

Chieftan Platform Project X Thermowell Replacement

Position Statement @ 1/1/2001

Background

During Offshore commissioning issues with high flowrates were identified by commissioning which resulted in a request for flow instrument re-ranging. A review was then carried out to ensure all associated inline instruments were suitable for the proposed flow conditions. During this exercise a number of thermowells were identified at risk of failure.

A review of the original design calculations showed that thermowells had been specified based on a nominal design case only and that a number of key operating cases had been missed. There is now a risk of failure from thermowells fracturing resulting in downstream equipment damage and/or instrument overpressure and loss of pressure containment.

Thermowells can be split in to three categories; Indication, Control and Safety systems.

The total number of thermowells potentially affected is 200, however ongoing Wave Factor Calculations, (WFC), will confirm items at risk of failure.

Work completed to date

The Engineering contractor has commenced an evaluation of the operating cases for each thermowell to determine whether replacement is required. The Oil & gas client is working on both a long term permanent solution and short term mitigation solutions.

The Oil & gas client have advised that a total of 25 thermowells have been ordered to date. This excludes erection materials, plugs, blinds, bolts and gaskets which will be procured by the engineering contractor

Replacement Scope (Long Term Solution)

A review is being carried out by the Oil and gas client Process Engineer for each thermowell against the required operating cases. Estimated completion of the majority of this scope will be by 1/1/2002. A single thermowell tracker is being developed with the following data fields;

- Thermowell ident
- Process data
- WFC results
- Pass/Fail decision
- Emerson Order data
- Interim operating restriction
- Short term mitigations

Process for Procurement

Where possible standard "off the shelf" items will be offered which may require a deviation from the Client engineering standards.

The Engineering contractor will procure all required materials not supplied via the thermowell vendor.

Lead Times

Lead times of circa 10W have been advised for 316 ss items and circa 16 week for exotic material specification.

System Priority

The Oil and gas client have advised the following systems priority sequence;

Oil, Gas, Utilities, Vendor Packages.

Short Term Mitigations

A range of mitigations have been proposed, however these require further evaluation and agreement before implementation. These include;

- Removal and blanking of indication thermowells. (blinking with blinds)
- Removal and blanking of RTDs. (Blanking with plugs)
- Software modifications including FAHH trip

A client team is completion a system by system series of Mini Mitigation reviews to evaluate and agree the short term mitigations. Priority is based on the current start up sequence.

Issues requiring further Discussion and agreement

Use of Reverse Integrity gaskets

Challenge on engineering specification/process conditions for Thermowells.

Post installation leak testing limits, full system/partial system.

Additional survey requirements.

Agreement on number of batches for procurement (circa 8).

Constructability, Access/scaffolding/RATs.

Single Point Contacts, (SPC), and Stakeholders

Given the urgency and importance of this scope the Engineering contractor will provide a "ring fenced" team to manage and support.

The Client contact will be PR Smith

Engineering contractor SPC will be Peter Cranston

Agreed workscope

Current authorised scope is limited to specification and procurement of blinds, gaskets, bolts and plugs for all 250 Thermowell locations.

Proposed workscope

Provision of Project Management services to support client team with the following activities;

- Chairing of meetings with all required stakeholders and issue of m.o.m, and action logs.
- Generation and update of schedule for all onshore, procurement and offshore activities.
- Materials, procurement of bulks, expediting, reporting, QA and inspection services associated with thermowell replacement.
- Provision of discipline support as required: i.e. Metallurgy and Process.
- Provision of “ring fenced “construction engineers to prepare construction workpacks for both mitigation and TW replacement.

Next Steps

- Confirmation of all stakeholders.
- Provision of Position Statement briefing note to all stakeholders.
- Formal scope kick off/m.o.m.
- Twice weekly interface meeting with key stakeholders and action log issue.
- Detailed scope of work issue and approval.
- Develop schedule for all onshore and offshore activities and add to Engineering contractor and client plans.
- Agree qty/split on workpacks.
- Engineering contractor dedicated team to support.