The Missouri Department of Health in cooperation with the National Institute for Occupational Safety and Health (NIOSH) is conducting a research project on work related fatalities in Missouri. The goal of this project, entitled *Missouri Fatal Accident Circumstances and Epidemiology (MO FACE)* is to show a measurable reduction in traumatic occupational fatalities in the state of Missouri. This goal will be met by identifying causal and risk factors that contribute to work related fatalities. The identification of these factors will enable more effective intervention strategies to be developed, and implemented by employers and employees. This project does not determine fault or legal liability associated with a fatality incident nor with current regulations. All MO FACE data will be reported to NIOSH for trend analysis on a national basis. This will help NIOSH provide employers effective recommendations for injury prevention. All personal/company identifiers will be removed from all reports to send to NIOSH to protect the confidentiality of all those voluntarily participating with the program.

FACE Investigation # 92MO00201

SUBJECT:

Iron Worker Dies from Injuries Received from 20-Foot Fall from Working Platform in Missouri.

SUMMARY:

A 28 year-old Iron Worker fell 20 feet to his death while working from a platform supported by a forklift. The victim was installing steel sheet metal siding on a manufacturing plant. At the time of the incident, the victim and a co-worker were placing a six foot wide sheet of insulation onto the steel structure. The co-worker was standing at the base of the building and the victim was standing on a work platform near the roof line. The victim was attempting to attach the top edge of the insulation to the structure when he apparently lost his balance and fell from the platform to the concrete floor on the inside of the building. The Missouri Department of Health Investigator concluded that in order to prevent future similar occurrences, employers should:

* Provide appropriate fall protection equipment to all workers who may be exposed to a fall hazard.

* Provide railings along all sides of the work platform.

* Develop, implement and enforce a comprehensive safety program that includes, but not limited to, training in fall hazard recognition and the use of fall protection devices.

* Consider and address worker safety in the planning phase of construction projects.

INTRODUCTION:

On June 1, 1992, a 28 year-old Iron Worker died as a result of injuries sustained from a 20-foot fall from a working platform. The Missouri Department of Health was notified by the County Coroner on June 6, 1992. The MO FACE Investigator interviewed the employer, coroner and the deputy sheriff responsible for the case.

The employer is a general contractor who specializes in metal building construction and has been in operation for 19 years. The contractor employs 23 persons, including five iron workers. The company had been at this work sight for four months at the time of the incident. The company did discuss work sight safety in the planning phase of this project. The company did not have a designated safety officer or a written safety plan at the time of the incident. The victim had worked for the employer for eight years and eight months.

INVESTIGATION:

The contractor had been hired to construct a large metal building at a manufacturing plant four months prior to the incident. The new building was erected on top of a six foot concrete wall over an existing building owned by the same manufacturer. A nine foot opening was left in the side of the new building to leave access for the distruction and removal of the old building and the completion of some concrete work. The old building had been completely dismantled and the new building was nearing completion. One day prior to the incident the concrete floor was completed and the opening in the six foot concrete wall was formed and poured.

The morning of the incident, the concrete wall forms were removed and the process of installing the steel siding to fill in the nine foot opening began. The victim, co-worker, and the forklift driver arrived at the job sight approximately one hour and thirty minutes before the incident. A working platform that was constructed by the contractor, a forklift, a six foot step ladder, a screw gun, and the required building materials were being utilized for this project. The platform was constructed of tubular steel and had a plywood floor. It measured 16 feet long and was four feet wide. The platform was enclosed by four foot railing on three sides leaving one-16 foot side open for access to the work area. The platform and victim were lifted into position, by the forklift driver, approximately 20 feet above the ground and one to two feet from the building. Once the platform was in place, the forklift driver left the area to complete another task leaving the victim and the co-worker to install the insulation and steel siding. The victim was not donning any fall protection while working from the 20-foot height and the co-worker was working off a six foot step ladder. The team had partially completed installing one section of the insulation that measured six feet wide and about 20 feet long and was three inches thick. This installation consisted of temporally attaching the bottom edge of the sheet to a pre-applied, double-sided tape. The top edge was also attached with the double sided tape but because the sheet metal roofing was already in place and the roofing material had to be lifted up and the insulation was tucked between the roofing and the top supporting beam. Once the sheet of insulation was in place the steel siding measuring three feet wide and 20 feet long could be installed over the insulation. At the time of the incident the victim and co-

worker were installing the last sheet of insulation into the opening. The bottom edge of the sheet was attached to the tape and the victim was working on installing the top edge. The victim was having some difficulty in handling the sheet and it had fallen down twice. The victim was again trying to attach the sheet of insulation on the building and tucking the top edge under the roofing. At this time, the victim lost his balance and fell 20 feet from the platform through the insulation and to the concrete floor inside the building. The victim's head and shoulders apparently struck first leaving a open skull fracture. An employee of the manufacturing plant and construction personnel were in the vicinity and witnessed the fall. The co-worker's vision was obscured by the six foot wall the building was constructed on.

An employee of the manufacturing plant went to call for help and construction employees tried to administer aid to the victim. An ambulance was summoned to the scene. The victim was taken by ambulance to a local hospital where efforts to stabilize him were undertaken before transfer by helicopter to a trauma center. The victim expired in flight and was pronounced dead at the trauma center.

CAUSE OF DEATH:

The death certificate listed the cause of death as massive skull fracture. An autopsy was not performed.

RECOMMENDATIONS/DISCUSSION:

Recommendation #1: Employers should implement 29 CFR 1926.104[1] which requires the use of safety belts, lifelines, and lanyards when working from elevations.

Discussion: When working from elevations, employers should provide personal protection equipment (ppe) (i.e., safety belt, lifeline and lanyard) to employees exposed to fall hazards. Employers should provide and enforce the use of ppe in accordance with 29 CFR 1926.104.

Recommendation #2: Employers should develop, implement and enforce a comprehensive safety program.

Discussion: Employers should emphasize the safety of their employees by developing, implementing, and enforcing a comprehensive safety program. The safety program should include, but not limited to, training workers in the proper selection and use of ppe, along with the recognition and avoidance of fall hazards.

Recommendation #3: Employers should address worker safety in the planning phase of construction projects.

Discussion: Worker safety issues should be discussed and incorporated into all construction projects during planning and throughout the entire project. The planning for and incorporation of safety measures, prior to any work being performed at construction sights, will help to identify potential worker hazards so that preventive measures can be implemented at the sight.

Recommendation #4: Employers should insure that working platforms and their use conform to 29 CFR 1926.556[2], *Aerial lifts* which quotes the ANSI (American National Standards Institute) Standard A92.2-1969, titled *Vehicle Mounted Elevating and Rotating Work Platforms.*

Discussion: The platform from which the victim fell was constructed so that it was enclosed by a four foot railing on three sides leaving the front /working side open, i.e., no railings. The employer should install railings across the front of the platform in accordance with the CFR and ANSI standards quotes above.

REFERENCES:

1. Office of the Federal Register, Code of the Federal Regulations, Labor, 29 CFR part 1926.104, pp.106. July 1, 1991.

2. Office of the Federal Register, Code of the Federal Regulations, Labor, 29 CFR part 1926.556, pp.212-214. July 1, 1991.

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