Structural Iron and Steel Worker Safety Fatality File

Three Ironworkers died and One was Seriously Injured in the Collapse of a Structural Steel Framework in Ohio

Three ironworkers were killed, and one was seriously injured when the structural steel skeleton of a four-story office building under construction partially collapsed. Those killed were members of a three-man crew who were lifting and leveling a floor section before bolting it in place at the fourth-floor level. The crew had attached a lifting device(s) to a roof beam to use the beam as a support for raising the floor section to a level position. However, the roof beam was a cantilever (a projecting beam or member supported at only one end) that had been temporarily attached to a structural column with only three bolts, rather than the eight bolts required to permanently secure it. Apparently, while the crew was hoisting the floor section, the load exceeded the shear strength of the three bolts, causing the structure to partially collapse. Two ironworkers who were tied off to the roof beam were thrown to the ground. The beam to which they were tied landed on top of one of them. The third member of the crew landed on the second floor and was crushed to death by pieces of falling steel. A fourth ironworker, who was placing steel decking on the floor just below the section being leveled, was seriously injured when he was struck by falling steel members and forced through the steel decking. NIOSH investigators concluded that, in order to prevent future similar occurrences, the project client/owner should ensure (through unambiguous contract language) that contracted employers:

- develop a project construction process plan detailing proper construction sequence and associated safe work procedures.
- implement job-specific employee training programs addressing

the job hazards and methods of control.

- establish an on-site safety inspection program as required by 29 CFR 1926.20(b)(2), and
- delineate project staff safety and health responsibilities.