

NCSX June 2007 ETC
TABLE V - Basis of Estimate

WBS Number: 145
WBS Title: Modular Coil-Coil Interfaces
Job Number: 1431
Job Title: Modular Coil Interface Hardware
Job Manager: Larry Dudek

Backup Documentation for M&S Estimates:

Item	Qty	Description	Drawing	Price Each	Total
1	60	SE140-191-1 Material option #1	Fabricate MCWF Flange Stud (10.5" long) per drawing. Material is as per drawing A286 per ASTM 453 Grade 660. Using 1.375" stock. Outside diameter of stud to be 1.375" +0/-0.01. Silver plating per AMS 2410 on threads.	\$275.00	
	140	SE140-191-2 Material option #1	Fabricate MCWF Flange Stud (7.5" long) per drawing. Material is as per drawing A286 per ASTM 453 Grade 660. Using 1.375" stock. Outside diameter of stud to be 1.375" +0/-0.01. Silver plating per AMS 2410 on threads.	\$257.00	
2	60	SE140-191-1 Material option #2	Fabricate MCWF Flange Stud (10.5" long) per drawing. Material is as per drawing A286 per ASTM 453 Grade 660. Using 1.500" stock. Outside diameter of stud to be 1.375" +0/-0.01. Silver plating per AMS 2410 on threads.	\$325.00	
	140	SE140-191-2 Material option #2	Fabricate MCWF Flange Stud (7.5" long) per drawing. Material is as per drawing A286 per ASTM 453 Grade 660. Using 1.500" stock. Outside diameter of stud to be 1.375" +0/-0.01. Silver plating per AMS 2410 on threads.	\$297.00	
3	260	Fabricate Washer	#SE140-193, Rev 0 dated 3/7/07	\$149.00	
4	260	Fabricate Spherical Washer Sails	#SE140-194-1 and #SE140-194-2, Rev 0 dated 3/7/07	\$163.00	

BITEC div Sample Machining Inc
225 N. Jersey Street
Darien, OH 45422
Phone: 937 258 3328
Fax: 937 258 3540

Updated Stud Estimate
5/4/2007

Quote: Precision Coatings
At: Plasma Physics Laboratory
700 S. 2nd St. 4th Fl.
Pittsburgh, PA 15222
United States

Quote Number:	20070708	Quote:	APRILNE WHITE
Quote Date:	05/04/07	Expires:	05/12/07 07:59:59
Customer:	PPPL	Name:	Neil 30 Days
Company:	Plasma Research	Phone:	412 324 2388
Rep. by:	United Parcel Service	Fax:	
Quote:	Quoted Date	Service:	815346668950

*Note: Please see drawing 20070708

Thank you for the opportunity to submit this quote. All prices and terms are valid for 30 days from the date of this quote.

No.	Description	Quantity	Unit	Price
1	SE140-191-1 MCWF Flange Studs	1	EA	\$282.75 EA
2	SE140-191-2 MCWF Flange Studs	1	EA	\$238.40 EA
Total:				\$521.15

BITEC div Sample Machining Inc

Quotes for Shims

Material	Price
304 Stainless Steel	\$343.77 Each
316 Stainless Steel	
316L Stainless Steel	
304 Inconel	
316 Inconel	
316L Inconel	
304 Titanium	
316 Titanium	
316L Titanium	
304 Aluminum	
316 Aluminum	
316L Aluminum	
304 Copper	
316 Copper	
316L Copper	
304 Invar	
316 Invar	
316L Invar	
304 Monel	
316 Monel	
316L Monel	
304 Hastelloy	
316 Hastelloy	
316L Hastelloy	
304 Incoloy	
316 Incoloy	
316L Incoloy	
304 Super Invar	
316 Super Invar	
316L Super Invar	
304 Kovar	
316 Kovar	
316L Kovar	
304 Inconel 625	
316 Inconel 625	
316L Inconel 625	
304 Inconel 718	
316 Inconel 718	
316L Inconel 718	
304 Inconel 909	
316 Inconel 909	
316L Inconel 909	
304 Inconel X	
316 Inconel X	
316L Inconel X	
304 Inconel 800	
316 Inconel 800	
316L Inconel 800	
304 Inconel 825	
316 Inconel 825	
316L Inconel 825	
304 Inconel 230	
316 Inconel 230	
316L Inconel 230	
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316 Inconel 240	
316L Inconel 240	
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Flange Hole Configuration											
Hole #	C-C on C) for tensioner	C-B on C	C-B on B	A-B on B	A-B on A	A-A on A					
1	T	OK	H	OK maybe	T	H	NO	H	NO - D&L	H	NO - D
2	T	OK	H	OK	T	H	OK	H	NO - D&L	H	NO - D
3	T	OK maybe	H	NO - D	T	H	OK	H	NO - D&L	H	NO - D
4	H	NO - D	H	NO - D	T	H	NO - D	H	NO - D&L	H	NO - D
5	H	NO - D	H	OK	T	H	OK	H	NO - D&L	H	NO - D
6	H	NO - D	H	OK	T	H	OK	H	NO - D	H	NO - D&L
7	H	NO - D	H	OK	T	H	OK	H	NO - D	H	NO - D
8	H	NO - D	H	OK	T	H	OK	H	NO - D	H	NO - D
9	H	NO - D	H	OK	T	H	NO - D	H	NO - D	H	NO - D
10	H	NO - D	H	NO - D	T	H	OK	H	NO - D	H	NO - D
11	H	NO - D	H	OK	T	H	NO way	H	NO - D	H	NO - D&L
12	H	OK	H	OK	T	H	OK	H	NO - D	H	NO - 1' clearance to bus lead block
13	H	OK	H	OK Remove 2 poloidal break bolts	T	H	OK	H	NO - D	H	NO - 1' clearance to bus lead block
14	H	OK	H	OK	T	H	OK	H	NO - D	H	NO - 4' clearance to bus lead block
15	H	OK Remove 2 poloidal break bolts	H	OK	T	H	OK	T	H	NO - D	NO - D
16	T	Maybe	H	OK	T	H	OK	H	NO - D	H	NO - D
17	H	Maybe	H	OK	T	H	OK Remove poloidal break	H	NO - D	H	NO - D
18	H	OK Remove 2 poloidal break bolts	H	OK	T	H	NO - D	H	NO - D	H	NO - L
19	H	OK	H	NO - D&L	T	H	NO - D	H	NO - D	H	NO - L
20	H	OK	H	OK	T	H	OK	H	NO - D	H	NO - L
21	H	OK	H	OK	T	H	OK	H	NO - D	H	NO - L
22	H	NO - D	H	NO - D&L	T	H	OK	H	NO - D	H	NO - D
23	H	NO - D	H	NO - D&L	T	H	OK	H	NO - D	H	NO - D
24	H	NO - D	H	NO - D&L	T	H	NO - D	H	NO - D	H	NO - D
25	H	NO - D	H	NO - D&L	T	H	NO - D	H	NO - D	H	NO - D
26	H	NO - D	H	NO - D&L	T	H	OK	T			
27	H	NO - D	T	H	NO - D&L	H					
28	H	NO - D	T	H	NO - D&L	H					
29	H	NO - D	T	H	NO - D&L	H					
30	H	OK maybe	H								
31	H	OK	H								
32	H	OK	H								

Flange Hole Configuration

Qty Holes	28	26	3	24	23	19	123	3-Coil Total
							738	Machine Total
							75	10%
							813	
							Say 1.5 inches tall x	
							813	100 Feet

Nose Shim Material Estimate							Comments
	A to A Join	A to B-E	A to B-D	B to C-E	B to C-E	C to C-D	
Area (sq. ft)	345.5	521	535	203	223	426	Scaled off of template drawings SE
Weight (lbs)	64.8	97.7	100.3	38.1	41.8	79.9	
310SS=0.3#/cu.in.							
Quantity	3	3	3	3	3	3	
Pounds	194.3	293.1	300.9	114.2	125.4	239.6	1267.59
Total Area	1,036.5	1,563.0	1,605.0	609.0	669.0	1,278.0	6760.50 Sq. In.
							253.52 25% Extra for Wastage
							633.80 50% Extra for Various Thicknesses
							8915.41
							71300.00 Cost @ \$8/#

	Total Machine	1 FPA	10% Spare	Total	Tests	TOTAL	Unit
Line 1: 10.5" Studs	136	45	5	50	10	60	
Line 2: 7.5" Studs	350	117	12	128	10	138	
Line 3: Washer	622	207	21	228	30	258	
Line 4: Spherical Sets	622	207	21	228	30	258	
Insulating Washers	622	207	21	228	30	258	
Insulating Bushing Stock	486	162	48.6	535		133.65 Feet	33.4125
Supernuts	486	162					
Nuts	116	39					

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PPPL Princeton Plasma Physics Laboratory Procurement Card System

Name: Return to Procurement Approval Card ID: 44016

P-Card Log # 1 191-114278 12 R G11-CR) 2.0 ID X 2.25 OD Tube
Requestor: Michael E Cole Status: Requisition Cardholder: Inquiries: Created: 3/12/2007

P-Card Log Line Item

Line	Quantity	UOM	Unit Price	Extended	Forecast Date	Forecast Comment
1	112	PCS	14.50	\$1613.00	3/12/2007	

Enter Complete Description - include mat. spec, part specifications, etc.
12 R G11-CR) Organic non-banded lamina tube 2.0 ID X 2.2500 X .48" long

Cost Center Distribution Accounts for this Line Item

Cost Ctr	Rate Pct	Job Pct	Expense Class	Dollar Amount	Details
0000	100%	1421	41001-44016/00001.0	\$1613.00	

Vendor Name: Princeton Plasma Physics Lab
Date Ordered: 3/12/2007
Date Expected: 3/12/2007

Final Amount: \$1,613.00

Shipping/Handling: 7.50
Sales Tax: 0
Other Charges: 0
Total Charges: \$1,620.50

Other Charges Comment: G-11 Backup

http://www.pppl.gov/procurement/procurement.asp?Page=18&CardID=191-114278&cardholder=1
Page 1 of 2

Superbolt Quote

From: Steve Busalacchi
Sent: Wednesday, March 28, 2007 2:43 PM
To: Cole, Michael
Subject: Superbolt Quote

Mike,

Our job for this special will be: 4-02200
For 500pcs = \$225.00 each, Delivery = 4-6 wks
For 1700pcs = \$295.00 each, Delivery = 3-4 wks

Terms: NET 30 (upon credit approval)
FOB: Shipping Point

Freight: Cradle, via Truck prepay & add or collect, 350 rate charge

Note: we need the C.D. to be 2.00" to keep dimensions given for the Nitronic 50 nut body. However, we can hold the same heights as the CV samples.

I will provide approval drawing tomorrow.

Regards,

Steve Busalacchi,
Engineering Manager,
SUPERBOLT, INC.
SU-412-275-1149
sbusalacchi@superbolt.com

From: Steve Busalacchi
Sent: Wednesday, March 14, 2007 3:25 PM
To: Cole, Michael
Cc: 'michael@pppl.gov'
Subject: RE: NITRONIC 33

Mike,

Late use \$225.00 each for 400 pieces special 1-3/8" - 8 lip. Materials will be

AMERICAN PLASMA LAB
Princeton Plasma Physics Lab
412 S. 8th Street
Princeton, NJ 08542
Tel: 609-241-2185 Fax: 609-241-2246

QUOTATION # 1297

Requested by: Lawrence Dudek
Quotation Valid: 30 Days
Delivery: "See Below"
E.O.S. (Shipping): 100% IN A
Trade No: 10
Bill: Metals/Supplies

Item	Qty	Description	Unit Price	Amount
1.	1	Engineering set up fee, non-refundable bag # 127-PPPL	\$3,888.00	\$3,888.00
1.	1	Special bag, APC Anger 100PPPL, ref PPPL-452-146-409	\$ 181.00	\$ 181.00
4.		REF: Wing Support Bladder		
SHIPPING				
TOTAL				

COMMENTS:
1. Change & dimension requires non-drawing approval, additional engineering fee.
2. Delivery time after approval of drawing and purchase order: 30 working days.
3. 10% of engineering time for the WBS order.
4. Payment: net 30 - 5%VC CRG of 2% per 30s (total to 24% per job) to be added to post-ship invoice.

Handwritten signature: M. Cole, May 9, 2007

Main nut body in Nitronic 50, and Jackbolts & washer in Inconel 718
How did the sample Torqueman 1 sent 90?

Regards,

Steve Busalacchi,
Engineering Manager,
SUPERBOLT, INC.
PH: 412-275-1149
sbusalacchi@superbolt.com

From: Cole, Michael (michael@pppl.gov)
Sent: Wednesday, March 14, 2007 3:31 AM
To: Steve Busalacchi
Subject: RE: NITRONIC 33

Steve,

Sorry for the delay in getting back to you.

We finally found a link to the Nitronic 60 material. I have attached the data for your information.

You can price the material for Nitronic 50 or Nitronic 60.

Mike

Michael J. Cole
Oak Ridge National Laboratory
Bldg 5700, Rm. 0206, MS 5709
Burlington, VA Road
P. O. Box 2008
Oak Ridge, TN 37831-6160

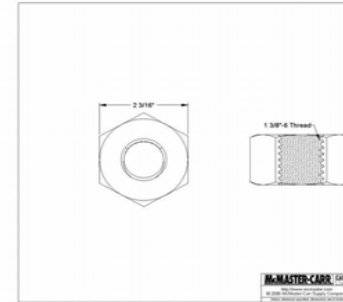
Phone: 865-574-2954
Fax: 865-541-4128
E-mail: colejm@ornl.gov

McMaster Carr Quote on Nuts dated May 9, 2007

Nuts
This product matches all of your selections.

Part Number: 9120A042 \$21.15 per Pack of 1

Nut Type: Machine Screw and Hex Nut
Machine Screw and Hex Nut
Type: Hex
Material Type: Stainless Steel
Finish: Type
Grade/Class: 316 Stainless Steel
System of Measurement: Inch
Lock Thread Size: 1-3/8"-6
Thread Direction: Right-Hand Thread
Width: 2-3/16"
Thread Type: Standard Threads
Rockwell Hardness: 340
Specifications Met: American National Standards Institute (ANSI) and American Society of Mechanical Engineers (ASME)
ANSI Specification: ANSI B 18.2.2
ASME Specification: ASME B 18.2.2



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Job Manager: Larry Dudek

From: Larry Dudek
 Subject: **Price and Delivery 310SS**
 Date: May 15, 2007 1:58:53 PM EDT
 To: FRED DAHLGREN
 Cc: Wayne T. Reiersen <reiersen@pppl.gov>
 2 Attachments, 852 KB [Save](#) [Slideshow](#)

Allegany Ludlum quoted delivery end of July for 3000# of 1/2" thick 310SS.
 Price \$3.36/# + \$4.54/# SURCHARGE= \$7.90/# total.

Larry Dudek
 X2185

310 SS Quote


[309_310.pdf \(754 KB\)](#)



Specialty Metals That Make Our World™

Products

- Stainless Steel
 - Austenitic
 - Duplex
 - Ferritic
 - Martensitic
 - Precipitation
 - Hardening
 - Superustenitic
 - Superferritic
- Nickel Alloy
 - Corrosion Resistant
 - Electronic Alloys
 - High Temperature
- Titanium
 - Alloyed
 - Commercially Pure
- Electrical Silicon Steel
 - Grain Oriented Silicon Steels

310 / 310S Stainless Steel

Austenitic stainless steel typically used for elevated temperature applications
 Market Applications
 Heat Treating, Chemical Processing, Food Processing Industry

Sheet	Plate	Strip
Tolerance Guide Sales Contact 800-259-3566	Tolerance Guide Sales Contact 800-299-7528	Tolerance Guide Sales Contact 800-323-1240

-  Technical Data Sheet
-  Surcharge
-  OGHA
-  WIMIS (French)
-  WIMIS (English)

Search: [Find It!](#)

From: Phil Heitzenroeder
 Subject: **RE: Weld Material**
 Date: December 15, 2006 2:02:24 PM EST
 To: Ruud, Chuck <Charles.Ruud@metatek.com>
 Cc: Lawrence E. Dudek <ldudek@pppl.gov>

[Show in Mailbox](#)

Chuck,
 I talked with Larry, and he feels that the 60 lbs. is plenty for our needs. Thanks for the offer, though.
 Phil

From: Ruud, Chuck [mailto:Charles.Ruud@metatek.com]
 Sent: Tuesday, December 12, 2006 6:06 PM
 To: Phil Heitzenroeder
 Subject: RE: Weld Material

Any word?
 Chuck

I can offer a lower price for the last 1/2. The \$40 includes the welding and testing costs.
 Material is \$26/lb.
 To summarize 60 lbs at \$40 and the balance at \$26.
 Fair?

Chuck Ruud
 Quality Manager
 MetalTek International
 Carondelet Division
 8600 Commercial Blvd.
 Pevely, MO 63070
charles.ruud@metatek.com
 636-475-2199

From: Phil Heitzenroeder [mailto:pheltzen@pppl.gov]
 Sent: Thursday, December 07, 2006 4:08 PM
 To: Ruud, Chuck; Lawrence E. Dudek
 Subject: RE: Weld Material

Chuck,
 Thanks for the offer....Larry, what do you think. - should we buy it all? Chuck, we'll get back to you soon.
 Phil

From: Ruud, Chuck [mailto:Charles.Ruud@metatek.com]
 Sent: Tuesday, December 05, 2006 6:20 PM
 To: Phil Heitzenroeder
 Subject: Weld Material

We have the order for 60 pounds of weld wire.
 Turns out we have 141 pounds of the LNM 4455 weld wire. All from the same certified lot.
 Do you want to purchase all?

Chuck Ruud
 Quality Manager
 MetalTek International

NCSX June 2007 ETC
TABLE V - Basis of Estimate

WBS Number: 145
WBS Title: Modular Coil-Coil Interfaces
Job Number: 1431
Job Title: Modular Coil Interface Hardware
Job Manager: Larry Dudek

Modular Coil Test Flange
For A-B joints, assumed 18 inch centers which results in 6
bolts/joint vs. the assumed 2-3 (by Task Force)

