



MOVING CENTRAL MAGNET AND DETECTOR CARRIAGES IN THE PHENIX 1008 IR

procedure name

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Hand Processed Changes

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Approvals

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LETTER	DESCRIPTION	DATE	WRITTEN BY	APPROVED BY	TYPED BY
A	First Issue	5/20/1999	n/a	(2 unintelligible), P Kroon, W Lenz, Y. Makdisi	n/a

1.0 Purpose & Scope

- 1.1 The purpose of this procedure is to provide directions for the movement of the PHENIX Central Magnet (CM) and the east and west detector carriages (EC and WC) in the interaction region of the PHENIX Experimental Hall (PEH). These items are moved periodically to provide access to various detector elements for maintenance.

The Central Magnet weighs about 450 tons, and each carriage weighs around 200 tons. They roll on Hilman rollers on permanent steel tracks, driven by hydraulic cylinders. The operation of the hydraulic system is covered in its own procedure, and is common to several moving operations in the PEH.

- 1.2 This procedure covers the unidirectional moves in the IR that are accomplished without disconnecting any of the service or signal attachments (water, gas, power, data etc.) or the beam pipe.

2.0 Responsibilities

- 2.1 All operations shall be performed under the direction of the PEH “Person-in-Charge” or his designee.

3.0 Prerequisites

- 3.1 Training: All personnel involved in this procedure shall have reviewed this procedure and the operation of the hydraulic system, including the location of the “Emergency Stop” and the wall-mounted circuit breaker, and be fully knowledgeable about the way in which the device moves on the rails.
- 3.2 In addition to the hydraulics operator, at least two technicians are to be assigned to conduct this procedure, with their sole focus being on the moving device and rollers.
- 3.3 Each of the devices has two “normal positions”: 1) Data taking, or “in” and 2) retracted, or “out”. Both carriages must be fully retracted before the Central Magnet can be moved. The CM must be fully in before either carriage can be moved in.

4.0 Precautions

- 4.1 There is a potential for crushing personnel or equipment during this operation. The devices move so slowly that to the casual observer it may appear to be stationary. Therefore, access to the immediate area must be cleared of non-essential personnel and equipment.
- 4.2 There is a potential of damaging cables and hoses if they are not kept clear of the roller paths on the tracks during movement.

5.0 Procedure

- 5.1 Ensure that the hydraulic cylinders are properly and securely attached and connected.
- 5.2 Ensure that the rails are swept clean of debris and there is nothing in the paths of the rollers.
- 5.3 Remove/release all seismic tie downs for the device to be moved.
- 5.4 Ensure that nothing projects above the track level that would be hit by the traveling device or its cables and hoses.
- 5.5 Ensure that all hoses and cables that remain attached to the device are free to move for the travel of the device (up to 60 inches for the CM, up to 40 inches for the carriages).
- 5.6 Inspect the entire travel envelope of the device to ensure there are no obstructions or interferences.
- 5.7 If moving the CM, inspect the travel envelope of the CM over the beam pipe to ensure there are no obstructions or interferences.
- 5.8 Energize the hydraulics to move the device to the desired position, continuously checking for free motion of all parts device and its cables and hoses, particularly underneath the device and around the beam pipe..
- 5.9 Shut down and secure the hydraulic system to preclude any unauthorized operation.

6.0 Documentation

NONE

7.0 References

NONE

8.0 Attachments

NONE