

FNAL Response: DATA CALL – Clearance and Release of Personal Property from Accelerator Facilities

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Scope

The content of this document is in response to the data call request from the Office of Science, Michael Epps, 6 February 2018. The following information was requested with respect to the clearance and release of materials and equipment defined as personal property in DOE O 458.1, from 2013 – 2016, that may have been radiologically impacted:

1. The type and volume/quantity of material released each year that was below the Indistinguishable from Background (IFB) criteria.
2. The type and volume/quantity of material released each year that was above the Indistinguishable from Background (IFB) criteria. For material with detectable radioactivity, indicate whether the material was surface or volumetrically contaminated. Also indicate the clearance criteria (DOE-STD-6004 and or DOE O 458.1) and process (measurement methods) by which each type of material was released. NOTE – Do not include items that continued to be managed as radioactive material.
3. The disposition of volumetrically contaminated material (saved for beneficial reuse, stored as radioactive material, disposed as radioactive waste, etc.)
4. Please indicate if any metals were released for recycling.

Fermilab Response

Fermilab's clearance and release requirements are described in the Fermilab Environment, Safety and Health Manual (FESHM), which includes the Fermilab Radiological Control Manual (FRCM). The clearance process includes many requirements and controls including radiation surveys and labeling of equipment and materials removed from radiological areas, radiation surveys and process knowledge for equipment and materials moved on site, health physicist review of facility construction or modification engineering documents to identify materials subject to the metals recycling suspension, and environmental review of project plans to identify potential radioactive waste or metals recycling opportunities.

The release process identifies one of three paths for equipment and materials: storage for future use, radioactive waste or recycling. Items with potential future use are stored in various locations across site. Items that are radioactive are stored only in appropriately posted locations. Radioactive items with no future use are disposed of radioactive waste. Finally, metals that originate from non-radiological areas are cleared for recycling by at least four separate radiation surveys – three hand surveys and one drive through truck scanner. The first hand survey is initiated by a Material Move Request that requires a survey and process knowledge to be submitted prior to moving an item to the Railhead (where scrap metal is collected). Then each item is surveyed by the Logistics and Property Control Department before loading into the scrap hauler. The hauler is then hand surveyed by the Hazard Control Technology Team. Finally, the truck drives through the Bicon truck scanner before leaving site.

The information below specifically addresses the data call request.

1. Fermilab did not release any material between 2013 through 2016 utilizing DOE-STD-6004, therefore no material was released using the Indistinguishable from Background (IFB) criteria.
2. Fermilab did not release material using the IFB criteria.
3. Fermilab maintains volume activated accelerator equipment and materials for future beneficial use. Fermilab also disposes of volume activated or surface contaminated equipment and materials as radioactive waste (see table below for volumes) when no future beneficial use is identified.
4. Fermilab has a scrap metal recycling program that abides by the metals recycling suspension and DOE Order 458.1 (see table below for weight of recycled materials). The program is described in FRCM Chapter 4 and implemented through the Logistics and Property Control Department procedures. Fermilab's annual environmental report, Section 9.0 Radiological Clearance of Property and Metals Release Suspension, provides some details on this process.

	2013	2014	2015	2016
Radioactive Waste	125 m ³	103 m ³	53.9 m ³	127.4 m ³
Recycled Scrap Metal	643 metric tons	610 metric tons	396 metric tons	211 metric tons