Client: Civmec  
Location: Barrow Island, Western Australia  
CAPEX: AUD$60 billion  
Project Duration: 2011 - 2013

PROJECT NARRATIVE

The Downstream Project is part of the Gorgon Project, developing the Gorgon and Jansz-Io gas fields. It involves the liquefied natural gas plant, condensate handling facilities, carbon dioxide injection facilities and other support facilities. It also includes 3 trains each capable of producing 5 million tonnes of liquefied natural gas per year; a considerable portion of the overall 15.6 million tonne per annum liquefied natural gas (LNG) plant on Barrow Island.

SCOPE OF WORK

PDC’s scope included the structural connection design, modeling and structural detailing of 11,400T of stick build steel for all of the support structures and the 3 process trains on the Downstream Gorgon LNG Project.

Some of the major areas PDC carried out Structural engineering and detailing included:

- Amine Absorbers and Regenerator Units;
- MEG Injection Pump Area Piperacks;
- Cryogenic Heat Exchangers;
- HP Fuel Gas Mixing Units;
- Oily Water Treatment and Firewater Units;
- Waste Heat Recover Units;
- Condensate Stabilisation & Storage Buildings;
- Pipe Racks, Pipe Supports and Calve Access Platforms;
- Power Generation Units;
- Jetty Head / Loading Berth including Load Out Lines.

PROJECT CHALLENGES / HIGHLIGHTS

- The initial scope was for standard connect design with an allowance of 15% for non-standard connections. However, after final structural design drawings were provided, a total of 2,300 non-standard connections designs were required needing additional resources. Structural design of the building was performed in the UK however steel connection design where required to comply with Australian Codes.
- The non-standard connections were often heavily loaded with loads requiring in-depth analysis. The average time for non-standard connection design was reduced by 75% over the life of the project.
- Interfacing of the PDMS, structural and construction models were required throughout the project and required regular communication with the head client Kellogg Joint Venture on schedule priorities.