

ACCELERATOR DIVISION ES&H PROCEDURE

ADSP-05-1215

HP3DS and QP3
13.8 KV LOCKOUT/TAGOUT PROCEDURE

RESPONSIBLE DEPARTMENT ES&H

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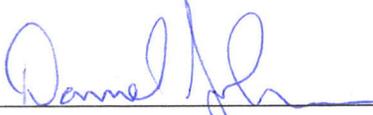
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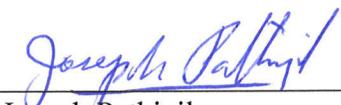
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1.0 **PURPOSE AND SCOPE**

The purpose of this Accelerator Division Safety Procedure (ADSP) is to outline and detail the conduct of LOCKOUT/TAGOUT (LOTO) for Group Lockout of the Tevatron 13.8 KV devices HP3DS and QP3.

2.0 **PERFORMANCE OF MAINTENANCE ACTIVITIES**

During maintenance/repair activities of the HP3DS and QP3 devices, the 13.8KV disconnects need to be locked out. The positive control point for Lockout/Tagout is at the Tevatron service building F4.

3.0 **THE NECESSITY OF WRITTEN LOTO PROCEDURE**

The reason for this written LOTO procedure is due to the necessity to lock out an energy source in an area in which access is restricted to authorized personnel only. The HP3DS and QP3 devices are fed through MOS 89. However the exposed bus extends into the Transfer Hall enclosure requiring a separate LOTO procedure for access into the Transfer Hall enclosure.

4.0 **RESPONSIBILITIES**

4.1 **OPERATIONS DEPARTMENT HEAD**

The Operations Department Head shall develop and maintain a list of Lead Authorized Personnel and coordinate their training.

In addition, the Operations Department Head will ensure that the Lead Authorized Personnel implementing this procedure utilize an appropriate lockout form which is developed and maintained by the Operations and ES&H Departments and approved by the AD Senior Safety Officer prior to use.

4.2 **LEAD AUTHORIZED PERSONNEL**

The role of the Lead Authorized Person is to properly Lockout/Tagout both disconnects which de-energizes the 13.8 KVAC to the HP3DS and QP3 power supplies. The completion of the Lockout/Tagout is to be documented using a lockout form developed and maintained by the Operations and ES&H Departments and approved by the AD Senior Safety Officer. The Lead Authorized Person shall carry the approved lockout form and each applicable step shall be checked off as they are performed. A copy of the completed form shall be placed in the Main Control Room (MCR) e-log. Completed original forms shall be maintained for one calendar year.

The Lead Authorized Personnel shall be from the Accelerator Operations Department who are authorized in writing by the Operations Department Head.

Authorized Personnel, who have the necessary knowledge and current training for General Lockout/Tagout, shall conduct lockout of the Group Lock Box.

5.0 **THE STEPS OF LOCKOUT/TAGOUT PRIOR TO MAINTENANCE ACTIVITY**

Upon desiring to perform LOTO on the HP3DS and QP3 devices, the MCR Crew Chief shall designate a Lead Authorized Person from a list of such named personnel maintained by the Operations Department Head.

5.1 **Prepare:** The Lead Authorized Person shall review this written procedure if necessary and obtain a copy of the approved lockout form. (Copies will be kept in a lockout binder on the Duty Assistant's desk.)

5.2 **Notify:** Notification shall be given to personnel deemed appropriate by the MCR Crew Chief.

5.3 **Shut Down:** The Lead Authorized Person shall check that the HP3DS and QP3 power supplies are off. At the F4 Service Building lock out the disconnects for the power supplies by performing the following:

- a. Note that the breaker status light indicates open and place the AC controller into 'lockout' for each power supply.
- b. If MOS 89 has not been switched off using ADSP-05-1214, operation of the disconnects in this step are an NFPA 70E Class 2 activity requiring safety glasses or goggles, non-melting or untreated natural fiber long sleeve shirt and long pants, FR coverall, hard hat, face shield, hearing protection, leather gloves, leather work shoes and FR rated jacket or rainwear as required. Open the 13.8 disconnect for each power supply.
- c. Turn and remove the top Kirk Key from the actuator for each power supply locking the HP3DS and QP3 13.8KV disconnects in the open position.

5.4 **Verify:** The Lead Authorized Person shall verify that all three knife switchblades are open for **both** devices (**Both must be visually verified, take a flashlight**). The Lead Authorized Person shall indicate on the approved lockout form the accomplishment of this step.

5.5 **Lock and Tag Out:** Return to the Main Control Room and place both Kirk Keys in the Transfer Hall lockbox. The Lead Authorized Person shall attach a **BT-5** padlock (MCR Crew Chief lock) to the lockout box. A copy of the completed lockout form shall be entered into the MCR e-log.

6.0 SPECIAL REQUIREMENTS FOR SHIFT/PERSONNEL CHANGE

If the maintenance continues beyond a shift, the next MCR Crew Chief assumes the responsibility and authority of the off-going MCR Crew Chief for this group lockout.

7.0 THE STEPS FOR RETURN TO SERVICE

The MCR Crew Chief or Lead Authorized Person must coordinate the following steps prior to returning the equipment to service after service or maintenance activity

7.1 **Check Equipment:** Check the MCR lockbox and ensure that all personnel have removed their locks and tags.

7.2 **Check Work Area:** Check that the Transfer Hall enclosure is secure and all keys are returned.

7.3 **Notify:** The MCR Crew Chief or Lead Authorized Person shall notify appropriate personnel that they are ready to reenergize.

7.4 **Remove Padlocks and Tags and Reenergize:** The MCR Crew Chief or Lead Authorized Person shall remove the Crew Chief locks from the group lockbox and designate a lead authorized person to return the Kirk Keys to HP3DS and QP3 disconnects. If MOS 89 has not been racked out using ADSP-05-1214, operation of the disconnects in this step are an NFPA 70E Class 2 activity requiring safety glasses or goggles, non-melting or untreated natural fiber long sleeve shirt and long pants, FR coverall, hard hat, face shield, hearing protection, leather gloves, leather work shoes and FR rated jacket or rainwear as required. Upon arrival at the HP3DS and QP3 disconnects the Lead Authorized Person shall insert the Kirk Keys and turn them to allow operation of the disconnects. The Lead Authorized Person shall close the disconnects and verify the AC controllers are out of 'lockout'.

This completes the requirements for returning the equipment to service.

8.0 PROCEDURE TRAINING REQUIREMENTS

Initial training shall be coordinated by the Operations Department Head. The time interval for re-qualification will be every year in accordance with Laboratory procedures.

9.0 DISTRIBUTION

An electronic controlled copy of this procedure is available at:
http://ad-esh.fnal.gov/ad_adsp.html