

**SECTION 2 - PROJECT MANAGEMENT****TABLE OF CONTENTS**

	<u>Page</u>
<b>2.1 Project Timing .....</b>	<b>2-2</b>
<b>2.2 Design Review Requirements .....</b>	<b>2-3</b>
* 2.2.1 ..... Design Reviews .....	2-3
* 2.2.2 ..... First Design Review .....	2-3
* 2.2.3 ..... Final Design Review.....	2-4

## SECTION 2 - PROJECT MANAGEMENT

### **2.1 Project Timing**

- 2.1.1 To ensure equipment delivery meets critical timing phases and final shipment dates, it is the responsibility of the supplier to provide and maintain a project time line and tracking system.
- 2.1.2 A draft of this time line is to be provided with the quotation.  
The final time line is to be provided to the project engineer within 2 weeks after receipt of a formal purchase order.
- 2.1.3 The project time line must be detailed enough to show all critical milestones and as a minimum include the following items:
- a) Kick-off meeting
  - b) Process flow chart
  - c) Process FMEA review
  - d) Preliminary design (mechanical and electrical)
  - e) Preliminary design review
  - f) Purchase of critical long lead-time components
  - g) Final design (mechanical and electrical)
  - h) Final design review
  - i) Purchase of remaining material
  - j) Equipment control programming
  - k) Equipment control program review
  - l) Receipt of purchased/produced components
  - m) Floor plan layout and foundation requirement
  - n) Equipment build/assembly
  - o) Tryout part availability
  - p) System tryout and debug
    - manual mode
    - automatic mode
  - q) Measurement system calibration
  - r) Preliminary gage capability study
  - s) Preliminary process capability study
  - t) Documentation review

- u) Pre-acceptance at supplier
- v) Package & ship
- w) Installation at Bosch
- x) Tryout and debug at Bosch
- y) Final capability studies
- z) Final acceptance sign-off

2.1.4 The project time line is to be updated and submitted to the project engineer every two weeks throughout the project life. It is the equipment supplier's responsibility to provide any action plan to correct problems that are causing significant shifts in the time line.

## **2.2 Design Review Requirements**

### **2.2.1 Design Reviews**

- \* A minimum of two design reviews will be held to insure that the project goals and specifications are being met. The actual number of design reviews will be determined by the project engineer.

### **\* 2.2.2 First Design Review**

The first design review will be a comprehensive concept design review and preliminary PFMEA (Process Failure Mode and Effect Analysis) review.

The following points are to be discussed, whereby the supplier must make available necessary documents:

- \*
  - a) Review of relevant topics of the BPS (Bosch Production System) Assessment, Appendix 2.3.
  - b) A concept drawing of the overall machines. This drawing must show the overall completed machine or assembly. It must have at least two views, a plan or top view, and one side or elevation view. Sufficient detail must be shown to convey the overall completed appearance of the equipment including control panels. It must be drawn to scale and show overall dimensions of height, width, length, location and dimensions of auxiliary control cabinets, the location of the work piece or part, and the direction of index travel.
  - c) Additional concept drawing(s) of all equipment operations and processes. Sufficient detail must be shown to communicate the operation(s) of the machine. Main components must be shown and labeled.

- d) A control system overview which will contain a listing of major components.
- e) Material handling overview.
- f) Review of Ergonomics.
- g) Hazard assessment of robots and hazardous material (MSDS).
- \* h) Review of Special Attention Points, Appendix 5.2.
- i) Machine guarding.
- j) A completed Machine Data Sheet, Appendix 2.1.
- k) Literature and specifications for any major machine components that were not elected from the recommended parts list(s).
- l) Approval Prints  
The supplier must provide two copies of all of the above documentation. At the design review, the project engineer and the supplier will sign and date each copy of the approval prints to indicate that the concepts have been approved. Any changes or modifications that are required will be noted on the prints.  
A follow-up review may be required to evaluate modifications.
- m) Completion of Design Review Checklist, Appendix 2.2.

\* **2.2.3 Final Design Review**

The final design review will be a review of all engineering documentation and PFMEA. This review will be completed before construction of the equipment begins.

The supplier must provide the following:

- a) Mechanical Assembly and Subassembly Drawings
- b) Detail Drawings and Parts Lists
- c) Pneumatic & Hydraulic Schematics and Parts Lists
- d) Control System Functional (Sequence) Plan
- e) Electrical Control System Diagrams, Drawings, & Parts Lists
- f) Critical and Proprietary Parts

- g) Updated Machine Data Sheet
- h) Hazardous Material List
- i) Foundation Drawing
- j) Approval Prints
- k) Anticipated PM Requirements (Labor, Material, & Frequency)

2.2.4 The supplier must provide two copies of all of the above documentation. At the design review, the project engineer and the supplier will sign and date each copy of the approval prints to indicate that the concepts have been approved. Any changes or modifications that are required will be noted on the prints. A follow-up review may be required to evaluate modifications.