

SHELL
DEER PARK MANUFACTURING COMPLEX
COMPLEX

FIRE AND SAFETY PERMITS
(HOT WORK AND ENTRY PERMITS)

SAFETY S-102
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OCTOBER 9, 1986 (R)

I. GENERAL INFORMATION

All work performed by personnel in DPMC 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 Safety Orders S-103, Departmental Safe Work Permits and S-119, Entering Vessels and Confined Spaces. The purpose of these Safety Orders is to establish standardized authorization procedures for all 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.

A. Organizational Roles Definition

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

Operating Departments are responsible for setting the conditions for the initiation of the work, issuing the Fire Permit for work authorization, 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 Construction or Contract Personnel are responsible for knowing what conditions 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, consultation, support and training for field personnel and auditing the conditions of a high risk permit.

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B. Individual Roles Definition

A "qualified" operations foreman¹ is a foreman who has attended a training session conducted by the DPMC Health and Safety Department. A "qualified" operations foreman who has been "certified" is a foreman² who has attended the training session and has demonstrated his capability in the field to perform the independent audit functions under the guidance of DPMC Health and Safety Department.

The certification process requires additional field training over and above that received during the qualification training session. Plus, concurrence of BA Superintendent, BA Technical Manager - Engineering, BA Process Managers and DPMC Manager - Health and Safety. The certification of a foreman allows him to perform the independent audit function in his BA only unless there is agreement between the BA Superintendents that allows him to cross BA organizational lines.

C. Authorization Process

The authorization process includes all the duties performed by the Operations Foreman as outlined in "A" above plus filling out the permit form. This process includes all activities up to the point of securing the independent F&S permit audit.

D. F&S Permit Audit Process

Low risk fire and safety permits authorized by "qualified" Operations Foreman do not require independent audit. All high risk fire and safety permits authorized by a "qualified" Operations Foreman require an independent audit by a "certified" and qualified Operations Foreman³ or Safety Inspector.

A "qualified" and "certified" Operations Foreman may not perform the independent audit function in his own department unless he is designated as Safety Inspector relief, but may perform the independent audit function in other departments.

A Relief Foreman who is "set-up" on shift to perform an independent fire and safety permit audit will remain in that classification until the end of the shift.

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- 1 Reference to Operations Foreman include the TMC (Tank Maintenance Coordinator) in Dispatching Operations only.
 - 2 May be Hourly Relief Foreman.
 - 3 Operations Supervisors who are "qualified" and "certified" may perform the independent audit anywhere in their BA including their own department.

II. TYPES OF WORK REQUIRING FIRE AND SAFETY PERMITS

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, below grade 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 authorized by the Health and Safety Department. A Permit is required whether the work is performed by Operating, Maintenance, Construction or Contract personnel.

A. High Risk Work

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 authorization process becomes more involved.

High risk work requiring a fire and safety permit must be authorized by a "qualified" operations foreman and requires an independent audit by a safety inspector or a "qualified" operations foreman who has been "certified" as being capable to perform the independent audit function. High risk fire and safety permits are to be issued for work on a single piece of equipment only. Multiple jobs on the same equipment may be covered on one permit, provided each job is listed singularly on the permit and each work area has been properly isolated and decontaminated. Other sections of the equipment that have not been decontaminated must have access restricted.

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 spaces, including but not limited to tanks, vessels, towers, sewer manholes, or lube oil reservoirs, for any purpose. See Safety Order S-119 for special conditions to be met for entering equipment.
3. All use of explosives within Deer Park Manufacturing Complex shall require a special Fire and Safety Permit approved by the Manager of Health and Safety. Use of explosives shall be governed by OSHA 1910.109, 1926.901 and 1926.302.

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B. Low Risk Work

Low risk work requiring a fire and safety permit must be authorized by a "qualified" operations foreman and does not require an independent audit. Before authorizing low risk work with a fire and safety permit the "qualified" operations foreman may consult with an individual who is "certified" to perform an independent audit but that individual will not sign the fire and safety permits.

Examples of work that is specifically designated as low risk:

1. Spark-producing tasks such as sawing, chipping, concrete-breaking, sand blasting, etc. (air-powered equipment preferred).
2. 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, or making hot electrical tie-ins.
3. Sandblasting (except for tanks in service).
4. Drilling on tanks, vessels, lines, pumps, or other closed equipment that has been decontaminated.
5. Use of Hiltigun
6. Use of X-ray equipment.
7. Smoking Permits.
8. Entry into column skirts and exchanger shells with bundles removed.
9. Hot tap drilling.
10. Open flame work on air conditioning units in areas other than Division I Class I and II areas.
11. Sustained operation of automotive equipment in Division I Class 2 areas.
12. Automotive entry into tank firewalls as described in S-109, "Entering Tank Firewalls with Automotive Equipment".
13. Entry into excavations of five feet or less (when permit is required).

14. Grinding on process equipment.
15. Fan shroud entry.
16. Cooling water tower entry.

III. TYPICAL JOBS REQUIRING A FIRE AND SAFETY PERMIT

Throughout the permit-issuing procedures that follow, 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. Under normal circumstances the Operations Supervisor will be responsible for coordinating the permitting procedure. 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:

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| White (Original) - | Posted at jobsite by Operations Foreman until job is complete. |
| Yellow Copy | - Retained by the Operating Department. This copy shall 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 picked up daily by the Operations Supervisor for filing in the operating area satellite files. |
| Pink Copy | - Will be obtained by the area Safety Inspector and will be matched with white and yellow copies located in the area satellite files. When it is verified that the white and yellow copies reside in the satellite files, the pink copy may be discarded. If the white or yellow copy is missing from the satellite files then the pink copy is to be filed. All copies shall be retained for five years. |

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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 Operating or Maintenance Foreman in the area where the work is to be performed and inform him that a Fire and Safety Permit will be needed. Job will be posted in the MUTS Work Order Planning System 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 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. The work permit addendum if required will be issued with 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 must include the Maintenance Foreman in the discussion of the safety aspects pertinent to the job preparation, maintenance or construction procedures to be employed to achieve safe work conditions.

Step 3: Achieving Conditions and Issuing the Permit

- A. The Operations Foreman will be responsible for achieving and maintaining 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.
- 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 6: 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 request an independent audit (if the work is considered high risks).
- E. The Operator responsible for the area in which the work is to be performed will also sign the permit to indicate awareness of the job and the safe work conditions specified. If operator responsibilities overlap in the immediate work area, each operator will sign the permit.
- F. Firewatch and holewatch shall be advised of their responsibilities and acknowledge their comprehension of these responsibilities by signing the permit.

Operations, Maintenance and contractors shall not jeopardize a permit by allowing the use of personnel as firewatch and holewatch with an inability to communicate with personnel for which they are responsible.

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 Maintenance Foreman is not at the work location when the permit is issued, after previously signing the permit, it shall be the responsibility of 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. The Operations Foreman who initiated the permit 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, Fire and 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. Likewise (if work lapses for more than two hours), the Fire and Safety permit will become invalid. Permit may be revalidated by following continuation of Permit Section (Step 6).

- C. When appropriate to do so, it will be the responsibility of Operations to notify adjacent units foreman of the pending work.

Step 5: Maintaining Conditions of Permit

- A. The Operator and Operations Foreman in whose area the work is being performed 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 Construction or Contract Foreman are responsible for working within the conditions of the permit throughout the duration of the job.

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 is authorized to stop the job if permit conditions are not maintained. When or if it becomes necessary to discontinue or stop a job, the 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 shift change, the appropriate Operations Foreman, Operator, and Craftsmen will audit the permit conditions and sign the white and yellow copies (white copy posted and updated at the jobsite, yellow copy retained by Operations) at the beginning of their shift to indicate their understanding and responsibility for maintaining safe work conditions. Likewise, a different Maintenance Foreman that assumes responsibility for a job in progress or that has continued past a craft shift change shall 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 planned continuously or around-the-clock jobs shall be audited and signed on the next daylight shift before 9:00 a.m. by the responsible personnel provided that the work has not been discontinued for two continuous hours in the 24-hour period.
- E. On occasion, a permit may be issued that is valid "UNTIL COMPLETE", instead of specifying a particular time that the permit expires.

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When "UNTIL COMPLETE" permits are issued for jobs that are worked continuously (i.e. - around the clock), the auditing and signing 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), all permit conditions must be validated prior to commencing work by auditing, redating and signing by the appropriate personnel. Appropriate personnel shall always include the Operations Foreman, Operator and the craftsmen, and may include the Maintenance Foremen 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 the white and yellow copies of the Fire and Safety Permit. The operator will then write "COMPLETE" across the back of both copies. The Operator will post them in the designated area of the permit board for pickup by the Operations Supervisor, or if in a non-operating area, by the Maintenance Supervisor or Safety Inspector.

Updating Responsibility:
Superintendent Health, Safety & Environmental

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