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LASER INTERFEROMETER GRAVITATIONAL WAVE OBSERVATORY
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LIGO VE Subsystem Review Report

DESIGN REQUIREMENTS REVIEW
Vacuum Control and Monitoring System (VCMS)

Title

Review Board: W. Althouse, D. Coyne (Chair), A. Kuhnert, B. Lucas, A. Sibley, R. Weiss

Authors(s)

This is an internal working note of the LIGO Project

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REPORT ON THE DESIGN REQUIREMENTS REVIEW OF THE CDS CONTROL AND MONITORING

Signature Page

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LIGO Detector Scientist

B. Lucas
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REPORT ON THE DESIGN REQUIREMENTS REVIEW OF THE CDS CONTROL AND MONITORING

PARTICIPANTS

Presenter

R. Bork

Review Board

W. Althouse, D. Coyne (chair), A. Kuhnert, B. Lucas, A. Sibley, R. Weiss (telephone)

Other attendees

D. Barker, M. Coles, J. Heefner, A. Lazzarini, G. Sanders, G. Stapfer, J. Worden, B. Young, M. Zucker (telephone)

DOCUMENTS PRESENTED AND DISCUSSED

Reviewed Design Requirements (DRD) and Conceptual Design Documents

- "Vacuum Control and Monitoring System (VCMS) Design Requirements", LIGO-T960024-01-CDR, 22 Apr 96.
- "Vacuum Control and Monitoring System (VCMS) Conceptual Design", LIGO-T960037-00-CCD, 22 Apr 96.

A separate Design Requirements Review (DRR)[1] was held for the CDS Control and Monitoring System which provides much of the infrastructure and tools upon which the VCMS is built.

Viewgraph Handouts

VCMS Design Requirements Review Presentation, G960118-00-M, 5/1/96.

REVIEW BOARD REPORT

The review was conducted on 1 May 1996, in the Caltech LIGO Engineering Conference Room. The presenter summarized the design requirements and conceptual design, illustrated by the viewgraph handouts, and the Board discussed the documents, the presentation, and the Recommendations for Action. The Review Board charge (as specified in memorandum LIGO-L960294) and its response are as follows:

1. **Charge:** Determine if the requirements identified in the Design Requirements Documents are complete; advise whether proposed requirement values are appropriate; if needed, recommend additional requirements to be specified, and recommend other appropriate actions. Some spe-

1. review board, "Design Requirements Review: CDS Control and Monitoring", LIGO-E960026-00-D, 23Apr96.

help to prevent backstreaming from the roughing pumps if inadvertently left connected.)

22. 3.2.1.3.5.2 Interlocks (BT/manifold): Add a warning to the operator interface to request a manual check that the ion pump gate valve is closed prior to ion pump start-up. Also add a check that the ion pump current (local pressure indication) is below a threshold and the vacuum volume is below a threshold pressure before indicating that it is OK to open the ion pump gate valve(s).
23. Concern: The DRD, Section 3.2.1.3.6.1 Signal Monitoring (pumpdown carts): pump speed signal/indication is not currently provided by PSI.
    Action: See Item No. 11 above. In addition, note that there is no speed indication for the roughing pumpdown carts. Revise the DRD text to eliminate reference to a speed indication for the roughing pumpdown cart system and refer explicitly to speed indication for the turbomolecular pumpdown carts only.
24. Section 3.2.1.3.6 Pumpdown carts: Add a subsection to indicate the possible locations of these portable pump carts and a requirement to graphically display the current configuration.
25. 14) Section 3.2.1.3.3 BSC: Add subsection on purge air -- do not enable unless the isolation valves for the VE section are closed and all pumps within the section to be purged are off.

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TO:	~~Ronald Betty~~ Betty
ORGANIZATION:	
FAX NUMBER:	
VOICE NUMBER:	
DATE:	June 11
TIME:	

FROM:	~~Betty~~ Rai Weiss
ORGANIZATION:	
FAX NUMBER:	
VOICE NUMBER:	
REFER TO:	E9600 51-A-V
SUBJECT:	LDS Contract Monitoring signature page
NUMBER OF PAGES FAXED INCLUDING THIS COVER SHEET:	2

Will - We need only cover page. Need sig. pg to distribute document. Thanks. B

NOTE: Rai, Please sign and return this copy of the signature page.

Thanks.

Betty

Done!

Laser Interferometer Gravitational Wave Observatory

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