

Subject: Technical Analysis of Eden proposal entitled "RFQ SLAC TMA Heat Exchangers SOW Revision to PO 183196" and dated March 7, 2019
From: Thomas W. Markiewicz, CAM for LSST Cryo and Refrigeration Systems
Date: March 11, 2019

Sophia,

I have reviewed the subject Proposal from Eden for \$30,603 and concluded that this is acceptable for the following reasons:

As the milestone payments for the fabrication of the 4 coils in the existing unmodified contract are 4x\$16,808, or \$67,232, the \$30,603 in additional costs quoted is an increase of ~45%. If SLAC is to manufacture the coils ourselves we would require a minimum of 16 weeks at a cost of ~\$200/hour (with overhead) for a total of \$128,000. To this one would need to add ~\$60,000 for materials (per Eden), plus extra for tooling and preparation of an adequate space to process the long materials. The lack of SLAC personnel to do this work is also a concern.

Therefore, it is in SLAC's interest to complete the work via the proposed revision at a cost of \$71,433 [remainder of the original PO] plus the additional \$30,603 requested for the revision, totaling \$102,036. I conclude that this is a fair and reasonable cost and the Best Value for SLAC. Please proceed with the PO modification to include the \$30,603.

If you have any questions, please contact me.

Thank you,

Thomas W. Markiewicz

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