

LASER INTERFEROMETER GRAVITATIONAL WAVE OBSERVATORY
- LIGO -
CALIFORNIA INSTITUTE OF TECHNOLOGY
MASSACHUSETTS INSTITUTE OF TECHNOLOGY

Document Type LIGO-T970089-09 - P 4/19/98
LIGO On-line Documents April 1998
W. E. Althouse

Distribution of this draft:

/home/dcc/docs/A_INDEX.pdf

This revision indexes documents stored in /home/dcc/docs through 4/17/98, except those which have been replaced by a newer version.

This is an internal working note
of the LIGO Project.

California Institute of Technology
LIGO Project - MS 51-33
Pasadena CA 91125
Phone (818) 395-2129
Fax (818) 304-9834
E-mail: info@ligo.caltech.edu

Massachusetts Institute of Technology
LIGO Project - MS 20B-145
Cambridge, MA 01239
Phone (617) 253-4824
Fax (617) 253-7014
E-mail: info@ligo.mit.edu

WWW: <http://www.ligo.caltech.edu/>

1 LIGO TOP-LEVEL DOCUMENTS

1.1. DCC Information

T970050-xx DCC Document Listing
 L960641-05 Electronic Submissions to the Document Control Center (instructions)
 G960249-00 Electronic Submissions to LIGO Document Control Center (DCC) (flowchart)
 L970164-02 Procedures for Release of Controlled Drawings and Specifications
 E960024-00 Document Change Notice (DCN) -- completed example

1.2. Management Documentation

1.2.1. Project Plans and Policies

M950046-A LIGO PROJECT SYSTEM SAFETY PLAN
 M960076-A LIGO PROJECT QUALITY ASSURANCE PLAN
 E960099-B LIGO RELIABILITY PROGRAM PLAN
 L950262-00 Conference Talks/Attendance
 L970529-00 LIGO modem pool at Caltech

1.2.2. Annual Reports

M970007-01 Annual Report (December 1995 through November 1996)
 M970149-00 Annual Report (December 1996 through November 1997)

1.2.3. Quarterly Reports

M960024-00 Quarterly Progress Report (December 1995 through February 1996)
 M960055-00 Quarterly Progress Report (March 1996 through May 1996)
 M970034-00 Quarterly Report (December 1996 through February 1997)
 M970080-00 Quarterly Report (March 1997 through May 1997)
 M970138-00 Quarterly Report (June 1997 through August 1997)

1.2.4. Monthly Reports

M970017-01 Monthly Progress Report (End of December 1996)
 M970033-00 Monthly Progress Report (End of January 1997)
 M970042-00 Monthly Progress Report (End of March 1997)
 M980009-00 Monthly Progress Report (End of January 1998)

1.2.5. Proposals

M950020-01 LIGO Operations, 1997-2001
 M960051-A LETTER OF INTENT FOR A RESEARCH AND DEVELOPMENT PROGRAM FOR ADVANCED LIGO DETECTORS BY THE LIGO MIT/CALTECH GROUPS
 M970001-01 Revised Proposal for a Research and Development Program For Advanced Detectors by the LIGO MIT/Caltech Groups - FY 1997 Proposal Budget

1.2.6. Review Presentation Materials

1.2.6.1 NSF Review April 13-17, 1997

G970068-00 LIGO DATA PROCESSING
G970071-01 BEAM TUBE BAKEOUT
G970075-01 LIGO Project Cost/Schedule Status
G970091-00 LIGO Control and Data System Control and Monitoring

1.2.6.2 NSF Review March 31-April 2, 1998

G980034-00 Cost/Schedule/Contingency
G980036-00 Detector Status

1.3. Publications and Conference Proceedings

P940008-00 Measurement of Optical Path Fluctuations due to Residual Gas in the LIGO 40
Meter Interferometer
P950017-02 The Laser Interferometer Gravitational-Wave Observatory (LIGO) Project
P960024-A PRINCIPLES OF CALCULATING ALIGNMENT SIGNALS IN COMPLEX
RESONANT OPTICAL INTERFEROMETERS
P960031-C The Laser Interferometer Gravitational Wave Observatory Project LIGO
P960041-02 Recent Research on the LIGO 40 m Interferometer
P960042-00 Development of Laser Interferometers for Gravitational Wave Detection:
Abstract and Summary
P970002-00 Modeling LIGO Data Analysis
G970247-00 The LIGO Project: Progress & Plans
G970257-00 Cosmic Muon Signature in LIGO

1.4. System Engineering Documentation

1.4.1. System Requirements

D970307-00 LIGO SYSTEMS FUNCTIONAL BLOCK DIAGRAM
E950018-02 LIGO Science Requirements Document (SRD)
E950111-A LIGO Naming Conventions
E960036-A LIGO EMI CONTROL PLAN AND PROCEDURES
E960099-B LIGO RELIABILITY PROGRAM PLAN
E960010-A LIGO Sites Alignment Requirements
E950083-B Science Requirements for the LIGO Beam Tube Baffles
T970130-B Specification of a Common Data Frame Format for Interferometric Gravitational
Wave Detectors (IGWD)

1.4.2. Modeling and Data Analysis

T970159-04 LIGO Data Analysis System Design Requirements
T970211-00 LIGO Data Analysis System Software Specification for C, C++ and Java
T970160-06 LIGO Data Analysis System Conceptual Design.
G970288-00 LIGO Data Analysis System Design Requirements Review (DRR)

G970064-00 Modeling LIGO Data Analysis
 G970135-00 What We've Learned About What We've Learned About "FRAMES"
 G970156-00 Computer Languages Computer Languages why all the fuss about why all the
 fuss about C++
 G970261-00 LDAS Prototyping & Testing
 T970100-A LIGO Data Analysis Software Specification Issues
 T970101-A Strain Calibration in LIGO
 M970013-02 A Proposal for the First Experiment for Validation of the 40m End-to-End Model
 M970065-B White Paper Outlining the Data Analysis System (DAS) for LIGO I
 T970128-02 Quantization Noise in Ligo Interferometers
 T970167-00 LIGO Science Benchmarks
 T970166-01 Benchmark tests for inspiraling binary searches for LDAS
 T970186-01 Overview of the 40m End-to-End Model
 T980004-00 LIGO Channel Count

1.4.3. Alignment

E960010-A LIGO Sites Alignment Requirements
 L960348-01 LIGO Coordinate Names and Reference Designations - CAUTION
 T950004-B Derivation of Global and Local Coordinate Axes for the LIGO Sites
 T950107-A Orientation of the LIGO Beam Center Lines with respect to foundation slabs
 T960176-C Determination of the as-built LIGO Global Coordinate Axes for Hanford, WA
 T960042-A Alignment Tolerances and Re-Alignment Criteria for the LIGO Beam Tubes
 T970117-A LIGO Site-to-Site Separation

1.4.4. Testing, Measurements and Analysis

T960128-00 Radiation Pressure Noise in LIGO
 T970054-00 Beam Tube Dynamics
 T970216-A Results of the Electromagnetic Survey for the LIGO Site at Hanford, WA

1.4.5. Layout Drawings

T960051-02 INTEGRATED LAYOUT DRAWINGS: USAGE & MAINTENANCE
 D970008-A Chamber & Rack Designations - WA (Corner Station)
 D970009-A Chamber & Rack Designations - WA (Mid Station)
 D970010-A Chamber & Rack Designations - WA (End Station)

1.4.6. Other

E950107-00 LIGO Foundation Thickness Decision: Minutes of Integration Meeting on 8
 December 1995
 E950108-00 LIGO Configuration Change to Nd:YAG Lasers: Impact on Facilities Chiller
 Requirements
 T950066-02 RESPONSE TO MULTIPLE ACTION ITEMS IN PARSONS' "REQUIRE-
 MENTS DEFINITION WORKSHEET"

2 FACILITIES DOCUMENTATION

2.1. Vacuum Equipment

2.2. Beam Tube

2.2.1. Design Requirements and Qualification

T960042-A Alignment Tolerances and Re-Alignment Criteria for the LIGO Beam Tubes
 T960125-00 Beam Tube Qualification Test

2.2.2. Baffles

E950083-B Science Requirements for the LIGO Beam Tube Baffles
 E960028-A Specification, Porcelain Coating of Beam Tube Baffles
 E960037-A COMPONENT SPECIFICATION: MECHANICAL FABRICATION OF BEAM
 TUBE BAFFLES
 E960038-00 DCN for E960028-A and E960037-A
 T970053-00 Baffle Glaze Shedding

2.2.3. Bakeout

E960123-03 Beam Tube Bakeout Design Requirements Document
 E970125-A COMPONENT SPECIFICATION: BEAM TUBE MODULE INSULATION
 E970167-A COMPONENT SPECIFICATION: Cryopump for Beam Tube Bakeout
 E970184-A COMPONENT SPECIFICATION: Calibrated Leak Assembly
 E970193-A COMPONENT SPECIFICATION: Portable Power Cable - NEC Type W
 E980006-A COMPONENT SPECIFICATION: Heating Blanket Relay Panel Assemblies
 E980008-A COMPONENT SPECIFICATION: Portable Electrical Power Panelboard Assemblies
 E980022-A COMPONENT SPECIFICATION: SPECIFICATION for ELECTRICAL CONTRACTOR SERVICES for the BEAM TUBE BAKEOUT at the LIGO HANFORD OBSERVATORY
 E980023-A COMPONENT SPECIFICATION: SPECIFICATION FOR ELECTRICAL PANELBOARD ASSEMBLY 'A1'
 E980024-A COMPONENT SPECIFICATION: SPECIFICATION FOR ELECTRICAL PANELBOARD ASSEMBLY 'A2'
 E980025-A COMPONENT SPECIFICATION: SPECIFICATION FOR ELECTRICAL PANELBOARD ASSEMBLY 'A3'
 E980026-A COMPONENT SPECIFICATION: SPECIFICATION FOR DC POWER SUPPLY ASSEMBLY 'B2'
 E980027-A COMPONENT SPECIFICATION: SPECIFICATION FOR 15 kV TRANSITION BOX ASSEMBLY 'E'
 E980028-A COMPONENT SPECIFICATION: SPECIFICATION FOR BEAM TUBE DC CONNECTIONS ASSEMBLY 'D'
 E980030-A COMPONENT SPECIFICATION: BEAM TUBE GROUNDING DURING BAKEOUT - ASSEMBLY 'I'

E980031-A	Beam Tube Bake Out Assembly Summary
T960124-00	ISSUES AND CONSIDERATIONS ON THE BEAM TUBE BAKE
T960178-01	Beam Tube Bakeout Conceptual Design
T970148-00	Beam Tube Bakeout Preliminary Design
G960181-00	BEAM TUBE BAKEOUT
G960241-00	BEAM TUBE BAKEOUT DESIGN REQUIREMENTS REVIEW
L970483-00	Beam Tube Bakeout Design Requirements Review - Responses to Recommendations
G970217-00	BEAM TUBE BAKEOUT PRELIMINARY DESIGN REVIEW

2.2.4. Testing, Measurements and Analysis

T970054-00	Beam Tube Dynamics
T970110-00	Information for the Beam Tube Pumpdown
T970111-00	Data from Beam Tube Pump Down II
L970429-00	Technical Board Meeting to Review Beam Tube HX2 Vacuum Test Results

2.3. Civil Construction

2.3.1. Design Requirements

E950101-00	Telecommunications requirements for Hanford, WA Site.
E950106-00	LIGO Requirements and Options for Facilities Monitoring and Control System (FMCS)

3 DETECTOR DOCUMENTATION

3.1. Detector System Documentation

E960112-05	Detector Subsystems Requirements
E960022-03	LIGO Vacuum Compatibility, Cleaning Methods and Qualification Procedures
E960050-A	LIGO Vacuum Compatible Materials List
T950065-A	Guidelines for Design Requirement Documents
L970196-00	Part Numbers and Serialization of Detector Hardware
L970164-02	Procedure for Release of Controlled Drawings and Specifications
T960083-A	Derivation of CDS Rack Acoustic Noise Specifications
E960108-A	Recommendation of parameter choices in 2 km interferometer design.
T960019-00	Frequency, Intensity and Oscillator Noise in the LIGO
T960120-00	Misalignment-Beam Jitter Coupling in LIGO
T960122-00	Proposed initial detector MC and RC baseline lengths
T970068-00	Recycling Cavity and Mode Cleaner Cavity Baseline Dimensions
D970002-00	Recycling Cavity Dimensional Range
D970003-00	Recycling Cavity Layout
T960128-00	Radiation Pressure Noise in LIGO
T960136-00	Estimates for Motions due to Sound Fields
T960140-00	Fast Estimation of Transverse Fields in High Finesse Optical Cavities

T960189-00	LIGO calibration accuracy
T970007-00	Modelling the Performance of an Initial-LIGO Detector with Realistically Imperfect Optics
G960250-00	Modelling the Performance of an Initial-LIGO Interferometer with Realistically-Deformed Optics
L970042-00	Internal Modes of Testmasses
T970077-00	Gravitational Deflection of LIGO Optics in a 9-Point Hindle Mount
T970091-00	Determination of the Wedge Angles for the Core Optics Components
T952008-00	A Tutorial For the Fast Fourier Transform Interferometer Simulator
G950061-02	A Summary and Future Preview of the FFT Simulation Initiative in LIGO
T960187-01	Effect of Microseismic Noise on a LIGO Interferometer
T970059-01	The Effect of Earth Tides on LIGO Interferometers
T970101-A	Strain Calibration in LIGO
T970128-02	Quantization Noise in Ligo Interferometers
T970167-00	LIGO Science Benchmarks
T970166-01	Benchmark tests for inspiraling binary searches for LDAS
T970149-00	Influence of the stray magnetic field generated by the Faraday isolator on SOS mirror actuators
T970174-00	Interferometric Vernier Technique for Measuring the Lengths of LIGO Fabry-Perot Resonators
T970177-00	Doubly Resonant Sideband Control for LIGO
T970212-00	Mirror Thermoelastic Deflection in the LIGO Optical Surface Absorption Measurement System
M980008-00	Detector Vacuum Bake Plan & Schedule
T960185-00	Numerical Thermoelastic Analysis of Complicating Factors in Optics Used in Laser Interferometers for Detection of Gravitational Waves
T960198-00	Resonant Frequencies and Quality Factors of LIGO “4-inch” Fused Silica Test Masses
T970176-00	Coating Strain Induced Distortion in LIGO Optics
T970191-03	Test Mass Transmissibility
T980005-01	Non-Linear Response of Test Mass to External Forces and Arbitrary Motion of Suspension Point
T980007-00	Effect of PO Telescope Aberrations on Wavefront Sensor Performance

3.2. Suspensions and Seismic Isolation

3.2.1. Suspensions

T950011-19	Suspension Design Requirements
E970037-00	SMALL OPTICS SUSPENSION ASSEMBLY SPECIFICATION
E970080-00	SMALL OPTICS SUSPENSION ASSEMBLY QUALITY CONFORMANCE WORKSHEET
E970038-C	LARGE OPTICS SUSPENSION (LOS) STRUCTURAL FABRICATION SPECIFICATION
E970132-B	LARGE OPTICS SUSPENSION ASSEMBLY QUALITY CONFORMANCE WORKSHEET

E970155-C	LARGE OPTICS SUSPENSION (LOS) FIXTURES AND COMPONENTS FABRICATION SPECIFICATION
E970152-B	LARGE OPTICS SUSPENSION FIXTURES AND COMPONENTS QUALITY CONFORMANCE WORKSHEET
T960074-07	Suspension Preliminary Design
E960098-01	PRELIMINARY DESIGN REVIEW Suspension System (SUS)
L970338-00	Settlement of SUS PDR Action Items for SOS
L970528-00	Settlement of SUS PDR Action Items for LOS
T970135-02	Small Optics Suspension Final Design (Mechanical System)
T970158-06	Large Optics Suspension Final Design (Mechanical System)
T960179-00	Small Optics Suspension Prototype Test Results
T960151-01	Large and Small Optics Suspension Electronics Design Requirements
T970113-00	Large and Small Optics Suspension Electronics Preliminary Design
G970219-00	LIGO LOS and SOS Electronics PDR
E970123-A	LIGO SUSPENSION SYSTEM RELIABILITY PREDICTION REPORT
L960596-00	Cross-coupling in the suspension controllers
T960040-00	RESPONSE OF PENDULUM TO MOTION OF SUSPENSION POINT
T960126-01	Magnet size considerations; interference and coil power dissipation
T960137-00	Note on Electrostatics in the LIGO suspensions
T970149-00	Influence of the stray magnetic field generated by the Faraday isolator on SOS mirror actuators

3.2.2. Seismic Isolation

T960065-03	Seismic Isolation Design Requirements Document
T960066-00	Seismic Isolation Conceptual Design
M960038-00	DESIGN REQUIREMENTS REVIEW Seismic Isolation
M970104-00	PRELIMINARY DESIGN REVIEW: Seismic Isolation System (SEI)
M970048-02	PRELIMINARY DESIGN REVIEW: Seismic Isolation (SEI) Actuator System
M970049-00	PRELIMINARY DESIGN REVIEW: Seismic Isolation (SEI) System Assembly Sequence and Fixturing
M970082-01	FIRST ARTICLE FABRICATION READINESS REVIEW Seismic Isolation System (SEI): In Vacuo Hardware
T970142-00	Action Item Response Report: FIRST ARTICLE FABRICATION READINESS REVIEW for the Seismic Isolation System (SEI)
L970061-01	Specification Guidance for Seismic Component Cleaning, Baking and Shipping Preparation
E970063-01	LIGO Seismic Isolation System: Fabrication Process Specification
E970129-01	Material, Process, Handling, and Shipping Specification for Welded Diaphragm Bellows
E970130-00	Material, Process, Handling, and Shipping Specification for Fluorel Parts
E970131-02	Material, Process, Handling, and Shipping Specification for Damped Coil Springs
D972219-00	LIGO ISOLATION SYSTEM COIL SPRING SEAT
D972714-00	LIGO ISOLATION STACK FLUOREL SHIM

- T970069-01 Requirements for Creep Testing of SEI Spring Elements
- T970168-00 Viton Spring Seat Vacuum Bake Qualification

3.3. Lasers and Optics

3.3.1. General Documentation

- L970042-00 Internal Modes of Testmasses
- T970077-00 Gravitational Deflection of LIGO Optics in a 9-Point Hindle Mount
- T970091-00 Determination of the Wedge Angles for the Core Optics Components
- G950061-02 A Summary and Future Preview of the FFT Simulation Initiative in LIGO
- T970212-00 Mirror Thermoelastic Deflection in the LIGO Optical Surface Absorption Measurement System
- T960185-00 Numerical Thermoelastic Analysis of Complicating Factors in Optics Used in Laser Interferometers for Detection of Gravitational Waves
- T960198-00 Resonant Frequencies and Quality Factors of LIGO “4-inch” Fused Silica Test Masses
- T970176-00 Coating Strain Induced Distortion in LIGO Optics

3.3.2. Prestabilized Laser

- E950081-06 Nd 3+ Laser Target Specifications
- T970080-09 (Infrared) Pre-stabilized Laser (PSL) Design Requirements
- T970087-04 (Infrared) Pre-stabilized Laser (PSL) Conceptual Design
- M970044-00 LIGO Detector Review Report - Preliminary Design Review (PDR) - Design and Fabrication of Nd3+ Lasers
- L970108-00 (Review of) LightWave Electronics (LWE) Laser Reliability Plan
- M970142-00 Temporary Operational Safety Procedure For The LIGO 10-W Laser
- T970145-00 Performance of VCO/AOM frequency shifter

- T970115-00 (Infrared) Pre-stabilized Laser (PSL) Electronics Design Requirements
- T970114-00 IR PSL CDS CONCEPTUAL DESIGN DOCUMENT

3.3.3. Input Output Optics

- T960093-02 Input Output Optics Design Requirements Document
- L970447-00 Settlement of IOO DRR Action Items
- T970143-00 Design Considerations for LIGO Mode-Matching Telescopes
- T970144-00 Input Optics Preliminary Design
- T970149-00 Influence of the stray magnetic field generated by the Faraday isolator on SOS mirror actuators
- T970098-00 IOO Mode Cleaner Wavefront Sensing Telescopes
- T970218-01 Mode Cleaner Length/ Frequency Control Design

3.3.4. Core Optics

E950099-04	Core Optics Components Requirements (1064 nm)
T970071-02	Core Optics Support Design Requirements Document
T970072-01	Core Optics Support Conceptual Design
T980010-00	Core Optics Support Preliminary Design
G970067-00	Core Optics Support Design Requirements Review
T970109-00	Spectral Analysis of Coated Optic Phase Maps
G970286-00	Optical Development of Test Masses

3.3.4.1 Recycling Mirror Specifications

E960092-B	COMPONENT SPECIFICATION: SUBSTRATE, RECYCLING MIRROR
E960096-B	COMPONENT SPECIFICATION: MIRROR BLANK MATERIAL, RECYCLING MIRROR

3.3.4.2 Input Test Mass Specifications

E960093-C	COMPONENT SPECIFICATION: SUBSTRATE, INPUT TEST MASS
E980019-A	COMPONENT SPECIFICATION: SUBSTRATE, SUPRASIL 312
D960787-B	INPUT TEST MASS SUBSTRATE, 4K
D960803-B	INPUT TEST MASS SUBSTRATE, 2K
E960095-A	COMPONENT SPECIFICATION: MIRROR BLANK MATERIAL, INPUT TEST MASS

3.3.4.3 Beam Splitter Specifications

E960100-B	COMPONENT SPECIFICATION: SUBSTRATE, BEAM SPLITTER
D960789-B	BEAM SPLITTER SUBSTRATE
E960094-B	COMPONENT SPECIFICATION: MIRROR BLANK MATERIAL, BEAM SPLITTER

3.3.4.4 End Test Mass Specifications

E960102-A	COMPONENT SPECIFICATION: SUBSTRATE, END TEST MASS
D960791-A	END TEST MASS SUBSTRATE
E960097-A	COMPONENT SPECIFICATION: MIRROR BLANK MATERIAL, FOLDING MIRROR, END TEST MASS

3.3.4.5 Folding Mirror Specifications

E960101-A	COMPONENT SPECIFICATION: SUBSTRATE, FOLDING MIRROR
D960790-A	FOLDING MIRROR SUBSTRATE
E960097-A	COMPONENT SPECIFICATION: MIRROR BLANK MATERIAL, FOLDING MIRROR, END TEST MASS

3.3.4.6 Reference Flat Specifications

E980020-A	COMPONENT SPECIFICATION: REFERENCE FLAT, UNCOATED
D970619-00	Flat, Transmission, 150mm Before Coating, LIGO

- E980058-A COMPONENT SPECIFICATION: FLAT, TRANSMISSION, 150 mm,
COATED
- E980059-A COMPONENT SPECIFICATION: REFERENCE FLAT, AR COATED

3.3.5. Core Optics Components Carrying Case Drawings

- D970085-A Project Material List - Large Core Optic Component and Beam Splitter Optic Assemblies
- D961460-C Large Core Optic Component Carrier Assembly
- D970006-B Material List - Large Core Optic Component Carrier Assembly
- D970597-A Drawing List - Large Core Optic Component Carrier Assembly (linked list)
- D961461-C Beam Splitter Optic Carrier Assembly
- D970007-B Material List - Beam Splitter Optic Carrier Assembly
- D970598-A Drawing List - Beam Splitter Optic Carrier Assembly (linked list)
- D961468-B Core Optic Component Carrier Metrology Interface Top Plate Assembly
- D970599-A Drawing List - Metrology Interface Top Plate Assembly (linked list)
- D970064-B COC Carrier Shipping Compartment Assembly
- D970065-B COC Carrier Shipping Compartment Details

3.4. Alignment and Length Sensing

3.4.1. Alignment Sensing/Control

- T952007-04 Alignment Sensing/Control Design Requirements Document
- T960134-00 Alignment Sensing/Control Conceptual Design
- T970060-00 Alignment Sensing/Control Preliminary Design
- T952013-00 Alignment Design Interfaces
- T960103-00 ASC: Environmental Input to Alignment noise
- T950049-00 ASC Centering Subsystem Description
- T950069-00 Naming and Interface Definition for ASC Wavefront/Centering
- T950073-00 Interferometer Requirement Flowdown To ASC
- T950074-00 Naming and Interface Definition for ASC Initial Alignment
- T970063-00 Response to Alignment Sensing and Control DRR2 Action Items
- T970061-00 ASC CDS Design Requirements Document
- T970062-00 ASC CDS Conceptual Design
- T960138-00 ASC Channel Count

3.4.1.1 Optical Lever

- T950106-01 ASC Optical Lever Design Requirement Document
- T950112-00 ASC Optical Lever Specification and Design Document
- T950070-00 Naming Convention and Interface Definition for Optical Lever

3.4.1.2 Wavefront Sensing

T960111-A	WAVEFRONT SENSOR
T960113-00	Modal Model Update 1: Interferometer Operators
T960114-B	Modal Model Update 2: GW-Sensitivity to Angular Misalignments
T960115-A	Modal Model Update 3: Small Angle Regime
T960116-00	Modal Model Update 4: Mode Mismatch
T960191-00	Modal Model Update 5 Large Angle Regime
T960118-00	Modal Model Update 6: Mode Cleaner
T970058-00	Modal Model Update 7 Angular Transfer Functions
T980001-00	Modal Model Update 10 Noise Coupling and Random Imperfections

3.4.2. Length Sensing/Control

T960058-03	Length Sensing and Control Design Requirements Document
T970138-00	LSC CDS Design Requirements
T970139-00	LSC CDS Conceptual Design
T970122-00	Length Sensing and Control Subsystem Preliminary Design
T952109-01	LIGO Length Sensing System: Design considerations for a tabletop prototype interferometer
T960067-00	Length Control RMS Deviations from Resonance
T960139-00	Shot noise sensitivity of the length control error signals
T970084-00	Frequency Response of the LIGO Interferometer
T970101-A	Strain Calibration in LIGO
G970192-00	Length Sensing and Control Subsystem Preliminary Design Review
G980022-00	Photodiodes for Initial and Advanced LIGO
G980048-00	Photodiodes for Initial LIGO

3.5. Control and Data System

T960004-A	CDS Software Development Plan and Guidelines
T950054-02	CDS Control and Monitoring Design Requirements Document
T950120-01	CDS Control and Monitoring Conceptual Design
T970171-00	CDS Control and Monitoring Final Design
G970289-00	CDS Control & Monitoring Final Design Review (FDR)
T960009-A	LIGO Data Acquisition System Design Requirements
T960010-00	CDS Data Acquisition System Conceptual Design
T970136-00	CDS Data Acquisition Preliminary Design
T980017-00	Data Acquisition System Reflected Memory Network Design
G980029-00	LIGO Data Acquisition System
T970190-A	LIGO DATA ACQUISITION SYSTEM RELIABILITY PREDICTION REPORT
T980023-00	A Reference of Data Server Library for Data Acquisition System
T980024-00	Data Acquisition Daemon (DAQD) Client-Server Communication Protocol Version 5

T980025-00 Data Acquisition Daemon (DAQD) Program Design

T970115-00 (Infrared) Pre-stabilized Laser (PSL) Electronics Design Requirements
T970114-00 IR PSL CDS CONCEPTUAL DESIGN DOCUMENT

T960151-01 Large and Small Optics Suspension Electronics Design Requirements
T970113-00 Large and Small Optics Suspension Electronics Preliminary Design
G970219-00 LIGO LOS and SOS Electronics PDR

T970061-00 ASC CDS Design Requirements Document
T970062-00 ASC CDS Conceptual Design

T970138-00 LSC CDS Design Requirements
T970139-00 LSC CDS Conceptual Design

T970165-00 PEM Data Acquisition Preliminary Design
D970532-00 Hanford PEM Data Acquisition System Preliminary System Layout

T960107-00 LIGO Interferometer Diagnostics System Design Requirements
T960108-00 Interferometer Diagnostics Conceptual Design
T970172-A Global Diagnostics System Preliminary Design
G980024-00 GLOBAL DIAGNOSTICS SYSTEM
G980031-00 GLOBAL DIAGNOSTICS SYSTEM Preliminary Design Review
T980020-00 GDS REFLECTIVE MEMORY ORGANIZATION
L980070-00 Minutes/slides from the diagnostics meeting at MIT, 2/19-2/20/98

T960024-A Vacuum Control and Monitoring System (VCMS) Design Requirements
T960037-00 Vacuum Control and Monitoring System (VCMS) Design
T970001-00 Vacuum Control and Monitoring System (VCMS) Final Design
E970158-00 Hanford EPICS Vacuum Controls Vacuum Gauge Pair (Pirani and Cold Cathode)
Test Specifications

E970159-00 Hanford EPICS Vacuum Controls Electric Gate Valve Test Specifications
E970160-00 Hanford EPICS Vacuum Controls Pneumatic Gate Valve Test Specifications
E970161-00 Hanford EPICS Vacuum Controls Cryogenic Pump Test Specifications
E970162-00 Hanford EPICS Vacuum Controls 2500l/s Ion Pump Test Specifications
E970163-00 Hanford EPICS Vacuum Controls 75 l/s Ion Pump Test Specifications
E970001-00 DCN for VCMS Drawings
T970179-00 How to Build the Hanford Left End Station EPICS Vacuum Controls System
T970180-00 How to Build the Hanford Left Mid Station EPICS Vacuum Controls System
T970181-00 How to Build the Hanford Left LVEA-Y Station EPICS Vacuum Controls System

T970182-00 How to Build the Hanford Right LVEA-X Station EPICS Vacuum Controls System

T970183-00 How to Build the Hanford Mechanical Room Station EPICS Vacuum Controls System

T970184-00 How to Build the Hanford Right Mid Station EPICS Vacuum Controls System
T970185-00 How to Build the Hanford Right End Station EPICS Vacuum Controls System

T960014-00 Vacuum Feedthrough and Cabling Conceptual Design
T960177-00 LIGO Cable Numbering and Marking Standard
T970076-00 LIGO CDS VME Mainframe Specification
T960083-A Derivation of CDS Rack Acoustic Noise Specifications
D970595-00 8KHz Instrumentation Amplifier/Filter
D970596-00 500Hz Instrumentation Amplifier/Filter

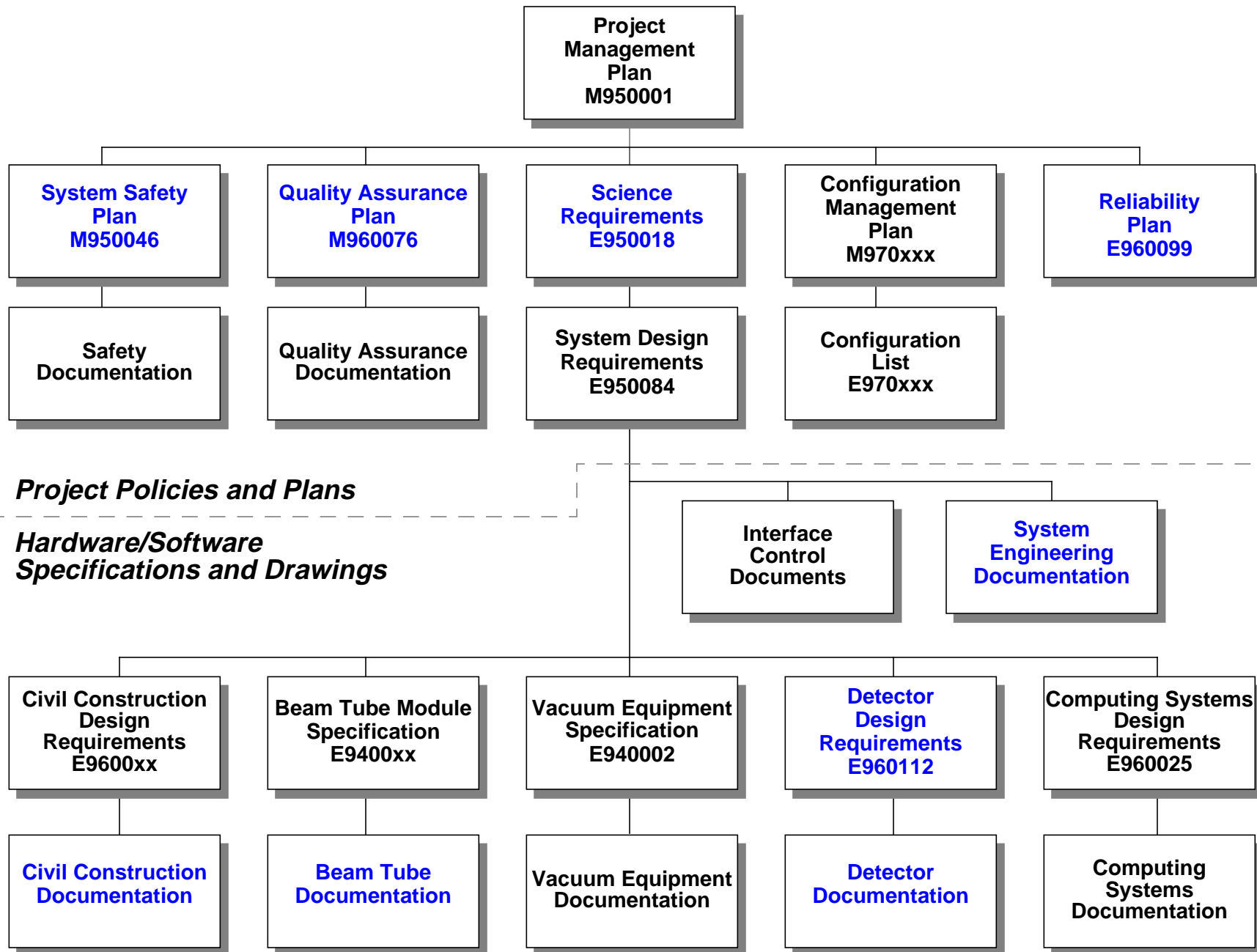
3.6. Physical Environment Monitor

T960127-02 Physical Environmental Monitor Design Requirements Document
T960145-00 Physical Environmental Monitor Conceptual Design
T970086-00 Physical Environmental Monitor Preliminary Design Document
G970026-00 Physics Environment Monitoring Preliminary Design Review
L970028-00 DESIGN REQUIREMENTS REVIEW Physics Environment Monitoring (PEM)
Action Item Responses
M970137-01 PRELIMINARY DESIGN REVIEW Physics Environment Monitoring (PEM)
T970112-00 Physics Environment Monitoring Final Design Document
D970532-00 Hanford PEM Data Acquisition System Preliminary System Layout
T970165-00 PEM Data Acquisition Preliminary Design
T970213-A PHYSICS ENVIRONMENT MONITORING SYSTEM RELIABILITY PRE-
DICTION REPORT

4 R&D DOCUMENTATION

D961304-06	OPTICAL LAYOUT - 40m RECYCLING
G960172-00	THE FMI ALIGNMENT EFFORT
G970152-01	LIGO@ MIT: Transition to Operations and Advanced Detector R& D
M960114-00	Statement of Work: Replacement of Vertex Masses at 40m
M960115-00	Statement of Work: Installation of Side Chamber and Reconfiguration of Associated Optics at the 40m
M970013-02	A Proposal for the First Experiment for Validation of the 40m End-to-End Model
T950035-01	Measurement of the Ground Drift at the 40-m Lab
T950137-00	Description of the Electronics for the FMI Wavefront Experiment
T960013-02	Calculation of the Modulation Frequency for the 40m Power Recycling Interferometer
T960015-03	Calculation of Optical Parameters for the 40m Power Recycling Interferometer
T960072-00	Beam Splitter and Recycling Mirror Suspension Controller Design Requirements
T960073-00	40 Meter Recycling Electronics Design Requirements
T960162-02	Specifications of the 40m Test Mass Suspension Prototype
T960186-00	Procedure for Attaching the Fins and Hanging the PNI Mirrors
T970085-02	Correlation Function and Power Spectrum of Non-Stationary Shot Noise
T970090-00	Proposal for a table-top prototype resonant sideband extraction interferometer
T970099-00	Statement of Work: Change of Modulation Frequency at the 40m
T970102-00	40 Meter BS and RCM Suspension Controller Test Plan
T970103-00	BS and RCM Suspension Electronics Operator's Manual
T970126-02	40m Data Acquisition System Quick Reference
T970186-01	Overview of the 40m End-to-End Model

LIGO CONFIGURATION DOCUMENTATION



LIGO

Beam Tube

Beam Tube

Detector DRD

LIGO

Vac

