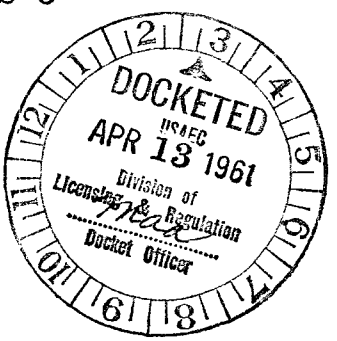
DOCKET NO. 40-3296

THE MARTIN COMPANY

Baltimore 3, Maryland

April 12, 1961
Mail No. W722

Refer to: LSS-5



U. S. Atomic Energy Commission
Division of Licensing & Regulation
Washington 25, D. C.

Attention: Mr. J. C. Delaney,
Chief Materials Section
Licensing Branch

Subject: Source Material License C-4283

Reference: a) USAEC Letter 40-3296 L & R:ND dated March 31, 1961

b) Martin Letter LSS-4 dated March 9, 1961

Gentlemen:

In accordance with reference (a) we submit additional information for your use in consideration of the requests stated in reference (b) concerning the subject license.

Reference (b) requests a limitation of procurement quantity at 150,000 pounds. The Martin Company has, since inception of the subject license procured 100,000 pounds of Thorium-Magnesium alloy in various sheet stock sizes. A review of our perpetual inventory records indicate that there are approximately 10,000 pounds of material currently in Stores. This material in various sheet stock sizes has been procured for use as outer skins for Titan I Missiles. This material will also be required for use in Research and Development for missile applications.

Martin Procurement is currently holding unplaced Purchase Requisitions totaling 6600 pounds. No attempt has been made to inventory the Work-In-Process or Finished Product in Storage. Such an inventory would be extremely difficult to obtain, due to the vast manufacturing, assembly and storage areas existing at the Martin Company. We estimate that 15,000 pounds of material is in process and in finished product. A summary of material in possession or to be ordered is as follows:

A/83

O.K.
D.F.H.

Nick - refer them to Sections 20.103 in your cover letter

In Inventory	10,000 pounds
Unplaced Purchase Requisitions	6,600 pounds
Work in-process and finished product (estimated)	15,000 pounds
Total	31,600 pounds

Answers to your specific questions 1-5 are as follows:

1. On the basis of the new requirement for possession limits a possession limit of 100,000 pounds is requested.

2. Activities to be performed:

   a. Shearing
   b. Drilling
   c. Forming

      1) Bend on brake
      2) Hydroform press
      3) Stretch form
      4) Marform
      5) Drop hammer form
      6) Punch press

   d. Machining

      1) Skin milling
      2) Routing

   e. Burring and Grinding

      1) Belt sander

   f. Cleaning

      1) Vapor degreasing - Trichlorethylene
      2) Alkaline cleaner
      3) Rinse
      4) Chromic acid pickle

   g. Assembly

      1) Rivet
      2) Shielded Heli-arc welding

h. Protective coating

1) Dichromate treatment
2) Zinc chromate primer
3) Enamel

3. Procedures for personal safety are attached as Appendix 1.

4. A description of survey equipment is attached as Appendix 2.

5. Waste products consisting of chips, clippings, dust, offal, etc., is accumulated up to 3000 pounds maximum. Waste is stored in a secured area and is sold to a licensed scrap dealer. Disposal occurs at 6 to 10 months intervals. Solution samples are submitted periodically for Health Physics analysis. Concentration has been low enough to permit disposal into the sanitary sewer system.

Internal control of Magnesium-Thorium is described in Martin Baltimore Product Procedure Number OP-B4.104, attached as Appendix 3.

Should you have any further questions, please do not hesitate to contact us.

Very truly yours,

THE MARTIN COMPANY

J. V. Loppert,
Licensing Officer
Nuclear Division

RLM/JVL/plm

Appendix 1

MAGNESIUM-THORIUM HANDLING PROCEDURES - HEALTH PHYSICS ASPECTS

1. Health Physics will inspect and report specifically on any new process or location involving this material.

2. Injuries involving this material will receive immediate attention of the Medical Department (as should all injuries) with notice to Health Physics and special effort to remove splinters, etc.

3. Standard procedures will be used in any operation to confine and remove dust, filings, etc. This is necessary because of the fire hazard of the magnesium and to prevent the accumulation of even these small amounts of radioactive material.

4. In general, the welding of Magnesium-Thorium will require respiratory protection or a well designed local exhaust.

5. The local ventilation provided for pickling baths, etc. will suffice in general for protection against radioactive material from these baths. Respirators are relatively ineffective against chemical vapors.

Appendix 2

HEALTH PHYSICS SURVEY INSTRUMENTS

Listed below are descriptions of the types of instruments available to perform necessary health and safety surveys and the surveys to be performed.

Instrument	Radiation Detected	Manufacturer	Type	Use
G.M. Survey Meter	Beta-Gamma	Nuclear-Chicago Model No. 2612	Geiger Muller	General Survey
G.M. Survey Meter	Beta-Gamma	Eberline Model E-500B	Geiger Muller	General Survey
Scaler-Detector	Beta-Gamma	Tracerlab Model No. 1000	Geiger Muller	Counting Smears & Air Samples
Scaler-Detector	Alpha	TMC & NRD Detector	Scintillator	Counting Smears & Air Samples
Alpha Survey Meter	Alpha	Eberline PAC-1SA	Scintillator	General Survey
Alpha Survey Meter	Alpha	Eberline PAC-3G	Gas Proportional	General Survey
Air Sampler	-	Gast	Air Pump	Collection of Air Samples

Surveys are conducted at storage locations and work areas to measure radiation levels and levels of surface and air contamination to employees in the vicinity.

MARTIN
BALTIMORE

☐ OPERATING INSTRUCTION	NO. OP-B4.104
☐ ADMINISTRATIVE PROCEDURE	REVISION Original
☒ PRODUCT PROCEDURE	ISSUED 9-15-60
	PAGE 1 OF 2

SUBJECT: MATERIALS, MAGNESIUM-THORIUM - CONTROL OF

REMARKS This procedure establishes the method of handling and processing alloys of Magnesium-Thorium containing 4% or less Thorium.

This procedure establishes that:

1. Materiel & Procurement shall purchase and identify Magnesium-Thorium material upon receipt and shall store and maintain a record by weight of all material purchased, in stock, and issued.
2. Manufacturing shall control all Magnesium-Thorium in process through the use of colored and stenciled Shop Order folders, color coding material, special notes, and instructions on the Process Planning Sheets, special handling of offal and work in process, special disposition of scrap and color identification spots on finished parts.
3. Quality shall inspect incoming material, check identification and notify Conservation whenever Magnesium-Thorium scrap is generated as a result of rejected material or parts.
4. Health Physics shall monitor the handling, storage, manufacturing operations and scrap disposition of Magnesium-Thorium to ensure the safety of personnel and proper handling of material.

Atomic Energy Commission approval of this procedure has been obtained by the Legal Department.

Additional copies of this Product Procedure may be obtained by calling Extension 9295 or 9327.

D. J. Desandro
Management Studies

Reference: Standard Process - P75007

PROCEDURE

I Materiel & Procurement

A Specify in the purchase of all Magnesium-Thorium materials that material must be so designated and that all shipping papers must be marked with the net weight of the material.

B All Magnesium-Thorium material in STORES must be properly designated and may not be mixed with other types of materials.

C Keep stock records on all orders, receipts, and issues, returns and excess materials.

D Initiate Inventory Schedules or Excess Lists on obsolete, canceled, and terminated raw sheet stock.

II Manufacturing Planning

A Flag all primary data sheets where there are detail parts to be made from Magnesium-Thorium.

B Mark each page of the Process Planning Sheets in bold letters - "MAGNESIUM-THORIUM".

C Provide the following note in first step of the process plan:

"After each operation that requires removing material such as cuttings, chips, or residual remnant material, clean machine and floor thoroughly and put all cuttings, chips, and residual material in designated Magnesium-Thorium container. All offal 8" x 10" or larger is to be returned to STORES."

D Include in the process plan a step requiring that all completed parts be identified with a Magnesium-Thorium identification spot.

III Production Control

A Provide special colored and stenciled Shop Order folders marked "MAGNESIUM-THORIUM" to identify detail parts that are to be made from Magnesium-Thorium alloy.

III (Cont'd)

B Deliver Magnesium-Thorium materials with the color coded Magnesium-Thorium folder to DETAIL MANUFACTURING.

C Have all parts moved as an integral package - do not permit losses of material due to rejections, split folders, or other reasons.

D Process rework or scrap on details and assemblies resulting from Engineering design changes to maintain segregation of material.

E Initiate Inventory Schedules or Excess Lists on obsolete, canceled, and terminated parts in process and completed assemblies.

IV Factory

A Handle Magnesium-Thorium in accordance with instructions in the process plan, Safety Bulletins, and instructions of the Health Physics representative.

B Account for all material and parts as finished parts, rejected parts, scrap, or offal.

C Return offal 8" x 10" or larger to STORES.

V Conservation

A Provide containers for Magnesium-Thorium material, cuttings, trimmings, clippings, and floor sweepings.

B Store Magnesium-Thorium material until sufficient quantity is available for shipment to a designated scrap dealer.

C Package the Magnesium-Thorium in containers to ensure against loss.

D Weigh all scrap and maintain a record of the weight of scrap sold.

NOTE: All rejected parts, scrap, offal, or surplus materials will be kept separate from other materials and will be disposed of only to a licensed scrap dealer in accordance with normal excess and scrap disposition procedure.

VI Quality

A Inspect incoming material and assure that the required Magnesium-thorium material is received and identified.

B Any Magnesium-Thorium required for test purposes must be disposed of in Magnesium-Thorium scrap containers.

C Notify CONSERVATION whenever scrap is generated as a result of rejected material or parts, indicating the contract number involved.

VII Health Physics - Safety

A Monitor the handling of Magnesium-Thorium as required to assure that prescribed safety measures are followed and that no health hazards exist. In particular, monitor all operations involving welding, grinding, polishing, etc., to ensure that no harmful fumes or dusts are present in work areas.

B Periodically monitor scrap metal containers as required, to prevent accidental mixing of Magnesium-Thorium with other materials.

FORMS USED

Purchase Order	- Form 061226
Inventory Schedule	- Form 060830-060838
Detail Process Plan	- Form 060480
Assembly Process Plan	- Form 060485
Shop Order	- Form 060500