

Advanced LIGO Engineering Change Request (ECR)

ECR Title: Addition of DC Power Breaker Switch Boxes (D1400007-v1) in-line with HEPI Pier Pods (D080520), and TCS ISS Chassis (D1300649).

DCC No: E1400052-v2

Date: 5 February, 2014

Requester: Ben Abbott

Impacted Subsystem(s): ISI,
TCS

Description of Proposed Change(s): The HEPI Pier Pods, and TCS ISS Chassis both have small power switches that don't have any circuit breaker functionality. Due to a recent chassis failure, it has been deemed reasonable to include some circuit breakers in their power lines. The proposed breaker would live in the rack from whence the power is delivered, and would protect everything downstream.

Reason for Change(s):

A recent failure has brought to our attention the danger of un-limited power supplies. Any instance of a chassis that is fed from a supply with no circuit protection needs to be mitigated.

Estimated Cost: \$4500 for materials/supplies plus \$830 in assembly charges from an outside vendor for 40 units. Total estimated cost = \$5.5K. (6/40ths TCS, and 34/40ths SEI)

Schedule Impact Estimate: Minimal

Nature of Change (check all that apply):

- Safety
- Correct Hardware
- Correct Documentation

- Improve Hardware
- Improve/Clarify Documentation
- Change Interface
- Change Requirement

Importance:

- Desirable for ease of use, maintenance, safety
- Desirable for improved performance, reliability
- Essential for performance, reliability
- Essential for function
- Essential for safety

Urgency:

- No urgency
- Desirable by date/event: before final acceptance
- Essential by date/event:
- Immediately (ASAP)

Impacted Hardware (select all that apply):

- Repair/Modify. List part & SNs: _____
- Scrap & Replace. List part & SNs: _____
- Installed units? List IFO, part & SNs: _____
- Future units to be built

Impacted Documentation (list all dwgs, design reports, test reports, specifications, etc.): SEI System Schematic diagrams D0901301-v10, D1101584-v6, D1101576-v8, D1000298-v6, and TCS Block Diagrams, E1100892-v23 and E1100891-v11.

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Disposition of the proposed change(s):

The disposition of this proposed engineering change request is to be completed by Systems Engineering and indicated in the “Notes and Changes” metadata field in the DCC entry for this ECR. The typical dispositions are as follows:

- **Additional Information Required:** in which case the additional information requested is defined. The ECR requester then re-submits the ECR with the new information using the same DCC number for the ECR but with the next version number.
- **Rejected:** in which case the reason(s) for the rejection are to be given
- **Approved**
- **Approved with Caveat(s):** in which case the caveat(s) are listed
- **TRB:** the ECR is referred to an ad-hoc Technical Review Board for further evaluation and recommendation. It is the System Engineer’s (or designee’s) responsibility to organize the TRB. The System Engineer (or designee) then makes a technical decision based on the TRB’s recommendation. Links to the TRB’s documentation (charge, memos, final report, etc.) are to be added to the “Related Documents” field for this ECR.
- **CCB:** a change request for approval of additional funds or schedule impact is to be submitted to the Configuration Control Board. Links to the CCB’s documentation (CR, etc.) are to be added to the “Related Documents” field for this ECR.

Concurrence by Project Management:

Acknowledgement/acceptance/approval of the disposition is to be indicated by the electronic “signature” feature in the DCC entry for this ECR, by one the following personnel:

- Systems Scientist
- Systems Engineer
- Deputy Systems Engineer