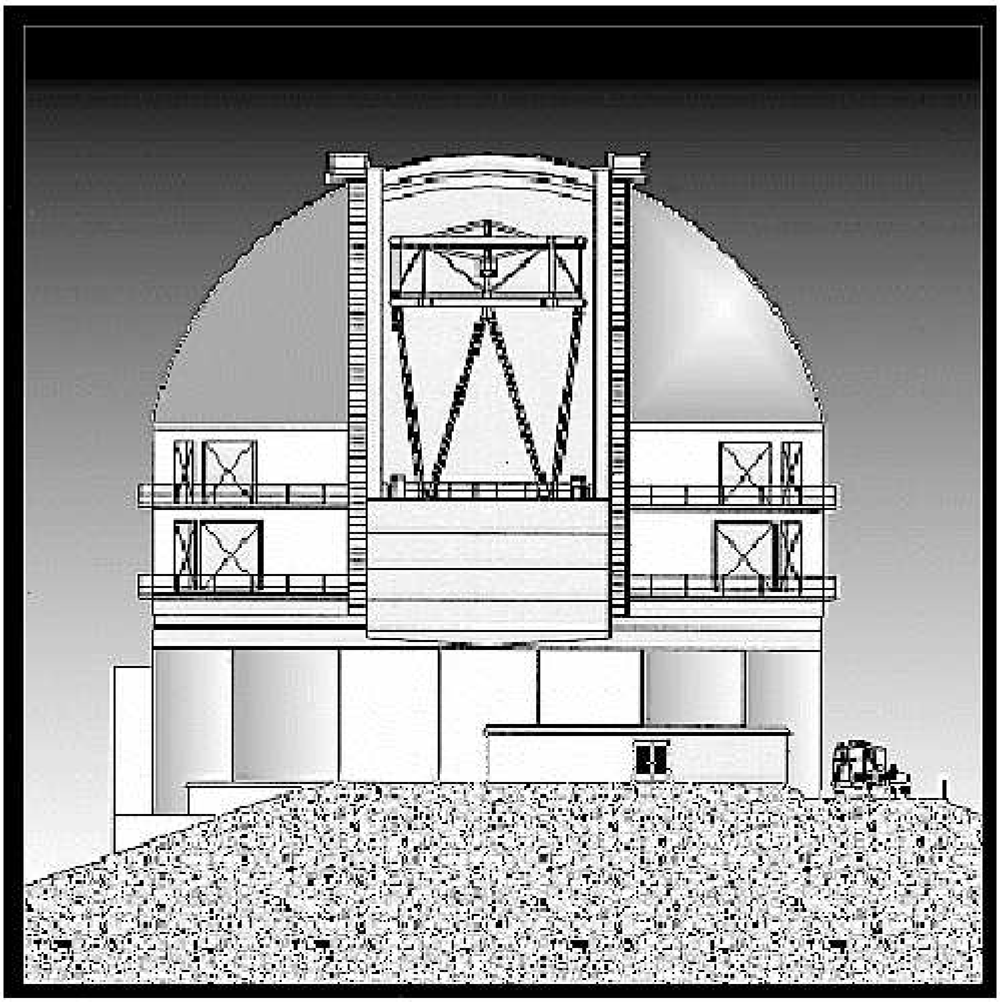
GEMINI
8-M Telescopes
Project

REV-S-G0114

Hydrostatic Bearing Control System CDR



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September 25, 1997

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Date: January 13, 1998

To: Distribution

From: Mark Hunten

Subject: Hydrostatic Bearing Control System CDR Report

The Hydrostatic Bearing Control System CDR was held on September 25, 1997 at Gemini Hilo.

Attending were: Keith Raybould, Jim Oschmann, Mark Warner, Jim Catone, Andy Rudeen, Kent Tsutsui, Gustavo Arrigada, Manuel Lazo, Stan Karewicz, Chase Reed, Richard McCarthy, Andrew Gushikan.

The design was approved with minor changes to be evaluated on the cabinet. There was much discussion of the routing of cables in conduits. An area of concern to the electrical types were how the conduits exit the cabinet. Original plans were to have the power cables exit the bottom of the cabinet. Recommended exit points are on the top of the cabinet, which makes the conduiting easier. Alternatively the conduits could come out the side with 90 deg ells to bring them vertical for the overhead runs. The possibility of putting wire raceways inside to run the power wires through was mentioned. This would ease the routing of the power wires out the top of the cabinet.

The power disconnect is close enough to being a problem that there was much discussion about possibly moving it. Alternatives included removing the disconnect and placing fuse blocks in the cabinet. This would be a design change with additional work for the contractor. We have decided to leave the disconnect where it is and to exit the top of the disconnect, entering the cabinet from the top. This requires only two 90 deg. sweeps and has been okayed verbally by Paul Collins and Chase Reed.

Another discussion point was on the connector panel to connect the sensors and control voltages. The possibility of removing the connectors entirely and running hard conduit into the cabinet with the cables being terminates at the terminal blocks was discussed. By doing this we provide a more robust system. This would be a design change, but it would be less work for the contractor. The reasoning behind the connectors in the original design was to speed up installation since all that would need to be done for field hookup would be to snap on the connectors, a significant saving of time. Time estimate for field wiring of the terminal block would be two man days.

Mark Warner has an action item for specifying the mounting of the J-boxes on the pumping plant and oil unit. We need to get the boxes completed and shipped as soon as possible for field wiring before the pumping plant goes up the mountain. This happens the week of Oct. 20. Stan K. and Mark H. will look at the J-boxes to see if the holes can be prepunched for the cabling to the sensors.

Temperature measurement of the oil exit temperature was discussed, Mark Warner and Kent Tsutsui are going to work on that at a lower priority level. This is done on the actual telescope, so is not part of this system.

The preliminary I&T plan for the HBS was shown and discussed. More detail is required. This needs to be a joint mechanical/electrical venture. A checklist of **all** items needed for startup is a required item. This will include all sensors, solenoids and motors to be checked out on the electronics side both for the setup phase and for the commissioning. This is an action item for Stan K. and Mark W. to work together on this. The list will include a mechanical section and an electrical section. This will be finished by early November and reviewed by Keith Raybould and Jim Oschmann.

A demonstration of the Paneview display system followed with a discussion of items needed for debugging of the system. Added to the requirements are screens showing the limits of the sensors. This is not the screen that is the primary one, but a secondary screen for debugging. This is an action item for Mark H. for page layout and Stan K. for software.

The design for the HSB Control System is now considered frozen and under change control. Changes recommended at the CDR will be implemented as approved by Mark Hunten and/or Keith Raybould. All electrical changes are to be documented and approved by Mark Hunten. All control, mechanical or interface changes must be approved by Keith Raybould or the engineer designated by him. If conflicts exist between the two groups, they are to be brought to Keith Raybould's and Jim Oschmann's attention for resolution. All contract changes must go through Andy Flach.

A visit was made to the summit to evaluate the location of the HBS cabinet prior to installation. During the visit:

- Cable runs were measured for the specifying of the cable lengths to the contractor.
- The electrical disconnect location was measured and clearances estimated.
- Conduit locations and runs were discussed.
- It was noted that the cabinet needs to be secured to the floor for earthquake protection.
- We also noticed that the oil tank motor should have a local disconnect since it is in a separate room from the control.

Summary of Action Items – Responsible party(ies):

- Decision on addition of wire raceways internal to main cabinet – Mark Hunten, due Oct. 8, 1997.
- Decision on the connector panel on the main cabinet – Mark Hunten, due Oct. 8, 1997.
- Mounting of J-boxes on pumping station – Mark Warner, due before pumping plant ships.
- Completion of I&T Plan – Stan Karewicz and Mark Warner, due Nov. 3, 1997.
- Addition of Panelview screens for limits – Mark Hunten and Stan Karewicz, due Oct. 17, 1997.

- Insure that a electrical disconnect panel gets installed by the oil tank pump motor – Mark Hunten, due at installation.