

Annex I

INSPECTION/QUALITY ASSURANCE/QUALITY CONTROL

1 Inspection and Test Plan (ITP):

1. The Contractor must prepare an Inspection and Test Plan (ITP) comprising individual inspection and test plans for each specification item of this project, in accordance with the Quality Standard and its Quality Control Plan. The ITP must be submitted to the Inspection Authority for review and amended by the Contractor to the satisfaction of the Inspection Authority.
 - (a) Each ITP must contain all inspection points identified in the Specification highlighting any mandatory points that must be witnessed by the Inspection Authority and other "hold" points imposed by the Contractor to ensure the quality of the work.
 - (b) Milestone delivery date for the ITP is given in the Contract, however individual ITPs should be forwarded for review as developed.

2. Coding:
 - (a) Each Inspection and Test Plan (ITP) is to be coded for identification clearly demonstrating a systematic approach similar to the following:
(Contractor's system should be defined in its Quality Control Plan): e.g. Prefixes for Inspections, Test and Trials:
 - i. Prefix "1" is a Contractor inspection,
 - ii. Prefix "2" is a Contractor post repair test,
 - iii. Prefix "3" is a Contractor post repair trial,
 - (b) Specification items followed by assigned sequence numbers for inspection processes within each Specification Item; and
 - (c) Cross reference to a verification document number

3. Inspection and Test Plan Criteria:

Inspection criteria, procedures and requirements are stated in the specifications, drawings, technical orders and reference standards invoked by the Specifications. Test and trial documentation may also be included or referenced in the Specifications. An individual Inspection and Test Plan (ITP) is required for each Specification item.

 - (a) All ITPs must be prepared by the Contractor in accordance with the above criteria, its Quality Plan, and must provide the following reference information:
 - i. the ship's name;
 - ii. the Specification item number;
 - iii. equipment/system description and a statement defining the parameter which is being inspected;
 - iv. a list of applicable documents referenced or specified in the inspection procedure;
 - v. the inspection, test or trial requirements specified in the Specification;
 - vi. the tools and equipment required to accomplish the inspection;
 - vii. the environmental conditions under which the inspections are to be conducted and the tolerances on the inspection conditions;
 - viii. a detailed step-by step procedure of how each inspection is to be performed, conformance parameters, accept/reject criteria and recording of results, deficiencies found and description of corrective action(s) required;
 - ix. name and signature of the person who prepared the plan, date prepared and amendment level; and,
 - x. names and signatures of the persons conducting and witnessing the inspection, test or trial.

4. Contractor Imposed Testing:

Tests and trials in addition to those given in the Specification must be approved by the Inspection Authority.

- (a) Amendments: Amendment action for the Inspection and Test Plans must be ongoing throughout the refit and reflect the inspection requirements for unscheduled work. Amendments must be submitted as developed, but not less frequently than once every second week.

2 Conduct of Inspection

1. Inspections shall be conducted in accordance with the ITP and as detailed in D4.
2. The Contractor shall provide their own staff or subcontracted staff to conduct inspections, tests and trials; excepting that Technical Authority or Inspection Authority personnel may be designated in the specifications, in which case the Contractor shall ensure that their own staff are provided in support of such inspection/test/trial.
3. The Contractor shall ensure that the required conditions stated in the ITP prevail at the commencement of, and for the duration of, each inspection/test/trial.
4. The Contractor shall ensure that personnel required for equipment operation and records taking during the inspection/test/trial are briefed and available at the start and throughout the duration of the inspection/test/trial. Tradesmen or FSRs who may be required to effect minor changes or adjustments in the installation shall be available at short notice.
5. The Contractor is to coordinate the activities of all personnel taking part in each inspection/test/trial and ensure that safe conditions prevail throughout the inspection/test/trial.

3 Inspection Records and Reports

1. The Contractor on the inspection record, test or trials sheets as applicable shall record the results of each inspection. The Contractor shall maintain files of completed inspection records consistent with the Quality Standard and their Quality Plan for this project.
2. The Contractor's QC representative (and the FSR when required) shall sign as having witnessed the inspection, test or trial on the inspection record. The Contractor shall forward originals of completed inspection records, together with completed test(s) and/or trials sheets to the Inspector as they are completed.
3. Unsatisfactory inspection/test/trial results, for which corrective action cannot be completed during the normal course of the inspection/test/trial, will require the Contractor to establish and record the cause of the unsatisfactory condition to the satisfaction of the Inspector. The Crown representatives may assist in identification where appropriate.
4. Corrective action to remove cause of unsatisfactory inspections shall be submitted to the Inspector in writing by the Contractor, for approval prior to affecting such repairs and rescheduling of the unsatisfactory inspection/test/trial. Such notices shall be included in the final records passed to the Inspector.
5. The Contractor shall undertake rectification of defects and deficiencies in the Contractor's installation or repair as soon as practicable. The Contractor is responsible to schedule such repairs at their own risk.
6. The Contractor shall reschedule unsatisfactory inspections after any required repairs have been completed.
7. Quality Control, Inspection and Test records that substantiate conformance to the specified requirements, including records of corrective actions, shall be retained by the Contractor for three (3) years from the date of completion or termination of the Contract and shall be made available to the Inspection Authority upon request.

4 Inspection and Trials Process

1. Drawings and Purchase Orders

- a. Upon receipt of two (2) copies of each drawing or purchase order, the Designated Inspector will review their content against the provisions of the specification. Where discrepancies are noted, the Inspector will formally advise all concerned, in writing using a Discrepancy Notice. The resolution of any such discrepancy is a matter for consultation between the Contractor and other Crown Authorities.

The Inspector is NOT responsible for the resolution of discrepancies.

2. Inspection

- a. Upon receipt and acceptance of the Contractor's ITP, inspection will consist of a number of Inspection Points supplemented by such other inspections, tests, demonstrations and trials as may be deemed necessary by the Inspector to permit him to certify that the work has been performed in compliance with the provisions of the specification. The Contractor shall be responsible for notifying the Designated Inspector of when the work will be available for inspection, sufficiently in advance to permit the Designated Inspector to arrange for the appropriate inspection.
- b. The Inspector will inspect the materials, equipment and work throughout the project against the provisions of the specification and, where non-conformances are noted, will issue appropriate **INSPECTION NON-CONFORMANCE REPORTS**.
- c. The Contract requires the implementation of a Quality Assurance/Quality Control system, so the Inspector shall require that the Contractor provide a copy of its internal inspection report pertaining to a work item before conducting the requested inspection. If third party inspections are required by the Contract (e.g. inspections by a certified CWB 178.2 welding inspector), the reports of these inspections shall be required before the Work is inspected by the Inspection Authority .
- d. The QA/QC system is a requirement, so if the documentation is presented to the Inspector prior to an inspection stating that the Work is satisfactory but the Inspector finds that the Work has not been satisfactorily inspected, the Inspector shall issue an Inspection Non-conformance Report against the Work and another against the failure of the Contractor's QA/QC system.
- e. Before carrying out any inspection, the Inspection Authority shall review the requirements for the Work and the acceptance and/or rejection standards to be applied. Where more than one standard or requirement is called up and they are potentially conflicting, the Inspector shall refer to the order of precedence in the Contract to determine the standard or requirement to be applied.

3. Inspection Non-conformance report

- a. An Inspection Non-conformance Report will be issued for each non-conformance noted by the Inspector. Each report will be uniquely numbered for reference purposes, will be signed and dated by the Inspector, and will describe the non-conformance.
- b. When the non-conformance has been corrected by the Contractor and has been re-inspected and accepted by the Inspector, the Inspector will complete the Report by adding an appropriate signed and dated notation.
- c. At the end of the project, the content of all Inspection Non-conformance Reports which have not been signed-off by the Inspector will be transferred to the Acceptance Documents prior to the Inspector's certification of such documents.

4. Tests, Trials, and Demonstrations

- a. To enable the Inspector to certify that the Work has been performed satisfactorily, in accordance with the Contract and Specifications, the Contractor shall schedule, co-ordinate, perform, and record all specified Tests, Trials and Demonstrations required by the Inspector as detailed in H4.
- b. Where the Specifications contain a specific performance requirement for any component, equipment, sub-system or system, the Contractor shall test such component, equipment, sub-system or system to the satisfaction of the Inspector, to prove that the specified performance has been achieved and that the component, equipment, sub-system or system performs as required by the specifications.
- c. Tests, trials and demonstrations shall be conducted in accordance with a logical, systematic schedule which shall ensure that all associated components and equipment are proven prior to sub-systems demonstration or testing, and that sub-systems are proven prior to system demonstration or testing.
- d. Where the Specifications do not contain specific performance requirements for any component, equipment, sub-system or system, the Contractor shall demonstrate such component, equipment, sub-system or system to the satisfaction of the Inspector.
- e. The Contractor shall submit their Inspection and Test Plan as detailed in H2.
- f. The Contractor shall co-ordinate each test, trial and demonstration with all interested parties, including the Inspector; Contracting and Technical Authorities; regulatory authorities; Classification Society; Sub-contractors; etc. The Contractor shall provide the Inspector and other Crown Authorities with a minimum of five working days notice of each scheduled test, trial, or demonstration.
- g. The Contractor shall keep written records of all tests, trials, and demonstrations conducted as detailed in H4. The Contractor may utilize the **PWGSC STANDARD TESTS & TRIALS RECORD SHEETS** which can be customized by the Contractor to suit individual test or trial requirements. These Record Sheets are available from the Inspection Authority in digital format.
- h. The Contractor shall in all respects be responsible for the conduct of all tests and trials in accordance with the requirements of the Contract.
- i. The Inspection Authority and the Technical Authority reserve the right to defer starting or continuing with any sea trials for any reasonable cause including but not limited to adverse weather, visibility, equipment failure or degradation, lack of qualified personnel and inadequate compliance with safety standards