SM-32-MC (REV. 4-79)

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Shell Oil Company • Shell Chemical Company
Interoffice Memorandum

PLAINTIFF'S EXHIBIT
SH-23-29

APRIL 23, 1984

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SUBJECT: IN-SERVICE BLASTING PROCEDURES FOR NON-SOUR FLOATING ROOF TANKS

Attached are the finalized procedures for blasting non-sour floating roof tanks in-service that have been agreed to by Maintenance, Safety and the operating groups represented. It is hoped that each of you will share them with your teams as appropriate.

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JEH/RS/pb

Attachments

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LAM 002384

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I. CONTROLS/RESPONSIBILITIES FOR IN-SERVICE BLASTING OF NON-SOUR FLOATING ROOF TANKS

Due to the inherent nature of floating roof tanks and the increased hazard possibilities that may be encountered, the following responsibilities must be met before blasting is started and during the course of the job:

A. SHELL MAINTENANCE AND DESIGNATED PAINT CONTRACTOR WILL:

1. Survey tanks to classify conditions of existing coatings and identify areas of metal loss.

2. Convey this information to appropriate Shell Maintenance and Operational personnel along with a proposed painting schedule and costs.

3. Schedule a pre-job meeting with operating departments that have permit responsibilities for the tanks involved.

   a. Operations, Safety, and Inspection to attend

   b. Meeting to be held one month before start date

   c. Keep Operations informed of planned work schedule

B. PERMITTING OPERATION DEPARTMENT WILL:

1. Be responsible for scheduling a coordination meeting with all operating departments that pump or receive products into all the tanks involved.

2. Coordinate the development of communication procedures

   a. Operations to Operations - notify pumpers and receivers weekly

   b. Maintenance to Operations - Maintenance/Paint Contractor will update permits daily

3. Establish "static tank" procedures with all Operations and Maintenance personnel involved.

4. Notify involved operating departments if a leak or emergency occurs.

5. Make decision and develop an action plan for any leak or emergency.

6. Notify Maintenance/Paint Contractor of all high-risk products in tanks to be blasted, i.e., acid, caustic, benzene, sour products, etc.

I. CONTROLS/RESPONSIBILITIES FOR IN-SERVICE BLASTING OF NON-SOUR FLOATING ROOF TANKS (continued)

B. PERMITTING OPERATION DEPARTMENT WILL:

7. High-gauge tank roof and hold the tank static by closing, tagging and locking all valves.

C. SAFETY/OPERATIONS/INSPECTION WILL:

1. Inspect roof for combustible materials, hazardous fumes, and visually inspect roof pontoons for leaks.

2. Determine respiratory requirements, if any, to permit Paint Contractor to seal off all tank openings.

D. SHELL INSPECTION WILL:

1. Examine all items scheduled to be blasted and determine if sufficient metal thickness remains to withstand sandblasting and support the associated roof load requirements.

2. Inspect and insure all seals are in good condition.

3. Provide a written report to Operations, Safety and Maintenance.

E. PERMITTING OPERATION DEPARTMENT WILL:

1. Issue Departmental Work Permit to Maintenance/Paint Contractor to ground the tank (see F, 2.) and seal off all tank openings.

F. MAINTENANCE/PAINT CONTRACTOR WILL:

1. Seal off all tank openings to prevent:

a. Unsafe escape of combustible material or hazardous fumes.

b. Contamination of the tank's product, roof seal, or roof drain by blasting material during the course of the job.

1. The roof drain must be plugged before work is started and the plug removed at the end of each work day to allow the roof to drain in case of rain.

2. Insure the tank and blasting equipment is properly grounded to eliminate static electricity build-up.

a. The blast nozzle must be grounded to the blast pot by a ground wire, and utilizing the same ground connection on the blast pot, an additional ground wire must be run to the tank's shell which also must be grounded.

I. CONTROLS/RESPONSIBILITIES FOR IN-SERVICE BLASTING OF NON-SOUR FLOATING ROOF TANKS (continued)

F. MAINTENANCE/PAINT CONTRACTOR WILL:

2. Insure the tank and blasting equipment is properly grounded to eliminate static electricity build-up.

b. In order to properly ground floating roof tanks, the roof must be grounded to the shell, the top of the roof ladder must be grounded to the shell, and the bottom of the roof ladder must be grounded to the roof.

c. No "alligator clip" ground connections are permitted!

d. The integrity of the grounding must be verified with an "in-line" ohm meter before blasting is started.

1. The resistance between the blast nozzle and the item to be blasted must measure one ohm or less.

a. Anytime the resistance measurement exceeds one ohm, the blasting must immediately be stopped and the grounding system repaired before blasting can be resumed.

e. Immediately notify Operations if a leak or emergency occurs.

G. OPERATIONS/SAFETY WILL:

1. Write Fire and Safety Permit for all sandblasting after insuring the following conditions are met:

a. Grounding system's ohm meter reading is one ohm or less (see F,2.).

b. A means of access to the tank roof is in place to be used by painters during the course of the job.

c. The roof ladder has been decked to be utilized as an emergency escape ramp.

d. Explosive and/or hazardous vapor levels have been monitored and respiratory requirements, if any, have been established and met (includes monitoring roof pontoons, roof seal, and sealed openings).

1. Monitoring by Shell personnel will be done prior to issuring or re-dating the Fire and Safety Permit.

I. CONTROLS/RESPONSIBILITIES FOR IN-SERVICE BLASTING OF NON-SOUR FLOATING ROOF TANKS (continued)

G. OPERATIONS/SAFETY WILL:

a. Additionally, the Shell Maintenance Representative and the Paint Contractor Coordinator will monitor the job after lunch.

1. On-going continual monitoring by contractor-supplied "badges", if required.

e. Operations Departmental Order pertaining to tanks in a common firewall is met.

f. The bulk of the previous day's blast material has been removed from the roof.

g. Fire extinguisher is readily available on the roof and the "no smoking" rule is in effect.

b. [illegible]

[illegible]