EDWARDS ACCELERATOR LAB

KEY HOLDER TRAINING FLOW CHECKLIST

Key Holder Name:_____ **Date:**_____

Accelerator Orientation Section:

Initials of Trainer
Acceptable to initial & mark as N/A where not needed

General:

Location of Emergency Exits

Location of Restrooms

Location of Restricted Area Doors

Building Page Device in Lobby

Location of Emergency Phone Numbers

FM, PD, and FD don't have keys _____

Safety Equipment:

Personal Protective Equipment in Thin Film Lab

Eye Wash / Shower Station in Thin Film Lab

Spill Control Kit in Thin Film Lab

First Aid Kit Outside Control Room

Fume Hoods _____

Fire Emergencies:

Hazards in Lab; Class A, B, C, D fires; Likely Locations

Types of Extinguishers in Lab (CO2 & Dry Chem) and Use

Detection Systems; Standard Smoke, Aspirating Smoke, Heat, O2 Depletion

Course of Action in Emergency - Evacuate _____

Electrical Emergencies:

Hazards in Lab; Common AC, High Voltage, High Current, Lasers

Specific Locations; Source Area, Magnets, Cabinets

Laser Locations _____

Chemical Emergencies:

Types of exposure; Respiratory, Ingestion, Contact

Chemical Locations in Lab

SF6 Locations; Properties and Hazards

Safe Practices and Protective Equipment

No food or drink, except control room _____

Safety and Warning Devices:

EMO Buttons; Locations and use. When in doubt, hit one

Control Room Alarms (other than fire); Contact Staff

Beam Warnings, Locations. 15 second delay for High Rad Ops

Claxon and Flashing Red Lights. Accelerator Startup. Areas Cleared by Operator.

Flashing Red Lights. Accelerator Running. Check with Operator for Entry _____

<u>Key Holder Level Radiation Safety Orientation Section:</u>

Fundamentals of Radiation Safety

- Characteristics of Radiation _____
- Units of Radiation Dose _____
- Significance of Radiation Dose _____
  - Fundamentals of Radiation Dose _____
  - Radiation protection Standards _____
  - Biological Effects of Radiation _____
- Levels of Radiation from Particle Accelerator Sources _____
  - Radiation locations with beam on _____
  - Radiation locations following beam on _____
  - X-rays from accelerator tubes _____
  - X-rays from source area _____
- Sealed Sources _____
  - Types and Locations, including tritium _____
  - Signage for deployed sources _____
  - Proper Handling _____
  - Security System – PD lockdown of building _____

Methods of Controlling Radiation Dose

- Exposure Time _____
- Working Distance _____
- Shielding _____

Use of Radiation Detection Instruments

- Survey Instruments _____
  - Neutron Survey Meter _____
  - Victoreen 440 RF _____
  - Geiger Counter _____
  - Direct Reading Dosimeter _____
- Instrument Operation _____
- Calibration _____
- Limits of Detection _____
- Monitoring Procedures _____

Personnel Monitoring Equipment (Dosimetry)

- Procedures for Issuance, Wearing, and Exchange of Dosimetry _____
- Typical Exposures Expected _____
- Methods to Keep Exposures ALARA _____
- Film Badges _____
- Direct Reading Dosimeter _____
- Bioassays _____

Role of the Accelerator Operator

- Ensure Film Badge and DRD use _____
- Limit access to only authorized personnel _____
- Ensure compliance with visitor policies _____
- Inspect, evacuate, and secure areas prior to beam _____
- Knowledge of experiment conditions and hazards _____
- May be out of Control Room, wait for his/her return _____

Fixed Radiation Monitor System

- Detection of n, x, and gamma Radiation _____
- Types of Detectors _____
- Where Detectors are Monitored _____
- Shutdown Due to Radiation Monitor _____
  - Accumulated _____
  - Rate _____
  - 8 Hour Scaler _____
  - 24 Hour Scaler _____
  - Signal Comparator _____
  - Recorder _____

Visitors

- Definition _____
- Orientation _____
- Film Badge Requirements and Card _____
- Pregnant Women and Minors _____

Consultation

- Activated Machine Parts _____
- Radioactive Targets _____
- Radioactive Sources _____
- Violations _____

Key Issue Process:

Accelerator Orientation _____

Key Holder Level Radiation Safety Orientation _____

Signed Key Request and Key Issue _____

Security of key _____

Return of Key when Finished _____

REQUEST FOR ACCELERATOR KEY

PLEASE PRINT CLEARLY

Applicant Name:_____

Local Address:_____
Street City State Zip

Local Phone:_____ Email:_____

____Faculty/Staff ____Student ____Visitor

Effective Dates: From_____ Returned_____

_____

Signature of Chair of TALC or Chair of Physics and Astronomy

Restricted Area Key Number:_____

I have received an Accelerator Orientation and a Radiation Safety Orientation and understand the material presented. I understand that the key issued to me shall not be given or loaned to an individual who is not authorized to use the Ohio University Accelerator facility. I understand that upon termination of Accelerator facility usage the key shall be returned to the Chair of the Tandem Accelerator Lab Committee or the Chair of the Department of Physics and Astronomy.

_____

Signature of Applicant