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ARAB ENGINEERING BUREAUS

21 FINAL INSPECTION AND HANDOVER PROCEDURES

21.1 GENERAL PROCEDURES FOR INSPECTION AND HANDOVER

21.1.1 Scope

- 1 This Part specifies the requirements and procedures associated with the inspection and handover of the Works.
- 2 Related sections and Parts are as follows:

This Section
Part 1 Introduction
Part 7 Submittals
Part 9 Materials
Part 20 Clearance of Site

Section 2 Quality Assurance and Quality Control
Section 9 Mechanical and Electrical Equipment
Section 30 Project Testing and Commissioning

21.1.2 Definitions

- 1 **Engineer:** Means the party appointed by the Owner to administer the Contract
- 2 **Nonconformity:** Any part of the Works not executed, provided or completed in accordance with the Contract. For the avoidance of doubt and without limiting the generality of the expression the term shall be taken to include any item of Plant, material, goods or work incorporated or used in the Works which does not or may not conform to the relevant quality standards or pass the tests prescribed in or to be inferred from the contract
- 3 **Owner:** Means the party for whom the Project is being undertaken and to whom the handover of the final product will be made.

21.1.3 Pre-requisite for Handover Inspection – Completion Certificate

- 1 The Initial Project Handover Meeting involving all parties should be held six months, but no later than four months prior to construction completion.
- 2 The inspection shall be carried out during the construction stage as recommended by the Engineers representative.
- 3 Upon Completion of Part of work for the whole project, The request shall be forwarded to the Owner by the Engineer's Representative and a suitable date for the inspection shall be arranged by the Owners and issue the snags to the Contractor with a view to take over when whole project is completed.
- 4 The inspection shall be carried out with minimum required documents like Supervision Consultant snags, draft As Built and required test results of the assets.

- 5 When the Contractor has completed and cleaned the Works to the satisfaction of the Engineer the Contractor shall request a final inspection. The request shall be forwarded to the Owner by the Engineer's Representative and a suitable date for the inspection shall be arranged. The Contractor, Engineer's Representative, maintenance department (if any) and the supervising consultant (if any) shall be present. A list of outstanding items (if any) shall be agreed and issued to the Contractor.
- 6 Upon completion of the listed outstanding items a further inspection shall be requested by the Contractor, the request shall be forwarded to the Owner by the Engineer's Representative and a suitable date for the inspection shall be arranged. The Contractor, Engineer's Representative, maintenance department (if any) and the supervising consultant (if any) shall be present.
- 7 A list of any items still outstanding shall be issued to the Contractor. If any of these are deemed to be significant the Contractor shall complete these items and then request another inspection as described in clause 21.1.3 5.

21.1.4 Pre-requisite for issuing the Completion Certificate

- 1 The Contractor shall complete the following to the satisfaction of the Engineer before requesting the pre-handover Inspection:
 - (a) Submit final manufacturer certification, guarantees, warranties and similar documents.
 - (b) Submit occupancy permits, operating certificates, final inspection and test certificates and similar releases enabling full and unrestricted use of the Works.
 - (c) Submit record drawings, operation and maintenance manuals, final project photographs, damage or settlement surveys, property surveys and similar physical items.
 - (d) Complete submittal of record documents.
 - (e) Make final changeover of locks and deliver the keys to the Engineer.
 - (f) Complete start-up, testing of system, and training of the Owner's operations and maintenance personnel; submit equipment operating data as well as all test reports and test data required by the Contract.
 - (g) Dismantle and remove temporary facilities and services from the Site; this includes utilities, construction tools, buildings and facilities, mock-ups, and similar elements
 - (h) Complete final cleaning.
 - (i) Repair and restore exposed finishes which have been marred or otherwise damaged.
 - (j) Handover all spare parts, tools and maintenance equipment.
 - (k) If agree by the Engineer, partial handing over is acceptable, if all the above mentioned requirements have been met.
 - (l) Closure of all identified Nonconformity to the satisfaction of the Engineer
- 2 When the Contractor has completed and cleaned the Works to the satisfaction of the Engineer the Contractor shall request a Final Inspection. The request shall be forwarded to the Owner by the Engineer's Representative and a suitable date for the inspection shall be arranged. The Contractor, Engineer's Representative, maintenance department (if any) and the supervising consultant (if any) shall be present. A list of outstanding items (if any) shall be agreed and issued to the Contractor.

- 3 Upon completion of the listed outstanding items a further inspection shall be requested by the Contractor, the request shall be forwarded to the Owner by the Engineer's Representative and a suitable date for the inspection shall be arranged. The Contractor, Engineer's Representative, maintenance department (if any) and the supervising consultant (if any) shall be present.
- 4 A list of any items still outstanding shall be issued to the Contractor. If any of these are deemed to be significant the Contractor shall complete these items and then request another inspection as described in clause 21.1.2-2.
- 5 In respect of pumping station or Works involving mechanical or electrical equipment if items outstanding are deemed not to be significant or if no outstanding items remain then a 7 day commissioning and running test shall be initiated. On completion of all tests and agreement by the Engineer's Representative that the plant is considered operable then it shall be handed over. A 14 day training period for the maintenance department staff on the operation of the pumping station shall commence.
- 6 For works that have no mechanical or electrical equipment if the outstanding items are deemed not to be significant or if no outstanding items remain the Works inspected shall be handed over.

21.1.5 Approvals from Public Authorities

- 1 The Contractor shall obtain all clearance certificates and approvals required as a prerequisite to connecting the Works to the permanent water and/or power supply.
- 2 The Contractor shall co-ordinate with the Engineer to obtain the necessary documents from the Qatar General Electricity & Water Corporation regarding connection to the permanent water and/or power supply.

21.1.6 Handover

- 1 When the Contractor considers that the Works are complete he shall submit the following:
 - (a) A certificate stating that the Works are complete and that all the requirements of the Project Documentation have been met.
 - (b) A certificate stating that the Works have been inspected.
 - (c) A certificate from the appropriate Municipality regarding cleanliness of the Site.
 - (d) Approval from the Ashghal Public Works Authority regarding satisfactory trench reinstatement in the Highway (if applicable).

21.2 ITEMS TO BE PROVIDED BY THE CONTRACTOR

21.2.1 Provision of Tools, Spare Parts and Maintenance Materials

- 1 The Contractor shall provide all tools, spare parts and maintenance materials specified in the Project Documentation.
- 2 The Contractor shall provide an itemised list of all the items to be furnished under this Clause. Each item to be furnished shall be given a unique reference number. The list shall include the reference number, a description of the item and the appropriate Specification Section and Paragraph.

- 3 All the items furnished under this Clause shall be packaged for long term storage. Any items requiring special storage conditions shall be brought to the attention of the Engineer.
- 4 All items furnished under this Clause shall be provided with a mark or tag for identification purposes. The mark or tag shall include the reference number detailed in Clause 21.2.1-2.
- 5 Unless otherwise instructed, all items furnished under this Clause shall be delivered to the Government Stores in accordance with the relevant provision of Part 9 of this Section, Materials.

21.2.2 Guarantee Warrantees and Bonds

- 1 The Contractor shall provide notarised copies of all guarantees, warranties and bonds as required by the Project Documentation. The guarantees, warranties and bonds should be assembled in a binder with a durable plastic cover, complete with a table of contents.
- 2 The start of the warranty or guarantee period shall be either:
 - (a) The date when any item is placed into full time operation for the Government's benefit and with the Engineer's approval.
 - (b) The date of issue of the completion certificate.
 - (c) Warranty / Guarantee terms and conditions if any shall be approved by the Engineer in writing prior to purchase or start of works.

21.3 MECHANICAL AND ELECTRICAL WORKS

21.3.1 Operation Data

- 1 The Contractor shall provide all operating data for all mechanical and electrical equipment supplied under the Contract.
- 2 The operating data shall be presented on A4 size paper in ring binder with a durable plastic cover.

21.3.2 Operation and Maintenance Manuals

- 1 The Contractor shall provide approved Operation and Maintenance Manuals in accordance with the relevant provisions of Section 9, Mechanical and Electrical Equipment and Part 7 of this Section, Submittals.

21.3.3 Operational, Field and Performance Testing

- 1 After all construction and starting is complete and before taking-over of any part of the Works, the Contractor shall perform operational, field and performance tests as called for in the Project Documentation.
- 2 The Contractor shall demonstrate operation of the facilities of the Engineer showing proper sequence of operation as well as satisfactory performance of the system and individual components. Any improper operation of the system or any improper, neglected or faulty construction shall be repaired or corrected to the satisfaction of the Engineer. The Contractor shall make such changes, adjustments or replacement of equipment as may be required to make same comply with the Specifications, or replace any defective parts or material.

- 3 Failure of the system to perform at the specified level at the time of testing will be the responsibility of the Contractor. In the event of failure of equipment to meet the specified performance, the Owner reserves the right to reject such equipment or system, withhold retention money or make claims on the Performance Bond.
- 4 The Contractor shall submit a consolidated schedule of operation, field and performance tests no later than three (3) months before the schedule start of the first test and weekly a schedule of tests to be carried out the following week. The Contractor shall inform the Engineer not later than 24 hours in advance of changes in the scheduling of a test.
- 5 For all specified performance tests, the Contractor shall prepare and submit the following:
 - (a) A draft test procedure no later than two (2) months in advance of the schedule test date.
 - (b) A final test procedure no later two (2) weeks in advance of the scheduled test date.
 - (c) A test report within two (2) weeks of the successful completion of the test.

21.4 PROJECT RECORD DOCUMENTS

21.4.1 General

- 1 Project Record Documents shall be kept separate from construction/working documents.
- 2 Project Record Documents shall be stored in facilities that provide a suitable environment to prevent damage or deterioration and to prevent loss.
- 3 Project Record Documents shall include, but not be limited to the following:
 - (a) Drawings.
 - (b) Specifications.
 - (c) Addenda.
 - (d) Variation orders.
 - (e) Correspondence.
 - (f) Transmittals
 - (g) Inspection and Test Records
 - (h) Quality Records

21.4.2 Record Drawings

- 1 Record drawings shall be clearly and correctly “red-marked” / or “red-lined” by the Contractor to show all changes made during the construction process. The record drawings shall show the Works as executed in accordance with the relevant provisions of Part 7 of this Section - Submittals.

21.4.3 Record Specifications

- 1 Record specifications shall be clearly and correctly annotated to show all changes made during the construction process.

21.4.4 Maintenance Period Final Inspection

- 1 During the last month of the period of maintenance the Engineer will notify the maintenance department that the maintenance period is about to expire. An inspection of the Works by the Engineer's Representative, maintenance department, and the Contractor shall be undertaken to verify that all outstanding items have been completed.

21.4.5 Handover Dossiers

- 1 No drawings and quality records shall be accepted or included in the handover dossiers until it has been approved by the Engineer.
- 2 Further, quality records or documents still subject to comments by the Engineer shall not be included in the handover dossiers unless agreed by the Engineer.
- 3 Documents rejected by the Engineer shall not be included in the handover dossiers. The Contractor is responsible for obtaining an approved status for all documents, drawings and quality records on the project.

21.4.6 Project Testing and Commissioning

- 1 This part shall be read in conjunction with Section 30 Project Testing and Commissioning

END OF PART