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***National Compact Stellarator Experiment (NCSX) SubC# S-04344-F  
Vacuum Vessel Manufacturing Development and Prototype Fabrication***

**Weekly Status Report 04/30/03 thru 05/07/03**

**Project Management**

The MTM team held a preliminary review meeting to introduce the project to the key personal that will be involved in the vessel project. This meeting included the VP of Manufacturing, VP of Quality Assurance, Managers and the team leaders from their groups.

Received Amendment No. 1 to the sub contract for signatures. This change added an increment funding amount, the MTM Technical Representative was changed from Dave McGowan to Mike Manuel and incorporated Michael E. Viola as the PPPL Technical Representative.

**Process Engineering**

The Planning for PVVS process has been loaded into Visual Manufacturing™ up to the level where we need the profile information. (See page 2 and 3 for summary of VM™).

**Fabrication**

No Activity

**Quality Control**

Our quality planning will be incorporated into the manufacturing process.  
(See page 2 and 3 for summary of VM™ – Sections Quality Assurance and QAP)

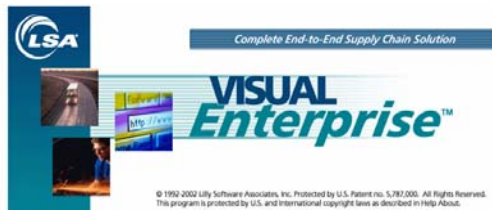
**Questions and Answers**

During the kick-off meeting at PPPL we talked about the stiffeners being left off the VVSA. Do we leave the stiffeners off the PVVS? If they stay on, would a double fillet weld be acceptable, do to concerns that the stiffeners in the PVVS are in close proximity to the edge of the vessel where the edges would likely curl from all the heat during a full penetration weld?

When will the final profile be defined?

**Pictures**

None at this time.



**Visual Manufacturing™**, a commercially available software package, along with supporting software modules written in-house constitutes a fully integrated, real-time ERP system that monitors and controls all of the fundamental processes of our business. It is the heart of our project management system. Overviews of the various modules follow:

[Estimating & Quotation](#) - creates comprehensive quotations that include material, labor, burden and outside services; determines realistic delivery dates based on material and resource availability.

[Order Entry](#) - provides access to crucial data including material and resource availability, order acknowledgments, percentage of completion and shipping information.

[Document Control](#) – virtual Librarian stores and catalogs all customer drawings, MTM process drawings, customer part lists, supplier material certifications as well as customer and industry specifications. Machine operators, engineers and support personnel can access any of these documents from the control stations of their CNC machines, their desks, or data terminals throughout the shop floor.

[Job Folder](#)- An electronic folder gives team members quick access to all crucial documentation related to a specific job and project. The first document entered into the folder is the scanned customer's purchase order followed by the Contract Review. Throughout the duration of the project all workscope communications and pictures are logged into the electronic job folder for quick access and secure storage.

[Process Engineering](#) - quickly and easily creates engineering plans and bills of material, and uses these to create quotations and/or work orders automatically; integrates seamlessly with material planning, purchasing, and scheduling.

[Scheduling](#) - real-time capacity planning by finite scheduling of all material and resource requirements. Utilizes "what-if" scheduling to detect and address bottlenecks before they occur.

[Purchasing/Receiving](#) - Receiving and Purchasing modules work hand-in-hand to record receipt of materials and services as well as automatic inventory issuance to specific areas of the shop floor, warehouse locations, or returns to suppliers.

[Inventory Control](#) - automatically adjusts inventory whenever a part's bar-coded label is scanned on the shop floor. Items are designated as purchased, manufactured, stocked, or non-stocked so we can place purchase orders or issue parts to each work order as they are needed.

[Part Traceability](#) - creates trace records for each lot number, serial number, or other grouping of a part and automatically tracks each part from receipt through shipping as well as all intermediate levels; query capabilities give us visibility into the flow of material lots and serialized parts throughout our manufacturing process.

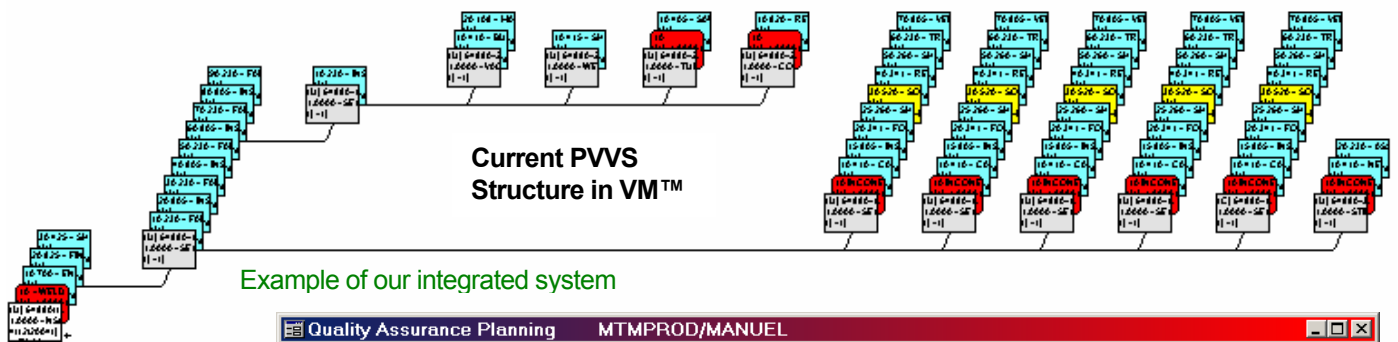
[Labor Collection](#) – Machine operators electronically “clock in” on every job at networked data terminals; provides real time access to actual direct labor hours throughout the company; direct labor hours and machine spindle times are used to efficiently manage our resources and control costs on each job.

[Quality Assurance](#) - Inspection Data Checklists (IDC) integrated into the electronic shop router created in the Process Engineering module specify dimensions to be measured by operators on the shop floor and record results on-line; qualified personnel electronically sign off on the IDC upon acceptance of each characteristic. The Non-Conformance Report (NCR) system allows us to track disposition, root cause, and preventive actions of non-conformances; reporting features perform trend analysis to correct potential problems before they occur.

**QAP** – This fully integrated into Visual planning program is our central place to plan for what inspection information and documentation is required for a work order and all the information is linked to individual “cards” in Visual Manufacturing. This program is our central place to link scanned files as well as linking Excel and Word documents to fulfill the requirement for documentation control. The program is a central place to help QA and Engineering team members control, manage and obtain status on what information has been collected with respect to the plan. The following quality documents are easily accessed from one program; N/C system, IDC’s, NDT, Material Certifications and Material Traceability. With the click of one button a QA team member can print all of a specific work order’s required documentation into a QA data package that will be delivered to the customer upon completion of the work order.

**Shipping** - creates bills of lading, packing slips, and bar-coded shipping labels to each customer’s specific requirements.

**Financial** - databases supporting Visual modules support the complete accounting process including cost accounting, accounts receivable and payable, general ledger, and payroll. The accuracy and immediacy of the data and the fact that every functional area in the company uses this software create a management tool that the CFT responsible for your project will use to insure that they are finished on time, within budget and that they meet all quality requirements.



Example of our integrated system

At MTM we double click this card in VM™ and hit the QAP Button and this window opens with Quality Assurance Information.

**Quality Assurance Planning** MTMPROD/MANUEL

File Options Help

System Requirements | Other Requirements | Documentation | **Data Package** | Additional Docs | Non-Conformances

<b>Workorder</b> Base ID    Lot    Split 64880    1    0 <b>Create Report</b> Link Missing Docs    Part Sort	<b>Report</b> <input type="radio"/> Cover Sheet <input checked="" type="radio"/> Table of Contents <input type="radio"/> Certificate of Conformance <input type="radio"/> QAP Documents <input type="radio"/> Inspection Data Checklists <input type="radio"/> NDT Certificates	<b>Options</b> <input type="checkbox"/> QAP Include Certs Only <input type="checkbox"/> IDC Include Submitted Docs <input type="checkbox"/> IDC Include N/C # <input type="checkbox"/> IDC Include W/O Spec Output Dir: _____	<b>Order By</b> <input checked="" type="radio"/> Part ID <input type="radio"/> Sub ID <b>Output</b> <input checked="" type="radio"/> View <input type="radio"/> Print <input type="radio"/> File
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**Certificate of Conformance**

Revision: 1	To: PRINCETON PLASMA PHYSICS LA	Date: 05-08-03
Save	Part Number: SE121	Quantity: 1
Delete	Part Description: NSCX Vacuum Vessel Prototype	Purchase Order: S-04344-F
	Part Serial Number:	Workorder: 64880/1.0
		<input type="checkbox"/> Customer Furnished Materials
		<input type="checkbox"/> Documented Materials

Additional Requirements

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**Cover Sheet**

Save	Customer Line 1: PRINCETON PLASMA PHYSICS LA	Part Number Line 2:
	Customer Line 2:	Part Name Line 1: NSCX Vacuum Vessel Prototype
	Purc Order Line 1: S-04344-F	Part Name Line 2:
	Purc Order Line 2:	MTM WO Line 1: 64880/1.0
	Part Number Line 1: SE121	MTM WO Line 2:

IDC

NUM