Case 32. Well hand killed as a result of flash fire during "hot oil" service on two 400-barrel oil storage tanks.

A 53-year-old male well hand and a coworker were performing a tank rollover or "hot oil" service on two 400-barrel oil storage tank contents. This process involves pumping crude oil from a storage tank into a tanker truck where it is heated to separate out the water and the "clean" oil is pumped back into the tank. The hot oil service rig has a tank and, in front of the tank, a heater unit with circulation tubes and a flame. To determine if the flame is lit a worker can open a hatch covering the flame; this hatch was left open during the "hot oil servicing". The tank system has a flame stack to burn off accumulations of flammable gasses. Instead of connecting the hose from the truck to a line in the storage tank, the 2-inch hose was inserted directly into the 20- inch diameter hatch on top of the tank, allowing open space for the unburned gasses to accumulate and migrate towards the source of ignition. The workers had placed folding chairs approximately 5-6 feet from the heater with the open flame while waiting for the hot oil servicing to be completed. One storage tank and been serviced and the 2nd storage tank had almost completed service. The victim was standing near the tank when the gasses ignited and there was a flash fire, which engulfed the victim. Approximately one month after the incident he died from complications of the burns sustained in the incident.

MIOSHA issued the following serious citations to the employer:

Serious:

1. The employer allowed employees on site to perform tank hatch openings, as well as tank servicing, without gas detection equipment and SCBA exposing employees to possible hazardous gasses. (Act 154 PA of 1974, Sec. 11(a))
2. The employer allowed employees to open tank hatches to re-circulate products into tanks instead of connecting to closed piping system, firm had not trained employees on procedure for this operation, exposing employees to possible hazardous gasses, performing tank roll over. (Oil and Gas Drilling and Servicing Operations, Part 57, Rule 5711(1)(a))
3. Employees were not instructed on how to proceed in the event a flare goes out exposing employees to possible hazardous gas (Oil and Gas Drilling and Servicing Operations, Part 57, Rule 5711(1)(a))
4. The employer did not train employees on proper operation of hot oiler truck burner unit, firm has no manufacturer's manual on operation and no in-house training program. (Oil and Gas Drilling and Servicing Operations, Part 57, Rule 5711(1)(a))
5. Employees on site were not trained in procedures for proper parking distances of servicing equipment vehicles from tank battery or well equipment, hot oil unit was within 27 feel of tanks being serviced. (Oil and Gas Drilling and Servicing Operations, Part 57, Rule 5711(1)(a))
6. Employees were not trained on emergency procedures and no emergency drills were conducted at the work sites. (Oil and Gas Drilling and Servicing Operations, Part 57, Rule 5711(1)(a))

7. Employer failed to post no smoking signs or prohibit smoking at well sites. (Oil and Gas Drilling and Servicing Operations, Part 57, Rule 5714(1))
8. There was no wind indications device provided or used at well servicing sites. (Oil and Gas Drilling and Servicing Operations, Part 57, Rule 5717(1))
9. There was no spark-arresting device on mobile equipment used to service tank battery at well site. (Oil and Gas Drilling and Servicing Operations, Part 57, Rule 5717(1))
10. The employer did not assess the workplace to determine if hazards that necessitate the use of personal protective equipment are present, or are likely to be present, enabling the selection of appropriate equipment. (Personal Protective Equipment, Part 33, Rule 3308(1))