

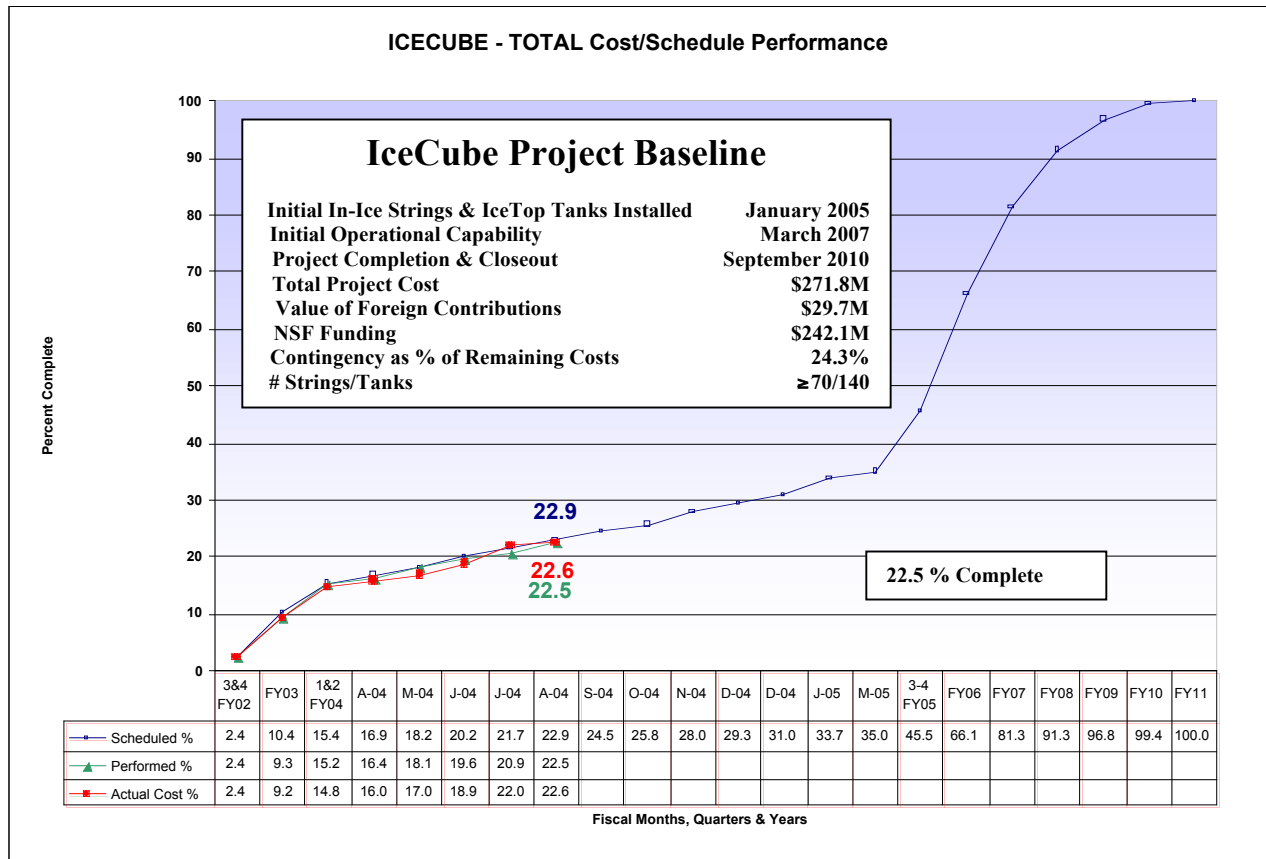
IceCube Project Monthly Report September 2004

Accomplishments

Completed two final acceptance test cycles in the dark freezer laboratory at the University of Wisconsin and shipped a total of 136 Digital Optical Modules (DOMs) to Port Hueneme, California. Germany and Sweden completed production of 45 DOMs. Germany started final acceptance testing.

Completed development of the DOM-Hub software test bed.

Submitted the Project Execution Plan for entire construction project to NSF on October 1, 2004.



Construction Cost and Schedule Performance – The cumulative schedule variance at the end of August was less than one half percent. The variance is due to minor delays in the start of instrumentation production, completion of Enhanced Hot Water Drill system level testing, and delays in increasing staff in the areas of data systems and detector verification and commissioning preparation activities. The variance is half of the previous cumulative variance now that the remaining drill testing work is essentially complete. The total contingency budget is ~24 percent of the budget for the remaining work to be completed.

Enhanced Hot Water Drill Testing

Completed testing and shipping of the drill equipment.

Digital Optical Module Production & Testing

UW/Physical Sciences Laboratory – The second final acceptance test cycle in the dark freezer laboratory was completed on September 30th. The second test cycle included 84 new DOMs, 66 were approved for shipping to the pole and 64 were shipped. LBNL delivered their final delivery quantity of 290 main boards.

DESY Zeuthen - DESY successfully loaded their dark freezer laboratory with 25 DOMs, the maximum possible given their supply of main boards. Testing is progressing well and a high yield is expected.

Stockholm/Uppsala – Stockholm has successfully integrated all of their main boards producing a total of 22 integrated DOMs. All 22 DOMs were sent to Uppsala at the end for final acceptance testing in the Uppsala dark freezer laboratory. There is a minor delay in the start of testing due to the availability of DOR cards but the shipping schedule is still valid.

Failure analysis of the DOMs that did not pass acceptance testing is actively underway. There are generally two types failures. There are minor problems with the flasher boards that can be fixed with a code revision that can be loaded into the flasher board after the DOMs are sealed. There are also problems with gain as ten DOMs showed a gain marginally below the hard cut off. This cut off is a factor of five above the nominal operating gain to allow some absolute margin and to allow for future aging effects. It is clear that in the long term the passing rate will be higher. Failures occurred in the first of two cold test cycles giving some confidence that there will not be latent failures of the DOMs.

Data Systems Software

The South Pole test system was completed and released for use in September, the data movement software was installed, and testing has started. Version 1.0 of Offline production software was also released in September and assembly of the South Pole System is roughly 50% complete. The system will be shipped from UW by the end of October.

Detector Verification and Commissioning

Plans were prepared for verifying performance, calibrating, and commissioning the initial strings and surface tanks. Working groups are being used to identify the tasks at a detailed level.

Future Meetings and Events

International Oversight & Finance Group Planning Meeting in Stockholm	October 7
IceCube Collaboration Meeting @ Uppsala, Sweden	October 8-10
NSF Semi-annual Review/Cost Review @ UW	October 26-28
Monthly Status Meeting @ UW	November 17
Monthly Status Meeting @ UW	December 15