

Fall Injury Assessment for Emerging Mast Scaffold Technology

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The objective of this 4-year feasibility study (FY10-FY13) is to identify fall prevention strategies and recommend effective intervention programs to workers who are at risk of injury from work at elevation on mast scaffolds. The hypothesis of this project is that certain hazards associated with falls from heights for mast-scaffolding can be identified and ameliorated through control measures developed through advanced engineering applications.

NIOSH will first host a peer review meeting at NIOSH Morgantown facility to identify/prioritize engineering-design-related components/tasks associated with mast scaffold incidents on September 20, 2011. Review of expert opinion solicited during the public meeting will be used to determine the project focus.

Second, the project team will build upon prior NIOSH sensor development, technology/system integration, and digital human modeling research. A major study component on mechanical and biomechanical assessment of mast scaffolds and mast climbers will be conducted to determine mast scaffold stability margins and their impact on climbers' postural instability.

Per arrangements with study collaborators, field walkthrough evaluations at worksites will be conducted in FY12. In FY12, the field study will collaborate with study partners and focus on the uses of the specific and selected mast scaffold models at construction worksites. A collaborative effort will be established with the assistance of CPWR, IMI, and the major collaborative manufacturer (i.e., FRACO Inc.). A letter of agreement (LOA) has been developed and signed between FRACO Inc. and NIOSH. As stipulated in the LOA, FRACO has already sent engineering data and drawings associated with its equipment to NIOSH. The construction of a preliminary model is underway, based on these drawings. Mainly, this feasibility project will provide resourceful information for a large-scale engineering intervention project proposal (FY12-FY13) after the completion of the preliminary computer model development, the preliminary hazard identification and evaluation processes at worksites.