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**ASHOK LEYLAND**

Case Study: **Hardline for Ashok Leyland Component Test Lab**: Chennai, INDIA

Project No: 3147

Cenergy Offshore has last year executed a Hydraulic Piping / Hardline project in a large scale Component Test Lab at the R&D facility of Ashok Leyland in Chennai, India. The Project was awarded on merit based on international best practices and past project executions carried by TMI / Cenergy Offshore. One of the leading Testing & Sensing Equipment OEM's was providing all the necessary Test equipment's and the same was to be integrated viz. the HPU's and Actuators.

The Project key points are as follows:

- Implementation of large bore Non Welded Hydraulic / High Pressure / Hardline Piping system for the Component Test Lab Actuators.
- Issuance of all the drawings prior to installation. The installation process was based on pre-designed & pre-fabricated Hardline Pipe spools.
- Pipes were pre-fabricated and they were carefully laid out in a defined space - meeting the design & schematic layout criteria.

The various steps involved were as follows-

1. **Design / Engineering:** Since this was a project involving Hardline Piping for a test lab, prior design could be carried out. The end user had defined their requirement to which we proposed suitable piping specifications. The design was entirely carried out in-house based on necessary information like Hydraulic Schematic Drawing, Civil Layout, and RC Detail Drawing. The Hardline Piping design once issued was accepted by the End-User to suit the final application delivery.
2. **Fabrication:** The Hardline Piping involved in this project were all pre-designed and pre-fabricated since site layout details were accurately available at our end. All the spools were pre-fabricated, cleaned, painted in TMI facility in Canada and shipped to the site. These above methods are employed so that the hardlines do not get contaminated by dirt, dust, rust, pollution during transportation & handling, which could hamper the final Hydraulic application.
3. **Erection:** All the Hardline Piping was erected under the supervision of Cenergy Offshore Supervisors and Technicians. The erection had to be carried out carefully since the cleanliness requirement at the lab was of top priority.

4. **Flushing:** The Hardline was looped by Cenergy Offshore Flushing components and flushed. We achieved a “NAS 0” cleanliness level which was applauded by the End-User. It hardly took half a day to achieve the above cleanliness level which clearly demonstrates the merit of using Non Welded Piping for such particular Testing Applications.
5. **Pressure Testing:** The Hardline had to be pressure / proof tested up to 4500 psi. The above pressure rating was subjected on the Hardline and was held for 30 min (standard states hold time of 15 mins is sufficient).
6. **Commissioning :** After the installation phase the Hardline was ready to be commissioned. All the Simulation actuators / equipment’s are tested by the end user and the lab has been operational from last year itself.
7. **Hand Over:** After successful commissioning, all the spares, documentation, reports were handed over to the End-User and a copy was kept with Cenergy Offshore for future reference & traceability. The same was provided in digital format for easy access.

Cenergy Offshore will soon be executing another similar hydraulic hardline installation project for Ashok Leyland in the near future.