

Fire at Haro's Metal Finishing, Inc.

Introduction

At roughly 12:30 a.m. on May 19, 2015, the Haro's Metal Finishing Inc. shop caught fire, and burned for about 1 ½ hours (Figure 1). The shop is part of a small business park in San Jose.

When the San Jose Fire Department (SJFD) respondents first arrived on the scene they were not aware of the hazardous chemicals inside the building because the NFPA (National Fire Protection Association) hazardous materials placarding on the building was hidden by dense smoke (Photo 1). Once SJFD realized they were dealing with a chemical fire, a four-alarm¹ response was called and Hazmat units dispatched. There were no injuries reported or evacuations ordered, however, the initial lack of



Photo 1. NFPA placard on front

awareness of the chemicals stored at the facility resulted in 16 fire fighters needing decontamination. Had the fire occurred during normal work hours when businesses in the park were open, the results could have been different. Images of the fire and aftermath are shown in Figure 1.

The California Department of Public Health, Division of Environmental and Occupational Disease Control (DEODC), Emergency Preparedness Team (EPT) conducts public health investigations of hazardous material emergencies with a goal of identifying risks and developing strategies to minimize the potential health impacts to community members, first responders and workers. This case study is the first in a series that supports Executive Order 13650 (EO) – Improving Chemical Facility Safety and Security (August 2013) and the Emergency Planning and Community Right-to-Know Act (EPCRA) passed by Congress in 1986. The EO was a response to a number of catastrophic incidents that occurred at chemical facilities around the country. One of the key considerations for implementing the EO, and a focal point of this case study, is effective communication and notifications to the community before, during and following a chemical accident.

EPT conducted a public health investigation of the Haro's Metal Finishing incident to identify knowledge gaps of adjacent businesses and first responders that could be addressed through training, education, or information sharing, with the ultimate goal of increasing individual and collective preparedness.

¹ The higher the alarm designation, the more firefighters are dispatched; multiple alarm designation is indicative that a fire was severe and difficult to contain.

Background

The County of Santa Clara Department of Environmental Health (DEH) is the CUPA² and responsible for implementing the hazardous materials management programs in the county. These programs include: Hazardous Waste Generator Program; Tiered Permitting; Underground Storage Tanks, Aboveground Storage Tanks; California Accidental Release Prevention Program; reporting requirements of Article 80 of the Uniform Fire Code and; the Hazardous Materials Business Plan (HMBP)³. Prior to 2012, SJFD was the Participating Agency² responsible for implementing the hazardous materials management program for the City of San Jose. The program was transferred back to DEH.

Haro's Metal Finishing, Inc. operated as a metal anodizing, plating, and polishing shop for over 20 years in the Reynolds Circle Business Park, located in San Jose. The facility was also permitted to treat hazardous waste on-site. The treatment process consisted of running rinse waters from zinc plating and anodizing operations into three 2,000 gallon tanks and treating them by adjusting the pH and using other chemical additives to precipitate the solids. The treated waste water was then evaporated after-hours in a 1,800 gallon evaporation tank using a closed loop hot water supply heated with a boiler. The remaining sludges were shipped off-site to a hazardous waste facility.

The facility reported to the CUPA as having 46 chemicals on-site, consisting of various acids (corrosives), plating and/or anodizing mixtures such as zinc cyanide, nickel and chromium based compounds, and other chemicals used in metal finishing. The majority of these chemicals are classified as posing an acute health hazard, and many (e.g., strong acids) are reactive with the addition of water. Others pose further hazard when mixed with other chemicals, including some firefighting foams. For example, exposing zinc-cyanide to acids or high temperatures causes decomposition and the evolution of hydrogen cyanide, a poisonous gas.

² A CUPA (Certified Unified Program Agency) is: certified and overseen by the California Environmental Protection Agency (CalEPA). The CUPA is the local administrative agency that coordinates the regulation of hazardous materials and hazardous wastes through six programs. As a Participating Agency (PA), Local Fire Agencies are often responsible for the Hazardous Materials and Business Plan Program.

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Haro's Metal Finishing was inspected by the local Participating Agency (SJFD) in 2005, 2008, 2011, and by DEH in 2012, and 2015. The facility received at least one "Notice of Violation" during every inspection. In 2015, DEH cited the facility with 13 violations, 11 of which were classified as "minor" violations. With minor violations, a business has 30 days to return to compliance without any threat of enforcement or penalty. The following illustrates some of these violations.

- 2005 (1 violation): heating cyanide waste water for volume reduction without a permit.
- 2008: (2 violations) Emergency Response Plan not prepared, hazardous waste management and training not provided to workers.
- 2011: facility late on submittals.
- 2012 (3 violations): hazardous waste training records missing, inspection schedule for hazardous waste treatment system missing, tank assessment not done.
- 2015 (13 violations): improper labeling, improper storage, contingencies put on the tank assessment in 2012 had not been corrected, facility failed to certify its HMBP information in 2014, failure to submit Biennial Report [accounting of all waste generating activities to US Environmental Protection Agency (USEPA)] – required of Large Quantity Generators), and several violations associated with the on-site hazardous waste treatment system.
 - ◇ The violations noted during the March 2015 inspection were corrected in April 2015.

In addition to the inspections/violations mentioned above, the facility has also been inspected by state and federal environmental agencies. In 1998, CalEPA's Department of Toxic Substances Control issued an enforcement order to Haro's Metal Finishing for violating the California Health and Safety Code by treating cyanide wastes on-site without a permit.

In 2002, USEPA fined Haro's Metal Finishing for hazardous waste management violations. The facility was cited for improperly labeling and storing hazardous waste in open containers.

The facility's Consolidated Emergency Response/Contingency Plan listed basic information meeting the legal requirements, but it did not provide a detailed plan on responding to various emergencies (e.g., airborne chemical releases, spills, or fires) that could occur at this type of industrial facility. The facility's Emergency Response Plan merely had a box checked next to a statement that adjacent business will be notified of an off-site release by "public address or intercom system."

In June 2015, EPT conducted a survey among businesses in Reynolds Circle Business Park on their awareness of the chemicals and operations at Haro's Metal Finishing. EPT interviewed employees from 10 businesses (3 owners, 7 employees) and the business park property manager. Respondents had worked in the business park from 2 months to 32 years. The following is a summary of the survey results:

- 6 (60%) respondents knew the facility did metal anodizing.
- 9 (90%) respondents were unaware of the chemicals used or the processes.
- 3 (30%) respondents learned of the fire from the news, 4 (40%) upon arriving at work, 2 (20%) were at work and saw the fire, and 1 (10%) business owner was not aware of the fire.
- 7 (70%) respondents want to know about the chemicals used/stored near their workplace or home.
- 4 (40%) respondents have an emergency plan, which consists of knowing the location of the fire extinguisher and exits in their place of business.
- None of the respondents practice emergency evacuation or drills.

Discussion

The nature of the operations, chemicals used, compliance history, and recent fire at Haro's Metal Finishing suggest the importance to communities and neighboring businesses of being aware of facilities that use and store chemicals. While this incident did not result in serious health consequences, there are numerous examples of industrial incidents resulting in loss of life and injury to workers, emergency responders and community members. Increasing information sharing with emergency responders and community members, including adjacent workplaces, is essential to improving public safety and preparedness.

Community Right-to-Know laws (EPCRA) and the EO provide the legal basis for community members to learn about chemical risks posed by a facility, but the burden of obtaining this information, which can be a very complicated process, generally falls solely on the public. Prevalent educational and technological barriers further diminish the chances for members of the public to access and understand information necessary for developing steps to prepare for hazardous chemical emergencies. To increase individual and collective readiness, it is critical that communities and businesses located around chemical storage facilities be made "partners" in the process of managing chemical risks and preparing for chemical emergencies.

CUPAs and/or PAs responsible for the HMBP and CalARP⁴ are in the best position to identify high risk facilities and facilitate communication with the adjacent community, be it a residential or business population, or combination of both. While a facility, such as Haro's, may be compliant in meeting the legal requirements for their Emergency Response/Contingency Plan, it does not necessarily mean the Emergency Response/Contingency Plan is the most protective of public health. The local jurisdictions have the authority⁵ to require a more robust Emergency Response/Contingency Plan as part of the HMBP program, and to require facilities to conduct meaningful outreach to potentially impacted communities on a periodic basis.

In some cases local planning decisions result in incompatible land uses, where residential housing is developed near industrial and/or chemical storage facilities. Local governments, beyond first responders and regulators, play an important role in mitigating potential public health impacts from industrial releases when making land use and zoning decisions.

Finally, the HMBP also provides emergency responders with necessary information to prepare and protect themselves when responding to chemical-related incidents at regulated facilities. HMBPs are uploaded to the California Environmental Reporting System (CERS), a statewide web-based system used to support CUPAs and PAs for electronically collecting and reporting various hazardous materials data. Fire Departments have access to the HMBP for regulated facilities in their jurisdictions, even if they are not responsible for regulatory oversight. The CERS web-based system recently added a "Responder" feature that allows quicker access to chemical inventories through this secure web-based system. While many Fire Departments access and use CERS, EPT staff learned that some staff at SJFD and other fire departments in the State (fire fighters, Battalion Chiefs, etc.) were not aware of CERS and how to use it. If the SJFD respondents had accessed CERS while en route and became aware of the chemicals stored at the facility, a Hazmat crew could have been dispatched earlier, avoiding potential exposure and decontamination of the 16 fire fighters arriving first on-scene.

Key Findings

The scope of our public health investigation included: 1) speaking with the CUPA inspector; 2) reviewing inspection reports and the facility's emergency response plan; 3) speaking with SJFD and reviewing the fire report and; 4) surveying workers from businesses located near Haro's Metal Finishing. The key lessons learned from this work are:

⁴ CalARP – California Accidental Release Prevention program (administered by the CUPA) oversees facilities that have greater than the threshold quantity of hazardous materials and requires them to develop a Risk Management Plan (RMP). The RMP includes an off-site consequence analysis of a chemical release, under a worst case scenario.

⁵ Health and Safety Code (HSC), Article 1, Section 25500: "...the Legislature does not intend to preempt any local actions, ordinances, or regulations that impose additional or more stringent requirements on businesses that handle hazardous materials." See reference number 7.

Inspections and Emergency Response Plan

Between 1998 and 2015, the facility received violations (some repeated) related to permitting, training, handling, treatment, and storage of hazardous waste. While some of the violations may be administrative in nature (e.g., being late on paperwork submittals), others are indicative that the facility did not employ best practices with respect to health and safety.

Haro's Metal Finishing's Emergency Response Plan, while compliant with regulations, did not provide any information or procedures for notifying adjacent businesses of the potential risks posed by operations at the facility or the appropriate emergency response measures that should be exercised in the event of a chemical release or fire. The intent of EPCRA is for neighboring communities to be made partners in the process of managing risks and preparing for emergencies associated with facilities that use and store hazardous chemicals.

Business/Employee Survey

The majority of employees (90%) that were interviewed by EPT at the business park were not aware of the chemicals or the processes used at Haro's Metal Finishing. Prior to the fire at Haro's, most survey respondents indicated they were not concerned about chemical use and storage at adjacent businesses and had never given it much thought. However, since the fire, most of the respondents (70%) now think that it is important to know about chemical use and storage near their work and home.

None of the survey respondents reported having an emergency plan at their business, beyond a fire extinguisher and marked exits.

The property manager for the business park had a copy of Haro's HMBP (including a chemical inventory), but did not have a clear understanding of the risks and hazards associated with an accidental chemical release or fire. The property manager indicated the need for more fact finding on their part in order to understand the implications of chemical hazards and processes present at their tenant businesses; simply having the HMBP and chemical inventory is not enough information to fully recognize the potential hazards.

SJFD

The fire fighters who were first to respond to the incident did not have knowledge of the hazardous chemicals on-site, which resulted in potential exposures and subsequent decontamination of 16 fire fighters.

Conclusion

This case study highlights several key issues that, if addressed, could reduce potential exposure and safety risks to first responders, facilitate better emergency preparedness and increase resilience of neighboring businesses and community.

- The facility's Emergency Response and Contingency Plan, while compliant with regulation, is general in nature and does not provide critical information specific to nearby, potentially impacted community (e.g., neighboring businesses) needed for effective emergency preparedness.
- There is widespread lack of awareness of the nature of operations and chemical hazards posed by Haro's Metal Finishing, Inc. in neighboring businesses (employees).
- Adjacent businesses lack knowledge of what constitutes an effective emergency preparedness plan.
- SJFD had limited awareness of CERS as a resource that could be used during response.

Recommendations

1. CUPAs and local jurisdiction partners should facilitate a process for increased information sharing about the potential risks of hazardous chemicals stored and used at facilities located near residential communities, sensitive receptors (hospitals, day care, convalescent homes, etc.) and other workplaces. This process should include collaboration with local Community Emergency Response Teams (CERT), in areas where a CERT program is active.
2. San Jose and other fire departments should consider increasing the number of first responders who can access CERS and training them on using the system. This would provide more opportunities for learning of local chemical use and storage facilities and identifying potential needs for the response prior to arriving on-scene of an incident.

References

1. US Environmental Protection Agency. How to better prepare your community for a chemical emergency – A guide for state, tribal and local agencies. June 2015.
2. Centers for Disease Control. Sodium cyanide: systemic agent. Available online at: http://www.cdc.gov/NIOSH/ershdb/EmergencyResponseCard_29750036.html
3. San Jose Fire Department. Reynolds fire report – incident number 15-1399005. May 2015.
4. County of Santa Clara Department of Environmental Health. Inspection reports of Haro's Metal Finishing, Inc. 2005, 2008, 2012, 2015.
5. Department of Toxic Substances Control. Consent Order: Haro's Metal Finishing, Inc. - violation of Health and Safety Code Section 25201. State of California, Environmental Protection Agency. May 1998. Available online at: https://dtsc.ca.gov/HazardousWaste/Projects/upload/Haros_ENF_ConsentOrder_5-14-98.pdf
6. US Environmental Protection Agency. News release: U.S. EPA fines Haro' s Metal Finishing \$7,150. Available online at: <http://yosemite.epa.gov/opa/admpress.nsf/d0cf6618525a9efb85257359003fb69d/e9af6862f7a4129f852570d8005e14b0!OpenDocument>
7. Health and Safety Code. Division 20. Miscellaneous health and safety provisions [24000-26204], Chapter 6.95. Hazardous materials release response plans and inventory [25500-25547.8], Article 1. Business and Area Plans [25500-25519]. California Legislative Information. Available online at: http://leginfo.legislature.ca.gov/faces/codes_displayText.xhtml?lawCode=HSC&division=20.&title=&part=&chapter=6.95.&article=1

Figure 1. Images of Fire at Haro's Metal Finishing, Inc. May 19, 2015, San Jose, Santa Clara County, CA.



Media source: KTVU Fox 2



Media source: KGO abc 7



Media source: KPIX CBS 5

