

**Case 409. 44-year-old sanitation worker died when he was struck by mixing blades in a scrape surface steam jacketed mixing tank.**

A 44-year-old sanitation worker died when he was struck by mixing blades in a 500-gallon, 8-foot diameter, 5-foot-deep scrape surface steam jacketed mixing tank. The decedent walked up a flight of stairs to a metal platform to gain access to the top of the tank, which was 34.5 inches above the platform. The tank had mixing blades running the depth of the tank. The tank was weight activated; when the tank reached 200 pounds, it automatically turned on and began the mixing process. In addition, if the tank itself appeared empty, the piping system below could hold between 50 -80 pounds of weight and this weight could affect the activation when an individual leaned over the side or closed the lid and sat on the tank cover. The decedent was assigned to clean and sanitize the incident tank. He used a long-handled brush, and to clean around the rim of the tank, a hand-held green scrubber. It is unknown if the machine was running at the time he was cleaning it or if it started up automatically. At some point, the decedent entered/fell into the tank and was struck by the mixing blades. Another sanitation worker heard the tank making “weird” noises and told another sanitation worker, who investigated. The individual turned off the tank at the control panel, climbed the stairs, looked into the tank and found the decedent inside at the bottom of the tank. Emergency response was called. Emergency responders out the tank and initiated recovery of the decedent. Responders found a plastic bucket and the hand-held green scrubber inside of the tank with the decedent. The brush was leaning against the outside of the tank.

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

**SERIOUS: GENERAL PROVISIONS, GI PART 1**

- RULE 408.10011(a): Provide training to each newly assigned employee regarding the operating procedures, hazards, and safeguards of the job.

The sanitation workers were not trained that the mixing tanks were weight-activated at 200 pounds and would start automatically.

- RULE 408.10033(6): Where a machine work station is remotely located from the machine controls, either a red emergency stop device shall be provided at the machine work station if a hazard exists that could cause an injury or the actuation of the controls shall require continuous depression during the hazardous portion of the machine cycle.

There was no emergency stop or device that requires constant pressure on top of the platform away from the control panel below, in the mixing room.

**SERIOUS: FLOOR AND WALL OPENINGS, STAIRWAYS AND SKYLIGHTS, GI PART 2, RULE 408.10219:**

When the top of an open tank or vat that contains a hazardous substance is less than 36 inches from the floor, platform, or ground level and is not otherwise guarded to prevent an employee from falling into a tank or vat, it shall have a barrier erected to a height of not less than 36 inches above the floor, platform or ground level on all exposed sides.

The top of the APV mixing tanks that are located in the Mixing Room, are less than the 36 inches in height of the platform and offer no guarding.

**SERIOUS: THE CONTROL OF HAZARDOUS ENERGY SOURCES (LOCKOUT/TAGOUT), REF 408.18502, GI PART 85**

- RULE 1910.147(c)(4)(i): Procedures shall be developed, documented and utilized for the control of potentially hazardous energy when employees are engaged in the activities covered by this section.
  - (a. There was no written machine specific lock out procedure for the mixing tanks located in the mixing room.
  - (b. Lock-out for sanitation employees was not utilized when removing and opening guards to clean the equipment while it was running.)
- RULE 1910.147(c)(6)(i): The employer shall conduct a periodic inspection of the energy control procedure at least annually to ensure that the procedure and the requirements of this standard are being followed pursuant to a though d of this sub-rule.

There were no periodic inspections conducted of the lock out procedures.

- RULE 1910.147(c)(7)(i): Each affected employee shall be instructed in the purpose and use of the energy control procedure.

There was no training for authorized employees that perform cleaning of equipment while guards are open or removed and equipment is running in the processing areas.

**SERIOUS: PERMIT-REQUIRED CONFINED SPACES, REF 408.19002, GI PART 90**

- RULE 1910.146(c)(1): The employer shall evaluate the workplace to determine if any spaces are permit-required confined spaces.

The evaluation for confined spaces didn't include the two large mixing tanks located in the mixing room.

- RULE 1910.146(c)(2): If the workplace contains permit spaces, the employer shall inform exposed employees, by posting danger signs or by any other equally effective means, of the existence and location of, and the danger posed by, the permit spaces.

There were no posted signs or other equally effective means warning employees of the dangers of the confined spaces of the tanks in the mixing room.

- RULE 1910.146(g)(1): The employer shall provide training so that all employees whose work is regulated by this section acquire the understanding, knowledge, and skills necessary for the safe performance of the duties assigned under this section.

There was no training for employees on Confined Spaces in the firm.