

# JOB SAFETY ANALYSIS

Safety Information for the University of California, Berkeley

## ENVIRONMENT, HEALTH & SAFETY – EMERGENCY RESPONSE CLEANING A RELEASE OF A CHEMICAL(S) AND RADIOACTIVE MATERIAL(S)

| TASK   | HAZARDS  | CONTROLS  |
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| <p>1. Assess the situation; determine identity of released material, its amount, concentration and the area/extent of contamination. Assess the volatility of the isotope released. Determine presence of other chemicals that may react or that may be sources of exposure. Determine sources of ignition and other physical hazards at the release area.</p> | <p>Exposure to released material.</p>                | <p>Assess the situation away from contaminated area. Notify the Radiation Safety Officer and request guidance in responding to the radioactive component of the spill.</p> <p>Consult reference material about chemicals present in the vicinity of the released material and plan response to include protection from exposure to these chemicals.</p> |
|  | <p>Tripping, falling, and slipping</p>               | <p>Move carefully away from the area of release and keep away from physical hazards.</p>  |
|  | <p>Exposure of materials released to the public.</p> | <p>Cordon off the area of release; install barriers and post warning signs to keep the public away.</p> <p>Have someone near the area of release keep the public away from the spill.</p>   |
| <p>2. Determine appropriate radiation-monitoring equipment necessary to measure exposure and contamination. Bring swipes and pipettes to monitor and identify the isotope and the magnitude of release so response can be tailored to the radioactive material released.</p>   | <p>Exposure to released material.</p>                | <p>Wear PPE with adequate protection from released chemical(s) and radioactive material(s); change into new PPE if original PPE is damaged while moving absorbents.</p>   |

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| 3. Select and don the appropriate PPE.  | Selection of PPE with inadequate protection.                          | Check adequacy of the selected PPE with health physicist and industrial hygienist, making sure protection is for both chemical and radioactive material(s) released.                      |
|   | Selection of defective PPE.   | Before donning the selected PPE, make sure the PPE has no tear, holes, or other defects.  |
|   | Physical injury due to falling or tripping when donning PPE.          | Don PPE at a location free from physical hazards.<br>Don PPE while seated in a chair to prevent falling.<br>If a seat is not available, obtain assistance from a buddy while donning PPE. |
| 4. Determine appropriate neutralizer/absorbent and bring an adequate supply to a clean spot as close to cleanup area as possible. | Selection of inappropriate absorbent/neutralizer.                     | Discuss the appropriateness of selected neutralizer/absorbent during the tailgate safety meeting and confirm choice with an expert(s).  |
|   | Exposure to materials released.                                       | Follow 2a-1.  |
|   | Irritation of nasal passages and eyes when handling solid absorbents. | Wear appropriate PPE to keep dust from nasal passages; wear eye protection to keep dust from eyes and for protection from other hazards.  |
|   | Physical strain or injury due to moving heavy load.                   | Move bulk of response material that is appropriate for body size and weight; rest periodically, avoid awkward posture, or movement when lifting and carrying.                             |
|   | Tripping and falling.   |   |
| 5. Enter contaminated/cleanup area with PPE and apply neutralizer/absorbent over the identified contaminated area or surfaces.    | Exposure to released material.  | Follow Control 4b-1.  |
|   | Exposure to other chemicals in the vicinity of the release.           | Follow Control 4b-1.  |
|   | Irritation of nasal passages and eyes when handling solid absorbents. | Follow Control 4c-1.  |
| 6. Search for other contaminated areas, surfaces, equipment   | Exposure to released material(s).                                     | Follow Control 4b-1.  |

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|  | and/or furniture.   | Exposure to other chemicals in the newly discovered contaminated areas. | Follow Control 4b-1.  |  |
|  | 7. Apply absorbent or neutralizer to newly discovered contaminated areas, equipment, furniture, and other objects.  | Irritation of nasal passages and eyes when handling solid absorbents.   | Follow Control 4c-1.  |  |
|  |   | Exposure to released material(s).                                       | Follow Control 4b-1.  |  |
|  | 8. Repeat Tasks 5 and 6 until no other contaminated areas and objects are discovered.   | Irritation of nasal passages and eyes when handling solid absorbents.   | Follow Control 4c-1.  |  |
|  |   | Exposure to released material(s).                                       | Follow Control 4b-1.  |  |
|  | 9. Collect and bag the waste.   | Exposure to released material(s).                                       | Follow Control 4b-1.  |  |
|  | 10. Transport generated wastes to secure collection or storage location.  | Physical strain or injury due to moving heavy load.                     | Follow Control 4d-1.  |  |
|  | <b>Required Training:</b>   |   | <b>Required Personal Protective Equipment (PPE):</b>  |  |
|  | <ol style="list-style-type: none"> <li>1. Radiation Safety Training (must be on RUA 3771).</li> <li>2. RP-20, "Handling and Disposal of Radioactive Waste."</li> <li>3. RWI-2, "Monitoring and Surveys."</li> <li>4. RWI-12, "Contamination Control Zone."</li> <li>5. Use of the hood.</li> <li>6. Use of the LSC.</li> <li>7. Use of the pipetter.</li> </ol> |   | Dositmetry, safety glasses, appropriate PPE, and booties. Consult Industrial Hygienist and RSO. |  |
|  | <p><b>Other Information:</b><br/> <b>Contributors:</b> Environment, Health &amp; Safety<br/> <b>Created:</b> June 2005<br/> <b>JSA Library Number:</b> EHS-ER-28</p>  |   |   |  |
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