

SOLUTIA
JFQ PLANT
DRILL
24 NOVEMBER 1997

NARRATIVE

At 9:00 AM on 24 November 1997, the Ferrel Gas driver is in the process of unloading Anhydrous Ammonia from an MC331 Tank Truck into the L-Aspartic Dept. Aqueous Ammonia Storage Tank. The Differential Pressure Cell Line fails at the flex connection. Aqueous Ammonia (17%) is spraying out of the 1/2" line at 50 PSI. The driver is sprayed with the solution and is rapidly overcome and falls to the ground. Two of the four Ammonia sensors detect the release and the alarm sounds in the L-Aspartic Control Room.

EXERCISE OBJECTIVES:

1. Test the effectiveness of the plant evacuation and headcount procedure.
2. Test the interface (Unified Command Structure) between plant emergency responders, St. Louis Fire Department, and St. Louis Fire Dept.
3. Test the emergency response capabilities of the plant Emergency Response Team and in responding to an Ammonia release, emergency shutdown of the MC331 Tank Truck, rescue and patient care.
4. Test plant communication of emergencies internally (alarms, PA announcements, radio communications) and external emergency notifications (911).
5. Test the effectiveness of the Emergency Control Staff in coordinating plant evacuation, making appropriate external plant notifications (community, regulatory, Solutia)

PLAYERS

- Emergency Response Team
- Emergency Control Center
- St. Louis FD - Deputy Chief Frank Schaper
- Ferrel Gas
- ECC Staff
- L-Aspartic Department

CONTROLLERS

- Bob Auer - Evacuation
- Bob Gale - Emergency Control Staff
- Bob Schneider - Emergency Scene & L-Aspartic
- Don Ridenhower (Lead Controller) - St. Louis Fire Dept.

Controllers will coordinate with Don Ridenhower on WGK Radios - Fire Ground Frequency.

EVALUATORS

Scene - WGK Union Safety Rep. (Pat Schaeffer)
L-Aspartic Control Room - Bill Webking
St. Louis Fire Dept. - Deputy Frank Schaper
Emergency Control Center - To Be Named - Dale Dressel invited (corporate S&PP)
Plant Headcount - Mike Siegel (Monsanto WHQ Emergency Response Coord.)
Dept. Evacuation - QUESHNET

PRE-DRILL ISSUES

CONTROLLER ACTIONS & CONTINGENCY PLANS

1. Real Emergency Occurs
 - 1.1. Announcement on PA & Radio **Bob Gale advise receptionist**

"May I have your attention please, the drill has been terminated. A real emergency is in progress". Echoed on emergency frequency and controller frequency. On St. Louis Fire Main by Deputy Chief Schaper if appropriate.

2. Notification of Plant Neighborhood Businesses (letter and phone call)
 - 2.1. Rhone Poulenc Bob Auer With Input From Brad Young
 - 2.2. St. Louis businesses to north Bob Auer With Input From Brad Young
 - 2.3. Monsanto WW Bldg. Bob Auer With Input From Brad Young
 - 2.4. Solutia Corporate Don Ridenhower
3. Rain Inclement Weather
 - 3.1. 1 PM Rain date: 2 Dec 97
4. Relations with St. Louis F.D. - Don Ridenhower
 - 4.1. Enroll St. Louis F.D.
 - 4.1.1. Change: The Fire Marshall's Office participation in drill planning has been replaced by Deputy Chief Frank Schaper of the St. Louis Fire Dept. Discussions with Deputy Chief Schaper indicated that the Department's SOP would place the first arriving engine companies at the plant gate to collect information on the HAZMAT incident. These engine companies would not enter the plant until such time the HAZMAT Task Force arrived. The HAZMAT Task Force would be 2 pumpers, Squad 2, Engine 28, Ladder Truck 15 (110' aerial), 805 Deputy Chief Ralph Brake, and the Command Vehicle 900. Deputy Chief Schaper gave us the option of responding the HAZMAT Task Force on this drill or having only Deputy Chief Schaper as a Fire Dept. representative. We chose the latter option since one of the primary objective of this drill was to determine if the Queeny Plant Emergency Response Team had adequate resources to conduct isolation and rescue. A larger drill will be planned with St. Louis HAZMAT participation in 1998.
5. Solutia Corporate Notifications - Don Ridenhower
 - 5.1. Public Relations - Glenn Young
 - 5.2. S&PP & IH notification
 - 5.2.1. John Henshaw
 - 5.2.2. Paul Easterday
 - 5.2.3. Mike Pierle
6. Press Contingency Plan - Don Ridenhower
 - 6.1. Prepared text and PIO in case press shows up.

- 6.1.1. ID JFQ person who has had media training in conjunction with St. Louis F.D. Rep.
 - 6.1.1.1. Sue Willower identified as PIO for JFQ
 - 6.1.1.1.1. Alternate: Don Ridenhower
 - 6.1.1.2. Identify St. Louis FD - **Deputy Chief Frank Schaper**
- 7. Who in plant needs to be notified in advance of drill? **Brad Young**
 - 7.1. Business Team Leaders need to be advised in advance so they can designate an operator to stay by and run the dept. while drill is in progress.
 - 7.2. Business Team Leaders need to be advised to give the designated operators name at the headcount assembly area so those persons can be accounted for.
 - 7.3. Once all persons accounted for, then plant will return to normal operations except for emergency scene and emergency control who will play the drill out to it's conclusion.
 - 7.4. QUESHNET, Brad Young, and Jim Hart need to be given regular updates on drill planning scenario. **Bob Auer & Bob Gale will keep QUESHNET informed. Don Ridenhower to keep Jim Hart and Brad Young informed.**
- 8. Develop set of cue cards for Emergency Scene, Emergency Control Center, Receptionist, L-Aspartic Acid. **Bob Schneider**
- 9. Put red ribbons on Ammonia tank truck emergency shut off valves. **Bob Schneider & Butch Barnett (Ferrel Gas).**
- 10. Place barricade/cones with signs indicated Ammonia plume area. Indicates wind direction and odor detectable. **Bob Auer, Bob Schneider, Butch Barnett (Ferrel Gas). Don to bring 6 cones from WGK morning of drill. Bob & Bob to put cue card on emergency vehicle dash indicating not to drive past cones (Ammonia area).**
- 11. Dispersion modeling of release so we have a realistic idea of what the area of impact would be for drill purposes. **Ridenhower note: 1 block**
- 12. Make critique sheets for evaluators. Use Drill Objectives and detailed sequence of events, site emergency plan, and detailed list of events as guide. Distribute on drill date. **Don Ridenhower**

MAJOR SEQUENCE OF EVENTS

1. Ammonia Leak & Driver Overcome, alarm sounding.
2. Initial Response by ERT & Size Up. Dept./Plant Evacuation. Initial actions, offensive or defensive.
3. St. Louis FD arrives at main gate, stages, collects information, awaits HAZMAT Task Force per their SOP's. *NOTE: Deputy Chief Frank Schaper will play this role per previous agreement. See notes under 4.1.1 above. This is a change from original drill plans.*
4. Plant evacuation and headcount completed. All personnel accounted for. *NOTE:: At this point the plant will return to normal operations except for a local exercise at the emergency scene and associated activities of the Emergency Control Staff.*
5. Truck pump shut down, patient rescue & care, patient decontamination and transport.

SCENARIOS

SCENARIO #1 The Emergency Response Team has adequate personnel to begin offensive actions (4 or more).

SCENARIO #2 The Emergency Response Team does not have adequate personnel and must wait for St. Louis FD assistance (less than 4).

DETAILED SEQUENCE OF EVENTS

EVENT MARKER #1: 9:00 AM. The Differential Pressure Cell Line fails at the flex connection on the Anhydrous Ammonia unloading station. The Ferrel Gas driver is sprayed with Aqueous Ammonia and is overcome. 17% Ammonia in water is spraying out of the 1/2" line at 50 PSI. The Ammonia alarm sounds in the L-Aspartic Control Room.

Detailed Event

Expected Actions

Alarm sounds at L-Aspartic Control Room

Operator shuts down Recirculation Pump and dials 2222.

Plant Receptionist answers call.

Sounds Plant Alarm. Announces Ammonia Fume Alert at Ammonia Unloading Station. Communicates with ERT on radio.

Calls 911 (SIMULATED CALL to ESH Office- Deputy Chief Frank Schaper on other phone.

ERT members assemble upwind with Emg. Vehicle.

Emergency Control Staff Members assemble in Emergency Control Center.

Command established. Size up given to ECC on radio. Command requests that St. Louis F.D. respond. Command advise ECC to begin plant evacuation and advises on evacuation routes for nearby departments.

Emergency Control Staff begins evacuation process.

Departments are given guidance on evacuation routes.

Emergency Control Staff begins notification process.

ECC external notifications (SIMULATED)
ECC notifies..... Regulatory Contacts
ECC notifies..... Neighboring Businesses
ECC notifies..... Corporate Contacts

Emergency Control Staff directs Rich Koenig to perform perimeter monitoring.

Rich Koenig cannot comply. Detector tubes are in evacuated area (lab) next to incident scene.

ECC requests WGK IH to deliver tubes & pump.

EVENT MARKER #2: The Incident Commander cannot see the driver and the L-Aspartic Dept. cannot account for him. The Incident Commander can hear the Ammonia truck pump running. There are no dense white fumes showing. Large amounts of liquid are visible on the ground in the vicinity of the truck. One of the ERT members reports that while he was in route to the scene he got a good look at the piping on the

unloading side. He reports that liquid was running from an overhead flex connection at about 5 gallons per minute. Ammonia odor is reported to be very strong down wind.

SCENARIO #1

The Incident Commander determines he has enough people (4 or more) and can take offensive actions.

Note: IF the Incident Commander determines enough responders are NOT present, THEN PROCEED TO SCENARIO 2.

Detailed Event

The Incident Commander determines he has enough people (4 or more) and can take offensive actions.

St. Louis FD arrives at the front gate. The gate keeper reports to the Incident Commander.

St. Louis FD staged at front gate.

Expected Actions

The Incident Commander has the ERT don SCBA's, isolate the area, turn on monitors to absorb and disperse fumes, and observe the scene from various vantage points without entering the immediate hazard area.

The St. Louis FD stages at the front gate and collects information from the gate keeper on the incident. Any additional information needed by St. Louis FD is obtained from the gate keeper from Monsanto Incident Command and communicated to the St. Louis FD by the gate keeper. ***(St. Louis FD part played by Deputy Chief Frank Schaper.***

St. Louis FD stages at front gate awaiting arrival of the St. Louis FD Task Force. ***(For the purposes of this drill, St. Louis FD HAZMAT Task Force will not respond. See section 4.1.1 under Pre-Drill Issues for further description.)***

The Incident Commander requests an L-Aspartic Dept. representative come to the command post for advice.

ERT members report that the driver is seen face down on the ground near the unloading hoses. He is not moving. Liquid can be seen slowly leaking out of a small diameter flex connection running off of the main 6" Aqueous Ammonia line.

EVENT MARKER #3 St. Louis FD HAZMAT Task Force arrives on scene. Unified Command established.

St. Louis FD arrives on scene.

Battalion Chief & Solutia IC establish Unified Command. *Note: St. Louis FD part played by Deputy Chief Frank Schaper.*

L-Aspartic Dept. Rep. indicates that the flex connection on the DP line has probably come apart and released Aqueous Ammonia. Reports that Recirculation pump was shut down and valves isolated truck. Truck pump is RECIRCULATING. Tank is isolated. Only residual Aqueous Ammonia is leaking out of line.

EVENT MARKER #4 The site has been successfully evacuated and all personnel accounted for. At this point in the drill, the plant will be allowed to return to normal operations except for the emergency scene personnel and the Emergency Control Center. The following activities will continue to conclusion.

Action Plan agreed upon.

St. Louis FD. sets up a additional unmanned monitors for fume scrubbing & dispersal. ERT down level A and SCBA's. 2 for entry, 2 as a rapid intervention team. *NOTE: It is permissible to simulate additional personnel for the Rapid Intervention team as from St. Louis HAZMAT Task Force is anticipated to be on scene at this point.*

Assignment Given

Push Emergency shut down on truck pump.
(RED RIBBON AT EMG. SHUT OFFS)
Isolate Leaking Line Using Valve
(RED RIBBONS ON VALVES)
Rescue driver.
(RESCUE RANDY DUMMY)

DSW 135178

STLCOPCB4035140

FOR RELEASE IMMEDIATELY

CONTACT: ~~Erie Brimer~~ Diane Herndon
Phone: (314) 268-1845 694-2915MONSANTO'S CARONDELET PLANT
INVESTS IN NEIGHBORHOOD ~~UPKEEP~~ IMPROVEMENTS

ST. LOUIS, January 24, 1996 -- Monsanto Company continued its decade-long support for the Carondelet Community Betterment Foundation by ~~donating \$20,000~~ ^{presenting a generous donation} from the Monsanto

Fund to continue to finance the organization's home repair program. ^{This came on the 25th anniversary date of the CCBF, continuing a nearly two decades}
The program fixes or maintains homes in the Carondelet area of low income residents 55

and older. It allows seniors on a limited budget to remain in their homes while keeping them safe.

Homeowners who are able, repay the funds to CCBF to stretch the benefit further. The program also helps to maintain property values for other homeowners in the area.

"This contribution is important to maintaining the quality of housing in the Carondelet community," stated Sister Marie Charles, CSI, executive director of the program. "It allows us to address many needs that would otherwise go unmet."

"Monsanto strongly believes in supporting the communities in which we operate," stated Carondelet Plant Manager Craig Vanderburg. "The stability and sustainability of this community are greatly enhanced by the activities of the CCBF. We are pleased to be able to contribute to such a worthwhile organization."

The CCBF staff completes approximately ^{home} 350 - 400 repairs annually with two craftsmen and a few volunteers.

(more)

2-2-2

The Carondelet Community Betterment Foundation is an organization founded to address

DSW 135694

STLCOPCB4035141

Decon driver in safety shower and strip.
Decon selves in safety shower.
Bring decontaminated driver to ambulance.

EVENT MARKER #5 Truck pump shut down (signified by obtaining red ribbon),
leak isolated by closing valves (signified by obtaining red ribbons), patient rescue & care,
patient decontamination and transport to hospital.

All tasks completed successfully. Driver transported to hospital

Final wash down, and secure equipment,
termination procedures.

**DRILL HAS REACHED SUCCESSFUL END POINT. PROCEED TO
DEBRIEFING (LISTED ON LAST PAGE).**

DSW 135179

STLCOPCB4035142

SCENARIO #2

The Incident Commander has less than four responders present and he must restrict his actions to defensive until additional help from St. Louis FD arrives (identify, isolate, deny entry and use unmanned monitors to scrub fumes and disperse vapors).

Detailed Event

Expected Actions

Incident Commander informs Emergency Control that manpower is limited and that ERT can take only defensive actions.

ERT members don protective equipment, activate unmanned monitors to scrub fumes, establish perimeter control. ERT members do not enter hot zone.

St. Louis FD arrives at the front gate. The gate keeper reports to the Incident Commander.

The St. Louis FD stages at the front gate and collects information from the gate keeper on the incident. Any additional information needed by St. Louis FD is obtained from the gate keeper from Solutia Incident Command and communicated to the St. Louis FD by the gate keeper. (St. Louis FD part played by Deputy Chief Frank Schaper.

(For the purposes of this drill, St. Louis FD will not respond. See section 4.1.1 under Pre-Drill Issues for further description.)

The Solutia IC requests an L-Aspartic Dept. representative to come to the command post.

Emergency Control contacts headcount coordinator and requests L-Aspartic Rep. to go to command post. Radio or runner.

ERT Members report findings to Solutia IC.

ERT members report that the driver is seen face down on the ground near the unloading hoses. He is not moving. Liquid can be seen slowly leaking out of a small diameter flex connection running off of the main 6" Aqueous Ammonia line.

EVENT MARKER #3 St. Louis FD & HAZMAT Task Force arrives on emergency scene, Unified Command established.

St. Louis FD arrives on scene.

Battalion Chief & Solutia IC establish Unified Command.

L-Aspartic Rep. at Cmd. Post.

L-Aspartic Dept. Rep. indicates that the flex connection on the DP line has probably come apart and released Aqueous Ammonia. Reports that Recirculation pump was shut down and valves isolated truck. Truck pump is RECIRCULATING. Tank is isolated. Only residual Aqueous Ammonia is leaking out of line.

EVENT MARKER #4 The site has been successfully evacuated and all personnel accounted for. At this point in the ALL CLEAR will be sounded.

DRILL HAS REACHED SUCCESSFUL END POINT. ST. LOUIS CITY HAZMAT WOULD ACTIVATE AMMONIA TRUCK EMERGENCY SHUT DOWN, ISOLATE VALVES, PERFORM RESCUE & DECON PATIENT, TRANSPORT.

DSW 135181

STLCOPCB4035144

CONCLUSION OF DRILL

DEBRIEFING: Held with key players immediately following exercise or drill. (constructive criticisms only, thanks to all players, controllers, observers etc.) **Bob Gale to Facilitate. Held in Queeny Conference Room.**

POST INCIDENT ANALYSIS: Written summary within 2 weeks. **Bob Gale**

CRITIQUE: Follow up meeting with key players to reinforce positives and establish corrective actions needed for improvement. CARS agreed to prior to meeting. **Bob Cheevers**