P. ODDONE E-MAIL RESPONSE TO RAY ORBACH
December 20, 2006

Dear Ray:

The purpose of this note is to explain the cuts that would be necessary at Fermilab to fit inside a budget at the level of FY2006 and to answer explicitly the questions posed in your e-mail of December 15th. I am attaching to this e-mail two documents that I previously provided to Robin Staffin and that are consistent with the analysis below.

The fiscal situation at Fermilab is extremely constrained. The surgery that would enable the laboratory to fit an FY06 funding level and continue to operate the program would be a furlough of one month. We would shut down the whole laboratory for one month except for essential personnel to keep the site orderly and safe and the computers running.

FY06 was a very tight year. The budgeted funding level of $324M was barely enough to run the Tevatron effectively and still launch a significant ILC R&D and associated infrastructure development. The FY05 reduction in force necessary to fit the FY 06 budget left the laboratory at its lowest staffing level since the early eighties. For FY07, however, due to increased costs for both electrical power and wages, the increased funding needs amounted to over $15M to maintain a constant level of effort. In addition the start of the Cooperative Agreement for the NOvA facility is funded at $5M, which brings the approximate incremental needs to $20M in those two items alone.

The laboratory has no funded projects, either on-going or new, so there are no significant capital expenses that could be postponed in order to avoid a furlough.

The Tevatron program is constrained by the start-up of LHC so it must be run effectively during the limited time before shutdown in FY2009. It does not make sense to shut down the Tevatron for the remainder of the year in a manner similar to BNL's stopping operation of RHIC while maintaining the work force to run the facility at some later year.

Finally, by internal transfers we have increased the staff working on the ILC R&D and SCRF infrastructure from 60 at the beginning of FY06 to 150 at the end of FY06. I cannot think of anything more damaging to the ILC effort than either laying off staff or have them idling for the rest of the year for the lack of funds to buy materials. The US HEP program cannot place its only truly forefront program beyond Run II on the backburner.

The bottom line is that there is no place to go to "save" the more than $20M

that would be necessary to fit the FY06 budget for another year. The funding gap will be filled by $11M not spent because of the furlough, $5M not spent due to postponing the Cooperative Agreement on NOvA (causing a delay of at least half a year in the availability of the building), and more than $5M saved by cuts on several other smaller but significant programs of the laboratory.

Shutting the laboratory down for one month would unquestionably have a wide ranging impact. It will be detrimental to our mission and highly visible to the world-wide particle physics community. It will impact our recruitment efforts negatively for a long time to come. A lab-wide shut down is the inevitable consequence of having placed the laboratory in a straight-jacket over the last few years.

Below is a summary of the analysis I provided Robin, recast along the specific questions you asked in your inquiry.

1. Operating scientific user facilities
We would shut down the entire laboratory for a period of one month. This would impact the Tevatron program as well as ILC R&D, the neutrino program, LHC activities and all other aspects of the laboratory except for those required for safety and essential activities. Restoring this cut would require $11M ($10M furlough + $1M power and consumables)

2. On-going construction projects (including Other Project Costs)
There are no construction projects funded at Fermilab at this time. We would postpone needed GPP investments by $2M. Restoring this cut would take $2M.

3. On-going Major Items of Equipment
There are no major items of equipment funded at Fermilab except the MIE funding to complete CMS at $1.25M.

4. New construction projects that had no funding in FY 2006 (including Other Project Costs)
In the FY2007 President's budget there is a modest start of the NOvA project with $5M under the Cooperative Agreement to start the building design.
Eliminating this item in FY 2007 postpones the start of NOvA by at least six months and will impact the timing of NOvA in relation to the T2K experiment in Japan. Restoring the Cooperative agreement would take $5M.

6. Research programs AT THE LABORATORY DIVISION LEVEL
The entire research program of the laboratory will be curtailed by one month in order to fit the FY06 budget. Restoration is covered under item 1 above and amounts to $11M to avoid the one month shutdown. R&D for small projects

such as DES and Minerva, as well as other cuts across the program would save $3M. Restoration of these cuts would permit at least some small new projects at the end of the decade when the Tevatron is shutdown for good.

SUMMARY: To restore the laboratory to a reasonable level of operations the FNAL FY2006 funding level of $324M would have be augmented with an additional $21M, which would bring the level of FY2007 support to $345M.

Please let me know if you need any additional information.

Best regards,

Pier.