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Section - 07

Project Management, Schedule and Implementation Plan

This section describes the project management, schedule, quality assurance and implementation plan requirements for this package.

7.1 Project Management

The Contractor shall assign a Project Manager with the authority to make commitments and decisions that are binding on the Contractor. The Project Manager's responsibility shall include interface and coordination with the Project Contractor. The Employer will designate a Project Manager to co-ordinate all the Employer project activities. All Project correspondence and communications between the Employer and the Contractor shall be co-ordinated through the Project Managers.

The project shall be staffed from the list of project management and engineering personnel presented in the proposal. Principal participants shall have previous experience in a similar position on at least two other projects of similar scope to this project. The assignment and reassignment of the Contractor's principal participants in the project shall be subject to the Employer's approval.

7.1.1 Reporting Period

The Project Manager shall provide updated project schedules and complete progress reports on monthly basis for the duration of the project. All references to the reporting period throughout this Specification shall refer to this monthly period.

7.1.2 Progress Meetings

The Project Managers shall schedule and attend Progress Meetings as deemed necessary but no less than once every two months.

7.1.3 Transmittals

Every document, letter, progress report, change order, and any other written or electronic media transmissions exchanged between Contractors and the Employer shall be assigned a unique transmittal number. Discussions and phone calls where project related information is exchanged shall be documented in a transmittal. The Contractor shall maintain a correspondence index and assign transmittal numbers consecutively for all Contractor documents. The Employer will maintain a similar correspondence numbering scheme identifying documents and correspondence that the Employer initiates.

7.1.4 Quality Assurance

7.1.4.1 General

The Contractor shall adhere to a Quality Assurance (QA) program for the preparation of all Contract deliverables, including documentation and hardware. The program shall provide for early detection of actual or potential deficiencies, timely and effective corrective action, and a method of traceability of all such deficiencies.

The Bidder's proposal shall include the relevant ISO 9000 certificates from the main Bidder and from all subcontractors which have a major part (over 10%) of the delivery.

The relevant ISO 9000 standards to be provided are the following:

- ISO 9001: model for quality assurance in design, development, production, installation and servicing

- ISO 9002: model for quality assurance in production and installation

- ISO 9003: model for quality assurance in final inspection and testing

The Quality Assurance procedures, documentation standards, and software development procedures which were included with the Bidders proposal will be incorporated into the Contract.

7.1.4.2 Quality Assurance System and Requirements

The ISO 9001 Certificate and the assessment and visit reports shall be available to Employer throughout the duration of the contract.

The Quality Assurance program shall be outlined by the Contractor and shall be finally accepted by the Employer after discussions before the award of contract. A Quality Assurance program of the Contractor shall generally cover but not limited to the following:

(a) Organization structure for the management and implementation of the proposed quality assurance program.

(b) Documentation control system.

(c) Qualification data for Contractors key personnel

(d) The procedure for purchases of materials, parts/components and selection of sub-Contractors services including vendor analysis, source inspection, incoming raw material inspection, verification of material purchases etc.

(e) System for shop manufacturing including process controls and fabrication and assembly controls.

(f) Control of non-conforming items and system for corrective action.

(g) Control of calibration and testing of measuring and testing equipments.

(h) Inspection and test procedure for manufacture.

(i) System for indication and appraisal of inspection status.

(j) System for quality audits

(k) System for authorizing release of manufactured product to Employer.

(l) System for maintenance for records.

(m) System for handling storage and delivery

(n) A quality plan detailing out the specific quality control procedure adopted for controlling the quality characteristics of the product.

The Quality Assurance Plan shall be mutually discussed and approved by Employer after incorporating necessary corrections by the Contractor as may be required.

This Quality Assurance Plan shall then form part of the contractual documentation and shall not be changed without prior agreement with the Employer. The Contractor shall be required to submit all the Quality Assurance Documents as stipulated in the Quality Assurance Plan at the time of Employer's inspection of equipment/material. The Employer or his duly authorised representatives reserve the right to carry out Quality Audit and Quality Surveillance of the systems and procedures of the Contractor/his vendor's Quality Management and Control Activities.

7.1.4.3 Variance Reporting and Processing

An automated variance recording and tracking system shall be placed in service at least one month before the initially scheduled beginning of the FAT. This system shall be designed to record and track variances for documentation deficiencies, functional deficiencies, performance deficiencies, procedural deficiencies (as when deviations from contractually required QA procedures are observed), and test deficiencies (as when the System cannot satisfactorily pass a step within a test procedure).

Variances may be initiated by both Contractor and Employer personnel and shall be classified as follows:

(a) Open (recorded but not necessarily agreed to)

(b) Assigned (denoting acceptance by the Contractor)

(c) Pending (denoting fixed, in the Contractors opinion, and awaiting retest or verification)

(d) Resolved (denoting Employer acceptance or verification).

For the tracking of the variances and to support the automatic printout of subset lists, the following information fields shall be stored for each variance:

(a) Variance number (automatically assigned)

(b) Date initially recorded

(c) Status (open/assigned/pending/resolved)

(d) Date current status recorded

(e) Names of involved Employer personnel

(f) Names of assigned Contractor personnel

(g) Subsystem involved

(h) Test name (where applicable)

(i) Description (up to five lines in a full printout and part of the first line in a one-line-per-variance printout)

(j) Urgency description (1, 2, or 3).

The variance recording and tracking system shall allow full printouts of all of the above information, condensed printouts of abbreviations of the above information (one-line-per-variance) and shall produce subsets of the variances based on searches of the fields singly or in combinations. For example, it shall be possible to produce a printout of all the variances (and only those variances) that were at level 1 or 2 urgency, concerning a specific named subsystem, had open or assigned status, and were initiated within a named period.

A variance status summary shall be included in the monthly project progress reports, and up-to-date variance reports shall be made available to Employer on demand. The variance recording and tracking system shall be subject to approval by Employer.

7.1.4.4 Additional Quality Assurance Requirements

The Employer shall have access to the Contractors premises at any mutually agreed time and be provided access to inspect and assess the quality system should any specific need arise. Employer shall also be able to conduct on site reviews as mutually agreed.

Employer shall have access to any relevant documentation for verification that quality procedures are in accordance with the contract-specific quality plan.

7.1.5 Document Review and Approval Rights

To ensure that the proposed systems conform to the specific provisions and general intent of the Specification, the Contractor shall submit documentation describing the systems to the Employer for review and approval.

All standard documentation shall be submitted to the Employer within 60 days of Contract Award Date. The Employer will respond with written comments to the Contractor within fifteen(15) calendar days after receipt of the documents. Documents requiring correction must be resubmitted by the Contractor to the Employer within 15 calendar days. The Employer will respond to resubmitted documents within fifteen (15) calendar days after receipt of the document. No implementation schedule relief is to be implied for documents requiring correction and resubmission to the Employer.

The Employer shall have the right to require the Contractor to make any necessary documentation changes at no additional cost to the Employer to achieve conformance with the Specification.

Any purchasing, manufacturing, or programming implementation initiated prior to written the Employer approval of the relevant documents or drawings shall be performed at the Contractor risk. Review and approval by the Employer shall not relieve the Contractor of its overall responsibilities to satisfy system functions and performance requirements in accordance with the Specification.

To help the Employer manage the review and approval of documents during any given period, the Contractor shall stagger the release of documents over the time allocated in the project schedule. The number and size of documents shall be factored into the document release schedule.

7.2 Project Schedule

The project schedule shall consist of an implementation schedule, a documentation schedule and a training schedule.

7.2.1 Implementation Schedule

The Contractor shall produce and maintain the implementation schedule using Microsoft Project. A soft copy of the implementation schedule files shall also be provided to the Employer. The overall project plan shall consist of a Milestone Plan and a detailed Schedule Plan.

The Contractor shall provide a critical path analysis report and a manpower resource analysis report from MS Project. Other standard reports will be defined during the Work statement.

Within two weeks of contract signing, the Contractor shall submit detailed project schedule, as described below. The project schedule shall include all tasks to track overall direction and integration of the project from inception through completion. The Schedule Plan shall be

developed utilizing the concept of Work Breakdown Structures. No task shall be greater than 3 weeks in duration.

The implementation schedule shall include the project milestones defined in Volume I and Contractor activities. The project schedule shall be an accurate representation of the progress and planned activities of the project. Activities shall be scheduled only on customary the working days.

The actual progress made to date and the scheduled delivery date for the completed systems shall be closely monitored by both the Contractor and the Employer project managers. The following information shall be reported to the Employer in a clear and concise manner using the tabular and graphic capabilities of the project management software:

(a) An overview and general assessment of all the Employer and Contractor activities and any progress or delays in these activities since the last reporting period

(b) Identification of tasks in the critical path together with an analysis indicating any required remedial action

(c) The amount of contingency time (float) remaining in the schedule

(d) Information on each task, including:

  (1) Estimated start and finish dates
  (2) Any change in the estimated dates since the last reporting period
  (3) Estimated total number of calendar-days to complete the task
  (4) Percent of task completed
  (5) An indication of whether the start date was manually entered or computed.

(e) Total project resources

(f) The tasks to begin in the next two reporting periods

(g) The tasks to be completed in the next two reporting periods

(h) The tasks completed in the last two reporting periods.

The content and format of the project schedule shall be subject to the Employer approval. The Contractor shall update and submit the project schedule to the Employer at least one week prior to each progress meeting.

7.2.1.1 Contractor Activities

The implementation schedule shall be compiled by the Contractor summarizing all activities, and shall include but not be limited to the following:

(a) Survey, Design & Engineering
(b) Hardware purchases, development, and integration
(c) Hardware production schedules
(d) Documentation preparation and release
(e) Documentation revision and release following the Employer review
(f) Type Tests and Factory testing
(g) Shipment
(h) Receipt, forwarding and staging
(i) Installation
(j) Site acceptance testing
(k) Availability test.

Each scheduled task shall have an estimated duration for completion and predefined relationships with other tasks. Relationships shall be used to enforce the logical progression of work in as much as certain tasks cannot start until others have been completed.

7.2.1.2 The Employer Activities

The implementation schedule shall contain all the Employer activities required in order for the Contractor to complete their system, including the following:

(a) Document reviews and approvals
(b) Licensing and Regulatory Clearances, if any
(c) Participation in all levels of testing and training
(d) Any major site preparations, if required.

7.2.2 Documentation Schedule

The documentation schedule shall include an entry for each document and drawing to be delivered throughout the project. Each documentation schedule entry shall include the document or drawing title, number, revision level, actual or future submittal date for the Employer review or approval, date of completion of review or approval by the Employer, and outcome of review or approval by the Employer. When the Employer requires correction to any document, the documentation schedule shall be updated with a new entry for the next revision of the document. The content and format of the documentation schedule shall be subject to the Employer approval.

The documentation schedule shall allow for at least two submissions of each document requiring review or approval. The Employer shall be allowed a minimum of thirty calendar days for document review or approval.

7.2.3 Training Schedule

The training schedule shall identify the dates of all of the training courses. The Contractor shall work with the Employer to determine the training schedule. The training schedule shall be subject to the Employer approval.

The Appendices provide training requirement summaries for this package. The training schedule shall accommodate the availability of personnel in so much as it is possible.

7.3 Progress Reporting

With the intent to assure quality management and project progress as per the implementation schedule, progress reports submitted for each reporting period and Progress Review Meetings shall focus on the following:

7.3.1 Monthly Progress Reports

A Monthly Progress Report shall be prepared by the Project Manager that includes inputs from all its subsystem. The soft & hard copy of report shall be made available to the Employer by the 10th working day of each month and shall include but not be limited to:

(a) Updated project schedule highlighting any deviations from the previous issue of the project schedule

(b) Explanation and anticipated effect of each schedule deviation and its implication to the Employer.

(c) Schedule recovery plan for any deviation incurring a delay in delivery date. (All delays shall be factored into the project schedule as soon as they are known to the Contractor.)

(d) A summary of activities performed by the Contractor and the Employer during the previous reporting period

(e) An updated list of all correspondence transmitted and received by the Contractor

(f) Updated documentation schedule

(g) Updated training schedule

(h) List of all Contractor personnel and the Employer personnel resident at the Contractor facility, identifying all activities performed by each person and the activities scheduled for the next two reporting periods

(i) Updated list of Contractor and the Employer action items with status, description of required information, and required resolution dates

(j) Summary of pending and upcoming Contractor and the Employer activities during the next two reporting periods along with required completion dates

(k) Status of unresolved contract questions and change requests

(l) Summary of variances

(m) Log of invoice status

(n) Description of current and anticipated project problems and steps to be taken to resolve each problem.

7.3.2 Quarterly Progress Review Meetings

Progress Review Meetings shall be scheduled by the project managers and attended by the Contractor to review progress of the project. Progress meetings shall be used to review the progress reports for the previous reporting periods, written correspondence exchanged since the last meeting, and open action items.

The Contractor shall also attend technical meetings as required to discuss technical aspects of the project and to review the Employer comments on approval documents. When appropriate, these splinter meetings shall be conducted as extensions to the progress meetings.

At least one-half of all meetings shall be held at the Employer's offices. The Contractor Project Manager shall record the minutes of each meeting and shall provide hard copies to the Employer and all attendees on the same day whenever possible, but not later than within two working days after the meeting. Table 7-1 provides a suggested agenda for Progress Review Meetings.

Table 7-1:
Suggested Progress Review Meeting Agenda

Item:	Title:	Description:
1.	**Meeting Minutes:**	Review minutes from previous meeting, with comments
2.	**Open Action Items:**	Review all outstanding action items
3.	**Progress Review:**	Review with participating Project Managers and Contractor, most recent project schedule. Update schedule and develop Action Items.
4.	**Technical Discussion:**	Discuss Technical Issues.
5.	**Action Items:**	Assign responsibilities for new action items.
6.	**Administrative Matters:**	Discuss administrative matters
7.	**Action Items:**	Assign responsibilities for action items.

Table 7-1:
Suggested Progress Review Meeting Agenda

8.	**Next Meeting:**	Schedule time and place for next meeting and agree on agenda
9.	**Adjourn:**	Adjourn meeting.

7.4 Implementation Plan & Schedule

The implementation schedule for this package Eighteen (18) months from the date of award. The fibre optic links which are essentially required for replacement of microwave shall be implemented on priority basis. These links shall be identified during L-2 Schedule finalisation.

The bidder shall submit a preliminary project implementation schedule along with the bid. The detail project implementation schedule shall be submitted by the Contractor after award for Employer's approval, which shall include at least the following activities:

(a) Site Survey
(b) Documents, DRS, Drawing submission and approval
(c) Type Testing Schedule
(d) Manufacturing
(e) Factory Testing Schedule
(f) Dispatch Schedule
(g) Receipt, Storage, Installation Schedule
(h) Site Testing Schedule
(i) Training Schedule

7.4.1 Implementation Steps

The basic implementation steps pertaining to the fibre optic cabling system under this package are:

(a) Design & parameterise the fibre optic cable network including implementation strategies.

(b) Conduct site/route surveys, identify equipment location and required site preparation.

(c) Subsystems design; manufacture, type test (if applicable) & factory test

(c) Shipping, installation and field-testing for above.

(d) Site Acceptance testing

Though not detailed, the above steps are intended to encompass all relevant work required to provide the Employer a fully working integrated telecommunication network supporting communication requirement under this project.

7.4.2 Implementation phases

The above implementation steps shall be organised package wise in a co-ordinated manner and managed in various overlapping phases

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