



Asset Information Management (AIM) Improvement

Nigeria LNG Limited (NLNG)

Since inception, a considerable number of modifications and simple engineering changes (SECs) have happened in Nigeria LNG Limited. Modifications carried out on the facility were not accurately documented thus raising safety concerns.

In 2012, NLNG contracted Ariosh Ltd to update all safety and integrity-critical documents across all disciplines (Process, Mechanical, Civil, Electrical and Instrumentation) for six LNG trains and associated common facilities to reflect the As-built status of the plant.

To further improve on the adequacy and accuracy of the representation of Piping, Mechanical and Structural facilities in the plant, NLNG contracted Ariosh Ltd in 2014 to generate intelligent 3D models of the LNG trains, loading jetties and the common facilities. Ariosh deployed 3D Laser Scanning technology to gather accurate point cloud data that were combined with the facilities' operating parameters from the updated 2D as-built to generate intelligent 3D models using Aveda E3D.

The scope of work included Project Management, Facility Information Management, Engineering and training of NLNG engineering and maintenance personnel on the use of 3D models for engineering and asset management purposes. A total of 750,000 man-hours were expended on the project by over 100 multinational and multidiscipline engineers. Over 18,000 integrity-critical asset information were updated to plant as-built status and intelligent 3D models of the following facilities were generated.

- LNG Trains
- LPG Refrigeration & Storage Facility
- LNG Fractionation Plant
- Gas Transmission Nodes
- LNG & LPG Loading Jetties

Ariosh deliverables on the project greatly improved NLNG operations in the preparation of work scope estimates, brownfield engineering, management of shutdown SIMOPs, extraction of critical information about specific instruments and equipment in the plant, information sharing between various project teams and virtual plant visits.

Phase 1 and 2 of the project were completed on schedule in Q4 2014 with zero LTI. Phase 3 of AIM and 3D Laser Scanning was also completed in Q3, 2018.

Services

Project Management, Facility Information Management, Engineering and Training

Location

Lagos & Bonny Island, Nigeria

Total Man-hours

Over 813,000

Safety Record

Zero LTI, Zero MTI

Status

AIM: Completed Q3 2018
3D Laser scanning exercise: Completed.