

Structural & Mechanical Engineering

Description

Dos Santos Engineering provides structural and mechanical engineering services to industrial facilities across a wide range of markets. Our team of licensed professional engineers delivers technical and economic studies, system evaluations, upgrade engineering, new system design, structural analysis, and PE-stamped documentation.

With experience spanning power generation, ports and bulk terminals, mining, pulp and paper, cement, metal and steel, recycling, and tunneling, DSE brings practical engineering solutions to complex industrial challenges. Our work has been delivered to clients throughout the southeastern United States, across North America, and internationally.

****A Note on Field Advisory Services****

In addition to office-based engineering, DSE's engineers are available to visit client facilities to observe conditions, assess systems, and provide expert recommendations in person. These are strictly advisory engagements: our engineers do not perform hands-on labor, operate equipment, or perform physical work of any kind. All site visits are conducted in compliance with the client's own safety protocols and all applicable regulations. DSE's role on site is the same as in the office to observe, analyze, and advise.



DSI PROJECT – WYODAK MINE

NEW UPPER SUPPORT AT HAC

On the night of the 28th June 2013, a large storm blew through the town of Gillette, Wyoming. This storm, with reported wind gusts above 120 mph, damaged the upper support of the High Angle Conveyor, R-1, at the Wyodak Mine.

The high angle conveyor at Wyodak delivers coal, at a 57 degree incline angle, up to the center of a 5000 ton silo where it can discharge directly to that silo or, by actuation of a flop gate, can divert the coal flow to an adjacent 5000 ton silo. The structural system has only two major support points; a lower fixed hinge support at grade and an upper hinge-hinge frame, on the silo wall. The upper hinge-hinge frame allows expansion while offering a vertical support reaction. The truss support system consists of two major truss sections, the first from grade to the silo wall, and a second which cantilevers from the silo wall to over the middle of the silo. There is no support at the silo center. Rather, a steel bent mast with cable stays carries the cantilevered truss and all of its equipment in suspension from the silo wall. The back stays transfer the cantilever moment, in tension, back to the main truss that runs from grade to the silo wall. Figure 1 depicts the HAC profile, the structural system and summarizes the operating parameters.

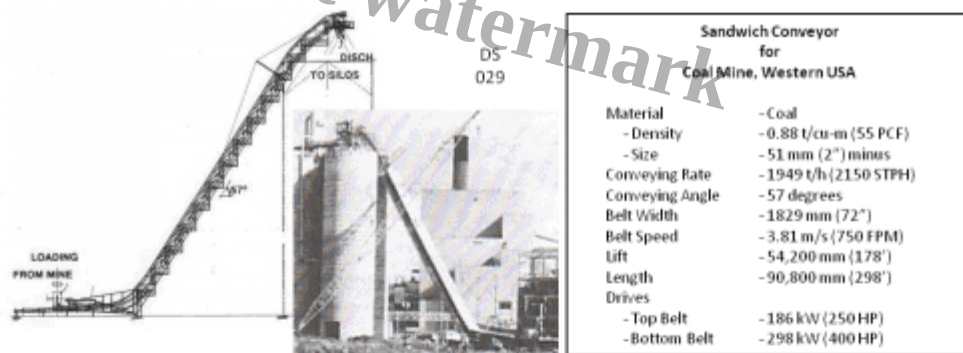


Figure 1: The sandwich belt high angle conveyor (HAC) at Wyodak features a highly efficient structural system that cantilevers from an upper support on the silo wall to suspension over the center of the silo.

The R-1 conveyor is critical to mine operations. It feeds the two silos, which subsequently feed Wygen 1 and 2, two of the four power plants on site, and it facilitates the mine's truck loading operations.

On the night of the incident, Black Hills Power personnel contacted Dos Santos International (DSI) for their expert advice. This was a natural reaction as Black Hills Power were well aware of the DSI expertise in the sandwich belt high angle conveyor technology and more broadly in the engineering of mechanical and structural systems. Indeed, the original design of the R-1 conveyor was conducted under the direction of J. A. Dos Santos, inventor of the HAC and founder of Dos Santos International. Against this background, Black Hills Power contracted Dos Santos International to inspect the failure and to develop the repairs that would return the HAC to productive operation.

Upon DSI's arrival at the site, the conveyor was thoroughly inspected. With the upper wall support collapsed, the lower truss came to rest (leaning) against the silo wall and the cantilevered head end came to rest on the steel framing that supported the receiving chute work and transfer conveyor. The overhead cable stays that previously cantilevered the upper structure were now slack and carried no load. Inspection revealed very

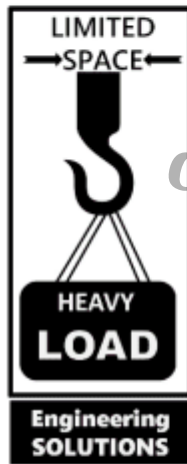
Office: +1 770 423 9895 • Toll free: +1 833 DOS INTL • info@dossantosintl.com
DosSantosIntl.com • 531 Roselane St - Suite 810 • Marietta, GA 30060



DSI ENGINEERING – POWER PLANT

INLET DUCT SUPPORTS ANALYSIS & REINFORCEMENT [W10236]

- CHALLENGE:** (1) Determine stress impact on existing support steel after flue ducts are reinforced with new liner plates
(2) Design reinforcement to effectively negate the impact of the added liner weight
- SOLUTION:** Upon calculating added stresses, DSI provided the reinforcement necessary to increase the moment capacity of each affected beam, accommodating the added loads.



Because of substantial wear to the exhaust system's flue ducts, plans were made for the ducts to be lined with new protective liner plates. DSI was tasked with analyzing the effect of this additional weight distributed throughout the existing structural steel support system.

DSI identified the loads of the existing flue ducts and the added weight of the new liner plates. The load path to the main building's columns was traced, and members along this path were analyzed. DSI then determined an acceptable increase in each existing beam's bending stress due to the added load. In any instance in which the added stress was too great, a determination was made for the extent and locations of reinforcement necessary to increase the moment capacity of each beam, effectively negating the impact of the added liner weight.

Appropriate reinforcement schemes for each affected member were successfully implemented without interfering with existing supported walkways, pipe hangers, etc.

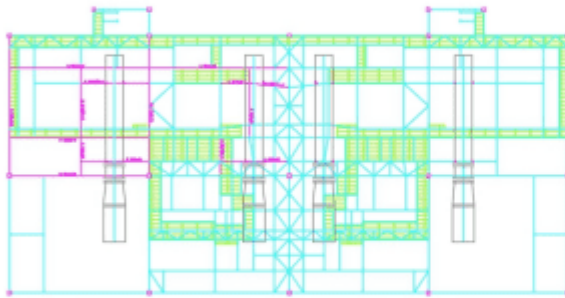


Figure 1: Plan View with Load Paths Highlighted

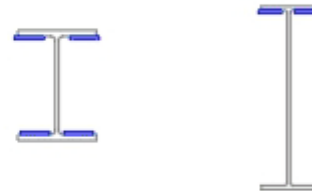


Figure 2: Examples of Structural Reinforcements

Office: +1 770 423 9895 • Toll free: +1 833 DOS INTL • info@dossantosintl.com
DosSantosIntl.com • 531 Roselane St - Suite 810 • Marietta, GA 30060



DSI ENGINEERING – POWER PLANT

MONORAIL DESIGNS FOR EQUIPMENT REMOVAL [W10234]

CHALLENGE: Design two monorail structures for equipment removal within a limited space
SOLUTION: Existing structures required reinforcement as well as additional design of special support brackets for proper weight distribution at the water wall

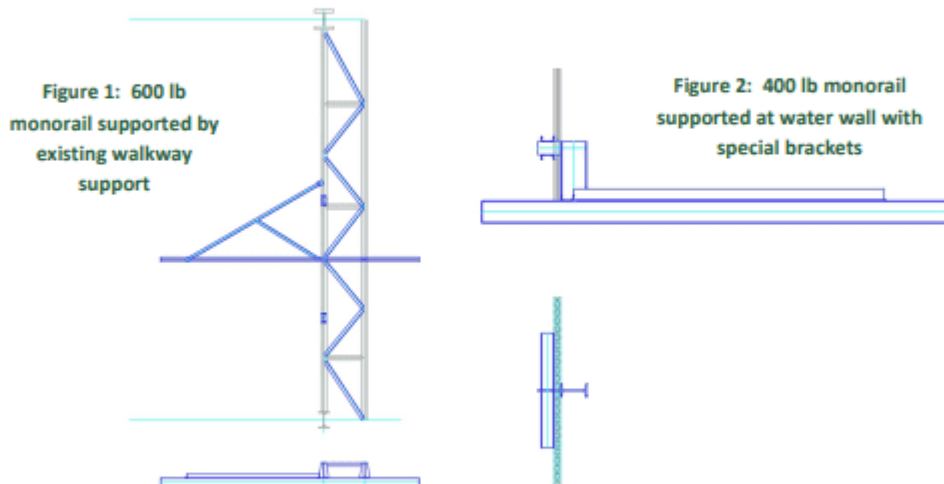


The facility was faced with the need to replace old equipment. DSI was tasked with designing two monorails to facilitate the removal and replacement of the equipment.

The equipment removal for the first monorail required a load capacity of 600 lb and was to be supported by existing walkway support beams. Upon inspection, it was discovered that the walkway support beams did not meet code requirements with regard to structural stability. This made it necessary to add horizontal bracing members, increasing the moment capacity of the walkway supports. With the stability issue addressed and the moment capacity increased, the walkway support beams were then adequate to support the cantilevered monorail load.

The second monorail, of 400 lb load capacity, was supported at the water wall, which is composed of closely spaced tubing. A special support bracket was designed to fit through a small slit between the closely spaced water wall tubing and distribute the hanging loads (shear and bending) across several tubes. The special support bracket was also designed for easy installation and removal.

The reinforcements to the existing steel and the fabrication of the monorails and bracket were successful, allowing for timely completion of the necessary plant maintenance.



Office: +1 770 423 9895 • Toll free: +1 833 DOS INTL • info@dossantosintl.com

DosSantosIntl.com • 531 Roselane St - Suite 810 • Marietta, GA 30060



DSI ENGINEERING – COAL FIRED POWER MONORAIL AND SUPPORT SYSTEM [W10233]

CHALLENGE: Engineer monorail and support system necessary for deaerator tank removal and replacement

SOLUTION: The design and selection of shallow, reinforced beams in conjunction with adding tank straddling support posts allowed for a successful tank removal and replacement.



In order to facilitate the removal and replacement of a deaerator tank, the construction of a monorail support structure was necessary. Space constraints required that the monorail be supported from the steel structure above the tank. The steel from which the monorail was to be hung was designed to support only the roof loads; therefore support of the tank by these members alone was not feasible. In addition, very limited head room existed between the roof beams and the top of the tank, limiting the options to reinforce these members.

DSI utilized the most shallow monorail beam appropriate to carry the load of the tank and chose low-headroom rigging equipment. This narrowly achieved the required headroom necessary, however left no room for reinforcement of the roof beams below the bottom flange. Instead of reinforcing the roof beams to allow them to support the entire lifted load, DSI designed posts to straddle the tank which allowed the load from the monorail to be shared between the roof beams and the

floor beams below, proportionally to their respective moments of inertia. Through this load sharing, appropriate ratios of added stress to allowable stress were achieved. The old deaerator was successfully removed and the new deaerator installed.

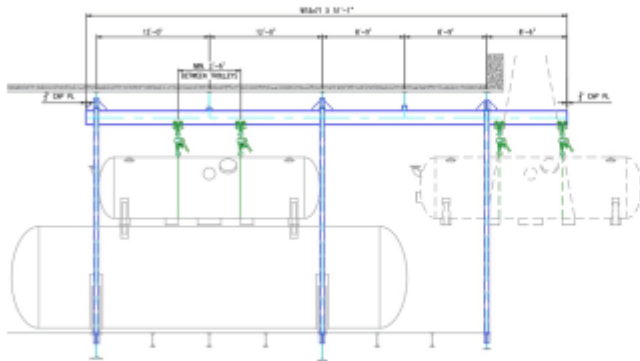


Figure 1: Elevation View – Monorail System

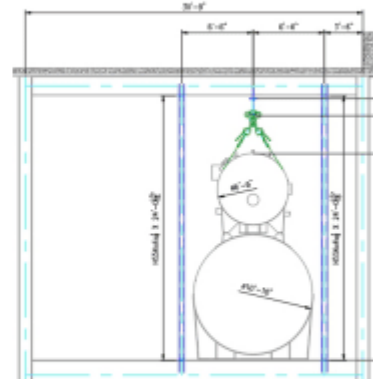


Figure 2: End View – Monorail System

Office: +1 770 423 9895 • Toll free: +1 833 DOS INTL • info@dossantosintl.com

DosSantosIntl.com • 531 Roselane St - Suite 810 • Marietta, GA 30060



DSI ENGINEERING – COGEN POWER PLANT

MONORAIL DESIGN FOR HARP REPLACEMENT [W10232]

- CHALLENGE:** The variety of harp geometries proved challenging for uniform monorail usage. In addition, the monorails had to be placed in very confined and crowded spaces. Main structural supports and access systems had to be avoided.
- SOLUTION:** Versatility was essential in the engineering design required to accommodate for the space constraints and variability of harp sizes.



The design solution incorporated a modification of a single lifting beam for use with a multitude of harp sizes. Multiple harp sizes required a versatile lifting beam and bracket design.

A system of interchangeable brackets was designed to accommodate each harp type. The bracket designs were made to allow for a quick connection to the lifting frame and harps.

The monorail beams and their supports were designed to allow for proper positioning of the hoists to the harps in tight quarters and were designed to allow for the easiest removal/installation path. This enabled the access of various monorail beams for the straightforward removal of old harps and installation of new harps.

The harps were removed in a timely manner. The lift bracket design proved to be successful and is being used on other projects because it allows for so many harp design variations.

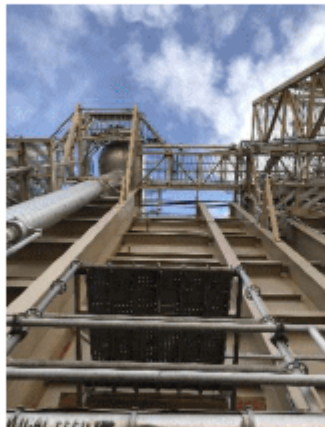


Figure 1: Heat Recovery Unit Side Casing

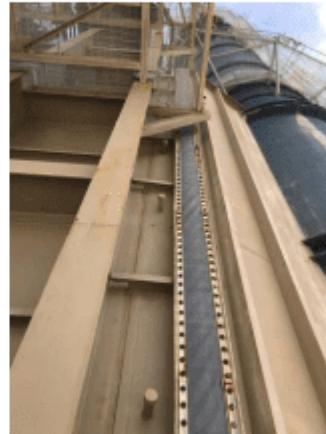


Figure 1: Heat Recovery Unit at Stack

Office: +1 770 423 9895 • Toll free: +1 833 DOS INTL • info@dossantosintl.com
DosSantosIntl.com • 531 Roselane St - Suite 810 • Marietta, GA 30060



DSI ENGINEERING –POWER PLANT

ENGINEERING SUPPORT WATER CLARIFIER [W10211-006]

CHALLENGE: Engineer a support system to allow the expedient replacement of a slewing bearing located within the center of a power plant's water clarifier.

SOLUTION: The project focused on providing structural inspections, studies, renovation plans and drawings for existing coal handling equipment and support systems. The least intrusive access creation for repair/replacement was engineered.

Time-Critical



A water clarification tank, essential to solids removal within the facility's carbon capture system, required immediate maintenance. DSI was tasked with engineering a solution design that allowed for the replacement of the slewing bearing, located at the center of the water clarifier. DSI's solution minimized: (1) cost, (2) equipment removal, and (3) down time. This was accomplished while incorporating the following constraints:

- no prior access system available for replacement
- no known cause of bearing failure
- no system to prevent future premature bearing failure

Engineering SOLUTIONS

Customer was faced with a complete removal of a walkway/support bridge, scraping ring, process piping, and electrical controls and conduit in order access replacement area. It was further discovered that the bearing failed due to water intrusion resulting from exposure to rain.

A custom designed ring was designed to provide support for the existing center column. This unique support was formed into a rolled angle ring which was welded to the column. Twelve adjustable ratchet turnbuckles were then secured to the support ring. These turnbuckles were positioned aptly under the bridge walkway, the slewing drive base, and the rotating scraper cone.



Figure 1: Scraping Ring

A protective shield was constructed to cover the new slewing bearing to prevent another premature bearing failure.

The special support ring design allowed the equipment to be supported, making possible the removal of the slewing bearing. The custom cover was successfully installed and prevents rain water from collecting at the bearing. The entire project was completed in the time frame required, allowing for return to operation.



Figure 2: Center column with turnbuckle rings

Office: +1 770 423 9895 • Toll free: +1 833 DOS INTL • info@dossantosintl.com
DosSantosIntl.com • 531 Roselane St - Suite 810 • Marietta, GA 30060



DSI PROJECT – SHAWNEE FOSSIL PLANT

HOPPER REPLACEMENT

Conveyor BC-9

DSI was approached by Power Techniques to design structural modifications to the two existing hoppers feeding Conveyor BC-9 at Shawnee Fossil Plant in Paducah, KY. The plant intended to replace the existing reciprocating feeders with new vibratory feeders and replace the existing rack-and-pinion gate with a new, heavier duty gate.

The original intent was for DSI to design the local reinforcement needed for the hopper to support the feeders and to make minor modifications to the bottom of the hopper to allow for proper mating with the new gate. However, after developing the initial layout which incorporated the new feeders and gates into the existing system, it became clear that the modifications would be extensive. Prior to DSI's involvement, Shawnee Fossil Plant had decided that the condition of the existing hoppers warranted replacement. Because of the state of the existing hoppers and the extent of the modifications required to accommodate the new system, DSI was commissioned to design two new hoppers.

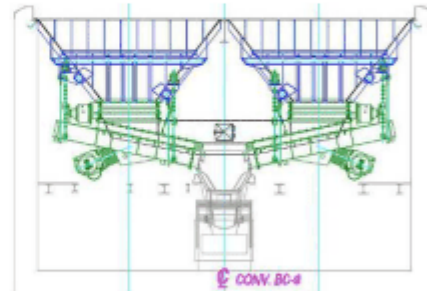


Figure 1: Elevation of new hoppers and equipment

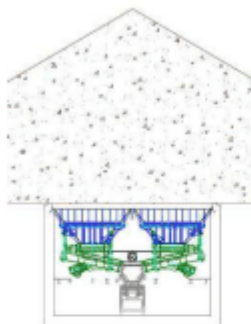


Figure 2: 40' stockpile above hoppers

The biggest challenges to the design were the tight space requirements, complex geometries associated with the feeder supports, and the heavy head loads applied by the stockpile above. The size of the new equipment required the height of the hoppers to be reduced significantly, relative to the existing hopper design. This reduction in height subsequently reduced the hopper wall slope angles. Because of the vibratory feeders below, the reduced slope was deemed acceptable by the plant. The geometry became quite complex due to the location of the new feeder suspension supports. This was overcome using Hollow Structural Sections (HSS) connected with shear plates and stiffeners to resist the moment and torsion created by the feeder loads. DSI was informed that the stockpile of coal above the hoppers could reach a height of 40 feet. According to experimental results reported in articles written by J. Ai, J.F. Chen, J.M. Rotter and J.Y. Ooi, pressure distributions beneath a stockpile can result in nearly 60% of hydrostatic pressure. Applying this to the 40 foot stockpile above the hoppers results in heavy wall pressures, requiring closely spaced reinforcing ribs at the hopper walls. The large head load created by the stockpile also exceeds what is allowed on the feeders below, necessitating DSI to design a triangular-shaped deflector to reduce the head pressure on the feeders. The deflectors include adjustable liner plates to optimize the flow of material onto the feeders.

Office: +1 770 423 9895 • Toll free: +1 833 DOS INTL • info@dossantosintl.com
DosSantosIntl.com • 531 Roselane St - Suite 810 • Marietta, GA 30060



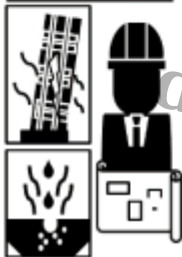
DSI ENGINEERING – COAL/GAS FIRED POWER

RECOVERY & REPAIR PLAN OF DERAILED STACKER^[W102111-002]

CHALLENGE: Develop and design a recovery and response plan to repair and return the coal stacker to its operating position in order to return the power plant to productive operation.

SOLUTION: The project focused on engineering accurate lifting, alignment, and support design, to facilitate the return of the stacker onto its rails, as well as developing repair plans for damaged components of the stacker.

Response / Recovery



Sudden extreme high winds overtook the plant stockyard and subsequently swept away an unsecured coal stacker. The stacker was propelled southward down the track and traveled through the end stops, until finally coming to a rest. Tilted on the hill side with the yard conveyor truss to the drive house crushed beneath it, the stacker's forward travel gear was found buried into the earth and its back travel gear dangling from the gantry structure.

DSI was tasked with assisting in the plan to lift the stacker back onto its rails and designing temporary support stands to support the forward corners where the travel gear was destroyed. Inspection revealed much damage, chiefly caused by the accident but also a substantial amount was due to weather exposure and coal related corrosion. Crane specialists were contracted to develop a rigging plan and DSI issued an inspection report with recommended repairs and designed temporary corner support stands, in addition to special required repairs.

Engineering SOLUTIONS

Crane accessibility and secure support conditions were a challenge. At the coal storage side (west side), one of three cranes would be placed at the toe of the coal pile, which proved to be a very wet area with poor soil bearing capacity. Timber mats were required to be installed to spread the crane load. Additionally the consequential lateral pressure was imposed against a retaining wall just past the track beam.

The retaining wall problem was solved by merely back filling the back side with packed crushed stone. The lifted stacker was placed on steel frames of DSI design. The project was completed timely and successfully.



Figure 1: De-Railed Stacker



Figure 2: Temporary steel support

Office: +1 770 423 9895 • Toll free: +1 833 DOS INTL • info@dossantosintl.com

DosSantosIntl.com • 531 Roselane St - Suite 810 • Marietta, GA 30060



DSI PROJECT IN SOUTHAMPTON, UK

OXBOW SULFUR HANDLING

A number of factors drove Oxbow's decision to use the DSI Snake Conveyor at their sulfur handling facility in Southampton. The plant takes in liquid sulfur, which is then turned into pastilles using a steel belt system. From the steel belts, the material must be transferred into a silo. The pastilles are then loaded into trucks for export. The site was not large enough to allow space for a conventional conveyor to feed the material from the steel belts to the silo, and therefore the small footprint of the DSI Snake was necessary. Other high angle conveying options could be considered in this application, as the carrying capacity requirement was not particularly high. Bucket elevators and Flexowall belts are often considered for these types of applications. However, in this case, the client appreciated the clear advantage of scraping the belts clean at the head end, as opposed to the high wear and power consumption required to beat the material out of the other systems.

Though the order for the Oxbow system was originally placed in February of 2013, it started as engineering-only, with the supply order expected to follow shortly after. The engineering design was composed completely in 3D, using Autodesk Inventor. After a prompt completion of engineering, the equipment order was delayed until September of 2013. The equipment was delivered early in 2014, but sat dormant at the site for around six months before erection began. Finally, in early 2015, commissioning began, and DSI was invited to England to start up the equipment.



DSI Snake Sandwich Conveyor for Oxbow, Ltd, Fawley Plant, Southampton, UK

Material	- Sulfur
- Density	- 1.20 t/cu-m (75 PCF)
- Size	- 2 mm (1/8") minus
Conveying Rate	- 20 t/h (22 STPH)
Conveying Angle	- 50.5 degrees
Belt Width	- 600 mm (23.6")
Belt Speed	- 0.40 m/s (78.7 FPM)
Lift	- 19,266 mm (63.2')
Length	- 55,800 mm (183.1')
Snake Drives	
- Top Belt	- 3.7 kW (5 HP)
- Bottom Belt	- 3.7 kW (5 HP)

This system is fully enclosed by cladding and a drip pan along its belly. The site is located adjacent to an automobile transfer terminal, so sulfur pellets drifting through the air are not acceptable. The full enclosure ensures that any fugitive material is completely contained, allowing it to be easily returned to the belt line.

Having installed sulfur handling systems in the past, there was no expectation that the material at Oxbow would present any difficulty. However, some aspect of its composition caused the material to spread on the belt more easily than expected. Fortunately, this problem was easily resolved by the introduction of the DSI Wet Brush system. A light wetting of the belt edge arrested the material through the loading zone, and restricted it from spreading further as it traveled through the sandwich. This, combined with a few other tweaks in the field, resulted in a successful startup of yet another DSI Snake Sandwich High Angle Conveyor.

Office: +1 770 423 9895 • Toll free: +1 833 DOS INTL • info@dossantosintl.com
DosSantosIntl.com • 531 Roselane St - Suite 810 • Marietta, GA 30060



DSI PROJECT – PADUCAH, KY

CONVEYOR BC-9 HOPPER REPLACEMENT

DSI was approached by Power Techniques to design structural modifications to the two existing hoppers feeding Conveyor BC-9 at Shawnee Fossil Plant in Paducah, KY. The plant intended to replace the existing reciprocating feeders with new vibratory feeders and replace the existing rack-and-pinion gate with a new, heavier duty gate.

The original intent was for DSI to design the local reinforcement needed for the hopper to support the feeders and to make minor modifications to the bottom of the hopper to allow for proper mating with the new gate. However, after developing the initial layout which incorporated the new feeders and gates into the existing system, it became clear that the modifications would be extensive. Prior to DSI's involvement, Shawnee Fossil Plant had decided that the condition of the existing hoppers warranted replacement. Because of the state of the existing hoppers and the extent of the modifications required to accommodate the new system, DSI was commissioned to design two new hoppers.



Figure 1: Hollow structural sections used to resist moment and torsion created by new feeder loads.

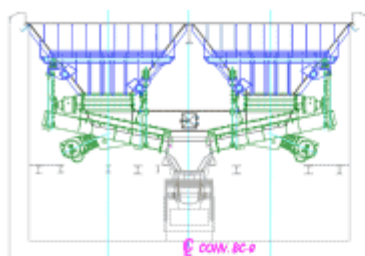


Figure 2: 40' stockpile above hoppers

The biggest challenges to the design were the tight space requirements, complex geometries associated with the feeder supports, and the heavy head loads applied by the stockpile above. The size of the new equipment required the height of the hoppers to be reduced significantly, relative to the existing hopper design. This reduction in height subsequently reduced the hopper wall slope angles. Because of the vibratory feeders below, the reduced slope was deemed acceptable by the plant. The geometry became quite complex due to the location of the new feeder suspension supports. This was overcome using Hollow Structural Sections (HSS) connected with shear

plates and stiffeners to resist the moment and torsion created by the feeder loads. DSI was informed that the stockpile of coal above the hoppers could reach a height of 40 feet. According to experimental results reported in articles written by J. Ai, J.F. Chen, J.M. Rotter and J.Y. Ooi, pressure distributions beneath a stockpile can result in nearly 60% of hydrostatic pressure. Applying this to the 40 foot stockpile above the hoppers results in heavy wall pressures, requiring closely spaced reinforcing ribs at the hopper walls. The large head load created by the stockpile also exceeds what is allowed on the feeders below, necessitating DSI to design a triangular-shaped deflector to reduce the head pressure on the feeders. The deflectors include adjustable liner plates to optimize the flow of material onto the feeders.

For more information visit
www.dossantosintl.com

Office: +1 770 423 9895 • Toll free: +1 833 DOS INTL • info@dossantosintl.com
DosSantosIntl.com • 531 Roselane St - Suite 810 • Marietta, GA 30060



SAKHALINCOAL PROJECT

FEASIBILITY STUDY

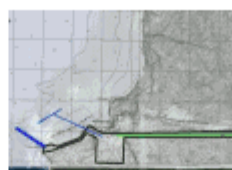
SakhalinCoal determined that the market for its coal at their mine on Sakhalin Island in Russia was abundant; however, increasing mine production to 5 MTPY with future expansion of 10 MTPY was met by challenges and limitations. These included:

- Consistency of mine production.
- Ability to transport coal efficiently from mine to port.
- Limit to size of ships in current port.

Baran Industries and Infrastructure Ltd, was commissioned by Sakhalincoal to perform the first stage of the mine upgrade project definition. Ahead of the expansion, Dos Santos International was retained by Baran Industries as material handling experts to assist in the overland conveyor routing, conceptualization and engineering. DSI assisted in planning, conceptualizing and engineering of the following:

- 1000 tph, 17 km overland conveyor
- Port storage facilities
- Yard conveyors
- Stackers and stacker reclaimers
- Dock layouts
- 4000 tph, 1.5 km marine conveyor to the new dock structure
- 3000 ton dock surge bin
- 4000 tph ship loader systems

The first task was to identify and define the land area required for the overland conveyor and port facilities. This first required the investigation of alternate routes for the overland conveyor with the purpose of choosing the best route over a mountainous area. Accordingly, elevation and coordinate data was collected and tabulated using data from Google Earth and Geocontext software. The conveyor paths were each assigned pros and cons according to their overall length, variations in elevation, obstacles that must be crossed, and necessity of truss spans to avoid rough terrain.



The first task was to identify and define the land area required for the overland conveyor and port facilities. This first required the investigation of alternate routes for the overland conveyor with the purpose of choosing the best route over a mountainous area. Accordingly, elevation and coordinate data was collected and tabulated using data from Google Earth and Geocontext software. The conveyor paths were each assigned pros and cons according to their overall length, variations in elevation, obstacles that must be crossed, and necessity of truss spans to avoid rough terrain.

CONVEYING METHODS CONSIDERED BY DSI

In the study, several methods and paths were considered to optimize cost efficient means of transport as well as storage options. In comparing different methods of handling, the study determined that a conventional conveyor will be the preferred option for the application at Sakhalin. Pipe conveyors, cable belts, and Rope-Cons® were each considered, and could be beneficial in other applications. However, the conventional troughed conveyor has the proven background and low-cost that made it the proper choice for Sakhalin.

Office: +1 770 423 9895 • Toll free: +1 833 DOS INTL • info@dossantosintl.com
DosSantosIntl.com • 531 Roselane St - Suite 810 • Marietta, GA 30060

Visit More

[Industries Served](#)

[Search & View DSI Installations](#)

[References & Resources](#)

Get in Touch

Weâ??re here to answer your questions and support your project needs.

[Contact Us](#)

Follow Us :

Facebook

X-twitter

Instagram

Linkedin

- Assistance on C-2 slack belt
- Review and stamp lift plans
- Monorail design at power plant
- Engineering platform over valve
- Expert witnessing for conveyor case
- Structural assistance for ducts failure
- Upgrade of a monorail at power plant
- Engineering study for heater replacement
- DEM analysis of two soft loading variations
- Structural check and PE stamp for platform
- Rebuild ducts internal structure at power plant
- Modifications to rail beam at 70 ton bridge crane

- Structural check/design and PE stamp of building in Utah
- Set up of conveyor maintenance program for pet food plant
- Structural check/design and PE stamp of conveyor in Indiana
- Inspection of Sandwich Belt conveyor for handling new material
- Check and PE stamp drag conveyor support structure in Arkansas
- ExConTec Lite analysis of reversal of feeder or combination of feeders

- [Tunneling](#)
- [Power Plants](#)
- [Pulp & Paper](#)
- [Cement Plants](#)
- [Recycling Plants](#)
- [Ports & Terminals](#)

default watermark

[DSI Standard Muck Lifter](#)

[San Miguel Electric Cooperative](#)

[NRG Texas](#)

[Xcel Energy](#)

[Cogen Power Plant](#)

[Sabic Power Plant](#)

[NRG Energy](#)

[Tennessee Valley Authority](#)

[NRG Energy](#)

Savannah Electric â?? Plant Kraft, Port Wentworth, GA USA â?? Engineering, upgrade hoisting system at coal stacker, consulting services, analyze and redesign hoisting system.

Georgia Power â?? Plant Bowen, Euharlee, GA USA â?? Detail rigging scheme, removal of existing, installation of new, hot reheat piping.

Georgia Power â?? Plant Bowen â?? Euharlee, GA USA â?? Design of pipe bracing system for cold pull.

Plains Electric â?? Escalante Station â?? Prewitt, NM USA â?? Design platforms for access to rigging and for inspection and maintenance at new, hot reheat piping changeout.

Gulf Power ??? Plant Crist ??? Pensacola, FL USA ??? Design and member sizing of staging structure to change out boiler panels, structural calculations, connection details and drawings.

Georgia Power ??? Plant Scherer ??? Juliette, GA USA ??? Design and estimating of monorail structure to change out hot air ductwork.

Indianapolis Power and Light ??? Harding Street Station ??? Indianapolis, IN USA ??? Engineering services to upgrade conveyors to 1000 STPH, complete engineering record, design of new actuator at deflector and design of top cord bracing.

CINERGY CG&E ??? John C. Beckjord Station ??? Cincinnati, OH USA ??? Engineering and field services of WEBA high tech transfers and drives upgrade at conveyors.

University of Illinois ??? Abbott Power Plant ??? Champaign, IL USA ??? Inspection of the coal receiving system with emphasis on structural condition and safety at two conveyor gallery trusses. Analysis, repair and upgrade recommendation in report.

Ameran Electric ??? La Cygne Power Plant ??? La Cygne, KS USA ??? Design new head frames at 42" belt with conveyors.

Dynegy Power ??? Dynegy Vermilion Power Plant ??? Danville, IL USA ??? Engineering for new crusher system, chute work and tramp iron magnet system at head end of conveyor.

Florida Power ??? Plant Bartow ??? St Petersburg, FL USA ??? Design, calculations, details, track structure to support removing old replacing with new heat exchangers.

Anhaeuser-Busch Power ??? St Louis, MO USA ??? Engineering support to modify transfer and crusher from conveyor to Pek conveyor including rotate lower chute and crusher 180 degrees, modify lower chute, replace flop gate with scalping grizzly.

Progress Energy ??? Anclote Plant ??? Tarpon Springs, FL USA ??? Design, calculations, detail structure and method for moving heaters.

Georgia Power ??? Branch Plant ??? Milledgeville, GA USA ??? Design, calculations, detail structure and method for moving and installing heaters.

Florida Power ??? Panama City, FL USA ??? Design, calculations, details timber cribbing at condenser.

Georgia Power ??? Plant Wansley ??? Carrollton, GA ??? Pad eyes

Ameren Energy ??? AECI Power Plant ??? New Madrid, MO USA ??? Engineering of two conveyors head end upgrade, drives and monorail and provide two head pulleys, 2 snub pulleys, shafts and pillow blocks.

Ameren Energy ??? Duck Creek Power Station ??? Canton, IL USA ??? Engineering of transfer conveyor and new loading chute, silo transfer conveyor.

Midwest Energy â?? Chicago, IL USA â?? Field advisory services, inspection of high angle conveyor, belt training assistance, report and recommendations.

University of Illinois â?? Abbott Power Plant â?? Champaign, IL USA â?? Conceptual development of new coal receiving, storage and handling facility. Technical and economic feasibility study.

PacifiCorp â?? Jim Bridger Power Plant â?? Rock Springs, WY USA â?? Engineering and field assistance, revise dance floor design for new scaffolding layout and loads and then back to the classic industrial design. Revised handling monorails.

Southern Electric Power â?? Pirkey Plant â?? Hallsville, TX USA â?? Engineering and field assistance, calculations and design for rigging, monorails, staging associate with boiler rebuild.

Mid-American Energy â?? Hunter Plant â?? Castle Dale, UT USA â?? Engineering and field assistance, design of monorails and miscellaneous lifting and leveling tools.

SWEPCO/Cleco Power â?? Dolet Hills Power Plant, Mansfield, LA USA â?? Engineering, field assistance, design of tugger reeving and monorail.

Brame Energy â?? Rodemacher Power Plant â?? Alexandria, LA USA â?? Engineering, field assistance, design of monorail.

TransAlta and Heartland Generation â?? Sheerness Plant â?? Alberta, Canada â?? Engineering, conveyor analysis, structural evaluation and design and new crushing systems.

Tennessee Valley Authority â?? Shawnee Fossil Plant â?? Paducah, KY USA â?? Engineering support, upgrade hopper under rail car dumper and modifications of access platform.

Tennessee Valley Authority â?? Paradise Fossil Plant â?? Drakesboro, KY USA â?? Engineering support, upgrade hopper under rail car dumper.

Eielson Air Force Base â?? Eielson, AK USA â?? Review of high angle conveyor and training to ensure proper operation of system.

NRG Energy â?? W.A. Parish Power Plant â?? Thompsons, TX USA â?? Engineering and field assistance of monorail, analysis and procedure to repair corrosion at stack duct.

Entergy â?? Gerald Andrus Power Plant â?? Greenville, MS USA â?? Engineering and field advisory assistance, four heavy monorails to remove/replace flue and ducting, stability bracing at buildingâ??s opened access panels.

NRG Energy â?? W.A. Parish Power Plant â?? Thompsons, TX USA â?? Engineering support, design of lifeline system at rail car dumper building.

NRG Energy â?? W.A. Parish Power Plant â?? Thompsons, TX USA â?? Engineering and field advisory, Xcel Harrington monorail rigging plan, hangers spacing.

Savannah Electric/Georgia Power â?? Plant McIntosh â?? Savannah, GA USA â?? Engineering support for the removal and replacement of heat recovery steam generator modules.

Berkshire Power Plant â?? Tenaska Plant â?? Agawam, MA USA â?? Engineering support for the removal and replacement of heat recovery steam generator modules.

LS Power â?? NAES Sandy Creek Power â?? Waco, TX USA â?? Engineering and field advisory assistance, redesign northside platform for removeable handrail at end side.

Southern Company â?? E.B. Harris Electric Generating Plant â?? Engineering support for the removal and replacement of heat recovery steam generator module.

Tennessee Valley Authority â?? Shawnee Fossil Fuel Plant â?? Paducah, KY USA â?? Engineer support for replacement and upgrade of reclaim hopper and feeders.

San Miguel Electric Cooperative â?? San Miguel Power Plant â?? Christine, TX USA â?? Engineering support for silo evaluation.

Xcel Energy â?? Maddox Station Power Plant â?? Hobbs, NM USA â?? Engineering support for moving heater header.

CPS Energy â?? VH Braunig Station Power Plant â?? Elmdorf, TX USA â?? Engineering support for removal of piping, monorail design.

Vistra â?? Duck Creek Station â?? Peoria, IL USA â?? Engineering assistance.

Kimberly Clark â?? Terrace Bay, ON Canada â?? Expert engineering consulting and inspection of Sandwich Belt high angle conveyor.

Kimberly Clark â?? Terrace Bay, ON Canada â?? Engineering, consulting and field advisory services during annual shut down.

Weyerhaeuser Pulp Mill â?? Kamloops, BC Canada â?? Inspection and analysis of Sandwich Belt high angle conveyor. Analyze system for tension and power, radius of curvature constrains, etc. Developed solutions to upgrade and improve performance. Developed proposals for customer consideration.

Weyerhaeuser Pulp Mill â?? Kamloops, BC Canada â?? Engineering and design of semi-automatic take-up to upgrade Sandwich Belt high angle conveyor. Include all calculations and detail design drawings, shop detail list and shipping lists.

Neenah Paper Company â?? Terrace Bay, ON Canada â?? Feasibility study to combine two conveyors into one. Analysis, layout drawings, estimates and report.

Neenah Paper Company â?? Terrace Bay, ON Canada â?? Engineering, consulting and field advisory services and inspection for Sandwich Belt high angle conveyor.

New Page Mill â?? Engineering and design of DSI Sandwich Belt high angle conveyor to elevate hog fuel.

[Brennand Cimentos](#) â?? Paraiba, Brazil â?? Engineering, design and supply of [DSI Sandwich Belt high angle conveyor to elevate raw feed](#).

CEMEX â?? Medusa Cement Plant â?? Clinchfield, GA â?? Engineering including drawings to upgrade Sandwich Belt high angle conveyor unit into a DSI GPS (Gently Pressed Sandwich) unit and correct the inflection.

Votorantim â?? St Maryâ??s Cement â?? Charlevoix, MI USA â?? Inspection of Sandwich Belt high angle conveyor and issue detailed report.

Argos Cement â?? Newberry, FL USA â?? Engineering and field advisory services to inspect the Sandwich Belt high angle conveyor, compose site presentation, engineering volume, tension, power, pulleys calculations, press modules design, specifications, inflection zone design and report.

LaFarge Holcim â?? Sparrows Point, MD USA â?? Engineering, design and supply of [DSI Sandwich Belt high angle conveyor to elevate natural gypsum](#).

[Metal Recycling Plant](#)

[Ash Grove Cement](#)

Ash Gove Cement â?? Midlothian, TX USA â?? Access for Sandwich conveyor, sacrificial conveyor for tire chips, layout and bill of materials, engineering to modify baseplates, design of access platform at head end of Sandwich conveyor, inspection of Sandwich conveyor for handling new material (shredded wood).

SNF Coagulants â?? Andrezieux Boutheon, France â?? Sandwich Belt conveyor for magnetite.

[United Bulk Terminal](#)

[Cargo Port](#)

[United Bulk Terminal](#)

[United Bulk Terminal](#)

[Oxbow Sulfur Handling](#)

Electro-Coal Transfer â?? Davant, LA USA â?? Study to improve performance of IHI ship loader boom conveyor.

Electro-Coal Transfer â?? Davant, LA USA â?? Engineering, improvements to IHI ship loader boom conveyor.

Electro-Coal Transfer â?? Davant, LA USA â?? Engineering analysis of trap loader.

Electro-Coal Transfer â?? Davant, LA USA â?? Concept and estimation of iron ore transfer terminal.

Gulf Power â?? Crist Steam Plant â?? Pensacola, FL USA â?? Crusher and chutework.

Electro-Coal Transfer â?? Davant, LA USA â?? Spillage control and reclaim system.

Electro-Coal Transfer â?? Davant, LA USA â?? Improvements to IHI boom conveyor, engineering and field service.

Electro-Coal Transfer â?? Davant, LA USA â?? Materials handling system for synfuel project, yard system.

Electro-Coal Transfer â?? Davant, LA USA â?? Materials handling system for Synfuel Project Yard system.

Electro-Coal Transfer â?? Davant, LA USA â?? Materials handling system for Synfuel Project Plant system.

Electro-Coal Transfer â?? Davant, LA USA â?? Temporary hopper.

TECO Transport, Electro-Coal Transfer â?? Davant, LA USA â?? Field assistance at Krupp stacker reclaimer and conveyor.

TECO Transport, Electro-Coal Transfer â?? Davant, LA USA â?? DSI *ExConTec* analysis of conveyor system.

TECO Transport, TECOBulk Terminal â?? Davant, LA USA â?? Engineering analysis of tractor hoist structure at FMC CBU.

TECO Transport, TECOBulk Terminal â?? Davant, LA USA â?? Engineering and field assistance at FMC CBU, after hoist drop accident.

TECO Shipping â?? Tampa, FL USA â?? Inspect self-unloading barge, recommendations to improve.

TECO Transport, TECOBulk Terminal â?? Davant, LA USA â?? Engineering and field assistance, survey and align D-conveyor after Hurricane Katrina.

Flinders Port â?? Port of Adelaide, Australia â?? Engineering of DSI Sandwich Belt high angle conveyor for fully mobile ship loader.

TECO Transport, TECOBulk Terminal â?? Davant, LA USA â?? Engineering assistance, hopper and support system to receive coal from self-unloading ships.

Rio Tinto â?? Guinea, Africa â?? Expert consulting for Simandou Iron Ore pit to port mining project.

United Bulk Terminal â?? Davant, LA USA â?? Consulting and field advisory services at F-Boom after failure of slew platform.

United Bulk Terminal â?? Davant, LA USA â?? Consulting assistance at Krupp stacker reclaimer damaged elevating conveyor at FMC CBU, Dravo barge haul winch.

United Bulk Terminal â?? Davant, LA USA â?? Phase 1, redesign, improve transfer at elevating conveyors to Dravo stacker reclaimer.

United Bulk Terminal â?? Davant, LA USA â?? Engineering assistance with supply, installation of ZPMC stacker reclaimer at D yard.

United Bulk Terminal â?? Davant, LA USA â?? Auto hydraulic take-up for IHI ship loader.

Phillips 66 Wood River â?? Roxana, IL USA â?? Investigation of feeder system concerns, primarily related to take-up system. Full conveyor analysis to reveal any existing issues and development of concepts to solve head drive pulley slip problems. Analysis of feeder tensions.

United Bulk Terminals â?? Davant, LA USA â?? Engineering support for terminal expansion project.

DongYang P&F Ltd â?? Seoul, Korea â?? *ExConTec* calculation outputs, bill of materials, pulley shaft sizing and technical data for pipe conveyor in Blue Dolphin project.

United Bulk Terminal â?? Davant, LA USA â?? Drip pan and shuttling, telescoping chute below conveyor at FMC CBU deck truss.

United Bulk Terminal â?? Davant, LA USA â?? Raising conveyor head end.

United Bulk Terminal â?? Davant, LA USA â?? Magnetic separator supports for conveyor to Sandwich Belt transfer, added access and miscellaneous work.

Associated Terminals â?? Convent, LA USA â?? Inspection of floating grain terminal.

Alabama State Docks â?? Mobile, AL USA â?? Engineering and field advisory services at conveyor.

Cooper Consolidated Terminals â?? New Orleans, LA USA â?? Sandwich Belt high angle conveyor for floating grain terminal.

Consulting and engineering services are offered for the various industries including:

- Materials handling systems and equipment
- Power plant maintenance
- Steel mill equipment
- Ports and terminals

All industries may benefit from our discipline-oriented engineering services. Such services are offered in mechanical and structural engineering:

- Technical and economic studies and evaluations
- Plant modifications and field assistance
- Upgrade of existing systems
- Conveyor system layouts
- New systems

Office/WhatsApp/SMS: +1 770 423 9895 â?¢
Email: info@DosSantosIntl.com

DosSantosIntl.com â?¢
531 Roselane St â?? Suite 810 â?¢ Marietta, GA 30060

Date Created
November 13, 2025

Author
marcdossantos

default watermark