

Implementing Arrangement to the Accelerator Protocol
Between CERN and the U.S. DOE
Concerning Scientific and Technical Cooperation on the LHC

Appendix 3

Memo Specifying the Number of Cable Tests to be Performed by BNL



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Memo

Date: November 21, 2003
To: Daniel Leroy *Daniel Leroy*
From: Arup Ghosh *Arup K. Ghosh*
Subject: Superconductor Testing at BNL under the US LHC Accelerator Project.
CC: J. Strait (FNAL), M. Harrison, P. Wanderer, E. Willen, A. Verweij

The current agreement between the US LHC Accelerator Project and CERN concerning superconductor testing by BNL for the main LHC magnets is contained in a memo dated March 23, 2001. It specified an expected number and rate of "Equivalent 4.2 K tests" (EFTs) to be accomplished each US fiscal year through the middle of FY 2005.

Due to slower than planned delivery of cable samples – through FY2003, 2276 tests were planned, but only 1505 could be performed – it will not be possible to accomplish the planned number of tests by the previously planned completion at the mid-point of FY2005. Because of budgetary constraints on the US Project, due in part to CERN mandated work scope changes in other parts of the Project, it will not be possible to extend the testing program beyond the previously planned period.

Cost experience over the past several years has shown that the monthly cost of operating the cable test facility does not depend strongly on the number of samples tested. Thus, given a limited budget for cable testing, it makes more sense to consider this a "level-of-effort" task, under which BNL will perform tests on a best effort basis, limited by the rate of sample delivery and the capacity of the test facility. Over the past 8 months (February-October 2003), BNL has averaged about 55 tests per month, limited by the rate of cable deliveries. Within this "level-of-effort", 60 to 80 tests could be performed per month.

It is currently estimated that the available budget will support cable testing through early April 2005. If the originally planned rate of 197 EFTs/quarter (200 total tests minus 3 reference sample tests) is maintained, a total of approximately 2700 EFTs can be accomplished by the end of the cable testing program. If the recent average of 55 EFT/month rate is maintained, then a total of approximately 2500 EFTs will be accomplished. If 80 EFT/month rate would be accomplished, then a total of approximately 2945 EFT will be completed by mid-point FY2005. If contingency funds are available within the US LHC Accelerator Project at the time, we will use them to extend the cable testing program to allow additional samples to be tested, but such an extension cannot be guaranteed at this time.

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