Step 17

Preview of the Detailed Engineering Phase

During the detailed engineering phase, the system designs in the project definition must be transformed into sufficiently detailed commercial conditions and technical specifications to enable contractors to prepare bids for all necessary equipment and services.

These conditions and technical specifications form the contract bidding documents, the Requests for Proposal (RFP). This step previews the contents of the RFP and discusses the prerequisite survey and final design work.

The parts of the project to be implemented using in-house resources; i.e., parts not contracted, will need to have appropriate technical specifications prepared but, of course, commercial conditions are not needed.

17.1 Request for Proposal

Preparing the RFP entails developing the following documents for each contract identified in the project definition:

- Scope of Work,
- Technical Requirements,
- Equipment Specifications,
- Supporting Information,
- Bidding Requirements, and
- Contract Forms and Contract Conditions.

These documents must be carefully developed to ensure that they

- accurately describe the work and performance required;
- encourage competitive bids from eligible suppliers;
- allow submitted proposals to be efficiently and effectively evaluated; and
- create a manageable contract framework.

Steps 18 and 19 provide checklists and considerations to help the engineer write specifications and requirements for international competitive bidding.

17.2 Surveys and Final Design

Depending on the type of contract to be let, various engineering efforts are needed before writing the technical specifications. Furnish-only contracts require the most in-house engineering, and turnkey contracts the least.

Field surveys are needed to verify any previous design assumptions and to obtain the following data:

at existing sites

- space for an equipment room,
- power capacity available and its characteristics,
- tower adequacy for additional antennas and feeder lines (loading and space),
- cable tray and duct capacity, and
- waveguide building entry ports;

at new sites

- site access for installation and maintenance,
- power,
- path profile if radio is to be used,
- cable route if cable is to be used,
- soil type for foundation designs, and
- any special conditions, obstacles, security issues, etc.

If a model was used in the feasibility study, examine each service area and specify in detail the equipment quantities, locations, and physical routes. If a model was not used, review and verify the original design quantities, locations, etc.