

SAFETY AND FIRE PROTECTION SURVEY REPORT NO. 113
BEAUMONT WORKS

Field Observations

November 3-4, 1981

G. A. Bell (B)
M. J. Lettich (L)

TEL

- B-1 Contractor Unsafe Act - A Chemical Leaman truck driver backed a TEL tank wagon into a load spot and went into the control room without shutting off his engine. When contacted, he turned the engine off.

METHANOL

- B-2 Polycarbonate Filter Bowl (Valve B-1 South Reformer) - An unguarded polycarbonate air filter bowl on valve V-1 on top of the south reformer was crazed and deteriorating. It could shatter under its operating pressure of 100 pounds and should be guarded.
- B-3 Deteriorated Cords - The electrical cords to and from an emergency light battery box on top of the south reformer were deteriorating from heat and exposure. The cords are on a five year inspection schedule and are due next year. Consideration should be given to reducing the five year span to two or three years for equipment exposed to severe conditions.
- ✓ B-4 Safety Showers - The new safety showers at the new Methanol area storage tanks did not meet plant standards. The piping was not painted to identify it and the eye wash hoses were not placed for easy access during emergency use.
- B-5 Construction Unsafe Acts - Construction personnel were observed without safety glasses and hearing protection in areas requiring them.

ANILINE

- L-6 Relief Valve Inspection - Examination of the test records for relief valves indicated some important information such as line condition, valve condition and "as found" pop pressure is not documented on all records. Since this information is an essential element in the safe operation of that process, it should be provided and analyzed for each valve. Conversation with area personnel also indicated that two to three test results are maintained on file. To provide better history on the performance of each valve, five test results should be on file as outlined in Engineering Standard SG6T.
- L-7 Improper Barricading - A barricade around an area being painted was constructed such that a person walking down the stairway from the AOP area would find themselves within the barricaded area. To avoid subjecting personnel to the potential hazards within these areas, all routes of entrance into these areas should be barricaded to restrict access to unauthorized personnel.
- L-8 Air Compressor Inspection - Conversation with personnel indicated that the receiver mounted air compressor for the maintenance shop is not periodically inspected. To insure a safe operating piece of equipment, consideration should be given to periodically inspecting both the air compressor and air receiver (including inspection of the welds on the receiver for stress cracks, an area identified as a potential hazard for all receiver mounted air compressors). Engineering Standard PH101 and Accession Report No. 5096 may be helpful in establishing a program.

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SAFETY AND FIRE PROTECTION SURVEY REPORT NO. 1173
BEAUMONT WORKS

Field Observations

November 5, 1981

G. A. Bell (B)
M. J. Lettich (L)

FIRE PROTECTION

L-9 Fire Pump Testing

- Conversation with personnel indicated the electric fire pump in "A" pump house is tested once per week by manually switching. Since this pump is equipped for automatic starting on fire main pressure drop, consideration should be given to test the fire pump as it would normally operate. This may be referenced in Engineering Standard F6A.
- Examination of the inspection form for the fire pumps in "B" pump house showed the fuel level is checked and recorded but without any easy reference as to minimum level allowed. The weekly operational test, although performed, does not document actual test results (pressure that pump starts). The area's plan to revise the form to include this information is endorsed.
- The timer circuit which synchronizes the automatic operation of the fire pumps in both pump houses is not routinely tested. Testing this system is recommended to insure pump operation as designed.

ANILINE

- L-10 Deluge System Test - The #1 deluge sprinkler system was tested revealing one plugged head, two possibly damaged heads and one head improperly aimed. These deficiencies should be corrected to insure maximum sprinkler system protection.
- L-11 Broken Ladder - A ladder on the third floor of main manufacturing building was broken (current inspection tag was present). This ladder should be removed from service and either repaired or replaced.

ACRYLONITRILE

- L-12 Hoist Trolley - The chain hoist trolley above the reboiler platform appears to be defective. One of the trolley wheels is sitting at an extreme angle on the monorail. This puts excessive stress on the trolley and it could be damaged or pulled down. The trolley should be shimmed and adjusted to ride level.
- B-13 Compressed Gas Bottles - Several deficiencies were noted at a compressed gas storage rack by Caprolactam Road.
- One air cylinder had a 1975 inspection date and was overdue for inspection.
 - Full bottles were stored in the same rack with empty bottles.
 - Fuel gases (hydrogen) were stored in the same rack with oxidizer gases (compressed air). They should be separated by 20 feet or have a fire partition. (Reference Engineering Standard F-10-J).

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November 9, 1981

G. A. Bell (B)
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STORES

- L-14 Unsafe Storage - Several examples of unsafe elevated pallet storage were observed (material with the potential of falling on its own or easily knocked over). Increased emphasis is needed in storing only stable loads on elevated racks. Consideration should also be given to either strapping unstable elevated loads or storing them at ground level.

SALVAGE

- L-15 Cylinder Storage - Oxygen and acetylene cylinders were observed stored 5-10 feet apart. To eliminate the fire and explosion hazard, these cylinders should be stored a minimum of 20 feet apart or separated by a fire wall as described in Engineering Standard F10J.

GENERAL

- L-16 Welding Cart Storage Trays - Several oxygen-acetylene welding carts are equipped with attached storage trays. Since these trays can accumulate flammable vapors, they should be vented on all four sides, top and bottom to provide adequate ventilation.

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Field Observations

NOVEMBER 11, 1981

G. A. Bell (B)
M. J. Lettich (L)

PD TECHNICAL COMPUTER ROOM

- B-17 Improper Storage - Cable in cardboard boxes was stored under the raised floor in the computer room. This increases the fuel load in a fire and also could affect the ability of the extinguishing system to control the fire. The material should be relocated and the under floor area kept clear.
- B-18 Floor Tile Pullers - Floor tile pullers were available but were not quickly accessible. They should be stored in a clearly identified, easily accessible location.

CONTROL LABORATORY

- ✓ B-19 Eyewash Fountains - The valves on two eye wash fountains were the self closing type. The valves should remain open until manually closed so a user can be assured of having full flow at all times to wash his eyes.

NORDEL®

- B-20 Improper Tool - An electric drill in the Nordel® shop had the trigger switch lock button still in place. This lock should be removed so the drill will automatically shut off when the trigger switch is released.
- B-21 Fork Lift Trucks - The brake pad on one lift truck was worn and could allow the driver's foot to slip off causing an accident. The rubber pad should be replaced. One lift truck had a small area under the brake and gas pedals with a non skid surface. Other areas on the floor board showed signs of wear and should have a non skid surface applied to reduce the chance of a slip.
- B-22 Poor Judgment - A mechanic working in the packaging area moved a tall portable platform ladder without removing his tools which were loose on top. The tools fell and could have struck another mechanic who was standing by the ladder. The tools should have been removed or properly stored in a tool pouch.
- B-23 Improper Ladder Use - A mechanic working in the packaging area was standing on the top step of a step ladder. He then proceeded to kneel on the top platform with one leg while standing sideways on a rung with the other leg. Both actions exposed him to the chance of a fall. Standing on the top step should be restricted and the top step should be painted red to identify it.
- B-24 Fire Doors Inoperable - Both fire doors at the bottom of the elevator-stair tower needed repairs. One door did not latch when closed and the other door was missing its latch. These doors should latch to keep smoke and fire out of the tower.
- B-25 Tripping Hazard - A set of foot and shin guards were laying in the middle of a walkway on the roof over the Nordel® dryers.

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HYPALON®

- L-26 Handrail Usage - Two operators were observed using stairways without holding the handrail (one operator was taking two steps at a time) in violation of Works rules.
- L-27 Loose Clothing - An operator was observed wearing a shirt with loosely rolled up sleeves in violation of area rules.
- L-28 Contractor Barricading - A contractor was observed spray painting in the area without barricading. To prevent possible injury to area personnel (from overspray, tripping over equipment, etc.), consideration should be given to barricading the area.

HYPALON® SHOP

- L-29 Arbor Press Guards - The guard used on the arbor press only protects the front portion from flying objects (shattered bearings, etc.). A guard to protect personnel in all directions as used in the other areas of the Works should be used.

CENTRAL SHOPS

L-30 Relief Valve Testing

- Observation of the liquid relief valve test stand revealed small diameter tubing supplying the test flange. Testing a valve with this stand tends to indicate the pressure at which it starts to open not die pop pressure, which may be several PSI higher. What can result is a relief valve set several PSI higher than designed for the process. A larger capacity test stand should be considered.
- Conversation with test personnel indicated relief valves for liquid service are "pop" tested with air. Since these valves are designed for liquid service, they may start to leak air earlier than the set pressure without actually being defective. Consideration should be given to testing liquid service relief valves with liquid to increase the accuracy of the test.

L-31 Forklift Truck Maintenance - Conversation with personnel indicated two items:

- Fork deflection is not measured. This test reflects the overall strength of the forks and should be periodically performed to insure forks capable of handling its rated load as outlined in Engineering Standard PH40.
- Periodic maintenance is scheduled once per month on each forklift. Safety and Fire Protection Guideline on Forklift Truck Safety recommends periodic maintenance consistent with the amount of use. The current scheduling should be evaluated to insure maintenance consistent with this guideline.

HYDAN®

- B-32 Sprinkler Deficiencies - Sprinkler heads in the bagging room are covered with dust which could affect the temperature they release at. The heads should be maintained in a clean condition.

Sprinkler piping over the top of the filter was corroded. The piping should be inspected and painted to stop corrosion and reduce the chance of a sprinkler failure

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- B-33 Damaged Ladder - A wooden step ladder showed signs of deterioration on the top and one rail was damaged. It should be removed from service.
- B-34 Fire Doors - Two fire doors in the smokeproof tower had plastic windows. Wired glass should be installed.

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