Case Study

Low Head stool and bearing replacement Dolgarrog Power Station

EKSPAN were instructed to replace bearing stools assemblies on the low head high pressure pipeline for plinths 2, 4 and 6.

Background Information

As part of RWE Innogy's continued programme of maintenance works for the hydro-electric power station's pipelines in Conwy North wales, EKSPAN were selected as principal contractor to carry out bearing/stool replacement works on the Low Head Pipeline. EKSPAN have the relevant experience to deliver this project, having already completed a successful 4 year programme (2007 – 2011) of major refurbishment works on the High Head Pipeline.

EKSPAN's Workscope

EKSPAN were instructed to replace bearing stools assemblies on the low head high pressure pipeline for plinths 2, 4 and 6. Prior to commencement of this project, EKSPAN had to carry out exploratory works to assess the pipe at all three proposed plinth locations for ovality and to take core samples of the footings directly below the pipe at the proposed areas for the foundations. Pre-works operations involved establishment of site compound with welfare and storage units, and temporary scaffold platforms for access to the pipeline with plant, labour and materials.

PROJECT IMPACT

- Supplied: Manufacture and installation of 3 no bearings to high pressure pipeline incline plinths 2, 4, & 6.
- Project Team
- Client: RWE Innogy UK Ltd
- Main Contractor: EKSPAN
- Start Date: July 2014
- Completion Date: August 2014

To accommodate the extreme incline of the low head pipeline location, which measures an angle of approximately of 42o, EKSPAN had to develop a winch system. This, with the use of a tele-handler, enabled bearing/stool assemblies, which were secured together with heavy duty chains and ratchet strops, to be carried and unloaded into the material skids. The skid and winch system was also used to lower the stool half to each plinth location temporarily secured in position on the scaffolding frame.

Excavation works was carried to the existing concrete slab below the pipe, followed by the installation of 3 new concrete bases. Jacking stools, shot blasting, NDT and UT testing, and final application of a paint system were also carried out.

The remote location and the extremity of the low head pipeline incline made this project one of the most challenging to contend with, especially from a health and safety point of view, as did the weather conditions, the uneven terrain and working in spaces with very limited access. The pipeline location is also within a National Park site and therefore all stages of operations were subject to approval and planning was key to get all stages of the project completed on time.

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