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Director's Office

September 18, 2003

Professor Gerald Blazey
D0 – MS 357

Dr. John Womersley
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Dr. Jonathan Kotcher
D0 – MS 357

Dear Jerry, John and Jon,

Thank you for your note of September 10, 2003, concerning the “preliminary proposal for a Layer-0 Silicon Detector for D0.”

We understand that running throughout Run II with no upgrade to the current silicon detector presents potential vulnerabilities. These include steady attrition of channels, catastrophic damage, radiation damage, and increased demand on the silicon detector due to high luminosity. If some of this risk can be mitigated by a creative initiative of the scale outlined in your document, that would be a very positive development for D0 and therefore for Fermilab.

If a new silicon layer is to be included in the plan for Run IIB, the best mechanism for doing so is to treat it as a component of the Baseline Change Proposal currently under development. For this and other reasons we concur with your view that it is important to reach an early decision as to whether this can be done. We do not plan a full review cycle by the PAC as for a new proposal. We will ask for technical advice as part of considering the inclusion of the silicon layer in the project, and expect to include one or two PAC members, who are already aware of the larger context.

As the next step, we invite D0 to provide a document that includes the motivation for layer 0, the design concept, some demonstration of the effectiveness, a first cost estimate and schedule, the feasibility of the installation plan, and a consideration of the risks. To make sure we are able to move through this process expeditiously, we would like such a document by about mid-October. We understand that this is an extraordinarily demanding schedule, so some of the information will be preliminary. The goal of proceeding in this way is to reach an up-or-down decision very soon, and I understand that you share that goal.

Please let us know informally whether this schedule looks viable to you, so we can plan the next few weeks.

Sincerely,

Michael Witherell

Michael Witherell

Cc: H. Montgomery
J. Cooper