

UNITED STATES
NUCLEAR REGULATORY COMMISSION
OFFICE OF FEDERAL AND STATE MATERIALS
AND ENVIRONMENTAL MANAGEMENT PROGRAMS
OFFICE OF NUCLEAR MATERIAL SAFETY AND SAFEGUARDS
WASHINGTON, DC 20555

May 9, 2008

**NRC REGULATORY ISSUE SUMMARY 2008-12
CONSIDERATIONS FOR EXTENDED INTERIM STORAGE OF
LOW-LEVEL RADIOACTIVE WASTE BY
FUEL CYCLE AND MATERIALS LICENSEES**

ADDRESSEES

All holders of U.S. Nuclear Regulatory Commission (NRC) fuel cycle and materials licenses. All Radiation Control Program Directors and State Liaison Officers.

INTENT

The NRC is issuing this regulatory issue summary (RIS) to inform addressees of considerations related to extended interim storage of low-level radioactive waste by fuel cycle and materials licensees that may be necessary as a result of loss of permanent disposal capacity for some classes of LLRW. Not all of these licensees will need to store LLRW for an extended period. No specific action or written response is required. NRC is providing this RIS to Agreement States for their information and distribution to their licensees as they consider appropriate.

BACKGROUND

This RIS presents considerations related to the extended interim storage of low-level radioactive waste (LLRW). It updates information provided in Information Notice (IN) 90-09 "Extended Interim Storage of Low-Level Radioactive Waste by Fuel Cycle and Materials Licensees," dated February 5, 1990. (Similar information for power reactor licensees is given in Generic Letter 81-38, "Storage of Low-Level Radioactive Wastes at Power Reactor Sites," dated November 10, 1981)

The Low-Level Radioactive Waste Policy Amendments Act of 1985 (LLRWPA) established a series of milestones, penalties, and incentives to ensure that States or regional compacts make adequate progress towards being able to manage their LLRW. Throughout the 1980s and 1990s, the States and compacts worked to implement the requirements of the LLRWPA with limited success. After June 30, 2008, it is likely those LLRW generators and licensees in 36

States, the District of Columbia, the Commonwealth of Puerto Rico, and the U.S. Territories will lose access to the full-service LLRW (Classes A, B, and C LLRW as defined in section 61.55 of 10 CFR Part 61, "Licensing Requirements for Land Disposal of Radioactive Waste") disposal facility in Barnwell, South Carolina. Consequently, many LLRW generators will likely need to store a portion of their LLRW for an indefinite period. This will include Class B and C waste as well as certain Class A waste streams that do not meet the waste acceptance criteria of the LLRW disposal facility in Clive, Utah.¹

Additionally, the events of September 11, 2001, have changed the Nation's safety and security paradigm for the possession and storage of byproduct, source, and special nuclear materials. Guidance for extended LLRW storage needs to be considered in the context of changing regulatory requirements. For instance, additional requirements have been imposed on radioactive materials licensees who are authorized to possess radionuclides of concern in quantities exceeding certain threshold limits (see, e.g., 70 Federal Register 72128 (December 1, 2005) (Order Imposing Increased Controls); 72 Federal Register 70901 (December 13, 2007) (Order imposing Fingerprinting, and Criminal History Record Checks Requirements for Unescorted Access to Certain Radioactive Materials)). Changes in license possession limits necessitated by interim storage of LLRW may result in possession of radionuclides of concern in quantities exceeding these threshold limits. In such cases, additional requirements – like those cited above – may be imposed on licensees.

The staff also prepared recommendations related to storage of all LLRW in SECY-94-198, "Review of Existing Guidance Concerning Extended Storage of Low-Level Radioactive Waste," dated August 1, 1994. To the extent that the recommendations relate to storage of LLRW by materials and fuel cycle licensees, they are reemphasized here.

SUMMARY OF ISSUE

Some licensees may need a license amendment to allow on-site storage of some LLRW for which disposal capacity is not available. Before considering extended storage, licenses are encouraged to implement measures to minimize production of LLRW for which there is no disposal option. If the possession limits specified in a license need to be increased to allow for extended interim storage, or if the terms and conditions of a license otherwise need to be modified, a license amendment or equivalent compliance mechanism will be required. Enclosure 1 to this RIS identifies information that NRC is likely to require in support of such amendment requests. This information may also be useful to other licensees as they assess the adequacy of their storage methods and to potential applicants for a license to construct and/or operate a centralized storage facility.

The following considerations are central to extended storage and are the basis of the information included in Enclosure 1:

¹ Certain other Class A Waste does not include discrete sources of Radium – 226 and other naturally occurring and accelerator produced radioactive material (NARM) which may create the potential for new LLRW streams that would require storage. The EPAAct 2005 specifically preserves pre-existing disposal options for this material.

- Storage is not a substitute for disposal. Other than storage for radioactive decay or other short-term operational considerations, LLRW should be stored only when disposal capacity is unavailable and for no longer than necessary. When feasible, licensees may wish to specify a date by which storage of specific waste streams will end and disposal or alternative disposition (such as processing for radioactive waste volume reduction, or, in the case of sealed sources, return to manufacturer) of the LLRW will take place. As part of their planning efforts, licensees may wish to also identify any stored waste streams (e.g., Class B, C, greater than Class C, unprocessed biological waste) for which no disposition pathway is reasonably foreseen, and be prepared to identify such waste streams to NRC officials upon request.
- Waste should be stored in a form suitable for disposal if there is sufficient assurance that the waste form is ultimately acceptable for disposal and will not require significant reprocessing. Licensees may wish to process and/or package the waste to be stored in a manner consistent with physical stability and radiation protection goals including the consideration to keep exposure as low as reasonably achievable (ALARA). Processing and/or packaging should not preclude or diminish the likelihood of future transportation or alternative disposition pathways for any waste stream in accordance with 10 CFR Part 20, "Standards for Protection Against Radiation," Subpart K, "Waste Disposal." Individual circumstances will determine whether labeling containers of stored LLRW is required in accordance with 10 CFR 20.1904, "Labeling Containers," or exempt in accordance with 10 CFR 20.1905, "Exemptions to Labeling Requirements."
- To ensure the integrity of packaging and maintenance of waste form, stored waste packages should be protected from the elements (e.g., wind and precipitation) and from extremes of temperature and humidity. To the extent that circumstances make it impractical to provide such protection from climate, the licensee may wish to determine how it will maintain package integrity and prevent the release of stored LLRW despite the exposure of stored waste packages to the elements. For example, maintaining a brief assessment of time-dependent deterioration that considers the specific packaging and form of the stored waste and a contingency plan for mitigation of such package deterioration to prevent radioactive release or contamination could constitute sufficient action to maintain package integrity.
- Waste should be stored in an area that permits ready visual (direct or remote) inspection on a routine basis. Licensees may wish to conduct and document such inspections on a quarterly basis (or on an alternative schedule as justifiable by an overall assessment of the inherent safety, stability, and security of the LLRW storage system).
- In addition to existing measures to locate waste during an emergency, the licensee may wish to consider a real-time waste tracking system that allows the location of specific packages or accumulations of packages during emergencies.
- Licensees should evaluate the potential for deterioration of waste packages and determine whether procedures and equipment may be needed to repackage waste. If so, licensees may wish to have them available.
- Decomposition and chemical reaction of incompatible waste materials over time can result in gas generation or other reaction products. Licensees may wish to evaluate

radioactive waste that they are planning to store and take measures to prevent or mitigate the adverse consequences of these reactions. Furthermore, licensees may wish to determine if the need exists for additional ventilation, air filtration, or fire detection/alarm/protection /suppression systems.

In view of the increased quantities and potential changes in chemical compositions of radioactive waste that may now be stored for longer periods of time, licensees are reminded to assess whether new or revised provisions are necessary for their waste facility environmental release and contamination monitoring programs in order to continue to assure, and in some cases demonstrate, compliance.

- Most waste forms and packaging used for extended interim LLRW storage are not likely to represent a significant increment of direct radiation exposure potential to workers. However, licensees may wish to consider their specific waste and storage plans and determine if additional radiation shielding or other actions are warranted to keep radiation exposures ALARA.
- Waste should be stored in a manner that minimizes potential exposure to workers who are required to access it periodically. Licensees may wish to consider possible alternative disposition pathways and times for different waste streams. In some cases, tradeoffs may be justified between package dose rate and ease of accessibility. In such cases, the NRC recommends that licensees prepare an ALARA analysis to justify the tradeoff. Security considerations may also be factors in the analysis.
- Stored waste should be located in a restricted area or managed in accordance with Commission regulations in 10 CFR 20.1801, "Security of Stored Material." This regulation requires licensees to secure, from unauthorized removal or access, licensed materials that are stored in controlled or unrestricted areas. When waste storage areas are unoccupied by authorized personnel, stored waste should be locked inside a facility (the storage area itself, an immobile safe, or a similar secure device with access limited to authorized personnel) as part of a key control system or equivalent system.
- Licensees who received or will receive increased control and related orders addressing fingerprinting and criminal history should follow the requirements of those orders, including specific security, access, and detection requirements. Similarly, licensee programs already established to implement those orders should be reviewed to determine necessary revision/expansions of the program to assure that continued compliance with those orders is carried over to the areas where waste containing radioactive material in quantities of concern will be stored and handled/processed.
- Given the uncertainties regarding disposition alternatives for some LLRW, it may not be practical to establish a specific time limit for retention of LLRW in extended interim storage. However, the NRC recognizes that it is prudent practice to move LLRW from storage to permanent disposal/disposition as quickly as is practicable. Licensees storing LLRW are encouraged to develop and maintain a strategy and timeline for disposition and/or disposal of LLRW in their possession. Different strategies and timelines may be appropriate for waste streams having or requiring different disposition pathways. Waste streams for which the licensee can identify no foreseeable disposition pathway should be specifically acknowledged.

Notwithstanding the absence of a specific time limit for storage, NRC staff will undertake a licensing review of LLRW storage circumstances at the end of each license renewal period for NRC licensees. To facilitate such review, the NRC encourages licensees to periodically reassess the circumstances dictating indefinite interim storage of LLRW, impacts on licensed activities other than LLRW storage, and impacts on nearby unlicensed activities including activities not under licensee control. The assessment should also include a reevaluation of storage technique, technique for opening/inspecting/replacing package, and recalculation of activity of LLRW in extended interim storage.

Licensees are also encouraged to maintain communication with regional compact and/or unaffiliated State and territorial officials (see Enclosure 2) regarding LLRW disposal options and change in disposal availability circumstances.

- To the extent possible, licensees may wish to estimate the total life-cycle financial burden of extended interim LLRW storage (including but not limited to operations and maintenance, inspection and monitoring, and eventual disposition) and provide this estimate to organization decision makers for overall budget consideration.
- Storage of hazardous waste, as specified under the Resource Conservation and Recovery Act, is beyond the scope of this document. Some licensees will need to store LLRW that also contains hazardous wastes. Either the NRC (or Agreement State) and the U.S. Environmental Protection Agency (or Authorized State) regulate these mixed wastes. The considerations for handling waste provided in this RIS apply only to materials (LLRW) being stored in accordance with NRC regulations. It may be prudent or necessary for the licensee to supplement information contained in this RIS with guidance (or requirements) provided by authorities with jurisdiction over the hazardous component of stored waste.

BACKFIT DISCUSSION

This RIS requires no action or written response and the backfit rule (10 CFR 50.109,70.76, 72.62 and 76.76) does not apply. Consequently, the NRC staff did not prepare a backfit analysis.

FEDERAL REGISTER NOTIFICATION

A notice of opportunity for public comment on this RIS was not published in the *Federal Register* because the RIS is informational and does not represent a departure from current regulatory requirements.

CONGRESSIONAL REVIEW ACT

The RIS is not a rule as designed by the Congressional Review Act (5 U.S.C. §§ 801-808) and, therefore, is not subject to the Act.

PAPERWORK REDUCTION ACT STATEMENT

This RIS does not contain information collections and, therefore, is not subject to the requirements of the Paperwork Reduction Act of 1995 (44 U.S.C. 3501, et seq.).

CONTACT

This RIS requires no specific action or written response. If you have any questions about the information in this notice, please contact the technical contact listed below or the appropriate regional office.

Larry W. Camper, Director
Division of Waste Management
and Environmental Protection
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Enclosures:

1. Information that NRC Staff May Require to Authorize Extended Interim Storage of Low-Level Radioactive Waste
2. Regional Compacts, Unaffiliated States and Territories
3. Bibliography
4. List of Recently Issued FSME Generic Communications

INFORMATION THAT NRC STAFF MAY REQUIRE TO AUTHORIZE EXTENDED INTERIM STORAGE OF LOW-LEVEL RADIOACTIVE WASTE

The following identifies the information that the U.S. Nuclear Regulatory Commission (NRC) considers pertinent to any request from a materials or fuel cycle licensee to authorize extended interim storage of low-level radioactive waste (LLRW). Licensees whose LLRW storage circumstances do not dictate the need for license amendment may also find the information useful for a self-audit of the adequacy of their extended interim LLRW storage in conjunction with other licensed operations.

1. Identification of Waste To Be Stored

- a. Any possession limit increases needed for extended interim storage of LLRW. Increases in possession limits to accommodate interim storage of LLRW may result in the imposition of additional requirements, such as the requirements described in the increased controls and fingerprinting orders issued to licensees authorized to possess certain quantities of radionuclides of concern (see, e.g., 70 Federal Register 72128 (December 1, 2005); 72 Federal Register 70901 December 13, 2007)). Licensees should note that, although low specific activity radioactive material inventories pose a low risk, the increased controls requirements were imposed on certain types of licensees, by either license condition or order based on authorized possession limits. Specific activity thresholds were not established for categorical exclusion. However, licensees were permitted to request relief from the increased controls if compliance with any of the requirements was unnecessary in specific circumstances.
- b. The estimated maximum amount of LLRW to be stored, both in terms of volume and activity, by radionuclide. Estimates should be based on licensee operations which generate LLW, any anticipated changes to these practices and best available assessment of external factors which will affect future disposal availability.
- c. Characterization of the LLRW to be stored:
 - 1) volume and activity of waste by class (A, B, C, or greater than Class C per 10 CFR 61.55);
 - 2) physical form of the waste (solid, liquid, or gas);
 - 3) any processing of the waste either in-house or by an external vendor (volume reduction, solidification, or other treatment);
 - 4) additional non-radiological properties of LLRW, if any (e.g., toxic, biologic/pathogenic, corrosive, flammable).
- d. The amount and type of LLRW currently being stored or processed and current disposition pathways (e.g., disposal by broker/processor, decay-in-storage).

- e. Any additional permits or approvals necessary for storage. These may include, for instance, U.S. Environmental Protection Agency hazardous waste permits, state approvals, and local approvals. The licensee may wish to assess the potential impact of such approvals on the future disposition of particular waste streams.

2. Plans for Final Disposition

- a. The volume, activity, and specific waste streams that must be stored because disposal capacity/disposition options do not currently exist for the waste streams.
- b. Disposition timeline and pathway for all waste streams likely to be stored for more than 1 calendar year for any discretionary reason (e.g., operational or business considerations). For waste streams that are likely to be stored for more than 1 calendar year for nondiscretionary reasons (e.g., lack of disposal capacity) dependent on third-party actions, the licensee may wish to provide estimates by or on behalf of the third party of the potential timeline and pathway of disposition. If no such estimate exists, the licensee may provide an acknowledgement of the circumstance.

3. Physical Description of Storage Area or Storage Structure

- a. The location and description or diagram of the LLRW storage area (or storage structure). This may demonstrate where packages will be stored and how packages will be accessible for inspection purposes. The licensee may wish to include the locations of waste processing equipment (if applicable), air sampling stations, effluent filters, and any sources of flammable or explosive material and any sources of material that are mobile or could be rendered mobile (e.g., liquids, gases, sludges, ash, or fine-grained material) if the primary containment was compromised.
- b. The maximum volume of LLRW that can be stored in the proposed waste storage area related to the annual volume of waste generated.
- c. The type of building/structure or enclosure within which the waste will be stored. The licensee may wish to briefly describe the means (if not self-evident) by which waste will be protected from deleterious impacts of both chronic (e.g., precipitation, changes in temperature, humidity) and applicable extreme (hurricanes, tornadoes) climatological conditions. The licensee may wish to identify aspects of the storage area that require periodic maintenance or testing (e.g., mechanical and electrical systems, gaskets, and seals) and the frequency of such maintenance.
- d. General measures to control access to the LLRW storage area and other methods, as applicable, to ensure security of the waste. It is not necessary for licensees that are implementing the increased controls requirements, to submit their increased controls documentation during the licensing process unless requested. The NRC strongly recommends not submitting such information and will rely on NRC inspectors to review this documentation during licensee inspections. However, whenever a licensee believes that this information is needed in order to respond to the increased controls requirements or to respond to an apparent violation, then the document may be submitted, provided it is properly marked in accordance with 10 CFR 2.390, "Public Inspections, Exemptions, Requests for Withholding."

- e. The ventilation system to assure adequate ventilation of an enclosed storage area.
 - f. The fire detection, protection, and suppression system to minimize the likelihood and extent of fire.
 - g. Mitigation of the adverse effects of extremes of temperature and humidity, not climatologically induced or otherwise described according to item 3.c above, on waste and waste containers.
 - h. The vulnerability of the waste to other hazards, both anthropologically induced (e.g., industrial accidents) and, to the extent beyond the scope of item 3.c above, natural (e.g., flooding, earthquakes).
4. Packaging and Container Integrity
- a. The nature of packages or containers to be used for storage of LLRW. Licensees may wish to inform themselves of any hazards the waste may pose to package or container integrity (structural stability, containment of radioactive waste, contribution to shielding, and utility of handling and manipulation), and the projected storage life of the packages or containers.
 - b. The program for periodic inspections of LLRW packages to ensure that they retain their integrity and containment of LLRW.
 - c. The program for the identification and mitigation of damaged, leaking, or deteriorating waste packages or containers. This may include, if applicable, equipment for remote handling and/or repackaging damaged or leaking waste containers.
 - d. Additional, information related to possible problem areas related to waste packages and waste forms is found in NUREG/CR-4062, "Extended Storage of Low-Level Radioactive Waste: Potential Problem Areas."
5. Radiation Protection
- a. The program for safe placement and inspection of waste in storage and maintaining occupational exposures as low as is reasonably achievable (ALARA). This program should include periodic radiation and contamination surveys of individual packages and the storage area in general, as well as posting the storage area in accordance with 10 CFR 20.1902, "Posting Requirements." The radiation protection program, including the ALARA plan for the waste storage area or facilities, should be an integral part of the overall facility radiation protection program.
 - b. Projected exposure rates, needs for shielding (if any), and any changes in personnel monitoring which will be required as a result of waste storage.
 - c. If procedures for responding to emergencies are not otherwise described in overall facility licensing documentation, the licensee may wish to describe the procedures, including triggering mechanisms, responsibilities and authorities, internal and external notifications and notification of and coordination with local fire, police, and medical departments and/or other emergency service providers. The licensee may wish to consider formal agreements with emergency response providers that clearly define roles

and responsibilities. The licensee may wish to consider periodic drills. As licensees that are implementing or will be implementing the increased controls requirements are aware, the specifics of a licensee's security program must be protected, and the specifics of the radioactive materials possessed are sensitive security-related information. This information can be shared only with those who are considered trustworthy and reliable and have a need to know.

- d. The system for maintaining accurate records of waste in storage (including any waste receipts or transfers from or to other licensees) to ensure accountability.

6. Training and Qualifications

- a. The program for training personnel in procedures for packaging, handling, placement, inspection, surveying, and emergency response for LLRW storage.
- b. Qualifications for all personnel responsible for aspects of LLRW storage (if they differ from those responsible for management of other licensed radioactive material). In most cases, management of LLRW storage will represent only a portion of individual job responsibility for a number of facility personnel. Licensees may wish to estimate the percentage of each individual's time allocated to some aspect of LLRW storage.

7. Financial Assurance

- a. The adequacy of financial assurance in accordance with 10 CFR 30.35, 10 CFR 40.36, or 10 CFR 70.25, all titled "Financial Assurance and Recordkeeping for Decommissioning," based on any increases in possession limits mandated by nondiscretionary extended interim storage. If amended possession limits exceed the limits specified in these sections, regulations require a decommissioning funding plan or certification of financial assurance. In either case, this submittal should demonstrate that financial resources are or will be in place not only to decommission the licensed operation but also to provide for the reasonable best estimated cost of handling, transport, and disposal of all LLRW stored on site.
- b. The adequacy of facility liability and/or comprehensive insurance given the added requirement for extended interim storage of LLRW.

8. Emergency Preparedness

The adequacy of licensee emergency preparedness with respect to increased possession limits as a result of requirements for LLRW storage. Licensees may wish to review the relevant sections of 10 CFR Part 30, "Rules of General Applicability to Domestic Licensing of Byproduct Material," 10 CFR Part 40, "Domestic Licensing of Source Material," and 10 CFR Part 70, "Domestic Licensing of Special Nuclear Material," to ensure that regulatory requirements regarding emergency preparedness are met. If proposed maximum possession limits exceed the limits specified in 10 CFR 30.32(i)(1), 10 CFR 40.31(j)(1), or 10 CFR 70.22(i)(3), either demonstrate that an emergency plan is not needed or develop and maintain a plan that meets the requirements of these sections.

9. Security/Increased Controls

Security measures consistent with the attractiveness and accessibility of the material and vulnerability to theft and sabotage. Commission regulations in 10 CFR 20.1801, "Security of Stored Material," and 10 CFR 20.1802, "Control of Material Not in Storage," require licensees (1) to secure from unauthorized removal or access licensed materials that are stored in controlled or unrestricted areas and (2) to control and maintain constant surveillance of licensed material that is in a controlled or unrestricted area and that is not in storage.

Low specific activity radioactive material inventories pose lower risk. The NRC is issuing increased controls requirements to certain types of licensees based on their authorized possession limits. Specific activity thresholds were not established for categorical exclusion. Rather, implementation of the increased controls is based on possession of radionuclides of concern in quantities greater than or equal to the activity limits provided Table 1 of the increased controls orders (see, e.g., 70 Federal Register 72128 (December 1, 2005)). There is a process by which a licensee may request relief from the increased controls if compliance with any of the requirements is deemed unnecessary in specific circumstances.

The NRC strongly recommends that licensees not submit their increased controls documentation during the licensing process. NRC inspectors will review this documentation during licensee inspections. However, whenever a licensee believes that this information is needed to respond to the increased controls requirements or to respond to an apparent violation, then the licensee may submit the document, provided that it is properly marked in accordance with 10 CFR 2.390.

For licensees implementing the increased controls requirements, the specifics of a licensee's security system must be protected. Further, specific information related to the radioactive materials possessed is considered sensitive security-related information that can be shared only with those who are considered trustworthy and reliable and have a need to know. Licensees who need assistance in determining when such information can be appropriately shared with public officials should contact the appropriate NRC regional office.

LOW-LEVEL RADIOACTIVE WASTE COMPACTS

| COMPACT | NAME/ADDRESS | PHONES/FAX/EMAIL |
|--------------------------------|--|--|
| Appalachian Compact | Richard Janati Chief, Division of Nuclear Safety Bureau of Radiation Protection Department of Environmental Protection Commonwealth of Pennsylvania PO Box 8469 Harrisburg, PA 17105-8469 | (717) 787-2163 (717) 783-8965 rjanati@state.pa.us |
| Atlantic Compact | Max Batavia Executive Director Atlantic Interstate Low-Level Radioactive Waste Commission 1201 Main Street, Suite 600 Columbia, SC 29201 | (803) 737-1879 (803) 737- 5023 mbatavia@microbyte.net |
| Central Compact | Rita Houskie Administrator Central Interstate Low-Level Radioactive Waste Commission 1033 "O" Street, Suite 636 Lincoln, NE 68508 | (402) 476-8247 (402) 476-8205 rita@cillrwcc.org |
| Central Midwest Compact | Marcia Marr Executive Director Illinois Emergency Management Agency 1035 Outer Park Drive Springfield, IL 62704 | (217) 785-9982 (217) 785-9977 marcia.marr@illinois.gov |
| Midwest Compact | Stanley York Midwest Interstate Low-Level Radioactive Waste Compact Commission 2851-1 Century Harbor Middleton, WI 53562-1824 | (608) 831-5434 stan.york@tds.net |
| Northwest Compact | Mike Garner Exective Director Northwest Interstate Compact on Low-Level Radioactive Waste Washington Department of Ecology PO Box 47600 Olympia, WA 98504-7600 | (360) 407-7102 (360) 407-7152 jamg461@ecy.wa.gov |
| Rocky Mountain Compact | Leonard Slosky Executive Director Rocky Mountain Low-Level Radioactive Waste Board 1675 Broadway, Suite 1400 Denver, CO 80202 | (303) 825-1912 (303) 892-3882 lslosky@rmlw.us |

LOW-LEVEL RADIOACTIVE WASTE COMPACTS

| COMPACT | NAME/ADDRESS | PHONES/FAX/EMAIL |
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| Southeast Compact | Kathryn Haynes, M.P.H Executive Director Southeast Compact Commission 21 Glenwood Ave., Suite 207 Raleigh, NC 27603 | (919) 821-0500 (919) 821-1090 khaynes@secompact.org |
| Southwestern Compact | Don Womeldorf Executive Director Southwestern Low-Level Radioactive Waste Commission PO Box 277727 Sacramento, CA 95827-7727 | (916) 448-2390 (815) 361-3680 swllrcc@swllrcc.org |
| Texas Compact | Susan Jablonski Texas Commission on Environmental Quality PO Box 13087, Mail Code 122 Austin, TX 78711-3087 | (512) 239-6731 (512) 239-5151 sjablons@tceq.state.tx.us |

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| Maine | Charles Pray State Nuclear Safety Advisor State of Maine 112 State House Station Augusta, ME 04833-0011 | (207) 287-8936 (207) 287-4317 charles.pray@maine.gov |
| Massachusetts | Robert Walker MA Department of Public Health Radiation Control Program Schrafft Center Suite 1M2A Charlestown, MA 02129 | (617) 242-3035 ext 2001 (617) 242-3457 bob.walker@state.ma.us |
| Michigan | Thor Strong Acting Commissioner Department of Environmental Quality PO Box 30241 525 West Allegan Lansing, MI 48909 | (517) 241-1252 (517) 241-1326 strongt@michigan.gov |
| Nebraska | Carla Prange Manager Low-Level Radioactive Waste Program Department of Environmental Quality State of Nebraska 1200 N Street, Suite 400 Lincoln, NE 68509-8922 | (402) 471-3380 (402) 471-4840 carla.felix@ndeq.state.ne.us |
| New Hampshire | Mary Ann Cooney Director of Public Health State of New Hampshire 29 Hazen Drive Concord, NH 03301 | (603) 271-4501 (603) 271-4827 www.dhhs.nh.gov |

UNAFFILIATED STATES

| COMPACT | NAME/ADDRESS | PHONES/FAX/EMAIL |
|--|--|--|
| New York | Jack Spath Program Manager Radioactive Waste Policy and Nuclear Coordination Energy Research & Development Authority State of New York 17 Columbia Circle Albany, NY 12203-6399 | (518) 862-1090 ext 3302 (518) 862-1091 jps@nyseda.org |
| North Carolina | Beverly Hall Radiation Protection Section Department of Environment and Natural Resources State of North Carolina 3825 Barrett Drive Raleigh, NC 27609-7221 | (919) 571-4141 (919) 571-4148 beverly.hall@ncmail.net |
| Rhode Island | Terrance Tehan Director Atomic Energy Commission State of Rhode Island 16 Reator Road Narragansett, RI 02882 | (401) 789-9391 (401) 782-4201 ttehan@gso.uri.edu |
| Commonwealth of Puerto Rico | Raul Hernandez Director Radiological Health Division Department of Health PO Box 70184 San Juan, PR 00936-8184 | (787) 274-5815 (787) 274-6829 rhernandez@salud.gov.pr |
| Guam | Lorilee T. Crisostomo Administrator Guam Environmental Protection Agency Barrigada, Guam 96921 | (671) 475-1658 (671) 477-9402 24 hours: (671) 635-9500 |
| Virgin Islands | Dean C. Plaskett, Esq., Commissioner Department of Planning and Natural Resources Cyril E. King Airport Terminal Building – Second Floor St. Thomas, Virgin Islands 00802 | 24 hours: (340) 774-5138 |
| American Samoa | Pati Faiai Government Ecologist American Samoa Environmental Protection Agency Office of the Governor Pago Pago, American Samoa 96799 | (684) 633-2304 24 hours: (684) 622-7106 |

UNAFFILIATED STATES

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|--|--|--------------------------------|
| Commonwealth of The Northern Marina Islands | Thomas B. Pangelinan Secretary Department of Lands and Natural Resources Mariana Islands Government PO Box 501304 Saipan, MP 96950 | (670) 322-9830 |

Bibliography

The NRC staff believes that the following references may be helpful to specific licensees or categories of licensees to supplement the guidance provided herein. This list is not all inclusive.

- [1] Electric Power Research Institute- "*Guide for Operating an Interim On-Site Low-Level Radioactive Waste Storage Facility*", October 2004
- [2] Illinois Department of Nuclear Safety- "*Extended Storage of LLRW by Materials Licensees*", July 1994
- [3] International Atomic Energy Agency, Safety Guide No. WS-G-6.1, "*Storage of Radioactive Waste*", November 2006
- [4] Texas Administrative Code Section 289.254 "*Licensing Radioactive Waste Processing and Storage Facilities*"
- [5] U.S. Department of Energy, DOE M 435.1, Radioactive Waste Management Manual, July 1994
- [6] U.S. Nuclear Regulatory Commission, Code of Federal Regulations-10 CFR 20.1801- Security of Stored Material
- [7] U.S. NRC NUREG/CR-4062, "*Extended Storage of LLRW: Potential Problem Areas*" December 1985

| List of Recently Issued FSME Generic Communications | | | |
|--|---------------|---|---|
| Date | GC No. | Subject | Addressees |
| 10/04/07 | RIS-07-23 | Date For Operation Of National Source Tracking System | All licensees authorized to possess Category 1 or Category 2 quantities of radioactive materials. All Radiation Control Program Directors and State Liaison Officers. |
| 10/17/07 | IN-07-35 | Varian Medical Systems Varisource HDR Events: Iridium-192 Source Pulled From Shielded Position | All U.S. Nuclear Regulatory Commission medical use licensees and NRC Master Materials Licensees authorized to possess or use a Varian Medical Systems VariSource High Dose Rate Remote Afterloader (VariSource HDR). All Agreement State Radiation Control Program Directors and State Liaison Officers |
| 12/05/07 | RIS-07-27 | Improving Public Understanding of the Risks Associated with Medical Events | All U.S. Nuclear Regulatory Commission medical use licensees. All Radiation Control Program Directors, and State Liaison Officers |
| 12/07/07 | RIS-07-28 | Security Requirements for Portable Gauges | U.S. Nuclear Regulatory Commission portable gauge licensees and Agreement State Radiation Control Program Directors and Liaison Officers |
| 12/14/07 | IN-07-38 | Ensuring Complete and Accurate Information in the Documentation of Training and Experience for Individuals Seeking Approval as Medical Authorized Users | All U.S. Nuclear Regulatory Commission medical use licensees and NRC master materials licensees. All Agreement State Radiation Control Program Directors and State Liaison Officers |
| 02/01/08 | RIS-08-02 | Actions to Increase the Security of High Activity Radioactive Sources | All U.S. Nuclear Regulatory Commission Materials and Master Materials Licensees. All Agreement State Radiation Control Program Directors and State Liaison Officers. |
| <p>Note: This list contains the six most recently issued generic communications, issued by the Office of Federal and State Materials and Environmental Management Programs (FSME). A full listing of all generic communications may be viewed at the NRC public website at the following address: http://www.nrc.gov/reading-rm/doc-collections/gen-comm/index.html</p> | | | |