

**ONLINE COPY RHIC OPERATIONS PROCEDURES MANUAL
- VALID FOR FIVE (5) WORKING DAYS**

RHIC Operations Procedures Manual

**3.9 EMERGENCY PROCEDURES FOR THE
STAR DETECTOR AND THE 1006 COMPLEX**

Text Pages 1 through 5
Attachment(s) 1, 2

Hand Processed Changes

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Approved:

Satoshi Ozaki

4/30/99

RHIC Project Director

Date

Preparer(s): W. Christie

RHIC-OPM 3.9

Date Issued: April 30, 1999

Category A

**3.9 Emergency Procedures For the
Star Detector and the 1006 Complex**

1.0 Purpose

The purpose of this document is to define the local emergency plan for operations of the STAR Detector system. This local emergency plan will help to ensure:

- a. safety and well-being of personnel,
- b. implementation of the appropriate emergency procedures contained in RHIC-OPM 3.0 and section 5.0 of this document,
- c. prompt notification of appropriate personnel,
- d. maintenance of appropriate RHIC emergency status,
- e. protection of the environment, and
- f. preservation of BNL facilities and equipment.

2.0 Responsibilities

During the testing, commissioning, and operations of the STAR Detector system a Local Emergency Coordinator (LEC) shall be identified for each work shift. The default designation as the LEC shall be the Physicist in charge of the shift. The LEC is responsible for:

- a. maintaining the STAR detector and facility area in a safe condition,
- b. assuring that all personnel involved in STAR operations are trained in any special procedures required for these operations,
- c. posting any special instructions as required,
- d. carrying out any emergency actions, as prescribed in the Procedures section of this document, or as directed by the Department Emergency Coordinator (DEC).

3.0 Prerequisites

The LEC shall have training on the following:

- a. RHIC Project Local Emergency Plan, RHIC-OPM 3.0,
- b. all relevant equipment involved in the STAR systems being used, to ensure safe operations, and
- c. knowledge of the geographical layout of the RHIC 1006 complex (routes of egress, location of emergency equipment, phones and controls, etc.).

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4.0 Precautions

The safety of personnel is of primary importance. In an emergency the LEC shall take great care not to give instructions or information which might place personnel at risk of physical harm.

5.0 Procedures

5.1 In the event that a fire alarm goes off in the 1006 complex, and it is not immediately clear that there is an actual fire:

- All personnel, except the LEC, shall evacuate the Assembly Building and the Wide angle Hall, proceed to the assembly point, and await the arrival of the Fire/Rescue Group.
- If it cannot be determined that there is not a fire in the Data Acquisition room or the Control room, then all personnel, except the LEC, should evacuate these areas, proceed to the assembly point, and await the arrival of the Fire/Rescue Group.
- If it can not be determined that there is not a fire in the Counting house (trailer), then all personnel, except the LEC, should evacuate the Counting house, proceed to the assembly point, and await the arrival of the Fire/Rescue Group.
- The LEC shall report to the command Post upon arrival of the Fire/Rescue Captain. The command post is Car-1 unless directed elsewhere by the Fire/Rescue Captain.
- If it is subsequently determined that there is a fire in the Assembly building or the Wide Angle Hall, the methane bottles on the gas pad outside of the Assembly Building shall be closed. If possible, without putting personnel in danger or entering the building without permission from the Fire Captain, the gas system power should be turned off at the gas system power distribution panel (indicated on the attached layout of the STAR site).

5.2 In the event that there is an actual fire in the STAR Complex (in order of priority):

- Pull the nearest fire alarm box if the alarm bells are not already sounding, and then call 911 or 2222.

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- Ensure that all personnel, except the LEC, are evacuated from the Assembly Building and Wide Angle Hall (WAH), and that they proceed to the assembly area.
- If the fire is in the building where the STAR detector currently resides, remove the AC power from the STAR detector. This is accomplished by setting the A11 and A12 circuit breakers, in Panel A1 of the DAQ room, to the OFF position, if they are not already OFF.
- Ensure that all personnel, except the LEC, are evacuated from the DAQ room, Control room, and the Counting house (trailer) and that they proceed to the assembly area.
- If possible, without putting personnel in danger or entering the building without permission from the Fire Captain, the gas system power shall be turned off at the gas system power distribution panel (indicated on the attached layout of the STAR site, Attachment 1).
- Close the valves on the methane bottles located on the gas pad outside of the Assembly Building.

5.3 In the event that there is a Flammable gas alarm from the Detector, the STAR Global Interlock System should take many actions to place the detector in a safe mode. The emergency response is to:

- Pull the nearest fire alarm if the alarm bells are not already sounding.
- Ensure that all personnel are evacuated from the building where the detector resides (either the Assembly Building or the Wide Angle Hall), and that they proceed to the assembly point.
- Remove the AC power from the STAR detector. This is accomplished by setting the A11 and A12 circuit breakers, in Panel A1 of the DAQ room, to the OFF position, if they are not already OFF.
- Ensure that the WAH emergency ventilation fans are on. This can be accomplished by turning the WAH ventilation fan switch to ON (see Attachment 1).
- Deenergize the STAR magnet. This can be done either via the Magnet control system, or by activating the Magnet Crash button located just to the left of the door to the second floor equipment loft (see Attachment 1).

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- Ensure that the TPC gas system has gone to purge mode. This can be accomplished by placing circuit breaker 3 in the TPC GAS SYSTEM POWER panel to OFF (see Attachment 1), or by pushing the button labeled “Gas System OFF” on the TPC Interlock System control panel (see Attachment 1).
- Contact a gas system expert from list (Attachment 2).

5.4 In the event that the Oxygen Deficiency Hazard (ODH) alarm goes off in the gas mixing room (intermittent audible alarm and flashing blue light on panel in the gas mixing room), the emergency response is:

- Without entering the gas mixing room, open the door between the gas mixing room and the Assembly Building and leave it in the open position.
- Turn off the AC power to rack 2 of the TPC gas system by placing circuit breaker number 3, in the TPC GAS SYSTEM POWER panel, to the OFF position (see Attachment 1).
- Without going through the gas mixing room, walk around to the door between the gas mixing room and the outside. Open this door and prop it open.
- Turn off the Nitrogen gas line that supplies gas to the gas mixing room. This is accomplished by closing valve MV66, which is mounted on the metal wall just outside of the external door to the gas mixing room (see Attachment 1).

5.5 In the event that a High Pressure gas line ruptures, the emergency response is to:

- If possible, quickly determine which of the high pressure gas lines has ruptured (Methane, Argon, or Nitrogen) and close the valve on the appropriate bottle(s) or dewar(s) located on the gas pad outside of the AB. If it is not possible to quickly determine which gas line has ruptured turn off the valves on all of the bottles and dewars (Methane, Argon, and Nitrogen) located on the gas pad outside of the Assembly Building.
- Contact a gas system expert from list (Attachment 2).

5.6 In the event that there is a general gas system alarm:

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- Silence the alarm, if desired, by pushing the appropriate button on the gas system hardware alarm box, which is located in rack number 2 in the gas mixing room.
- Contact a gas system expert (names and contact information posted in the gas mixing room and in Attachment 2). The expert will provide information on the cause/source of the alarm and provide instructions on what actions should be taken.

5.7 In the event of a power failure or an action by the STAR Global Interlock System (SGIS) which de-energizes the gas system:

- The system will automatically go into a safe mode.
- Contact a gas system expert (from call list, posted in the gas mixing room and in Attachment 2) and inform them.

6.0 Documentation

None

7.0 References

7.1 RHIC-OPM 3.0, "Local Emergency Plan for the Relativistic Heavy Ion Collider Project"

8.0 Attachments

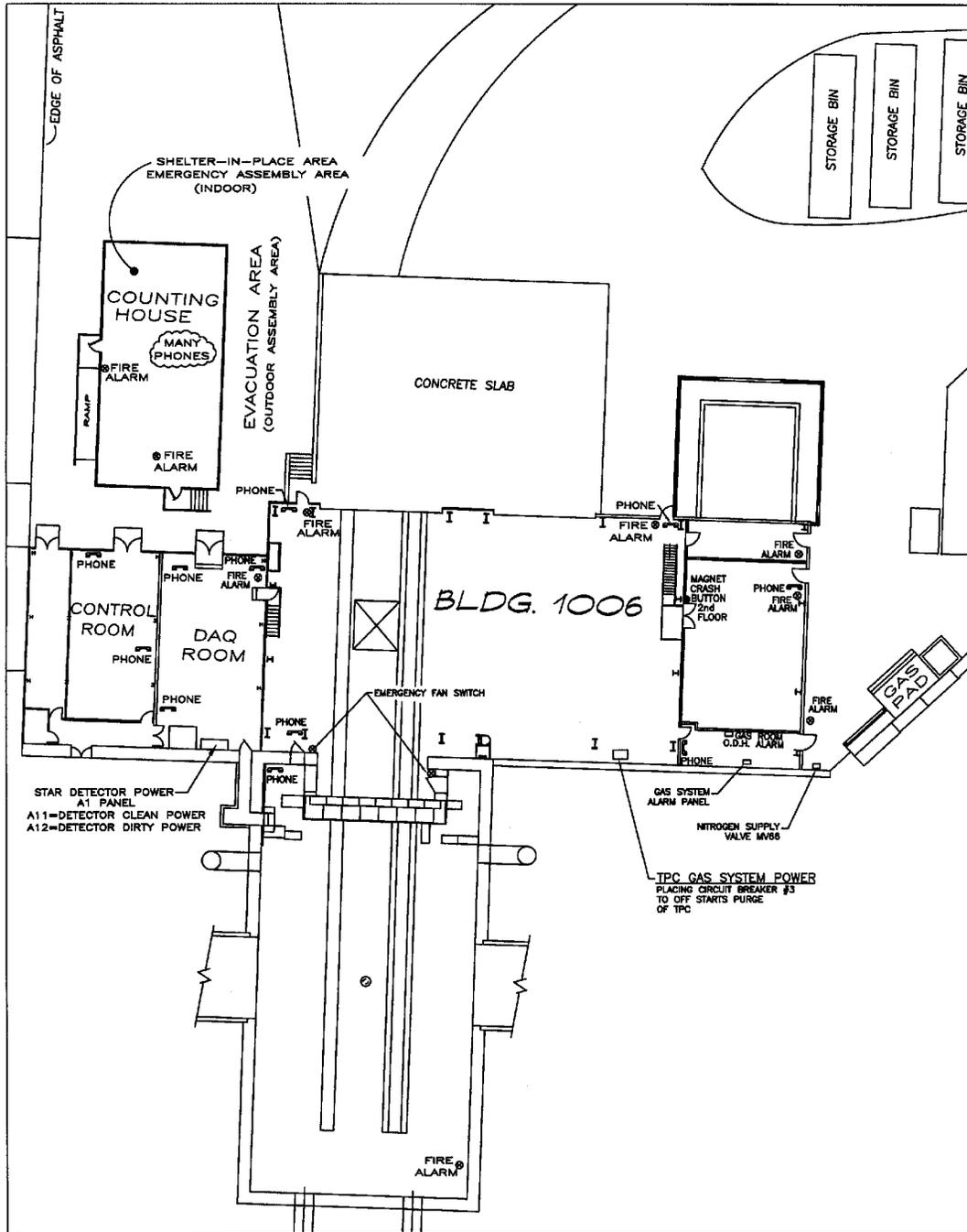
1. Layout of STAR Site indicating:
 - Fire Alarms
 - Telephones
 - Gas Pad
 - Emergency Assembly Area (Indoor Assembly Area) (Counting House/Trailer)
 - Evacuation Area (Outdoor Assembly Area)
 - Shelter-in-place Area (Counting House/Trailer)
 - Detector Power Distribution (A1) Panel
 - Gas System Power Distribution Panel
 - Nitrogen Supply Valve (Mv66)
 - Wide Angle Hall Emergency Ventilation Fan Switch
 - Magnet Crash Button (In Power Supply Room)
 - Gas System Alarm Panel and Interlock Panel
2. Call List for Star Gas System Experts

Fill Out Reading Acknowledgment Form

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Attachment 1

Layout of STAR Site



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Attachment 2

Call List for STAR Detector

System	Name	Office Location	Phone Numbers
STAR Operations Leader	Bill Christie	Bldg. 510 Rm-1-180	X 7137
		Home	821-4348
STAR Safety Coordinator	Bill Christie	Bldg. 510 Rm-1-180	X 7137
		Home	821-4348
STAR Technical Support Group Leader	Ralph Brown	Bldg. 830	X 7775
		Home	929-3513
TPC Gas System	Blair Stringfellow	Bldg. 1006C	X 7386
		BNL Apartment #22A	X 1042
		Cell Phone	516-662-3466
		BNL Beeper	X 8518
		Purdue Office	765-494-5391
		Home (Purdue U.)	765-497-0161
	Howard Wieman	Bldg. 902 Rm U-23	X 7762
		Home	516-298-2195
	Leonid Kotchenda		X 5795
Magnet	Ken Foley	Bldg. 510 Rm-1-182	X 3943
		Home	744-9682