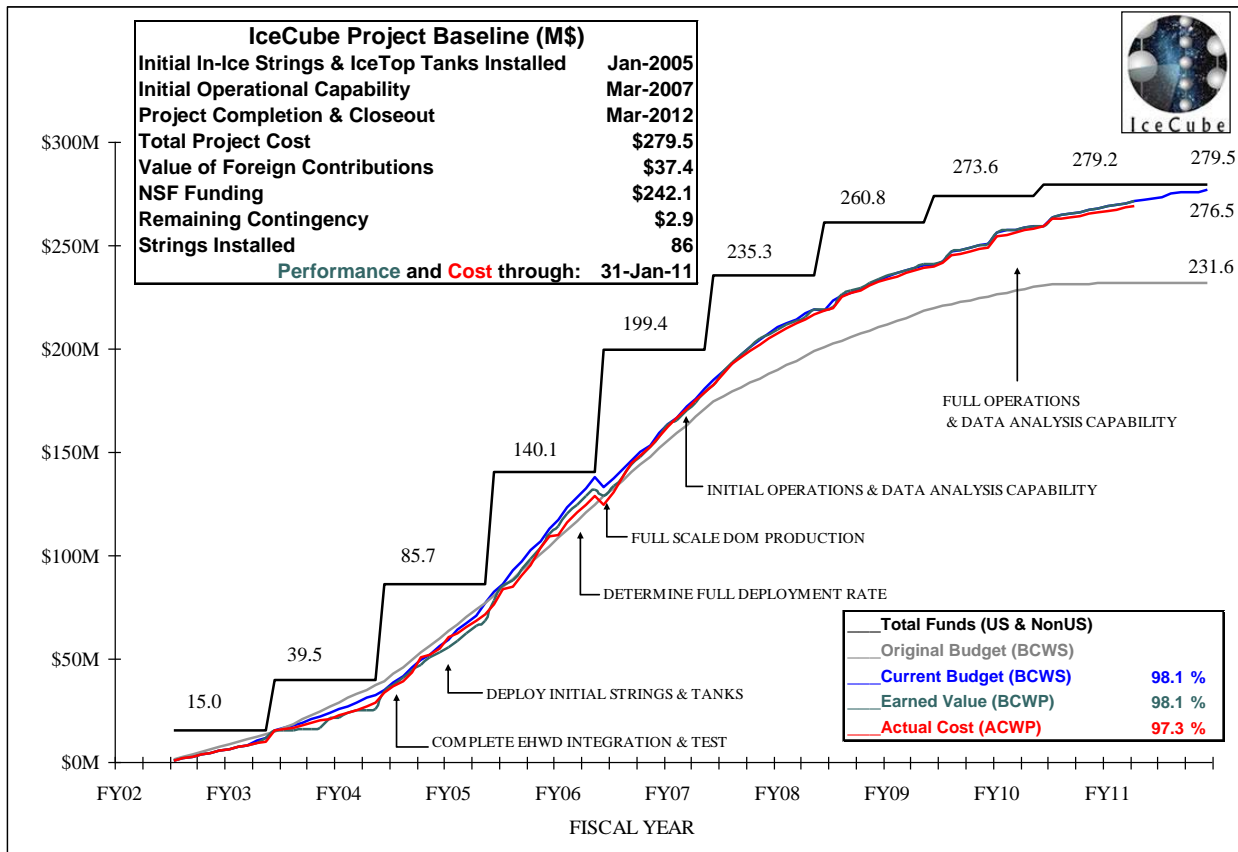


IceCube Project Monthly Report – February 2011

Accomplishments

- The final IceCube summer personnel safely departed Antarctica. There are two people staying through the winter at South Pole to maintain the data management and computing systems.
- A storage report for the Enhanced Hot Water Drill (EHWD) was developed including photographs, 3D drawings of storage configurations, and inventory lists.
- Fuel use summary reports were completed for the 2010-11 season and all of the construction years.
- A comprehensive assessment of the long term computing requirements and the plans for meeting these requirements is being prepared as part of the project completion exercise.
- Additional outreach activities took place in February including the annual Physics Fair at UW-Madison. Several IceCube staff visited elementary schools for “Science Nights” during the month.



Cost and Schedule Performance – The project is 98.1% complete. Remaining contingency is \$2,937K. The NSF IceCube MREFC funding of \$242.1 million remains unchanged since the project baseline was established in early 2004.

IceCube Neutrino Observatory Cost Schedule Status Report Reporting Period Ending: 1/31/2011								
Cumulative (AY K\$)					At Completion	Complete (%)		
OBS Structure L2	Budgeted Cost		Actual Cost of Work Performed	Variance Cost	Budgeted AY \$s	Sched	Perf	Actl Cost
	Work Scheduled	Work Performed						
Project Support	26,927	26,927	26,844	83.4	27,804	96.8%	96.8%	96.5%
Implementation	45,941	45,941	45,456	485.4	46,905	97.9%	97.9%	96.9%
Instrumentation	76,837	76,837	76,694	143.1	77,163	99.6%	99.6%	99.4%
Data Acquisition	33,855	33,855	33,855	0.6	33,855	100.0%	100.0%	100.0%
Data Systems	26,712	26,712	26,736	-24.1	26,989	99.0%	99.0%	99.1%
Detector Comm. & Verification	20,608	20,608	20,610	-2.1	20,628	99.9%	99.9%	99.9%
Pre Operations	5,126	5,126	5,137	-10.9	5,605	91.5%	91.5%	91.7%
Subtotal	236,007	236,007	235,331	675.4	238,949	98.8%	98.8%	98.5%
RPSC Support	33,967	33,967	32,585	1,382.5	36,323	93.5%	93.5%	89.7%
NSF	1,238	1,238	1,238	0.0	1,263	98.0%	98.0%	98.0%
Total	271,212	271,212	269,154	2,057.9	276,535	98.1%	98.1%	97.3%
CONTINGENCY					2,937			
IceCube Total	271,212	271,212	269,154	2,057.9	279,472	98.1%	98.1%	97.3%

The cost variance at the end of January 2011 was a favorable \$2,057.9K, primarily due to Raytheon and New York Air National Guard Fiscal Year FY2010 fuel savings and FY2011 on-ice labor cost savings.

Contingency Status and Plans – One change request was implemented this month, IC0168 Project Year 10 Baseline Re-Plan. Major activities during the final year of construction are: project closeout, documentation and archive, EWHF final disposition logistics and coordination, finalize IceTop surface array calibration, reconstruction and simulation software tools and adjustments to the IceCube Live experiment control interface and Data Acquisition software to support the final configuration of the detector.

01/31/2011

Change Log - IceCube Total Project Budget Baseline (\$K)

No.	Description	Approval Date	Total Baseline	Allocated Budget	Allocated Budget Change	Contingency Budget
NA	Status as of October 2010		279,472	275,475	0	3,997
NA	Status as of November 2010		279,472	275,475	0	3,997
NA	Status as of December 2010		279,472	275,475	0	3,997
CR168	PY10 Baseline Re-Plan	02/25/11	279,472	276,535	1,060	2,937
NA	Status as of January 2011		279,472	276,535	0	2,937

Reviews of MREFC subsystems continue and any additional resources necessary to ensure successful completion of these systems are considered in the risk assessment process and will be addressed within the available contingency. The remaining contingency will be adequate to complete the approved scope. A no-cost extension of the project end date from March 31, 2011 to March 31, 2012 has been approved. This will accommodate activities associated with the final disposition of the IceCube EHWD; the orderly termination of construction activities; and the preparation of a comprehensive completion report on construction.

Risk Assessment & Potential Contingency Adjustments

		Item	Estimate	Comments
1.	Risk Assessment	Potential cost exposure for the approved scope of work based on Level 3 technical, cost, and schedule risk assessment.	\$140K	
2.	Risk Assessment	Estimated cost of Off-Ice and On-Ice activities to complete dismantle and retrograde of the IceCube EHWD equipment stored at the South Pole.	\$750K	Complete Disposition and Storage (UW: \$300k, RPSC & ANG \$455k)
3.	Potential Contingency Adjustment	Computing infrastructure and software development and documentation.	\$1,800K	SPS, SPTS, Data Warehouse and Data Center upgrades DAQ, IceCube Live, Simulation Software
Total			\$2,690K	

Available Contingency as of January 31, 2011 \$2,937K

Drill Operation and Installation – EHWD Documentation and User Manual development continued through February. Content development is 80% complete. Editing began on operational process videos that are to be embedded within the User Manual. A web-based format was selected and a site template developed. EHWD drawings, schematics, and as-built drawings are currently being updated.

An EHWD Resurrection Plan is being developed and to be included within the User Manual. Repair, replacement, and upgrade activities are captured in a schedule format; material costs and labor estimates are being compiled.

An EHWD storage report was developed, including photographs, 3D drawings of storage configurations, and inventory lists. A storage plan for the returning sensitive EHWD equipment was developed in coordination with the PSL, where it is to be stored. Sensitive equipment includes: computers, motor drives, sensors, etc.

Fuel use summary reports were completed for the 2010-11 season and all construction years. Similar planned-vs-actual summary reports are being developed for cargo, waste, deployments, and footprint information.

Engineers are writing technical papers on the EHWD and the Drilling that will be published.

South Pole Activities were concluded in January.

Education and Outreach – An outreach highlight in February was the Physics Fair in Madison on February 19th. A 300 lb block of ice was "drilled" using water from spray bottles and syringes by youngsters as their parents were able to learn about the science from IceCube graduate students. Several IceCube staff visited elementary schools for Science Nights during the month. Paul Wisniewski spoke to the Minnesota Chapter of the UW Alumni Association at their annual meeting and Hagar Landsman invited a troop of Cub Scouts to learn about neutrinos. Mark Krasberg, on his way back from Pole, stopped off at St. Augustine College in Sydney to talk about his IceCube experiences. Evelyn Malkus spoke to the Madison Kiwanis and Dave Glowaki to the Waunakee Rotary club.



The photo taken by Blaine Gudbjartsson of a DOM descending was NASA's Astronomy Picture of the Day on February 13. This picture has appeared widely in the press since the completion of IceCube construction.

Upcoming IceCube Meetings and Events

IceCube Collaboration Meeting, Madison
IceCube Detector Completion Events
IceCube Invites Particle Astrophysics

April 25 – May 2, 2011
April 28, 2011
April 29-30, 2011

Acronym List

DOM	Digital Optical Module
EHWD	Enhanced Hot Water Drill
MREFC	Major Research Equipment and Facilities Construction
PSL	Physical Sciences Laboratory