

QUARTERLY REPORT FORM

Report Date: **September, 2003**
 Project Number: **MIE-02**
 Report Period: **4th Quarter FY2003**

U. S. DOE Project Manager's Progress Report
 Title: **National Compact Stellarator Experiment**
 Location: **Princeton Plasma Physics Laboratory**

Office of Science
 Program: **FE**
 Project Office: **CH**

SUMMARY ASSESSMENT

	<u>Current Quarter</u>	<u>Previous Quarter</u>
Cost:	Satisfactory	Satisfactory
Schedule:	Satisfactory	Satisfactory
Technical:	Satisfactory	Satisfactory
Overall:	Satisfactory	Satisfactory

PROJECT MANAGEMENT

DOE Program Manager:	Gene Nardella
Phone:	301-903-4956
DOE Project Director:	Greg Pitonak
Phone:	609-243-3713
Contractor Project Manager:	G. H. Neilson
Phone:	609-243-2726

COST/FUNDING (\$K)

	<u>Baseline</u>	<u>Current Estimate</u>	<u>Funding Received</u>
DOE TEC:	81,000*	81,000*	
DOE TPC:	N/A	N/A	N/A
NON DOE:	0	0	0

* *Proposed baseline*

CRITICAL DECISIONS

	<u>Number</u>	<u>Baseline</u>	<u>Actual/Forecast</u>
	1	Aug, 2002	Nov, 2002 (A)
	2	Jan, 2004	Jan, 2004
	3	Sept, 2004	
	4	Sept, 2007	

FUNDING PROFILE (KS)

Per Latest Approved Budget in \$M (as-spent)

	<u>FY03</u>	<u>FY04</u>	<u>FY05</u>	<u>FY06</u>	<u>FY07</u>	<u>Total</u>
TEC:	7.9	15.9	20.4	20.5	16.3	81.0
OPC:	N/A					
	N/A					

Cumulative Costing through end of **Sept, 2003**

	<u>TEC (\$K)</u>	<u>TPC (\$K)</u>
Costs Accrued:	\$5,942	N/A
Uncosted Commitments:	\$1,587	

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TPC: N/A

Remaining Uncommitted \$73,471

N/A

SCHEDULE SUMMARY

	Start Date		Completion Date		Percent Complete	
	<u>Baseline</u>	<u>Forecast/Actual</u>	<u>Baseline</u>	<u>Forecast/Actual</u>	<u>Baseline</u>	<u>Actual</u>
Title I & II Design:	10/02	04/03 (A)	04/06			
Procurement:	05/04		09/06			
Fab & Assembly	09/04		05/07			
Start-up & Operation	04/07		09/07			

Key Milestones Completed Since Last Report

Baseline Date (PEP) Actual Date

(LEVEL)

Joule 04-1	Authorize Vac Vessel Prototype Fab	August 2003	<i>August 2003</i>
Joule 04-1	Authorize Modular Coil Prototype Fab	December 2003	<i>October 2003</i>
	Conduct Preliminary Design review	April 2003	<i>October 2003</i>

Key Milestones Upcoming (Next Three Months)

Baseline Date(PEP)

Forecast Date

(LEVEL)

DOE II	External Independent Review	November 2003	
	November 2003		
DOE I	Complete CD-2 Milestone	January 2004	January 2004

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NARRATIVE HIGHLIGHTS

○ **Technical**

- The project has successfully conducted a project level preliminary design review and documented its cost and schedule baseline.
 - Summary conclusion of the PDR review panel
 - The design is technically sound and all subsystems are ready to baseline
 - Cost and schedule estimates are well-developed and adequate to deliver the scope
 - Plans and strategies exist to deal with risks and unknowns
 - Budget and schedule contingency is adequate for this stage of design
 - Experienced leadership, staff and management systems are in place
 - Good teamwork is evident!
 - Design is ready for CD-2
 - Risks and challenges identified at the PDR that need addressing during final design and follow-on R&D
 - Magnets
 - Modular coil conductor delamination concern
 - Conclusion of winding/epoxy R&D
 - Vacuum Vessel
 - Port extension material transition and vessel welding
 - Bakeout
 - Field period assembly
 - Metrology development
 - Full size mockup R&D
 - Final assembly
 - Resolution of inboard bolt tightening
- A racetrack-shaped demonstration coil was fabricated and tested to cryogenic conditions
- Concluded the keystoneing R&D program
- Concluded preliminary conductor material properties testing.
- Major Tool and Machine, Inc. has begun fabrication of the NCSX prototype vacuum vessel. The first panel has been through the press, through the annealing, and its back in the press.

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- Following an internal design review the project has released the two modular coil prototype vendors to begin fabrication on type "C" winding forms.
- **Administrative**
 - The project has prepared the following documentation as part of CD-2 readiness
 - Project Execution Plan
 - Acquisition Strategy
 - Integrated Project Team
 - Resource Loaded Schedule
 - Detailed Project Cost and Schedule Estimates
 - NEPA Documentation
 - Risk Analysis & Risk Management Plan
 - Preliminary Design and Design Review Report
 - System Functions and Requirements
 - Hazards Analysis
 - Value Management/Engineering
 - Project Controls/Earned Value Management System

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WBS Cost Summary (\$K)

Scope Item	FY03 <u>Actual</u>
WBS-1 Core Systems	\$4,005
WBS-2 Heating, Fueling	\$ 204
WBS-3 Diagnostics	\$ 155
WBS-4 Power Systems	\$ 115
WBS-5 Central I&C	\$ 12
WBS-6 Facilities	\$ 9
WBS-7 Assembly	\$ 164
WBS-8 Project Mgmt	\$1,277
Contingency	<u>\$ 0</u>
Total	\$5,941

<u>FY04 Plan</u>	<u>FY05 Plan</u>	<u>FY06 Plan</u>	<u>FY07 Plan</u>	<u>Total</u>
<p>Currently being rebaselined as part of CD-2</p>				