



Program Statement

OPI: FPI
NUMBER: 8510.03
DATE: 7/31/2003
SUBJECT: Factory Costing
Procedures

1. **PURPOSE AND SCOPE.** To establish costing procedures for the production process in **Millennium**, the integrated management information system Federal Prison Industries (FPI) uses.

- ◆ **Millennium** uses a cost system composed of planned costs of material and activity costs. The planned costs are developed using engineering standards as a basis and adjusted as conditions warrant. It is a system that permits actual costs to be compared with planned costs promptly when a job is completed to determine variances that can be analyzed for production efficiency.
- ◆ **Millennium** is designed to aid in quoting, planning, costing, scheduling, and controlling job orders. It is integrated with the Material Management, Production, Sales & Distribution and Finance & Controlling program modules. This system further provides management with additional tools to analyze and monitor the cost and performance of job orders by using the production module.

2. **PROGRAM OBJECTIVES.** The expected results of this program are:

- a. Costing procedures will be standardized to ensure consistency throughout the Corporation.
- b. Duties and responsibilities for the Business Manager and Factory Manager as they relate to cost analysis will be defined.
- c. The accuracy of internal and external financial reporting will be accomplished.
- d. Quarterly review and analysis of application rates and annual submission to the Financial Management Branch (FMB) will be completed.

3. DIRECTIVES AFFECTED

a. Directive Rescinded

PS 8510.01 Factory Costing Procedures (11/27/97)

b. Directive Referenced

PS 1240.05 Records and Information Management Programs
(9/21/00)

4. STANDARDS REFERENCED

a. American Correctional Association 3rd Edition Standards for Adult Correctional Institutions: 3-4406

b. American Correctional Association 3rd Edition Standards for Adult Local Detention Facilities: 3-ALDF-5A-17

5. DEFINITIONS

a. **Work Center.** Work Centers are specific functions or machines within a production plant. Consideration must be given to the level of control management wishes to establish over the production process when establishing work centers for a particular factory.

b. **Cost Center.** The unit of activity for which costs are accumulated. Cost centers may encompass one or more work centers and are established for cost control or product costing purposes at the level management determines to be justifiable (cost vs. benefit). Accumulated expenses for each cost center are reported on the Cost Center Report.

c. **Activity Costs.** Those costs that are not easily identified with a specific product or service.

- ◆ They are classified as either Production (Variable) activity or Support (Fixed) activity.

(1) **Production Activity.** Those costs incurred as a direct result of a production operation and can be easily identified to a department's production activities.

- ◆ They include costs associated with keeping production lines operating, such as foremen and inmate wages, supplies, and indirect material.

(2) **Support Activity.** Those costs resulting from activities performed in support departments. These costs are not clearly identified to a production operation. Support departments include:

- ◆ Quality Assurance,
- ◆ Business Office,
- ◆ AW/SOI,
- ◆ Purchasing,
- ◆ Warehouse,
- ◆ System Administration,
- ◆ Recycling,
- ◆ Maintenance, and
- ◆ Factory Administrative Expenses.

6. **DEVELOPING ACTIVITY RATES.** Activity rates must be established for variable and fixed activity costs by cost center. These rates must be applied to products based on the standard hours established in the item standard routing.

a. **Establishing Rates.** The following three elements must be used to determine overhead rates.

(1) **Factory Capacity.** Factory capacity is an estimated production level the Factory Manager and the Program Manager develop in conjunction with the Product Support Center (PSC).

- ◆ The capacities may not be lower than the product family capacities negotiated in the Memorandum of Understanding (MOU) or in the FPI Operating Plan.
- ◆ The current production level may be considered in determining the factory capacity.
- ◆ Once capacity has been determined for each product family, the yearly total hours are to be calculated for each product family.

(2) **Standard Hours.** Work Measurement Coordinators are responsible for maintaining approved work measurement studies. Approved work measurement studies establish the standard hours required to produce a given product.

- ◆ PSC approval must be obtained before any changes can be made to the Bill of Material/Routing in **Millennium** that will change the standard cost of a finished good or subassembly.

(3) **Activity Costs.** The variable activity expenses must be categorized by cost center for these activities:

- ◆ Run,
- ◆ Machine, and
- ◆ Setup.

The support expense cost centers include:

- ◆ the Business Office,
- ◆ Purchasing,
- ◆ Quality,
- ◆ Warehouse,
- ◆ Maintenance,
- ◆ Systems Administration,
- ◆ Recycling, and
- ◆ Factory Office.

b. **Calculating Fixed and Variable Application Rates.** The Field Financial Administrator, in conjunction with the applicable General Business Manager, is responsible for calculating the application rates for their respective products.

c. **Review and Analysis of Activity Rates.** While initial activity rates are established annually, a periodic review of the rates for appropriateness must be performed. The FMB must conduct a review quarterly and document it as evidence it was completed.

Monthly analysis of variances between planned and actual costs provides useful data to determine the appropriateness of activity rates.

Factors to examine when analyzing over/under applied activity costs include:

- (1) actual production vs. capacity,
- (2) actual activity cost vs. budget,
- (3) additions/deletions of product lines, and
- (4) changes in the production process.

Under-utilization of production capacity and short-term expansion of capacity should not be considered as a basis for adjusting activity rates.

- ◆ Cost variances from the budget must be reviewed in detail and a determination made as to the cause and long-term effect prior to substantiating a request for rate changes.

Annual activity rates must be submitted to the FMB upon request.

- ◆ The approved MOU provides support for activity rate requirements.
- ◆ The FPI Controller must approve all activity rates and changes, and notify field offices and various corporate support branches (i.e., Program Management and the PSC) via memorandum.

7. FIELD COST MANAGEMENT PROCEDURES

a. The Factory Manager is responsible for initiating new jobs in **Millennium**.

- ◆ Jobs are normally created by confirming a plan generated by MRP and releasing the job.
- ◆ It is not necessary to print the job header since this data is retained in the system.
- ◆ The MRP data must be reviewed for appropriateness.

However, the Associate Warden and/or SOI do not have to approve jobs created via MRP.

b. Materials are issued to jobs based on the pick list generated and signed by the factory foreman.

- ◆ The Factory Manager will make any changes in quantity or substitute items.
- ◆ The Warehouse will fill and deliver materials based on the computer generated pick list.
- ◆ The factory foreman is responsible for ensuring the exact quantities requested are issued.

c. As units on a job are completed and moved from operation to operation, the factory foreman will add and post job transactions. Adding and posting these transactions will update the job record for the job run hours and activity costs.

- ◆ Sub-assembly and/or finished goods records are to be updated upon completing the final operation.

Generally, sub-assembly and finished goods costs are calculated at the standard cost as maintained in the material master. Variances between actual, standard, and planned costs remain on the production order until the job is corrected or settled.

- ◆ Costs associated with sub-assemblies and finished goods relating to configurable materials and items that are unique to the customer order are to be calculated at planned costs.
- ◆ Activity costs are based upon standard hours.
- ◆ Tracking and posting of actual direct hours to individual jobs is not required.

d. The Business Manager must perform job settlement(s) in **Millennium** at least weekly, but prior to the end of the month.

- ◆ A list of production orders that are almost ready to be settled can be obtained by generating a C088 (actual settlement in test mode).
- ◆ Special care must be taken at month-end to ensure all jobs completed in the last few days are reviewed and settled within that month.
- ◆ Each production order must be settled with a **DLB** (status of delivered) or **TECO** (technically complete.)

Before settlement is accomplished, the Factory Manager must review the Job Cost Analysis Report and make any required corrections and usage explanation.

The Business Manager/Plant Controller must explain any activity cost variances.

The Factory Manager must explain any variances in material usage.

The Factory Manager must close production orders placing them in closed (CLSD) status after settlement and period end closing transactions have been accomplished. However, any errors preventing the order's closure must be resolved.

8. REVIEW OF SALES THRESHOLDS BY PROGRAM MANAGERS

a. The Factory Manager and Business Manager must review the Job Cost Analysis Report upon completion of a job. If variances for materials and/or activity costs are within +/-10% of planned cost, no further action is required.

b. The Factory Manager and Business Manager/Plant Controller must ensure that completed jobs are reviewed.

- ◆ The analysis of these reviews is to be recorded in the job text for all jobs with variances of +/-10% in either material or activity costs.

Detailed analysis is required when production job costs exceed the dollar threshold established for each product group as listed:

Graphics & Services	\$10,000
Electronics & Plastics	10,000
Optics	1,000
Metals	10,000
Brush/Broom	2,500
Cut & Sew	5,000
Furniture	5,000
Systems Furniture	5,000
Dorm and Quarters	5,000

All variances resulting from incorrect Bill of Material and/or routing must be corrected. The Factory Manager must notify the PSC promptly for correction of the Bill of Material and/or routing.

c. A listing of **settled** orders will be retained in the monthly work papers. The Business Manager and Factory Manager must ensure that all variances greater than +/- 10% are reviewed and explanations of differences are included in the text of the job in **Millennium**.

d. The Corporate Accountant will generate the Collective Processing Report and ensure file accessibility to all locations. This report must be reviewed to identify any potential problems in active production orders.

e. The Factory Manager must notify the program manager of all production orders that have significant differences between:

- ◆ planned and standard costs,
- ◆ planned and actual costs, and
- ◆ actual and planned costs.

f. The Associate Warden I&E/SOI is responsible for making sure a quarterly review of all items not being produced at standard cost is performed (i.e., configurable materials and items being produced at planned costs).

- ◆ This review must verify that the Bill of Material and Item Standard Routing is correct and that an approved work measurement study exists for these items.

9. **SHOP FLOOR CONTROL.** **Millennium** recognizes the charges of production during the month as an expense. Production charges are recognized as an asset when one of the following occurs:

- ◆ when units of production are moved to the warehouse;
- ◆ when units and values are captured as a finished good and/or subassembly; or
- ◆ when the WIP Calculation transaction is executed during the period end closing process (**Millennium** recognizes WIP only at the end of a period for reporting purposes).

Consumption accounts and secondary cost elements are used to accumulate production expenses (material and activity costs). These expenses are summarized on the cost analysis report of the production order.

10. **RETENTION OF MILLENNIUM WIP COST CONTROL REPORTS.** A job history must be retained in **Millennium** for the time required under the Bureau of Prisons Records and Information Disposal Schedule (BOP-RIDS). The following reports must be included at a minimum:

- ▶ **Pick Lists** - Retain hard copies as required by BOP-RIDS (Immediate access in **Millennium** for 36 months);
- ▶ **Job Order Header** - (Immediate access in **Millennium** for 36 months); and
- ▶ **Job Cost Analysis Report** - (Immediate access in **Millennium** for 36 months).

a. **WIP Valuation.** The monthly WIP Valuation is to be reconciled to the general ledger and maintained in the Corporate Accountant's monthly close-out transaction file for the time required under the BOP-RIDS.

The Business Manager must ensure the WIP valuation report for his or her respective location is reconciled to the General Ledger and documentation maintained in the monthly close out folder.

b. **Job Settlement.** The monthly job settlement transactions must be maintained in the monthly close-out folder for the time required under the BOP-RIDS.

11. **SCRAP AND DEFECTIVE WORK.** The control and accountability of defective work is an important element of the production planning and control system. Most manufacturing processes generate some bad units along with acceptable units as an unavoidable or inherent result of production.

The reason for these losses is to be identified in accordance with the Quality Assurance Manual and every effort made to keep the cost of defective work as low as practicable through:

- ◆ improvements in operating procedures,
- ◆ changes in machine design, or
- ◆ use of different material, etc.

The Factory Manager must monitor and control the occurrence of defective work within predetermined limits.

- ◆ Rework of defective work is to be accomplished only when rework is more economically advantageous than salvage.
- ◆ When the costs of rework or replacing the defective work are expected to be significant as determined in the Quality Assurance Manual, the Quality Assurance Manager must initiate a Defective Work/Scrap Report (FPI Form 31) available on BOPDOCS.

The definition of defective work or abnormal scrap can vary between products and factories. Therefore, determination is a matter of judgment but materiality is the key factor.

- ◆ The Quality Assurance Manager must develop guidelines for each product line in the factory defining the thresholds at which a Defective Work/Scrap Report is to be initiated.

a. While a job is in production, capturing rework cost is accomplished by issuing overages of required material to the job. These additional material costs should be reflected on the Job Cost Variance Report.

If an FPI Form 31 is not generated for the additional material, the overage in material cost should be charged to the Planned Cost Variation Account.

b. If the rework cost is significant or abnormal as defined by the Quality Assurance Manager and the job remains open, the abnormal cost must be reported on FPI Form 31.

c. When rework is significant and the job has been closed, the abnormal cost must be reported on FPI Form 31. This form must be submitted to the Business Manager for preparing a manual entry in **Millennium**.

The rework costs reported on the FPI Form 31 must be debited to General Ledger Account 654200, Cost Of Rework Account, and credited to General Ledger Account 653300, Planned Cost Variance Account.

12. **DEFECTIVE WORK RETURNED FROM CUSTOMER.** The Quality Assurance and Factory Manager must inspect defective finished goods the customer returned upon receipt.

- ◆ The Quality Assurance Manager is to initiate an FPI Form 31 for all significant rework costs to include material and activity costs that are required for the rework.
- ◆ The FPI Form 31 must be prepared within two working days of receiving the defective goods.
- ◆ The form must be submitted to the Business Manager for preparing a manual entry in **Millennium**.
- ◆ The rework costs reported on the FPI Form 31 must be reclassified from General Ledger Account 653300. Planned Cost Variance to General Ledger Account 654100, Cost of Warrantee Replacement/Repair.

The Quality Assurance Manager must request the Customer Service Center process any credit return(s) in **Millennium** for all items returned. If a credit invoice is required, the Accounts Receivable Section must issue a credit and the plant will return the damaged finished goods to stock.

The damaged finished goods are to be returned at current unit cost and written-off using the Allowance for Defective Finished Goods account.

13. WORK IN PROCESS INVENTORY. Individual locations must conduct a physical inventory of work in process annually. The Business Manager will use Inventory Tags (FPI Form 64) to identify the job number, item number, quantity, and operation number and prepare a manual journal entry for the overage/shortage prior to September 29th.

The WIP Valuation Report must be adjusted by this manual journal entry in order to reconcile to the general ledger at year-end. The accountant must reverse this manual journal entry in October of the new fiscal year so that the WIP Valuation Report can be reconciled.

14. STANDARD COST. The PSC is responsible for developing and maintaining the Corporate Standard Costs for all FPI products and services.

Cost estimates are derived from information obtained from various sources, such as:

- ◆ Work Measurement
- ◆ Material Master
- ◆ Bill of Material (BOM)
- ◆ Item Standard Routing (ISR)
- ◆ Activity Rate

Any changes to the above mentioned items may require the PSC to generate a new cost standard.

15. WORK IN PROCESS INVENTORY VALUATION

a. The accountant must review the Production Order Information System Report monthly for released production orders. Jobs with material charges that have been in process for longer than 120 days must be inventoried as evidenced by the entry in the job text field of the Production Order Display-Long Text Screen.

The accountant will provide a listing of these jobs to the Factory Manager who will prepare the necessary inventory reports and forward them to the Business Manager.

b. Finished Goods/Sub-Assemblies will be valued at equal to or less than 95% of the selling price.

c. The accountant must review the WIP Valuation Report for those jobs that have actual and anticipated costs exceed 95% of the selling price. Proper adjustments must be made to maintain the 95% inventory value.

16. **SUBASSEMBLIES.** Subassemblies are defined as a manufactured component part of a product FPI manufactures.

- ◆ The Factory Manager must request an item number from the PSC for all subassemblies. A job must be created to produce subassemblies. The completed subassemblies are to be carried at a stock location within the factory and valued at standard cost.
- ◆ Subassemblies must be reviewed to ensure that the standard cost reflects a reasonable valuation for that item.

17. **SECONDS.** Seconds are finished items that are sold at a reduced price because of manufacturing defects. The Factory Manager is to request an item number for all seconds.

Items identified as seconds are to be moved from the regular finished goods item number to the seconds item number through a transfer posting (Material to Material). The difference in cost is charged to the Inventory Valuation Adjustment Account.

18. **CORRECTING JOBS DURING PRODUCTION.** If a correction is required as a result of an incorrect movement of goods through the system, the Factory Manager or designee must follow proper procedures and coordinate the action with the Warehouse Supervisor or the accountant as appropriate.

19. **TRANSFER OF MATERIAL FROM ONE JOB TO ANOTHER.** When raw materials are transferred from job to job, the Factory Manager must coordinate with the Warehouse Foreman to ensure that this process is accomplished.

20. **RETURNING EXCESS OR UNUSED RAW MATERIALS TO THE WAREHOUSE.** When the factory returns raw materials to the warehouse, the Warehouse Foreman must process this transaction on the same day of the physical transfer.

21. **SHOP STOCK.** Shop stock is used when the nature, size, or type of raw material prevents a determination of the exact quantity required for a job or when the material must be processed in some manner prior to being assigned or distributed to an individual job.

Shop Stock must be under the Factory Manager's control and accountability. Shop Stock is to be assigned a stock location in **Millennium** and physically inventoried monthly by the Factory Manager. The Factory Manager or designee will issue materials from shop stock to a specific job.

22. **SPECIAL TOOLING.** Special tooling is defined as special tools, dies, jigs, or fixtures, and such equipment purchased or manufactured for a particular customer order. If a customer order requires special tools, dies, jigs, or fixtures, and such equipment is purchased or manufactured, these costs must be included in the Bill Of Material.

23. **EXTERNAL PRODUCTION WORK.** External production work occurs when the factory does not have the resources to handle certain phases of the production process. Therefore, the raw material or work-in-process inventories are sent out to a vendor for external production work. However, this inventory will remain an asset to the Corporation. External work can be accomplished via an external process or subcontracting.

a. **External Process.** If the item is just worked by an outside vendor and the item number does not change then it can be accomplished as part of the routing in the production process.

b. **Subcontracting.** If the item changes part numbers upon return from the vendor, it will be done by the subcontracting process.

24. **RESEARCH AND DEVELOPMENT.** All major and/or significant Research & Development (R&D) projects must follow PSC guidelines.

25. **MINIMUM BUY.** Minimum buys occur when a vendor requires FPI to purchase material quantities in excess of FPI's current needs. When no recurring need exists for this material, the cost of the minimum buy (all material to be purchased) will be included in the price quoted to the customer.

When the production process is complete, all remaining material from the minimum buy becomes the customer's property.

Factory staff must:

- ◆ inventory the material,
- ◆ segregate it in a secured area, and
- ◆ request disposition instructions from the customer.

a. When the customer requests the material and provides shipping instructions, the prepackaged items must be shipped in accordance with the customer's instructions and a memorandum shipping order prepared to document the shipment.

b. When the customer requests that FPI retain the material for use on the customer's future orders, the materials are to be left packaged and returned to the warehouse for storage. A new item stock location is to be created for that item and the materials placed in inventory at no cost.

The stock location is to be restricted so that the material is not available for other orders.

c. When the customer does not want the material and allows FPI to retain it without restrictions, the materials may be returned to the warehouse at no cost with a new item number. It will be accounted for in quantity only and placed in an unrestricted stock location for use on other orders.

d. When the customer does not want the material and advises FPI to dispose of it, the material is to be disposed of in accordance with the Federal Property Management Regulations.

26. **RECONCILIATION.** The Corporate Accountant must maintain a copy of the Calculate Work In Process Report on file in the monthly close out folder.

/s/
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Director