

# ICP-R PROCESS PLATFORM



In order to augment the exploitation program under Mumbai High South re-development Phase-II, ONGC has added one process platform along with associated pipelines and modification works at IC process complex of Mumbai High Field located about 165 km northwest of Mumbai in the Arabian Sea on the continental shelf of western India. This process platform is constructed to compress 2.3 MMSCMPD having process facilities and compressor module along with utility services. The project was awarded to AFCONS – Gunanusa JV in March, 2009.

AFCONS Gunanusa Joint Venture has completed one of the biggest Process Platforms – AFCONS first entry into offshore segment. The project consisted of the following items of work to be done:

- One (1) Launch Jacket – 5852 MT
- Twelve (12) (inclined) 72 inch skirt piles
- One (1) Module Support Frame (MSF) – 3254 MT
- Separator Module – For separation of oil and gas from the well fluid – 2370 MT
- PGC Module – For compression of Process gas using Gas turbine – 2130 MT
- TG Module – For generation of electricity using Gas turbine – 1800 MT
- Building Module – Offices, Workshops, Control rooms & Helicopter Landing – 1616 MT

- One (1) Bridge (between ICP-R and existing ICG platform) – 380 MT
- One (1) Tripod Jacket – 1510 MT
- Three (3) (vertical) 60 inch skirt piles
- One (1) Tripod deck structure
- 1.3 KM (2) subsea rigid pipelines of 28" & 4" size and (2) subsea cables
- The total top sides weighed – 11170 MT and total platform weighed 22437 MT

## Key Partners in the EPC contract:

- AKER Engineering Malaysia - Design Engineering
- Kawasaki Heavy Industries, Japan - Design and Fab of PGC
- Gunanusa & Kencana yard - Fabrication of Jacket and topside
- Heerema Marine Contractors - Offshore Installation of Structures
- Swiber offshore - Pipeline Installation
- OHCS Pvt Ltd - Hook up and commissioning
- Noble Denton - Marine warranty surveyor

There are some landmark achievements and several innovations along the way -

## ACHIEVEMENTS

- Clocking cumulative man hours of 6

- million+ without Lost Time Incident
- No major NCR on quality of work performed
- Tallest Platform in IC complex
- After connection to ICP, making it the largest complex in ONGC
- String Test of PGC module was done for FIRST TIME in Indonesia at Gunanusa Yard

## INNOVATIONS

- 4 legged process platform jacket without main piles is a first in Mumbai High
- State of Art Buoyancy Chambers were designed covering pile sleeve cluster to facilitate Jacket upending and avoid removal of Subsea Buoyancy tanks
- Vertical pile driving. (First time in Indian Offshore) eliminated chaser piles
- Single pile make-up of 114m length is the longest pile constructed by vertical pile driving - a first in Indian Offshore - reduced critical offshore time and eliminated the necessity of pile welds at offshore
- Introduced phased array as NDT method in lieu of RT for the first time in any ONGC project on piping welds
- In a first of its kind the transition pieces were welded to the process platform jacket in onshore yard. 