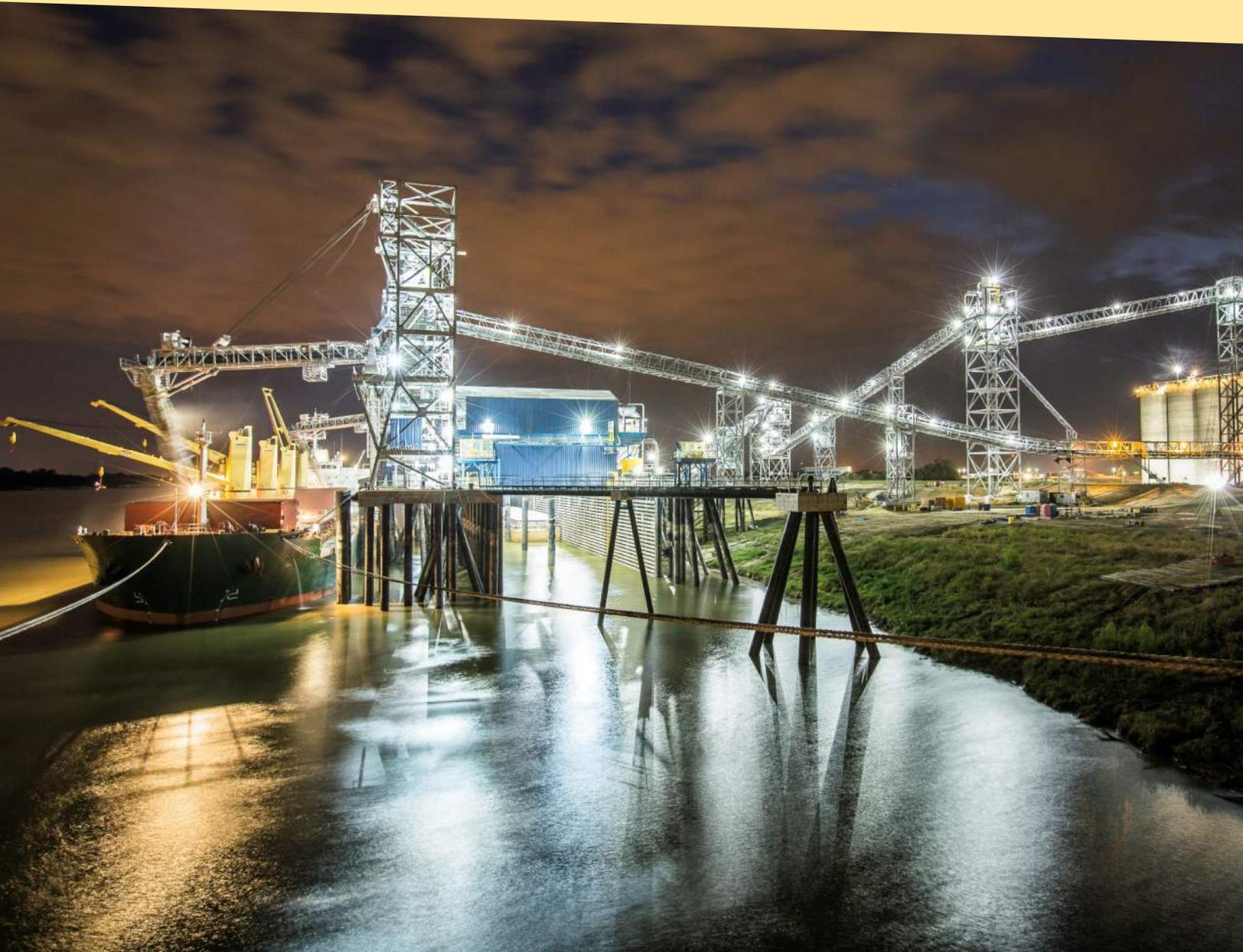


# PORTS AND TERMINALS



# SERVICES

Millcreek Engineering is a full-service engineering, procurement and construction management company specializing in bulk material handling and processing solutions for mining, minerals, power generation, fertilizer, oil / gas, cement, petrochemical, port and rail industries. We are staffed with highly qualified and experienced career professionals who bring deep expertise to the industries we serve.

Millcreek Engineering capabilities range from concept development to detailed design in all major engineering disciplines. Our engineers provide equipment, fabrication and construction documentation, QA/QC, inspection, field engineer support, commissioning, start-up and training.

Specific to the rail and port industry:

- Millcreek Engineering designs and delivers bulk material handling solutions for ports, terminals and marine facilities.
- Port projects include industries such as coal, salt, cement, coke, DRI, petroleum, liquids and cargo.
- Rail to ship and barge facilities include rail unloading, stacking storage, reclaiming, blending, and loading with conveyor and ship loading or unloading at rates up to 12,500 TPH.
- Millcreek Engineering offers port master planning and strategic development.
- We work with our clients to develop a plan that incorporates all requirements for the site. We help identify key industries that will play a roll in the ports life and provide the infrastructure design to support a long productive port life.
- Many of Millcreek's projects require strict safety guidelines for operators and are environmentally sensitive. Millcreek prides itself in offering innovative and environmentally friendly solutions for land use, coastal management, and air and water emission controls.
- Millcreek Engineering has specific expertise in the supply of the ship and barge load and unloading and stacker/reclaim equipment.
- Equipment types include self-unloaders, traversing, luffing and slewing loaders, radial, luffing and slewing loaders and traveling luffing and slewing loaders.

# PROJECTS EXECUTED

Millcreek Engineering Company has completed multiple projects. Below is a highlight of recent projects that included dust containment design:

## **Salt Barge Loadout – Louisiana**

Millcreek Engineering Company provided engineering design for a new barge loadout facility. The facility was designed to replace an existing loadout. Permit support was included in the scope. The loadout was designed to offer long life by using precast concrete piles and structure. Two barges were able to be loaded.

## **Sulfuric Acid Terminal - California**

Millcreek Engineering completed the basic and detailed engineering for a new sulfuric acid terminal in California. Concentrated acid was received via ship and unloaded to a storage tank. The acid was then diluted and shipped out via rail, truck or ship.

## **Rail to Ship Coal Terminal – California**

Concept, layouts, detailed engineering and construction management of bulk storage system. Terminal design includes rail unloading, covered slot storage, reclaiming and shiploading belt conveyors and related equipment. Terminal Capacity: 7,700 tons of coal/coke per hour. Ship sizes: small coastwise barges to 275,000 DWT vessels.

## **Rail to Barge Coal Terminal – Ohio**

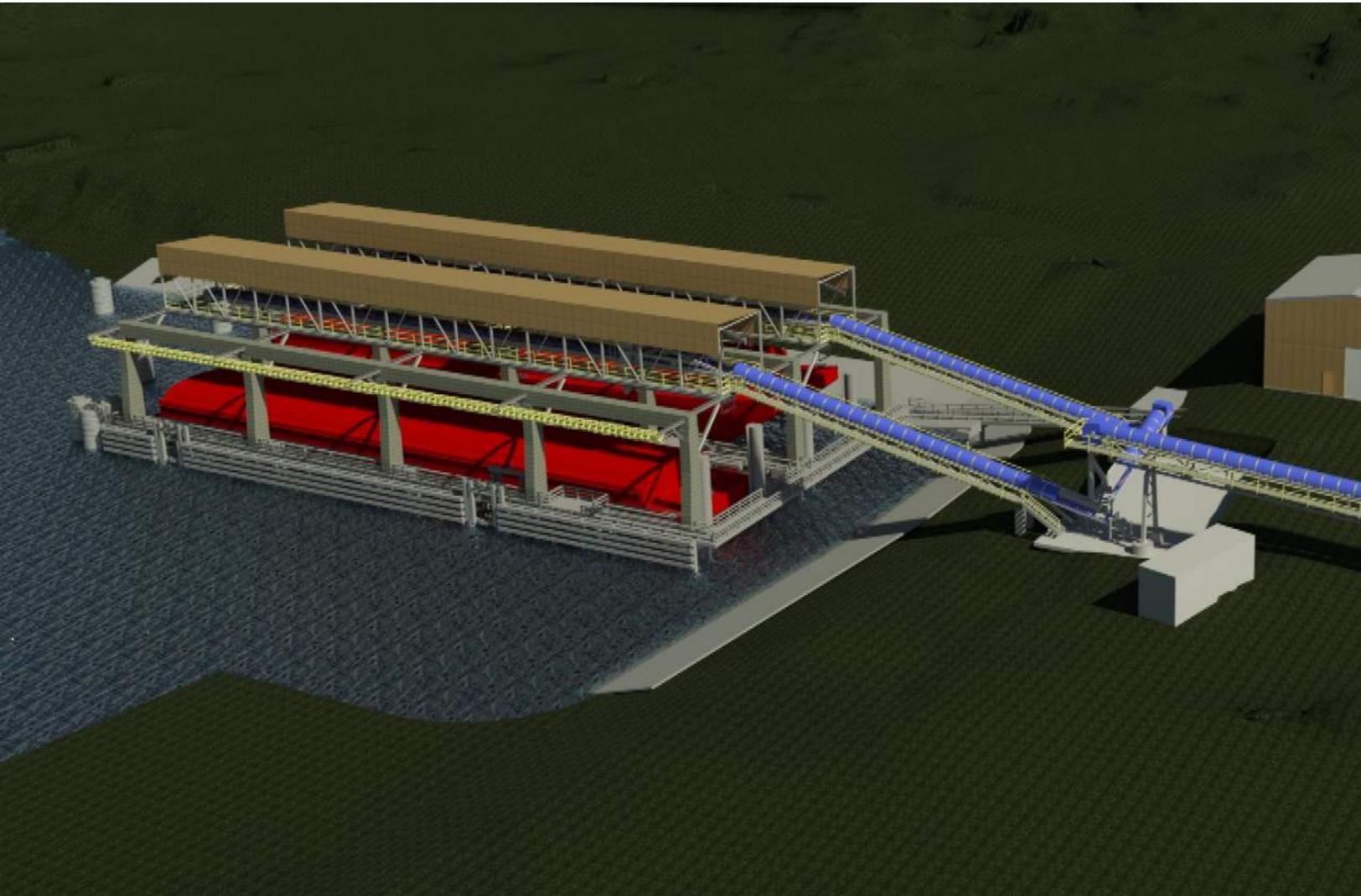
Concept, layouts, detailed engineering and construction management. Terminal design includes rail unloading, stacking reclaiming and shiploading belt conveyors and related equipment. Client was Norfolk Southern Corporation. Terminal Capacity: 7 million tons of coal per year. Ship sizes: small barges to 50,000 net ton vessels.

## **Port Master Plan - Alaska**

Millcreek Engineering Company provided port facility design and layout for a new port in Alaska. Project included rail, truck conveyor and ship material handling feasibility and concept design. When complete, the rail line will provide the gateway tide water access to the Interior of central Alaska via the existing rail corridor. The port will provide the ability to efficiently move materials between ship, rail, truck and barge as needed. The bulk material handling conveyor, ship loader and deep water mooring system will provide the ability to load any size ship with wood chips, coal, limestone, cement, aggregates, etc.

## **Coal Barge Loadout - Oregon**

Millcreek Engineering was commissioned to perform a study to evaluate and select the best option for the design of a coal handling system at a port in Oregon. This included a Unit train unloading station inside a stilling shed, storage barns with tripper conveyors, reclaim conveyors, and portal reclaimer (165,000 ton capacity each). We developed several design concepts, generated initial general arrangement drawings and a capital cost estimate, within a  $\pm 25\%$  range, for the described trans-loading facility. A maximum facility capacity was determined. Expansion and future operating scenarios were evaluated to determine potential growth and to develop a growth strategy. Initial operation and storage capacity were considered, as well as production and future growth. This enabled Millcreek to ensure optimal conveyor sizing and storage capacity for its client.



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