

EXHIBIT II

**DELIVERABLE DOCUMENTATION
LIGO-C950804-00-V01**

DELIVERABLE DOCUMENTATION

- A. The deliverable documentation of this contract is summarized in the following Contract Data Requirements List (CDRL), which identifies the items to be delivered and when delivery is required, the quantity and type of each item, and frequency of issue. Documentation shall be delivered as early as available but no later than the date specified in the CDRL. The Data Requirement Description (DRD) forms referenced in the CDRL describe the specific requirements for the item(s) to be delivered.
- B. The Contractor shall display on the cover or title page of all deliverable non-design documentation (i.e., all documents except drawings and specifications) the following minimum information:
- Document Title
 - Contract Number
 - Document Number (Institute and/or Contractor assigned)
 - Program Identification
 - Date of Issue
 - CDRL Line Item Number
 - Approval Status
- C. The approval code on the CDRL is defined as follows:
A= Submitted for LIGO's approval.
X= LIGO approval not required.
- D. The following applies to all data submitted for approval:
1. The Contractor shall submit the approval draft on or before the date indicated.
 2. If the draft is approved, the Contractor will be notified in writing by the LIGO Contract Technical Manager. The Contractor shall then prepare and deliver final copies as indicated in the CDRL.
 3. If the submitted approval draft requires significant Contractor modifications before approval will be granted, the following steps shall be taken:
 - The required modifications will be transmitted or discussed between the cognizant parties.
 - The Contractor shall submit an updated draft, containing the required modifications.
 - If the updated draft is approved, the Contractor will be notified in writing by the LIGO Contract Technical Manager. The Contractor shall then prepare and deliver final copies as indicated in the CDRL.

The approval requirements for revisions shall be the same as applied to the original data item submittal unless otherwise specified.

4. All documentation is to be delivered to the Document Control Center (DCC) in care of MS. Linda Turner, LIGO Project, Mail Stop 51-33, California Institute of Technology, 391 South Holliston Ave. Pasadena CA 91125. The Document Control Center will be the point of official receipt and distribution.

Table 1: CONTRACT DATA REQUIREMENTS LIST

CDRL #	Title or Description of Data	Approval Code	Frequency of issue	Date Due To User	# Copies	Remarks
1	Phase B Update of Preliminary Design					PDR - Preliminary Design Review
	Draft	X	Once	3 days prior to PDR	4	ARC - After receipt of comments
	Final	A	Once	30 days ARC	4	
2	Project Management Plan					
	Draft	X	Once	3 days prior to PDR	4	
3	Final Design					
	Draft	X	Once	10 days prior to FDR	4	
4	Preliminary Design Review Data Package					
	Draft	A	Once	30 days ARC	4	
5	Final Design Review Data Package					
	Draft	X	Once	3 days prior to PDR	4	Presentation material
6	Acceptance Test Report					
	Draft	X	Once	10 days prior to FDR	4	Presentation material
7	Acceptance Test Review Data Package					
	Draft	A	Twice	TBD	4	One per site.
7	Acceptance Test Review Data Package					
	Draft	X	Once	10 days prior to ATR	4	Presentation material

NOTE: Each issue (submittal) shall contain one camera-ready copy.

Table 1: CONTRACT DATA REQUIREMENTS LIST

CDRL #	Title or Description of Data	Approval Code	Frequency of issue	Date Due To User	# Copies	Remarks
8	Minutes	X	Once for each meeting	7 days after meeting	4	
9	Status Report	X	Monthly	15 days after meeting	1	
10	Deliverables to the Beam Tube Final Design Review Data Package Draft	X	Once	10 days prior to Deliverables to the Beam Tube FDR	4	
	Final	A	Once	30 days after FDR	4	
11	Prototype Vessel Data Review	A	Once	30 days after completion of prototype vessel tests	4	

NOTE: Each issue (submittal) shall contain one camera-ready copy.

**Data Requirement Description (DRD)
for CDRL No. 1: Updated Preliminary Design**

Purpose:

To document the design of the LIGO overall vacuum system and to substantiate that the design meets the requirements.

Preparation Instructions:

Assemble a package of plans, drawings, specifications procedures, calculations etc. which describe the overall vacuum system design. This data package shall include as a minimum the items described in Article I, Statement of Work, Delivery or Performance Schedule. Additional information which may be required to fully describe and assess, the adequacy of the system design shall also be included in this data package.

**Data Requirement Description (DRD)
for CDRL No. 2: Project Management Plan**

Purpose:

To provide the basic operating plan for the project which allows for detailed scheduling, work progress reporting, and tracking of termination liability.

Preparation Instructions:

Update and revise the Project Management Plan generated for CDRL No. 02 of Phase A as described in Article I, Statement of Work.

**Data Requirement Description (DRD)
for CDRL No. 03: Final Design**

Purpose:

To define and document the vacuum equipment design.

Preparation Instructions:

Prepare a stand alone document, consisting of drawings, specifications, plans, procedures, etc., as described in Article I, Statement of Work.

**Data Requirement Description (DRD)
for CDRL No. 04: Preliminary Design Review Data Package**

Purpose:

To present and substantiate the preliminary design for the vacuum equipment.

Preparation Instructions:

The Data Package to be provided in support of the Preliminary Design Review shall contain all presentation material as well as backup data and information on all topics to be discussed at the review.

**Data Requirement Description (DRD)
for CDRL No. 05: Final Design Review Data Package**

Purpose:

To present and substantiate the final design for the vacuum equipment.

Preparation Instructions:

The Data Package to be provided in support of the Final Design Review shall contain all data and information on all topics to be discussed and presented at the Review.

**Data Requirement Description (DRD)
for CDRL No. 06: Acceptance Test Report**

Purpose:

To document the acceptance test process and results.

Preparation Instructions:

Substantiate that the vacuum equipment complies with the Design documented in CDRL No. 03 and the requirements in Article I, Statement of Work.

Data Requirement Description (DRD) for CDRL No. 07: Acceptance Test Review Data Package

Purpose:

To present all aspects of as built design and associated fabrication, installation and acceptance testing of the vacuum equipment, and to provide a permanent record of presented material and subsequent closeout of resultant action items.

Preparation Instructions:

The Data Package to be provided in support of the Acceptance Test Review shall contain all data and information on all topics to be discussed and presented at the Review and shall include, but not be limited to, the following for each LIGO site:

- Test report excerpts documenting the results of the acceptance tests, in accordance with CDRL No. 06, Acceptance Test Report.
- Performance verification.
- As-built drawings.
- Disposition of property procured under the contract or made available as Government furnished property.
- Remaining issues and open action items.

Data Requirement Description (DRD) for CDRL No. 08: Minutes

Purpose:

To document proceedings of all formal Institute/Contractor LIGO project meetings.

Preparation Instructions:

The Minutes shall document proceedings of all formal Institute/Contractor project meetings. The Minutes shall include:

- A summary of all business transactions between the Contractor and the Institute, including any alterations and/or clarifications to the Review Data Package generated during the Review.
- Contractor action items and planned completion dates.
- Institute action items and planned completion dates.

Data Requirement Description (DRD) for CDRL No. 09: Status Report

Purpose:

To assess project progress and status.

Preparation Instructions:

The Data Packages to be provided in support of the monthly progress meeting shall contain all data and information on all topics to be discussed and presented at a review, and shall include, but not be limited to, the following:

- All current technical contract activities, and percent complete at the WBS element level.
- Updated schedules including milestones and other events accomplished or missed, reasons for delay and corrective measures taken.
- Problem areas, including those concerns requiring action(s), decision(s) or assistance on the part of the Institute.
- Action items closed during the review period, progress of open action items, and identification of new action items.
- Response to technical direction received.

**Data Requirement Description (DRD)
for CDRL No. 10: Deliverables to the Beam Tube Final Design**

Purpose:

To define and document the deliverables to the Beam Tube Contractor.

Preparation Instructions:

Prepare a stand alone document, consisting of drawings, specifications, plans, procedures, etc., as described in Article I, Statement of Work.

**Data Requirement Description (DRD)
for CDRL No. 11: Prototype Vessel Data Review**

Purpose:

To document the test results of the prototype vessel.

Preparation Instructions:

Prepare a stand alone document, consisting of test results as described in Article I, Statement of Work.