Lessons Learned

NFPA 704
Hydrochloric Acid

Date of Incident January 18, 2010 @ 1600

Subject: Hazmat Release and Exposure Incident CA- LPF
Note: This Hazmat Release and Exposure Incident was reviewed using The June 2009 Facilitated Learning Analysis Implementation Guide.

Incident: On January 18, 2010 five firefighters from the USDA Forest Service were transported to local emergency room for examination due to inhalation of an unknown hazardous material which caused some of them to react with hacking and coughing.

Summary:
The firefighters were part of a winter project fuels crew and had been assigned to work on Bureau of Reclamation land which the Los Padres National Forest, LPF has under agreement. The property is near the highway and occasionally has illegal dumping. The Ranger District has requested that the property remain free of trash and to repair damages due to trespass. The forest had received significant rainfall on the day prior and the day of the incident.
1300 The fuels crew had a meeting to discuss project work in which they planned fence repair and clean up some trash on the land under agreement. The work was approved by district management.
1400 The crew began loading miscellaneous items (bags of trash, clothing, old paint cans, a couch, plywood and a clear plastic jug of unknown liquid) into a government owned stake side truck. They then transported it to a Forest Service fire station approximately two miles away to unload.
1500 While unloading, members of the crew observed a small and dense white cloud, like steam, venting from the trash in the pickup truck. They instantly reacted with coughing and complained of a “nasty” taste in their mouth. They all backed up and a crew member called a supervisor. The supervisor then called the duty officer.
1525 The duty officer spoke with the fuels crew leader and was advised of the incident and that they needed help disposing of the hazardous waste. The duty officer then contacted district staff and also notified dispatch to relay the crew leader’s message and create an incident.
1541 The duty officer notified Forest Safety Officer and a decision is made to respond county hazmat, transport exposed crew members to local emergency room and order vendor for clean up.

Once on scene the county hazmat team made entry in level B protective equipment and discovered a plastic container of 50% solution (100% would be pure) of Muriatic/Hydrochloric Acid. It should be noted that the amount commonly used to strip the plaster (acid wash treatment) off the walls of a swimming pool is a 50% solution.

Contributing Factors:

- Rainy day weather and the crew were in a hurry to finish the task before it rained again and to be back to the District Office to end their shift.
- No Job Hazard Analysis (JHA) was completed for the project.
- Fuels crew was not “In Service” with dispatch at the time of the incident.
- Two out of the five crewmembers were not trained as HAZWOPER First Responder Operations due to the fact they were apprentices.

Concentrated hydrochloric acid (fuming hydrochloric acid) forms acidic mists. Both the mist and the solution have a corrosive effect on human tissue, with the potential to damage respiratory organs, eyes, skin, and intestines. Wikipedia 2010

Lessons Learned From Participants:

- We do not drill on hazmat. We get caught off guard on these since we never get dispatched to a hazmat incident. By the time we realize this was a hazmat concern we were are already exposed.
- Warning bells are going off in my head and then I tasted the chemical. I knew we had just been exposed to something that could damage my health. We were all very lucky that we did not get hurt worse.
- Chain of command did not work cleanly because we were a "just for the winter" fuels crew, and made calls to our normal supervisors.
- I had cleaned up at the same facility and in the past and had no problems so I thought today would be no different.
- The entire crew was not aware that I picked up some unmarked liquid and put it in the truck. Next time we will not move unmarked containers or stuff that we are not sure about.

Lessons Learned From Facilitator:

- The Forest has had little exposure to hazardous material incidents and employees are not able to create slides or gain situational awareness from annual refresher training. Recommend drilling at stations and possibly incorporating hazmat into existing events such as trap drills or fire school.
- Permanent firefighters are trained at the HAZWOPER First Responder Operations level. The purpose of the training is to train responders to, "protect nearby persons, property, or the environment from the effects of the release. They are trained to respond in a defensive fashion without actually trying to stop the release. Their function is to contain the release from a safe distance, keep it from spreading, and prevent exposures." 29 CFR, Part 1910.120(q)(6)(ii) The training also includes an introduction to acronyms such as S.I.N and several reference manuals including the Emergency Response Guidebook or ERG.
- Recommend that leaders reinforce the basics emphasized in this training course. In most cases our employees should only be considering **s**afety, **i**solate & deny entry and make **n**otifications. (S.I.N.) The hazardous waste material will typically remain unidentified during the initial response and the employees can be taught to focus on the requirements listed in the ERG on Guide 111- Unidentified Cargo.
- Do not self transport exposed victims without Decontamination. The local emergency room could have refused immediate treatment because the firefighters did not go through decontamination. The hospital did question this fact with the firefighters and the county hazmat team. The decision was made to send the firefighters to the ER prior to the arrival of the county but it must be emphasized that when there is a hazmat release and exposure, decontamination will take place.
- ***When there is a hazmat incident, qualified help (County Hazmat Team) must be notified immediately.***

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