

Advanced LIGO Engineering Change Request (ECR)

**ECR Title: Upgrade power feedthrough for TCS
CO2 laser tables**

DCC No: **E1600114-v1**

Date: 12 April 2016

**Requester: Alastair
Heptonstall**

**Impacted Subsystem(s):
AOS/TCS**

Description of Proposed Change(s):

The laser power feedthroughs at the table patch panels currently use CONNEC connectors that are not reliable due to strain induced on the backshell. Several upgrade possibilities were discussed, but the simplest option is to replace the connectors with a hard-wired screw connection inside a metal electrical box. This allows use of standard cable clamps appropriate for the large diameter cable. Patch panel will need drilled to mount box.

Reason for Change(s):

Improve reliability of power connection to TCS tables.

Estimated Cost: \$250

Schedule Impact Estimate: None

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: _____
- Essential by date/event: _____
- Immediately (ASAP)

Impacted Hardware (select all that apply):

- Repair/Modify. List part & SNs:

- Scrap & Replace. List part & SNs: _____

- Installed units? All TCS CO2 laser tables

Impacted Documentation: D1300474

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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 of the following personnel:

- Systems Scientist
- Systems Engineer
- Deputy Systems Engineer