

Supervised Access – Collision Hall

Revision Log

Version Number	Date Approved	Pages Affected	Description of Revisions
1.1	3/12/01	All	Initial Issue (interim version)
1.2	4/20/01	6-7	Modified visitor procedures
1.3	7/2/01	3-4	Require LOTO 1 for entry; Remove 4.4.1, §“Persons lacking DØ authorization for entry”
1.4	11/26/01		Various Clarifications,
1.5	2/21/06		Updates and clarifications
1.6	8/03/07		Updates and clarifications

Approvals

Bill Lee _____ 8/8/07 ___
DØ Run Coordinator Date

George Ginther _____ 8/10/07 ___
DØ Technical Integration Coordinator Date

Daniel Johnson _____ 8/10/07 ___
Accelerator Division Operations, Head Date

Michael A Gerardi _____ 8/8/07 ___
Accelerator Division RSO Date

Wayne Schmitt _____ 8/8/07 ___
Particle Physics Division RSO Date

TABLE OF CONTENTS

1	Introduction.....	3
1.1	Purpose.....	3
1.2	Scope and Applicability	3
2	Precautions and Limitations.....	3
3	Prerequisite Actions	4
3.1	Documents	4
3.2	Special Equipment, Tools, Parts, and Supplies.....	4
3.3	Special Approvals	4
4	Procedure	5
4.1	Preparing for Supervised Access	5
4.2	Issuing Supervised Access Keys.....	5
4.3	Making the Supervised Access	6
4.4	Recovering Supervised Access Keys.....	6
4.5	Persons on Inspections, Visits, or Tours.....	7
5	References.....	9
6	Appendices.....	9

1 INTRODUCTION

1.1 Purpose

This procedure is to be followed when a supervised access to the DØ Collision Hall is requested.

1.2 Scope and Applicability

The DØ Shift Captain or trained designee distributes Collision Hall supervised access keys by following this procedure. All individuals making the supervised access must adhere to these procedures. Escorts for untrained personnel or visitor groups also follow this procedure. This procedure DOES NOT cover controlled access or solenoid/toroid power-on access to the Collision Hall.

2 PRECAUTIONS AND LIMITATIONS

- [1] Supervised-access keys must not leave the DØ area.
- [2] Items removed from the collision hall must be checked for contamination and radioactivity.
- [3] The following activities are not permitted without prior RSO approval:
 - cutting, drilling, or grinding on radioactive materials
 - work in posted contamination areas or high radiation areas

3 PREREQUISITE ACTIONS

3.1 Documents

Shift Captain and Escorts

- [1] Review most recent radiation survey map of the DØ Collision Hall.

3.2 Special Equipment, Tools, Parts, and Supplies

Shift Captain

- [1] Obtain pocket dosimeter for tour groups.

Those making the supervised access

- [1] Dosimetry badge (consult section on Visits, Inspections, or Tours for exceptions)
[2] Hard hat
[3] Closed toe shoes

3.3 Special Approvals

Shift Captain

- [1] IF visitors or tours are involved, THEN refer to section 4.5 of this procedure.

Escorts

- [1] Escorts are responsible for arranging for all necessary permissions to conduct inspections or tours in the Collision Hall.
- Entrance to the collision hall by untrained personnel or visitors requires prior approval by a DØ Run Coordinator and area RSO.
 - IF a visitor is a minor (under 18 years old) or has the potential to receive a dose greater than 10 mrem, THEN the prior approval of the Senior Radiation Safety Officer is also required
 - Tours with visitors under the age of 18 must be approved by the PPD Senior Safety Officer or designee.
 - Tours with more than 10 visitors must be approved by the Head of the PPD ES&H department or designee.

4 PROCEDURE

4.1 Preparing for Supervised Access

Shift Captain

- [1] Verify that:
- [a] the toroid and solenoid magnet power supplies are locked out with a DØ Operations lock. IF they are not, THEN contact the Operations Shifter to arrange the lockout.
 - [b] the Collision Hall interlocks are disabled.
 - [c] a Collision Hall radiation survey has been completed since the last time beam was introduced into the Collision Hall, and no exposure rates above 20 mR per hour are present. IF rates above 20 mR per hour are present, THEN do not permit the access to proceed until authorized by the Accelerator Division RSO.
 - [d] a DØ Collision Hall controlled access key is locked in the DØ Control Room Supervised Access (SA) key storage panel. IF no controlled access key is in the SA key storage panel, THEN call the Main Control Room and request access to the Collision Hall key tree to remove an interlocked key and place it in the SA key storage panel, where it should remain until the Supervised Access period is ended.
 - [e] no restricted access notices are listed on the DØ Status Board.

4.2 Issuing Supervised Access Keys

Shift Captain or Trained Designee (such as Operations Shifter or DØ Run Coordinator)

- [1] Check that each person requesting access is qualified by using the computer based key logger. They must have the following current training:
- Radiological Worker (valid for two years)
 - DØ Hazard Awareness (valid for two years)
 - Lockout/Tagout Level 1 (valid indefinitely) or Basic Electrical Safety Orientation (which is part of the New Employee Orientation)

and be deemed fit to enter the DØ Collision Hall.

- [2] Verify that each qualified person is wearing a dosimetry badge.
- [3] Issue each qualified person a supervised access key using the computer-based key logger. Also instruct the person to record the SA key number and other required information on the Supervised Access key sign-out log sheet, as a backup.

4.3 Making the Supervised Access

Qualified personnel making the Supervised Access and/or escorts

- [1] Verify that all members of your party have the proper protective equipment (hard hats and closed-toe shoes).
- [2] Verify that the date is properly recorded on the Supervised Access key sign out log sheet currently in use.
- [3] Fill in the appropriate information on the Supervised Access key sign-out log sheet.
- [4] Verify that the supervised access gate is securely closed after you have entered or exited the Collision Hall.

4.4 Recovering Supervised Access Keys

Supervised Access Key Holder

- [1] Each key holder will return their key to the drop box and record the time the key was returned in the Supervised Access key sign-out log when they have finished their access.

Shift Captain or Trained Designee

- [1] Instruct each key holder to record the time the key was returned in the Supervised Access key sign-out log.
- [2] Return the key to the supervised access key tree, and log its return in the key logger database.
- [3] Verify that all issued keys have been returned at the end of the supervised access period. IF some keys have not been returned to the DØ Control Room, THEN contact the persons who signed them out and request their return.

4.5 Persons on Inspections, Visits, or Tours

NOTE *This section applies to untrained persons who request entry into the Collision Hall. They are referred to as visitors in the following procedure.*
Shift Captain or Trained Designee

- [1] Verify that the DØ Run Coordinator or designee and the Area RSO have approved the access.
- [2] Verify that all visitors are 18 years of age or older or that the appropriate special approvals have been sought and granted.
- [3] IF a visitor has the potential to receive a dose greater than 10 mrem, THEN obtain approval of the Senior Radiation Safety Officer.
- [4] Brief the visitors on the hazards by using the DØ Hazard Awareness handout.
- [5] Issue a copy of the *Radiation Safety Information for Visitors* pamphlet to each visitor. Inform the visitors that they are entering a posted radiation area, inform them of the dose rates, if any, and give them the option to remain behind.
- [6] Verify that the visitors are escorted by a worker who has the necessary training and qualifications to enter the Collision Hall.
- [7] Verify that there are a sufficient number of qualified escorts for the size of the group (typical ratio of at least one escort for every ten visitors).
- [8] Instruct the escorts(s) that the visitors are not to enter the CF toroid “cathedral” area or any of the muon trusses without the authorization of the DØ Run Coordinator or designee.
- [9] Inform the escort of any hazards posted on the DØ Status Board.
- [10] Issue a “tour group” pocket dosimeter and card to the escort.

NOTE *Visitors are not required to wear dosimetry badges unless the potential dose is expected to be greater than 10 mrem for the duration of the tour.*

- [11] Issue a Supervised Access key to the tour group escort and instruct the escort to complete the SA key sign-out log with the required information, including the names of the visitors. Log the SA key into the SA key logger data base under the ID of the tour group escort.

NOTE *One Supervised Access key is issued per visitor group, held by the escort.*

- [12] Retrieve the SA key from the escort at the end of the visit, instruct the escort to enter any required information on the SA key sign-out log sheet, and log the key back into the key logger database.

Escorts

- [1] Escorts are responsible for getting necessary prior approvals from the DØ Run Coordinator, Area RSO, and any others as required based upon conditions outlined in Section 3.3 of this document.
- [2] Conduct the visit to the Collision Hall.
- [3] Record the dose received during the tour as measured on the tour group pocket dosimeter. Complete the dosimeter card after the tour and place it in the pocket dosimeter card folder near the shift captain's console. Include each visitor's name and ID/SSN on the card.
- [4] Retrieve any temporary dosimetry badges worn by visitors and submit them for processing.
- [5] Return the supervised access key to the drop box and enter the time the key was returned on the SA key sign-out log sheet.

5 REFERENCES

- A. DØ status board
- B. Training database <http://www-esh.fnal.gov/train/itp.html>
- C. Dosimetry badges and pocket dosimeters
- D. DØ Supervised Access key sign-out log
- E. Radiation survey map
- F. Fermilab ES&H Manual [Chapter 11010](#)
- G. Fermilab Radiological Control Manual [Chapter 9 Part 4](#)
- H. Requirements for Tours of PPD Experiment Areas [PPD_ADMIN_005](#)

6 APPENDICES

None