

NCSX TVPS Backup Information

WBS22

Title: Torus Vacuum Pumping System (TVPS)

Originator: W. Blanchard

Description of Activities to be Performed Activity Definition	Eng Mhrs	Design Draft MHrs	Monthly Support Mhrs	Tech Mhrs	M&S
I. TVPS					
1) Design and Mech. Eng., Work Planning and Testing	290	350	80		
2) Testing and Refurbishment of Equipment			240		\$6,000.00
3) Mechanical Fabrication and Installation			80	200	\$9,000.00
4) Electrical Design and Drafting					
5) Electrical Fab and Installation			120	120	\$5,000.00
II. RGA and Gauging					
1) Design and Mechanical Engineering and Work Planning	40		160		
2) Repair and Calibration of Instrumentation			240		
3) Mechanical Fabrication and Installation			60		\$2,000.00
4) Electrical Design and Drafting		20			
5) Electrical Fab and Installation				20	\$1,000.00
III. PLC Controls					
1) Engineering Design	60		240		
2) Electrical Design and Drafting		40			
3) Fabrication and Installation			120	40	\$32,000.00
4) Integrated System Testing			60		
Totals=	390	410	1400	380	\$55,000.00

Total Engineering Labor (loaded)= \$63,960.00

Total Design/Draft Labor (loaded)= \$45,305.00

Total Monthly Support Labor (loaded)= \$159,600.00

Total Bi-weekly Tech Labor (loaded)= \$31,809.80

Total M&S (loaded)= \$76,120.00

Total for TVPS= \$376,794.80

Total with 14% contingency= \$429,546.07

Note: This estimate only includes a single duct (2 TMPs) vacuum pumping system, gauging, RGA and control system (PLC).