

From: Anthony Huffert - N/mgs/dwm&p
To: Elaine Brummett; Randolph Ragland - R1
Date: 11/10/03 12:10PM
Subject: Whittaker recycle request

Elaine and Randy -

Attached is a draft one-page summary of Whittaker's proposal to recycle slag into road bed.

The plan is to incorporate this summary into a Commission Paper being prepared by FCSS on Cabot's recycling requests. The Whittaker request would serve as an example of another materials licensee pursuing source material recycling under Part 40 to reduce costs.

Elaine - Please review this draft and let me know what changes are needed for incorporation into the CP.

Randy - Why has Whittaker pursued approval from PADEP only and not engaged NRC on this yet? Is it PAC Title 25 Chapter 287.611 "Authorization for General [Beneficial Reuse] Permit?" Note related words in the draft. Also, let me know if there would be a problem with informing the Commission of Whittaker's proposal to recycle slag into roadbed.

Tony

CC: Daniel Gillen; Dominick Orlando; Robert Nelson

B/58

Whittaker Corporation maintains a license for the possession of material contaminated with uranium and thorium located at their former metal production site in Greenville, PA. The only activities currently authorized by the license are for the storage of radioactive material and the decontamination and decommissioning of the site. The majority of the material is in the form of metal slag that resulted from prior operations for the production of ferro-molybdenum, ferro-columbium, and ferro-nickel alloys. According to information contained in their draft decommissioning plan, it is estimated that approximately 136,000 cubic feet (8,000 dry weight tons) of waste will be excavated to meet license termination requirements. The draft decommissioning plan is currently under NRC staff review.

Earlier this year, the licensee sought approval from the Pennsylvania Department of Environmental Protection (PADEP) to recycle approximately 7,400 tons of slag material that has thorium and uranium concentrations above the license termination criteria contained in their draft decommissioning plan, but at the levels considered "unimportant quantities" of source material in 10 CFR Part 40. The licensee proposes to dispose as low-level radioactive waste the slag material that is greater in concentration than the "unimportant quantity" level of 0.05 weight percent. The mean concentration of slag material that the licensee wishes to recycle is estimated to be less than 20 picocuries per gram of thorium-232 and uranium-238, in equilibrium with their progeny, but may be lower than 10 picocuries per gram.

The recycling proposal is to transfer slag material to an asphalt company for use as road base in a strip mine reclamation project located in Smith Township, PA. The slag material would be transferred and transported to the asphalt company operating at the Smith Township site, and would not be processed or size-reduced for use in the mine roadbed. As the mine is filled with agricultural lime, at a rate of 100,000 tons per year, the roads would be covered, which would essentially eliminate the possibility that the slag material would be excavated from the mine in the future.

Two assessments were conducted by the licensee to estimate potential doses during transportation and after the slag material was buried in the strip mine. The licensee calculated an exposure rate during transportation of 5 microroentgens per hour, but did not estimate the driver dose based on the 80 mile trip from Greenville, PA to Smith Township, PA. The dose from buried slag material was estimated to be 20 millirem per year, assuming a residential farmer exposure scenario with uranium-238, thorium-232, and their daughters at a concentration of 10 picocuries per gram. The NRC staff has not reviewed either of these dose assessments.

The reduction in decommissioning costs estimated by the licensee for the recycling of the slag material is between 1.5 and 2 million dollars. This estimate is based on reduced costs for transportation (1.1 million dollars) and disposal (500,000 dollars), and lower operating costs during remediation activities at the Greenville, PA site.

Whittaker Corporation has sought, on two occasions, to obtain a position on beneficial reuse of slag material from PADEP. PADEP's first response, dated 1/16/03, is that it would not be approved for the Whittaker case. A second letter from Whittaker, dated 10/13/03, is currently being reviewed by PADEP. The 7-page letter contains pertinent technical and financial information and is located in ADAMS at ml033000520. Whittaker Corporation has not requested NRC staff review of the recycling proposal yet.