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Dr. Michael Witherell, Director  
Fermilab

Dear Mike,

Please find attached two documents for distribution to the Physics Advisory Committee in advance of their April meeting. They both concerning the DØ Run 2B detector upgrades.

The first contains our written responses to the questions raised by the Director's Technical Review Committee. We believe it is self-explanatory.

The second document is a summary of the simulation studies which have been carried out for the silicon detector Technical Design Report and of our investigation of alternative detector designs with reduced scope. We explored possible removal of layer 1, removal of layer 4, a shorter detector in  $z$ , and additional ganging in  $z$ . The document shows the effect of each of these options on the Higgs search in the associated production channel, using full GEANT simulation, pattern recognition and track reconstruction. The impact is, we believe, unacceptably negative, and so it is the intention of the experiment to pursue the baseline option for the silicon detector. We hope that the committee will concur with this assessment after reading the note.

Electronic copies of these documents, and additional background material, can be found at the following URL:

[http://d0server1.fnal.gov/projects/run2b/meetings/pac/april02/pac\\_web.htm](http://d0server1.fnal.gov/projects/run2b/meetings/pac/april02/pac_web.htm)

We look forward to presenting a summary of this material at the PAC meeting, together with status reports and updates on the other aspects of the upgrade. As always, we will be happy to answer any questions that arise.

With best regards

A handwritten signature in black ink that reads "W. John Womersley".

John Womersley  
on behalf of the DØ collaboration