

Advanced LIGO Engineering Change Request (ECR)

ECR Title: remove lid from PSL-PMC tank

DCC No: E1300284-v1

Date: April 18, 2013

Requester: Benno Willke

Impacted Subsystem(s): PSL

Description of Proposed Change(s):

operate the PSL with an open PMC tank

Reason for Change(s):

We found some contamination on the inside of the AR windows and the AR side of the PMC mirrors which build up over several month. We were able to clean the surfaces but the cause of the contamination could not be identified. As we expected the contamination to build up via some photochemistry with molecules in the gas phase that accumulate in the PMC tank over time, we took the lid of the PMC at LLO, LHO and AEI. Since then no contamination build up on the AR surfaces.

Only negligible changes in the PSL noise performance was found due to the open lid (<https://alog.ligo-la.caltech.edu/aLOG/index.php?callRep=6504>, <https://alog.ligo-la.caltech.edu/aLOG/index.php?callRep=5006>)

Estimated Cost: no

Schedule Impact Estimate: no

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)

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Impacted Hardware (select all that apply):

Repair/Modify. List part & SNs: _____

Scrap & Replace. List part & SNs: _____

Installed units? List IFO, part & SNs:

L1-PMC [S1102964](#);

H1-PMC [S1107833](#)

Future units to be built

Impacted Documentation (list all dwgs, design reports, test reports, specifications, etc.):

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