



## TTR Emergency Procedures

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### Abstract:

This document describes the Physics Research Division (PRD) GEM Texas Test Rig experimental prototype's emergency procedures, for its personnel. To assure personnel safety and quality of emergency response by describing proper personnel action requirements and procedures.

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	EFFECTIVE DATE	SUPERSEDES	
	SPONSORING FUNCTION <b>GEM</b>		
	APPROVED BY <b>DRAFT</b>		
SUBJECT TTR Emergency Procedures			

## 1.0 PURPOSE

- 1.1 This document describes the Physics Research Division (PRD) GEM Texas Test Rig experimental prototype's emergency procedures, for it's personnel.
- 1.2 Assure personnel safety and quality of emergency response by describing proper personnel action requirements and procedures.

## 2.0 SCOPE

- 2.1 This procedure defines the general and specific requirements for the safe emergency shutdown and operation of the TTR. The SSCL's requirements for emergency procedures have been incorporated into this document to ensure consistency, compliance and quality.
- 2.2 This procedure does not address the content of other related documents such as emergency response policies, procedures or plans, which are used by the PRD for the management of emergency preparedness activities

## 3.0 DEFINITIONS

- CPR - Cardio-pulmonary Resuscitation
- EPO - Emergency Power Off
- ERT - Emergency Response Team
- ES&H - Environmental Safety and Health
- GEM - Gammas, Electons and Muons Detector Collaboration
- LEL - Lower Explosive Limit (flammable gas concentration in air; at  $\geq 100\%$  level the gas can ignite)
- PRD - Physics Research Division
- TTR - Texas Test Rig

## 4.0 GENERAL REQUIREMENTS

Emergency procedures in the ES&H and Emergency Preparedness manuals for the SSC Laboratory apply to the use of the TTR. Where the procedures are slightly different or for convenience and/or clarification, these procedures may be repeated in this document.

- 4.1 This Procedure is written, maintained and controlled in accordance with the SSCL ES&H Manual.
- 4.2 The Procedure and updates to it will not be approved by the PRD Associate Director until the document has been concurred with by PRD and SSCL ES&H Departments.
- 4.3 The Procedure shall not conflict with Lab procedures or policies. Interfaces with other organizations may be identified in the procedure, but it shall not direct nor state requirements for activities outside the TTR.

## 5.0 SPECIFIC REQUIREMENTS

### 5.1 Radiation Incident (currently, only 'low-strength' $\mu$ Curie sources will be used)

NOTE: A radiation incident is any situation involving uncontrolled exposure to personnel. Radiation incidences include fire in an area containing radioactive material, uncontrolled exposure of personnel to radiation, a spill of radioactive material, and similar incidents.

#### 5.1.1 Instructions

1. Evacuate the immediate area whenever a radiation incident is suspected.
2. Call 1313

#### 5.1.2 Action In Case of Contamination or Spill of Radioactive Materials

1. Notify the Emergency Operator (Ext. 1313) that the Emergency Response Team (ERT) may be required.
2. Personnel who may be contaminated should be kept isolated, but not in the primary contamination area. They must keep their hands and all objects away from their faces. No decontamination should be attempted except for having the victims remove their own clothing in the case of wet contamination. In this situation, if the contaminated person is female, a female witness should be present. If necessary, an uncontaminated person wearing proper gloves may clean the face of a contaminated person, but care should be taken to avoid the spread of contamination.
3. Rope the area off to avoid re-entry of personnel.
4. Do not attempt to clean up the spill. Wait for trained personnel with proper equipment.

## 5.2 Fire Emergencies

### 5.2.1 Instructions

1. Push one of the TTR Emergency Power Off (EPO) switch to remove current and stop the flow of gases into the TTR. This is accomplished by a relay shunt-trip on the main power circuit breaker, and a solenoid-driven pneumatic high pressure shut-off valve at the flammable gas cylinders (Note: this will be the common result for all EPO's).

NOTE: The EPOs are identified in RED and are located at the North exit door and on the West wall.

2. Evacuate the area.
3. Call 1313. Request the Emergency Response Team.

NOTE: Do not attempt to extinguish the fire unless it is obvious that it can be effectively controlled.

4. On the way out of the building, use the nearest Emergency Pull Station (pull box) to activate the fire alarm.

### 5.2.2 Fire Emergency Awareness

Every employee shall become familiar with the location of pull boxes and fire extinguishers and learn how to use them. They shall also become familiar with the location of the EPOs.

### 5.3 Electrical Shock Emergencies

Note: These procedures are to be followed if a severe shock potential should be present, such as the inadvertent activation of the sprinkler system or severe roof leak onto the electronics of the TTR.

#### 5.3.1 Instructions

1. Push the TTR Emergency Power Off (EPO) switch to remove current and the stop the flow of gases into the TTR. (see 5.2.1.1)

NOTE: The EPOs are identified in RED and are located at the North exit door, the East exit door and on the West wall.

2. If emergency arises from an electrical source other than the TTR, take appropriate steps to remove that power source.

3. Call 1313. Request the Emergency Response Team.

4. Seek medical assistance by reporting to the SSC Medical Office as per the SSCL policy on the treatment of work-related injuries.

5. If required, perform Cardio-pulmonary Resuscitation (CPR) on the injured party until medical assistance arrives.

6. Supervisor shall attend to the immediate medical needs of the injured employee. He shall also verify that action has been taken to "safe" the area to ensure that no further injuries or damage may occur.

#### 5.3.2 Electrical and High Voltage Awareness

Personnel working in areas where there is potential for electrical shock will be trained in the hazards of electricity, rescue of persons from electrical shock, and CPR. Every employee shall become familiar with the location of high voltage areas in the TTR. Employees shall be aware of and obey "Danger: High Voltage warning signs." They shall also become familiar with the location of the EPOs.

NOTE: If a person is receiving a severe shock, area personnel must not attempt physical-contact rescue until the power has been de-energized or they are isolated from the electrical energy source.

#### 5.4 Gas Leak Emergencies

##### 5.4.1 Caution Instructions (applies to gas leak 10-20% LEL)

1. Push the TTR Emergency Power Off (EPO) switch to remove current and the stop the flow of gases into the TTR. (see 5.2.1.1)

NOTE: The EPOs are identified in RED and are located at the North exit door, the East exit door and on the West wall.

2. Evacuate the area except for key personnel.

NOTE: Know the location of, and proceed to, the closest exit.

3. Ensure the area is well ventilated by activating the emergency vent fan, if it is not already operating.

4. Supervisor shall ensure that the leaks(s) or source of the gases has been isolated and repaired, prior to system reactivation.

##### 5.4.2 Warning Instructions (applies to gas leak $\geq$ 20% LEL)

1. Push the TTR Emergency Power Off (EPO) switch to remove current and the stop the flow of gases into the TTR. (see 5.2.1.1)

NOTE: The EPOs are identified in RED and are located at the North exit door, the East exit door and on the West wall.

2. Evacuate the area.

NOTE: Know the location of, and proceed to, the closest exit.

3. Call 1313.

4. Notify the Emergency Operator (Ext. 1313) that the Emergency Response Team (ERT) is required.

##### 5.4.3 Gas Leak Awareness

Every employee should have Hazardous Gas Safety training that is pertinent to the operation of the TTR. They should also become familiar with the location of the EPOs.