

**REPORT TO THE MUNICIPAL SOLID WASTE ADVISORY COMMITTEE  
FROM THE DIVISION OF RADIOLOGICAL HEALTH  
January 28, 2008**

The Tennessee Municipal Solid Waste Advisory Committee tasked the Department of Environment and Conservation with implementing the recommendations made by the Committee in its report of August 20, 2007, and with providing a report back to the Committee by January 31, 2008, describing how those recommendations were implemented. The recommendations consisted of those provided by the Committee's consultant, Ms. Lisa Stetar, discussed in Item A, below, and a supplementary recommendation by the Committee, discussed in Item B, below. This report is presented to the Committee in fulfillment of that portion of the task for which the Division of Radiological Health has responsibility.

A. The five recommendations of the Committee's consultant have been implemented as follows:

**1. Define and document staff roles and responsibilities for evaluation and oversight of the BSFR program.**

Action:

A Division policy/procedure document outlining the responsibilities of various Division staff (the Health Physics Consultant and the Licensing, Inspection, and Technical Services sections) has been developed and implemented for all BSFR related activities. A copy of this procedure document is attached as Enclosure 1.

**2. Develop a single set of clearly defined BSFR related requirements for all licenses.**

Action:

The Division accepts this recommendation as pertaining to more than just the areas outlined in Recommendation 2, and has developed remedial actions that are intended to address "standardization" issues described in this Recommendation, as well as in Recommendations 4 and 5 below. See in particular the discussion of licensing practices in Recommendation 5.

**a. reporting requirements for waste tracking information;**

Action:

Reporting requirements for BSFR waste tracking information have not been uniform in the past. These will be standardized and the new requirements clearly incorporated into each license. These requirements will address the specific data needed for waste tracking and compliance evaluation, and the submission of reports will be uniformly required on a quarterly basis. See also Recommendation 4.

**b. approaches to limiting total volumes of waste sent to the landfill;**

Action:

The Division reviewed the methodologies it has utilized to limit the amount of BSFR waste that may be disposed by each licensee/processor at each approved landfill, and has selected a methodology as standard for future use. This methodology incorporates data from the Division of Solid Waste Management on the disposal amounts from the previous three years at each BSFR approved landfill. This methodology will be clearly incorporated into each license as a requirement. The Division will evaluate compliance with these limits periodically throughout the year and during inspections.

**c. extent to which processors must perform sampling to verify generator scaling factors before applying them in the bulk survey methods used for waste characterization;**

Action:

The existing sampling requirements for licensees/processors authorized to perform BSFR activities are being standardized to make them the same for each licensee/processor. These requirements will be clearly incorporated into each license, and compliance will be evaluated during inspections.

**d. administrative controls such as limits on the external dose rates that can be present on conveyance surfaces and adherence to DOT concentration limits that are more restrictive for some radionuclides than the BSFR conditional release limits;**

Action:

The method of implementing these requirements has varied from one licensee to another, but will be standardized and clearly incorporated into each processor's license. External dose rate limits for conveyances carrying BSFR material will be established to prevent any driver from receiving greater than the dose guideline of 1 millirem per year from BSFR associated activities. Disposal limits for each requested landfill will continue to be first determined based on computer modeling and dose-based considerations, then reduced, if necessary, to ensure that shipments of BSFR material comply with the U. S. Department of Transportation requirements for exempt material.

- e. **Improve the way in which the information is organized even if this requires duplication of some records that pertain to more than one license condition or aspect of the licensee's program.**

Action:

This recommendation suggests steps that the Division can take to make file materials, relevant to BSFR authorizations, more accessible to persons wishing to review that program.

BSFR activities are typically only a portion of the activities authorized on a waste processor's radioactive material license. Division practice has historically been to place all documents related to a single license in a single file, except for materials that must be filed separately due to requirements related to proprietary information. The requirements and information pertinent to BSFR are often contained in documents comprising a relatively small part of the total license file. Some generally applicable documents, such as the description of the radiation safety program, may also apply to the BSFR program.

To facilitate the accessibility of pertinent BSFR information to the public, documents that relate specifically to BSFR activities conducted by a licensee at a particular landfill will be copied and placed in a separate file containing only documents pertaining specifically to that BSFR program. This license copy will be maintained in the central office for informational use. It will not be considered to be an official copy, as it may not contain every document having general applicability to the overall licensed program.

- 3. **Conduct further evaluations to verify that doses to workers involved in current landfill operations are negligible. Additional modeling is recommended to verify doses to workers involved in active landfill**

**operations are negligible especially for shorter-lived radionuclides that would not factor into the residential farmer analysis.**

Action:

The Division has not identified any credible scenario in which a worker engaged in landfill activities involving BSFR material might be exposed to a dose approaching any regulatory limit (100 millirems per year for a member of the general public, or 5000 millirems per year for a radiation worker).

However, to ensure that all worker doses would comply with the BSFR program dose guideline of 1 millirem per year, the Division identified the need for an assessment of worker dose during active operation and post-closure maintenance of the landfill. To accomplish that assessment, the Division included in its draft licensing requirements document of March 30, 2007, a proposed requirement for such further evaluation.

Worker doses for active and post-closure landfill operations will be evaluated using computer modeling, taking into account appropriate parameters that are relevant for shorter-lived radionuclides. If found to be necessary, appropriate controls as necessary to ensure that worker doses are unlikely to exceed the BSFR program's dose guideline will be imposed through incorporation into the processor's license.

**4. Develop a standardized, electronic format for recording and reporting waste tracking information.**

Action:

Due to the different data tracking modalities utilized by each licensee/processor, the Division will not develop a standardized, electronic format for licensee use in reporting the data, but will require and ensure that the necessary data is made available electronically in a usable format. A standardized, electronic format has been developed for Division use in evaluating, tracking, and maintaining BSFR waste information. The information required and the frequency of submission will be the same for each licensee/processor, and the requirements will be clearly incorporated into each license.

**5. Limit the extent to which processors identify BSFR related records as proprietary (i.e. unavailable for public review). Concentration limits and summary information that provides specific isotopes and total quantities**

**of material shipped to the landfills for disposal on an annual basis should be available for public review.**

Action:

The Division's normal licensing procedures require an applicant for a license to describe in its application the activities for which it proposes to be authorized, including the processes and procedures to be utilized in conducting the requested activities, and to submit a radiation safety program to protect human health and the environment.

The Division believes this approach to be generally superior to one in which the applicant is simply required to commit to following a program prescribed in rules and regulations, as it requires the applicant to demonstrate an understanding of the regulatory requirements applicable to the proposed activity, and also provides a degree of assurance to the Division of the applicant's knowledge prior to issuance of the license. However, the Division also recognizes that this approach can lead to fundamentally similar programs having a number of distinctive authorizations and requirements, giving rise to difficulties in the following areas:

- Administration of the licenses by Division staff
- Understanding by the public of the basic requirements of the program
- Unique authorizations having perceived business competitive advantages, prompting claims of proprietary information

This is the situation in which the BSFR program has come to be. All three of the above issues are problematic, particularly the last one.

To address all three issues, including the above recommendation to reduce the amount of information requested to be maintained as proprietary, the Division will adopt a different process for evaluating BSFR programs. Upon receipt of an application meeting all the requirements for the BSFR program, the Division, with assistance provided by the Division of Solid Waste Management in the form of data pertinent to the proposed landfill, will develop and pre-approve the disposal limits appropriate for that landfill. The Division taking ownership of the approved limits, and the basis for their development, will eliminate this aspect of business competitive advantage, which in the past has prompted numerous proprietary claims. The other two issues will be mitigated, as well.

- B. We recommend TDEC take action to improve the information in public notices, to consider adding public notice into processes not currently including it, to put more information on the web site, including information about special wastes accepted at landfills, to make available to the public on an annual basis information regarding the volumes of BSFR waste going to Tennessee landfills, and to have a single person designated to respond to issues raised by the public for both divisions.**

Action:

The following information addresses the actions to be taken by the Division of Radiological Health to implement this recommendation. The Division of Solid Waste Management will address its activities in a separate statement.

The Tennessee Department of Environment and Conservation, Division of Radiological Health has, already in place, a website for BSFR information. To improve public notice and information, the Division will post, on that website, information regarding current processing licensees and approved landfills engaged in BSFR activities. Upon receipt by the Division of any future BSFR application or amendment request, pertinent information will be prepared by the Division for posting on the BSFR website. The posted information will include the applicant/licensee's name, processing location, and the landfill to be utilized. In addition, total annual BSFR waste amounts disposed will be reported for each landfill.

The Division will also post on the website a summary description, such as the following, of the regulatory process utilized by the Division. The Division will perform a comprehensive technical review of each application and amendment request regarding all BSFR related actions. If the applicant meets the Division's rules and regulations, and has applied for a special waste permit from the Division of Solid Waste Management, and if the landfill is determined to be suitable for BSFR disposal, the license or amendment will be issued. The licensee will be required to comply with the Division's radiation protection standards for protection of the public health and safety and the environment. Licensee compliance with these requirements will be monitored periodically throughout the year by an evaluation of the data required to be submitted by the licensee, and through periodic inspections by the Division.

Attachments: Enclosure 1