

Brookhaven National Laboratory/ LIGHT SOURCES DIRECTORATE			
Subject:	Securing the VUV Ring		
Number:	LS-OPS-0002	Revision:	E
		Effective:	2/24/2009
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*Approval signatures on file with master copy.

[Revision Log](#)

1.0 PURPOSE

The purpose of this procedure is to provide the requirements for the Operations Group personnel and other qualified personnel to perform a VUV ring search for operational purposes and to Un-Secure/break security the VUV Ring.

2.0 SCOPE

The inside of the VUV ring, at floor level, can contain High Radiation Areas during beam injection. This area is an interlocked exclusion area during injection. This procedure for securing the ring will assure that all persons have left the area and prevent unnecessary radiation exposure to personnel. In addition it is important to properly un-secure/break VUV ring security to prevent damage to the main magnet supplies and to allow personnel access to the VUV Ring for approved work. Note: Trained/authorized individuals may access the VUV ring during Non-Maintenance periods as per "[Controlled Access to the VUV Ring \(Non-Maintenance Period\)](#)"

3.0 RESPONSIBILITY

Searcher: The searcher must assure that the caution barrier tape is in place prior to securing the ring area and that no personnel remain inside the VUV ring after the search has been completed. These individuals are also required to assure all main magnet power supplies have been turned off prior to breaking security in the VUV Ring.

Control Room Operator: The on duty Operator must always be aware of the status of the interlocks and in control of the status.

4.0 PREREQUISITES

4.1 The VUV ring may be secured by one qualified person. (refer to procedure "Qualified Search Personnel for NSLS Accelerators", LS-ESH-0009)

4.2 Permission for securing the VUV ring must be given by the Control Room Operator on duty.

4.3 All personnel shall be asked to leave the ring before the search begins.

4.4 The searcher should determine that all work in the VUV ring has been completed.

4.5 The "Caution – Do Not Enter" barrier tape must be placed in position along the inside perimeter of the ring, refer to fig -1-UV.

5.0 PROCEDURE

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Refer to [figure 1-UV](#) for the location of Emergency Stops, Check Stations, Barrier tape, and the proper Search Path to be followed for these procedures. During the search through the VUV ring area, the searchers must do the following:

- The searcher must look carefully for any persons who may be in the VUV ring area.
 - **The searcher must announce verbally that the ring is being secured, numerous times throughout the search process.**
- 5.1 The searcher must close the security gate at the top of the ring access stairs before starting the search.
 - 5.2 The searcher proceeds to CS-1 following the search path indicted in figure 1-UV.
 - 5.3 The search must be stopped if any persons are encountered and then restarted when all persons have left the ring.
 - 5.4 Press CS-1 if no personnel are found. The pilot light at each check station will light as each button is pressed, indicating that the search is successful to that point.
 - a.) Pressing CS-1 starts a 2 minute search timeout period. The search must be completed within this duration.
 - 5.5 The searcher proceeds to CS-2 following the search path indicted in figure 1-UV.
 - 5.6 Press CS-2 if no personnel are found.
 - 5.7 The searcher proceeds to CS-3 following the search path indicted in figure 1-UV, verifying that no personnel are located in the central area or between the rows of racks.
 - 5.8 Press CS-3 if no personnel are found.
 - 5.9 The searcher proceeds to CS-4 following the search path indicated in figure 1-UV.
 - 5.10 Press CS-4 if no personnel are found. This allows the security gate to be opened so the searcher may exit.
 - 5.11 The searcher proceeds directly to CS-E, insuring that no one enters the ring during this time
 - 5.12 The searcher must close the security gate and press the last check station, CS-E.
 - a.) An audible alert will sound for 30 seconds after CS-E is pressed.
 - b.) If the audible alarm does not sound, most likely the search timeout has expired.

If this occurs, the searcher must re-search the VUV ring.
 - 5.13 Inform the Operator on duty that the VUV ring has been secured. This should be entered in the Operator log.

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6.0 Un-secure/Break Security in VUV Ring

- 6.1 The machine operator must command all VUV main power supplies OFF.
- 6.2 An authorized searcher listed on LS-ESH-0009 must verify that all indicators on the “Power Supply Read Back Monitor” panel at the entrance to the VUV Ring all indicate OFF. If all power supplies indicate off then the searcher presses either the “Interlock Off” button at the entrance point to the ring or inside the ring at SR9.
- 6.3 The Caution barrier tape should be removed at the beginning of each maintenance and shutdown period after all power supplies are turned off and ring security is broken.

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**Document Review
Frequency**

3 Years

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LIGHT SOURCES DIRECTORATE REVISION LOG		
Document Number:	LS-OPS-0002	
Subject:	Securing the VUV Ring	
Rev	Description	Date
0	Initial Document	12/15/1997
B	Minor changes for clarification.	1/14/2000
C	Changed reference for Qualified Searchers to new document LS-ESH-0009 and removed section 6 for qualified searchers.	2/1/2002
D	<ul style="list-style-type: none"> • Added instructions on how to Un-secure the VUV Ring in various sections including a new section 6.0. • Figure 1-UV changed to illustrate location of power supply Read Back panel and second interlock off button. • Changed review frequency from 2 to 3-years. 	7/18/2008
E	<ul style="list-style-type: none"> • Added Barrier tape requirements throughout document. • Modified figure 1-UV to illustrate the barrier tape and BUS bar location. • Revised the Purpose section. • Changed step 5.12 from 20 second audible to a 30 second audible. 	2/24/2009