

ATTACHMENT 3.2-4 TO RMPP 3.2

PROCEDURE FOR REPORTING EVENTS

This is a procedure for determining if an event is reportable and steps need to be taken.

Note: Provide clear reference to documents on file that were used to generate the event report.

Vermont Hazardous Materials Response Team (VHMRT): (800) 641-5005
Vermont Department of Health (Department): (800) 439-8550
Health Department Fax: (802) 865-7745
Local Law Enforcement: 911

If yes is the answer to any of the following questions, then the appropriate contacts listed on the following pages should be notified in accordance with the schedule described on the following pages.

- Does the release present either an acute or chronic radiation exposure to humans?
- Does the exposure include, but is not limited to, inhalation, skin absorption, and ingestion?
- Does the release involve a fire or explosion potential?

Potential causes of fires/explosions are chemical reactions, ignition of flammable or explosive chemicals or vapors, ignition of materials due to oxygen enrichment, agitation of shock- or friction-sensitive compounds, and sudden releases of radioactive materials under pressure.

- Does the release of the product involve radiation exposure to the public or contamination of the environment?
- Does the release involve the loss, recovery, or theft of radioactive material?

Commented [SM1]: Not sure what these questions determine—even if the answer is yes, the timing (immediate, 24-hr, 5 day, etc.) of the reporting is still determined by the criteria on the following pages, right?

Or is this list of questions just for determining immediate reporting? If so, delete my proposed track changes and clarify that these questions are for immediate only.

Commented [SM2]: Contacts are also listed above, and otherwise only appear on the next page. Please revise to accurately describe where contacts are listed.

Fire/Police/Sheriff Department: 911
Vermont Department of Health: (800) 439-8550
Health Department Fax: (802) 865-7745

IMMEDIATE (WITHIN 4 HOURS OR LESS) NOTIFICATION FOR ANY OF THE FOLLOWING:

Reports of removable contamination on package > limits in 10 CFR 71.87 (See Table 9, 49 CFR 173.443). 10 CFR 20.1906(d)(1);

Radiation levels on package > limits in 10 CFR 71.47, 10 CFR 20.1906(d)(2);

Reports of lost, stolen, or missing licensed material ≥ 1000 ~~times~~ Appendix C to 10 CFR Part 20 value under such circumstances that it appears to the licensee that an exposure could result to persons in unrestricted areas 10 CFR 20.2201(a)(i).

Exposure (real or threatened) \geq TEDE of 25 rem (0.25 Sv), or lens dose equivalent \geq 75 rem (0.75 Sv), or shallow dose equiv. (skin/extremities) \geq 250 rads (2.5 Gy). 10 CFR 20.2202(a)(1).

Release where individual could have intake ≥ 5 ~~times~~ ALL the annual limit on intake (ALI) over 24 hours. 10 CFR 20.2202(a)(2).

Byproduct material: Events involving prevention of immediate protective actions, necessary to avoid exposures to radiation, radioactive materials, or releases of radioactive material that could exceed regulatory limits. 10 CFR 30.50(a-) (byproduct material), 10 CFR 40.60(a) (source material), 10 CFR 70.50(a) (special nuclear material).

Well logging: Well logging source rupture. 10 CFR 39.77(a).

Theft or loss of radioactive materials, radiation overexposures, or excessive levels and concentrations of radioactive material radiation. 10 CFR 39.77(b).

Source Material: Events involving immediate protective actions; unplanned contamination in accessible areas; disabled or malfunctioning equipment; unplanned medical treatments; and unplanned fires or explosions. 10 CFR 40.60(a). (Note: Same as 10 CFR 30.50 above, except that this is reporting that is required concerning source materials.) 10 CFR 40.60(a).

Special nuclear material: Events involving immediate protective actions necessary to avoid exposures to radiation or radioactive materials that could exceed regulatory limits or releases of licensed material that could exceed regulatory limits; unplanned contamination in accessible areas; disabled or malfunctioning equipment; unplanned medical treatments; and unplanned fires or explosions. Essentially the same as 10 CFR 30.50 and 40.60 except that this is required for

Commented [SM3]: Spell out on first use.

Commented [SJ4]: Suggested revisions to clarify which the material at issue as well as make this section less repetitive.

Commented [SJ5]: This needs to be deleted because it tracks 40.60(b) which is for events to be reported within 24 hours.

Commented [SJ6]: This needs to be deleted because it tracks 70.50(b) which is for events to be reported within 24 hours.

~~special nuclear material (SNM) and there are some small variations in reporting details following Paragraph (c). See 10 CFR 70.4, "Definitions" for a definition of SNM. 10 CFR 70.50(a).~~

~~Events involving failure of 10 CFR 71.5 provides that~~ licensees ~~shall to~~ comply with the applicable requirements of the Department of Transportation regulations in 49 CFR. 10 CFR 71.5.

~~49 CFR 171.15(b)(1) (Events involving hazardous materials, including radioactive materials per 49 U.S.C. 5103(a) requires the immediate hazardous reporting of incidents involving hazardous materials (which include radioactive materials) that result in an individual's death, injury requiring hospitalization, evacuation of the general public for at least one hour, the operational flight pattern or routine of an aircraft is altered, and or the closure of one or more major transportation facility or roadway artery for at least one hour. 49 CFR 171.15 (b)(1) and (2).~~

49 CFR 171.15(b)(2) requires the immediate reporting of fire, breakage, spillage, or suspected radioactive contamination that occurs involving the shipment of radioactive material.

10 CFR 37.57 requires immediate notification to the ~~Department and~~ Local Law Enforcement Agency (LLEA) after determining that an unauthorized entry resulted in an actual or attempted theft, sabotage, or diversion of a category 1 or category 2 quantity of radioactive material (see Appendix A to Part 37—Category 1 and Category 2 Radioactive Materials). As soon as possible after initiating a response, but not at the expense of causing delay or interfering with the LLEA response to the event, the licensee shall notify the Department at (800) 439-8550 and VHMRT at (800) 641-5005. In no case shall the notification to the Department be later than 4 hours after the discovery of any attempted or actual theft, sabotage, or diversion.

10 CFR 37.57 requires the licensee to assess any suspicious activity related to possible theft, sabotage, or diversion of category 1 or category 2 quantities of radioactive material and to notify the LLEA as appropriate. As soon as possible, but not later than 4 hours after notifying the LLEA, the licensee shall notify the Department at (800) 439-8550 and VHMRT at (800) 641-5005.

Notify the NRC's Operations Center at (301) 816-5100 if the results from an FBI identification and criminal history records check indicate that an individual is identified on the FBI's Terrorist Screening Database.

24 HOUR EVENT REPORTING

~~Reports of lost, stolen, or missing licensed material > 10 Xtimes Appendix C to 10 CFR Part 20 value and is still missing at this time (i.e., within 30 days it becomes known to the licensee). 10 CFR 20.2201(a)(1)(ii).~~

Commented [MS7]: VT should avoid statements comparing different Parts of 10 CFR. This occurs in several places in reference to §§ 30.50, 40.60, and 70.50. I recommend deleting.

Commented [MS8]: This should be framed as an events that require reporting, not a summary of regulations, as shown. Otherwise, it isn't clear why this regulation is listed. But, if the edits are not what VT intended to convey (immediate reporting for any failure to comply w/ 49 CFR), please revise.

Commented [MS9]: Already stated in first parenthetical.

Commented [MS10]: Nothing in this paragraph is in (b)(2).

Formatted: Space After: 8 pt, Line spacing: Multiple 1.08 li, Adjust space between Latin and Asian text, Adjust space between Asian text and numbers, Tab stops: 1", List tab

Formatted: Space After: 8 pt, Line spacing: Multiple 1.08 li, Adjust space between Latin and Asian text, Adjust space between Asian text and numbers, Tab stops: 1", List tab

Commented [MS11]: This entire paragraph doesn't seem to belong here—it's citing the regulation for 30 days, so doesn't fit in the 24-hour event reporting. Recommend deleting.

Release where, had an individual been present for 24 hours, individual could have intake > 1 times ~~X~~ occupational ALI over 24 hours. 10 CFR 20.2202(b)(2).

Commented [MS12]: Edited to track the regulation.

Commented [MS13]: (b)(2) references *occupational* ALI, whereas (a)(2) (immediate reporting) references ALI.

Events involving unplanned contamination that: (i) requires access to the contaminated area, by workers or the public, to be restricted for more than 24 hours by imposing additional radiological controls or by prohibiting entry into the area; (ii) involves a quantity of material greater than five times the lowest annual limit on intake specified in Appendix B of 10 CFR part 20 for the material; and (iii) has access to the area restricted for a reason other than to allow isotopes with a half-life of less than 24 hours to decay prior to decontamination. 10 CFR 30.50(b)(1) (byproduct material), 10 CFR 40.60(b)(1) (source material), 10 CFR 70.50(b)(1) (special nuclear material).

Events in which equipment is disabled or fails to function as designed when: (i) the equipment is required by regulation or license condition to prevent releases exceeding regulatory limits, to prevent exposures to radiation and radioactive materials exceeding regulatory limits, or to mitigate the consequences of an accident; (ii) the equipment is required to be available and operable when it is disabled or fails to function; and (iii) no redundant equipment is available and operable to perform the required safety function. 10 CFR 30.50(b)(2) (byproduct material), 10 CFR 40.60(b)(2) (source material), 10 CFR 70.50(b)(2) (special nuclear material).

Events requiring unplanned medical treatment at a medical facility of an individual with spreadable radioactive contamination on the individual's clothing or body. 10 CFR 30.50(b)(3) (byproduct material), 10 CFR 40.60(b)(3) (source material), 10 CFR 70.50(b)(3) (special nuclear material).

Events involving unplanned fire or explosion affecting integrity of material, device or container, or equipment containing licensed material when the quantity of material involved is greater than five times the lowest annual limit on intake specified in Appendix B of 10 CFR Part 20 for that material, and the damage affects the integrity of the licensed material or its container. 10 CFR 30.50(b)(4) (byproduct material), 10 CFR 40.60(b)(4) (source material), 10 CFR 70.50(b)(4) (special nuclear material).

Commented [SJ14]: There were multiple issues in the references to these reporting requirements. For example, as originally written the section:

- Did not properly track the language in the cited regulation .
- Did not include all necessary language from 30.50(b)(4)(ii).
- Misstated that events involving immediate protective actions are reportable within 24 hours when those events are immediately reportable.

Suggested revisions to fix these errors, signal which regulations apply to the type of material, and make the section less repetitive.

~~Events involving unplanned contamination 10 CFR 30.50(b)(1), see items (i) - (iii) for other conditions that apply.~~

~~Events in which equipment is disabled or fails to function as designed. 10 CFR 30.50(b)(2), see items (i) - (iii) for other conditions that apply.~~

~~Events requiring unplanned medical treatment at a medical facility of an individual with spreadable radioactive contamination on the individual's clothing or body involving unplanned medical treatment of a contaminated person. 10 CFR 30.50(b)(3).~~

~~Events involving unplanned fire, or explosion affecting integrity of material, device or container, or equipment containing licensed material. 10 CFR 30.50(b)(4) when the quantity of material involved is greater than five times the lowest annual limit on intake specified in Appendix B of 10 CFR 20. 10 CFR 30.50(b)(4).~~

Formatted: Space After: 8 pt

The following events involving irradiators are reportable under 10 CFR 36.83 if not reported under other Department reporting requirements: source stuck in an unshielded position, sources, any fire or explosion in a radiation room, fire/explosions, damage to source racks, failure of the cable or drive mechanism used to move the source rack, cable or drive mechanism failure, inoperability of the access control system, access control system failure, detection of source by the product exit monitor, detection of radioactive contamination attributable to licensed radioactive material, contamination from licensed material, etc. (See 10 CFR 36.83 (a)(1) through (10)) for specific descriptions of reportable events.

Events involving immediate protective actions; unplanned contamination in accessible areas, disabled or malfunctioning equipment, unplanned medical treatments, and unplanned fires or explosions. (Note: Same as 10 CFR 30.50 above, except that this is reporting that is required concerning source materials.) 10 CFR 40.60(b)(1)-(4)

Events involving immediate protective actions; unplanned contamination in accessible areas, disabled or malfunctioning equipment, unplanned medical treatments, and unplanned fires or explosions. Essentially the same as 10 CFR 30.50 and 40.60 except that this is for special nuclear material (SNM) and there are some small variations in reporting details following Paragraph (c). See 10 CFR 70.4, "Definitions" for a definition of SNM. 10 CFR 70.50(b)(1)-(4).

Notify the Department (800) 439-8550 if the results from an FBI identification and criminal history records check indicate that an individual is identified on the FBI's Terrorist Screening Database.

NEXT CALENDAR DAY REPORTING

Notifications and reports of medical events involving administration and use of byproduct materials, except for patient intervention events, that result in certain doses as stated: 10 CFR 35.3045.

Events involving an unauthorized dose of 50 mSv (5 rem) to an embryo/fetus or a nursing child, or an unintended permanent functional damage to an organ or a physiological system of the nursing child. 10 CFR 35.3046.

5 DAY REPORTING

Reporting of leaking sealed source or guide tubes, leak test results ≥ 0.005 microcurie (185 Bq). 10 CFR 34.27(d).

Reports of leak test results that demonstrate the presence of 185 becquerel (0.005 microcurie) or more of removable contamination from a sealed source. 10 CFR 35.3067 (medical uses) and 10 CFR 39.35 (well logging) (See remaining paragraphs of 10 CFR 35.3067 and 39.35 for other conditions, including exemptions that apply).

Commented [SJ15]: Edited to track language of 36.86, otherwise the shorthand was so vague as to be unclear (e.g., what did VT mean when it listed "stuck sources"?)

Commented [SJ16]: Under 40.60(a), events involving immediate protective actions must be reported immediately (i.e. not later than 4 hours after discovery) not within 24 hours. See revisions above.

Commented [SJ17]: This needs to be deleted, events involving immediate protective actions is immediately reportable not reportable within 24 hours. See revisions above.

Commented [MS18]: This sounds like all medical events involving administration of byproduct, but the regulations limit it to those that result in certain doses. See proposed edit.

Commented [MS19]: Corrected regulation.

Commented [SJ20]: Edited to track description in NUREG-1556 Vol. 2, page 8-48.

~~Reports of leak test results (of sources leak tested at intervals not greater than every 6 months) when the presence of 185 becquerel (0.005 microcurie) or more of contamination is detected. (See remaining paragraphs of 10 CFR 39.35 for other conditions, including exemptions, that apply). 10 CFR 39.35(d)(2)~~

Commented [SJ21]: Suggested revisions for clarity and conciseness.

30 DAY REPORTING

Reports of lost, stolen, or missing licensed material > 10 ~~times~~^X Appendix C to 10 CFR Part 20 value and is still missing at this time (i.e., within 30 days it becomes known to the licensee). 10 CFR 20.2201(a)(1)(ii)

Radiation doses, releases, or concentrations of radioactive material that exceed the limits of 10 CFR 20. See 10 CFR 20.2203(a) for a list of reportable events.

Immediately suspend operation of a device if there is a failure of or damage to the shielding or an indication of a failure of or damage to the shielding, or the on-off mechanism or indicator, or upon detection of 185 becquerel (0.005 microcurie) or more of removable radioactive material and submit a written report within 30 days. 10 CFR 31.5(c)(5). (See 10 CFR 30.50(c)(5) for other conditions and restrictions that apply.)

Radiography source disconnection, inability to retract source, or component failure (critical to safe operation of device.) (See 10 CFR 30.50 requirements and other sections of the regulations.) 10 CFR 34.101(a).

Commented [SJ22]: Please specify other sections.

After notification and classification that a well logging source is irretrievable, a report shall be made to the Department. 10 CFR 39.77(c), (d).

Commented [MS23]: Should § 39.77(a) be included, requiring 30 day notice for sealed source rupture?