

GUIDANCE FOR THE DECAY IN STORAGE (DIS) METHOD OF WASTE DISPOSAL

1. Confirm that only radionuclides (sealed and unsealed) with half-lives less than or equal to 120 days will be considered for DIS.
2. Submit a description and a diagram of the area where the waste will be held in storage. Describe the shielding and security. Confirm that postings will meet the requirements of 10 CFR 20.1902.
3. Provide the frequency of surveys of adjacent areas and the DIS area along with the survey map and form in which survey results will be recorded.
4. Confirm that dose rates in adjacent unrestricted areas will not exceed 0.05 mrem/hr above background radiation levels or propose and justify higher limits that comply with 10 CFR 20.1301 and 10 CFR 20.1302.
5. Provide survey procedures including the following:
 - a. Confirm that the inventory control system used to track individual bags, boxes, or other containers will include isotopes, activities, and date sealed and placed in storage.
 - b. Confirm that waste will be held for a minimum of ten (10) half-lives prior to release from DIS.
 - c. Confirm that waste will be surveyed and determined to be indistinguishable from background prior to disposal. The surveys are to be performed in low background areas that are not impacted by licensed radioactive materials.
 - d. Identify instrumentation (see Table 1 below) used to perform surveys in the low background area. Surveys should include all outer surfaces of each container to be released (i.e., scan within 1 inch of the surface at a scan rate not greater than 1 inch per second).
 - e. Confirm that waste will be segregated by half-life groups and type of emitted radiation.

Table 1

Type of Instrument (Recommended)	Pure Beta (P-32, S-35, Y-90)	Gamma or X-Ray (low energy) (I-125, Pd-103)	Gamma or X-Ray (moderate energy) (Tc-99m, Ga-67, Tl-201, Cr-51, Co-57, In-111, I-123, Ra-223)	Gamma or X-Ray (higher energy) (I-131 and PET Isotopes)
G-M pancake or equivalent (<2.0 mg/cm ² window)	X			
Thin crystal NaI (1"X1 mm)		X	X	
Thick crystal NaI (1"X1")			X	X

6. Recommended instruments are listed in Table 1. If different instrumentation is proposed, submit supporting information, including the manufacturer's technical specifications of the instrument/system, to demonstrate that the instrumentation is appropriate for distinguishing above background radiation levels for the isotopes of concern.
7. Confirm that if new isotopes are added to the DIS program, instruments used for release surveys will be based on Table 1 or submit the new instrument to RHB for approval.
8. Confirm that all labels or similar markings, which indicate the presence of radioactive materials, will be removed or obliterated. This can be done as the waste is placed in containers, leaving only the outer container labels to be removed prior to release. If the waste is destined to be disposed of at a biomedical waste facility, internal labels do not need to be removed.
9. Confirm that the waste/DIS log will include disposal date, type of waste, surveys results, serial number for sealed sources, instrumentation used, and the name of the surveyor and will be maintained for three (3) years or until the next inspection.