



TO Steve Illes

DATE April 11, 1983

FROM Roger Corley *RC*

SUBJECT Respiratory Protection Program Review

The Respiratory Protection Program Review (draft) which you sent was reviewed between Jon and I, and the comments below are offered for your consideration. I appreciate the opportunity to comment, and I apologize for the time we have taken. Activity has been high on many fronts.

In general, I have no basic disagreements with the intent of any of the recommendations, but there are several that I question from the cost effective viewpoint and for the practical value they may have. There are always things that are "nice to do" but may be questionable in the face of an overall desire to cut costs in every category, and manpower resource in particular. I believe that you and I have different thoughts on the purpose of the Respiratory Protection Manual. My thought is that this is an information manual for supervisors. I suspect you view it more as a document for the OSHA inspector, which documents and defends our practices. I'd rather defend against specifics than to try and put together a document that tries to anticipate all the conceivable challenges.

Specific comments, keyed on heading III, Recommendations: Respiratory Protection Manual: (A)

- 1) We will revise the Respiratory Protection Manual to include a statement on storage of respirators, as you suggest.
 - (a) However, recordkeeping practices and sample forms have no value to the supervisor, and we want to keep his manual practical and streamlined where possible. These things can be placed in the "master copy" maintained by Shepherd, and this should satisfy.
 - (b) The facial hair policy will be included in the manual, but would it serve just as well to reference it?
 - (c) We can include a general statement on who gets fit tested with what.
 - (d) The quantitative fit test manual is a technical document that stands on its own. I don't see that referencing it would be of any value to our supervisors.
 - (e) I don't understand the need to reference tank entry procedures. Why?

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(f) I agree that a discussion of monitoring philosophy is not appropriate in the Respiratory Protection Manual. We will generalize and mention the monitoring strategy and annual plan.

- 2) Obviously, the Respiratory Protection Manual will need periodic revision. The intention is that an annual review of respiratory program practices by Shepherd will identify areas which may need revisions.

B. Recommendations: Specification of Respirators and Training

- 1) As you have noted, it is impractical to have Shepherd specify the correct respirators for each job and exposure, and he must operate as a consultant/advisor to our supervisors. We will reinforce our supervisors in this area, through the following means:
- (a) a cartridge/canister color chart in safety manuals, and display boards in the Safety Equipment Shops.
 - (b) in addition, we are looking into a training booklet similar to the one we use for hearing conservation, to use as a handout and safety meeting guide for employees on the subject of respiratory protection. This should satisfy item 2 also.
- 3) The Respiratory Protection Manual, once revised again, will be distributed to all supervisors (and others) as a part of the Supervisor's Safety Procedures Manual.
- 4) These items for training will be handled in new employee orientation and will include items in section 3.1 of the Respiratory Protection Manual. This, along with the booklet mentioned in 1B above, should cover it.

C. Recommendations: Fit Testing

- 1) The goal of having each employee fit tested by this month has not been achieved, due to down time for relocating the fit test facility, and employee scheduling problems. We expect to complete the cycle at the end of the 1st quarter of 1984, assuming we can maintain the current pace of 7 employees per work shift.

We are anticipating a reduction in our ability to schedule and fit test employees, however, and I'd like to hear a rationale of your recommendation for fit testing on a 12 month basis. Why not 15 or 18 months; if our resources require that frequency?

Fit testing office clerical personnel will be done every two years, if we can fit the traffic in the fit test schedule.

How Important??

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- 2) Fit testing 8710 users would seem to be done expeditiously with irritant smoke. However, this is really vacuum truck contractors who are issued this respirator, and our approach to providing medical surveillance, safety equipment, etc. to this type worker is being reviewed by legal and line managers. We may transfer more responsibility to contractors for compliance with safety regulations.
- 4) Fit-factors/protection factors seems to be a subjective interpretation. I'd like to see more justification before we bind ourselves to minimum fit factors of 100 for half face masks and 200 for full face masks.
- 6) Communicating respirator sizes to supervisors is not an effective approach. Employees must be made responsible for asking for and using the right size equipment, whether it be boots, slicker suits or respirators. Our responsibility is to assure that the employee knows his correct or recommended respirator size.

Card

Fit testing contractors is not something we want to get into, based on the transfer of responsibility comments made under the paragraph on 8710 respirators.

E. Recommendations: Breathing Air Quality

Our laboratory has steadfastly maintained that it is impractical and difficult for them to make breathing air analyses. While I do not understand this, it is a given that I must work with.

We will work to see that the supplier certifies the quality of each lot of breathing air cylinders.

F. Recommendations: Medical Evaluation

I don't understand the need for job titles on our Health Certificate approval for respirator use. The doctor bases approval on individuals, regardless of job title.

More important is the fact that we do not have formal criteria for approval. We are working with Dr. Myers to get this.

G. Recommendations: Mercury Respirator Storage

We will do something to improve respirator storage facilities.

H. Recommendations: Program Evaluation

The SCORE Program does not seem to be a good audit tool for respirator use. An annual audit and report by Jon Shepherd seems more appropriate, but as long as we have audits such as this one, won't that suffice? Perhaps we don't need to duplicate the effort.

TANK ENTRY PROCEDURE

DEFINITION OF TANKS

The term "tank" includes tanks, mixers, sewer manholes, heaters, boilers, electric manholes, fume tunnels, large pipelines, small vaults, cooling tower basins (in special cases) and similar confined areas with restricted access/difficult rescue where any of the following hazards, such as moving agitator blades; acids or caustic; plant inert gas; or oxygen deficiency.

GENERAL

A Tank Entry Permit will be issued anytime entry is to be made into a "tank". Issuing such a permit is the joint responsibility of the Operations Supervisor and the Maintenance Supervisor or Construction Field Engineer.

Separate Tank Entry Permits are to be issued for each tank, unless a series of tanks are isolated as a system and there is only one entry point.

The permit is a two-part form consisting of a field and control room copy.

MINIMUM REQUIREMENTS

The supervisors in charge of the work will be responsible for the observance of the safety requirements listed below. These rules are to serve as minimum safety requirements. If the supervisors involved deem that more stringent safety requirements are necessary, they may take those measures as well.

1. Clean Tank - Purge with inert gas or wash and/or steam tank, if needed, to clean it of flammable or toxic materials. Ground hose if applicable.
2. Remove or Blind Off All Lines (Outlet and Inlet)- All process lines, including well water and nitrogen, leading to or from a tank must be physically removed or blinded. Separation of flanges is not adequate. Blinds must be tagged using the standard tagging procedure. Blinds should be installed next to the vessel. If this is impractical, valves and other points of access between the blind and the vessel should be tagged using the standard tagging and procedure. Air lines in general need not be blinded, but must be blocked and tagged. Heat sources capable of increasing the temperature of the tank air space or internal surfaces must be tagged.

Blinds must be sufficient thickness to withstand the maximum system operating pressure as detailed in PPG spec PL-B-19. If it is impractical to install blinds of sufficient thickness, then provisions must be made to prevent the substitute blind installed from being exposed to pressure beyond its rating.

Each person who enters a confined space for which a Entry Permit was issued must hang his personal tag on every control point that was tagged to issue the permit.

3. Test Tank - Test the tank for flammable vapor and oxygen. Also test for toxic materials where they are likely to be present. The temperature of the tank air space and wall metal should be considered with regard to heat exposure.

4. Use Approved Safety Harness - When entering a tank a safety harness or belt with lifeline should normally be used. With approval of the workman's General Foreman, the safety harness requirement can be eliminated if it will not facilitate rescue operations. If the General Foreman is not available (on backshifts), the Shift Superintendent will make this decision.
5. Use Fresh Air Mask - Persons working in tanks or confined areas subject to being suddenly surrounded by gas shall be equipped with a supply of emergency breathing air. When breathing air is supplied through hoses from a source external to the tank, the hose must be pressurized and ready for instant use. On jobs that require continuous use of masks with an external air supply, five minute breathing air escape bottles must be worn. Hoods are not acceptable for protection against toxic materials.

When air is introduced into a tank for either ventilation or cooling, it should be accomplished by creating a draft through the tank with either an air mover or external blower which exhausts from the tank. If at all possible, the draft air should enter the top of the tank and exit at the bottom to avoid heavier than air gases.

Plant compressed air shall not be used for either direct ventilation or emergency breathing air.

6. Ladders - A ladder must be used when entering or leaving a tank that involves a drop or climb or more than four feet, or if otherwise required by the supervisor.
7. Watchman - A person must always be on hand as a safety watchman and to tend air lines and/or life lines if such equipment is provided. This person must know how to operate the safety apparatus. Under no circumstances will a safety watchman leave his post to do other work, etc., while persons are still in the tank. The safety watchman must maintain contact with persons in the tank at all times and log workers in and out so that he knows who is in the tank at any given time.

The standby person in a vessel entry job must be able to communicate in emergency situations to obtain prompt assistance. The standby person must not enter the vessel until assistance arrives. Methods for summoning assistance will be as follows:

- a) A walkie-talkie radio will be checked out from the Shift Superintendent (Operations/Emergency frequency) by the standby person or his supervisor. Operating instructions for this radio will be issued by the Shift Superintendent. The radio will be retained by the standby person and used only to summon aid in the event an emergency arises. This radio will contact the Shift Superintendent, the Shift Supervisor and the main guard gate (simultaneously). If Emergency Squad or ambulance assistance is requested, the main gate desk guard will dispatch them to the location given by the standby person.

OR

- b) A whistle, horn, or similar audible alarm device, if not available in the unit, will be issued by the safety attendant from the safety repair shops. The standby person will use this device in an emergency to attract attention and have someone else turn in the emergency by radio or telephone.

OR

- c) Any other radio system that provides contact for summoning the Plant Emergency Squad.

At the conclusion of the job for the shift or the day or when people are no longer in the confined space, the radio or signal device must be returned to the location where it was checked out.

8. Electrical Equipment - Electrical light extension cords must have fully insulated lamp holders and fully guarded bulbs. The guard must be grounded. Explosion-proof cord and light sets are recommended. Low voltage light and cord sets will be used. Stationary 110-volt light sets and 110-volt inspection devices or other essential electrical devices with ground fault circuit interrupters are permissible on certain jobs as a "last resort" option. A list of these jobs is kept in the safety offices for each plant. The use of hand-held 110-volt power tools is prohibited unless a ground fault circuit interrupter is used.
9. Welding Precautions - Before any welding or cutting is done in a tank, a burning and welding permit must be obtained. The gas cylinders must not be put into the tank and all torches and hoses must be removed from the tank when not in use.
10. Power Sources - Power sources to tanks equipped with electro-mechanical devices such as agitators, rakes, fans, dampers, etc., will be locked and tagged. All other power sources such as pneumatic, hydraulic, or radiation must be tagged and/or secured in the safe position.
11. Time Duration of Permit - 8 hours - A new permit will be issued anytime if, in the judgment of the supervisor, conditions could have changed. An oxygen test will be required in the case of a unit siren, plant evacuation or lunch period.

EXCEPTIONS

A tank entry permit is not required for entry into the Power Plant "A" cable vaults or Silica Products sand tunnels for the purpose of routine inspection by Operations or by others for tagging equipment. In all other cases, a permit is required for entry in the above areas.

Boil out operations in Caustic Production units are covered under a separate procedure and special tank entry procedures are included in those cases.

Tanks under construction and not connected to process lines or other operating equipment are generally excepted from these rules: however, it may be necessary to provide fresh air for workers in those tanks.

Cooling tower basins are also generally excepted from tank entry rules. There may be special cases, however, where the nature of the process side of the cooling tower water system or the cooling tower water treatment system may dictate observance of all or part of the tank entry procedure to protect worker safety. The decision on application of the tank entry procedure in these cases may be made by both the Operations and Maintenance General Foremen involved. If General Foremen are not available, (on back shifts), the Shift Superintendent will make this decision.

THE HANDLING OF SITUATIONS CALLING FOR EXCEPTIONS TO, OR DEVIATION FROM
THESE SAFETY RULES IS DETAILED IN SAFETY BULLETIN #8.

TANK ENTRY PERMIT

DATE _____ TIME OF ISSUE _____ PM PERMIT DURATION _____ HRS. (8 Hrs. Max.)

TANK DESCRIPTION _____ PRIOR CONTENTS _____

JOB DESCRIPTION _____

TANK CLEANED _____ / PREVIOUSLY PURGED WITH: AIR ☐ N₂ ☐BURNING OR WELDING REQUIRED: YES ☐ NO ☐

PROCESS LINES TO TANK TAGGED AND BLINDED (OR REMOVED) _____

POWER SOURCES LOCKED AND TAGGED _____

BREATHING AIR REQUIRED: YES ☐ NO ☐ / MASK REQUIRED: YES ☐ NO ☐EXTERNAL VENTILATION REQUIRED: YES ☐ NO ☐ / AIR HORN ☐ ELECTRIC ☐LIFE LINE REQUIRED _____ WRISTLETS ☐ SAFETY BELTS ☐ELECTRICAL EQUIPMENT REQUIRED: YES ☐ NO ☐ / LOW VOLTAGE LIGHTS ☐
110 VOLT LIGHTS WITH GROUND FAULT BREAKER ☐ 110 VOLT TOOLS OR INSPECTION
DEVICES WITH GROUND FAULT BREAKERS ☐LADDER REQUIRED: YES ☐ NO ☐

MANWAY WATCH ASSIGNED _____ / COMMUNICATION DEVICE PROVIDED _____

CHECKED FOR TOXIC MATERIAL (SEE BACK OF CARD): YES ☐ NO ☐

COMMENTS _____

TYPE PROTECTIVE CLOTHING TO BE USED _____

TANK ATMOSPHERE CHECKED

% O₂ _____
(19.5% MINIMUM)% EXPLOSIVE _____
(10% OF LOWER EXPLOSIVE LIMIT M

SUPERVISOR APPROVALS

OPERATIONS

MAINTENANCE/CONSTRUCTION

JOB COMPLETED _____

DEFINITION OF TANKS _____ (MAINTENANCE/CONSTRUCTION SUPERVISOR)

THE TERM "TANK" INCLUDES TANKS, MIXERS, SEWER MANHOLES, HEATERS, BOILERS, ELECTR
MANHOLES, FUME TUNNELS, LARGE PIPELINES, SMALL VAULTS, COOLING TOWER BASINS
(IN SPECIAL CASES) AND SIMILAR CONFINED AREAS WITH RESTRICTED ACCESS/DIFFICULT RESC
WHERE ANY OF THE FOLLOWING HAZARDS MAY BE ENCOUNTERED: TOXIC OR FLAMMABLE
GASES OR VAPORS; MECHANICAL HAZARDS, SUCH AS MOVING AGITATOR BLADES; ACIDS OR
CAUSTICS; PLANT INERT GAS; OR OXYGEN DEFICIENCY.

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