

NCSX Work Approval Form (WAF)

WBS Number: 12

WBS Title: Vacuum Vessel Systems

Job Number: 1204

Job Title: Vacuum Vessel System Procurements

Job Manager: Larry Dudek

Description:

This WBS element includes all of the non-VVSA procurements.

Schedule:

See Attached

Approvals:

Job Manager

Date

Responsible Line Manager

Date

Project Manager

Date

Engineering Department Head

Date

**NCSX June 2007 ETC
TABLE I - Design Labor**

WBS Number: 12

WBS Title: Vacuum Vessel Systems

Job Number: 1204

Job Title: Vacuum Vessel System Procurements

Job Manager: Larry Dudek

Description:

Procure necessary parts and consumables to support assembly and fabrication of Vacuum Vessel Segments. This job only covers M&S support - labor to procure the parts and consumables is covered under WBS 82 (where L. Dudek labor is covered). Details of requirements shown on drawings prepared under WBS 19.

No Design Work in this Job.

NCSX June 2007 ETC
TABLE II - Materials and Subcontracts

WBS Number: 12													
WBS Title: Vacuum Vessel Systems													
Job Number: 1204													
Job Title: Vacuum Vessel System Procurements													
Job Manager: Larry Dudek													
Materials and Subcontracts (M&S)							Basis of Estimate						
Description:													
			PPPL EMTB Suppt (Hrs)	Rate	Qty	Subtotal	TOTALS						
VV Vertical Supports												Work Completed	
VV Personal Acces Port & Lateral Supports							3	19504	58,511			ORNL estimate. See worksheet below.	
Insulation Boots Total									55,750				
Insulation Boots													
	Boots for Some Ports		250		150	37500					Requisition 405021 - see Table V		
	Boots for Some Ports		75		150	11250					Requisition 405024 (150 pcs x \$25 each) - see Table V		
	Miscellaneous hardware					7000					Engineering judgement of miscellaneous parts (G-11 rings, fasteners, etc.)		
Pourable Insulation									80,000			Rough Order of Magnitude from Cabot - see Table V	
Port Thermal Insulation								25000	25,000			Verbal estimate from Aspen Aerogel Inc. to ORNL. Based on projected production in new facility.	
VV Local I&C													
	Thermocouples: 4 each x 83 appendages		80		337	26960		26,960			See Omega Quote - seeTable V		
Heater Tapes for Port Stubs													
			70		220	15400		15,400			See Brisk Heat Quote - seeTable V		
VV Interface Hardware													
T/C and Heater Tape Leads Port 12									28250			See G. Labik estimate detailed in Job 3101 dated 4/10/2007 (Updated 5/3/2007)	
Flux Loops Junction Boxes									9620			See G. Labik estimate detailed in Job 3101 dated 4/10/2007 (Updated 5/3/2007)	
VV Heating Cooling Tubing (COMPLETED)													
M&S Total									299,491				
Worksheet:													
COST OF NB PORT DUCT/COVER OPTION												PL GORANSON 5/25/05	
Pumping will be from port 4 or 12.													
150 C bakeout operation													
Option uses basic geometry of the mod kit drawings and gives credit for incorporating existing NB blankoff flange in new design. It uses a stainless steel, 22" wire seal, commercial (MDC) flange with Viton o-ring.													
The interface (boot) to the cryostat is not included.													
Option 3 does not include any hardware for port 4 pumping. Supplied by WBS 22.													
Simplified Duct													
						Cost							
	Duct Material/fab(l625)					5009						Based on material cost based on Inconel at -\$30/lb - See Table V	
	22 inch port flange					1950						Price out of MDC catalog	
	22 inch blankoff Flange					2850						Price out of MDC catalog.	
	Lateral supports					5000						My estimate on labor time to machine detail parts outside.	
	NB duct flg rework					1800						Based on set up and labor time for machining cost to bore hole in house.	
	Assy fab					2640						Based on 24 hour estimate to do fab.	
	Bolt kit/o-ring					255						Price out of MDC catalog.	
	subtotal					19504							
Engineering								15600				COMPLETE	

NCSX June 2007 ETC
TABLE III - Fabrication/Assembly Installation

In-house Fabrication and Assembly and Installation															
Description: N/A															

**NCSX June 2007 ETC
TABLE V - Basis of Estimate**

WBS Number: 12
WBS Title: Vacuum Vessel Systems
Job Number: 1204
Job Title: Vacuum Vessel System Procurements
Job Manager: Larry Dudek

M&S Backup

Heater Tape

Backup on Pourable Insulation



Confidential Quotation Form

8055 944ard Ave
 Columbus, OH 43201
 Phone: (614) 294-2072
 Fax: (614) 294-2072
<http://www.briskheat.com>

Customer: Princeton Plasma Physics Lab
Address: Head, PFM Division
 PO Box 451
 Princeton, NJ 08543
 PO Box 451

Quotation No.: SD1402
Date: 5/9/2007
Prepared By: Susan Blank

Payment Terms: Terms Net 30 Days
Delivery: See Below
Quote Valid: Sixty (60) Days
F. O. B.: Columbus, Ohio
Freight Charge: Collect
 Please advise carrier and account number
Total Pages: 2

Contact: P. E. Lawrence E. Dudek
Phone: 609-243-2195
Fax: 609-243-3249
Email: ldudek@pppl.gov

Reference:

Item	Qty	Product Description	Unit Price	Net Price
1	200	Custom BH1 Style Heating Tape: 1/2" W X 10 Ft L, Heavy insulated Heating Tape, 520 Total Watts, To be constructed with alloy 180. This alloy consists of 22% Ni with a balance of Cu and it is non-magnetic. 24" Leads Same End, With Split Plug, 120 Volt	\$60.25	\$13,650.00
2	48	Custom BH1 Style Heating Tape: 1/2" W X 6 Ft L, Heavy insulated Heating Tape, 310 Total Watts, To be constructed with alloy 180. This alloy consists of 22% Ni with a balance of Cu and it is non-magnetic. 24" Leads Same End, With Split Plug, 120 Volt	\$44.25	\$2,124.00
TOTAL:				\$15,774.00

Larry, I included a 25% quantity discount off of our manufactured list price in the above quoted price. Price quoted does not include shipping cost.

Lead-time since the tape will be custom-made is 3 to 5 weeks as the most.

The lead-time begins upon receipt of complete information to design and manufacture. The lead-time is subject to change based on order volume and availability of components. Please confirm lead time when placing the order.

Please use the assigned quote number when placing your order.

Please do not hesitate to call with any questions regarding this quotation.

Sincerely,

Susan Blank

Account Representative
BriskHeat® Products (BH Thermal)
 Phone: (614) 294-2072 ext. 156
 Fax: (614) 294-3807
 Email: sblank@briskheat.com

Assumed ~\$70 x 220 (based on current NCSX estimate) = ~\$15,400

From: Geoffrey J. Gettelfinger
 Sent: Wednesday, May 09, 2007 4:56 PM
 To: Paul Goranson; Lawrence E. Dudek; Wayne T. Reierzen; Ronald L. Strykowski; Mike Coley; Bradley E. Nelson
 Cc: Jerry D. Levine; William V. Slavin
 Subject: WBS 12 - Insulation

Follows:

Allow me to share the origin of the cost estimate for Paul Goranson's aerogel vacuum vessel insulation.

A very rough volume calculation yielded a volume of about 2.5 m**3 to fill the annulus between the vessel and the modular coils. I assumed that we should order twice this volume as this is a custom product.

Recall that the stock aerogel from Cabot Corporation has a water dispersant coating that becomes mobile at vessel bake temperatures and was judged an ES&H concern earlier in the design process.

Mr. Jodi Bates, a technical person with Cabot, SNAged that the "calcining" (baking) of the 5 m**3 of aerogel would cost about \$80k-\$90k. Allow me to re-emphasize the rough order of magnitude estimate basis.

When polled about whether NCSX should move ahead with this off-normal product request, the NCSX community felt the best logic was to hold off and to see if this becomes a stock product instead of a "special".

The \$80-\$90k is a soft price that needs a spec and Procurement oversight to make it more dependable.

Geoff

**NCSX June 2007 ETC
TABLE V - Basis of Estimate**

WBS Number: 12
WBS Title: Vacuum Vessel Systems
Job Number: 1204
Job Title: Vacuum Vessel System Procurements
Job Manager: Larry Dudek

Boots - Requisition 405021

Requisition Print Form

05/10/2007 09:07 AM



Requisition 405021 created on 03-12-2007 for
NCSX Winding Form Boot Assembly

Requisitioner: Thomas Meighan	Buyer:	Assigned:	Suggested Sources:
Deliver to: Thomas Meighan		Temp Shield/Laura Sweeney/Sar Harbor(207)667-9686	
		MS41 C-Site B313	Others

Phone: (609) 243-3053

CC/W/Obj/Exp Cts	FY1 - Amount	FY2 - Amount	Signature Authority
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Line Item 1: Assembly Dwg. No. se122-340-r0.pdf, Detail Dwg. No. se122-343-r0.pdf Port 2 Winding Form Boot Assy Material: NOMEX

Qty: 6 ea @ \$300.00	Total Price: \$1800.00 (Pct tolerance 10%)
9450 1*** 1204	2007 - \$1800.00
9450 1*** 1204	2008 - \$0.00
	R. Strykowski

Line Item 2: Assembly Dwg. No. se122-344-r0.pdf, Detail Dwg. No. se122-347-r0.pdf Port 5 Winding Form Boot Assy Material: NOMEX

Qty: 6 ea @ \$300.00	Total Price: \$1800.00 (Pct tolerance 10%)
9450 1*** 1204	2007 - \$1800.00
9450 1*** 1204	2008 - \$0.00
	R. Strykowski

Line Item 3: Assembly Dwg. No. se122-348-r0.pdf, Detail Dwg. No. se122-351-r0.pdf Port 6 Winding Form Boot Assy Material: NOMEX

Qty: 6 ea @ \$300.00	Total Price: \$1800.00 (Pct tolerance 10%)
9450 1*** 1204	2007 - \$1800.00
9450 1*** 1204	2008 - \$0.00
	R. Strykowski

Line Item 4: Assembly Dwg. No. se122-352-r0.pdf, Detail Dwg. No. se122-355-r0.pdf Port 7 Winding Form Boot Assy Material: NOMEX

Qty: 6 ea @ \$300.00	Total Price: \$1800.00 (Pct tolerance 10%)
9450 1*** 1204	2007 - \$1800.00
9450 1*** 1204	2008 - \$0.00
	R. Strykowski

Line Item 5: Assembly Dwg. No. se122-360-r0.pdf, Detail Dwg. No. se122-363-r0.pdf Port 9 Winding Form Boot Assy Material: NOMEX

Qty: 6 ea @ \$300.00	Total Price: \$1800.00 (Pct tolerance 10%)
9450 1*** 1204	2007 - \$1800.00
9450 1*** 1204	2008 - \$0.00
	R. Strykowski

Line Item 6: Assembly Dwg. No. se122-364-r0.pdf, Detail Dwg. No. se122-367-r0.pdf Port 10 Winding Form Boot Assy Material: NOMEX

Qty: 6 ea @ \$300.00	Total Price: \$1800.00 (Pct tolerance 10%)
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05/10/2007 09:07 AM

9450 1*** 1204	2007 - \$1800.00	2008 - \$0.00	R. Strykowski
9450 1*** 1204	2007 - \$1800.00	2008 - \$0.00	R. Strykowski

Line Item 7: Assembly Dwg. No. se122-368-r0.pdf, Detail Dwg. No. se122-371-r0.pdf Port 11 Winding Form Boot Assy Material: NOMEX

Qty: 6 ea @ \$300.00	Total Price: \$1800.00 (Pct tolerance 10%)
9450 1*** 1204	2007 - \$1800.00
9450 1*** 1204	2008 - \$0.00
	R. Strykowski

Line Item 8: Assembly Dwg. No. se122-372-r0.pdf, Detail Dwg. No. se122-375-r0.pdf Port 15 Winding Form Boot Assy Material: NOMEX

Qty: 6 ea @ \$300.00	Total Price: \$1800.00 (Pct tolerance 10%)
9450 1*** 1204	2007 - \$1800.00
9450 1*** 1204	2008 - \$0.00
	R. Strykowski

Line Item 9: Assembly Dwg. No. se122-376-r0.pdf, Detail Dwg. No. se122-379-r0.pdf Port 17 Winding Form Boot Assy Material: NOMEX

Qty: 6 ea @ \$300.00	Total Price: \$1800.00 (Pct tolerance 10%)
9450 1*** 1204	2007 - \$1800.00
9450 1*** 1204	2008 - \$0.00
	R. Strykowski

Line Item 10: Assembly Dwg. No. se122-380-r0.pdf, Detail Dwg. No. se122-383-r0.pdf Port 18 Winding Form Boot Assy Material: NOMEX

Qty: 6 ea @ \$300.00	Total Price: \$1800.00 (Pct tolerance 10%)
9450 1*** 1204	2007 - \$1800.00
9450 1*** 1204	2008 - \$0.00
	R. Strykowski

Line Item 11: Assembly Dwg. No. se122-384-r0.pdf, Detail Dwg. No. se122-387-r0.pdf Port 8 Winding Form Boot Assy Material: NOMEX

Qty: 6 ea @ \$300.00	Total Price: \$1800.00 (Pct tolerance 10%)
9450 1*** 1204	2007 - \$1800.00
9450 1*** 1204	2008 - \$0.00
	R. Strykowski

Line Item 12: Assembly Dwg. No. se122-388-r0.pdf, Detail Dwg. No. se122-391-r0.pdf Spacer Port Winding Form Boot Assy Material: NOMEX

Qty: 3 ea @ \$200.00	Total Price: \$600.00 (Pct tolerance 10%)
9450 1*** 1204	2007 - \$600.00
9450 1*** 1204	2008 - \$0.00
	R. Strykowski

Line Item 13: Assembly Dwg. No. se122-392-r0.pdf, Detail Dwg. No. se122-396-r0.pdf Neutral Beam Port Seal Boot 3 Material: NOMEX

Qty: 1 ea @ \$300.00	Total Price: \$300.00 (Pct tolerance 10%)
9450 1*** 1204	2007 - \$300.00
9450 1*** 1204	2008 - \$0.00
	R. Strykowski

Line Item 14: Assembly Dwg. No. se122-401-r0.pdf, Detail Dwg. No. se122-405-r0.pdf Port 12 Seal Boot Assy Material: NOMEX

Qty: 6 ea @ \$300.00	Total Price: \$1800.00 (Pct tolerance 10%)
9450 1*** 1204	2007 - \$1800.00
9450 1*** 1204	2008 - \$0.00
	R. Strykowski

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**NCSX June 2007 ETC
TABLE V - Basis of Estimate**

WBS Number: 12
WBS Title: Vacuum Vessel Systems
Job Number: 1204
Job Title: Vacuum Vessel System Procurements
Job Manager: Larry Dudek



Requisition Print Format

05/10/2007 09:07 AM

Requisition Print Format

05/10/2007 09:07 AM

Line item 15: Assembly Dwg. No. SE122-004, Detail dwg. no. se122-409-r0.pdf Port 4 Winding Form Boot Assy. Material: NOMEX

se122-409-r0.pdf (Line item 15)

Qty: 6 ea @ \$300.00	Total Price: \$1800.00 (Pct tolerance 10%)		
9450 1*** 1204	2007 - \$1800.00	2008 - \$0.00	R. Strykowski
9450 1*** 1204	2007 - \$1800.00	2008 - \$0.00	R. Strykowski

Requisition Total: \$24,300.00

Excess Inventory: Not Listed
 Stockroom Inventory: Not Stocked
 Receipt Inspection Required: Yes
 Sole Source: No
 BOA: Not Applicable

Attachments:
 NCSX-PRL-12-001-00-Signed.pdf
 se122-340-r0.pdf (Line item 1)
 se122-343-r0.pdf (Line item 1)
 se122-344-r0.pdf (Line item 2)
 se122-347-r0.pdf (Line item 2)
 se122-348-r0.pdf (Line item 3)
 se122-351-r0.pdf (Line item 3)
 se122-352-r0.pdf (Line item 4)
 se122-355-r0.pdf (Line item 4)
 se122-390-r0.pdf (Line item 5)
 se122-393-r0.pdf (Line item 5)
 se122-394-r0.pdf (Line item 6)
 se122-397-r0.pdf (Line item 6)
 se122-398-r0.pdf (Line item 7)
 se122-371-r0.pdf (Line item 7)
 se122-372-r0.pdf (Line item 8)
 se122-375-r0.pdf (Line item 8)
 se122-376-r0.pdf (Line item 9)
 se122-379-r0.pdf (Line item 9)
 se122-380-r0.pdf (Line item 10)
 se122-383-r0.pdf (Line item 10)
 se122-384-r0.pdf (Line item 11)
 se122-387-r0.pdf (Line item 11)
 se122-388-r0.pdf (Line item 12)
 se122-391-r0.pdf (Line item 12)
 se122-392-r0.pdf (Line item 13)
 se122-396-r0.pdf (Line item 13)
 se122-401-r0.pdf (Line item 14)
 se122-405-r0.pdf (Line item 14)
 se122-004-r0.pdf (Line item 15)

Reviews:
 Chemical - No
 Desktop IT - No
 AC Power - No
 Telecomm - No
 PAAA - No
 Quality Assurance - Yes
 Machining Resource - No

Safety - No
 Non-Desktop IT - No
 Labor Resources - No
 Radiological - No
 Printing - No
 Lift Manager - No

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**NCSX June 2007 ETC
TABLE V - Basis of Estimate**

WBS Number: 12
WBS Title: Vacuum Vessel Systems
Job Number: 1204
Job Title: Vacuum Vessel System Procurements
Job Manager: Larry Dudek

Boots - Requisition 405024

Requisition Print Form

05/10/2007 09:08 AM



Requisition 405024 created on 03-12-2007 for
NCSX Winding Form Seal Plates

Requisitioner: Thomas Meighan
Buyer: Thomas Meighan
Deliver to: MS41 C-Ste B313
Phone: (609) 243-3053

CO/Wkg/DOB/Exp Cts	FY1 - Amount	FY2 - Amount	Signature Authority
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Line Item 1: Assembly Dwg. No. se122-340-r0.pdf, Detail Dwg. No. se122-341-r0.pdf Port 2 Winding Form Seal Outer Plate Material: G-11CR			
Qty: 6 ea @ \$0.00		Total Price: \$0.00 (Pct tolerance 10%)	
9450 1***1204	2007 - \$0.00	2008 - \$0.00	R. Strykowski
Line Item 2: Assembly Dwg. No. se122-340-r0.pdf, Detail Dwg. No. se122-342-r0.pdf Port 2 Winding Form Seal Inner Plate Material: G-11CR			
Qty: 6 ea @ \$0.00		Total Price: \$0.00 (Pct tolerance 10%)	
9450 1***1204	2007 - \$0.00	2008 - \$0.00	R. Strykowski
Line Item 3: Assembly Dwg. No. se122-344-r0.pdf, Detail Dwg. No. se122-345-r0.pdf Port 5 Winding Form Seal Outer Plate Material: G-11CR			
Qty: 6 ea @ \$0.00		Total Price: \$0.00 (Pct tolerance 10%)	
9450 1***1204	2007 - \$0.00	2008 - \$0.00	R. Strykowski
Line Item 4: Assembly Dwg. No. se122-344-r0.pdf, Detail Dwg. No. se122-346-r0.pdf Port 5 Winding Form Seal Inner Plate Material: G-11CR			
Qty: 6 ea @ \$0.00		Total Price: \$0.00 (Pct tolerance 10%)	
9450 1***1204	2007 - \$0.00	2008 - \$0.00	R. Strykowski
Line Item 5: Assembly Dwg. No. se122-348-r0.pdf, Detail Dwg. No. se122-349-r0.pdf Port 6 Winding Form Seal Outer Plate Material: G-11CR			
Qty: 6 ea @ \$0.00		Total Price: \$0.00 (Pct tolerance 10%)	
9450 1***1204	2007 - \$0.00	2008 - \$0.00	R. Strykowski
Line Item 6: Assembly Dwg. No. se122-348-r0.pdf, Detail Dwg. No. se122-350-r0.pdf Port 6 Winding Form Seal Inner Plate Material: G-11CR			
Qty: 6 ea @ \$0.00		Total Price: \$0.00 (Pct tolerance 10%)	
9450 1***1204	2007 - \$0.00	2008 - \$0.00	R. Strykowski
Line Item 7: Assembly Dwg. No. se122-352-r0.pdf, Detail Dwg. No. se122-353-r0.pdf Port 7 Winding Form Seal Outer Plate Material: G-11CR			
Qty: 6 ea @ \$0.00		Total Price: \$0.00 (Pct tolerance 10%)	

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9450 1***1204	2007 - \$0.00	2008 - \$0.00	R. Strykowski
Line Item 8: Assembly Dwg. No. se122-352-r0.pdf, Detail Dwg. No. se122-354-r0.pdf Port 7 Winding Form Seal Inner Plate Material: G-11CR			
Qty: 6 ea @ \$0.00		Total Price: \$0.00 (Pct tolerance 10%)	
9450 1***1204	2007 - \$0.00	2008 - \$0.00	R. Strykowski
Line Item 9: Assembly Dwg. No. SE122-004, Detail Dwg. No. se122-356-r0.pdf Neutral Beam Port Seal Fill Plate Assy. Material: G-11CR			
Qty: 6 ea @ \$0.00		Total Price: \$0.00 (Pct tolerance 10%)	
9450 1***1204	2007 - \$0.00	2008 - \$0.00	R. Strykowski
Line Item 10: Assembly Dwg. No. se122-360-r0.pdf, Detail Dwg. No. se122-361-r0.pdf Port 9 Winding Form Seal Outer Plate Material: G-11CR			
Qty: 6 ea @ \$0.00		Total Price: \$0.00 (Pct tolerance 10%)	
9450 1***1204	2007 - \$0.00	2008 - \$0.00	R. Strykowski
Line Item 11: Assembly Dwg. No. se122-360-r0.pdf, Detail Dwg. No. se122-362-r0.pdf Port 9 Winding Form Seal Inner Plate Material: G-11CR			
Qty: 6 ea @ \$0.00		Total Price: \$0.00 (Pct tolerance 10%)	
9450 1***1204	2007 - \$0.00	2008 - \$0.00	R. Strykowski
Line Item 12: Assembly Dwg. No. se122-364-r0.pdf, Detail Dwg. No. se122-365-r0.pdf Port 10 Winding Form Seal Outer Plate Material: G-11CR			
Qty: 6 ea @ \$0.00		Total Price: \$0.00 (Pct tolerance 10%)	
9450 1***1204	2007 - \$0.00	2008 - \$0.00	R. Strykowski
Line Item 13: Assembly Dwg. se122-364-r0.pdf, Detail Dwg. No. se122-366-r0.pdf Port 10 Winding Form Seal Inner Plate Material: G-11CR			
Qty: 6 ea @ \$0.00		Total Price: \$0.00 (Pct tolerance 10%)	
9450 1***1204	2007 - \$0.00	2008 - \$0.00	R. Strykowski
Line Item 14: Assembly Dwg. No. se122-368-r0.pdf, Detail Dwg. No. se122-369-r0.pdf Port 11 Winding Form Seal Outer Plate Material: G-11CR			
Qty: 6 ea @ \$0.00		Total Price: \$0.00 (Pct tolerance 10%)	
9450 1***1204	2007 - \$0.00	2008 - \$0.00	R. Strykowski
Line Item 15: Assembly Dwg. No. se122-368-r0.pdf, Detail Dwg. No. se122-370-r0.pdf Port 11 Winding Form Seal Inner Plate Material: G-11CR			
Qty: 6 ea @ \$0.00		Total Price: \$0.00 (Pct tolerance 10%)	
9450 1***1204	2007 - \$0.00	2008 - \$0.00	R. Strykowski
Line Item 16: Assembly Dwg. No. se122-372-r0.pdf, Detail Dwg. No. se122-373-r0.pdf Port 15 Winding Form Seal Outer Plate Material: G-11CR			
Qty: 6 ea @ \$0.00		Total Price: \$0.00 (Pct tolerance 10%)	
9450 1***1204	2007 - \$0.00	2008 - \$0.00	R. Strykowski
Line Item 17: Assembly Dwg. No. se122-372-r0.pdf, Detail Dwg. No. se122-374-r0.pdf Port 15 Winding Form Seal Inner Plate Material: G-11CR			
Qty: 6 ea @ \$0.00		Total Price: \$0.00 (Pct tolerance 10%)	

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**NCSX June 2007 ETC
TABLE V - Basis of Estimate**

WBS Number: 12
WBS Title: Vacuum Vessel Systems
Job Number: 1204
Job Title: Vacuum Vessel System Procurements
Job Manager: Larry Dudek



Requisition Print Format 05/10/2007 09:08 AM

9450 1*** 1204	2007 - \$0.00	2008 - \$0.00	R. Strykowski
Line item 18: Assembly Dwg. No. se122-376-r0.pdf, Detail Dwg. No. se122-377-r0.pdf, Port 17 Winding Form Seal Outer Plate Material: G-11CR			
Qty: 6 ea @ \$0.00	Total Price: \$0.00 (Pct tolerance 10%)		
9450 1*** 1204	2007 - \$0.00	2008 - \$0.00	R. Strykowski
Line item 19: Assembly Dwg. No. se122-376-r0.pdf Detail Dwg. No. se122-378-r0.pdf Port 17 Winding Form Seal Inner Plate Material: G-11CR			
Qty: 6 ea @ \$0.00	Total Price: \$0.00 (Pct tolerance 10%)		
9450 1*** 1204	2007 - \$0.00	2008 - \$0.00	R. Strykowski
Line item 20: Assembly Dwg. No. se122-380-r0.pdf Assembly Dwg. No. se122-381-r0.pdf Port 18 Winding Form Seal Outer Plate Material: G-11CR			
Qty: 6 ea @ \$0.00	Total Price: \$0.00 (Pct tolerance 10%)		
9450 1*** 1204	2007 - \$0.00	2008 - \$0.00	R. Strykowski
Line item 21: Assembly Dwg. No. se122-380-r0.pdf Detail Dwg. No. se122-382-r0.pdf Port 18 Winding Form Seal Inner Plate Material: G-11CR			
Qty: 6 ea @ \$0.00	Total Price: \$0.00 (Pct tolerance 10%)		
9450 1*** 1204	2007 - \$0.00	2008 - \$0.00	R. Strykowski
Line item 22: Assembly Dwg. No. se122-384-r0.pdf Detail Dwg. No. se122-385-r0.pdf Port 8 Winding Form Seal Outer Plate Material: G-11CR			
Qty: 6 ea @ \$0.00	Total Price: \$0.00 (Pct tolerance 10%)		
9450 1*** 1204	2007 - \$0.00	2008 - \$0.00	R. Strykowski
Line item 23: Assembly Dwg. No. se122-384-r0.pdf Detail Dwg. No. se122-386-r0.pdf Port 8 Winding Form Seal Inner Plate Material: G-11CR			
Qty: 6 ea @ \$0.00	Total Price: \$0.00 (Pct tolerance 10%)		
9450 1*** 1204	2007 - \$0.00	2008 - \$0.00	R. Strykowski
Line item 24: Assembly Dwg. se122-388-r0.pdf Detail Dwg. No. se122-389-r0.pdf Spacer Port Winding Form Seal Outer Plate 3 Material: G-11CR			
Qty: 3 ea @ \$0.00	Total Price: \$0.00 (Pct tolerance 10%)		
9450 1*** 1204	2007 - \$0.00	2008 - \$0.00	R. Strykowski
Line item 25: Assembly Dwg. No. se122-388-r0.pdf Detail Dwg. No. se122-390-r0.pdf Spacer Port Winding Form Seal Inner Plate Material: G-11CR			
Qty: 3 ea @ \$0.00	Total Price: \$0.00 (Pct tolerance 10%)		
9450 1*** 1204	2007 - \$0.00	2008 - \$0.00	R. Strykowski
Line item 26: Assembly Dwg. No. se122-356-r0.pdf Detail Dwg. No. se122-393-r0.pdf Neutral Beam Port Winding Form Seal Fill Plate Material: G-11CR			
Qty: 6 ea @ \$0.00	Total Price: \$0.00 (Pct tolerance 10%)		
9450 1*** 1204	2007 - \$0.00	2008 - \$0.00	R. Strykowski

Requisition Total: \$0.00

<https://bones.pplf.gov/printreq/req=405024>

Page 3 of 4

Requisition Print Format

Excess Inventory: Not Listed
 Stockroom Inventory: Not Stocked
 Receipt Inspection Required: Yes
 Sole Source: No
 BQA:
 Attachments:
 None

Reviews: Chemical - No
 Desktop IT - No
 AC Power - No
 Telecomm - No
 PAAA - No
 Quality Assurance - Yes
 Machining Resource - No
 Safety - No
 Non-Desktop IT - No
 Labor Resources - No
 Radiological - No
 Printing - No
 Lift Manager - No

05/10/2007 09:08 AM

<https://bones.pplf.gov/printreq/req=405024>

Page 4 of 4

NCSX June 2007 ETC
TABLE V - Basis of Estimate

WBS Number: 12
WBS Title: Vacuum Vessel Systems
Job Number: 1204
Job Title: Vacuum Vessel System Procurements
Job Manager: Larry Dudek

From:FERGUSON METALS

04/20/2007 16:44 #165 P.001/001

3475 Symmes Road
Hamilton, OH 45015
Phone: 1-800-347-2376
Fax: 513-874-6857



FACSIMILE

TO: Fred FROM: Frank Mefford
fmefford@fergusonmetals.com

COMPANY: Princeton University DATE: 4/20/2007

FAX NUMBER: 609-243-3030 TOTAL NO. OF PAGES INCLUDING COVER: 1

REP: RPQ QUOTE VALID FOR: 15 Days

SALES QUOTE

Description	AMS	Width	Length	Quantity	Weight	Price
625 .500 36x120	5599	36	120	20	13,560#	16.00#RUZ
625 .750 36x120	5599	36	120	6	6,090#	16.00#RUZ

Quoted + surcharge at the time of shipment

16.0
11.5
w/ surc. #/lb → # 27.50

A286?

FOB:45015
Estimated Lead Time:14 weeks
** Subject to prior sale.

Thanks for the opportunity.


Frank Mefford

Inconel 625 Quote

In-Stock and On-Time
Specialty Stainless Steels & Alloys



3475 Symmes Road
Hamilton, OH 45015

Surcharge Totals for February 2007 – June 2007

Grades	February	March	April	May	June
	2/1/07 - 2/28/07	3/1/07 - 3/31/07	4/1/07 - 4/30/07	5/1/07 - 5/31/07	6/1/07 - 6/30/07
15-5	0.6606	0.7188	0.8284	0.9719	1.0645
15-7	1.6736	1.7734	1.9641	2.2500	2.4095
17-4	0.5820	0.6346	0.7327	0.8630	0.9468
17-7	1.2753	1.3793	1.5773	1.8250	2.0024
18SR	0.1254	0.1318	0.1555	0.2028	0.2246
201	0.8050	0.8784	1.0079	1.1733	1.2887
301 7.0%	1.2545	1.3462	1.5370	1.7785	1.9520
302/304/304L	1.4215	1.5257	1.7421	2.0128	2.2098
304-8.5%	1.4924	1.6127	1.8419	2.1263	2.3341
305	2.0182	2.1772	2.4821	2.8553	3.1332
309	2.0786	2.2427	2.5561	2.9401	3.2309
310	3.2314	3.4810	3.9604	4.5393	4.9847
316/316L	2.2533	2.3962	2.6703	3.0543	3.2930
317L	2.6845	2.8430	3.1467	3.5894	3.8544
321	1.5916	1.7166	1.9552	2.2522	2.4679
347	1.5710	1.6970	1.9374	2.2351	2.4519
409/409 Mod	0.0940	0.1079	0.1319	0.1758	0.1861
410/410S	0.0793	0.0942	0.1201	0.1651	0.1777
430	0.0941	0.1105	0.1382	0.1865	0.2074
434	0.2898	0.3082	0.3398	0.4103	0.4320
439	0.1248	0.1404	0.1660	0.2140	0.2353
440A	0.0941	0.1105	0.1382	0.1865	0.2074
Alloy 286	1.4924	1.6127	1.8419	2.1263	2.3341
Alloy 625	10.9488	10.7978	11.5031	12.1638	13.6292
Alloy 718	9.2413	9.1268	9.7192	10.2307	11.4262
Alloy HX	9.2413	9.1268	9.7192	10.2307	11.4262

Order Hotline

1.800.347.2376

fax: 513.874.6857

www.fergusonmetals.com

salesquote@fergusonmetals.com

5/7/2007 1:08:00 PM

Activity ID	MILE-stones (level 2 & 3)	Activity Description	Duration (work days)	Baseline Start	Baseline Finish	Shifts	Total Float	% cmplt	Proposed Budgeted							
										FY07	FY08	FY09	FY10	FY11	FY12	
cc 9450 - NCSX Fabrication (MIE)																
12 - Vacuum Vessel Systems																
Job: 1204 - VV Sys Procurements (nonVVSA)-DUDEK																
VV Vertical Supports																
124-037		PPPL Fab VV Vert. Sprts (log # M1091) (complet	197	01MAY07A	01MAY07A				0.00							
VV Personnel Access Port & Lateral sprts																
124-110		Issue req,Bid & Award VV NB port cover	25	01OCT09*	04NOV09			81	0.00							
124-120		Award VV NB port cover	0		04NOV09*			81	0.00							
124-130		VV NB port cover Fabrication	40	05NOV09	13JAN10			81	83,786.32						41=58.51\$K ;	
VV Local I&C																
1204-101		Drawings Signed -Local I&C	0		01MAY07*			360	0.00							
1204-105		Issue req,Bid & Award -Local I&C	25	02MAY07	06JUN07			360	0.00							
1204-109		Award -Local I&C	0		06JUN07			360	0.00							
1204-113		Deliver -Local I&C	40	07JUN07	02AUG07			360	34,400.96						41=27\$K ;	
Thermal Insulation																
123-040		Issue req,Bid & Award insul boots	25	26FEB08	31MAR08			76	0.00							
123-045		Award Insulation Boots	0		31MAR08*			76	0.00							
123-050		Fabricate& Deliver Insul Boots	130	01APR08	02OCT08			76	72,997.33						41=56\$K ;	
122-035		Issue req,Bid & Award Port Thermal Insulation	25	27FEB08	01APR08			115	0.00							
122-041		Award Port Thermal Insulation	0		01APR08*			115	0.00							
122-051		Deliver Port Thermal Insulation	40	02APR08	28MAY08			115	32,700.00						41=25\$K ;	
122-030		Issue req,Bid & Award Pourable Insulation	25	27AUG09	01OCT09			176	0.00							
122-036.9		Award Pourable Insulation	0		01OCT09*			176	0.00							
122-037		Deliver Pourable Insulation	40	02OCT09	30NOV09			176	114,560.00						41=80\$K ;	
Heater Tape for Port Stub																
1204-121		Drawings Signed Heater Tape for port stubs	0		04SEP07*			140	0.00							
1204-125		Issue req,Bid & Award -Heater Tape for port stub	25	05SEP07	09OCT07			140	0.00							
1204-129		Award Heater Tape for port stubs	0		09OCT07			140	0.00							
1204-130		Deliver Heater Tape for port stubs	40	10OCT07	06DEC07			140	20,143.20						41=15\$K ;	
T/C and Heater Tape Leads																
1204-145		Issue req,Bid & Award-T/C and Heater Tape Leads	25	29AUG07	03OCT07			136	0.00							
1204-149		Award T/C and Heater Tape Leads	0		03OCT07			136	0.00							
1204-153		Deliver T/C and Heater Tape Leads	40	04OCT07	28NOV07			136	36,951.00						41=28.25\$K ;	

Activity ID	MILEstones (level 2 & 3)	Activity Description	Duration (work days)	Baseline Start	Baseline Finish	Shifts	Total Float	% cmplt	Proposed Budgeted						
										FY07	FY08	FY09	FY10	FY11	FY12
Flux loop junction boxes and spacer templates															
1204-173M		Material Delivery (desifn/fab in job 3101)	35	20JUN07	08AUG07		187		12,275.12						
Subtotal			0		13JAN10		152		407,813.93						

