



NS ACCREDITATION & STANDARDS

A Fearnley Procter Group Company

NS Accreditation & Standards (Gibraltar) Ltd.
3rd Floor, Montarik House, 3 Bedlam Court, PO Box 1331, Gibraltar
Tel: +350 200 61061 Fax: +350 200 64756



Equipment Design Review and Approval Process

Fearnley Procter NS-1™ Accreditation Programme

The Fearnley Procter NS-1™ Accreditation Programme is an independent evaluation service that is available to all suppliers of products, services and equipment to the Oil & Gas Industry. Trusted by end users and suppliers it provides an unbiased review of the capability and competence of a company to work to the NS-1™ and NS-2™ Standard.

This document outlines the process for Equipment Design Review and Approval to NS-1™ Quality Requirements for Manufacturing and Inspection of New Drilling and Well Completion Equipment.

Review Process

Initial Application

Manufacturers or Proprietors of equipment should complete the application form for initial review and qualification of their equipment relative to the applicable NS-1™ Standard, stating the desired level of review.

Four Design Review and Approval levels are currently available;

Level 1 - Quality & Inspection for Manufacture

This level is classified as being the lowest level of review, where the applicants Manufacturing, Assembly and Inspection procedures alongside Manufacturing Drawings are checked to ensure equipment meets requirements as specified within the appropriate section(s) of Standard NS-1™ or other related Standards such as NS-2™ if applicable.

Level 2 - Review for Failure Prevention (includes Level 1)

Along with the areas covered in a Level 1 review, Level 2 reviews ensure that the equipment has been designed with consideration to failure avoidance. Evaluations are conducted based on failure modes more commonly observed when equipment is used for purposes to which they were designed, and may require calculations to be performed for determining the maximum loading conditions equipment may be subjected to.

Level 3 - Fitness for Purpose (includes Levels 1 & 2)



Along with the areas covered in Level 1 and Level 2 reviews, Level 3 reviews ensure that equipment has been assessed for functionality with tests performed and witnessed by the reviewing engineer in order to demonstrate that the equipment is capable of meeting and performing the physical functions to which it was designed for.

Testing may be conducted either by:

- Surface Testing
- Down hole Testing

Level 4 - Measurement and analysis

All of or any combination of Levels 1, 2 and 3 plus a full process audit to assess, analyse and measure the company's capability to maintain the necessary engineering and manufacturing controls on a continual basis or for the duration of a specific contract life.

Preliminary Review

Project engineer shall identify the appropriate Section(s) of NS-1™ to which the equipment applies for review, and document the necessary information and materials the applicant is required to supply in order to satisfy a full technical appraisal.

Technical Review

Upon receipt of the requested applicant's materials, the project engineer shall commence his review using the applicable Sections of NS-1™ supplemented by appropriate product Standards and Specifications.

Where required, external assessments shall be conducted on the applicants Quality and Work Procedures for the manufacture, assembly, inspection or supply of the equipment.

If a Level 3 or 4 approval has been requested, the Job Engineer shall make arrangements to witness testing and audit for both demonstrating and ensuring that product is 'Fit for Purpose'.

Where the Job or Project Engineer detects that the equipment has either major design flaws, or that tests or services show poor performance, which indicate the equipment has a high probability of failure, the applicant is required to address the areas of concern to the satisfaction of both the Job and Project Engineer before the application is put forward to the NS-1™ Technical Review Committee.

Following our internal review process, an Engineering Report is sent to the NS-1™ Technical Review Committee requesting their comments and to initiate requests for either further tests or additional evidence to substantiate the applicant's claim on equipment integrity.



Acceptance and Issue of Certification Packages

On acceptance by the NS-1™ Technical Review Committee a Certificate of Approval shall be prepared, which will include the following information:

- Auditors final report
- NS-1™ Certificate
- NS-1™ License Agreement

Certificate of Approval shall document the following information:

- Date of Approval
- NS-1™ Certificate Number
- Review Number(s)
- Candidate/Facility Name and Address
- Product Description
- Review Level (1, 2, 3, 4)
- Scope of review including a general statement of Approval Cover
- Audited/Reviewed Against
- Valid Until date
- Any 'Exceptions' to and 'Conditions' of the approval

The covering letter shall inform the Applicant that Approval has been granted only in accordance with equipment reviewed and that any change to equipment (including name change) will invalidate the original Approval and responsibility for continual Approval rests with the custodian or original Applicant.

Technical Review Committees

The Technical Review Committee is an independent group of industry experts, with proven track records within relevant topic areas. It is convened whenever there is a new specification produced, or a new equipment design to be approved under the Fearnley Procter NS-1™ Accreditation Programme.

This independent committee will review the Fearnley Procter engineering report detailing the key findings of the equipment design review and ensure that FPG have followed the agreed workscope, been diligent in their process; and taken the appropriate areas into consideration. For example:

- how the equipment will perform in typical operating environments?
- is it designed with failure prevention in mind?
- how should it be maintained and inspected?
- how should it be manufactured and repaired?

Our guiding principle in all of this is to minimise the risk of equipment related non-productive-time.