



**PHENIX MVD OPERATION IN THE PEH**

**PHENIX Procedure No. PP-2.5.2.1-01**

**Revision: A**

**Date: 07-11-00**

**Hand Processed Changes**

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**Approvals**

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PHENIX S E & I    Date

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Cognizant Scientist / Engineer    Date  
/Activity Manager

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PHENIX Safety    Date

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CA-D ES&H / SAFETY    Date

PHENIX Procedure # PP-2.5.2.1-01 Rev A

REVISION CONTROL SHEET

LETTER	DESCRIPTION	DATE	WRITTEN BY	APPROVED BY	TYPED BY
A	First Issue	7/11/02	Not recorded	W. Lenz, Y. Makdisi, 2 others not legible	n/a
RETIRED	This procedure is no longer needed as the MVD detector has been decommissioned and removed from the PHENIX Experiment in 2005	2/12/2007	(Retirement note written by. D.Lynch)	Retirement approved by D. Lynch, R. Pisani and P. Giannotti for the PHENIX experiment	n/a

# Operating Procedure of MVD for the 2000 Run

## 1.0 Purpose

The purpose of this document is to define the plan for operation of the PHENIX MVD subsystem in the PEH (PHENIX Experimental Hall) during the 2000 run. This plan will ensure:

- A. The safety of all personnel from risks associated with the operation of the bias voltage systems required to power MVD silicon bias voltage.
- B. The implementation of the appropriate emergency approaches,
- C. Prompt notification of the appropriate C-AD and S&EP specialists,
- D. The maintenance of appropriate C-AD emergency status,
- E. The preservation and protection of the environment, and
- F. The preservation of BNL facilities and equipment.

## 2.0 Responsibilities

During the 2000 run, there will be two levels of responsibility for the oversight of the MVD subsystem.

The first level of responsibility will be the PHENIX Shift Crew. Prior to data taking, there will be a period of MVD commissioning when MVD is tested before the IR is closed and the MVD becomes inaccessible. During the commissioning phase, the MVD Bias and LV systems will be monitored primarily by the team of MVD Experts. A record of the performance of the MVD system will be kept by the experts.

During data taking, it will be the responsibility of the PHENIX Shift Crew to:

- 2.1 monitor the status and alarms for the MVD LV system according to a prescribed check off list at least once a shift (eight hours).
- 2.2 In the event of an alarm or irregularity, contact an expert from the Expert Call List given in an attachment to this document.

The second level of responsibility is the MVD Experts. It is the responsibility of the MVD Experts to:

- 2.3 maintain the MVD subsystem in a safe operating condition. This includes:
  - 2.3.1 setting, adjusting, and checking the Bias and LV power supplies,
  - 2.3.2 setting, adjusting, and checking the cooling gas flow rate and temperature,
  - 2.3.3 setting, adjusting, and checking the liquid cooling flow rate and temperature,
  - 2.3.4 monitoring temperature of the MCM's, and motherboards
  - 2.3.5 post any special instructions or notifications as required, and carrying out any emergency action, as prescribed in the Procedures section of this document.

## 3.0 Prerequisites

The MVD Experts shall have read or have training in the following areas:

- 3.1 Emergency Procedures for the PHENIX experiment

- 3.2 PHENIX MVD subsystem specific training,
- 3.3 Geographical layout of the experimental area (routes of egress, location of emergency equipment, phones and controls)
- 3.4 Knowledge of this procedure

The MVD Experts shall train all personnel involved in the MVD running in the safe operation of the MVD Bias and LV systems.

## **4.0 Precautions**

The safety of personnel is of primary importance. The MVD Experts and Shift Crew members shall take great care to ensure that the MVD subsystem will be operated in a way that does not place personnel at risk of physical harm.

### 4.1 Bias Voltage system precautions:

The Bias power supplies are current limited to less than 256  $\mu$ A per channel. Typical operating voltages are 40-60V, with a maximum of 100 V. All Bias points are enclosed within the MVD enclosure in order to eliminate the danger to personnel.

### 4.2 LV system precautions:

MVD utilizes high current low voltage (+5, +/- 7.5, +/-12V) power supplies to provide power required by FEM and ancillary electronics crates to operate. This power is delivered from the standard PHENIX LV power supply crate to the detector and distributed among the crates. Because the voltage is low, LV wires may stay energized while doors are open to allow test-work on FEM crates and ancillary controls systems.

## **5.0 Standard Operating Procedures**

5.1 Bias system Procedures: In normal operations the experimental hall will be closed to personnel making access to any Bias point impossible. Under such conditions, follow this procedure for turning on the Bias:

5.1.1 Since the silicon bias voltage is essentially static and typical power dissipation is 10 $\mu$ W per detector (with 42 detectors total). The threshold for rejecting a detector is 1 mW. Therefore the Bias system is not a significant safety threat.

5.1.2 Check that the ramp up rate for each Bias supply is appropriate.

5.1.3 Ramp up the Bias.

5.1.4 When ramping is complete, verify that the operating currents are appropriate.

5.2 Bias system Procedures: Turning off bias voltage to MVD silicon bias.

5.2.1 Begin ramping down the Bias.

5.2.2 Verify by the read back that the Bias is off.

## **6.0 Documentation**

All MVD systems are documented on the web, at [http://p25ext.lanl.gov/phenix/mvd/mvd\\_info.html](http://p25ext.lanl.gov/phenix/mvd/mvd_info.html).

## **7.0 References**

- 7.1 C-AD-OPM 3.16, “Local Emergency Plan for the PHENIX detector building 1008 Complex.”
- 7.2 BNL SBMS.

## **8.0 Attachments**

MVD call list

**Attachment to PHENIX Procedure No. PP-2.5.2.1-01:**

**PHENIX MVD OPERATION IN THE PEH**

Call List:

Allan Hansen	x6595
Sangsu Ryu	x1003
JuHwan Kang	x1003
DongSu Ho	x1003
John Sullivan	x4803 (at LANL:505-665-5963)