NATIONAL SPHERICAL TORUS EXPERIMENT UPGRADE PROJECT
Engineering Change Proposal (ECP)
Part I To be Completed by Originator

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ECP-095

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Originator (CAM) Atnafu **Date Submitted** 8/13/2013

ECP No. 095 **ECP Title** PCHERS passive plate design/fabrication

Required Reviewers (Change Control Board)
- ☒ Williams
- ☒ Strykowsky
- ☒ Dudek
- ☒ Stevenson
- ☒ Langish
- ☐ Other...

Change Level 2 Federal Project Director

Approvals

Change Level	Approving Official	Approval	Signature
3	NSTXU Project Manager	■ Yes ☐ No	Ron Strykowsky — Digitally signed by Ron Strykowsky DN: cn=Ron Strykowsky, o, ou=PPPL, email=rstrykow@pppl.gov, c=US Date: 2013.09.03 11:39:37 -04'00'
3a Expedited ECP	NSTXU Engineering Lead	☐ Yes ☐ No	
2	NSTXU Federal Project Dir.	■ Yes ☐ No	Anthony Indelicato — Digitally signed by Anthony Indelicato DN: cn=Anthony Indelicato, o=Princeton Site Office, ou=DOE-PSO, email=aindelicato@pppl.gov, c=US Date: 2013.09.03 13:45:01 -04'00'
1	Associated Director OFES	☐ Yes ☐ No	
0	Deputy Secretary of Energy	☐ Yes ☐ No	

Approval Date 9/3/13

- **Primavera Updated** ☐
- **Cobra Updated** ☐
- **WAD Updated** ☐
- **RAM Updated** ☐

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PART I

Originator (CAM) Atnafu

Date Submitted 8/13/2013

Type of ECP ☒ Standard ☐ Expedited

Type of Change (Check all that apply) ☐ Technical ☒ Cost ☒ Schedule ☐ Editorial ☐ Other

Reason for Change PCHERS passive plate design/fabrication

Impacted WBS Elements

☒ 1.1
☐ 1.2
☐ 1.3
☐ 1.4
☐ 1.5
☐ 1.6
☐ 1.7
☐ 1.8
☐ PEP
☐ Milestone
☐ Other...

Control Accounts

☐ 1000	☐ 1306	☐ 2470	☐ 5000	☐ 8200
☐ 1001	☐ 1307	☐ 2475	☐ 5200	☐ 8210
☒ 1002	☐ 1310	☐ 2480	☐ 5501	☐ 8250
☐ 1200	☐ 2300	☐ 2485	☐ 6100	☐ Other...
☐ 1300	☐ 2420	☐ 2490	☐ 7200	
☐ 1301	☐ 2425	☐ 3200	☐ 7300	
☐ 1302	☐ 2430	☐ 3300	☐ 7400	
☐ 1303	☐ 2440	☐ 3400	☐ 7100	
☐ 1304	☐ 2450	☐ 4100	☐ 7710	
☐ 1305	☐ 2460	☐ 4500	☐ 7900	

Impacts of Change (Briefly Describe) **Increased cost/schedule**

Impact on Materials Parts Already Manuf. ○ Yes ◉ No

If yes, what is recommended disposition

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Detailed Description of Change

Description of Change

PCHERS passive plate design/fabrication per attached schedule.

Contingency draw: $356,917.92

Submitted by:

Neway D. Atnafu

Digitally signed by Neway D. Atnafu
DN: cn=Neway D. Atnafu, o, ou, email=natnafu@pppl.gov, c=US
Date: 2013.08.29 14:50:15 -04'00'

Neway Atnafu

Reviewed by:

Lawrence E. Dudek

Digitally signed by Lawrence E. Dudek
DN: cn=Lawrence E. Dudek, o=PPPL, ou=Fabrtication and Operations, email=ldudek@pppl.gov, c=US
Date: 2013.08.29 15:06:27 -04'00'

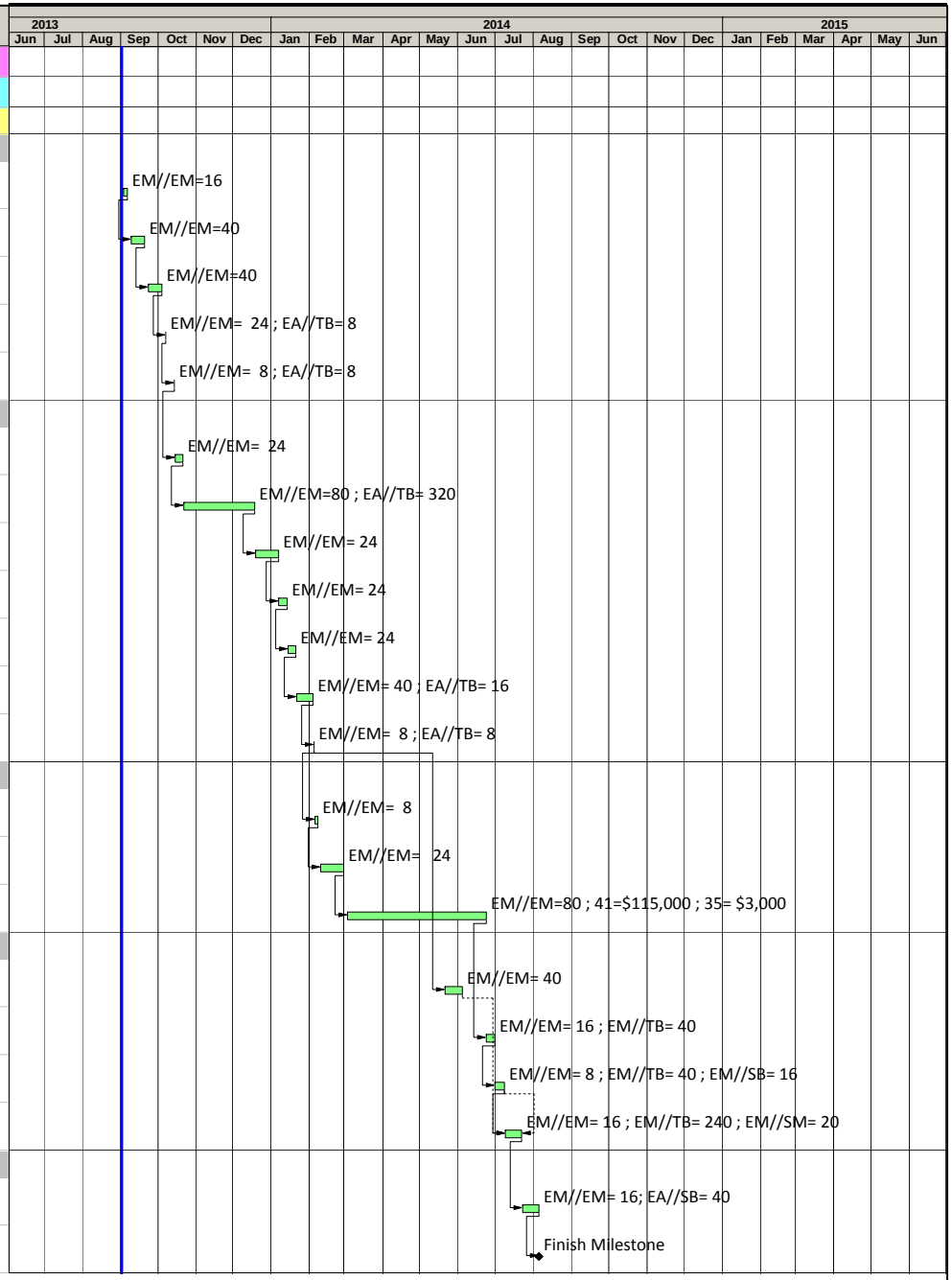
Larry Dudek

SUBMIT ECP

Do not fill in information below this point

List of Attachments ☐ **Primavera Schedule (Before/After)** ☐ **Cobra (Before/After)** ☐ **Other...**

Activity ID	Activity Name	Original Duration	Act % Comp	Start	Finish	Budgeted Total Cost	evms rule	BOE
NSTX Upgrade Project		**229**		**03-Sep-13**	**05-Aug-14**	**$356,917.92**		
Job: 1002 -Passive Plate Analyss &Upgrade-		**229**		**03-Sep-13**	**05-Aug-14**	**$356,917.92**		
ECP-095		**229**		**03-Sep-13**	**05-Aug-14**	**$356,917.92**		
Peer Design		**29**		**03-Sep-13**	**14-Oct-13**	**$24,849.28**		
1002-0101A	Prepare Work Planning Form	4	0%	03-Sep-13*	06-Sep-13	$2,834.24	E	
1002-0101B	Prepare system description and requirements	10	0%	09-Sep-13*	20-Sep-13	$7,085.60	E	
1002-0101D	Develop Methodologies	10	0%	23-Sep-13*	04-Oct-13	$7,205.60	E	
1002-0101E	Prepare for Peer Review	0	0%	07-Oct-13*	07-Oct-13	$5,327.04	E	
1002-0101F	Conduct Peer Review	0	0%	14-Oct-13*	14-Oct-13	$2,396.80	E	
Final Design		**71**		**15-Oct-13**	**04-Feb-14**	**$80,999.20**		
1002-0101G	Disposition of Peer Review Chits	5	0%	15-Oct-13*	21-Oct-13	$4,308.96	E	
1002-0101H	Design Drawings	40	0%	22-Oct-13*	18-Dec-13	$51,918.40	E	
1002-0101J	Update fabrication and assembly methodologies	5	0%	19-Dec-13*	06-Jan-14	$4,395.36	E	
1002-0101K	Update cost & schedule estimate	5	0%	07-Jan-14*	13-Jan-14	$4,395.36	E	
1002-0101L	Prepare Procurement Specs	5	0%	14-Jan-14*	20-Jan-14	$4,395.36	E	
1002-0101M	FDR Prep	10	0%	21-Jan-14*	03-Feb-14	$9,188.96	E	
1002-0101N	Conduct FDR	1	0%	04-Feb-14*	04-Feb-14	$2,396.80	E	
Procurement		**98**		**05-Feb-14**	**23-Jun-14**	**$179,841.68**		
1002-0101O	Submit Req. to Procurement	3	0%	05-Feb-14*	07-Feb-14	$1,465.12	E	
1002-0101P	Procurement Lead Time	15	0%	10-Feb-14*	28-Feb-14	$4,395.36	E	
1002-0101Q	Procurement Award for Fabrication	80	0%	03-Mar-14*	23-Jun-14	$173,981.20	C	4
Installation		**43**		**21-May-14**	**22-Jul-14**	**$63,639.12**		
1002-0101R	Installation Procedure, JHA, Work Permit	10	0%	21-May-14*	04-Jun-14	$7,325.60	E	
1002-0101S	Surface finish and modification	5	0%	24-Jun-14*	30-Jun-14	$7,240.64	E	
1002-0101T	Vacuum Prep the PP	5	0%	01-Jul-14*	08-Jul-14	$8,015.84	E	
1002-0101U	Install the PP	10	0%	09-Jul-14*	22-Jul-14	$41,057.04	E	
CLOSING		**10**		**23-Jul-14**	**05-Aug-14**	**$7,588.64**		
1002-0101V	Update drawings and procedure/archive	10	0%	23-Jul-14*	05-Aug-14	$7,588.64	E	
1002-0101W	Finish ECP-095 Work	0	0%		05-Aug-14	$0.00	E	



Remaining Work

◆ Milestone

NSTX-U
ECP-091 Bakeout System
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Basis of Estimate:
1- National Standards, 2- Engineering Judgment, 3- Est/data from external source, 4- Previous PPPL experience,
5- Prototype data/results, 6- Catalog/vendor quote, 7- Placed contracts, 8- Actual experience, 9- Other

Time phased resource useage for ECP-095

Row Labels	Sum of 1-Sep-13	Sum of 1-Oct-13	Sum of 1-Nov-13	Sum of 1-Dec-13	Sum of 1-Jan-14	Sum of 1-Feb-14	Sum of 1-Mar-14	Sum of 1-Apr-14	Sum of 1-May-14	Sum of 1-Jun-14	Sum of 1-Jul-14	TOTAL
35							3000					3000
41							115000					115000
EM//EM	80	88	38	36	98	44	21	22	49	44	35	555
EM//SB											16	16
EM//TB										40	360	400

WAF/Change Control Board
(ECP-095)

Date: August 29, 2013

Attendees:

	Print	**Signature**
1.	S W LANGISH	
2.	M. WILLIAMS	
3.	STRYKOWSKY	
4.	T. STEVENSON	
5.	L. DUBEK	
6.	Neway Atnafu	
7.	ERIK PERRY	
8.		
9.		
10.		
11.		
12.		
13.		
14.		