

P. E. Brubaker

- 4 -

August 23, 1976

CONCERNS/RECOMMENDATIONSA. Procedures

1. Concern - The Dept. 19 operating personnel were not aware that any work was going on in the ammonia area.

Action - CED will enforce the plant rules.
[DONE - Instructions Forwarded]
 Responsibility: CED/E. D. Moore
 Timing: Immediately

Action - CED will assign additional supervision to the off sites project.
[George Hook - Belger also]
[DONE - Bob Di Antonio - Asst. Supv.]
 Responsibility: CED
 Timing: Immediately

2. Concern - Should Construction/CED work around tanks which contain hazardous inventories such as ammonia.

Action - Write a procedure specific for the ammonia tank rehabilitation that will minimize contact in this area.
[Completed 9/10/76]
 Responsibility: J. L. Rasmussen
 Timing: September 15, 1976

- Action - A plant policy should be considered for work on hazardous inventory tanks.

Continued
 Responsibility: SHAC
 Timing: October 1, 1976

3. Concern - The present permit system may not allow control by the department affected when CED is doing a lot of off site pipe work.

Action - Investigate present permit system to incorporate CED involvement in new construction.

Continued
 Responsibility: SHAC
 Timing: October 1, 1976

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CONCERNS/RECOMMENDATIONS (cont.)

4. Concern - The ammonia storage tanks are located in the north storage area and do not have a specific geographical area that is considered the ammonia storage area.

Action - Define ammonia storage area geographically and inform all personnel.

Completed 9/3/76

Responsibility: J. L. Rasmussen

W. H. Triplett

E. D. Moore

Timing: September 1, 1976

B. Mechanical Design

1. Concern - The broken swage nipple did not meet the current Monsanto specification of no threaded connections against hazardous inventories. The action plan to backweld the swage nipples is a compromise influenced by constraints of existing construction, stress relieving, etc. There is concern that back-welding may not be the best solution.

Action - All nozzles on the tank need to be investigated to ensure that the mechanical design of the installation is satisfactory.

Completed 9/9/76

Responsibility: J. Trafton

Timing: September 1, 1976

Action - Alternate designs, including one submitted by Badger, will be evaluated to determine the best available corrective action.

Completed 9/9/76

Responsibility: J. Trafton

Timing: September 1, 1976

2. Concern - During the process of isolating the ammonia tanks, it was found that one of the tank outlet valves which is located under the skirt of the tank did not have an extension handle.

August 23, 1976

CONCERNS/RECOMMENDATIONS (cont.)

- Action - Install extension handle and check the workability of all others.

Completed 7/3/76
Responsibility: W. M. Recknor
Timing: September 3, 1976

3. Concern - During the investigation, it was thought that some of the ammonia valves into and out of the ammonia tanks leak through, which makes isolation difficult.

- Action - Study problem and develop solution.

Completed 7/9/76
Responsibility: W. H. Triplett
J. L. Rasmussen
Values will be determined during isolation Timing: September 15, 1976

C. Safety Equipment

1. Concern - During the period of the incident, it appeared that the Dept. 19 operators were running out of air paks too frequently. It did not appear that they were lasting 30 minutes as designed. It was later determined that two types of air paks were being used. One, a Scott Air Pak which discharges air in the mask upon demand and a MSA type furnished by the fire department which lets out air whenever the valve is open.

- Action - Conduct safety meetings to train Dept. 19 operations in the use of both types of masks.

(SEPT. SAFETY MEETINGS) Will be conducted
Responsibility: R. T. Hammann
Timing: October 1, 1976
only on Scott AIR PAK.

- Action - The investigation team questions the advisability of two types of air paks and also whether other departments need similar training.

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Responsibility: LP&S
Timing: September 1, 1976

Will Train on only one TYPE.

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CONCERNS/RECOMMENDATIONS (cont.)

2. Concern - There was some concern from the personnel involved in the incident whether or not there were enough air paks available and whether or not the ability to refill was fast enough.

Action - Review and define nature and extent of air pak problems during the incident.

DEPT. WILL PURCHASE 3 MORE SCOTT
PAKS PLUS Responsibility: LP&S
THREE BOTTLES Timing: September 1, 1976

3. Concern - Investigation determined after the incident that the location of the caged safety ladder did not give access to both ends of the ammonia tanks and also the caged ladder did not meet plant standards and was too small for personnel if they had an air pak.

Action - Relocate and revise the ladder to meet plant standards.

Responsibility: W. H. Triplett
Timing: Action Plan - 9/15/76
Execution - 12/15/76

4. Concern - Some of the team members questioned whether all block valves could be reached with a vapor proof suit and air pak on.

Action - Check to determine and make recommendations.

Responsibility: W. H. Triplett
Timing: September 15, 1976

5. Concern - An inspection of the area indicated that there may not be enough safety showers in the area of the ammonia tanks.

Action - Study and make recommendations on number of safety showers needed.

Responsibility: W.H. Triplett
J. E. Fox
Timing: September 15, 1976

CONCERNS/RECOMMENDATIONS (cont.)D. Safety of People

1. Concern - There was concern that with the large number of CED construction personnel working in the north storage area where the ammonia tanks are located, that all personnel would not be aware of potential hazards in area.

Action - Emphasize existing safeguards and procedures to all workers.

DONE - Re-emphasize Procedure

Responsibility: CED

Timing: Immediately

Action - Initiate straight day "permit" operator for closer surveillance by Dept. 19.

DONE 8/25/76

Responsibility: Mfg. - Dept. 19

Timing: August 25, 1976

2. Concern - There was concern noted about the adequacy of the EPP for handling contract personnel and also how the plan covers community impacts such as when to evacuate residential areas, etc.

Action: - Review EPP plan for handling of the above factors.

Continued

Responsibility: PMSB

Timing: Underway

E. Relationships

1. Concern - There is a feeling that CED/Construction personnel are not aware of potential safety hazards and act differently than plant personnel.

Action - Provide action plan for improving safety awareness of off site construction workers.

Responsibility: CED

Timing: September 1, 1976

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- 1) Started at Top management through weekly tool box meetings
2) Each new employee given more safety orientation

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August 23, 1976

CONCERNS/RECOMMENDATIONS (cont.)

2. Concern - Because the ammonia storage area will be operated by AN-5 after December 15, 1976, the Dept. 19 operators are not completely knowledgeable of the new piping system which in turn caused the isolation procedure during the incident to be slowed down.

- Action - Train the Dept. 19 operators on the piping of the ammonia tank system.

Responsibility: J. L. Rasmussen

Timing: October 1, 1976

SEPTEMBER

F. Process Design

1. Concern - Can ammonia be pumped from one storage tank to another without using the present compressor.

- Action - Design and installation of such a system should be investigated.

Under Study

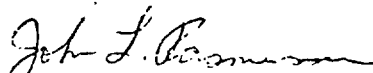
Responsibility: W. H. Triplett

A. J. Stroud

J. C. Trube

Timing: Design - 9/15/76

Cost Study - 10/1/76


John L. Rasmussen

bw

Enclosure (1)

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