

Oleoducto de Crudos Pesados Ltd. Project Management Services - Ecuador

PROJECT OVERVIEW

OCP's Integrated Management Team ("IMT"), so named as it incorporated personnel from the OCP member companies along with contractor personnel, commenced activities in February 2001. Gulf contributed an IMT project manager and 50 expatriate project and construction management specialists to the team of 200.

Techint International Construction Corporation ("Techint"), a minority equity member of the OCP consortium, installed the OCP pipeline system under an EPC contract with OCP S.A. The system as installed was based upon the preliminary design executed by Gulf for Occidental International Exploration and Production Company, whose Ecuadorian affiliate is a major investor in OCP S.A. Gulf's understanding of the pipeline system and familiarity with the project locations in Ecuador was a factor in Gulf's successful execution of its IMT duties.

PROJECT CHALLENGES

The country of Ecuador lacks the infrastructure to accommodate the installation of a billion-dollar crude oil export system. Congested

Gulf Interstate Engineering (Gulf) provided project and construction management services for the engineering, procurement, construction, and commissioning of Ecuador's second crude oil export system owned and operated by Oleoducto de Crudos Pesados (OCP) S. A. The 500-km pipeline transports 18 to 24 degree API heavy crude oil from the Oriente Basin in the Amazon region of eastern Ecuador to Esmeraldas on the Pacific Coast. The system facilities include (i) four combination pumping and heating stations, (ii) two pressure-reducing stations, (iii) an initiating pump station at Lago Agrio with storage tank farm to receive crude oil from the Oriente Basin fields, (iv) a marine terminal with storage tank farm, and (v) dual submarine pipelines with Single Buoy Mooring connections for ocean tanker loading. OCP operations are scheduled to commence in the third quarter of 2003.

For the execution of the project, Gulf participated in an Integrated Management Team with OCP personnel to manage and administer the engineering, procurement and construction activities at multiple locations across Ecuador.

port facilities, poor roads, limited communications, security concerns, and terrain encompassing tropical rain forest and snow capped mountains, combined to place a significant logistical challenge on the project. At the height of the

project, construction activity was underway throughout the 500-km length of the pipeline system and at all facility sites, and this situation presented constant exacerbation to timely communications and coordination.



Traversing a large portion of the Amazon region and numerous nature preserves, the OCP Project faced tremendous environmental challenges and constant pressure from environmental activist groups the more passionate of which frequently occupied project work sites to prevent and frustrate the construction operations.

Finally, the political environment in Ecuador during project execution included a large portion of the rural population that was not supportive of the OCP project. The populace in opposition to the project organized work stoppages and other frustrations to project progress.

The IMT personnel supplied by Gulf weathered the project challenges and were successful in resolving various issues due to their experience on previous pipeline projects both with Gulf and other companies.

PRE-COMMENCEMENT

Gulf's initial IMT personnel mobilized to OCP's Quito, Ecuador offices in February 2001 and set to the task of implementing the management systems needed to monitor, control and report the project

activities. Gulf's IT specialists designed, procured and installed the computer hardware to support the project Management Information System.

Gulf also designed a project website that made the project progress information available to all project participants.

Gulf's IMT personnel prepared the Project Execution Plan, Safety Plan, Quality Plan, Construction Management Plan and related procedures to guide the IMT during project execution. Among other things, Gulf's IMT personnel developed budgets, schedules, progress monitoring and reporting templates and documents including a web-based monthly project status report and numerous construction reporting forms.

Gulf's IMT personnel also assisted Techint with such field activities as rights-of-way acquisition, permit acquisition, surveying and confirming sites for the project facilities. At the same time, Gulf's IMT members developed contracts, solicited bids and engaged local contractors to complete staffing of the IMT. Finally, Gulf supervised the local IMT project and construction management personnel assigned to the IMT.

EXECUTION PHASE

The project execution phase began in July 2001, for which Gulf's IMT personnel mobilized to various remote camp locations established by Techint.

Throughout the construction, Gulf's IMT personnel performed regular quality assurance audits of Techint's work, covering all phases of the construction effort. Gulf also performed construction inspection functions on a daily basis working alongside Techint on the pipeline rights-of-way and at the facility sites.

Gulf reviewed Techint's progress statements and invoices for accuracy and compliance with the contract terms and approved the invoices for payment. Evaluating claims for extra work, considering associated impacts to the project schedule and related change management functions were a part of Gulf's daily functions.

IMT monitored and reported on the effectiveness of Techint's health, safety, and environmental mitigation practices. Gulf's IMT personnel also performed a significant interfacing function between the construction parties, landowners and townships to provide a coordinated approach for community relations.

During the execution phase Gulf's IMT personnel were resident in Techint's Buenos Aires' offices coordinating and reviewing engineering and procurement activities. At Esmeraldas Port in Ecuador, Gulf performed a liaison and coordination function to expedite customs clearance of project materials and equipment.

Unexpected challenges to project execution included the November 2002 eruption of the El

Reventador volcano, which covered much of the eastern portion of the project area, as well as Quito with volcanic ash. The eruption destroyed several kilometers of the pipeline, which was welded and awaiting lowering into the ditch. Greater still was the destruction to the rural populace who lost homes, farms and livestock. Gulf's IMT personnel played a significant role in coordinating relief assistance, including water, food and shelter for the devastated areas.



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