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project summaries
nuclear safety engineering

SERCO Assurance

Civil/Structural Safety Case Assessments in support of MoD Naval Nuclear Propulsion Programme

Serco Assurance undertakes safety case reviews/assessments and provides advice to the Chairman of the Naval Nuclear Regulatory Panel (CNNRP) in accordance with MoD Site Authorisation conditions for all of the docking facilities for nuclear powered submarines and atomic weapons handling facilities. ISS Consultants is engaged to provide review services and detailed technical assessments of civil/structural safety case documentation produced by the Naval Bases.

Technical assessment work completed to date includes

HMNB Faslane

- Detailed reviews of structural analysis and deterministic assessment of the shiplift platform using ABAQUS FE analysis and BS5400 for normal operation, common fault and seismic load effects.
- Detailed reviews of structural analysis and deterministic assessments of 125te finger jetty Goliath crane using ABAQUS FE analysis and BS5400 for normal operation, common fault and seismic load effects.
- Detailed reviews of cofferdams and sheet piling designs for the southern area jetties for normal operation and seismic load demands.

RNAD Coulport

- Detailed assessment of 125te and 35/10te EOT portal framed box girder weapons handling cranes using ANSYS software, BS2573 and BS5400 for normal operation, fault conditions and extreme environmental (wind and tidal) conditions.

Royal Dockyard Devonport - Submarine Refit Complex

- Review of various aspects of the safety cases for the D154 project covering 9, 10, 14 & 15 docks.
- Review of the Preliminary Safety Report for the Remote Ammunitioning Facility Tamar (RAFT).
- Independent reviews and technical checks using STRAP analysis software, BS5950 and BS5400 of RDD design proposals for the new Reactor Access House facility at 9 Dock. Ongoing reviews of strengthening works to original design proposals.

Shore Test Facility at Vulcan (Dounreay)

- Assessment of the structural safety cases for various nuclear safety related plant

items. This included the reactor support system, piping system, module storage rack, submersible module removal container trolley, pond fuel transfer rig, 125te crane and the submarine hull and support cradle. The use of finite element analysis (ANSYS) interpretation of results, design criteria and deterministic checks were covered by the assessment.

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