

**PROJECT CONTROLS REQUIREMENTS**

I. GENERAL

Within the following paragraphs is a listing of Project Control Requirements that are mandatory after award and are to be submitted to CONTRACTOR as specified. Nothing herein shall limit SUBCONTRACTOR from performing normal functions not herein specified.

II. PROJECT SCHEDULE

Significant construction activities may be ongoing in and around the areas of work included in this scope of work by other SUBCONTRACTORS and their lower tier SUBCONTRACTORS. No SUBCONTRACTOR has exclusive use of any area or areas of work and must coordinate this work in conjunction with others working on the site. Ultimate resolution and site coordination lies with the CONTRACTOR'S Resident Construction Manager.

III. PROJECT CONTROLS REQUIREMENTS

The successful SUBCONTRACTOR will be bound contractually to implement the following within thirty (30) days after SUBCONTRACT award.

A. Detailed Project Schedule

Within thirty (30) days after award, SUBCONTRACTOR shall submit a time phased Critical Path Method (CPM) project schedule. This schedule, once approved by the Contractor, will become the baseline schedule for measuring progress. Upon approval, the only changes to be made to the baseline will be those agreed upon through subcontract modifications. The schedule should be a logic driven bar chart organized by Work Breakdown Structure (WBS) and inclusive of engineering, procurement, fabrication, testing, shipment, construction and completion/closeout activities to the extent of the scope of work of the subcontract.

The schedule shall include pertinent milestones to be used as progress indicators for reporting in the Monthly Progress Report (to be outlined later in the specifications). The schedule shall include ample allowance for normal delays and difficulties, which may be encountered in work of this nature including weather, holidays, etc. The content shall be as described below.

Engineering

This schedule shall be sufficiently detailed so that all documentation deliverables and submittals are clearly defined for preparation timeframes, to submittal timeframes, to review timeframes, to acceptance and approval timeframes. The documentation deliverables and submittals will be as specified in the SUBCONTRACT.

Fabrication/Demolition

The CPM Schedule must identify SUBCONTRACTOR'S plan of execution for the fabrication, delivery and demolition phases of the WORK including the portions performed by lower-tier SUBCONTRACTORS. Consideration must be given to interfaces with other SUBCONTRACTORS and milestone completion dates. The schedule shall be sufficiently detailed so that SUBCONTRACTOR interfaces and requirements, activities as identified in the specification, and milestone completion dates are readily apparent.

Level of acceptable data

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- Detailed logic diagram integrating all elements of the WORK.
- All activities must have identifiable start dates.
- All activities must have identifiable finish dates.
- All activities must be discrete activities (by unit) with measurable progress of a tangible product.
- All activities should be longer than 1 week but less than 2 months.
- It should be noted that a computerized schedule is preferred not required, and that a manually drawn schedule is acceptable, however, a critical path(s) must be portrayed regardless of approach.
- Include a legend explaining the symbols used.
- The title block must show the project name, SUBCONTRACTOR'S name, and date of latest issue.

The detailed CPM schedule must roll-up to a management level one page milestone summary schedule. This can be in a bar chart format to represent the total project status and supported by a detailed logic diagram in the level of detail described above. The schedule shall be maintained weekly with updates to Project Controls no later than 0800 on Mondays and kept current throughout the job. Modifications to the schedule which affect completion dates must be approved in writing by both the CONTRACTOR and SUBCONTRACTOR. Receipt and acceptance of the detailed project schedule is a prerequisite to any payment to Subcontractor.

### B. Detailed Price Breakdown

Within two (2) weeks after award SUBCONTRACTOR shall submit a detailed price breakdown, the sum of which shall equal the total value of the SUBCONTRACT. The price derivation shall be representative of an appropriate pro-rationing of the SUBCONTRACT price but in no case shall any individual price breakdown be more than 5% of the total price (unless the individual price cannot be further subdivided), and shall be subject to approval by CONTRACTOR. This price derivation shall be detailed to the extent SUBCONTRACTOR intends to rely upon for payment. Progress payments to the extent provided for in the SUBCONTRACT shall be based on measurable milestones (e.g., schedules received, drawings received, materials delivered and demolition activities completed) and shall relate directly to the detailed progress report for invoicing as described below.

### C. Invoice Support Requirements

The detailed price breakdown will serve as an invoice calculation document. The price breakdown will include SUBCONTRACTOR'S proposed method for calculating actual physical progress for each cost category. Upon approval by CONTRACTOR, the agreed upon price breakdown and calculation method for measuring physical progress will be used by Subcontractor to prepare invoices for progress payments. Unless otherwise directed by CONTRACTOR, payment for approved changes shall be separately invoiced and will utilize the appropriate, approved calculation method for measuring progress.

Earned progress must be supported by a detailed work status breakdown based upon physical completion of each item detailed. The work status breakdown shall be in sufficient detail to objectively report progress (percent complete) on an earned value basis. This breakdown is subject to CONTRACTOR review and approval.

The work status breakdown shall be submitted five working days in advance of the date for invoice submittal. CONTRACTOR shall verify accuracy of the earned progress and return it to SUBCONTRACTOR approved for use as is, or for revision. Any discrepancies shall be

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resolved to mutual satisfaction of CONTRACTOR and SUBCONTRACTOR before invoice submittal.

A copy of the approved work status breakdown is to be submitted as support for the monthly invoice showing "earned" progress against each pay item. The grand total of the earned price must then match the invoice price. The invoice must show a column for: subcontract price, total invoice last period, invoice this period, total to date, total retention, previous retention, retention this period, total amount due Subcontractor (minus retention), period of invoice amounts.

### D. Change Order Control

Pursuant to the Change Provisions of the SUBCONTRACT, the following procedures shall be implemented.

Change order control will be implemented by use of a system of Subcontract Interface Document (SID) and Subcontract Change Orders, using the form attached (Exhibit 3).

A Subcontract Interface Document may be initiated by either CONTRACTOR or SUBCONTRACTOR for changes in scope which have a possible cost or schedule impact or extra work. If CONTRACTOR initiates a SID, it will request SUBCONTRACTOR to provide cost and schedule information by a certain time for a specified scope of work. If SUBCONTRACTOR's quotation is acceptable, CONTRACTOR will authorize the change and assign a Change Order Number.

Within the time period specified in the SUBCONTRACT, SUBCONTRACTOR shall notify CONTRACTOR in writing of receipt of direction or of any impact that SUBCONTRACTOR considers to be a change. The following information must accompany the SUBCONTRACTOR's SID submittal for CONTRACTOR's review:

1. A comprehensive narrative description of the change, including the formal directive or other applicable justification validating the change.
2. A detailed pricing breakdown complete with a material takeoff of quantities involved in the change and prices for each item. Individual prices are to be extended for each line item as applicable and totaled for a total price of the SID.
3. Each SID shall show the appropriate schedule impacts, if any.

No SID should include more than one directive or subject. In other words, different changes or subjects should not be consolidated into one SID.

SUBCONTRACTOR shall establish and maintain a change control log to facilitate identification and tracking of each SID from origination through final disposition. SUBCONTRACTOR shall established and maintain a change control status report which will provide current information on the status of all SID's. This report will show each SID in the change approval process and the resulting Change Orders. This report shall be issued to the CONTRACTOR in the monthly progress report by the SUBCONTRACTOR and more frequently if appropriate.

SUBCONTRACTOR shall incorporate all approved Change Orders into the detailed CPM Schedules and Logic Networks and Detailed Price Breakdown.

### E. Progress Reporting

1. Weekly Progress Report

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The SUBCONTRACTOR shall submit a weekly progress report that contains the following information at a minimum:

- a. Job Title
- b. Earned value method
- c. Current status date
- d. Last status date
- e. Percentage complete
- f. Milestones with descriptions with the following columns
  - 1) Actual/scheduled date
  - 2) Forecast date
  - 3) New forecast date
  - 4) Complete (yes/no)
  - 5) Percent complete
- g. Preparer
- h. Date prepared

### 2. Monthly Progress Report

This report shall be inclusive of the SUBCONTRACTOR's total work scope and shall not segregate work by lower-tier SUBCONTRACT. It shall include the latest weekly progress report. The report shall be issued the fifth day of each month beginning the month immediately following award. Content shall include the following:

- a. Progress Narratives - These must include a list of all activities accomplished during the report period and a 30 day Look Ahead of activities to be performed by the SUBCONTRACTOR.
- b. Progress Curve - This will be a curve based on the planned progress % complete by month. Updated monthly to show "earned" to date progress. The original planned curve must never change and if required, a forecast curve can be added to display a new or changed plan which must be approved by CONTRACTOR.
- c. Schedule Update - The milestone Summary Schedule must be updated on a monthly basis and included in the monthly progress report. The milestones and Contractor interface points must not change without prior Contractor approval from the Project Manager. Along with the monthly progress report, the updated CPM Schedule, must also be submitted but not included as part of the report exhibits.
- d. Updated Price Breakdown - The detailed price breakdown must also be included showing any adjustments for inclusion of change orders approved by CONTRACTOR.
- e. Change Order Status - An updated copy of the change control tracking log and status report must be included.
- f. Problems/Needs/Remedies - This must be a narrative expressing all problems/needs/remedies for impacts of design/S-R interfaces/schedule/contract price/external sub-tier subcontract problems.

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- g. A cash flow projection must be submitted spreading the subcontract price by forecast monthly values and actual values invoiced for incorporation into the overall project cash flow.

### 3. Progress Reviews and Coordination

As necessary, a monthly meeting will be held to review progress, cost/schedule impacts, problem areas, change orders, etc. These meetings will be held at CONTRACTOR's office until mobilization, and at the jobsite thereafter.

CONTRACTOR and/or its customer shall have the right to monitor compliance with this SUBCONTRACT and any suborders by in-plant visits and/or by telephone. SUBCONTRACTOR shall include this notation of any suborders and lower tier contracts generated by this SUBCONTRACT.

CONTRACTOR shall schedule such in-plant visits and notify SUBCONTRACTOR in advance such that SUBCONTRACTOR may be adequately prepared. Contacts with SUBCONTRACTOR's suppliers and lower-tier SUBCONTRACTORS will normally be made with SUBCONTRACTOR in attendance unless SUBCONTRACTOR has given CONTRACTOR permission to contact them individually.

Upon receipt of the SUBCONTRACT, the SUBCONTRACTOR shall immediately supply the CONTRACTOR with the house or shop order number, name of its factory contact, and complete schedule of key milestones, including completion of engineering, procurement, key subassemblies, final assembly, required shop tests, etc.

As the SUBCONTRACT progresses, the SUBCONTRACTOR shall supply the CONTRACTOR with an un-priced copy of all major suborders and lower tier contracts.

Weekly Progress/Coordination Meetings (after Mobilization) will be held in order to discuss job progress, coordination and safety. All SUBCONTRACTORS will be required to attend.