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**STANDARD OPERATING PROCEDURE FOR ON-SITE SHIPMENT AND
DISCARD OF DEPLETED URANIUM MATERIALS, REVISION 3 -
(USED AS A REFERENCE IN OU1 RI)**

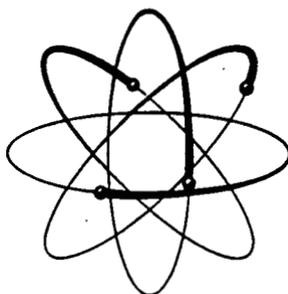
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NLCO-1021 REV 3
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REPORT

STANDARD OPERATING PROCEDURE
FOR
ON-SITE SHIPMENT AND DISCARD OF DEPLETED
URANIUM MATERIALS

REVISED BY

A. R. DIEHL



FEED MATERIALS PRODUCTION CENTER
NLO, INC.

6319

NLCO - 1021 (Rev. 3)

SPECIAL

STANDARD OPERATING PROCEDURE
FOR
ON-SITE SHIPMENT AND DISCARD OF DEPLETED
URANIUM MATERIALS

Revised by

A. R. Diehl - Accounting Division

NLO, INC.

Date Issued:

December 10, 1980

Approved:

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Nuclear Materials Representative

Approved:

C. H. Hande
Controller

NLO, INC.
Cincinnati, Ohio 45239

Contract Number DE-AC05-76OR01156

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PURPOSE

To expedite the on-site disposal of depleted uranium residues which are uneconomical to recover via the metal casting process, minimize materials handling, protect the atmosphere, ground and surface waters from contamination, and to record these discards in a manner commensurate with DOE policy and internal nuclear materials control. Precautions are taken to prevent the shipment of unauthorized depleted residues to the FMPC through the Nuclear Materials Control Department - administered NLT program, "Authorization to Ship Nuclear Materials." When, however, off-site receipts prove to be depleted uranium, based on NLO analysis, the same discard criteria are followed as for on-site generated depleted uranium residues, as set forth in this standard operating procedure. A table of detailed handling and discard requirements for NLO-generated residue materials is included at the conclusion of this SOP.

SPECIFICATIONS AND GENERAL NOTES1. Toxicity of Uranium Compounds

- 1.1 Avoid inhalation of dust, fumes and vapors from uranium compounds or residues.
- 1.2 Wear protective equipment as specified.
- 1.3 Clean the heavy equipment used at the chemical pits with pressurized water hoses prior to removal from the area.
- 1.4 Do not discard oils, oily sludges, solvents, solvent sludges or highly soluble uranium materials to the chemical pits.
- 1.5 Use earth or similar cover to prevent the spread of airborne contaminants.
- 1.6 Prevent the spread of contamination by promptly cleaning up spilled material.

2. Intrinsic Value

- 2.1 Depleted uranium materials for discard contain $\leq 0.52^*$ percent of the U-235 isotope.
- 2.2 Depleted uranium metal of known isotopic and chemical composition is valuable when processed to remeltable metal; therefore, it is to be retained in inventory.
- 2.3 Metallic residues that cannot be remelted to specification-grade metal after pickling, cutting, double melting, and/or briquetting are to be discarded to the chemical pits.

*Letter, C. F. Peters to L. M. Levy, Depleted Discard Assay, March 5, 1979.

3. Fire Safety Requirements

- 3.1 Materials of a pyrophoric nature are to be packaged in drums or cans no larger than 30 gallons capacity, prior to direct discard to the chemical pits. Examples of materials in this category include: D041, D046, D107, D109 and D110. These pyrophoric materials are not to be stored in drums with lids secured. Lids are to be secured only for transport to the chemical pit.
- 3.2 Oil and other organic liquids are to be decanted from the depleted uranium residues prior to discard in the chemical pits. See item 1.4.
- 3.3 Hazardous wastes, such as magnesium and similar materials that may ignite spontaneously, are to be pacified to minimize the possibility of fire, either at the source of generation, during transport, or after discard to the chemical waste pits. The handling of such pyrophoric-type materials must comply with current Fire & Safety requirements.

4. Nuclear Materials Control Requirements

- 4.1 Material coding and lot markings are to be maintained on containers in a legible condition until the material is discarded in the chemical pits.

Note: Gross, tare and net weight markings are to be maintained on containers of depleted uranium which are to be discarded.

- 4.2 The following forms are to be prepared by Production Recording personnel for the accounting of depleted materials:

<u>EDP Card Number</u>	<u>Form Number</u>	<u>Title</u>
65	NLO-AC-1945	Residue Production - Transfer & Identification
68-69	NLO-AC-1990	Nuclear Material Transfer Record
	1920	Nuclear Material Receipt Record
	1921	Material Identification Record
95-1	NLO-T-2316	Request for Analysis - Residues
----	NLO-PRO-614 ^b	Interplant Nuclear Materials Transfer Record

- 4.3 Accidental loss or diversion of nuclear materials and measured losses of depleted uranium are to be recorded and reported immediately to the NMC Department by the supervisor in charge of the area.

^bApplicable only to those residues which are not amenable to representative sampling and are transferred directly to the chemical pits.

- 4.4 The weighing of depleted materials is to be accomplished on scales designated by the Nuclear Materials Control Department. Instructions regarding scales to be used and scale testing or operator scale checking are contained in the individual Manufacturing Specifications and/or Standard Operating Procedures for the production plants or allied facilities.
- 4.5 Isotopic mixing is to be minimized before and after the material is drummed.
- 4.6 Drummed pyrophoric materials and dumpsters containing Plant 5 slag ($M.F._2$) are to be transferred directly to the chemical pits for discard. All other depleted residues including Plant 6 and 9 sump cake are to be sent to Plant 1 for sampling and sample preparation for U and U-235 analysis before they are sent to the chemical pits to be discarded. Grab samples are to be taken of residues not amenable to representative sampling. It is not necessary for Plant 1 to reweigh residues with the exception of off-site receipts which are to be weighed before sampling.
- 4.7 Samples are to be submitted to the Analytical Laboratory for percent U-235 by gamma analyses, which are to be reviewed and approved by Production Control prior to release of the lotted material for discard.
- 4.8 Inventory of depleted uranium materials is to be taken in accordance with the monthly letter of inventory instructions issued by the Production Control superintendent.
- 4.9 Material approved for discard and temporarily stored in drums on the chemical pit storage pad is to be discarded monthly, manpower and weather permitting. Discards are to receive final approval by the NMC Department. Form NLO-PRO-283, "Authorization for Release of Depleted Materials", is shown as Exhibit B in this SOP.

5. Responsibilities of the Shipper

- 5.1 In preparing the depleted uranium material for movement, the shipper is to make certain that it is properly identified, packaged, and in an acceptable condition for loading onto the transportation vehicle. The material is to be packaged securely in drum liners within the drum, with liners fastened at the top. All packaging must comply with current Fire & Safety requirements.
- 5.2 Soluble depleted uranium residues are to be precipitated prior to discard. Oil and other organic liquids are to be decanted from the residue material.
- 5.3 If the material is amenable to sampling, the shipper is to prepare form NLO-AC-1990 (EDP 68 Card), Nuclear Materials Transfer Record; the attached EDP 69 and XX cards accompany the shipment to the Sampling Plant.

5.4 If the material is pyrophoric and is to be transferred directly from the producing area to the chemical pits for discard, the shipper is to prepare form NLO-PRO-614, Interplant Nuclear Materials Transfer Record, to accompany the shipment. The transfer is to be handled on a memo basis; Transportation is to retain copy #2 of the document and the shipper is to retain copy #3. Copy #4 is to be forwarded to the NMC Department.

Each shipper is to prepare a summary at the end of each month, using Interplant Nuclear Materials Transfer Record (NLO-PRO-614), listing the quantity, lot numbers and net weights for those materials transferred to the chemical pits during the month. Copy #1 is to be forwarded by the shipper to the Production Control Department.

5.5 Vehicle load limits are not to be exceeded.

5.6 The shipper is to schedule all movements with the Transportation Department.

5.7 If the shipper, by reason of unexpected circumstances, is unable to meet the scheduled time, he is to notify the Transportation Department promptly.

5.8 Depleted residue materials are to be inventoried as instructed in the Production Control superintendent's inventory letter, until physically transferred to chemical pits.

5.9 In the event that sufficient manpower, staging or storage space and/or satisfactory environmental conditions do not permit immediate discard to the chemical pits, the drums of depleted material, excluding pyrophorics, are to be held by Plant 1 or stored on the pit storage pad until discard can be accomplished.

5.10 An NMC Department - approved copy of "Authorization for Release of Depleted Materials" (NLO-PRO-283) must be obtained prior to shipment of any depleted uranium materials to chemical pits, excluding pyrophorics.

5.11 To prevent damage to the chemical pit #6 rubber membrane, pyrophoric materials and materials having rough or jagged edges are to be discarded to chemical pit #4. Exhibit A summarizes those materials to be discarded to pit #4 and those which are acceptable for discard to pit #6. To expedite transfer to the chemical pits, Plant 1 supervision will maintain separate holding areas for these materials.

6. Responsibilities of the Production Control Department

6.1 The summary sheets for depleted uranium residue lots transferred to chemical pits, as listed on the Interplant Nuclear Materials Transfer Record (NLO-PRO-614), are to be reviewed and an estimate made of the residue material volume in cubic feet, per lot, based on the estimated material density (lbs./cu. ft.) as shown in the attached table and determined from 6.2 below.

6.2 Volume measurements are to be determined as follows:

$$\text{Volume of residue lot} = \frac{\text{Lot net weight (lbs.)}}{\text{Material weight estimate (lbs./cu. ft.)}^c} \\ \text{(cubic feet)}$$

If the lot net weight is unknown, the volume is to be obtained by assuming that full 30-gallon drums contain 4.0 cubic feet and full 55-gallon drums contain 7.4 cubic feet. If the metal drum is also discarded, add one cubic foot. Assume that full slag (MgF_2) dumpsters contain 135 cubic feet.

- 6.3 A copy of tentatively approved lots for discard, summarized on form NLO-PRO-283, "Authorization for Release of Depleted Material," is to be forwarded to the Nuclear Materials Control Department for final approval prior to discard. This form is shown as Exhibit B in this SOP.
- 6.4 Production Control may authorize for discard small quantities of lotted materials having isotopic analyses >0.52 and $<0.71\%$ U-235 based on current "recover-store-discard" criteria. A copy of the written authorization is to be directed to all appropriate departments.
- 6.5 Production Control may authorize the consumption and blending of small quantities of depleted uranium materials ranging between 0.52 and 0.71% U-235 with normal or slightly enriched uranium materials for the purpose of adjusting the isotopic level of digest batches in the Refinery.
- 6.6 Inventory of all depleted uranium materials is to be taken in accordance with the monthly letter of inventory instructions issued by the Production Control Superintendent.

7. Responsibilities of the Transportation Department

- 7.1 When notified by the shipper, the Transportation Department is to schedule the time of shipment.
- 7.2 The Transportation Department is to advise the shipper in the event that material cannot be currently discarded to the chemical pit.
- 7.3 Before accepting a shipment for movement, Transportation Department personnel are to check the load to verify that FMPC lot numbers and depleted uranium markings are the same as listed on the Interplant Nuclear Materials Transfer Record. Any irregularities noted are to be considered cause for refusal to move the material and are to be reported to the responsible shipper.
- 7.4 After the material has been physically discarded to a chemical pit, the responsible supervisor is to sign the copies of the Interplant Nuclear Materials Transfer Record (NLO-PRO-614) on the line marked "Received by," indicating that physical discard of the materials as listed has been completed.

^cObtain this weight estimate from the "Table of Handling and Discard Requirements for Depleted Uranium Materials" included with this SOP.

- 7.5 After the contents of each drum are emptied to a chemical pit, the empty drum is to be returned to the production area for reuse. Only when special authorization is given are the contents and the metal container to be discarded to the pit.
 - 7.6 The Transportation Department is responsible for gross and tare weighing the dumpster along with its dumpster unit (truck), using Scale SP-01, and attaching a copy of the printweight ticket to the white copy of the Interplant Nuclear Materials Transfer Record (NLO-PRO-614).
 - 7.7 Reactive Metals, Inc. - source depleted uranium residues are identified with NLT numbers 2312 through 2319. The Transportation Department is to transfer these materials to Production Receiving for sampling, inspection, and/or further disposition such as to the chemical pits. If RMI has previously submitted advance samples for analysis, no further sampling by Plant 1 is required.
8. Responsibilities of the Nuclear Materials Control Department
- 8.1 On receipt of each copy of Form NLO-PRO-283, "Authorization for Release of Depleted Material," completed by the Production Control Department, Nuclear Materials Control is to review the listed materials for correctness and reasonableness, within annual forecasted quantities and sign its approval for discard of the materials to the chemical pits. The NMC Department is to distribute copies of the form.
 - 8.2 On receipt of a completed Interplant Nuclear Materials Transfer Record (NLO-PRO-614), indicating that the material has been discarded, the Cost and Nuclear Materials Accounting Department issues a DOE Form 741, documenting the discard. Several transfers may be combined on a single DOE Form 741. DOE 741's for pit discards are to be documented as FVA to VVB (NLO's burial account).
 - 8.3 The Nuclear Materials Control Department is to report the total weight of depleted uranium materials discarded in the monthly report of "Routine Operating Losses" prepared for the Manager. The Cost and Nuclear Materials Accounting Department is to report these discard data monthly to DOE and NMSS.
 - 8.4 Weight and volume, as well as uranium and ²³⁵U measurement data on discards of depleted uranium to the chemical pits are to be summarized by Nuclear Materials Control and shown in the quarterly SWIMS reports to DOE as submitted by the NMC Department. These data are to be supplied by NMC to the Engineering and Health and Safety Divisions in the preparation of their waste management reports.

8.5 The Nuclear Materials Control Department is to maintain periodic surveillance over the discard operations.

APPROVALS:

AUTHORIZED BY:

W. Adams
General Superintendent

J. Andis
Manager

R.C. Matherton
Director, Health & Safety Division

W.W. Wright
Director, Procurement Division

NLO, Inc.

TABLE OF HANDLING AND DISCARD REQUIREMENTS
FOR DEPLETED URANIUM MATERIALS

Special Notes:

1. All materials will be handled on an individual lot basis and not as a group for discard.
2. All materials will be reviewed by Production Control for potential sale or for future commitments prior to discard.
3. All materials will be weighed and, if amenable, sampled by Plant 1 prior to discard.
4. Materials other than those listed below may also be considered for discard; however, they are to be discarded only after individual review.
5. Any pyrophoric materials or heavy materials having sharp edges or rough surfaces which could damage the Pit #6 rubber membrane are to be discarded to Pit #4.
6. Drums of all materials which may be pyrophoric are to be marked for Pit #4 disposal only.
7. All packaging must comply with current Fire and Safety requirements.

<u>MATERIAL DESCRIPTION</u>	<u>MATERIAL DESCRIPTION CODE</u>	<u>ESTIMATED DENSITY LBS./CU. FT.</u>	<u>DISPOSITION</u>
Discard process residues, trailer cakes, slurries, raffinates, etc.	001	75	Discard to chemical pit #6.
Non-burnable contaminated trash - to be discarded	003	50	Discard to chemical pit #4.
Contaminated steel and equipment, off-site receipts only, after washing and/or cleaning.	004	485	Sent to Decontamination for cleaning.
Contaminated leather gloves for laundry, off-site receipts only.	006		Send to laundry for dry cleaning.
Trailer cakes, waste slurries, raffinates, not meeting discard specification.	007	90	Discard to chemical pit #6 only after receiving written approval from Production supervision. Maintain pH between 9.0 and 10.5.

<u>MATERIAL DESCRIPTION</u>	<u>MATERIAL DESCRIPTION CODE</u>	<u>ESTIMATED DENSITY LBS./CU. FT.</u>	<u>DISPOSITION</u>
Contaminated graphite for machining.	008	135	Recover usable graphite; discard excess to chemical pit #4.
Contaminated oil - soluble; coolant.	009	5	Decant and/or split coolant. Do not send organics to pits; send coolant to Plant 6 for processing. Maintain pH between 9.0 and 10.5.
Contaminated water, containing chlorides.	010	62	Discard to chemical pit #6. Maintain pH between 9.0 and 10.5.
Contaminated soil, rocks, sand, bricks, to be processed for SS recovery. Includes ceramics.	011	150	Discard to chemical pit #4.
Contaminated water or sump liquor, non-chloride.	012	62	Discard to chemical pit #6. Maintain pH between 9.0 and 10.5.
Contaminated solvent-trichlor, perchlor, etc. - to be processed for SS recovery. (Stencil type on container).	013		Send to oil burner or incinerator; do not discard to chemical pit.
Glass and sample bottles - to be washed.	014	162	Discard to chemical pit #4 after washing.
Contaminated oil, insoluble, to oil burner.	015	60	Send to oil burner; do not discard to chemical pit.
Contaminated graphite, uncrushed, broken into large pieces.	017	135	Discard to chemical pit #4.
Contaminated magnesium.	019	30	Discard to chemical pit #4.
Contaminated Merco-Dri & Hilco cake.	020	30	Discard to chemical pit #6.
Drum decontamination residues, wet MgF ₂ .	021	40	Discard to chemical pit #6.
Contaminated TBP and/or kerosene mixtures and sludges.	022	40	Send to incinerator; do not discard to chemical pit.

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<u>MATERIAL DESCRIPTION</u>	<u>MATERIAL DESCRIPTION CODE</u>	<u>ESTIMATED DENSITY LBS./CU. FT.</u>	<u>DISPOSITION</u>
Oily MgF ₂	023	80	Do not discard to chemical pit if oil can be released to the liquid phase.
Contaminated graphite - crushed for processing	024	80	Discard to chemical pit #4.
Contaminated metallic filter elements.	025	25	Discard to chemical pit #4.
Contaminated carbon filter elements.	026		Discard to chemical pit #4. Particles may become airborne.
Contaminated burnable filter cartridges, rags, filter cloths, filter paper, etc.	027	25	Discard to chemical pit #4 and cover as soon as possible or after acceptance and inspection, send to incinerator.
Contaminated non-burnable filter cartridges, asbestos, filter cloths, polyethylene bags, etc.	028	25	Discard to chemical pit #4 and cover as soon as possible.
Dust collector bags.	029	25	Discard to chemical pit #4 and cover as soon as possible.
Magnesium oxide and magnesium zirconate from crucible cleanout.	030	30	Discard to chemical pit #6.
Incinerator ashes, material passing through grate or screen.	032	70	Discard to chemical pit #6.
Incinerator cinders, material not passing through grate or screen.	033	50	Discard to chemical pit #4.
MgF ₂ for milling.	034	90	Discard excess over reduction requirements to chemical pit #6. Use dumpsters or drums for transport.
MgF ₂ , good liner material.	035	100	Do not discard; use in reduction process. Keep product material dry.
MgF ₂ , -20 mesh, high free metal, for Plant 8 roasting.	036	140	Discard to chemical pit #4. May be pyrophoric.

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<u>MATERIAL DESCRIPTION</u>	<u>MATERIAL DESCRIPTION CODE</u>	<u>ESTIMATED DENSITY LBS./CU. FT.</u>	<u>DISPOSITION</u>
M _g F ₂ , to be crushed; materials from breakout.	038	130	Discard excess over reduction requirements to chemical pit #6.
Sludges, oily, from decant separation, including Plant 6 oil separator.	039		Send to oil burner.
Sludges, for blending and screening.	040	125	Decant any oil; discard to chemical pit #4. May be pyrophoric.
Sludges, oily for oxidation, high free metal.	041	125	Decant any oil; discard to chemical pit #4. May be pyrophoric.
Sludges, cleanout non-oily, for roasting.	042	100	Discard to chemical pit #4.
Sludges, solvent-trichlor, perchlor, etc. (Stencil type on container).	043	100	Send to incinerator. Do not discard to chemical pit.
Sludges, salt, soft, chloride.	044	100	Discard to chemical pit #6. Total discard per month may be limited to reduce chloride concentration in pit water.
Sludges, salt, soft, non-chloride.	045	100	Discard to chemical pit #6.
Sludges, non-oily, for oxidation, including high or low free metal.	046	100	Discard to chemical pit #4. May be pyrophoric.
Samples, non-metallic, miscellaneous.	047	100	Discard to chemical pit #6.
Oil burner ash.	048	25	Discard to chemical pit #6.
Graphite burner ash.	049		Discard to chemical pit #6.
Non-burnable metal with SS content.	053	150	Discard to chemical pit #4.
Depleted U Metal not suitable for reactor product streams.	055		Hold for possible sale.

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<u>MATERIAL DESCRIPTION</u>	<u>MATERIAL DESCRIPTION CODE</u>	<u>ESTIMATED DENSITY LBS./CU. FT.</u>	<u>DISPOSITION</u>
Depleted U ingot crops (top crops) from primary metal	056		Hold for possible sale.
Ash from burning dust collector bags.	059		Discard to chemical pit #6.
Furnace salt, solidified, chloride (for Plant 8 Recovery).	060	80	Discard to chemical pit #4. Total discard per month may be limited to reduce chloride concentration in pit water.
Furnace salt, solidified, non-chloride.	061	80	Discard to chemical pit #4. Total discard per month may be limited to reduce chloride concentration in pit water. May be used at General Sump for neutralizing acid waste liquors.
Dust collector residues, high fluoride, < 20% U assay.	062	125	Discard to chemical pit #6.
KOH reversion cake.	063		Discard to chemical pit #6.
Dust collector residues, pyrophoric, high fluoride.	064	120	Discard to chemical pit #4. May be pyrophoric.
Scrap salts, high fluoride, including floor sweepings.	065	145	Discard to chemical pit #6.
Scrap salts, low fluoride including floor sweepings.	066	145	Discard to chemical pit #6.
Wet sump or filter cake, halide contaminated.	067	30	Discard to chemical pit #6. Maintain pH between 9.0 and 10.5.
Wet sump or filter cake, oil contaminated.	068	30	Discard to chemical pit #6 after a check for oil content. Maintain pH between 9.0 and 10.5.

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<u>MATERIAL DESCRIPTION</u>	<u>MATERIAL DESCRIPTION CODE</u>	<u>ESTIMATED DENSITY LBS./CU.FT.</u>	<u>DISPOSITION</u>
Wet sump or filter cake, non-oily and non-halide.	069	70	Discard to chemical pit #6. Maintain pH between 9.0 and 10.5.
Rockwell spills.	070	120	Discard to chemical pit #4. May be pyrophoric.
Rockwell cleanings.	071	120	Discard to chemical pit #4.
Uranyl nitrate solution, high impurity such as Zirnlo decopering solution, for Refinery processing.	072		Discard sludge to chemical pit #6 after precipitation. Maintain pH between 9.0 and 10.5.
Uranyl chloride or fluoride solution high impurities (e.g., Plant 8 metal dissolver product) not Refinery feed.	073		Discard sludge to chemical pit #6 after precipitation. Maintain pH between 9.0 and 10.5.
Uranium sulfate solutions.	074		Discard sludge to chemical pit #6 after precipitation. Maintain pH between 9.0 and 10.5.
Clad metal for HNO ₃ dissolver.	075	500	Review for potential sale; discard to chemical pit #4 only after individual review.
Zirnlo ends - to be classified for recovery.	076	500	Do not discard; hold for review.
Unfired reduction charges plus M _g F ₂ from liner cave-ins.	079	120	Discard to chemical pit #4, unless direct salvage is possible.
Partially oxidized metal for sorting, containing Metal-X.	080	300	Discard to chemical pit #4.
Partially oxidized metal for sorting, containing no Metal-X.	081	400	Discard to chemical pit #4.
Off-specification UF ₄ .	082	200	Discard to chemical pit #6, unless practical to salvage through blending with other UF ₄ .

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<u>MATERIAL DESCRIPTION</u>	<u>MATERIAL DESCRIPTION CODE</u>	<u>ESTIMATED DENSITY LBS./CU FT.</u>	<u>DISPOSITION</u>
U chloride salts, reject.	083		Discard to chemical pit #6.
Bad reduction (no derby).	084	200	Discard to chemical pit #6.
U ₃ O ₈ , rotexed, other than Plant 8 product (not meeting Refinery specs. for CD).	085		Discard to chemical pit #6.
U ₃ O ₈ , rotexed, Plant 8 product (not meeting Refinery specs. for CD).	086		Discard to chemical pit #6.
Roasted sump cake - high fluoride - for milling.	087		Discard to chemical pit #6.
Scrap U ₃ O ₈ , low fluoride.	100	150	Review for potential sale; discard to chemical pit #6 only after individual review.
Scrap U ₃ O ₈ , high fluoride.	101	150	Discard to chemical pit #6, that which is in excess of a reasonable inventory for isotopic adjustment use.
Scrap UO ₂ .	102		Review for potential sale; discard to chemical pit #6 only after individual review.
Second generation top crops for dissolver.	103	500	Discard to chemical pit #4 if not for sale or remelt-able to special shapes.
Metal spills and extrusion ends, metal high in impurities and spills for HNO ₃ metal dissolver.	104	500	Discard to chemical pit #4 if not for sale or remelt-able to special shapes.
Chips and turnings contaminated with non-SS material, for oxidation.	107	100	Decant any oil; discard to chemical pit #4. May be pyrophoric.
Wet phosphate cake.	108		Discard to chemical pit #6.

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<u>MATERIAL DESCRIPTION</u>	<u>MATERIAL DESCRIPTION CODE</u>	<u>ESTIMATED DENSITY LBS./CU. FT.</u>	<u>DISPOSITION</u>
Sawdust for oxidation.	109	280	Discard to chemical pit #4. May be pyrophoric.
Non-briquettable chips and turnings, for oxidation.	110	150	Discard to chemical pit #4. May be pyrophoric.
Briquettable chips and turnings from standard metal.	111		Do not discard; recover in routine manner. May be pyrophoric.
Briquettable chips and turnings, high impurities, for briquetting and double melting.	112		Do not discard; recover in routine manner. May be pyrophoric.
Zr clad metal from off-site to be declad in Zirnlo.	113		Discard to chemical pit #4 only after individual review.
Zirnlo feed, classified and sawed.	114		Discard to chemical pit #4 only after individual review.
Wet ammonium diuranate cake.	117		Discard to chemical pit #6.
Hollow cores w/broken drills - all types - bits to be removed and cores pickled prior to remelt.	118		Do not discard; recover in routine manner.
Solid metal, other than cores, w/embedded steel.	119	500	Discard to chemical pit #4 only after individual review.
Chemical reject primary ingots for dissolver feed.	120	500	Hold for potential sale; discard only after individual review.
U ₃ O ₈ , +8 mesh, high fluoride.	121	400	Discard to chemical pit #6.
U ₃ O ₈ , +8 mesh, low fluoride.	122	400	Discard to chemical pit #6.
Zirnlo partially declad fuel elements.	124		Do not discard; recover in routine manner.
Unrecycled slag, +20 mesh, ball mill product.	125		Discard to chemical pit #4.

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<u>MATERIAL DESCRIPTION</u>	<u>DESCRIPTION CODE</u>	<u>ESTIMATED DENSITY LBS./CU. FT.</u>	<u>DESCRIPTION</u>
Clad U-metal, declad by machining or chemical treatment.	128	500	Discard to chemical pit #4 only after individual review.
M _g F ₂ , +20 mesh, high free U, high assay including dirty prill and Code 5 derbies.	129	300	Discard to chemical pit #4. May be pyrophoric.
Partially oxidized metal for dissolver.	130	400	Discard to chemical pit #4.
Partially oxidized metal, oxidation furnace feed.	131	400	Discard to chemical pit #4. May be pyrophoric.
Dust collector residues; low fluoride.	132	125	Discard to chemical pit #6.
U ₃ O ₈ for reoxidation.	134	170	Discard to chemical pit #6 only after individual review.
Dust collector residue, high fluoride, > 20% assay.	135	110	Discard to chemical pit #6.
Metal to be oxidized.	136	500	Review for potential sale; discard to chemical pit #4 only after individual review.
Misc. material - recovery method to be determined.	137		Disposition only after individual review.
Oxides clad or mixed with any element other than Al, Zr or stainless.	138	150	Discard to chemical pit #4 only after individual review.
Uranium alloyed or canned with elements other than Al, Mo, or Zr	139	150	Discard to chemical pit #4 only after individual review.
Clad metal for acid dissolution (not for Zirnlo processing).	141		Discard to chemical pit #4 only after individual review.
Roasted calcium precipitated sump and filter cakes.	143		Discard to chemical pit #6.
Off-site sump and filter cakes after roasting at FMPC.	144		Discard to chemical pit #6.
Roasted ammonium-precipitated sump and filter cakes.	145		Discard to chemical pit #6.
Roasted magnesium-precipitated sump and filter cakes.	146		Discard to chemical pit #6.

NLO, INC.

<u>MATERIAL DESCRIPTION</u>	<u>MATERIAL DESCRIPTION CODE</u>	<u>ESTIMATED DENSITY LBS./CU. FT.</u>	<u>DISPOSITION</u>
Roasted, milled and/or screened ADU cake for slag leach digestion	147		Discard to chemical pit #6.
Roasted, milled and/or screened ADU cake for continuous digestion.	148		Discard to chemical pit #6.
Reject UO ₃ .	157		Discard to chemical pit #6 only after individual review.
Uranium carbide (UC).	161		Discard to chemical pit #4 only after individual review.
UO ₂ pellets - Refinery feed.	166		Discard to chemical pit #6 only after individual review.
UO ₂ powder - Refinery feed.	167		Discard to chemical pit #6 only after individual review.
Crushed furnace salts and sludges, non-chloride.	168		Discard to chemical pit #6 only after individual review.
Roasted furnace salts and sludges, non-chloride.	169		Discard to chemical pit #6 only after individual review.

WLO, INC.

Disposition for Discard to Chemical Pits

Depleted Uranium by Material Description Code

MDC's to Pit #4

003	103
008	104
011	107
014	109
017	110
019	113
024	114
025	119
026	125
027	128
028	129
029	130
033	131
036	136
040	138
041	139
042	141
046	161
053	
060	
061	
064	
070	
071	
075	
079	
080	
081	

MDC's to Pit #6

001	084
007	085
010	086
012	087
020	100
021	101
030	102
032	108
034	117
038	121
044	122
045	132
047	134
048	135
049	143
059	144
062	145
063	146
065	147
066	148
067	157
068	166
069	167
072	168
073	169
074	
082	
083	

