State of Tennessee
Department of Environment and Conservation
Division of Radiological Health
Third Floor – L & C Annex
401 Church Street
Nashville, TN 37243-1532
Phone 615-532-0364
Fax 615-532-7938

Tennessee

Fax

To: Dennis Sollenberger **From:** Eddie Nanney

Fax: (301) 415-3502 **Pages:** 14

Phone: 415-2819 **Date:** 05-12-00

Re: **CC:**

☐ Urgent ☐ For Review ☐ Please Comment ☐ Please Reply ☐ Please Recycle

• **Comments:** As promised

The January 7, 2000 letter from the NRC to the Tennessee Division of Radiological Health contains a number of questions relating to the Manufacturing Sciences License amendment number 56 which authorizes the release of decontaminated nickel. The questions in this letter fall into several basic categories: Dose Assessment, Surficial versus Volumetric Contamination, Monitoring, Testing and Sampling, the Survey for Free Release Program, Documentation, and Miscellaneous issues. The following discussion will address each of these topic areas.

INTRODUCTION

Approval of this amendment was contingent on the proposal meeting a number of different criteria. One criterion was that the dose assessment had to demonstrate that the maximum impact to the most exposed individual would be less than 1 mrem/yr. In addition, it was required that the proposed level of residual contamination compare favorably with other published criteria, i.e. the NRC Reg Guide 1.86 and the IAEA "Clearance levels for radionuclides in solid materials." It was also required that this proposal embrace the concept of ALARA.

It was made clear to the licensee, in various meetings, that all of these requirements would have to be met for a proposal of this type to be approved by the Divison.

DOSE ASSESSMENT (I.A., I.B., I.C.2.b., I.C.2.c., I.C.2.d, I.C.2.e., I.C.2.f.)

The State of Tennessee has long considered 1 mrem/yr as an acceptable dose criteria for case by case determinations. From the onset of this project, it has been demonstrated that the 1 mrem/yr guideline would not be approached in all reasonable scenarios, even with significant changes in critical parameters. MSC's development of its technology and the resulting proposed release limits show a commitment to ALARA and recognition of the sensitive nature of this issue. Since MSC's proposed limit not only meets this criteria but is far below it, there was no need to further discuss concentration limits or dose levels.

Exposure During Processing

All processing and handling, from the removal of the nickel at K-25 to the survey and release of the final ingot, is performed by occupationally exposed workers of Manufacturing Sciences Corp., (the licensee) or by occupationally exposed DOE contractor personnel. Any scenario involving recyclers or slag workers does not come into play until after the release of the ingot and at that point, as indicated by the Auxier and Associates report, the highest dose would be to a truck driver who might haul 20 ton shipments of the ingots for 2000 hours/year. The truck driver's dose would be 0.0012 millirem per year.

Comparisons of modeled doses to slag workers and steel cutters resulting from the released nickel ingot to those resulting from the modeled doses for contaminated steel (as found in NUREG-1640 and IAEA TECDOC-855, etc.) are not valid for 3 reasons:

1. Tc-99 has an affinity to nickel as indicated by the need to go through the MSC special process to remove the Tc-99. If the Tc-99 could be adequately removed in the melting process, MSC would just melt the

nickel 3 or 4 times and drive the Tc-99 away into the slag. The same cannot be said for Tc-99 and steel, therefore, the ratio of Tc-99 going to slag used in the referenced models is invalid.

2. Unlike surface contamination on scrap steel used in the referenced models, the nickel, and the associated contaminants (Tc-99 and U), have already gone through a melting (high temperature) process. The chemical/physical states of the radionuclides are different than would be found in surface contamination. The U will be in a glassy form attached to slag inclusions in the nickel anode and cannot get through the Tc-99 barrier while the Tc-99 will be in elemental form which adheres to the nickel.

3. Since the nickel has already gone through a melting (high temperature) process the amount of "trash" in the bath that will become slag will be much lower.

Exposure from Nickel Products

As for the doses to individuals from products made from the nickel ingots, the Auxier and Associates report identified a hip joint prosthesis as the most likely item to be made from the nickel and placed internally. Additional possibilities were addressed in the letter dated January 18, 1999. None of the scenarios indicated that any type of significant exposure would exist. The highest dose calculated is 0.0014 mrem per year.

The 12 % nickel content in stainless steel is more than adequate for the most common uses of nickel. Most stainless is around 8% nickel content. There may be some stainless or other products that would use a higher nickel content, however, when considering the larger quantity of material, the larger surface area and the contact of the material with the tissue, the hip joint prosthesis is a conservative choice for dose assessment.

Auxier and Associates' use of the 25 mrem/yr reference is viewed as a comparison of magnitudes. On page 5 of their report they state that a "...recent change to the Title 10 Code of Federal Regulations, Part 20, Section 1402 (10 CFR 20.1402) provides further guidance for terminating a radioactive material license. This section of the regulation specifies that at license termination, the residual radiation at the facility must not cause more than 25 mrem annual dose to any exposed individual. ***This same standard can be applied to materials from a licensed facility. Reasonably, the materials removed from such a facility should cause only a small fraction of the criterion dose limit."*** (emphasis added). As used, this comparison is valid and reasonable.

The use of ICRP 60 tissue dose weighting factors was chosen, as it comprised the latest scientific evidence available on dose-risk coefficients. These factors have been accepted and used by NCRP (NCRP Report # 116). ICRP 60 and NCRP 116, have both been accepted and used by the NRC. The Division agreed that for this nickel release scenario only, it was reasonable to use these factors without a similar change to the Part 20 / SRPAR equivalent factors used for occupational workers and the public at the MSC licensed facility.

SURFICIAL VS. VOLUMETRIC COMPARISONS (I.A., I.C.1.a., I.C.1.b.)

The logic used for the comparison with Reg Guide 1.86 is based on the fact that the vast majority of metal released with surface contamination, (fixed and removable), is sent to foundries where it is re-melted for future products. When this surface contaminated material is melted, the contamination may spread throughout the volume of the material, thus resulting in volumetrically contaminated metal.

For the purpose of comparing the volumetrically contaminated nickel resulting from the MSC decontamination process to the surface contaminated metal being released under Reg Guide 1.86, both the consultant and the State based the comparison on a sheet of scrap metal with surface contamination on both sides. These comparisons demonstrated that it would take a sheet of stainless steel at least ¼ inch thick, made from nickel with volumetric contamination at 3 Bq/g, to equal the activity allowed on a sheet with surface contamination on both sides at Reg Guide 1.86 limits.

MONITORING/TESTING/SAMPLING (II. A., II.B., II.C.)

The December 8, 1998, letter from MSC to DRH presented the Sampling and Analysis Plan to be used for the nickel decontamination process. The plan is divided into two phases. The purpose of Phase I is to provide confirmatory proof of the process and methods of nickel decontamination. Phase I requires a larger number of samples during each stage of the electrorefining process. This phase is designed to identify the critical parameters or points of measure that may allow a more effective assessment with less sampling.

Based on Phase I results, Phase II will be designed to focus on the critical parameters of the process and to provide the appropriate information necessary for quality control of the finished ingot. It was the intent of the Division that this transition require specific approval by the Division.

Each sampling action is described in the plan, as is the analysis of samples. Samples are analyzed by liquid scintillation counting. Counting protocols and quality controls are in accordance with previously approved and included procedures (work instructions). Additional information was provided in the June 3, 1999, proprietary letter from MSC to DRH.

SURVEY FOR RELEASE PROGRAM (I.C.2.g., II.B., IV.D.)

Each ingot will be surveyed prior to release in accordance with MSC procedures including "Unrestricted Release Survey of Materials", "Unrestricted Release Calculations," and "Volumetric Sampling of Refined Nickel and Laboratory Analysis of Nickel for Technetium-99 and Uranium Utilizing Liquid Scintillation PDA Methods.

In accordance with good health physics practices, the sampling program provides that the volumetric analysis will be supplemented by surface scanning to verify compliance with any and all appropriate criteria. All previous tests have shown that the external surface of the nickel exhibits no contamination other than that which is consistent with the residual volumetric contamination.

The intent at all times has been to produce a clean ingot, one in which the level of decontamination was fully consistent with ALARA, and the worst-case postulated doses of no real impact. Any suggestion that the licensee might expend the resources required to clean this material to the level proposed, and then fail to take adequate precautions to prevent it from becoming surface contaminated, strains credulity.

MISCELLANEOUS (III., IV.)

Distinction Between the Two Licenses

MSC was issued two licenses to distinguish between the processing of source and special nuclear material (which they have performed for many years) and the expansion of their business into the decontamination of materials potentially contaminated with all radioactive material (including source and special nuclear material). The possession limit for special nuclear material is shared between both licenses and is consistent with the State of Tennessee's authority to license special nuclear material.

Material Tracking

MSC tracks its special nuclear material on a spread sheet that covers both licenses, keeping track of the limit for the facility. This system is further described in Attachment 1. As indicated by Attachment 2 this has been the case for many years.

Enrichment Levels

MSC's license allows them to receive material enriched to 3%. Any material above this criteria cannot be sent to or received by MSC for processing. Preprocessing will minimize the quantity of enriched uranium in the nickel received by MSC.

DOCUMENTATION (I.C.2.a, IV.A., IV.B., IV.C)

Following is a chronology of events showing MSC's involvement with nickel dating back to 1990. As indicated from the very beginning, interactions with MSC staff, in the form of meetings or discussions, were ongoing, including visits and discussions by senior Division management. These interactions culminated in the request for the melt-refine / electrorefining process which was reviewed during the February 1998 through April 1998 time frame.

Also during this time period regularly scheduled compliance inspections occurred. While these inspections did not focus on the nickel project they did look into MSC's analytical sampling and monitoring programs as well as other radiation safety/health physics concerns.

While DOE may have been present at meetings and may have even made presentations, any information from DOE, and included in the amendment, came from MSC. An example of DOE/STATE OF TENNESSEE communication can be seen in Attachment 3.

MSC NICKEL CHRONOLOGY OF EVENTS

Nov. 29, 1990	Letter from MSC to DRH. Amendment request to "roll nickel" for purposes of a demonstration. Mentions DOE "slightly contaminated" nickel castings and mentions that these were discussed with MHM the week before.
Nov. 30, 1990	**Issued Amendment 25**
Nov. 16, 1993	Letter from MSC to DRH. Request to process one contaminated nickel ingot from DOE using the inductoslag process. Will use the proposed IAEA international standard to measure the results of the project. Project will make stainless steel and work with the stainless steel as a product.
Dec. 6, 1993	**Issued Amendment 33**
Apr. 24, 1994	Renewal Application submitted. Section 9-22 covers melt-refining of nickel and section 12-24 covers the health and safety procedures for nickel processing operations.
Mar 5, 1995	**Issued Amendment 36 AIE**
Feb. 27, 1998	Letter from MSC to DRH. Amendment request to melt-refine and electro-refining 20,000 pounds of nickel in a 2000 gal full scale cell for demonstration purposes. (Proprietary)
Mar. 5, 1998	Letter from DRH to MSC with questions about the processes.
Mar. 24, 1998	Letter from MSC to DRH answering questions in March 5, 1998 letter. (Proprietary)
April 2, 1998	Letter from DRH to MSC with additional questions.
April 6, 1998	Letter from MSC to DRH responding to questions in April 2, 1999 letter. (Proprietary)
April 7, 1998	**Issued Amendment 52**
Dec 8, 1998	Letter from MSC to DRH requesting full scale operation and unrestricted release of volumetrically contaminated nickel.
Jan 18, 1999	Letter from MSC to DRH following up a meeting of Dec. 8, 1998.
Jan 29, 1999	Letter from MSC to DRH with additional information discussed in Jan. 20, 1999, meeting.
Feb 18, 1999	Letter from MSC to DRH with additional information discussed in Jan. 20, 1999, meeting.
Mar 26, 1999	**Issued Amendment 56**

Attachment 1

Manufacturing Sciences Corporation

A BNFL Inc. Company *The Metals Recycling Specialists*

Mr. Johnny Graves
Tennessee Division of Radiological Health
401 Church Street
L & C Annex, 3rd Floor
Nashville, Tennessee 37243-1532

Dear Mr. Graves:

Johnny, here is the information you requested. Please let me know if you need anything else.

"Paragraph K, L, and M of MSC's Radioactive Material License gives the combined possession limit for MSC License numbers S-01046-L00 and R-01078-L00 as 350 grams* of combined U-235, U-233 as 200 grams*, and Plutonium as 200 grams*.

The note for * states as follows: For each kind of special nuclear material determine the ratio between the quantity of that nuclear material and the quantity specified here for the same kind of special nuclear material. The sums of such ratios for all kinds of special nuclear material in combination shall not exceed "1" (i.e. Unity).

Following these instructions MSC has developed one spreadsheet for tracking all special nuclear material for both Licenses and the tracking system is called INVENT. This system gives a total amount and a percentage of limit for each isotope on site and a sum of fractions and percentage of limit for special nuclear material (see Enclosure 1)."

Sincerely,

Bobby Adcock
Radiation Safety Officer

804 Kerr Hollow Road Oak Ridge, TN 37830 Phone (423)481-0455 Fax (423)481-3142

Form RHS 8-7A
(9-92)

TENNESSEE DEPARTMENT OF ENVIRONMENT AND CONSERVATION
DIVISION OF RADIOLOGICAL HEALTH

RADIOACTIVE MATERIAL LICENSE

Supplementary Sheet

Page 3 of 6 Pages

License Number R-01078-L00

H. Any radioactive material with atomic number between 84 and 91 inclusive (excluding radium)	H. Same as in 8E	H. 10 curies
I. Radium 224, radium 226, and radium 228	I. Same as in 8E	I. 10 curies
J. Transuranics (except Special Nuclear Material)	J. Same as in 8E	J. 1 curie
K. Uranium enriched in the U-235 isotope	K. Same as in 8E	K. Combined possession limit for MSC licenses #S-01046-L00 and #R-01078-L00 350 grams* of contained U-235
L. Uranium 233	L. Same as in 8E	L. Combined possession limit for MSC licenses #S-01046-L00 and #R-01078-L00 200 grams*
M. Plutonium	M. Same as in 8E	M. Combined possession limit for MSC licenses #S-01046-L00 and #R-01078-L00 200 grams*

*For each kind of special nuclear material determine the ratio between the quantity of that special nuclear material and the quantity specified here for the same kind of special nuclear material. The sums of such

Form RHS 8-7A
(9-92)

TENNESSEE DEPARTMENT OF ENVIRONMENT AND CONSERVATION
DIVISION OF RADIOLOGICAL HEALTH

RADIOACTIVE MATERIAL LICENSE

Supplementary Sheet

Page 4 of 6 Pages License Number R-01078-L00

ratios for all kinds of special nuclear material in combination shall not exceed "1" (i.e., unity).

10. Authorized use

A. through C. For possession incidental to the processing and/or decontamination and free release of ferrous and nonferrous metals in accordance with statements, representations, and procedures contained in the references in Condition 22 of this license. In addition, uranium and thorium metal procured as feed material for processing authorized under Tennessee Radioactive Material License number S-01046-L00 and the resultant product may be stored under the authority of this license. The total possession limit for all source material shall not exceed 409,091 kilograms.

D. To be used for storage only.

E. through M. For possession incidental to the processing and/or decontamination and free release of ferrous and nonferrous metals in accordance with statements, representations, and procedures contained in the references in Condition 22 of this license.

Conditions (continued)

12. The licensee shall comply with applicable provisions of 1200-2-4, 1200-2-5, and 1200-2-10 of "State Regulations for Protection Against Radiation".

13. A. Radioactive material authorized by this license shall be used by, or under the supervision of, Alan Liby, Dennis Floyd, Howard Hendershott, Melvin Lundberg, Tom Mirth, Bobby R. Adcock, Madeline I. Alcorn, or Carl G. Mackey.

B. The Radiation Safety Officer for this license is Bobby R. Adcock.

14. The licensee shall maintain complete and accurate records of the receipt and disposal of radioactive material. The licensee shall, for radioactive material no longer useful for any purpose and for any equipment or supplies contaminated with such material for which further use and decontamination is not planned, define those materials as radioactive waste and treat them as such in accordance with the following provisions:

A. Radioactive waste material shall not be stored with non-radioactive waste.

B. A written record of all radioactive waste material shall be maintained until it has been determined by a suitable survey or radioassay that it has decayed to background levels or until it has been shipped to an authorized recipient in accordance with all applicable regulations. Accountability of

Enclosure 1. The following is a current picture of the actual INVENT table used to track licensed materials, including special nuclear material (see columns 6K, 6L, and 6M). This information is updated per shipment received and shipped and calculations are real-time.

6A	6B	6C	6D	6E
1000 Kilograms NATURAL URANIUM	1000 Kilograms URANIUM DEPLETED IN THE U-235 ISOTOPE	1000 Kilograms NATURAL THORIUM	350 grams URANIUM ENRICHED TO 5% URANIUM 235 Mass Grams	100 Curies ANY RADIOACTIVE MATERIAL WITH ATOMIC NUMBER BETWEEN 3 AND 89 INCLUSIVE (EXCEPT CARBON-14)
0.0000	97638.3418	0.0000	0.0000	1.7505
O.K.	O.K.	O.K.	O.K.	O.K.
O.K.	O.K.	O.K.	O.K.	O.K.
O.K.	O.K.	O.K.	O.K.	O.K.
0.00%	23.88%	0.00%	0.00%	1.75%

6F	6G	6H	6I	6J
100 Curies HYDROGEN 3	10 Curies CARBON 14	10 ANY RADIOACTIVE MATERIAL WITH ATOMIC NUMBERS BETWEEN 84 AND 91 INCLUSIVE, EXCLUDING RADIUM	10 RADIUM 226, RADIUM 228 AND RADIUM 228	1 TRANSURANICS (EXCEPT SPECIAL NUCLEAR MATERIAL)
0.8934	0.1514	0.1675	0.0003	0.3271
O.K.	O.K.	O.K.	O.K.	O.K.
O.K.	O.K.	O.K.	O.K.	O.K.
O.K.	O.K.	O.K.	O.K.	O.K.
0.89%	1.51%	1.5754%	0.00%	32.71%

6K	6L	6M	SUM of	Inferred
350 URANIUM ENRICHED IN THE U-235 ISOTOPE	350 URANIUM 233	350 PLUTONIUM	Fractions Special Nuclear Material	Uranium Curies
232.9358	0.0000	4.9812	69.04371%	1.32BE-02
ALERT 50%	O.K.	O.K.	ALERT 50%	
O.K.	O.K.	O.K.	O.K.	
O.K.	O.K.	O.K.	O.K.	
66.55309%	0.00%	2.48%		

Plantwide U235 350 grams	Plantwide U233 200 grams	Plantwide PU 200 grams	Plantwide SUM of Fractions
232.9358	0.0000	4.9812	69.04371%
ALERT 50%	O.K.	O.K.	ALERT 50%
O.K.	O.K.	O.K.	O.K.
O.K.	O.K.	O.K.	O.K.

To: ~~CA~~ 5/28
~~JCG~~ 5/28
~~LEN~~ 5/28
~~MHM~~ 5/29
AYD
REW

STATE OF TENNESSEE
DEPARTMENT OF ENVIRONMENT AND CONSERVATION
Division of Radiological Health
3rd Floor, L & C Annex,
401 Church Street
Nashville, TN 37243-1532

May 24, 1996

Certified Mail:
Return Receipt Requested

Manufacturing Sciences Corporation
804 Kerr Hollow Road
Oak Ridge, TN 37830

Attention: Danny Nichols, Manager Materials Transport and Survey

Gentlemen:

This letter is in response to your letter of May 10, 1996, as it relates to our telephone conversation of Thursday May 9, 1996.

As stated in your letter, we agree with your assessment that any Uranium-238 received in a shipment denoted as "enriched" is authorized and its possession limit inferred in your authorized limit of 350 grams of Uranium-235. However, it was our intention to give you guidance in accounting for that inferred possession limit, only, and we must insist that the amount of Uranium-238 be calculated and tracked for each shipment.

Sincerely,

Ronald E. Wynn

Ronald E. Wynn
Health Physicist
Division of Radiological Health

cc: Bobby R. Adcock,
Radiation Safety Officer

REW

Manufacturing Sciences Corporation

804 Kerr Hollow Road Oak Ridge, TN 37830 Phone (423) 481-0455 Fax (423) 481-3142

May 10, 1996

Mr. Ronald E. Wynn
Division of Radiological Health
Tennessee Department of Environment and Conservation
3rd Floor, L & C Annex
401 Church Street
Nashville, TN. 37243-1532

Dear Mr. Wynn:

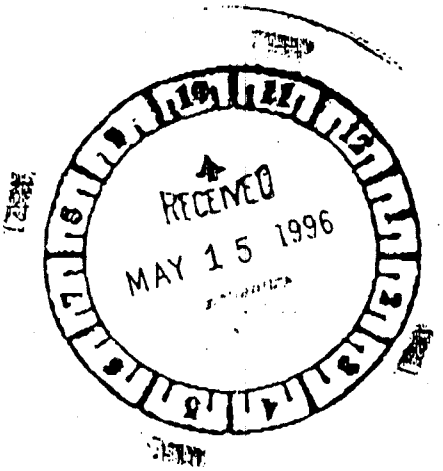
This letter is a follow-up to our telephone conversation of Thursday, May 9th. In that conversation we clarified with you the status of enriched uranium shipments (on contaminated metals) received at Manufacturing Sciences Corporation (MSC).

It is our understanding that any Uranium-238 received in a shipment denoted as "enriched" is authorized and inferred in our authorized limit of 350 grams of Uranium-235. Further, it is our understanding that MSC is not required to calculate or track the U-238 received in "enriched" shipments against any of our license authorizations. MSC will continue to track and limit the Uranium-235 component of "enriched" shipments to our authorized license limit of 350 grams. In addition, MSC will continue to track all special nuclear material (SNM) authorized by our license and limit total SNM to our authorized "unity equation " limit.

Should you have any questions concerning this letter please feel free to call myself or Bob Adcock at (423) 481-0455.

Sincerely Yours,

Danny Nichols
Manager Materials Transport and Survey



Copy File # S-01046

Memorandum

DATE: May 10, 1996

TO: FILE # R-01078

(MANUFACTURING SCIENCES

CORPORATION)

FROM: REW

RE: POSSESSION LIMIT FOR U-238 AND OTHER URANIUM IMPLIED IN ITEM 9.K.

CC: CWA, JCG, BHF

Danny Nichols of Manufacturing Sciences Corporation (MSC) called to ask how he should account for the U-238 he had that was associated with the calculated number of grams of uranium enriched in the U-235 isotope. After consulting with CWA, JCG, and BHF, we decided that the possession limit for the remaining uranium is implied to be that remaining portion of uranium, in grams, after calculating the amount of U-235 (in grams) and as a function of the percentage of the enrichment.

Attachment 3

FAX Transmittal

Number of Pages: 2 including cover

To: Charles Arnott
TDEC, Division of Radiological Health

Phone: 615-532-0364
Fax: 615-532-7938

From: Mitchell Callahan
Martin Marietta Energy Systems, Inc.

Phone: 615-241-2025
Fax: 615-576-6706

Message:

Martin Marietta Energy Systems, Inc. (MMES) is considering sending Manufacturing Sciences Corporation (MSC) some contaminated nickel metal to melt and alloy with other virgin feedstock materials to produce stainless steel 316L which will be made into sub-scale prototype containers. The nickel is contaminated with enriched uranium (U-235 wt% is 20 percent or less) and fission products comprised of Tc-99, Np, Pu, and Am. MMES is considering providing MSC with 1,000 lbs of contaminated nickel. MSC will probably receive the nickel in 10 separate shipments each containing 100 lbs of nickel. It is anticipated that the slag from the smelting process will be returned to MMES on a batch basis following each 100 lb shipment.

Attached is a copy of the letter received from MSC stating that MSC can possess and use the contaminated nickel, as described above, under MSC's radioactive materials license (license number S-01046-C00, Amendment 36, dated 3/16/95). Is the State of Tennessee, Department of Environment and Conservation, Division of Radiological Health, in agreement with the attached letter regarding MSC's ability to receive and alloy the contaminated nickel in question?

I informed Mr. Callahan on 4/24/95 that the above radioactive materials including the enriched uranium (U-235) would be authorized for receipt and use under the MSC license under Item E.

APR

CA

MANUFACTURING SCIENCES CORPORATION
804 Kerr Hollow Road Oak Ridge, Tennessee 37830 (615) 481-0455 FAX 481-3142

April 18, 1995

Harold R. Sheely
Martin Marrietta Energy Systems

Dear Mr. Sheely:

Manufacturing Sciences Corporation is prepared to accept delivery of nickel that has been removed from a converter that was actively involved in the gasseous diffusion uranium enrichment process. The metal will be melted, alloyed appropriately and cast into ingots which will then be subject to thermomechanical processing with the intent of manufacturing sub-scale prototype containers for containment of vitrified waste.. It is our understanding that the metal is contaminated with uranium compounds of less than 20 % enrichment in the isotope U235. Additionally the metal may be contaminated with trace fission products. MSC's radioactive materials license number S-01046-C00 which you have a copy of, allows for the processing of this metal in accordance with conditions 6,8,9 and 14 of the license. The applicable quantities are described by the following formula: [175(grams contained U-235)/350 +50(grams U-233)/200 + 50 (grams Pu)/200]=1. Additionally fission products are not to exceed 200 millicuries as described in the license conditions . It is expected that the nickel will not exceed those limits. It is incumbent upon Martin Marrietta Energy Systems to inform MSC if the quantities will exceed the above limits prior to shipping material.

Sincerely,

Bobby R. Adcock

Radiation Saftey Officer