NATIONAL COMPACT STELLARATOR PROJECT
Engineering Change Proposal (ECP)

COVER PAGE

(TO BE COMPLETED BY SYSTEMS ENGINEERING SUPPORT MANAGER)

Originator: Dave Williamson	**Date: January 28, 2005**
ECP No: 022	**ECP Title: Twisted Racetrack Design Changes Since FDR**

Required Reviewers

Required Reviewers for this ECP:
W. Reiersen, H. Neilson, B. Nelson, J. Chrzanowski, J. Malsbury, J. Levine, F. Malinowski, M. Zarnstorff, L. Dudek, T. Meighan

ECP Approval Level

Expedited ECP? ☐ **Yes** ☒ **No**

Change Level: 3 Project

Approving Official: 3 Reg ECP - Project Manager

Actions

- Adopt proposed chill plate design with changes as noted in the chits
- Adopt the revised production coil clamp design for the TRC
- Replace prototype and other drawings with new drawings to reflect these design changes.
  Approved for fabrication drawings for the TRC should be generated per the following schedule:
  - Side B (top and side) by 2/4/2005
  - Side A (top and side) by 2/11/2005
  - Clamps by 2/25/2005
- See attached TRC chits for additional action items
- Update drawings for production coils accordingly

APPROVALS

(TO BE COMPLETED BY APPROVING OFFICIALS)

Change Level	Approving Official	Approval?	Signature
3	**NCSX Project Manager**	☒ **Yes** ☐ **No**	
3a (Expedited ECP)	**NCSX Engineering Manager**	☐ **Yes** ☐ **No**	
2	**NCSX Federal Project Director**	☐ **Yes** ☐ **No**	
1	**Associate Director OFES**	☐ **Yes** ☐ **No**	
0	**Under Secretary of Energy**	☐ **Yes** ☐ **No**	

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PART I
(TO BE COMPLETED BY ORIGINATOR)

Originator: Dave Williamson	**Date: January 28, 2005**

Overview of Change

Type of of ECP: ☐ **EXPEDITED** ☒ **STANDARD**

Type of Change: ☒ **TECHNICAL** ☒ **COST** ☒ **SCHEDULE** ☐ **EDITORIAL**

(Check all that Apply)

Reason for Change: Feasibility and cost and schedule considerations prompted the project to develop an improved design concept for the chill plates. The revised chill plate design required a re-design of the winding clamps. The revised chill plate design and clamp design will be used on both the TRC and the production coils.

Impacted WBS Elements: WBS 142: Job 1403 – Modular Coil Final Design and Job 1410 – Twisted Racetrack Coil Fabrication

Impacts of Change (Briefly Describe):

1. TRC Cost and Schedule - Estimate at Completion (EAC) and schedule will be updated by 2/1/2005. Schedule impact should be strongly favorable. Impact of this EAC will be factored into PMB when risks are retired (March).
2. Production Coils Cost and Schedule – EAC and schedule will be updated upon completion of the TRC.
3. No significant impact in cooldown time is anticipated.

Assessment of Other Options: Staying with the current baseline would have incurred unnecessary cost and schedule penalties IF the current baseline could have been fabricated.

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PART I

(TO BE COMPLETED BY ORIGINATOR)

Originator: Dave Williamson	**Date: January 28, 2005**

Detailed Description of the Change:

(Use Continuation Sheets and/or Attach Information/Sketches, As Needed)

List Attachments, Impacted Documents, etc.

(1) Twisted Racetrack Coil Design Update (January 27, 2005)
(2) CHITs from CCB Meeting (table)
(3) Sketch of retention feature for clamps

Description of Change:

1. Cooling tube soldered to chill plates after installation of chill plates. This is a change from the current baseline in which the cooling tubes are pre-attached to fringe which is placed adjacent to the chill plates.
2. The 3-piece clamp design is replaced with a 1-piece clamp design to allow adequate space for the two coolant tubes. (Previously, there was a single cooling tube.)