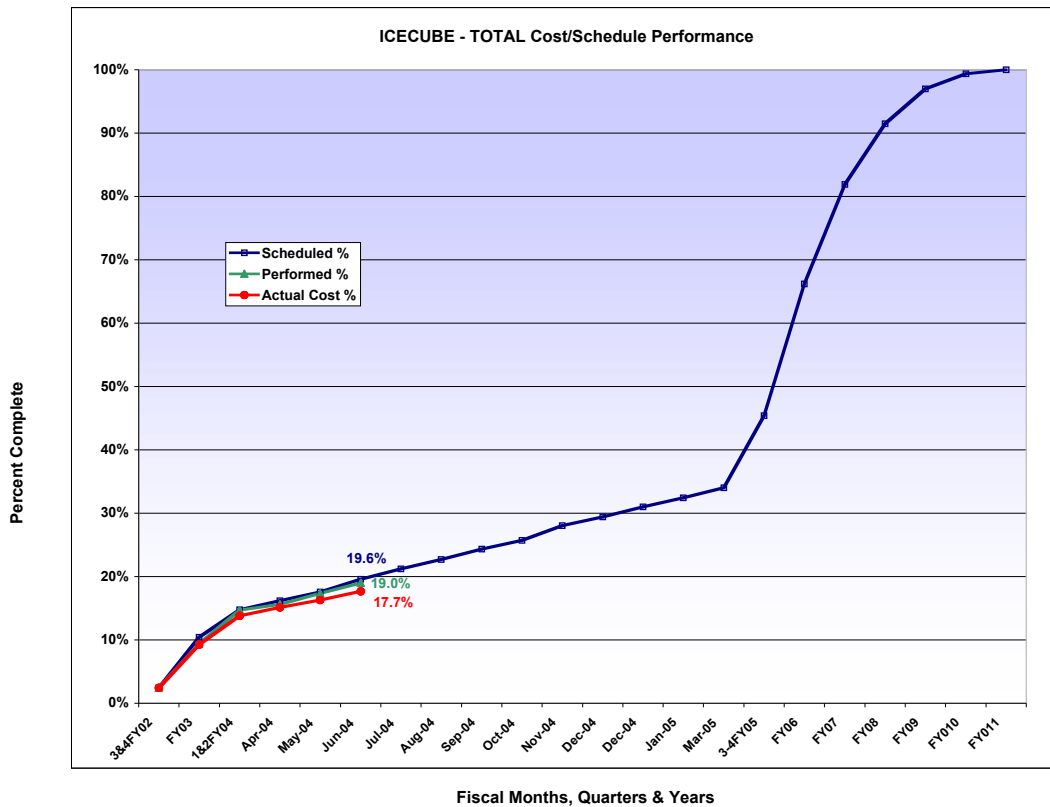


## IceCube Project Monthly Report July 2004

### Accomplishments

- Completed all Enhanced Hot Water Drill system tests with the exception of the Rod Well System. The Rod Well System testing will be completed on August 10<sup>th</sup>.
- Started DOM production at the production sites in the U.S., Germany, and Sweden.
- Conducted training for drilling operations, DOM installation, and safety. The training program included staff from UW, IceCube collaborators, and Raytheon.
- Conducted a Quarterly Status Meeting at UW with participation from the NSF.
- Implemented earned value reporting.
- Completed a detailed, resource-loaded schedule for on-ice activities that is coordinated with the Raytheon on-ice schedules.



**Construction Cost and Schedule Performance** – July cost and schedule performance data include adjustments resulting from a more accurate application of escalation rates and revisions to actual cost data. Raytheon earned value data is included in the total project performance measurements. A cumulative schedule variance of 0.6% is due to delays in the ramp up of instrumentation production and a few other factors related to the delay in completing EHWD system level testing and delays in ramping up staff in data systems and detector verification and commissioning activities. These variances are partially offset by a favorable schedule variance in Raytheon activities. A cumulative favorable cost variance of 1.9% is the result of delays in reporting of actual costs at collaborating U.S. institutions and actual Raytheon costs that are slightly lower than

originally planned. Baseline changes and technical progress have resulted in a slight increase in the contingency budget as a percentage of the remaining work (~25%).

**Logistics, Drilling, and Installation** - Project Office staff worked closely with Raytheon to refine the IceCube on-ice schedule for the FY04/05 season and to justify associated South Pole population requirements. The NSF favorably reviewed the results of these efforts in late June, and again in mid-July. Work continues to find ways to more effectively meet IceCube needs within total population limits. The Enhanced Hot Water Drill successfully completed system testing in July and is being prepared for shipment from PSL by 23 Aug. An alternative for shipping DOMs as late as early November has been developed and a baseline change request is in process to implement this alternative.

**Digital Optical Module Production** – Production started at all three sites.

- UW-Physical Science Laboratory - 28 DOMs produced and 121 more in process
- Zeuthen, Germany - 40 DOMs in process
- Stockholm, Sweden – production started

No significant problems were encountered in the initial DOM integration process. There are schedule delays that are primarily due to slower than planned delivery of the DOM main boards from LBNL. The main boards were delayed by the later than planned delivery of parts as well as lower yields after board testing. The parts issue is resolved and all parts required for the strings and tanks planned for this year are now on hand. LBNL shipped 37 main boards in July and another 106 are planned for August.

**Digital Optical Module Testing** – The Dark Freezer Laboratories in the U.S., Germany, and Sweden are being prepared for final acceptance testing of the DOMs. The first batch of production DOMs, approximately 80, will be loaded in the PSL freezer on August 16<sup>th</sup>. The test cycle is two weeks.

**IceCube Project Baseline** – The table below provides project baseline information.

Initial In-Ice Strings & IceTop Tanks Installed	January 2005
Initial Operational Capability	March 2007
Project Completion & Closeout	September 2010
Total Project Cost	\$271.8M
Value of Foreign Contributions	\$29.7M
NSF Funding	\$242.4M
Contingency as % of Remaining Costs	25.3%
# Strings/Tanks	≥70/140

**Quality and Safety** – There is one final code waiver for the drill pending with the NSF. A safety plan for “on-ice” activities is being developed in collaboration with Raytheon.

**Future Meetings and Events**

Instrumentation Workshop @ UW	August 2-3
Monthly Status Meetings @ UW	August 18, September 15
International Oversight & Finance Group Meeting @ Stockholm	October 7
IceCube Collaboration Meeting @ Uppsalla, Sweden	October 8-10
NSF Semi-annual Review @ UW	October 25-27