

POWER PLANT

REDDING, CA



MATERIAL HANDLING SOLUTIONS

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PFlow Designs Lift to Integrate Perfectly with 10-Story Power Plant Tower



- F Series 4-Post Mechanical Catalyst Lift
- Lifts Loads up to 6,000 lbs.
- 47' Vertical Rise
- 10 Levels of Vertical Rise
- 22 FPM Travel Speed

The Redding Power Plant is a state-of-the-art facility that generates electricity through the burning of natural gas. The plant expanded over the years to meet the demands of a growing community. The plant also added a 47' PFlow F Series.

PFlow Industries worked closely with EmeraChem Power™, the engineering firm hired by the power plant, to assure the lift interface perfectly with the multi-tiered, structural steel maintenance platform that was built against the side of the building the lift was to serve.

The custom F Series 4-post lift, with its 6,000 lb. capacity, was built for the sole purpose of delivering catalyst blocks to each of ten elevations of the building. It is driven by a 15 hp motor that moves the 11' 4" W x 17' 2" L carriage at a speed of 22 FPM.

The catalyst blocks are used for the facility's Selective Catalytic Reduction unit (SCR), a sophisticated air treatment and emissions control system. A block, riding in a cart, begins its ascent at the ground level. The catalyst cart is transported onto the lift conveyor by a series of coordinated moves between both the carriage mounted conveyor and the ground level conveyor. Once on the carriage, the catalyst block ascends to the desired elevation where it is pushed into its designated building receptacle. This process is repeated at each of the 10 elevations and is reversed when removing the catalyst carts from the building.

The PFlow engineering team took the 3D structural platform model provided by the power plant engineers and built a compatible 3D vertical lift model.

"We basically built a 3D model that fit neatly within the existing platform model, assuring that the lift would be built to the exact specifications and there would be no interferences," said Mike Reilly, the PFlow engineer who managed the project. "The intricate design of the platform structure and the ten access levels, each with conveyor connections, demanded that we develop a highly detailed and coordinated model."

Adding complexity to the project, to transport the large catalyst blocks on and off the lift with the necessary stability, a custom chain-driven conveyor system is installed onto the structure of the lift carriage. The conveyor features a push-pull connection to move the blocks.

"We have installed conveyors on many previous lifts, but the Redding integrated chain conveyor required a unique custom carriage structure," said Reilly. "The carriage design had to be strong enough to support the 6,000 lb. catalyst cart load while still maintaining a design profile allowing for integration of the custom conveyor."

