Case 529. 54-year-old male technician died when he fell into a 53-foot long, 5-foot wide and 6-foot deep, 6,000-gallon tank containing a sulfuric acid-based pickling solution for steel tubes.

A 54-year-old male technician died when he fell into a 53-foot long, 5-foot wide and 6-foot deep, 6,000-gallon tank containing a sulfuric acid-based pickling solution for steel tubes. The pickling solution was maintained at a temperature of approximately 160^0F. The decedent, who was working alone, was retrieving a sulfuric acid sample from the tank using a plastic syringe. While working from a 11-inch wide polyurethane ledge, the decedent reached down with one hand approximately 25 inches to pull the sulfuric acid mixture sample with the syringe while holding onto a nearby railing with the other hand. After drawing the syringe plunger out fully, he lost his balance/slipped and fell into the tank. The decedent screamed for help and was eventually rescued by fellow employees, who escorted him to a nearby emergency shower approximately 20 seconds/86 feet away. Emergency response was summoned, and he was transported to the hospital where died several hours later from chemical and thermal burns.

MIOSHA General Industry Safety and Health Division issued the following Serious citation at the conclusion of its investigation.

Serious: 1910.124(e): GI PART 526, DIPPING AND COATING OPERATION [REF 325.52601]

When an employee enters a dip tank, you must meet the entry requirements of §1910.146, OSHA's standard for Permit-Required Confined Spaces, as applicable.

> The Employer did not utilize procedures outlined in the firm's written confined space program prior to an employee entering a permit required confined space. On *Date* 2019, an employee received fatal injuries after falling into Tank *A* containing a sulfuric acid solution. The following deficiencies were found:
>
> a. There was an incomplete workplace evaluation for permit-required confined spaces. Pickle Tank *A* was not identified as a permit-required confined space.
> b. There were no danger signs posted, or other equally effective means used to infirm employees that Pickle Tank *A* was a permit required confined space.
> c. The firm did not implement measures necessary to prevent unauthorized entry, identify and evaluate the hazards of permit spaces before employees entered Pickle Tank *A* on *Date* 2019.
> d. Acceptable entry conditions were not implemented when an employee entered into Pickle Tank *A*, a permit-required confined space.
> e. Purging, flushing, or ventilating the permit-required confined space was not performed to eliminate or control chemical and atmospheric hazards in Pickle Tank *A*.
> f. Entry conditions were not verified throughout the duration of the entry to ensure that conditions were acceptable for authorized entry into Pickle Tank *A*.
> g. The firm did not provide testing and monitoring equipment to employees entering Pickle Tank *A*, a permit-required confined space.
> h. The employer did not provide ventilating equipment to obtain acceptable entry condition for entry into Pickle Tank *A*, a permit-required confined space.
> i. The firm did not provide communication equipment necessary for entry into Pickle Tank *A*, a permit-required confined space.
> j. The firm did not provide necessary equipment such as ladders needed for safe ingress and egress by authorized entrants into Pickle Tank *A*, a permit-required confined space.

k. The firm did not provide the appropriate level of rescue and emergency equipment needed prior to entry into Pickle Tank *A*, a permit-required confined.
l. There was no attendant provided outside of Pickle Tank *A*, a permit-required confined space, while entry was authorized.
m. The firm did not consult with affected employees with the development and implementation of the firms permit-required confined space program prior to an employee entering Pickle Tank *A*, a permit-required confined space.
n. The firm did not document an entry permit before an employee entered Pickle Tank *A*, a permit-required confined space.
o. Employees were not adequately trained in the understanding, knowledge, and skills necessary for the safe performance of his/her duties before entering into Pickle Tank *A*, a permit-required confined space.
p. Emergency rescue service was not designated prior to an employee entering into Pickle Tank *A*, a permit-required confined space.
q. There was an incomplete workplace evaluation for permit-required confined spaces. The Cold Water Rinse Tank was not identified as a permit-confined space.
r. There were no danger signs posted, or other equally effective means used to inform employees that a Cold-Water Rinse Tank was a permit-required confined space.
s. The firm did not implement measures necessary to prevent unauthorized entry, identify, and evaluate the hazards of permit spaces before employees entered Cold Water Rinse Tank, a permit-required confined space on *Date 2019*.) *NOTE: MIFACE changed the Pickle Tank number, replacing it with a capital A and removed specific dates.*

An inspection/investigation of your worksite revealed the following condition(s) that may constitute a safety or health hazard to your employee(s).

During the investigation, it was discovered that employees as Pickle Techs perform "Sample Pulling" from tanks of various hazardous chemicals. "Sample Pulling" requires an employee to reach into the tanks using three methods; syringe, tong/flask or plastic ladle in order to pull the sample. Employees exposure to thermal and chemical burns increase while performing this task. It is recommended that a spout/bulkhead fitting be installed, or existing piping plumbed into, in order to utilize a spigot/ball valve in which samples can be taken from.

This would eliminate employees from placing any part of their bodies into and over the brim of the tanks while pulling samples exposed to thermal and chemical burns. Compliance with safety and health regulations is the responsibility of the employer. Although there is not a required rule for this recommendation, your participation is strongly urged in order to minimize or eliminate future injuries related to this task.