

LIGO Operations Change Request

Change Request No.: LIGO-R1300030

Date: 2 December 2013

Change Request Title: Vacuum Control System Upgrade

WBS Element Title (number):

Originators:

Richard McCarthy,
David Barker

Telephone:

CCB Sponsor: Fred Raab

Technical Change Description: The initial Vacuum Controls Systems (VCS) were installed at the Livingston and Hanford observatories in 1997. These systems are now aging and require replacing to permit their continued operation for the next 15 years.

For minimum Operational impact and Schedule impact I recommend installing a new Beckhoff PLC style control system to replace the existing VME based system. This upgrade will interface directly with the existing cabling that is currently installed. We would unplug and remove VME system then install new Beckhoff system and do signal checks.

The recommendation is to do this at both LHO and LLO

Requirements in T1300195

Related Documents: R1300025,M1300166 (page5, #18)

To make it a standalone system we will install Touch Panel computers in the racks ~\$7k/rack

Slow controls Chassis using the same as ISC slow controls. \$700/Rack

Beckhoff Control Modules. LHO \$24K LLO\$16.2k

Budget Impact: LHO \$85k LLO without Midstations \$65k

Schedule Impact: I believe we can replace one racks worth of electronics a day minimizing the down time for data to one day per rack. The installation can be done building by building minimizing the data and monitoring downtime.

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Concurrence:

MIT:	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> Abstain	Controls and Data Acquisition Engineering	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> Abstain
Hanford Observatory:	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> Abstain	Instrument Science:	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> Abstain
Livingston Observatory:	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> Abstain	Data Analysis Science:	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> Abstain
Systems, Mechanics and Optics Engineering	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> Abstain	Laboratory Computing:	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> Abstain

Approval/Disposition (CCB Chairman):

Date:

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Additional Information