

**PARTICLE PHYSICS DIVISION OPERATING MANUAL  
REVIEW AND APPROVAL RECORD**

**POLICY ON CONTROLLED ACCESS  
AT THE MESON TEST BEAM FACILITY (MTEST)**

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## **POLICY ON CONTROLLED ACCESS AT THE MESON TEST BEAM FACILITY (MTEST)**

### **INTRODUCTION**

The Meson Test Beam Facility (MTEST) is located in the Meson Detector Building and consists of the two sections of the MT6 enclosure (MT6 Section 1 and MT6 Section 2). These enclosures house detectors under test by various users. Each experiment at MTEST has been assigned an experiment number by the directorate. This document outlines the PPD policies for making controlled accesses at MTEST.

Controlled Access is a privilege accorded to experimenters in Meson Test Beam Facility to help them carry out their work, which is mainly detector research and development. The procedure allows trained individuals to enter an interlocked beam enclosure for short periods of time to do work without breaking the enclosure interlocks. Since the interlocks are not broken, beam can be restored without requiring a time consuming “search and secure” by MCR operators. Controlled Access is especially important for test beam users because, by the nature of the R&D being carried out and the temporary and short-lived and experimental nature of the test apparatus, frequent interventions are the norm.

Given that there is no inspection of the area after an access by an operations team, it is essential that there be a method for ensuring that the beam is never delivered while a person could still be in the enclosure. This is achieved by requiring that each person entering the enclosure acquire and keep in his/her possession at all times during the access a key from a key tree that must be “made up” with all keys present to re-enable the beam. The idea that the possession of a key from the interlock key tree is the primary defense against being exposed to the beam is reinforced through rigorous training accompanied by written exams that the user must pass to be permitted to participate in a controlled access. In the “controlled access” examination, failure to answer correctly the questions on “key discipline” results in automatic failure.

Unlike established experiments, the operations at the test beam are carried out by a relatively rapidly changing set of small groups, each utilizing the beam for a relatively short time. Many are likely to be first time or only occasional users, who are unfamiliar with Fermilab procedures and the safety culture of the Lab and DOE. In addition, there is the possibility that some of these new or occasional users may have limited command of the English language. These risk factors dictate that additional procedures be put in place for MTEST, to ensure that controlled access procedures are correctly and completely followed, and thereby ensure the safety of all users.

### **PROCEDURE OVERVIEW**

To ensure that controlled access procedures are correctly and completely followed, each access must be overseen by a Controlled Access Leader (CAL), who must be present and is responsible for managing the accesses into the MTEST experimental enclosures. The CAL will coordinate all aspects of the controlled access, including communication with the Main Control Room (MCR),

requesting, handing out and replacing keys in the key tree, and checking the interlocked area at the end of each access to ensure that no one is left behind. The CAL records details of each controlled access on the MTEST Controlled Access Log, which is present at each interlocked gate. The MTEST Controlled Access Log form is attached to this document. No controlled accesses will be allowed unless an authorized CAL is present.

The CAL will receive area-specific training from the MTEST Access Coordinator (MAC), who is assigned by the head of PPD. The training consists of a briefing on the responsibilities and MTEST site specific procedures and being “walked through” the controlled access procedures by the MAC the first time the CAL performs a controlled access. The CAL will be responsible, in turn, for giving this training to each member of that and subsequent access parties. The MAC will provide the Accelerator Division’s Operations Group with a list of CALs for each week of scheduled running at the test beam facility.

The detailed responsibilities of the MAC are given in the section below: “Responsibilities of the MTEST Access Coordinator.” The detailed procedure for controlled accesses at MTEST is given in the document PPD\_ESH\_016, “Controlled Access Procedures for the Meson Test Beam Facility (MTEST)”. This procedure is found in the PPD *ES&H Manual*. The MAC is responsible for supplying the Accelerator Division Operations Group with the latest version of PPD\_ESH\_016.

***FAILURE TO FOLLOW CONTROLLED ACCESS PROCEDURES,  
INCLUDING THE MTEST-SPECIFIC PROCEDURES,  
WILL RESULT IN DISCIPLINARY ACTION.***

## Responsibilities of the MTEST Access Coordinator

The MTEST Access Coordinator (MAC) is assigned by the head of the Particle Physics Division. The MAC will perform the following duties before a test beam experiment can begin:

- 1) interact with the spokesman of each approved Meson Test Beam experiment to determine the run conditions the experiment will need and how many experimenters will be in attendance during the run and how many will need controlled access training.
- 2) Obtain a list of people on the test beam experiment who can act as Controlled Access Leaders (CAL). This list will not be excessive (i.e. 4 people at most). CALs are users or Fermilab employees who have prior experience successfully performing controlled accesses.
- 3) Ensure that each member of the experiment who needs controlled access training has obtained it.
- 4) Ensure that each member of the experiment has a dosimetry badge.
- 5) Meet with the experiment spokesman and entire group of CALs for the experiment. During this meeting, the MAC will go over the responsibilities for each aspect of a controlled access into either MT6 area. These responsibilities are outlined below. The MAC will stress that it is up to the CALs to coordinate controlled access for the experiment and any other experiment that may be taking parasitic beam. The CAL for one experiment is not obligated, however, to serve as the CAL for any other experiment who may be running at the same time, parasitically or otherwise.
- 6) Overview the documentation requirements for controlled accesses.
- 7) Personally assist in the first controlled access with the experiment's CALs.
- 8) Provide the Accelerator Division's Operations Group with a list of the approved CALs for the experiment.

During the course of the run of a test beam experiment, the MAC will perform the following duties:

- 1) On a weekly basis, inform the Operations Group of the list of approved CALs for the experiment scheduled for that week, noting any changes in the list.
- 2) Act as a CAL in those instances where the experiment cannot provide one.
- 3) At least once a week during MTEST operations, audit the controlled access process at MTEST by checking the MTEST Controlled Access Key Sign-Out Log (see below), and performing a walk-through of the MTEST area at a time when experimenters are active.



