

Form : HPP-OSP-002 Revision: 6 Date: 12/09/2009	JEFFERSON LAB Radiological Work Permit	Applicable to procedure: HPP-OSP-001 Sheet 1 of 2
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RWP Serial Number: 2012-S001	Start Date: 1/1/2012	Expiration Date: 12/31/2012
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Work Area/Description of Work:

All Jlab Beam Enclosure Areas

- Initial entry surveys performed by Assigned Radiation Monitors (ARM)
- All entries to beam enclosures when the residual whole body dose rate is known to exceed 1 rem/hr, or whenever this condition may exist, and has not been verified to be absent.

High Power Beam Dump Buildings (Bldg. 91 and 95)

- Entries to dump building by an ARM to investigate alarms
- NOTE: This RWP applies to "Controlled Access" entries to accelerator enclosure. Use in other conditions requires specific approval by the Radiation Control Department Manager.
- NOTE: ARMs shall not enter High Radiation Areas (HRA) without supplemental dosimetry and shall not routinely post HRAs. However, suitable HRA access controls and postings may be invoked with RadCon assistance.

Task Description:

- (1) Perform initial entry surveys as necessary. This applies to surveys conducted by ARMs (Radcon Technician surveys are covered under separate RWP).
- (2) Performance and/or coordination of direct surveillance of a work area for purposes of preventing access to a High Radiation Area with dose rate > 1 rem/hr (High Rad Area Watch). This task implements the specific requirements of 10CFR835.502(b)(5) and related portions of the Jefferson Lab Radcon Manual.
- (3) Conduct investigatory entry into dump cooling water building when High Radiation Areas exist.
- (4) Initial entry surveys performed, specifically after RF operations of new C100 cryomodules when in power permit.

Work Area Radiological Conditions:

* Radiation Levels:	** Contamination Levels:	Airborne Levels:
Maximum _____	Maximum _____	Maximum _____
Contact _____	Location _____	Location _____
Whole Body _____		

- * Other *To be determined by radiological survey upon entry. Applicable survey map shall be available and reviewed by persons performing task (2).
- ** No entry into known contamination areas or areas where the likelihood of contamination may exist.

ALARA Estimate: (Based on conservative "average" whole body dose rate)

250 (Total Man-hours) X 1.0 mrem/hr (Whole Body Exposure Rate) = 250 Man-mrem

Training Requirements for Entry on this RWP:

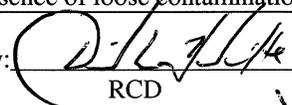
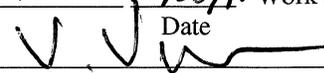
X** Radiation Worker I ___ Radiation Worker II ___ Respirator Qualified

****Tasks (1) and (3) and (4) require ARM training.**

Dosimetry Requirements for Entry:

X DOSIMETER ___ SRPD
* May be needed for task (3)

___ Extremity Dosimetry(as specified below):

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Protective Clothing Requirements: N/A		
Radiological Controls Coverage Requirements: <input type="checkbox"/> Continuous <input type="checkbox"/> Intermittent <input checked="" type="checkbox"/> None		
Special Instructions/ Consideration /Stay-time Controls: <input type="checkbox"/> Dose Tracking required <input type="checkbox"/> * Pre-job briefing required <input checked="" type="checkbox"/> Other (as specified below)		
<p>All routine requirements performed during Controlled Access must be met except where specifically noted below. *Briefing required for task-2 duties. This briefing may be conducted by the SSO or Crew Chief, as well as a member of the RCD.</p> <p><u>For task - 1</u></p> <ol style="list-style-type: none"> Entry to areas with dose rates <u>not exceeding 100 mrem/hr</u> are acceptable for short periods of time (i.e. 5-10 minutes) to assess conditions in the area. If the initial survey will be the basis for allowing non-escorted entries, whole body dose rates shall be measured along <i>the entire accessible portions of activated beamline areas</i> (see continuation sheet for exception). For short-duration, Controlled Access entries, in which direct observation of all workers can be maintained by the ARM, the survey may be limited to the applicable work areas, and the ARM must remain in the enclosure and provide direct surveillance of the workers at all times (this effectively invokes task-2). Such surveys are valid only for the duration of that specific entry. If a whole body dose rate > 1 rem/hr is located during the survey, Notify the SSO immediately, and contact Radcon. The requirements listed under Task-2 below must be met. <p><u>For task -2</u></p> <ol style="list-style-type: none"> The specific purpose of performing this task is to guard and prevent access to any areas with whole body dose rate > 1 rem/hr. Except for emergencies, the High Rad Area Watch shall not leave the area unless relieved by another High Rad Area Watch (briefed and signed in on this RWP), or until all persons have left the area (see below and additional Briefing Instructions page). Persons performing task -2 shall review the radiation survey data from the most recent survey. They shall be specifically briefed on the locations and extent of any areas with dose rates above 1 rem/hr whole body by the SSO or a member of the RCD. A location shall be chosen, by a member of the RCD, from which visual surveillance of the High Radiation Area shall be maintained. The dose rate in the area where the High Rad Area Watch is posted should be less than 5 mrem/hr and must be included in the briefing. The High Rad Area Watch and SSO shall review the requirements of this permit, and the SSO shall make a suitable note in the PSS log to the effect that the individual is the High Rad Area Watch. The SSO shall notify the High Rad Area Watch when all persons have left the area. <p>RCM approval required for any work with an incomplete current year's dose record.</p>		
Waste Production and Disposal: Routine <u>N/A</u> Description : None expected. Approx. amount expected <u>0</u> lbs <u>0</u> cu. ft.	Characteristics: <input type="checkbox"/> Oily <input type="checkbox"/> Bulk liquids <input type="checkbox"/> Lead	<input type="checkbox"/> > 1 M dpm <input type="checkbox"/> H ³ <input type="checkbox"/> Metal > 250 mR/hr <input type="checkbox"/> Mixed* *Requires RCM notification
Radiological Conditions that may void this RWP: -Anticipated dose to an individual > 25 mrem in a shift. -The presence of loose contamination		
Approvals: Submitted by: <u></u> <u>12/22/11</u> Work Supervisor <u>N/A</u> _____ Date _____ Approved by RCD Manager (or designee) <u></u> <u>12/22/2011</u> _____ Date _____		
Cancellation: This RWP is cancelled as of _____ by _____ <div style="display: flex; justify-content: space-around; width: 100%;"> Date/time RCD Manager (or designee) </div>		

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Date	Comments
	Additional Instructions – Continued from Page 2
1/1/12	<p>Task (1) Exception for Instruction 2:</p> <p>When conducting surveys for subsequent non-escorted entry, it is permissible to survey a portion of the beam path and post an exclusion zone for unsurveyed areas in the following locations:</p> <ul style="list-style-type: none"> - Portions of the North and South Linac and Arcs - FEL vault <p>NOTE: These areas have no known history of containing 1 rem/h whole body dose rates. If process knowledge suggests that high radiation areas (> 1 rem/h) might exist in the unsurveyed area (known high beam loss, vacuum event, etc.), exclusion zones shall not be posted, and a complete survey must be conducted.</p>
	<p><u>For Task 3</u> Refer to MCC-PR-16-004. However, all requirements in this permit must be met.</p> <p>In the event of an alarm (leak, fire, etc.) in buildings 91 or 95, the Crew Chief may dispatch a Runner to investigate. If the event happens on a normal workshift, the Crew Chief <u>shall</u> also call RadCon to request support. For off-shift events, the Crew Chief <u>shall</u> contact RadCon for advisory information.</p> <p>If beam is on, for the hall of concern, the beam must be secured(Off), before personnel can access the building.</p> <p>A telescoping survey meter shall be taken to the location. If the alarm can be resolved from outside the building, the Runner shall not enter. If there is evidence of a fire in the building, do not enter the building. Otherwise, proceed as below.</p> <p>Under general guidance from RadCon, the following steps shall be taken: The Runner shall observe the dose rate on the beam dump CARM (EDM RadCon screens for monitors RM701 and RM702 for B91 and B95 respectively). If it is above 100 mRem/hr, no entry shall be made without SRPD. If it displays less than 100 mRem/hr, entry to the gated walkway may be made and the path to the door surveyed. If radiation levels above 100 mRem/hr are found, no entry without a supplemental dosimeter is allowed.</p> <p>Use caution and be alert for areas of visible water on the floor or other signs of potential contamination (damp or wet areas on equipment). If any such signs are noted, exit the building and await RadCon instructions.</p>

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Date	
	Name of HRAW:
	Date of reviewed survey:
	HRAW location:
	Phone number:
	Watch period:
	Description of work:
	Time in : Time out:
	Name of HRAW:
	Date of reviewed survey:
	HRAW location:
	Phone number:
	Watch period:
	Description of work:
	Time in : Time out:
	Name of HRAW:
	Date of reviewed survey:
	HRAW location:
	Phone number:
	Watch period:
	Description of work:
	Time in : Time out:
	Name of HRAW:
	Date of reviewed survey:
	HRAW location:
	Phone number:
	Watch period:
	Description of work:
	Time in : Time out:
	Name of HRAW:
	Date of reviewed survey:
	HRAW location:
	Phone number:
	Watch period:
	Description of work:
	Time in : Time out:

