

# DELIVERING RESULTS.



## Hook up & Commissioning

### project highlights

- ▶ Original awarded scope of work: Max headcount 61 People - 215,000 man-hours  
Actual as completed scope of work: Max headcount 148 people - 597,000 man-hours
- ▶ Fabricated and installed PAX System - 500 linear feet of pipe and over 300 shop welds
- ▶ Removed and reinstalled 5 ASD skids in 2 buildings, including designing and performing infrastructure modifications needed to complete the task
- ▶ Removed, repaired and reinstalled 106 PetrolValves
- ▶ Designed and installed plan for H2S system skid, eliminating the need for derrick barge support
- ▶ Successfully completed 160 pressure tests of 34 systems at pressures up to 22,500 psi
- ▶ Completed - 2,000 punch list items



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## Temporary PAX System

- Installed 2 temporary PAX pumps
- Fabricated and installed 500 lf of piping with 300 shop welds
- Fabricated and installed 20 pipe supports
- Completed first oil critical scope within 21 days (including fabrication and installation from initial request to Danos)

## ASD Removal and Re-installation

- Removed and reinstalled 5 ASDs (14' x 6' x 10', 47,240 each) from compression and production electrical buildings
- First 2 ASD removals, in separate buildings, took place within 19 days of initial removal request to Danos
- Significant structural reinforcements completed to both electrical building interiors and landings
- Removals completed utilizing highly specialized equipment with no overhead rigging points and less than 12" of overhead clearance available
- Specialty securing mechanisms for safe transport designed and fabricated by Danos
- All replacement ASDs were shock logged and installed without any incidents of equipment damage
- Removal and re-installation procedure developed and executed by Danos
- 5 specialized rigging assemblies provided by Danos for differing unit designs and packaging

## PetrolValve Remediation

- Removed, and reinstalled 106 PetrolValves for weather seal removal
- All faces and seals professionally cleaned and reinstalled by Danos personnel
- 31 15K flow line valves removed, packaged for shipment, sent onshore and later reinstalled
- 21 15K flow line valves were removed and reinstalled 4 times (5,600 lbs EA)
- Removed and reinstalled failing 20" oil export SDV
- Repaired in place oil HV boarding valve
- Modified existing monorails and piping necessary for valve removal
- Removed, reinstalled, flushed and set correct stops on all actuators

## H2S System Skid Installation/Modification

- Installation of ZZZ-8100 skid below north bridge (66,000 lbs)
- Fabricated skid beam assembly for installation
- Developed skid-in plan to install ZZZ-8100 from moonpool, eliminating the need for DB-50 derrick barge support
- Installed approximately 1500 feet of associated piping
- Installed 151 pipe supports for H2S piping scope
- Completed 20 field welds and 10 field hydrostatic tests to correct dimensional changes from drawings
- Installed 6 analyzer cabinets and sample point assemblies

## Pressure Testing Completion

- Successfully completed over 160 field hydrostatic tests of in place piping on the FPU
- High pressure tests completed up to 22,500 psig
- DOT monitored testing completed on 4 flow-lines and gas export line
- Flow-line testing completed
  - 14 attempts
  - Challenges including:
    - Failed face seals
    - Cracked thermo wells
    - Cracked valve bodies
    - Failed subsea blinds
- Did not delay completion of diving campaign or flow line and sales lines commissioning activities
- Segmented test limits to provide commissioning access to critical areas
- Completed test setup, flooding and burping for pipeline and flow line integrated leak tests

