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

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ECP-068

COVER PAGE

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Originator (CAM) Chrzanowski **Date Submitted**

ECP No. 068

ECP Title Correct baseline dates for various future Critical Path activities to make them consistent with the baseline schedule and milestones. Also, replan activity 1306-5050 for the PF coil procurement.

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: 2013.01.17 11:39:29 -05'00'
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: 2013.01.17 13:15:28 -05'00'
1	Associated Director OFES	☐ Yes ☐ No	
0	Deputy Secretary of Energy	☐ Yes ☐ No	

Approval Date 1/17/2013

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

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PART I

Originator (CAM) Chrzanowski

Date Submitted

Type of ECP ☒ Standard ☐ Expedited

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

Reason for Change Correct baseline dates for various future Critical Path activities to make them consistent with the baseline schedule and milestones. Also, replan activity 1306-5050 for the PF coil procurement.

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) **Push out the baseline dates on various critical path activities to ensure the BL is realistic with regards to schedule. Changes DO NOT affect the early finish date.**

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

Correct baseline dates for various future Critical Path activites.

Also, replan activity 1306-5050 for the PF coil procurement.

See the attached Primavera schedule for the new dates of the affected critical path activities. Moving these dates results in a budget increase of $12,397.36.

Adjust the BL dates for task 1306-5050 for the procurement of the PF coils to: Start: 2/6/13 Finish: 10/29/13. Moving these dates results in a budget increase of $4,737.08

Net contingency draw: $17,134.44

$17,527.19 in Cobra

Submitted by:

James H. Chrzanowski

Digitally signed by James H. Chrzanowski
DN: cn=James H. Chrzanowski, o=PPPL, ou=Mech Engineering, email=jchrzano@pppl.gov, c=US
Date: 2013.01.16 15:15:13 -05'00'

Jim Chrzanowski

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: 2013.01.16 16:01:05 -05'00'

Larry Dudek

SUBMIT ECP

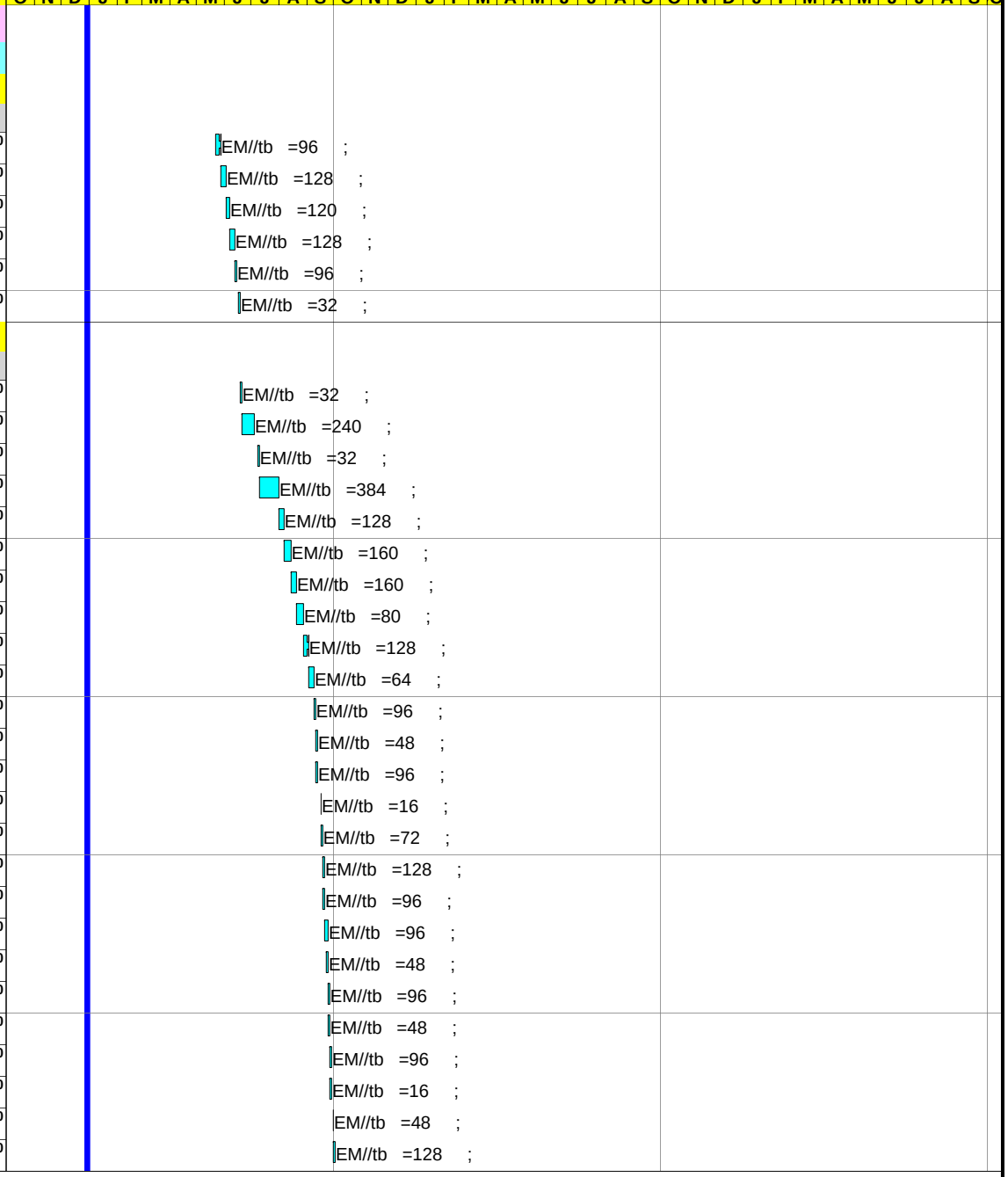
Do not fill in information below this point

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

NSTX Upgrade Project

Job: 1305 - OHMIC Heating Coil (OH)-CHRZANOWSKI

Activity ID	Activity Description	Work Days	New BL Start	New BL Finish	Total Float	% Comp
Inner TF Coil Assemble Quadrants						
CS High Bay						
1304-4902	Assemble Mold	3	23MAY13	28MAY13	20	0
1304-5000	Prepare VPI operation	4	29MAY13	03JUN13	20	0
1304-5100	VPI full TF coil	3	04JUN13	06JUN13	20	0
1304-5200	Cure VPI'd coil	3	07JUN13	11JUN13	20	0
1304-5300	Remove full TF from mold and cleanup	3	12JUN13	14JUN13	20	0
1304-5400	Perform Final electrical tests	2	17JUN13	18JUN13	20	0
TF/OH Fabrication						
Fabrication / Assembly						
1305-5700A	Reposition TF to Vertical Position	1	19JUN13	19JUN13	20	0
1305-5700B	Install Mold & Pour Aquapour	10	20JUN13	03JUL13	20	0
1305-5700C	Cure Aquapour	2	08JUL13	09JUL13	20	0
1305-5800	Rem Mold/Apply slip plane/inner groundwall insul	16	10JUL13	31JUL13	20	0
1305-5600	Prepare TF for OH winding	4	01AUG13	06AUG13	20	0
1305-5900	Braze first lead and prepare for winding	5	07AUG13	13AUG13	20	0
1305-6000	Wind 1st Quarter of layer #1	5	14AUG13	20AUG13	20	0
1305-6100	Make[2] in-line brazes of 1st Quarter of layer#1	5	21AUG13	27AUG13	20	0
1305-6200	Wind second Quarter of layer #1	4	28AUG13	03SEP13	20	0
1305-6200A	Make[2] in-line brazes of 2nd Quarter of layer#1	4	04SEP13	09SEP13	20	0
1305-6200B	Wind Third Quarter of layer #1(2-SHIFT till Fin)	2	10SEP13	11SEP13	20	0
1305-6200C	Make[2] in-line brazes of 3rd Quarter of layer#1	2	11SEP13	12SEP13	20	0
1305-6200D	Wind 4th Quarter of layer #1	2	12SEP13	13SEP13	20	0
1305-6300	Perform prelim electrical tests layer #1	1	16SEP13	16SEP13	20	0
1305-6400	Braze layer to layer joint layer #1	2	17SEP13	18SEP13	20	0
1305-6500	Wind 1st Quarter of layer #2	2	18SEP13	19SEP13	20	0
1305-6600	Make[2] in-line brazes of 1st Quarter of layer#2	2	19SEP13	20SEP13	20	0
1305-6700	Wind second Quarter of layer #2	2	20SEP13	23SEP13	20	0
1305-6700A	Make[2] in-line brazes of 2nd Quarter of layer#2	2	23SEP13	24SEP13	20	0
1305-6700B	Wind Third Quarter of layer #2	2	24SEP13	25SEP13	20	0
1305-6700C	Make[2] in-line brazes of 3rd Quarter of layer#2	2	25SEP13	26SEP13	20	0
1305-6700D	Wind 4th Quarter of layer #2	2	26SEP13	27SEP13	20	0
1305-6800	Perform prelim electrical tests layer #2	1	27SEP13	27SEP13	20	0
1305-6900	Braze layer to layer joint layer #2	1	30SEP13	30SEP13	20	0
1305-7000	Wind 1st Quarter of layer #3	2	01OCT13	02OCT13	20	0



Data Date 31DEC12
Run Date 16JAN13 06:56

1301
EVMS Rule
A = LOE K = Planning Pkg
B = Milestone
C = % Complete

NSTX UPGRADES
ECP-068

Sheet 1 of 3

FORECAST
Progress Bar
Critical Activity

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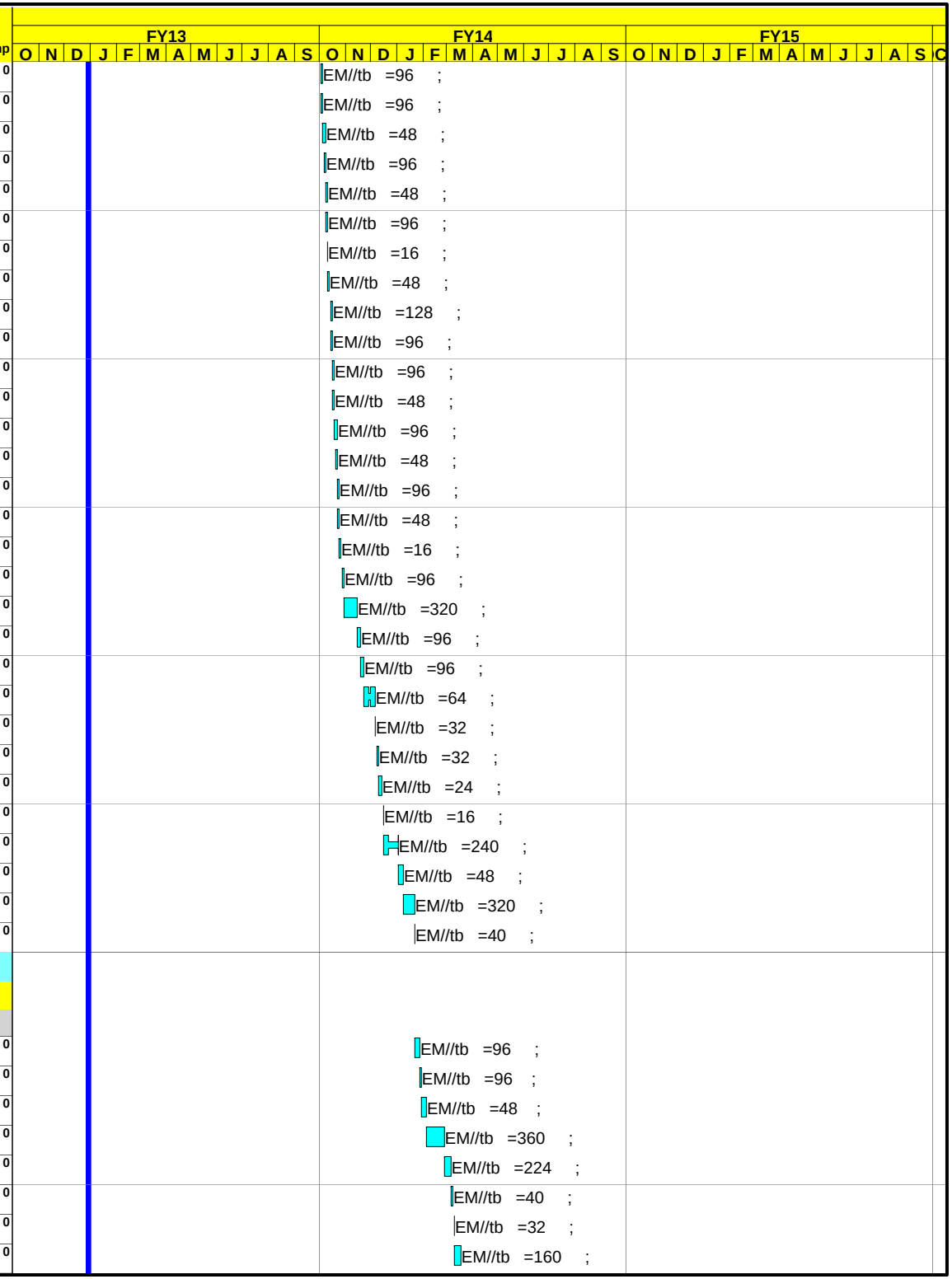
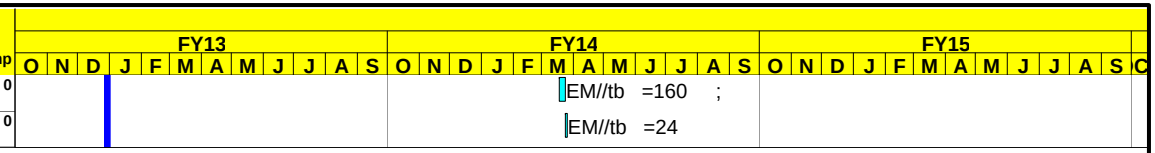
Activity ID	Activity Description	Work Days	New BL Start	New BL Finish	Total Float	% Comp
1305-7100	Make[2] in-line brazes of 1st Quarter of layer#3	2	02OCT13	03OCT13	20	0
1305-7200	Wind second Quarter of layer #3	2	03OCT13	04OCT13	20	0
1305-7200A	Make[2] in-line brazes of 2nd Quarter of layer#3	2	04OCT13	07OCT13	20	0
1305-7200B	Wind Third Quarter of layer #3	2	07OCT13	08OCT13	20	0
1305-7200C	Make[2] in-line brazes of 3rd Quarter of layer#3	2	08OCT13	09OCT13	20	0
1305-7200D	Wind 4th Quarter of layer #3	2	09OCT13	10OCT13	20	0
1305-7300	Perform prelim electrical tests layer #3	1	10OCT13	10OCT13	20	0
1305-7400	Braze layer to layer joint layer #3	1	11OCT13	11OCT13	20	0
1305-7500	Wind 1st Quarter of layer #4	2	14OCT13	15OCT13	20	0
1305-7600	Make[2] in-line brazes of 1st Quarter of layer#4	2	15OCT13	16OCT13	20	0
1305-7700	Wind second Quarter of layer #4	2	16OCT13	17OCT13	20	0
1305-7700A	Make[2] in-line brazes of 2nd Quarter of layer#4	2	17OCT13	18OCT13	20	0
1305-7700B	Wind Third Quarter of layer #4	2	18OCT13	21OCT13	20	0
1305-7700C	Make[2] in-line brazes of 3rd Quarter of layer#4	2	21OCT13	22OCT13	20	0
1305-7700D	Wind 4th Quarter of layer #4	2	22OCT13	23OCT13	20	0
1305-7700F	Make final lead brazes layer #4	2	23OCT13	24OCT13	20	0
1305-7700E	Perform prelim electrical tests layer #4	1	25OCT13	25OCT13	20	0
1305-7800	Apply groundwrap insulation	3	28OCT13	30OCT13	20	0
1305-7900	Mount OH mold around coil	10	31OCT13	13NOV13	20	0
1305-8000	Prepare VPI operation	3	14NOV13	18NOV13	20	0
1305-8100	VPI Fill - OH Coil (mold)	3	19NOV13	21NOV13	20	0
1305-8200	Cure VPI'd coil	8	22NOV13	05DEC13	20	0
1305-8300	Remove mold from OH coil	1	06DEC13	06DEC13	20	0
1305-8400	Cleanup OH coil	2	09DEC13	10DEC13	20	0
1305-8500	Silverplate all electrical surfaces [OH/TF]	3	11DEC13	13DEC13	20	0
1305-8600	Perform Final OH electrical tests	1	16DEC13	16DEC13	20	0
1305-8700	Remove intermediate spacer between OH and TF bun	5	17DEC13	02JAN14	20	0
1305-8800	Perform hydrostat and flow tests- OH/TF coils	3	03JAN14	07JAN14	20	0
1305-8800A	Install Upper & Lower Crowns	10	08JAN14	21JAN14	20	0
1305-8900	Transport to CS assembly station	1	22JAN14	22JAN14	20	0
Job: 1302 - Center Stack Assembly-CHRZANOWSKI						
Fabrication / Assembly						
1302-1500A	Position OH/TF in vertical position	3	23JAN14	27JAN14	20	0
1302-1500B	Join the Lower PF1A assembly with OH/TF Bundle	3	28JAN14	30JAN14	20	0
1302-1501B	Apply groung Plane to OH Outer Surface	3	31JAN14	04FEB14	20	0
1302-1500C	Install the surface diagnostics onto OH surface	15	05FEB14	25FEB14	20	0
1302-1500D	Install Micro-therm insulation around OH coil	7	26FEB14	06MAR14	20	0
1302-1501D	Transport OH/TF coil/Support Struct to Hot Cell	1	07MAR14	07MAR14	20	0
1302-1502D	Transport the CS Casing with Tiles to Hot Cell	1	10MAR14	10MAR14	20	0
1302-1500E	Position CS Casing assembly over the OH/TF coil	5	11MAR14	17MAR14	20	0



Activity ID	Activity Description	Work Days	New BL Start	New BL Finish	Total Float	% Comp
1302-1500F	Ready for Delivery to Test Cell	5	18MAR14	24MAR14	20	0
1302-1550	Deliver CS to NTC	1	25MAR14	25MAR14	20	0