AN OVERVIEW: THE VALDEZ MARINE TERMINAL

The Valdez Marine Terminal (VMT) marks the southern terminus of the Trans Alaska Pipeline System (TAPS). Situated on 1,000 acres on the southern shore of ice-free Port Valdez, this is where tankers have loaded Alaska North Slope Crude cargo for four decades, since TAPS startup in 1977. Approximately 200 people work on the VMT— in offices and warehouses and fabrication shops, on docks and loading berths and heavy equipment, and in sophisticated process areas such as Ballast Water Treatment, Power Vapor and in East Metering.

The facility was designed to load tankers and provide storage capacity to allow North Slope production to operate without impact-related delays from the marine transport system. It cost approximately $1.4 billion to construct, and stretches in elevation from sea level to 660 feet up the forested and often snowy Valdez mountainside. The facility has its own emergency and fire response team, and through the Power Vapor Facility, creates its own power. The VMT today operates two loading berths, with 14 storage tanks in service and a working inventory capacity of 6.6 million barrels of crude oil.

VALDEZ BY THE NUMBERS

1,000+ acres in size
$1.4 billion to build in 1977
17 billion barrels loaded since startup
7.14 million barrels tank capacity
20,000+ tankers loaded

TANKS AT THE VMT

A boomed tanker docks at Berth 5. Visible in the foreground is the four-tank West Tank Farm, now out of service. Further back sits the 14-tank East Tank Farm. This photograph gives a sense of the size and scope of the VMT, including its elevation grades. This elevation allows the tanks to rely on gravity to flow crude downward through piping to the tankers. The 14 in-service tanks have fixed, conical roofs, and can each hold 510,000 barrels of crude oil, for a total capacity of 7.14 million barrels.
POWER VAPOR: The power-generation facility on the VMT, Power Vapor’s primary facilities include three steam boilers each with an output of 175,000 pounds/hour at 600 psi at 750F. The facility manages vapors from the tank farm and tanker loading activities. Berths 4 and 5 are both connected to Power Vapor. The plant is able to produce 50 percent of power need from the vapor system; the rest is supplemented by ultra-low sulfur diesel.

LOADING BERTHS: About 20 tankers a month load at the Terminal. Alyeska conducts all tanker loading and, through the Ship Escort/Response Vessel System (SERVS) is contracted as primary response action contractor in the event or threat of an oil spill from a tanker carrying TAPS-transported crude. The VMT originally had four operational berths; Berths 1 and 3 are now out of service. Berths 4 and 5 are operational, both with vapor-recovery arms.

PIGGING: Cleaning pigs are received several times a week at the East Metering Building. These mechanical devices are pushed through TAPS by oil to sweep the pipe of built-up wax, water or other solids that precipitate out of the oil stream. This helps prevent corrosion. After transit, waxy waste collected by the pig is barrelled and treated as hazardous waste. Pigs can be configured to respond to changing conditions in the pipeline.

BALLAST WATER TREATMENT: The waste water treatment plant treats around 9 million barrels of water a year. Approximately 35% off that is storm ballast ballast from tankers; the rest is a combination of industrial waste water generated from operations and storm run-off collected from process areas around the VMT. Water is treated through a series of settling tanks, Dissolved Air Flotation Units, BETX air strippers, thermal oxidizers and biological treatment tanks. Each year, the plant collects approximately 75,000 barrels of recovered crude and returns it to the system for loading onto tankers.

OTHER FACILITIES AND WORK: Other staffed facilities include an emergency response base, a warehouse, a fabrication shop, a lab, and an office building. Alyeska employees and contractors perform work on the VMT around the clock— from security officers to snow removal crews, from berth loading staff to cooks. SERVS, headquartered on the north shore of the Port of Valdez, maintains a dock and small office at the VMT to support tanker booming and other prevention and response activities.