



UNITED STATES
NUCLEAR REGULATORY COMMISSION

WASHINGTON, D.C. 20555-0001

September 23, 1994

Mr. C. Scott Eves
V.P., Environmental Services
Shieldalloy Metallurgical Corporation
P.O. Box 768
Newfield, New Jersey 08344

SUBJECT: REVISION TO POSSESSION LIMITS AND RADIATION PROTECTION PROGRAM
(TAC NO. L30696)

Dear Mr. Eves:

In accordance with your application dated August 3, 1994, and pursuant to Part 40 to Title 10 of the Code of Federal Regulations, Materials License SMB-743 is hereby amended to authorize an increase for the possession and storage of source material (uranium only) and reflect personnel changes in your radiation protection program.

Accordingly, Condition 8.B. is revised to authorize a possession limit of 45,000 kilograms of uranium, Condition 10 is revised to include the date of August 3, 1994, and Condition 12 is amended as follows:

Condition 12 Licensed material shall be used by or under the supervision of David R. Smith, Bill Grabus, Al Lashley, Robert DeGrange, George E. Cowan, Robert Nesbitt, Robert Wright, Kenneth R. Pugh, or James P. Valenti. Overall control and authority for radiological protection shall reside with the President of Shieldalloy Metallurgical Corporation. The Radiation Safety Officer shall be Mr. C. Scott Eves.

All other conditions of this license shall remain the same.

Please note that NRC has not increased the possession limit for thorium at this time. This change was agreed to during a conversation between you and Mr. Gary Comfort of my staff on September 13, 1994. Storage of this material on site is considered a temporary activity, pending a determination of its ultimate fate based upon the Environmental Impact Statement currently in progress.

9409290229 940923
PDR ADDCK 04007102
C PDR

280022

NRC FILE CENTER COPY

NFO3

Enclosed are copies of revised Materials License SMB-743 and the Safety Evaluation Report, which includes the Categorical Exclusion determination.

Sincerely,

ORIGINAL SIGNED BY
Robert C. Pierson

Robert Pierson, Chief
Licensing Branch
Division of Fuel Cycle Safety
and Safeguards, NMSS

Docket 40-7102
License SMB-743
Amendment 10

Enclosures: 1. Materials License SMB-743
2. Safety Evaluation Report

cc w/encls:

Ms. Donna Gaffigan
State of New Jersey
Department of Environmental Radiation
CN-028
Trenton, NJ 08625-0025

Mr. R. Hargrove
U.S. Environmental Protection Agency
Region II
Jacob K. Javits Federal Building
New York, NY 10278-0012

DISTRIBUTION: w/encls. (Control No. 110S)

Docket 40-7102 File Center PUBLIC NMSS R/F
FCSS R/F FCLB R/F MMessier, LFDCB SHO
Region I JRoth, FCOB JKinneman, RI

OFC	FCLB	E	FCLB	E	FCLB	E	FCLB	E	WM		FCLB	E
NAME	GComfort:mh		VHarpe		MAdams		MTokar		JAustin		RBoerner	RPierson
DATE	9/15/94		9/15/94		9/15/94		9/15/94		9/16/94		9/22/94	9/23/94

C = COVER

E = COVER & ENCLOSURE

N = NO COPY

OFFICIAL RECORD COPY



UNITED STATES
NUCLEAR REGULATORY COMMISSION

WASHINGTON, D.C. 20555-0001

September 23, 1994

DOCKET NO: 40-7102

LICENSEE: Shieldalloy Metallurgical Corporation
Newfield, New Jersey

SUBJECT: SAFETY EVALUATION REPORT: APPLICATION DATED AUGUST 3, 1994,
REVISION TO POSSESSION LIMITS AND TO RADIATION PROTECTION
PROGRAM

BACKGROUND

SMC currently holds License SMB-743 issued by the U.S. Nuclear Regulatory Commission for possession of source material. The last renewal of License SMB-743 was granted to SMC by the NRC in July 1980. Prior to the license's expiration in July 1985, SMC submitted its application for renewal, thus extending License SMB-743 until the NRC decides to accept or revoke the license. The application is currently being reviewed and a site-wide license renewal Environmental Assessment document is being developed by NRC. NRC is also in the process of developing an Environmental Impact Statement (EIS) in response to SMC's conceptual decommissioning plan submitted by letter dated April 7, 1993. The EIS will evaluate SMC's proposal to safely dispose of the slag and dust on site, as well as evaluate other disposal alternatives. In September 1993, SMC notified the NRC that SMC had filed under Chapter 11 of the U.S. Bankruptcy Code.

By letter dated August 3, 1994, SMC requested (1) authorization to possess up to 370,000 kilograms of thorium and 45,000 kilograms of uranium and (2) to make administrative changes to names listed in the license regarding their radiological protection program.

DISCUSSION

The total amounts of source material requested to be permitted on site correspond to about 40 curies of thorium and 15 curies of uranium-238. This is an increase of approximately 20 percent more source material compared to the quantities of 303,050 kilograms of thorium and 34,870 kilograms of uranium-238 currently permitted by License SMB-743. On April 2, 1992, Amendment 8 was issued to increase possession limits so as to allow SMC to continue operating through 1997 while the NRC completed its study of decommissioning alternatives. The possession limits were based upon SMC's expected operations and radionuclide content of source ore during the period. SMC anticipated adding approximately 12,500 kilograms of thorium and 1,000 kilograms of uranium on an annual basis to their possession.

During an NRC inspection in December 1993, it was noted that the uranium concentration in the pyrochlore ore processed through the second quarter of 1993 was double that of previous quarters. In discussions with SMC in early 1994, SMC stated that uranium concentrations had returned to the expected concentrations during the last two quarters of 1993 and that SMC would not

9409290249 940923
PDR ADOCK 04007102
C PDR

require a possession increase until 1995. Since SMC's preliminary analyses for the first quarter of 1994 shows that uranium concentrations may again be high, SMC has requested an increase in possession limits. From April 1992 to the first quarter of 1994, thorium inventories increased slightly faster than expected; however, SMC projects that its thorium possession limit should allow operations through at least half of 1996 without surpassing the current licensed limits.

The direct gamma dose to workers from the piles in the Source Material Storage Yard (SMSY), where slag and baghouse dust is stored (see Figure 1), is not expected to vary significantly by addition of the licensed material, since its concentration of source material will only be minimally increased and the piles are thick enough (greater than 1 meter) to be considered as infinitely thick sources. Similarly, the dose from inhalation of resuspended dust is expected to be unaltered because the surface area of the lime dust pile will not substantially increase.

Because uranium and thorium are well confined in the slag matrix, any short-term leaching caused by infiltrating water is unlikely, and no significant groundwater radiological contamination has occurred nor is expected due to the temporary storage of additional source material in the SMSY. Leaching studies of the slag have shown the slag form to be stable with little, if any, leaching expected to occur over the short-term. Similarly, little increase of radionuclide concentrations are expected in surface water runoff, and in resuspended dust from the piles, because changes in the surface areas of the piles will be minor. It should be noted that even though the lime dust collected in the baghouse is initially in a dispersive form, upon contact with water, the dust forms a thin crust. This along with the addition of gunnite on the surface of the pile reduces the dispersiveness of the dust.

The biggest consequence of an increase in possession limits results from the possibility that SMC may be unable to adequately dispose of any additional accumulated material in the financial sense. As stated previously, SMC filed under Chapter 11 of the U.S. Bankruptcy Code, and NRC is currently evaluating SMC's request to permit *in situ* disposal. If this method of disposal is not permitted, SMC has inferred that they may not be able to afford to dispose of the material in a licensed off-site location. This may lead to governmental costs to properly dispose of the material remaining on site. Increase in the possession limits would allow SMC to continue to operate and potentially increase government liability if off-site disposal is required.

Changes to names listed in the license regarding SMC's radiological protection program are administrative in nature and do not affect the safety of operations. All personnel employed by SMC receive a basic radiation safety orientation. Furthermore, authorized users are trained in the fundamentals of ionizing radiation, basic radiation control practices, applicable site health physic procedures, and emergency procedures.

CATEGORICAL EXCLUSION

Because there would be no change in the procedures for processing the additional increment of material nor would there be changes in the forms of storage by permitting SMC's request for an increase in the possession limit for thorium and uranium-238, the staff has determined that the following conditions have been met:

1. There is no significant change in the types or significant increase in the amounts of any effluents that may be released offsite,
2. There is no significant increase in individual or cumulative occupational radiation exposure,
3. There is no significant construction impact, and
4. There is no significant increase in the potential for or consequences from radiological accidents.

Accordingly, pursuant to 10 CFR 51.22(c)(11), neither an environmental assessment nor an environmental impact statement is warranted for this action.

CONCLUSION/RECOMMENDATION

Based upon the discussion, the staff concludes that the changes to the radiation protection program are acceptable as stated. Because of the ongoing EIS to determine the eventual disposition of slag and dust temporarily stored at the site and the potential for governmental liability for the final disposition of any material on the site, the staff recommends that the request for the increase in possession limit for thorium be deferred at this time until the development of the EIS is completed. The current possession limit for thorium should allow SMC to operate for 18 months at current production rates, at which time the NRC and public should better understand disposal alternatives. The staff recommends that the uranium possession limit be increased to 45,000 kilograms as requested by SMC. This increase would allow SMC to continue operations, even at the elevated uranium concentration levels, until the EIS is completed. Furthermore, SMC would not exceed the volume of slag and dust originally envisioned by the 1992 amendment because the possession limit of thorium would still limit overall volumes of source material on site.

The Region I staff has no objection to this proposed action.

Attachment: Figure 1

Principal Contributor
Gary Comfort

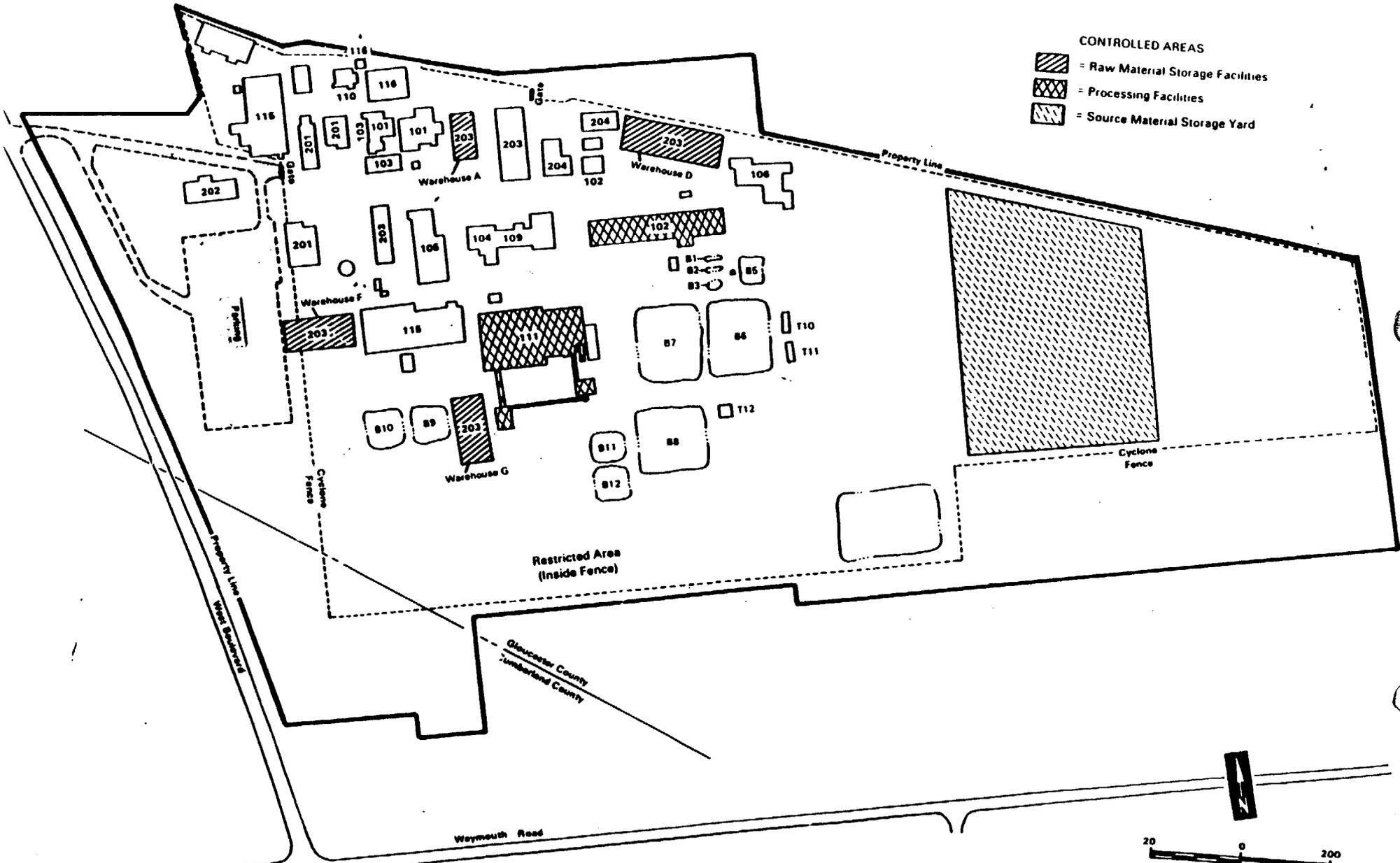


Figure 1 Facility Layout Map

