



PLANT SYSTEMS ENGINEERING

RAILCAR LOAD OUT: CEMENT PLANT

Project Requirements: A cement manufacturer wanted to off load finished cement from existing concrete silos to rail cars. Open air slides would be mounted inside the silos and would require structural support. Penetrations through the existing concrete silo structure would be required to feed closed air slides. The new air slides and dust control equipment would be mounted on an existing overhead structure re-engineered to support the new equipment. Compressed air piping would be required for the air slides.

Solution Method:

Working with equipment supplier Claudius Peters Americas, we modeled the complex open air slide support and silo penetration using SolidWorks.

Field measurements verified the existing structures to enable analysis.

Model of open air slide and its structural support internal to cement silo.



External view of silo penetration feeding closed air slide



Compressed air piping manifold and control valves



Overall view of structure supporting air slides and dust control equipment

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