

Case 407. 17-year-old farm hand at a hog-raising operation died from asphyxiation due to inhalation of the byproducts of incomplete combustion of a propane-powered pressure washer.

A 17-year-old female farm hand at a hog-raising operation died from asphyxiation due to inhalation of the byproducts of incomplete combustion of a propane-powered pressure washer. The pressure washer was located in a small room inside of a 14-foot by 17-foot office building with an 8-foot ceiling. Also located within the building was a change room where the decedent was required to shower and change clothes prior to entering the hog barn. The owner had recently hired an outside firm to install a new pressure washer to replace a faulty pressure washer. The pressure washer was installed close to the shower area that the decedent had entered. At the time of the incident, the farm owner was in the hog barn, pressure washing the barn in preparation for a new hog shipment. When the decedent did not come into the barn as expected, the farm owner looked for her. He found her fully clothed, face up in the shower area. The farm owner attempted to get a response from the decedent. Unable to get a response, he ran to the office to get his phone and called 911 and exited the building to obtain help from a truck driver who was vacuuming out old feed. Resuscitation efforts were initiated and when emergency responders arrived they assumed care. Based on the carboxyhemoglobin level in the decedent's blood (47.8%), calculations estimated that the decedent's exposure for 60 minutes was 2,772 ppm, with an 8-hour time weighted average of 346 ppm.

MIOSHA General Industry Safety and Health Division issued the following Serious citations to the employer at the conclusion of their investigation:

SERIOUS: Contaminants For General Industry, Part 301, Rule 325.51103(A)(iii):

An employee's exposure to any substance listed in table G-1-A shall not exceed the time-weighted average (TWA) limit, short-term exposure limit (STEL) and ceiling limit specified for that substance in table G-1-A.

Employee exposure calculated using Coburn-Foster-Kane calculation demonstrated that an employee was exposed to carbon monoxide above the permissible exposure limit on the day of the incident, resulting in death. *Date removed by MIFACE.*

SERIOUS: Hazard Communication, Part 430, Rule 1910.1200(h)(1):

Employers shall provide employees with effective information and training on hazardous chemicals in their work area at the time of their initial assignment and whenever a new chemical hazard the employees have not previously been trained about is introduced into their work area. Information and training may be designed to cover categories of hazards (e.g., flammability, carcinogenicity) or specific chemicals. Chemical-specific information must always be available through labels and safety data sheets.

On the day of the incident, an employee was exposed to carbon monoxide while another employee cleaned a hog barn with a propane-fired pressure washer. The employee was overcome and asphyxiated. The employer did not provide training on the hazards of carbon monoxide. *Date removed by MIFACE.*