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W. Innes, Chairman
Hazardous Experimental Equipment Committee

Wes Craddock EFD
Ian Evans SSRL
Ted Fieguth EFD
Keith Jobe AD
Joe Kenny ESH
Gerry Nelson AD
S. St. Lorant EFD

Re: Information for the HEEC operational approval of the BaBar Drift Chamber gas system, case 98-8.

Dear Walt Innes;

Please find enclosed documents describing the design and operation of the BaBar drift chamber gas system. The originals of these documents are located on the drift chamber safety web page:

www.slac.stanford.edu/BFROOT/www/Detector/CentralTracker/safety/index.html

Since our last meeting in September 1998, the system and its operation have been modified to reflect our experience during the cosmic ray run and the questions and comments of HEEC.

The information is organized in the following fashion:

1. Changes to the design since Sept. 1998.
2. Responses to specific items listed by HEEC in the Pre-Operational Approval.
3. Design of the gas system, excluding safety systems.
4. Gas system operations.
 - Operations procedures;
 - Maintenance and inspection;
 - Safety procedures.
5. Gas system alarms and alarm handler (nanoautomate).
 - Nanoautomates;
 - Sensors and inputs to nanoautomate;
 - Gas system alarms;
 - Summary of nanoautomate inputs and outputs;
 - Testing the gas system alarms.
6. Chiller and Electronics Cooling Safety.
 - Description of system;
 - Sensors and inputs to SIAMs;
 - Checklist for cooling system testing.

7. SIAMs
8. Annunciator Alarms
 - what to do if there is a gas system alarm;
 - what to do if there is a chiller alarm.
9. Access to the Drift Chamber Electronics: Confined Space.
 - Introduction;
 - Safety hardware;
 - Checklists;
 - Other hazards.
10. Electrical Safety
 - Lock and Tag for power supplies;
 - Lock-off for high-voltage supplies.