

**NCSX Fabrication Project Cost and Schedule Estimating Form**  
**(Attachment 1c - FAB)**

**WBS: 64 - Vacuum Vessel and PFC Heating and Cooling Systems      Responsibility:      Mike Kalish**

Activity Title	Manhours	FY2002		Start Date	End Date	Comments
		\$\$	Labor Type	Month/Year	Month/Year	
<b><u>Labor</u></b>						
<b>Preliminary Design (Title I)</b>						
	160		EMEA	November-05	January-06	Mechanical Engineering, Kalish
	40		EMSM	November-05	January-06	Electrical Design Support, Cropper
	80		EADM	November-05	January-06	Mechanical Design / Drafting, Morris
<b>Final Design (Title II)</b>						
	160		EMEA	January-06	March-06	Mechanical Engineering, Kalish
	80		EMSM	January-06	March-06	Electrical Design Support, Cropper
	400		EADM	January-06	March-06	Mechanical Design, Morris
	320		EADM	January-06	March-06	Electrical Design
<b>Lab Fab/Assembly/Installation (Title III)</b>						
	210		EMEA	Jul-06	Dec-06	Mechanical Engineering, Kalish
	160		EMSM	Jul-06	Dec-06	Electrical Design Support, Cropper
	120		EMSM	Jul-06	Dec-06	Shop Supervision, Kemp
	120		EMSM	Jul-06	Dec-06	Sr. Lab and Shop, Fabrication
	1600		EMTB	Jul-06	Dec-06	Technician, Installation Mechanical
	720		EMTB	Jul-06	Dec-06	Technician, Installation Electrical
<b>Level of Effort</b>						
FY2003	175		EMEA	10/1/2002	9/30/2003	
FY2004	260		EMEA	10/1/2003	9/30/2004	
FY2005	345		EMEA	10/1/2004	9/30/2005	
FY2006						
FY2007						

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<b><u>M&amp;S Costs</u></b>						
<b>Manufacturing Development</b>						
Purchased Design Services						
Procured Hardware/Material						
<b>Procured Hardware/Material</b>		127700		March-06	Dec-06	
<b>Purchased Design Services</b>						
<b>Procured Installation/Assembly Costs</b>		8000		Nov-06	Dec-06	
<b>Other Costs</b>						
Travel						
Allocations (WBS 81 only)						

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<i>Instructions for Completing Form</i>						

- (1) One form for each 3 digit WBS element (e.g., 111, 121, 452, etc.) => if no 3 digit WBS, use 2 digit WBS (e.g., 81, 82, 84)
- (2) For Lab labor, provide estimate in manhours => provide estimate by specific labor type.
- (3) For M&S, provide estimate in FY2002 direct dollars if procured by PPPL, or in fully loaded dollars if procured by ORNL
- (4) Start and end date provided in month/year format => March/2003