

**FORM S+H 5-1 JOB HAZARD ANALYSIS**

<b>JOB HAZARD ANALYSIS</b>		Date:10/21/99
Contract:(If Applicable)		Phase: <b>Erection of Pre-cast Beams and Planking</b>
Contractor/ Subcontractor/Subtier: Nielsen Dillingham Builders Inc./		Location: LLNL-NIF
NIF Element: CSP- 6/10		
ACTIVITY OPERATIONS	UNSAFE CONDITION, ACTION or OTHER HAZARD	PREVENTATIVE or CORRECTIVE ACTION THAT WILL BE TAKEN
Pre-construction	Site and Procedural hazards	A pre-construction meeting shall be held prior to the erection. All aspects including erection plan to be reviewed
	Site access restrictions, Unsafe ground conditions, Utility interference, Underground concerns Improper crane set up	Contractor has completed a Pre-Job Hazard Analyses (attached) that addresses potential site problems. NDBI and Contractor will continually monitor and maintain current conditions addressed.
Delivery of beams	Security interface, Access arrangements	Timely notification provided to owner: Memo to LLNL advising of specific delivery times of precast beams (attached).
Crane operations	Operator failure	Operator shall be approved by LLNL before being allowed to operate the Manitowoc.
	Crane failure	Crane will be inspected prior to start of operation and records of maintenance shall be maintained by LLNL.
		Erection plan has been reviewed and approved by LLNL.
Ringer crane and Pecco crane working at the same time.	Cranes contacting each other.	The Pecco and Manitowoc crane operators will be in radio communication during the erection of precast beams. Pecco operations will yield to the precast beam erection operations.
Ringer crane and American crane working at the same time.	Cranes contacting each other.	Prior to starting the precast erection, the American crane will be relocated outside of the <u>working radius</u> of the Ringer crane operations.
Unload trucks with Manitowoc and place beams in final position.	Striking workers with objects / losing load	Restrict access to unloading zone and areas within pick radius to essential personnel.
		Loosen all binders prior to removing any chains (at the level to be unloaded) to

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		ensure load is stable.
Unload trucks with Manitowoc and place beams in final position. (continued)	Striking workers with objects (continued)	Lifting procedures to comply with Contractor <b>Safety Plan for Precast Girder and Plank Erection</b> (attached).
		Tag lines to be attached to every load. Loads to be staged relative to their final placement positions.
		Contractor to coordinate with NDBI and LLNL for traffic control.
		Signal man to have clear view of load and it's path of travel.
		All rigging to be inspected prior to starting operation and at least once every day.
		Operator to have clear view of signal man
		Workers to position themselves to stay clear of load and pinch points
Securing beams after they are placed.	Beams falling	Permanent bracing to be installed concurrent to placing of pre-cast beams.
		Ensure proper bearing before "cutting loose" load. Beams are designed to be stable under their own load for interim of time between placement and installation of permanent bracing.
Fall Protection	Falling	Use of body safety harnesses with 2 shock absorbing lanyards, guard rail systems or safety net systems are required for all work over 6' high. (100% tie off) Lanyards shall be secured to members capable of supporting at least 5000 lbs.
		Standard guard rails are required for scaffolds over 6'. Toe boards are required if workers work or pass below.
		Ladders are to extend 3' above landing and will be properly secured / braced or held when in use.

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CM Concurrence

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LLNL Group/Contractor/Subcontractor Review

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Subtier Review

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