Case 214. 51-year-old toolmaker died when the second stage of a two-stage movable dowel pin inserter carriage was activated and descended on him, pinning his head between the carriage and a conveyor.

A 51-year-old male toolmaker died when the second stage of a two-stage movable dowel pin inserter carriage was activated and descended on him, pinning his head between the carriage and a conveyor. The incident occurred on an engine block assembly line. The station involved two interlocked gates to control access. One of the gates was closed. The other gate had been opened. The station had a two-stage movable dowel pin inserter carriage; dowel pins were inserted by an automated arm system. When the engine was lined up properly, the dowel pin arm system inserted a series of pins in a downward motion then if successful the arm apparatus returned to an upward position and waited for the next sequence. Two toolmakers had been troubleshooting the section where the dowel pins were inserted into the engine. They were trying to figure out why the dowel pins were jamming up or not lining up properly. They used a "cheat key," which was available at the tool crib, to circumvent the open gate's interlock safety system. The toolmakers made the adjustments and thought the problem was fixed. They asked the machine operator to run the part through. When the machine loaded, it jammed again at mid-cycle. Another worker in the area noted that there was a blinking "cancel next cycle" light and a solid "cycle" light. It appears that the tool makers, in trying to clear the jam, satisfied the condition for the next step in the machine cycle. One of the toolmakers walked to the far side of the carriage to see where the jam was occurring. The decedent then arrived and offered his assistance because he had worked on this machine in the past. The decedent straddled the conveyor that moved the engine blocks during assembly. He was releasing "wrenches" when the incident occurred. At this point it is unclear as to the sequence of events. The police report indicated that when the decedent pulled the "wrenches," the machine re-started and the second stage of the carriage descended and pinned his head between the carriage and the conveyor. The MIOSHA file indicated that an engineer for the firm arrived at the location and told the machine operator to activate the machine. The individual who noted the solid machine cycle light turned to tell the toolmakers to get out of the machine. The decedent was leaning into the area under the dowel pin carriage when it descended. The plant engineer hit the E-stop. Plant emergency response was called and arrived within minutes. The decedent was declared dead at the scene. The machine's pendant control was not utilized.

MIOSHA General Industry Safety and Health Division issued the following Serious and Other-than-Serious citation and a Safety Recommendation to the employer at the conclusion of its investigation:

SERIOUS: THE CONTROL OF HAZARDOUS ENERGY SOURCES, PART 85, RULE 1910.147(c)(4)(i):

> Procedures were not developed, documented and utilized for the control of potentially hazardous energy when employees were engaged in activities covered by Part 85.

Employer not enforcing and employees not utilizing lockout. Employee went under a ram area of a machine which pneumatically inserts steel dowel pins, the machine cycled causing the ram to come down onto the employee's head

OTHER-THAN-SERIOUS:THE CONTROL OF HAZARDOUS ENERGY SOURCES, PART 85, RULE 1910.147(c)(6)(i):

The employer did not conduct an annual or more frequent inspection of the energy control procedure to ensure that the procedure and requirements of Part 85 were followed:

OTHER-THAN-SERIOUS: THE CONTROL OF HAZARDOUS ENERGY SOURCES, PART 85, RULE 1910.147(c)(7)(iv):

Certification, that employee training had been accomplished and kept up to date, had not been done:

SAFETY RECOMMENDATION: Install and maintain a means for employees to view through the meta mesh guards so that they don't have to open up the interlock gates when observing the operation.