EVENT INVESTIGATION REPORT

Worker Exposure Outside of 241-SY Tank Farm
EIR-2014-020

Event Investigation Team Lead

PER Responsible Manager

PER No. WRPS-PER-2014-1108

6/23/14
Date

6/23/14
Date
Worker Exposure Outside of 241-SY Tank Farm

Investigation Summary

On June 16, 2014, while loading dirty laundry into a truck outside of the 241-SY change trailer (MO-296) within five to fifteen feet (5'-15') of the fence line, two (2) workers reported smelling strong odors coming from the tank farm. Due to the wind direction reported by the Nuclear Chemical Operator (slow and from the southwest), the change trailer was directly downwind of the SY primary and annulus exhausters. Within a few minutes, the workers reported having symptoms (worker 1 experienced coughing, hoarseness, and a slight rash on the neck; worker 2 indicated numbness in the face around the upper lip with blistering inside of the mouth).

At 1310 the ST Area Day Shift Manager was notified and the workers were being escorted to the site occupational medical provider (HPMC). At 1313, the Central Shift Manager entered TF-AOP-015, Response to Reported Odors or Unexpected Changes to Vapor Conditions, for 241-SY Tank Farm and the surrounding downwind area and personnel access to the area was secured.

An event investigation was initiated on June 16, 2014. Workers were interviewed, a facility walk down was completed, and logbooks were reviewed.

Event Timeline

June 16, 2014

1310 ST Area Day Shift manager reported to Central Shift Manager that while performing laundry duties a Mission Support Alliance (MSA) Health Physics Technician (HPT) and a Washington River Protection Solutions (WRPS) Nuclear Chemical Operator (NCO) smelled an onion-like odor. The MSA HPT was experiencing respiratory distress, throat inflammation, redness of the neck area, and a metallic taste in the mouth and the NCO was experiencing a metallic-like taste (followed by a numbness of the lip and mouth blistering). An Operations First Line Manager was escorting them to HPMC.

NOTE: The laundry service driver (Unitech) did not report smelling odors or having symptoms. He was asked if he needed to see the medical provider and he declined.

NOTE: MSA HPT called West Area Field Work Supervisor to inform him she was going to HPMC.

1313 Entered TF-AOP-015 for SY Tank Farm and area north of SY Farm. Shift Office Event Notification (SOEN) and radio announcement sent.

1315 ST Area Day Shift Manager secured access to SY Tank Farm due to vapor concerns.

1323 Central Shift Manager notified Production Operations Safety and Health personnel that herbicide spraying was scheduled for west of S-complex. NOTE: It was confirmed that this herbicide spraying did not occur due to wind.

1330 All personnel have been evacuated for SY Tank Farm (no other workers present). MSA contact notified that MSA employee taken to HPMC. WRPS Medical Advocate notified.
Production Operations Industrial Hygiene personnel were notified that B-train exhauster at SY Tank Farm was operating so no stack sample would be possible. Self-contained breathing apparatus (SCBA) would have to be worn beyond the restricted access boundary as a precautionary measure.

Hanford Metrological Station reported wind from the southwest (SW) ay 12-20 miles per hour (mph) and a barometric pressure of 29.02 and falling slowly.

Additional Information - Hanford Site Weather Station Report.

Tower Information

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1410 Event investigation initiated for SY Tank Farm TF-AOP-015 entry.

1420 Industrial Hygiene Technician pulled a bag sample from SY Tank Farm laundry trailer and downwind of SY Tank Farm VTP stack. Gravel roads to access SY Tank Farm were blocked to restrict access due to TF-AOP-015.

1440 Central Shift Manager notified by the WRPS Health Advocate that affected workers were released from HPMC to return to work (without restriction).

1520 Preliminary direct reading instrument (DRI) results were 0 parts per million (ppm) NH3 and 0 parts per billion (ppb) volatile organic compounds (VOCs).
Compensatory Measures

Vapor exposure as low as reasonably achievable principles:
- 241-SY Tank Farm access restricted minimizing number of workers at risk by administrative and physical control. Complete.
- TF-AOP-015 response actions implemented. Complete.
- Area north of 241-SY Tank farm restricted and barricaded to increase the distance from the vapors potential source by administrative control. Complete.
- Respiratory use for post event vapor sampling. Complete.
- All employee communication sent informing them of the vapor event. Complete.

TO: All WRPS Employees
(Please pass this message on to those who did not receive it.)

ISSUED: June 16, 2014

FROM: WRPS External Affairs

SUBJECT: June 16 vapors event

Two Hanford workers reporting symptoms related to chemical vapors this afternoon have been evaluated by medical professionals and cleared to return to work. The employees, one from Washington River Protection Solutions and one from Mission Support Alliance, were working at a laundry trailer outside the SY tank farm and were taken to the onsite medical provider for evaluation. No work was underway inside the SY tank farm at the time. Industrial hygiene technicians are taking samples in the area and checking for potential sources.

Discussion of Potential Extent of Condition

A review of prior (recent) vapor events in S-complex was conducted for similarities, such as potential vapor sources/potential causes, weather conditions, and response actions.

Discussion of Potential Causes

Based on interviews with workers, the assumed source of the odors is from the SY-Farm B-Train exhaust stack.

Recommendations/Proposed Corrective Actions

1. Evaluate follow-up industrial hygiene samples.
2. Evaluate the installation of the Industrial Hygiene sample port for the SY-Farm B-Train exhaust stack.
Lessons Learned

To be addressed, if required, by the causal analysis via a corrective action under WRPS-PER-2014-1108.

Attachments

A. Listing of Personnel Interviewed/Contacted
B. Shift Manager's Logbook Entries
Attachment A
Listing of Personnel Interviewed/Contacted

1. Nuclear Chemical Operator
2. Health Physics Technician
3. Unitech Laundry Driver
4. Operations Field Work Supervisor
5. Industrial Hygiene Technician
6. MSA Radiological Controls Technical Support
7. VRPS Health Advocate
8. ST Area Day Shift Manager
9. Central Shift Manager
10. HAMTC Safety Representative
11. Industrial Hygiene Program Manager
11/16/14 11-5:34

MIS: SCEN complete 4-1435. entity: ORP lotted FR, notified.

11/20: H&H pulled a bag from 51 Farm laundry trailer
and downwind of 51 Farm VIP stock. Gravel roads.

Access 51 Farm have been blocked at restrict.
Access due to ARFS.

PIPR reports that [REDACTED] and [REDACTED]
no being released [REDACTED] and [REDACTED] ARPS.

On Call: Senior Manager, notified at 1004 on TRS.
10:10 Retried by CSM

10:11 ASSP, assumedNotify, of BOM

10:14 SoS Reports that Emergency Shower

20:4. Sy. Emergency Safety Shower

is not functioning properly.

Emergency Safety Shower down
out of service. CSM and 24X7
FWS notified.

10:16 SS Doo Crane entered B-1, C-1

11:5 Retried by

11:5 Retried

15:51 Crane out of Sy. Farm

15:55 Retried, pull valve on 111 - Sy. Enamele

16:5 Retried by CSM

06:36 Assumed ADM

09:10 RAS veins off T-Form

11:20 RAS out of T-Form

11:59 Retried, Bump, Bump Sy. Display on 101-4C LIT

14:59 complete SR-201 in Sy. VTP-A

Declared Operable. Reprogram NLT

01/17

17:02 Retried by CSM

01/18 06:08 Assume ADM

08:30 RAS into T-Form

11:10 RAS out of T-Form

15:10 Sy. Emergency shower returned to service

16:15 Retried by CSM

01/19 06:30 Assume ADM

08:30 RAS to T-Form

10:21 RAS out of T-Form

01:15 Secured Access to sy. form due to

Value concern. CSM declared Adjacency.