

Princeton University

**Plasma Physics Laboratory**

James Forrestal Campus

P.O. Box CN17

Princeton, N.J. 08543

14 March 2005

Ms. Nancy Horton  
Energy Industries of Ohio  
6100 Oak Tree Boulevard, Suite 200  
Independence, OH 44131

**SUBJECT: Specification Addendum Letter No. 6-2** to Subcontract S005242-F's NCSX Product Specification, Modular Coil Winding Forms NCSX-CSPEC-141-03-06

Dear Ms. Horton:

National Compact Stellarator Experiment (NCSX) Project PRODUCT SPECIFICATION, MODULAR COIL WINDING FORMS, NCSX-CSPEC-141-03-06 (Revision 6), dated 14 January 2005, was transmitted to EIO as an attachment to proposed Amendment No. 2 to Subcontract S005242-F. Transmittal of the Amendment and the Specification was by e-mail on 17 January 2005. The Specification was effective for execution upon receipt.

In the interest of clarity and immediate communication to EIO of NCSX Project comments on EIO requests and recommendations that will either directly or indirectly impact on the Subcontract Specification and or drawings, the Project will issue periodically, as appropriate, serial numbered Specification Addendum Letters. Specification and drawing errors or omissions identified by the NCSX Project and the Project "fix" will also be addressed in these letters.

This **Specification Addendum Letter No. 6-2** (second Addendum Letter issued for Revision 6 of the Specification) provides the following information reported by NCSX Project Management. This information is effective immediately and where appropriate will be formally incorporated in the next revision of the Specification, now projected to be issued on about 15 April 2005.

Ms. Nancy Horton

14 March 2005

SUBJECT: **Specification Addendum Letter No. 6-2** to Subcontract  
S005242-F's NCSX Product Specification, Modular Coil  
Winding Forms NCSX-CSPEC-141-03-06

Page 2 of 2 Pages

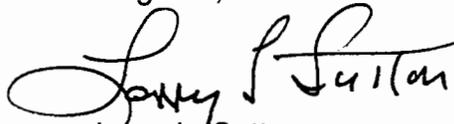
Attached two page Excel chart provides the NCSX Project "Resolution" to 16 comments and requests for deviation received. These Resolutions are effective for implementation immediately.

<b>DRAWINGS AFFECTED</b>	<b>REVISION</b>	<b>TITLE</b>
SE141-114	3	Modular coil Winding Form, Type-A
SE141-115	3	Modular Coil Winding Form, Type-B
SE141-116	4	Modular Coil Winding Form, Type-C

Please sign and return by telefax the acknowledgment of receipt certificate on the following page.

If there are any questions pertaining to these matters, I may be contacted at (609) 243-2441, telefax (609) 243-2021, or by e-mail lsutton@pppl.gov.

Regards,



Larry L. Sutton

Senior Subcontract Administrator

Attachment: As stated

**Please Sign and Return by Telefax (609) 243-2021**

Receipt of **SPECIFICATION ADDENDUM LETTER 6-2** to Subcontract S005242-F's NCSX SPECIFICATION - PRODUCT SPECIFICATION, MODULAR COIL WINDING FORMS, NCSX-CSPEC-141-03-06, dated 14 January 2005 is acknowledged.

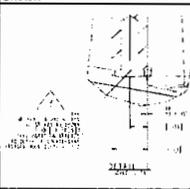
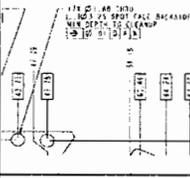
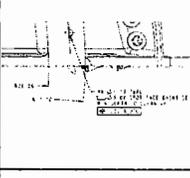
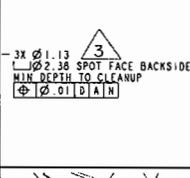
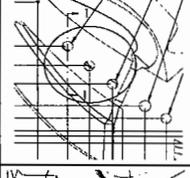
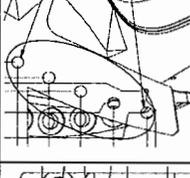
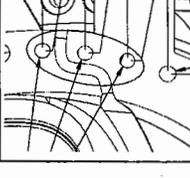
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Signature

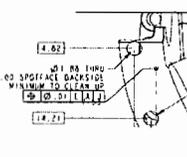
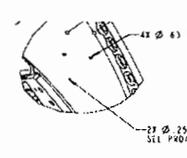
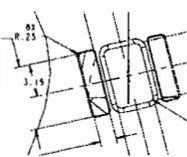
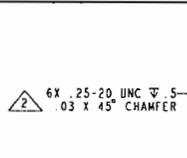
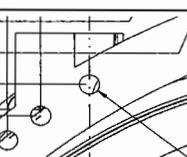
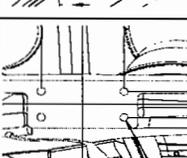
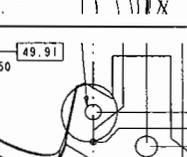
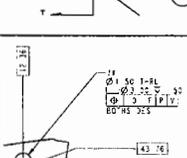
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Date

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Title

ENERGY INDUSTRIES OF OHIO  
6100 Oak Tree Boulevard, Suite 200  
Independence, OH 44131

MCWF Type-ABC Model / Drawing Changes

Item	Drawing	Sheet	Quad	Issue	Resolution	Justification of change	Sketch
1	SE141-114R2, SE141-115R2, SE141-116R3	2	B5	Depth of tapped hole is 1.125, >2x dia.	Change to 0.75-in thread depth. Increase depth of bore to .1875-in.	This still provides 2D of thread engagement which is standard practice. The c'bore depth will assure proper engagement of the new coil clamps.	
2	SE141-114R2, SE141-115R2, SE141-116R3	4	G6	17X 1.88 THRU W/ 3.25 BACK SPOTFACE is not standard cutter.	Change all 1.88 DIA THRU to 3 DIA BACK SPOTFACE.	This allows a standard cutter to be used and will expedite manufacture.	
3	SE141-116R3	2	C7	Tapped hole like that shown in Item #1 was not usable when design included spherical seats. Now, seats are not part of design and TRC experience indicates a need to add an additional hole in the "winding valley".	Add hole to pattern at s=.515625.	(Described in Issue column)	
4	SE141-116R3	3	F4	8X 1.13 DIA W/ 3 BACK SPOTFACE is not standard cutter.	Change all 1.13 DIA THRU to 2.38 DIA BACK SPOTFACE.	This allows a standard cutter to be used and will expedite manufacture.	
5	SE141-116R3	4	B5	3X 1.13 DIA W/ 2.38 DIA BACK SPOTFACE was 3.38 DIA in previous revision of drawing.	Already corrected in Rev-3.	(Not required - see Resolution column)	
6	SE141-116R3	4	E6	3X 1.375-6UNC THRU callout on drawing vs 1.375-dia thru hole in the CAD model.	Drawing callout is correct.	(Not required - see Resolution column)	
7	SE141-116R3	4	E6	5X 1.38-6UNC THRU is not correct. See flange b-c figure.	Change to 5X 1.88 DIA THRU W/ 3 BACK SPOTFACE	Corrected error on original drawing and added a back spotface to assure flat surface.	
8	SE141-116R3	5	F6	3X 1.375-6UNC THRU callout on drawing vs 1.375-dia thru hole in the CAD model.	Drawing callout is correct.	(Not required - see Resolution column)	

9	SE141-116R3	5	E8	Drawing calls out 1.88 DIA THRU W/ 3 BACK SPOTFACE, CAD model has 3.25 DIA spotface.	Drawing callout is correct. Change CAD model to match.	CAD model has to be changed to match pdf drawing.	
10	SE141-116R3	9	C7	CAD model of .25 DIA T/C hole has flat bottom. Drill end is OK.	Change CAD model to show drill end.	Being changed to show drill end so a flat bottomed hole, which is more difficult to make, is not implied.	
11	SE141-114R2, SE141-115R2, SE141-116R3	8	C8	6X lapped holes in leads base are suppressed in CAD model, not shown on drawing.	Add holes callout to drawing.	TRC experience identified need to have holes instead of studs for precise alignment of terminal and jumpers.	
12	SE141-114R2	4	B4	6X .25-20UNC callout on drawing was 6X .20 in previous revision of drawing.	Already corrected in Rev-2.	(Not required - see Resolution column)	
13	SE141-114R2	5	F6	1.88 DIA THRU W/ 3 BACK SPOTFACE callout on drawing, CAD model does not have back spotface.	Drawing callout is correct. Back spotface will be indicated in CAD model.	Need to correct CAD model to agree with drawing.	
14	SE141-115R2	3	G5	Inboard mounting surface is flat and perpendicular to datum-f, not cylindrical as may be implied by 17-in radius dimension.	Add drawing note.	Needed to clarify drawing.	
14	SE141-115R2	4	H6	Drawing calls out 1.38-6UNC THRU vs CAD model w/ 3-dia back spotface.	Drawing callout is correct.	Need to correct CAD model to agree with drawing.	
15	SE141-115R2	6	E6	7X 1.50 THRU HOLES at poloidal break does not match other winding forms.	Change to 7X 1.625 DIA THRU.	To correct drawing error.	
16	SE141-115R2	6	G3	TF interference check indicates need to chamfer edge of inboard support.	Add chamfer to model and drawing as shown.	Adding chamfer to MCWF is the easiest way to eliminate TF coil interference.	