SEVERN
GLOCON TECHNOLOGIES

Pressure & Temperature Test Rigs

INDUSTRY
Global Energy Industry

LOCATION
UK

PROJECT
Hayward Tyler Limited - Pressure & Temperature Test Rigs

THE CHALLENGE

Severn Glocon Technologies (SGT) were approached by Hayward Tyler to design and manufacture a small number of bespoke units in order to test and validate electrical cables and glands for their range of submersible pumps.

Four units were required in total; one to test at pressure and at cyclic temperatures; and a further three to use for long-term life testing at a range of different temperatures. Each of the test units presented their own unique set of challenges that needed to be overcome.

Temperature Cycling Rig:

- Test chamber required to house up to 6 off 2m cable and penetrator samples to test at a range of temperatures
- Operational temperatures ranging from ambient to 80ºC
- Test fluid Glythermin®, based on Polypropylene glycol (PPG)

Long-term Life Test Temperature Rigs:

- Test chamber required to house up to 6 off 2m cable samples to test at a range of temperatures for long-term testing
- Test temperature up to 120ºC
- Test durations expected to be up to 6 months
- Test fluid Glythermin®, based on Polypropylene glycol (PPG)
- Pressure required to stop the fluid boiling at 120 ºC

All of the test units required full local and remote control, and be compliant with the relevant machinery and pressure equipment regulations.

THE SOLUTION

The temperature circulation test rig was designed to have both a heated fluid reservoir and also a cooling reservoir so that the fluid in the main test chamber could be cycled from ambient to maximum and back. A constant flow of fluid is required to maintain the temperature at the required level.

The fluid in the life-test rigs was designed to be heated directly in the chamber with a circulation system to ensure uniform heat distribution throughout the test life cycle. A secondary pump was used to pressurise the system to 3.5 bar to prevent the fluid boiling at 120°C.

Both system variants are controlled and monitored via a PLC with a range of actuated valves and sensors: including temperature, pressure and level. Small touch screens are used to operate the units with remote control possible via Ethernet. Additional mechanical safety has also been incorporated.

THE OUTCOME

The circulation test rig was completed first and is now sited at SGT premises. It has already been used to test a number of Hayward Tyler's cable and penetrator samples, with further tests planned as their submersible pump project progresses.

The three life-test units have also now been completed and are now awaiting shipment and commissioning.

This project encompasses all of SGT's strengths and capabilities in mechanical, electrical and software engineering, and shows that we are able to think out of the box to develop bespoke products to meet the ever-expanding requirements of the client.

For more information on Severn Glocon Technologies call +44 (0)1209 312 000,email sales@severngt.com or visit www.severngt.com

Severn Glocon Technologies
Research Centre 6 Jon Davey Drive
Treleigh Industrial Estate Redruth
Cornwall TR16 4AX England

T. +44 (0)1209 312 000 sales@severngt.com
www. severngt.com