire and Safety permit is valid so long as the permit conditions are maintained and so long as the procedural steps below are followed. The Operator, Operations Foreman, Craftsmen, Maintenance Foremen or Safety Inspector are authorized to stop the job if permit conditions are not maintained. When it becomes necessary to discontinue a job, Operations and the Maintenance Foreman shall be notified immediately.
- B. The permit shall be invalidated if the work is discontinued for more than a two-hour period, unless the permit specifically states otherwise.
- C. If the work extends beyond an Operations or Maintenance - North shift change, the appropriate Operations Foreman, Operator, and Craftsmen will initial the permit (yellow copy retained by Operations) at the beginning of their shift to indicate their understanding and responsibility for maintaining safe work conditions. Likewise, a Maintenance Foreman that assumes responsibility for a job that has continued past a craft shift change shall also initial the permit. Maintenance personnel working continuously on the job past the normal shift change are not required to resign the permit.
- D. Fire and Safety Permits for continuous or around-the-clock jobs shall be renewed on the next daylight shift before 9:00 a.m.
- E. On occasion, a permit may be issued that is valid "UNTIL COMPLETE," instead of specifying a particular time that the permit expires.

When "UNTIL COMPLETE" permits are issued for jobs that are worked continuously (i.e., - around the clock), the signing and renewing requirements of Steps 6C and 6D apply.

When "UNTIL COMPLETE" permits are issued for jobs that are worked intermittently (for example, on daylight shifts only), the permit must be validated prior to commencing work by redating and signing by the appropriate personnel. Appropriate personnel shall always include the Operations Representatives and the craftsmen, and may include the Maintenance Foremen and the Safety Inspector, as specified on the original permit by the Operations Foreman.

Step 7: Completion of the Job

- A. The Craftsmen or Maintenance Foremen will notify Operations when the job is complete and sign Operations' copy (yellow) of the Fire and Safety Permit. The operator will then write "COMPLETE" across the back of the yellow copy, and post it in the designated area of the permit board for pickup by the Safety Inspector.

Responsibility for Updating:
Superintendent Health, Safety, & Environmental

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DEER PARK MANUFACTURING COMPLEX — NORTH

FIRE AND SAFETY PERMIT

Unit/Area _____	Permit Issued	Permit Expires	Ext. 1	Ext.
Location/Equipment No.: _____	Date			
ISSUED TO: _____	Time			
JOB DESCRIPTION: _____		Initials _____		

CHECK EACH BOX AS COMPLETED AND FOUND TO BE SATISFACTORY	Atmosphere checked for:	PROTECTIVE EQUIPMENT REQUIRE
☐ JOB SITE INSPECTION: ☐ Operations ☐ Safety ☐ Maintenance LINES: ☐ BLINDED ☐ BLIND LIST CK'D/OK'D ☐ DISCONNECTED ☐ VALVES CLOSED/TAGGED/LOCKED ☐ BLEEDERS OPEN ☐ POSITIVE PRESSURE & FLOW IN LINE ☐ HOT TAP FORM COMPLETE VESSELS: ☐ AIR MOVER OPERATING & GROUNDED ☐ HOLE WATCH REQUIRED ☐ KEEP ACETYLENE/OXYGEN/CO ₂ CYLINDERS OUTSIDE VESSEL. WHEN WORK IS STOPPED REMOVE TORCH AND LINES OUTSIDE	☐ Hydrocarbon Oper. _____ ☐ Oxygen Safety _____	☐ GOGGLES/FACESHIELD ☐ GLOVES-CHEMICAL/THERMAL ☐ _____ ☐ HOOD-CHEMICAL THERMAL ☐ SUIT-CHEMICAL/THERMAL ☐ BOOTS ☐ _____ ☐ HEARING PROTECTION _____ ☐ _____ ☐ SAFETY BELT AND LINE ☐ RESPIRATORY/SPECIFY _____ ☐ WEAR FRESH-AIR MASK ☐ STAND-BY WITH FRESH-AIR MAS
ELECTRIC EQUIPMENT: ☐ TAGGED/DISCONNECTED ☐ LOCK OUT PROCEDURE FOLLOWED ☐ TOOLS GROUNDED ☐ JOB PREPARATION CHART FOLLOWED DRAINS: ☐ DRAINS SEALED ☐ SEWERS PLUGGED FIRE PREVENTION: ☐ FIRE EXTINGUISHER AT SITE ☐ CHARGED WATER LINE ☐ FIRE WATCH ☐ CONTAIN SPARKS ☐ STOP WORK, SHUT DOWN MOTORS IF LEAK OCCURS ☐ GROUND WELDING MACHINE TO PIECE BEING WELDED AT PROPER LOCATION		

ADDITIONAL PRECAUTIONS NOT LISTED ABOVE: _____

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APPROVALS TO BEGIN WORK

OPERATING FOREMAN/TIME _____ MAINTENANCE FOREMAN/TIME _____

PERATOR/TIME: _____ SAFETY INSPECTOR/TIME _____

CRAFTSMAN/TIME _____ FIRE WATCH _____

JOB CLOSEOUT — MAINTENANCE _____ OPERATIONS _____

WHITE COPY—MAINTENANCE

YELLOW COPY—OPERATIONS

PINK COPY—SAFETY

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ATTACHMENT 2

S-102 FIRE AND SAFETY PERMITS (AUGUST 1, 1984)

The following questions/answers are intended as guidelines for uniform interpretation of S-102.

Q. 1. If an F&SP is required, is a departmental work permit (DWP) also required?

A. No. However, cold work being performed by Maintenance personnel to prepare for issuing an F&SP will require authorization per S-103 - Departmental Work Permits. Similarly, cold work that continued after an F&SP is completed will require authorization per S-103.

Q. 2. Is it the intent of the language pertaining to delegation of "Maintenance Foreman" or "Operations" (see Section 3 - definitions) that foreman will not normally be involved in the permitting process?

A. No. On the contrary, foreman will normally be involved in the permitting process, including initiating the permit request, setting job conditions, achieving conditions, issuing the permit, beginning the job, and continuation of permits. On occasion, the operating foreman may delegate portions of these activities to the appropriate operator; however, the foreman is at no time excluded from the permitting process, and is fully responsible for the activities of "operations" as set out in the order.

Likewise, the Maintenance Foreman may delegate to the craftsman the authority to sign and accept the permit at the time the job is to begin. However, the Maintenance Foreman is at no time excluded from the permitting process and is fully responsible for the activities of the "Maintenance Foreman" as set out in the order.

Q. 3. Why is the operator required to sign the permit? Does this mean that the operator is responsible for the issuing of the permit and all the planning and safe work conditions?

A. The operator's signature is a procedure that ensures good communication. It ensures that no F&SP-type work can proceed in any given operator's area without his knowledge. Further, it ensures that he understands the safe work conditions prescribed on the permit.

No new responsibility is implied by this operator signing procedure. The operator has been, and continues to be, responsible for maintaining the conditions of the permit insofar as operating conditions or conditions in the general area around the work location are concerned (see Step 6A).

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Q. 4. What happens if an operator refuses to sign a permit?

A. We can't imagine why an operator would refuse to sign a permit, since his signature is intended to ensure that no F&SP can be issued in his area without his knowledge, and no new responsibilities are intended or involved. In the event that an operator disagrees with the planning and safe work practices for a job, the matter should be discussed with his foreman and the Safety Inspector, who are responsible for specifying the safe work condition on the permit. Regardless of the outcome of these discussions, the operator should sign the permit to indicate that he understands the planning and safe working conditions.

Q. 5. Does the craftsman and operator always sign the permit?

A. Yes.

Q. 6. Are there any exceptions to the requirement for issuing the permit at the work location for almost all work that requires an F&SP?

A. Yes, but only for low risk in remote areas, at the discretion of the Operations Foreman.

The order clearly envisions issuance and signing of the permit at the work location for almost all work that requires an F&SP.

Q. 7. Why must the work begin within a two-hour period from the signing of the permit, unless otherwise specified on the permit by the Operations Foreman?

A. This procedure ensures an increased measure of safety by minimizing the time lapse between the issuance of the permit at the work location and the actual start of work. The two hours is an arbitrary figure. The concept is that by providing a time limit, the probability of changed conditions is minimized. Obviously, the sooner work begins after the issuance of the permit, the higher the probability that safe work conditions have not changed.

Q. 8. If work does not begin within the two-hour starting window, what then?

A. The Operations Foreman will reinspect the work location, and change and initial the starting time on the yellow copy of the permit.

Q. 9. Why is the permit invalidated if the work is discontinued for more than a two-hour period? If work has lapsed for more than a two-hour period, what then?

A. The answers to Q. 7 and Q. 8 apply.

Q. 10. For F&SP jobs that extend beyond craft shift change, does the Refinery Supervisor have to initial the permit in place of an Engineering Foreman?

A. No. Step 7C does require that an Engineering Foreman who specifically supervises a job that has continued past a craft shift change must initial the permit. This requirement does not apply to the Refinery Supervisor.

Q. 11. Why are permits for around-the-clock F&SP jobs reviewed the following day? Why "prior to 9 a.m."? Does work continue pending renewal of the permit?

A. Permits are renewed the following day to ensure that the planning and safe work precautions for the job are reviewed on a daily basis.

Work does continue pending renewal of the permit before 9 a.m. Normally, Operations Foreman will issue permits for new work beginning at the start of the shift, and then get around to renewing the permits on around-the-clock jobs prior to 9 a.m. Meanwhile, the actual work which had been in progress on evening and graveyard shifts should continue on the daylight shift, subject to the signing requirements at shift change as spelled out in Step 7C.

Q. 12. Why does the order use the phrase "UNTIL COMPLETE" instead of "JOB COMPLETE" for those permits that are issued for intermittent work (see Step 7E)?

A. The words "JOB COMPLETE" on a permit can be confusing, leading someone to believe that it means the job is complete! Therefore, the words "UNTIL COMPLETE" shall be used for this type of permit.

Also, Step 8A spells out the proper way to indicate that a job is complete, by writing "COMPLETE" across the back of the yellow copy, and posting it in the appropriate area on the permit board, for pick-up by the Safety Inspectors.