

Vermont Department of Health Radioactive Materials Program

Procedure 3.2, Revision 0



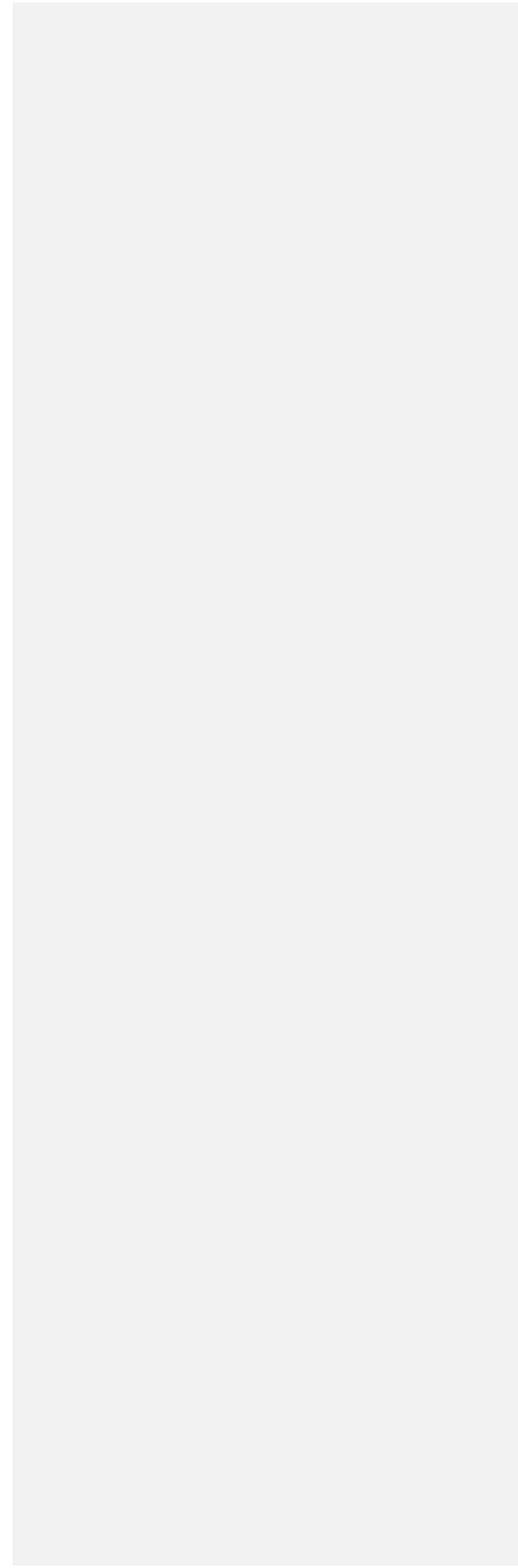
Incident Response

Prepared By: _____ **Date:** _____

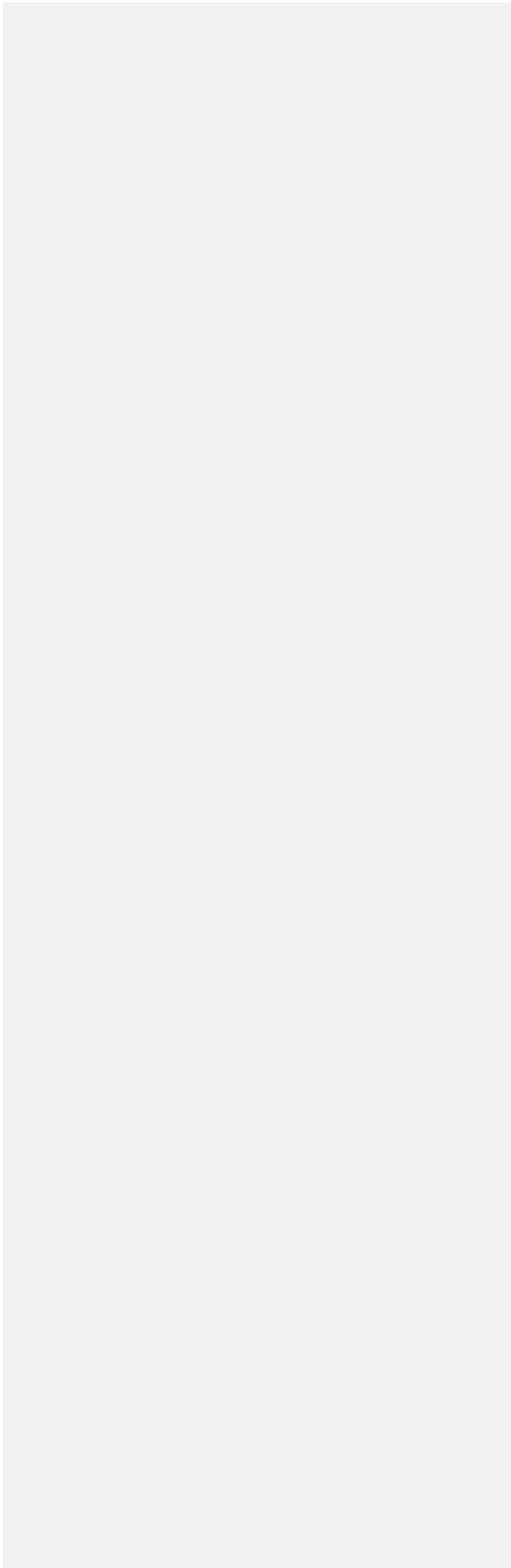
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Radioactive Materials Program Procedure 3.2, Revision 0

Incident Response

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PURPOSE

1.1 Applicability

- 1.1.1 This applies to all Vermont Department of Health (Department), Radioactive Materials Program (RMP) staff responding to an incident involving real or suspected radioactive materials. This procedure does not apply to a known or suspected terrorist incident. If terrorism is known or possible, contact the Local Law Enforcement Agency and Vermont Emergency Management at 800-347-0488 immediately. If the need for criminal investigatory capacity is required, contact the Local Law Enforcement Agency (LLEA) and/or the Vermont State Police and/or the U.S. Federal Bureau of Investigation (FBI), as appropriate.
- 1.1.2 This addresses preparation for responding to a radiological incident and an abnormal occurrence (AO) which is any unscheduled incident or event which the NRC/Department determines to be significant from the standpoint of public health and safety.
- 1.1.3 This procedure describes radiation detection instruments and other equipment potentially required for response to a radiological incident, safety precautions for RMP staff and other responders during a response effort and options for identifying unknown radioactive material in the field and laboratory.
- 1.1.4 This procedure establishes guidelines for voluntary reports on lost and stolen events of any type of radioactive material, as well as situations that cannot be specifically tied to a reporting requirement (such as “found” sources that were not reported as lost, materials contaminated with radioactive material, and landfill alarm trips).
- 1.1.5 This procedure establishes notification requirements to other federal (including NRC), state, and local agencies as well as event notification through the Nuclear Materials Events Database (NMED) and notification of a possible generic problem to other affected licensees, etc.

Commented [IW1]: NRC Comment 70

1.2 References

- 1.2.1 Vermont Radioactive Materials Rule.
- 1.2.2 NRC Procedure, SA-300, “Reporting Material Events,”

1.3 Files

- 1.3.1 Incident Reports developed for the particular incident or event.

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- 1.3.2 Incident File which contains all correspondence relevant to the incident or event.

1.4 Definitions

- 1.4.1 Abnormal Occurrence (AO): An accident or event will be considered an abnormal occurrence if it involves a major reduction in the degree of protection of public health or safety. This type of incident or event would have a moderate or more severe impact on public health or safety and could include, but need not be limited to, the following: (1) moderate exposure to, or release of, radioactive material; (2) major degradation of essential safety-related equipment; or (3) major deficiencies in design, construction, or use of management controls for facilities or radioactive material. A further description may be found in NUREG 0900 Annual Report to Congress on Abnormal Occurrences, Appendix A Abnormal Occurrence Criteria and Guidelines for Other Events of Interest.

Commented [IW3]: NRC Comment 79

- 1.4.2 Agency: The Radioactive Materials Program (RMP) of the Vermont Department of Health (Department).

- 1.4.3 Apparent Violation: A potential noncompliance with a regulatory requirement that has not yet been formally cited as a violation or order.

- 1.4.4 Deviation: A licensee's failure to satisfy a non-legally binding commitment (e.g. failure to tie-down a commitment during licensing and the licensee has not implemented that commitment.)

- 1.4.5 Escalated Enforcement Action: A Notice of Violation for any Severity Level I, II, or III violation(s), or a civil penalty, or order based on a violation. Violations with willful aspects will typically be considered for escalated enforcement.

- 1.4.6 Incident: An event in which a medical error has occurred; perceived concerns arising from a licensee's response to a generic letter or bulletin; or the loss of control of radioactive material that is causing, or has high potential to cause, a significant health and safety risk to members of the public. Refers to an event that may have caused, or threatens to cause, conditions described in Appendix A of SA-300 "Reporting Materials Events." Examples are included in Attachment 3.2-4 within which notification requirements to the NRC/Department are also shown. The notification examples are applicable for notification to the Department and subsequent NRC notification from the Department.

Commented [IW4]: NRC Comment 73

- 1.4.7 Immediate Notification: For this procedure, notification is required to be made to the Department by the licensee or its representative (Radiation

Safety Officer) after the licensee identifies the event. Notification is required to be within 4 hours or less of the identification that an incident has occurred.

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1.4.8 Noncompliance: A violation or deviation.

1.4.9 Notice of Violation (NOV): A formal written notice that sets forth one or more apparent violations of a legally binding requirement, following an inspection. An NOV formally documents violations and is typically the only enforcement action taken unless the criteria for escalated enforcement are met.

Commented [IW6]: NRC Comment 75

1.4.10 Observation: A fact or any detail noted during an inspection.

1.4.11 Potentially Generic Issue: An inspection finding that may have implications for other licensees, certificate holders, or vendors whose facilities or activities are of the same or similar manufacture or style.

1.4.12 Severity Level: Categorization of violations of license requirements based on the seriousness of the violation. One of four levels of severity is assigned to a violation, ranging from Severity Level I, signifying the most significant, to Severity Level IV, the least.

1.4.13 Significant Event: An event identified as having generic concerns or issues with a significant potential to impact public health and safety and/or the environment, requiring immediate (within 4 hours) or 24-hour reporting requirements.

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1.4.14 Regulatory Commitment: An explicit statement to take a specific action, agreed to or volunteered by a licensee, where the statement has been submitted in writing to the Department.

1.4.15 Requirement: A legally binding obligation such as a statute, regulation, license condition, or order.

1.4.16 Violation: The failure to comply with a legally binding regulatory requirement such as a statute, regulation, order, or license condition.

1.4.17 Willfulness: There are two types of willfulness discussed:

a. Deliberate Misconduct: An intentional act or omission that the person knows, (1) would cause a violation of any rule, regulation, or order; or any term, condition, or limitation, of any license issued by the Department; or (2) constitutes a violation or requirement, procedure, instruction, contract, purchase order, or policy of a licensee, applicant, contractor, or subcontractor.

b. Careless Disregard: This refers to situations in which an individual acts with reckless indifference to at least one of three things: (1) the existence of a requirement, (2) the meaning of a requirement, or (3) the applicability of a requirement. Careless disregard occurs when an individual is unsure of the existence of a requirement, the meaning of a requirement, or the applicability of the requirement to the situation, but nevertheless proceeds to engage in conduct that the individual knows may cause a violation. Although aware that the action might cause a violation, the individual proceeds without ascertaining whether a violation would occur.

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2.0 RESPONSIBILITIES

2.1 Radiological Health Specialist

- 2.1.1 Informs the Radioactive Material Program Manager (RMPM) of all radioactive material incidents.
- 2.1.2 Assumes the lead role in immediate response as required to incidents involving radioactive materials and coordinates with the RMPM or the Radiation Control Program Director (RCPD).
- 2.1.3 Immediately responds to incidents involving radioactive materials, as directed by the RMPM or designee.
- 2.1.5 Assists the RMPM or designee with incident response and documentation, including report preparation, as needed.

2.2 Radioactive Materials Program Manager (RMPM)

- 2.2.1 Notifies the RCPD of radiological incidents.
- 2.2.2 Assigns staff to respond to incidents involving radioactive materials.
- 2.2.3 Coordinates immediate response effort during normal working hours.
- 2.2.4 In coordination with the RCPD and legal counsel, makes decisions to impound radioactive materials found in the public domain.
- 2.2.5 Advises the RCPD whether legal assistance is required.
- 2.2.6 Ensures that notifications are made of reportable events and required reports as indicated in Attachment 3.2-4, and SA-300 "Reporting Materials Events" for immediate and 5 to 60-day event reporting requirements.

- 2.2.7 Has the responsibility to ensure that written documentation of reportable incidents is completed and for assuring the quality of the reports to the Nuclear Material Events Database (NMED) within the appropriate time period as required by the incident. Abnormal occurrences should be managed in accordance with NRC's Management Directive 8.1 "Abnormal Occurrence Reporting Procedure."
- 2.2.8 If necessary and in consultation with the RCPD, request federal assistance from the NRC Headquarters Operations Officer (HOO) at (301) 816-5100.

2.3 Radiation Control Program Director

- 2.3.1 Final authority, if needed, for radiological incident response activities (conflict resolution).
- 2.3.2 Requests legal assistance, if required.
- 2.3.3 Coordinates immediate response effort outside normal working hours.

3.0 PROCEDURE

3.1 Incident Type and Classification

- 3.1.1 **Transportation Incident:** An incident which occurs in association with any activity involving the movement of radioactive materials by a motorized conveyance on roadways, to include trucks, planes, automobiles, etc. This does not include movement of materials at a facility by forklift, hand-truck, or other transfer method. Such an incident would be considered as a fixed facility incident.
- 3.1.2 **Fixed Facility Incident:** An incident which occurs in association with any activity involving radioactive materials at a fixed location. This would include temporary work sites (soil testing and non-destructive testing of welds), manufacturing sites (thickness gauges etc.), or any other location which does not involve the movement of radioactive materials by a motorized conveyance on roadways as indicated above.
- 3.1.3 **Terrorism Incident:** An incident which occurs in association with any deliberate act of sabotage or destruction which includes the use of radioactive materials. This type of incident may include transportation or fixed facility, but due to the initiating event, will require coordination of response actions to ensure crime scene issues are considered.
- 3.1.4 **Incident Classification: Level I -** an incident in which no release of radioactive material has occurred. This is determined by visual assessment of the incident scene. If there is not a high confidence level by the

response personnel in declaring a Level I incident, it should default to a Level II incident.

3.1.5 Incident Classification: Level II - an incident in which there may be a release of radioactive materials. This is determined by visual assessment of the incident scene. Level II would be declared when there is reasonable doubt of the integrity of the containment of the radioactive materials (package shows significant damage, but there is no visible sign of material release).

3.1.6 Incident Classification: Level III - an incident in which there is a release of radioactive materials. This is determined by visual assessment of the incident scene. There must be a high level of confidence by the response personnel before declaring a Level III incident.

3.2 Initial Notification

When the Department is notified that an incident has occurred, Radioactive Materials Program staff shall obtain as much information as possible in order to determine the level of response required. If upon receipt of the radioactive materials incident and the Department determines that the incident is a major emergency, the Department will contact the applicable agencies listed in Attachment 3.2-4 for assistance. Not all incidents will require an immediate response, by obtaining as much information as possible, and with the guidance in Appendix A of SA-300 "Reporting Materials Events," the need for Department response can be ascertained. In the event that multiple simultaneous incidents are being reported, the RCPD or designee will coordinate the response activities to ensure the incidents are properly categorized and prioritized.

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Incidents may be received in a number of ways, in-person, phone, email, fax, letter, news media, and/or internet social media. Incidents are screened by RMP staff, initially to determine the level of response required. RMP personnel should use this section as guidance when responding to byproduct, source, or special nuclear material incidents. Radiological material incidents should be recorded on Attachment 3.2-1 **Radiological Incident Notification Form** and the incident reported to the Department and NRC in accordance with Attachment 3.2-4 **Procedure for Reporting Events**. For major radiological emergencies, the Department should coordinate with other state agencies, the NRC (24-hour Headquarters Operations Center Officer at (301) 816-5100), the Radiation Emergency Assistance Center/Training Site, REAC/TS, at (865) 576-1005, and EPA Region 1 at (800) 424-8802.

Commented [IW10]: NRC Comments 81 and 85

The below procedures should be performed for events classified as Significant Events; events identified as having generic concerns or issues with a significant potential to impact public health and safety and/or the environment, requiring immediate (within 4 hours) or 24-hour reporting as specified in SA-300 Appendix A. For example:

- (1) Multiple occurrences of an event tracked as a performance measure (medical events, overexposures, lost or stolen sources of concern);

- (2) A single occurrence of an event tracked as a strategic goal (deaths, loss of organ function, significant releases to the environment);
- (3) Events involving possible generic concerns or issues (equipment malfunctions, equipment failure, inadequate user procedures, software problems); or
- (4) Consequences or casual factors not previously seen in the event assessment.

3.2.1 Obtain as much of the following information as possible:

- Caller's name, if by phone, affiliation, and location.
- Phone number where the informer may be reached.
- On-scene contact person and phone number.
- Location of the incident.
- Overall description of the incident, including any injuries.
- Indications that radioactive material is involved.
- Description of the radioactive material, including packaging.
- Any writing or inscriptions on the materials.
- Availability of a shipping manifest (transportation incident).
- Indications of a possible spread of contamination from meter readings, broken source housing, leaking packaging, etc.
- Other agencies or personnel involved.

3.2.2 For incidents involving quantities of Category 1 and Category 2 radioactive materials, make the required notifications in accordance with the provisions of 10 CFR 37.57.

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3.2.3 Inform the RMPM and RCPD of the incident at (802) 865-7743. If the RMPM or RCPD is unavailable, notify any other RMP staff. If no response is obtained at this point, contact the Health Department emergency line for assistance at (802) 863-7483, which can be reached 24 hours per day, 7 days per week.

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Criteria for determining the level of response required follows the reporting requirements listed in SA-300, based on the relative risk to public health and safety. The primary responsibility for dealing with an incident remains with the licensee. However, the Department may give advisory support and may assist the licensees in diagnosing the situation and determining potential courses of action.

Factors that should be considered include:

- Potential to escalate.
- Location of incident.
- Potential for exposure or contamination.

- Media interest.
- Type of release.
- Involvement of other responders.
- Request for specific type of assistance.

3.2.4 Upon receipt of a notification of an incident, advise the notifier on proper measures to limit exposure and minimize the spread of contamination.

3.2.5 Keep the public informed through the Health Department Communication Office. Attachment 3.2-2 **Radiological Incident Response Question and Answer Sheet** may be helpful, particularly on the Health Department's website. Relative to communications with the public, consider the following factors:

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- Extent of public risk and perception of the risk.
- Extent of media interest.
- Confidence in validity of information reported to the Department.
- Reassessment of the measures that have been taken (e.g., health physics and medical services that have been made available to the public).
- Coordination of information among the NRC, federal agencies, and state and local agencies. Ensure that other federal agencies are informed of any information to be released to the media or the public.
- Assurance of correctness of information provided to the news media and public.

3.2.6 Examples of reportable events from SA-300 are included in Attachment 3.2-5.

3.2.7 The notifications to be made to NRC are contained in Attachment 3.2-6.

3.3 On Scene Response

3.3.1 When possible, a minimum of two people should provide immediate response to a radiological incident.

3.3.2 The following equipment should be obtained and transported to the incident scene for immediate response:

- Appropriate survey instrumentation,
- An instrument capable of field identification of unknown isotopes.
- Personally assigned dosimetry,
- Cellular phone.
- Other instruments and supplies, as necessary.

3.3.2 Site approach for immediate response team:

- Approach the incident site/material from upwind.
- Turn on exposure rate instrument before approaching the incident site.
- Obtain current information from on scene personnel.
- Coordinate response efforts prior to approaching the material.
- Ask for a shipping manifest if applicable.
- If there is the potential for contamination, wear plastic booties and gloves.
- Establish a 2 mR/hr exclusion zone around the material if not already done.
 - For worse incidents, like a radiological dispersal device or a nuclear detonation, a 10 mR/hr or 10 R/hr exclusion zone may be appropriate.
 - Consult the Department of Health Radiological and Nuclear Emergency Plan for guidance.
 - Determine who may enter the exclusion zone and under what conditions.

3.3.3 Document the following, as it occurs:

- Date and time of all major activities related to the incident.
- Model and serial numbers of all instruments used.
- Calibration date of all instruments used.
- Names of responders.
- A physical description of the incident site.
- Location or orientation of any materials.
- Background radiation levels.
- Survey results.
- Amount of material present.
- Any markings or inscriptions associated with the material.
- Disposition of the material.
- Names, phone numbers, and addresses of all individuals involved, for follow-up when performed.

3.3.4 Determine if material needs packaging. If the material must be bagged, double bag the material. Survey the outer surfaces of any packaging for contamination prior to transport and take appropriate precautions should external contamination be measured.

3.3.5 After the material has been safely packaged or ensured to be in safe condition, do the following:

- Determine best location for temporary storage.

- Ensure that decontamination issues are addressed.
- Initiate attempt to locate owner of material.
- Contact the RMPM and RCPD (primary) or designee (secondary) for direction and authorization for management of the material (see Attachment 3.2-3 **Impoundment Guidelines**.)
- Notify the 24-hour Department phone line at 802-863-5483, if appropriate.
- If no owner can be found, notify the RMPM and RCPD and inquire whether or not to impound the item. Disposal options will be investigated at this time.

3.3.6 Materials being transported for analysis or storage must be packaged to meet Department of Transportation (DOT) requirements.

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3.4 Report

3.4.1 The Radiological Health Specialist assigned to the incident shall prepare a report within 15 days documenting all information gathered, the disposition of the material, and a list of all the parties involved. The report is required for all incident response, including phone consultation for reportable incidents.

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3.4.2 Provide a copy of the report to the RMPM and RCPD.

3.4.3 The RMPM shall assure the quality and completeness of the report and ensure that a copy of the report, analysis results, and all notes and related paperwork are properly filed in accordance with SA-300. This report and any subsequent follow-up reports should be utilized to forward data to NMED and to the NRC in accordance with SA-300 "Reporting of Material Events" as well as any other federal, state, or local agency, as necessary.

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3.4.4 Input incident data to the local NMED and forward event reports to the NRC, as necessary. For more information on reporting events, see Attachment 3.2-4 **Procedure for Reporting Events**.

3.5 Follow-up

3.5.1 In consultation with RMPM and RCPD, determine if any whole-body counts, bioassays, or personnel dose determinations are warranted, and if medical assistance is required or referral to Oak Ridge Radiation Emergency Assistance Center (REAC/TS) for analysis is necessary. See NRC Inspection Manual Chapter 1360 "Use of Physicians and Scientific Consultants in the Medical Consultant Program" for guidance.

- 3.5.2 In consultation with RMPM, determine if training or information for any individuals involved in the incident is warranted.
- 3.5.3 In consultation with the RMPM, determine the need for a follow-up inspection and/or any enforcement actions against the licensee. This incident should be addressed during the next routine inspection. If it is determined that enforcement actions are required, refer to RMPP 2.5 *Enforcement, Escalated Enforcement, and Administrative Actions*.
- 3.5.4 Ensure a copy of the incident report is in the licensee file and make notifications to the appropriate RMP staff, as necessary.
- 3.5.5 Make notifications to appropriate federal and state agencies specified in section 5.0, including the NRC and NMED within the appropriate time period of any new information and status of event including final close of the event.
- 3.5.6 In consultation with RMPM, determine need to notify other licensees of problem if known or possible general fault that could affect those licensees.

4.0 **RECORDS**

- 4.1 Records include completed attachments from this procedure, other documents related to incidents and NMED-related documents.
- 4.2 Efforts will be made to maintain records primarily in an electronic form. Those that are paper will be scanned electronically, and may be kept as paper or recycled after determination as to what is best for the particular record and its form for regulatory purposes.

5.0 **COMMUNICATING EVENTS TO THE APPROPRIATE STATE AND FEDERAL AGENCIES**

- 5.1 Events and allegations may be reported to the Vermont Radioactive Materials Program at 108 Cherry Street, Suite 201 P.O. Box 70, Burlington. VT 05402-0070, **(802) 863-7200**
- 5.2 Vermont Radiation Control Program Director: William Irwin, 108 Cherry Street, Suite 201 P.O. Box 70, Burlington, VT 05402-0070 **(802) 863-7238**
- 5.3 Vermont Hazardous Material Response Team **(800) 641-5005**.
- 5.4 U.S. NRC Region 1, 2100 Renaissance Blvd., Suite 100, King of Prussia, PA 19406-2713 **(610) 337-5000**.

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5.5 NRC Headquarters Operation Officer (HOO) **(301) 816-5000**.

5.6 U.S. EPA (617) 918-1111 or in the New England States **(888) 372-7341**.

5.7 Oak Ridge Institute for Science and Education, Radiation Emergency Assistance Center/Training Site (ORISE REAC/TS) **(865) 576-1005**.

6.0 ATTACHMENTS TO RMPP 3.2

Attachment 3.2-1 Radiological Incident Notification Form

Attachment 3.2-2 Radiological Incident Response Question & Answer Sheet

Attachment 3.2-3 Impoundment Guidelines

Attachment 3.2-4 Procedure for Reporting Events

Attachment 3.2-5 Examples of Reportable Events

Attachment 3.2-6 Event Reporting Schedule