

Power Plant Monorail Engineering for Equipment Removal

Description

Industry: Energy & Power | **Service:** Lift Planning & Rigging Engineering, Structural & Mechanical Engineering

The Challenge

A power plant needed to remove and replace aging equipment, requiring the design of two separate monorail structures to facilitate the lifts. Both monorails had to fit within tightly constrained spaces and work within the limits of existing structural steel which, on inspection, proved inadequate for the required loads without reinforcement.

Monorail 1 600 lb Capacity, Walkway-Supported

The first monorail required a load capacity of 600 lb and was intended to be supported by existing walkway support beams. Upon structural inspection, DSE discovered that those beams did not meet code requirements for structural stability. Horizontal bracing members were added to increase the moment capacity of the walkway supports. With the stability deficiency addressed, the beams were adequate to support the cantilevered monorail load.

Monorail 2 400 lb Capacity, Water Wall-Supported

The second monorail, at 400 lb capacity, needed to be supported from the water wall a structure composed of closely spaced tubes. There was no standard attachment method available for this condition. DSE designed a special support bracket to fit through a narrow slit between the closely spaced water wall tubes, distributing the hanging loads (both shear and bending) across multiple tubes rather than concentrating them on a single connection point. The bracket was also specifically designed for straightforward installation and removal to accommodate future access needs.

Result

Both monorail structures were successfully designed and implemented. The reinforcements to the existing structural steel and the custom water wall bracket allowed the plant maintenance work to be completed on schedule.

Contact DSE to discuss monorail design and lift engineering for your facility.

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