

STANDARD OPERATING PROCEDURE

Incident Command Process: Nuclear Medicine Radiation Safety

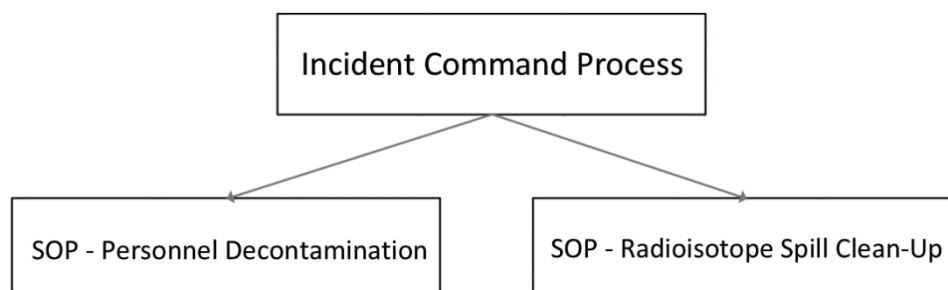
Purpose

This procedure establishes the incident command roles and responsibilities for nuclear medicine personnel and related departments and outlines the process following a radioactive spill or personnel contamination event. The process is established to ensure responsibilities are clearly defined during an emergency and clean-up is performed in a safe manner, minimizing the impacts to contaminated individuals, staff, public, facilities, and the surrounding environment.

Scope

The incident command process is to be followed by all Lower Mainland Medical Imaging (LMMI) Nuclear Medicine departments within Fraser Health Authority (FHA), Providence Health Care (PHC), Provincial Health Services Authority (PHSA) and Vancouver Coastal Health (VCH). This process applies to all personnel in Nuclear Medicine departments and supporting departments.

This process is intended as a general document to highlight key personnel during contamination incidents and their responsibilities following the incident. For detailed steps to respond to personnel decontamination or radioisotope spill cleanup, refer to incident specific SOPs:



Roles & Responsibilities

Responding Technologist - *the worker that discovers the incident*

- Conducts the immediate response steps:
 - Assists injured person(s) to seek medical aid
 - Advises first aid responders on how to minimize exposure and contamination
 - Contains the spill, alert all relevant parties in the area, post signage
- Calls for help such as other Technologists or SRSO
- Conducts personnel decontamination by following [Personnel Decontamination](#) SOP.
- Conducts spill cleanup by following [Radioisotope Spill Clean-up](#) SOP
- Completes applicable [Report form: Nuclear Medicine Radiation Safety](#)
- Assists in spill investigation as applicable
- Reports exposure to the Provincial Workplace Health Call Centre as applicable

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Assisting Technologist

- Notified by Responding Technologist of spill or personnel contamination
- Assists Responding Technologist with Immediate Response Actions
- Conducts personnel decontamination by following [Personnel Decontamination](#) SOP
- Conducts spill cleanup by following [Radioisotope Spill Clean-up](#) SOP
- Notifies relevant parties of spill incident such as SRSO
- Assists in spill investigation as applicable

Site RSO

- Determines level of contamination such potential for contamination to spread through air and notifies Facilities Maintenance
- Determines if operations need to be suspended and informs Site Leadership: Site Administrator, Site Coordinator, Site Director
- Directs spill cleanup and decontamination efforts
- Contacts RRSO, security, housekeeping or FMO as applicable
- Completes documentation and report forms
- Sends dosimeters of all personnel involved out for emergency readings
- Conduct incident investigation, identify the root causes of the incident and corrective actions
- Implement corrective actions
- Determine if incident needs to be reported to regulatory bodies as applicable

Regional RSO

- Support SRSO with investigation and corrective actions
- Report incident to the CNSC, Workplace Health or other parties, as applicable
- Oversee spill investigation and prepare CNSC report as applicable

Site Leadership

- Support SRSO as instructed such as suspension of operations/patient reassignment

Facilities Maintenance

- Support SRSO by switching ventilation appropriately

Workplace Health Advisor

- Support site activities as required
- Notify other Workplace Health Advisors as applicable
- Notify manager if report is required for WorkSafeBC
- Assist with spill investigation and report

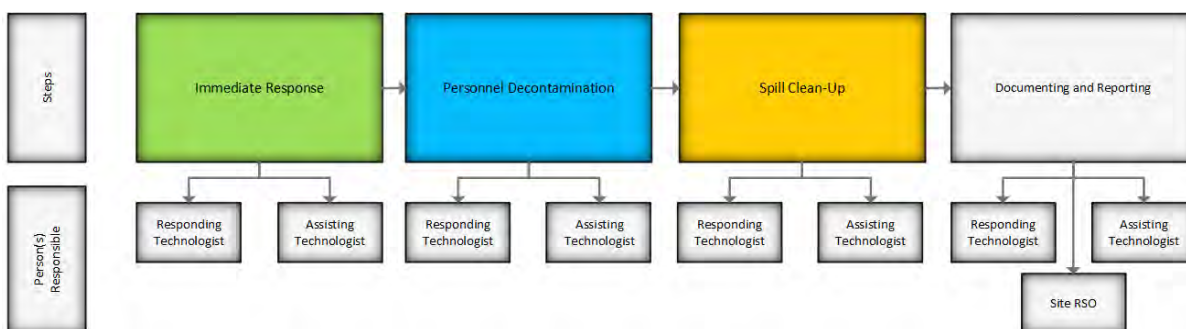
Refer to Appendix 1: [Incident Command Flowchart](#)

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Overview

Emergency situations such as spills or personnel contamination shall be reported to the Site Radiation Safety Officer (SRSO). The following are general steps in responding to incidents



Immediate response

The immediate health and safety of any person takes precedence over any radiological incidents. The following immediate response steps must be conducted prior to either Personnel Decontamination or Radioisotope Spill Clean-Up Procedures:

1. Seek First Aid for All Injured Persons
Any person injured as a result of the incident, must seek first aid.
2. Contain the Spill
Without risking further contamination, place absorbent pads over the spill to prevent spreading. If the spill occurs in the Hot Lab, leave the fume hood running to minimize the spread of volatile materials outside the room.
3. Alert relevant parties in the area
Instruct personnel to avoid the contaminated location; rope off the area using radioactive barrier tape and post Radioactive Spill Warning Sign.
4. Contact SRSO
If the spill involves radioiodine or if you suspect the radioisotope aerosolized, contact the Site RSO to follow up with FMO and request, if possible, the ventilation be switched to 100% purge/fresh air to prevent recirculation. The SRSO determines if operations need to be suspended and receives assistance from Site Administrator.

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Reporting Incidents

According to Canadian Center for Occupational Health and Safety:

“the term incident can be defined as an occurrence, condition, or situation arising in the course of work that resulted in or could have resulted in injuries, illnesses, damage to health, or fatalities.

The Regional Radiation Safety Officers must be informed without delay of every incident resulting in any:

- skin dose > 50 mSv for a NEW
- skin dose > 5 mSv for a non-NEW
- major spill

You must fill out the [Report Form: NM Radiation Safety](#) for every personnel contamination incident and for every radioactive spill that is not already documented (e.g.: Decommissioning records, weekly survey records).

Emergency Contact Information

| Contact | | Phone Number |
|---|---|------------------|
| Nuclear Medicine 24 Hour Emergency Line | | 1-(833)-343-4784 |
| [Name of Site RSO] | [Site Location] Site Radiation Safety Officer | [Enter number] |
| Roxana Ralea | Regional Radiation Safety Officer | 604-328-6342 |
| Facilities Management | | [Enter number] |

Reference Documents

[Personnel Decontamination](#) - SOP

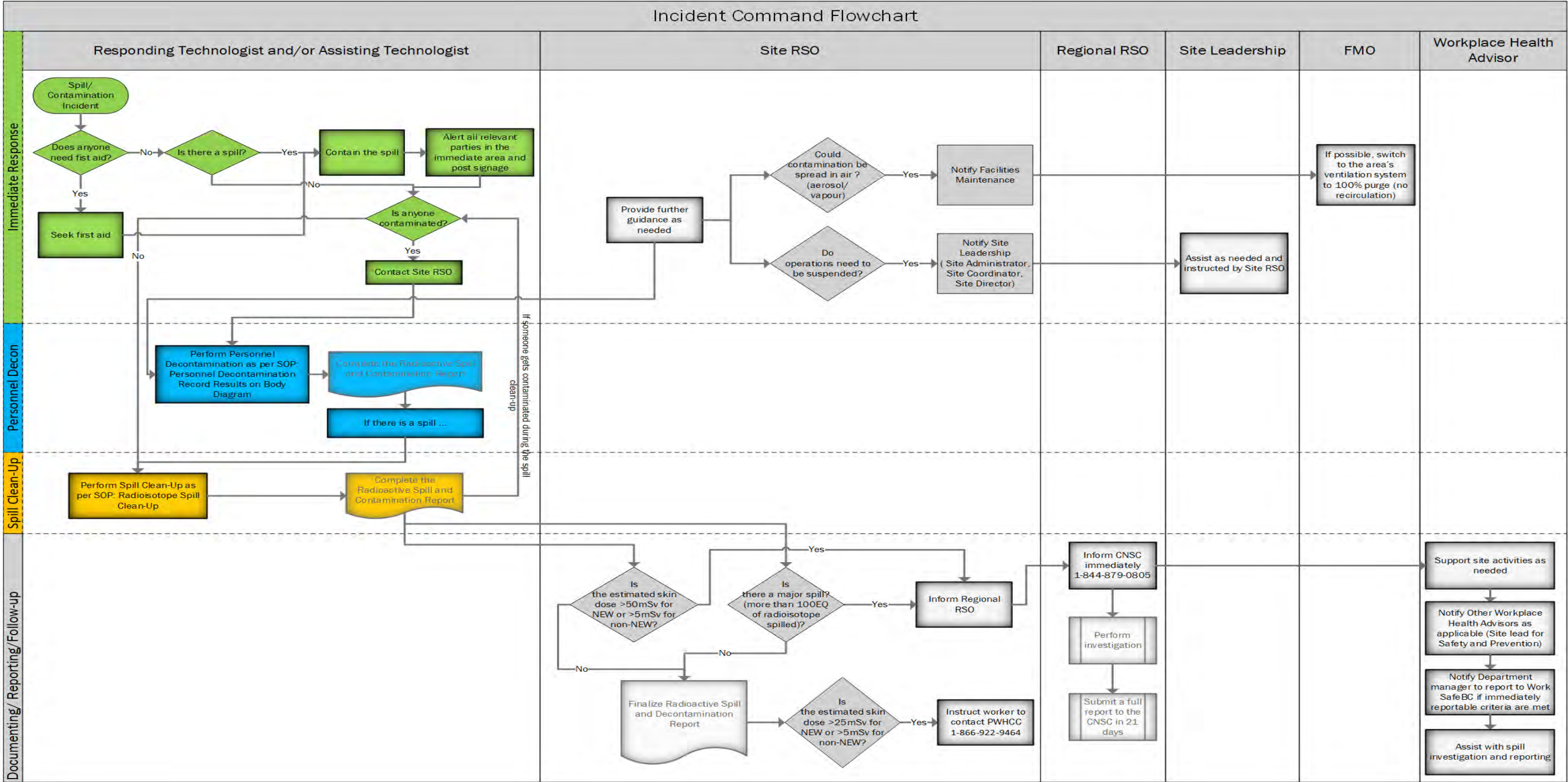
[Radioisotope Spill Clean-up](#) -SOP

[Spill and Personnel Decontamination Role Cards](#)

[Report Forms: NM Radiation Safety](#)

[Hand Contamination: NM Radiation Safety](#)

Appendix 1: Incident Command Flowchart



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| Effective Date: | 21-OCT-2022 | | | |
|---|--|-------------|--|--|
| Posted Date: | 21-OCT-2022 | | | |
| Last Revised: | 15-SEP-2022 | | | |
| Last Reviewed: | 15-SEP-2022 | | | |
| Approved By: <i>(committee or position)</i> | Radiation Safety Committee | | | |
| | 22-SEP-2022 | | | |
| Owners: <i>(committee or position)</i> | Nuclear Medicine Radiation Safety Committee | | | |
| | Nuclear Medicine Regional Radiation Safety Officer, LMMI | | | |
| Revision History: | Version | Date | Description/ Key Changes | Revised By (Name and Position) |
| | 1.0 | 30-JUN-2019 | Initial Release | Roxana Ralea - RRSO Marjorie Gonzalez – RRSO Rhonda Hollerbaum - RPL Micah Ho - WPH Jackie Ellis - WPH |
| | 2.0 | 31-DEC-2019 | Re-organized the sections for a better flow. Introduced Reporting Incident Section | Roxana Ralea - RRSO Marjorie Gonzalez – RRSO Rhonda Hollerbaum - RPL Micah Ho - WPH Jackie Ellis – WPH |
| | 3.0 | 2-AUG-2022 | Increased the NEW reportable limit for skin contamination to Provincial Workplace Health Call Center (PWHCC) from 5 mSv to 25 mSv. | Roxana Ralea - RRSO Rhonda Hollerbaum – RPL Erin Dahlen - RRSCo Izaaz Badshah - RRSCo Cindy Wu - WPH Dennis He - WPH Wylie Li - WPH Alina Tepes - WPH |