Case 183. 37-year-old construction laborer died when he was struck by a resin-impregnated tube during its removal from an underground sewer pipe.

A 37-year-old male construction laborer died when he was struck by a resin-impregnated tube during its removal from an underground sewer pipe. The decedent was the foreman of a four-person crew that included a coworker in the manhole with him, a top man who signaled the crane operator, and a crane operator. The firm was reconstructing storm water pipelines that discharged into a river utilizing cured-in-place pipelining technology. The resin-impregnated tube was attached to a line that was attached to a crane. The tube was placed into and dragged through the pipe using a boom truck crane and was cured in place by circulating hot water or steam through the pipe. After the material had cured, excess material must be removed. It was during this removal operation that the decedent was killed. The decedent and his coworker in the manhole had scored the last piece of sewer lining material, which was approximately one and one-half to two inches thick, with a gas powered chain saw. A hole was cut into the resin material and a one-inch diameter rope was attached. The top man tied the other end of the rope to the crane hook, which was located above the top of the manhole. The workers in the manhole signaled to the top man to signal the crane operator to raise the material. This exerted tension on the rope, which had in past work operations caused the scored resin material to crack. By using a pry bar and/or shaking the taut rope, the workers had been able to break the material, and the piece was lifted out of the manhole. On the day of the incident, the piece of material being removed was larger than had been scored and lifted in past operations. The piece involved in the incident was approximately 20 feet long by 6 to 8 feet wide. The piece was scored and the coworker in the manhole told the decedent to move out of the way. The decedent signaled the top man to signal the crane operator to lift and exert tension on the piece. It appeared to the coworker in the manhole that they had not scored the material deeply enough so it could break free. The top man stopped the lifting motion of the crane. The crane operator did not relieve tension on the rope. The top man told the decedent to move out of the way. The decedent decided to shake the taut rope to force the material to break as they had done previously with the smaller pieces. The liner material snapped and broke loose. The decedent was struck and thrown back, striking the manhole wall. Emergency response was called and transported the decedent to a local hospital where he was declared dead.

MIOSHA Construction Safety and Health Division issued the following alleged Serious citations and Other-than-Serious citation at the conclusion of its investigation.

SERIOUS:

GENERAL RULES, PART 1, RULE 114(2)(b).

An accident prevention program shall, as a minimum, provide for the following:

- Instruction to each employee regarding the operation procedures, hazards, and safeguards of tools and equipment when necessary to perform the job.
- Employer failed to provide training to employees in the sudden release of stored energy while engaged in the removal excess cured in place pipe within a manhole. Employees score cut a section of the excess material, tied an approximately 40-foot long rope to one end of the material and attached to the

other end of the rope to a hook of a boom truck crane utilizing a three part line. The crane was used to put the material under tension. The material suddenly released, fatally striking one worker.

SERIOUS:

GENERAL RULES, PART 1, RULE 114(2)(g).

An accident prevention program shall, as a minimum, provide for the following:

i) The hazards involved,
ii) The necessary precautions to be taken,
iii) The use of required personal protective equipment,
iv) Emergency equipment,
v) The procedures to be followed if an emergency occurs.

INSTANCE A

Employees were not trained in hazards involved in confined space entry prior to performing within a manhole.

INSTANCE B

Employer failed to contact – notify the local fire department prior to and upon entry – completion into – from the confined space. Rescue personnel did not inspect the jobsite and become familiar with the site conditions.

INSTANCE C

No simulated practice rescue operations performed yearly by designated rescue personnel.

INSTANCE D

Confined space entry attendant and supervisor failed to accurately maintain proper count of entrants signed in and out.

SERIOUS:

LIFTING AND DIGGING EQUIPMENT, PART 10, RULE 1005a(3).

All mobile hydraulic cranes in use shall be in compliance with the requirements of ANSI standard B30.5 "Mobile and Locomotive Cranes," 1994 Edition, except that all new mobile hydraulic cranes manufactured after August 5, 1995 shall have a positive-acting device that prevents contact between the load block or ball and the boom tip (anti-two-blocking device) or a system shall be used that deactivates the hoisting action before damage occurs in the event of a two-blocking situation (two blocking prevention feature).

Operator failed to determine weight of load prior to hoisting operation. Employee engaged in the removal of excess cured in place pipe from manhole with a Terex boom truck crane, model BT 4792877. Excess material is approximately 6- to 8-ft. wide by 20-ft. long by 1-1/2 in. thick

SERIOUS:

LIFTING AND DIGGING EQUIPMENT, PART 10, RULE 1009a.

Employer responsibility for employees crane, derrick, or excavation equipment knowledge and ability. An employer shall ensure that an employee has adequate knowledge of, and is capable of operating cranes, derricks, or excavation equipment before assigning an employee to a crane, derrick, or excavation equipment.

Operator of a Terex boom truck crane does not possess adequate knowledge to operate the crane. Operator failed to utilize the on board LOAD MOVEMENT INDICATOR to determine load being hoisted was free and excessive tension was not being stored within the hoisting system or rigging.

OTHER-THAN-SERIOUS:

ADMINISTRATIVE RULES, PART 11. RECORDING AND REPORTING OF OCCUPATIONAL INJURIES AND ILLNESS, RULE 1132(1).

MIOSHA 300 log for year 2007 has inaccuracies which are entered on the MIOSHA 300 A Annual Summary for year 2007.

INSTANCE A

MIOSHA 300 log CASE 12 has not entry classifying the case – no entry in Column G, H, I, or J.

INSTANCE B

MIOSHA 300 log Column H totals are inaccurate. Three boxes are checked and 2 is entered as page totals.

INSTANCE C

MIOSHA 300 A summary, number of cases, 2+9 = 11 does not total the number of injury and illness types, 12+1 = 13.

OTHER-THAN-SERIOUS:

GENERAL RULES, PART 1, RULE 132(3).

A person who has a valid certificate in first aid training shall be present at the worksite to render first aid. A certificate is valid of the requirements necessary to obtain the certificate for first aid training meet or exceed the requirements of the United States Bureau of Mines, the American Red Cross, the guidelines for basic first aid training programs, or equivalent trainings.

No designated “FIRST AID” trained personnel on site. Trained personnel went to lunch while work within a confined space proceeded.