

Subject: Interlock Key Control	Effective Date: July 27, 2004	Initiated by: Head, Engineering and Technical Infrastructure
	Supersedes: Revision 2 dated 6/29/01	Approved: Director

Applicability

This procedure applies to the entire PPPL site and scope of operations.

Introduction

This procedure describes the requirements for additions, removal/decommissioning, and duplicate Interlock Key transactions on the PPPL site.

Reference Documents

PPPL ES&H Directives 5008, Sections 2.0 & 5.0

Definitions

ES&H Electrical
Safety Engineer

A PPPL ES&H designated individual who is responsible for verifying initial installations and modifications of interlock systems and maintaining copies of Personnel Safety-Interlock (PSI) and Emergency Stop (E-Stop) testing documents when provided by Project or Department Safety-Interlock Coordinators (P/D SICs).

Key Custodian (KC)

A PPPL designated individual with knowledge of the lab-wide interlock key system procedure, who keeps all the spare interlock keys secure and issues keys on receipt of properly approved request forms. Maintains a computer database of all Kirk Key transactions.

Project/Department
Safety-Interlock Coordinator

Maintains lists of active PSIs and E-Stops for Project/Department and assures timely performance of PSI and E-stop testing and has the technical knowledge of their project's interlock systems. Safety-Interlock coordinators are appointed by Project/Department Heads.

Procedure

A. Appointment of Key Custodian

Responsibility

Action

Fabrication, Ops, &
Maint. Div Head

1. Identifies and appoints Key Custodian(s).
2. Notes appointment by sending memorandum to PPPL Supervisors.

B. Determination of Key Request Type**Responsibility****Action**

Cognizant
Engineer/Physicist

1. Identifies the need for test or replacement Interlock Key.
2. Determines classification of Interlock Key request.
 - a. If the key is worn out or broken, go to paragraph C below.
 - b. If the key is lost, go to paragraph D below.
 - c. If the key is for a test or maintenance procedure, go to paragraph E below. (Test keys must be returned on the approved due date)
 - d. If the key is being returned due to removal or decommissioning, go to paragraph G.
 - e. If the key or locks are for a new system go to paragraph H.

C. Worn Out Or Broken Key Replacement**Responsibility****Action**

Cognizant
Engineer/Physicist

1. Submits completed Interlock Key request form, Attachment 1 (one form for each key) and all parts of the damaged key to the Key Custodian.

Key Custodian

2. Signs form and issues replacement interlock key. Note: The last spare key (Red tag) may be issued if a new spare key is proven to be on order by the cognizant Engineer/Physicist.

Cognizant
Engineer/Physicist

3. Signs form and receives replacement interlock key.

Key Custodian

4. Records transaction in computer database.
5. Sends copy of completed form to ES&H Electrical Safety Engineer and to Project/Department Safety-Interlock Coordinators.

D. Lost Key Replacement**Responsibility****Action**

Cognizant
Engineer/Physicist

1. Submits completed Interlock Key request form, Attachment 1 (one form for each key) to ES&H Electrical Safety Engineer.

ES&H Electrical
Safety Engineer

2. Determines if key should be duplicated or the lock(s) should be replaced.

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| Cognizant
Engineer/Physicist | 3. Signs form and returns to Cognizant Engineer/Physicist if approved. If not approved, informs the cognizant Engineer/Physicist that lock(s) must be replaced. Kirk Key drawings and procedures must be updated per PPPL Engineering procedures to revise key and lock numbers. |
| Key Custodian | 4. Submits approved Interlock Key request form to the Key Custodian. |
| Cognizant
Engineer/Physicist | 5. Signs Interlock Key request form and issues replacement interlock key. Note: The last spare key (Red tag) may be issued if a new spare key is proven to be on order by the cognizant Engineer/Physicist. |
| Key Custodian | 6. Signs form and receives replacement interlock key. |
| Cognizant
Engineer/Physicist | 7. Records transaction in computer database. |
| Key Custodian | 8. Sends copy of completed form to ES&H Electrical Safety Engineer and to Project/Department Safety-Interlock Coordinators. |

E. Temporary Key For Test Or Maintenance Procedure

Responsibility

Action

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| Cognizant
Engineer/Physicist | 1. Documents nature and duration of a project/department test or maintenance procedure. |
| Project/Engineering
Head/ Designee | 2. Submits form and copy of project/department test or maintenance procedure to Project Head or Engineering Department Head (or designee) for approval. Approval requirements for the procedure are a project responsibility per PPPL Engineering procedures but must include ES&H Electrical Safety Engineer. |
| Cognizant
Engineer/Physicist | 3. Determines that a written, approved project/department test or maintenance procedure exists and the ES&H Electrical Safety Engineer has properly reviewed it. Reviews request and dispositions. Identifies the date when the duplicate interlock key must be returned. Returns approved form to Cognizant Engineer/Physicist. |
| Key Custodian | 4. Submits form with identification number of approved project/department procedure to the Key Custodian. |
| Cognizant
Engineer/Physicist | 5. Signs form and issues duplicate interlock key. Note: The last spare key (Red tag) may be issued if a new spare key is proven to be on order by the cognizant Engineer/Physicist. |

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| Cognizant
Engineer/Physicist | 6. Signs form and receives duplicate interlock key. |
| Key Custodian | 7. Records transaction in computer database, and backs up file for protection of records. |
| | 8. Sends copy of form to Project/Engineering Head or Designee, ES&H Electrical Safety Engineer and Project/Department Safety-Interlock Coordinators. |
| Cognizant
Engineer/Physicist | 9. Returns key by approved due date and obtains receipt. |
| Key Custodian | 10. Provides documentation of transaction to Project/Engineering Head or Designee, ES&H Electrical Safety Engineer and Project/Department Safety-Interlock Coordinators. Records key transaction in computer database, and backs up log for protection of records. |

F. Tracking Overdue Keys

Responsibility

Action

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| Key Custodian | 1. Requests overdue duplicate interlock key from the Cognizant Engineer/Physicist. |
| | 2. Notifies the Cognizant Engineer/Physicist, their supervisor, the Project/Engineering Head or Designee, the Deputy Director, and the Head of ES&H. Immediately follows-up with a memo, if duplicate interlock key is not returned within 24 hours of initial request. |
| Deputy Director | 3. Obtains duplicate key and returns to Key Custodian, if not returned in time. |
| Key Custodian | 4. Stores key in secure area and updates computer database, and backs up log for protection of records. |
| | 5. Issues biweekly report of key transactions to the Deputy Director, ES&H Division Head, ES&H Electrical Safety Engineer, Project/Department Safety-Interlock Coordinators, and Project/Engineering Head (Designee) with outstanding keys. |

G. DECOMMISSIONING/REMOVAL OF KEY INTERLOCK SYSTEMS

<u>Responsibility</u>	<u>Action</u>
Project/Engineering Head/Designee	1. Determines the need to decommission/remove a key interlock system
Cognizant Engineer/Physicist	2. Completes work planning forms per ENG-032 and obtains appropriate approvals and completes design change per PPPL Engineering procedures indicating removal of the key interlock system including the revision of all affected system drawings and verifies that the revised/existing systems will be left operational after the removals.
ES&H Electrical Safety Engineer	3. Reviews proposed design change and approves removal of the key interlock system.
Cognizant Engineer/Physicist	4. Supervises removal of the key interlock system and returns the key interlock system components to the Key Custodian. 5. Provides copies of revised/approved Kirk Key drawings to the ES&H Safety Electrical Safety Engineer, and the appropriate Project/Department Safety Interlock Coordinator
Key Custodian	6. Stores keys for interlock system in a secure area and updates computer database and backs up data base. All removed locks shall be disposed of.

H. INSTALLATION OF A NEW KEY INTERLOCK SYSTEM

<u>Responsibility</u>	<u>Action</u>
Project/Engineering Head/Designee	1. Determines the need to install or make modifications to systems for the installation of a new key interlock system.
Cognizant Engineer/Physicist	2. Completes the work planning form per ENG-032 obtains appropriate approvals and completes the design of the Kirk Key system per PPPL Engineering procedures, and associated key request forms. Completes all affected system drawings and access procedures and verifies that any associated systems have not been affected after the new system is installed. Provides copies of documents for approval to the ES&H Electrical Safety Engineer. Upon approval by ES&H Electrical Safety Engineer, Cognizant Person orders Kirk Key system through Procurement. All Kirk Key components shall be shipped to Key Custodian via Receiving #3

ES&H Electrical
Safety Engineer

3. Reviews/approves proposed design of the key interlock system and verifies that the Kirk Key access procedure is approved. Authorizes the release of locks and keys. Files copies of approved Kirk Key drawings.

Key Custodian

4. Upon receipt of the approved request for key forms, releases locks and keys for installation.

Cognizant
Engineer/Physicist

5. Obtains the key interlock system components from Key Custodian, supervises the installation of the system and informs the appropriate Project/Department Safety Interlock Coordinator about the new key interlock system.

Key Custodian

6. Updates computer data base, backs up data base, stores spare keys and forwards all copies of approved drawings and copy of approved key form to ES & H Electrical Safety Engineer for filing if not already retained and filed by ES & H.

ATTACHMENT

1 - Request for Return & Issuing of Interlock Key

PPPL	Request for Return & Issuing of Interlock Key		
Location	<input type="checkbox"/> C - Site <input type="checkbox"/> D - Site <input type="checkbox"/> Shops <input type="checkbox"/> AC Power	Date	Key No
Requestor	Applicable procedure No	Quantity of keys issued	
<input type="checkbox"/> Worn Out or Broken Key <input type="checkbox"/> Lost Key <input type="checkbox"/> Key for Test Procedure <input type="checkbox"/> New / Removal			
Note : Complete Sections Complete Sections Complete Sections Complete Sections			
3, 4, & 5 2, 3, 4, & 5 1, 3, 4, & 5 1, 2, 3, 4, & 5			
S E C T 1	Requestor Comment Project Head/Engr Dept Head/Designee Project Head/Engr Dept Head/Designee _____ Date		
S E C T 2	ES&H Review ES&H Electrical Safety Engineer _____ Date		
S E C T 3	Issue Key Comment: Cog User _____ Key Custodian _____ Issue Date _____ Due Date _____		
S E C T 4	Return Key Comment: Cog User _____ Key Custodian _____ Date _____		
S E C T 5	Custodian Records Data Base Updated Form Returned to File Key Custodian _____ Date _____		