
Tristar Terminal Guam Fuel Pipeline Relocation

Project Summary

PB prepared concept level engineering/design and technical design-build contract documents for the relocation of the three Tristar marine import fuel pipelines and abandonment/removal of four fuel lines. Deliverables from this task will be utilized by the Port Authority of Guam or Tristar to execute a Design-Build solicitation to complete design and construction.

(LONG-FORM PROJECT DESCRIPTION FOLLOWS)

Tristar Terminal Guam Fuel Pipeline Relocation

Piti, Guam

Client

The Port Authority of Guam (PAG) Jose D. Leon
Guerrero Commercial Port

Owner

Port Authority of Guam (a public corporation)

Background

On February 17, 2009 an agreement was endorsed between the government of Japan and the government of the United States concerning the relocation of 8,000 Marine Expeditionary Force personnel and their dependents from Okinawa to Guam by 2014. Demands for cargo movement during base construction and future organic growth in the region served by PAG is expected to put considerable demands on the port which it cannot support in its current condition and configuration. The Port has begun the facility modernization and improvements needed to meet these projected demands which includes roadway improvements, expansion of the port facilities and container yard which necessitates the relocation of utilities and fuel line distribution systems.



Parsons Brinckerhoff Role

Parsons Brinckerhoff International (PB) is providing owners agent/engineer services to PAG on a wide variety of task associated with the port modernization program. For this particular task PB provided the preliminary design, performance specifications and cost estimate for the relocation of a 24 inch diameter, 100 psi MAOP gas oil, Jet A pipeline, 24 inch diameter, 100 psi MAOP fuel oil pipeline and a 16 inch diameter, 100 psi MAOP Jet A pipeline with system appurtenances including isolation valve station facilities and cathodic

protection systems. PB's Guam office performed project management functions, final CAD work was performed by PB's Seattle office and PB Energy Storage Services (PBESS) performed the design, specifications and cost estimate for civil, mechanical, electrical and instrumentation engineering for fuel handling and support facilities.

Project Elements



- Site and Facility Inspections/Assessments
- Client provided program and performance requirements
- Fuel Line Relocation Concept Level Engineering and Design Layout and Profile
- Systems Performance Specifications and Cost Estimates
- Coordination of Paving with Department of Public Works Route 11 Road Strengthening Program, Guam Power Authority distribution network project, Guam Water Authority waterline relocation project, and construction activities of the Port Modernization

Project Description

The existing Tristar fuel lines were formerly owned by Shell and have been in service since the late 1960's. The system consisted of 2-24 inch and 2-16 inch fuel lines from wharf number 3 unloading to tank farms. A portion of the pipeline route crossed under a container storage yard. A combination of shallow cover over the pipelines and container loading resulted in damage to the pipelines and product leakage. Tristar purchased the fuel pipelines and facilities from Shell in 2007. Major repairs to the pipelines were undertaken and included decommissioning of one of the 16 inch

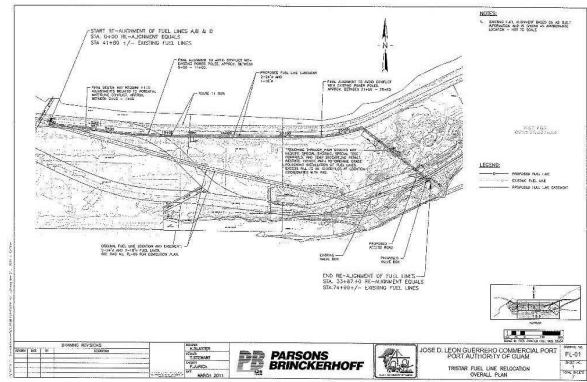
pipelines. Port modernization further expands the container yard, widens and realigns Route 11 and necessitates the realignment of the Tristar fuel lines. The task was the preparation of a Design-Build solicitation package which included design, performance specifications and cost estimate for rerouting the fuel oil pipeline system and isolation valve station and grout-filled abandonment or removal of the existing pipelines all to seismic zone 4 criteria.



PB provided preliminary designs, documentation, performance specifications and cost estimate for civil/mechanical/electrical elements for installing (2) - 24 inch and (1) - 16 inch, 0.64-mile-long, pipelines to carry fuel oil, gasoline and aviation fuel. The proposed pipelines would be tied into the pipelines crossing Route 11 into the container yard and the crossing of Apra Harbor main channel on the south side of Cabras Island. Also provided were plans and specifications for the abandonment in place with grout fill of (2) - 24 inch and (2) - 16 inch pipelines between the new pipeline tie in point of Route 11 to an existing isolation valve station south of Route 11-A near the pipeline crossing of Apra Harbor. Because of the shallow burial depth of the existing pipelines through the container yard area, the future grades of the expansion would fully expose the pipelines requiring their complete removal. With the history of leakage of these pipelines, the removals are an environmental issue which would include evaluation of soils contamination, soils remediation and coordination with the Guam EPA to develop performance requirements and estimated cost.

Additional coordination efforts included interfacing with the Guam Power Authority, a major consumer of the fuel oil; the U.S. Navy, the major user/transporter of jet fuel; and the Coast Guard which established specific hydrotest requirements for the pipelines.

The work also included the relocation of an isolation valve station for the (2) - 24 inch and (1) - 16 inch pipelines as well as a cathodic protection system.



Teaming

PB served as prime consultant.

Staffing

Matthew Smith (PB) served as project manager; Jeff Peck served as principal-in-charge. Tim Reichwein, Frank Jurica and Ken Stayer served as PBESS project manager and lead PBESS mechanical and civil engineers, respectively.

Schedule

Our services began in December 2010 and were completed in March 2011.

Project Number: 160175-TM-29.6

Creation Date: 04/11

Approved By: Tim Reichwein