

A collection of military medals and a pair of glasses on a wooden surface. The medals include a red ribbon with a circular emblem, a blue ribbon with a circular emblem, and two large silver stars with intricate designs. A pair of gold-rimmed glasses is positioned in the lower center. A small circular compass is visible in the bottom left corner. The background is a light-colored wooden surface.

U.S. LHC Program Office Report

April 27, 2002
HEPAP Meeting
G. Crawford



Since We Last Met

✍ LHC Cost and Schedule Update

- ✍ see Jim Yeck's talk for details
- ✍ approx 0.5B CHF in overruns and “unanticipated” costs (~20% TPC)
- ✍ CERN Mgmt response (many reviews, new LHC completion plan) in progress
- ✍ Interim reports in March, final by June Council Mtg; April '07 start now expected



A Letter to R. Cashmore from US Agencies

✍ LHC is one of our highest priorities

- Cannot contribute to “supplemental” costs
- But we have contingency, and will use it to
 - Complete our deliverables
 - Address selected activities “of greatest interest to the experiment” (e.g. CMS Si Trkr, ATLAS tilecal modules)
- LHC schedule overruns limit our ability to be flexible
- “We face significant challenges” to provide resources for the LHC research program in the next few years
- We are worried about cost shifting from CERN ✍ Expts, esp. on infrastructure and tech. coord.



U.S. Detector Projects Status

- ✍ See Jim Yeck's talk for details
- ✍ Schedule is the only real issue; still working to nominal Spring '06 "pilot run," new schedules in development
- ✍ Lehman Reviews: June 3-6 at FNAL



U.S. LHC Computing Status

✍ Completed major reviews in Nov. '01;
both collaborations passed

◆ NSF proposal under review

✍ Seriously challenged by new DOE funding
profile; several discussions w/agencies

✍ Mini-reviews June 20/21 at NSF



U.S. LHC Research Program

✍ This is meant to include:

✍ Maintenance and Operations (M&O)

✍ Software and Computing (S&C)

✍ Upgrade R&D (R&D)

✍ Detectors have advanced proposals

✍ NSF proposals (complete package) under review

✍ S&C pieces have established reviews

✍ “Lehman” review of M&O piece Apr 9-11

✍ Agency guidance needed on M&O envelope, scope
(Partly done, but no one was happy with the answer)



U.S. LHC Research Program II

- ✍ Detectors will have **real** needs in FY02/03
 - ✍ Installation/commissioning begins this year!
 - ✍ Another reason to try to “baseline” M&O costs now
- ✍ US LHC Accelerator Research proposal less advanced, more R&D-oriented
 - ✍ Jim Strait covered this well yesterday



Lehman Review of LHC M&O

Consultants:

- ✍ M. Breidenbach, SLAC
- ✍ B. Christie, BNL
- ✍ V. Luth, SLAC
- ✍ E. O'Brien, BNL
- ✍ M. Sokoloff, UCinn
- ✍ M. Tuts, Columbia

Agency folks:

- ✍ D. Lehman (Chair)
- ✍ P. Carolan, DOE
- ✍ J. Yeck, DOE
- ✍ G. Crawford, DOE
- ✍ J. Whitmore, NSF

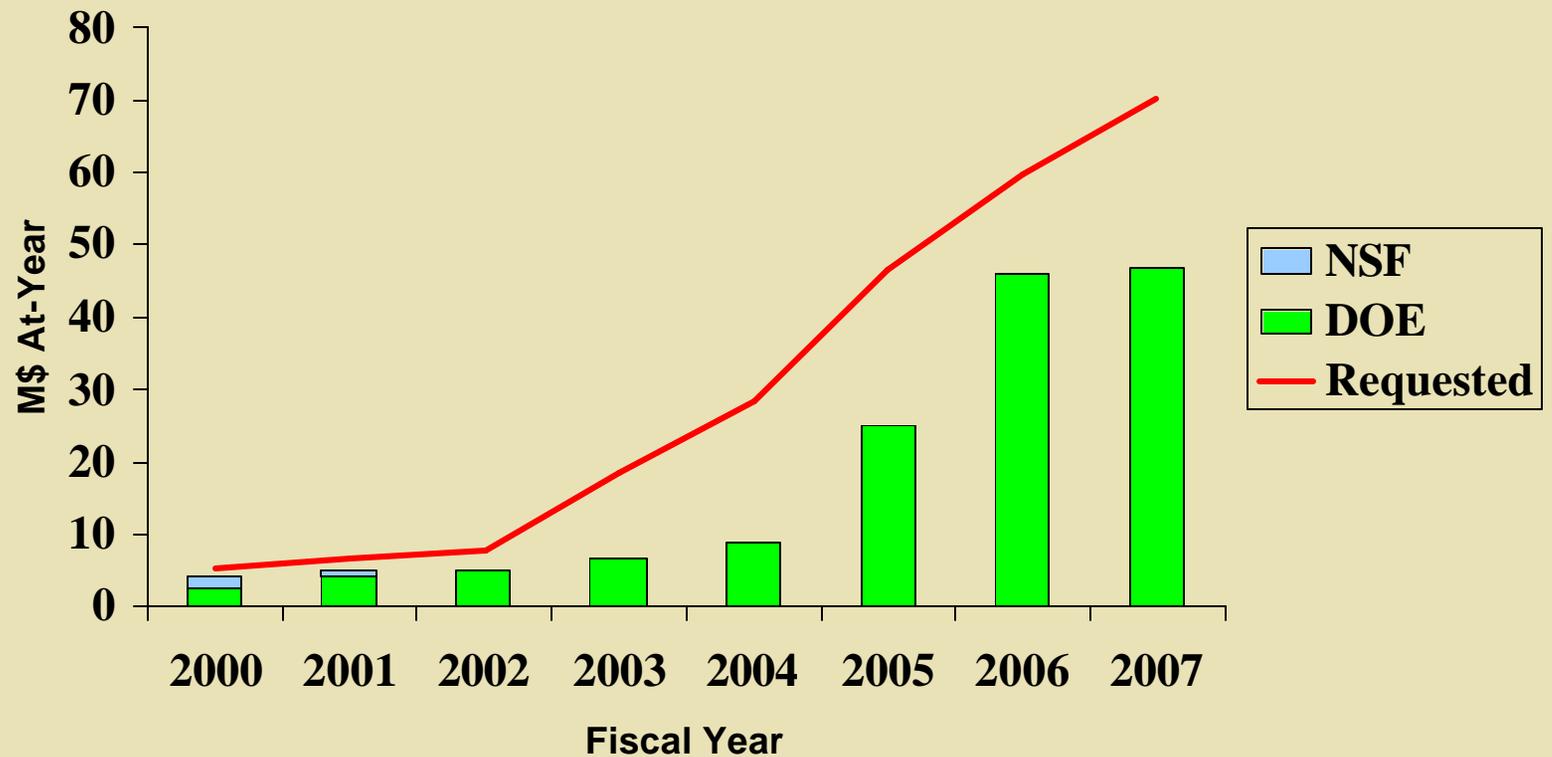


The Review Charge

- ✍ Assess proposed plans for U.S. participation in LHC detector pre-ops and ops, including management structure and funding requests
- ✍ Detector upgrade R&D is **in**
- ✍ Specific upgrades/scope restore is **out**
- ✍ Software and computing is **out**
- ✍ Accelerator R&D is **out**

US LHC Research Program Funding Profiles

(Including S&C, M&O, Detector R&D)
{ Does not include NSF ITR funds }





Executive Summary

- ✍ M&O Cost estimates are extensive, largely complete and not unreasonable
 - But large uncertainties still remain
- ✍ Mgmt is attempting to balance “standing army” costs versus risk of “storing” subsystems
- ✍ This effort is different from traditional HEP commissioning and pre-ops
 - Sheer scope of effort, mostly overseas
 - No US lab to “backstop” cost risks



Exec Summary II

- ✍ Wishes exceed guidance by ~\$47M for FY02-07 (under certain assumptions)
- ✍ Recommend further “scrubbing” of program costs and optimization of planning
- ✍ Evaluate the *total* resources available (construction, research program, base) versus *total* needs, including real impacts and options



Action Items

- ✍ Assess the impact of the research program funding for FY02-04 at the June review of the construction projects and the June status review of the...[S&C] projects
- ✍ Decide on the scope of future reviews
- ✍ Complete a comprehensive review of the US ATLAS and US CMS programs ('03)



Summary/Next Steps

- ✍ CERN is dealing with cost/schedule issues
 - ✍ We are watching closely
 - ✍ We are communicating concerns to CERN
- ✍ US LHC Research Program “launching”
 - ✍ Significant challenges to meet profiles
 - ✍ Impacts still under consideration
 - ✍ Will be the focus of next round of reviews