NRC FORM 374 (7-94)

U.S. NUCLEAR REGULATORY COMMISSION

MATERIALS LICENSE

Amendment No. 07

Pursuant to the Atomic Energy Act of 1954, as amended, the Energy Reorganization Act of 1974 (Public Law 93-438), and Title 10, Code of Federal Regulations, Chapter I, Parts 30, 31, 32, 33, 34, 35, 36, 39, 40, and 70, and in reliance on statements and representations heretofore made by the licensee, a license is hereby issued authorizing the licensee to receive, acquire, possess, and transfer byproduct, source, and special nuclear material designated below; to use such material for the purpose(s) and at the place(s) designated below; to deliver or transfer such material to persons authorized to receive it in accordance with the regulations of the applicable Part(s). This license shall be deemed to contain the conditions specified in Section 183 of the Atomic Energy Act of 1954, as amended, and is subject to all applicable rules, regulations, and orders of the Nuclear Regulatory Commission now or hereafter in effect and to any conditions specified below.

398159

Licensee	
1. AlliedSignal Aerospace Guidance and Control Systems Michawaka Operations 2. 400 S. Beiger Street Mishawaka, IN 46544	In accordance with application dated February 14, 1995 3. License Number STB-286 is amended in its entirety to read as follows:
	4. Expiration Date March 31, 2007
	5. Docket or Reference No. 040-04930

6. Byproduct, Source, and/or Special Nuclear Material	7. Chemical and/or Physical Form	8. Maximum Amount that Licensee May Possess at Any One Time Under This License
A. Thorium	A. Magnesium thorium alloy (up to 4% thorium)	A. 1230 kilograms

9. Authorized Use:

A. To be used for possession, receipt and storage in missiles and for minor modification of magnesium-thorium alloy parts.

CONDITIONS

10. Licensed material shall be used only at the licensee's facilities located at 400 South Beiger Street, Mishawaka, Indiana. Licensed material may be stored at the licensee's facilities located at 29297 U.S. Highway 33 North, Elkhart, Indiana.

11. Licensed material shall be used by, or under the supervision of, individuals designated by the licensee's Radiation Safety Officer, John A. Sauter.

12. The licensee's Radiation Safety Officer shall survey work areas where materials are stored and/or physically processed at intervals not to exceed six months in order to detect and prevent the spread of radioactive material contamination. Record of surveys including dates and survey results shall be maintained for review by the Commission.

MATERIALS LICENSE
SUPPLEMENTARY SHEET

License Number: STB-286
Docket or Reference Number: 040-04930
Amendment No. 07

13. The licensee shall follow the criteria contained in NRC, "Guidelines for Decontamination of Facilities and Equipment Prior to Release for Unrestricted Use of Termination of License for Byproduct, Source, or Special Nuclear Material," dated July 1982, for decontamination and release of facilities for unrestricted use.

14. The licensee's survey instruments shall be calibrated at 12-month intervals by individuals specifically licensed by the NRC or an Agreement State for calibration of survey instruments as a service to other licensees.

15. The licensee shall maintain records of information important to safe and effective decommissioning at Allied-Signal Aerospace Co., Mishawaka Operations, 400 South Beiger Street, Mishawaka, Indiana per the provisions of 10 CFR 40.36 until this license is terminated by the Commission.

16. Except as specifically provided otherwise in this license, the licensee shall conduct its program in accordance with the statements, representations, and procedures contained in the documents, including any enclosures, listed below, except for minor changes in the medical use radiation safety procedures as provided in 10 CFR 35.31. The Nuclear Regulatory Commission's regulations shall govern unless the statements, representations, and procedures in the licensee's application and correspondence are more restrictive than the regulations.

    A. Application dated February 14, 1995; and

    B. Letters dated September 27, 1996, March 17, 1997, and March 24, 1997.

FOR THE U.S. NUCLEAR REGULATORY COMMISSION

Date March 28, 1997

By _____
Nuclear Materials Licensing Branch, Region III

1.

BETWEEN:

LICENSE FEE MANAGEMENT BRANCH, ARM
AND
REGIONAL LICENSING SECTIONS

(FOR LFMS USE)
INFORMATION FROM LTS

PROGRAM CODE: 11300
STATUS CODE: 2
FEE CATEGORY: 2C
EXP. DATE: 19950331
FEE COMMENTS:
DECOM FIN ASSUR REQD: Y

LICENSE FEE TRANSMITTAL

A. REGION

1. APPLICATION ATTACHED
APPLICANT/LICENSEE: ALLIEDSIGNAL AEROSPACE
RECEIVED DATE: 950215
DOCKET NO: 4004930
CONTROL NO.: 398159
LICENSE NO.: STB-286
ACTION TYPE: RENEWAL

RB

RECEIVED
MAR - 3 1994
REGION III

2. FEE ATTACHED
AMOUNT: 1850.00
CHECK NO.: 0713439

3. COMMENTS

SIGNED D. Hersey
DATE 2-15-95

B. LICENSE FEE MANAGEMENT BRANCH (CHECK WHEN MILESTONE 03 IS ENTERED / √ /)

1. FEE CATEGORY AND AMOUNT: 2C $1400

2. CORRECT FEE PAID. APPLICATION MAY BE PROCESSED FOR:
AMENDMENT
RENEWAL ✓
LICENSE

3. OTHER

SIGNED 2C
DATE 2/27/95

OFC FOR 24 MAR 95

NRC FORM 313 (6-93)
10 CFR 30, 32, 33
34, 35, 36, 39 and 40

U. S. NUCLEAR REGULATORY COMMISSION

APPLICATION FOR MATERIAL LICENSE

APPROVED BY OMB: NO. 3150-0120
EXPIRES 6-30-96

ESTIMATED BURDEN PER RESPONSE TO COMPLY WITH THIS INFORMATION COLLECTION REQUEST: 9 HOURS. SUBMITTAL OF THE APPLICATION IS NECESSARY TO DETERMINE THAT THE APPLICANT IS QUALIFIED AND THAT ADEQUATE PROCEDURES EXIST TO PROTECT THE PUBLIC HEALTH AND SAFETY. FORWARD COMMENTS REGARDING BURDEN ESTIMATE TO THE INFORMATION AND RECORDS MANAGEMENT BRANCH (MNBB 7714), U.S. NUCLEAR REGULATORY COMMISSION, WASHINGTON, DC 20555-0001, AND TO THE PAPERWORK REDUCTION PROJECT (3150-0120), OFFICE OF MANAGEMENT AND BUDGET, WASHINGTON, DC 20503.

INSTRUCTIONS: SEE THE APPROPRIATE LICENSE APPLICATION GUIDE FOR DETAILED INSTRUCTIONS FOR COMPLETING APPLICATION. SEND TWO COPIES OF THE ENTIRE COMPLETED APPLICATION TO THE NRC OFFICE SPECIFIED BELOW.

APPLICATION FOR DISTRIBUTION OF EXEMPT PRODUCTS FILE APPLICATIONS WITH:

DIVISION OF INDUSTRIAL AND MEDICAL NUCLEAR SAFETY
OFFICE OF NUCLEAR MATERIALS SAFETY AND SAFEGUARDS
U.S. NUCLEAR REGULATORY COMMISSION
WASHINGTON, DC 20555-0001

ALL OTHER PERSONS FILE APPLICATIONS AS FOLLOWS:

IF YOU ARE LOCATED IN:

CONNECTICUT, DELAWARE, DISTRICT OF COLUMBIA, MAINE, MARYLAND, MASSACHUSETTS, NEW HAMPSHIRE, NEW JERSEY, NEW YORK, PENNSYLVANIA, RHODE ISLAND, OR VERMONT, SEND APPLICATIONS TO:

LICENSING ASSISTANT SECTION
NUCLEAR MATERIALS SAFETY BRANCH
U.S. NUCLEAR REGULATORY COMMISSION, REGION I
475 ALLENDALE ROAD
KING OF PRUSSIA, PA 19406-1415

ALABAMA, FLORIDA, GEORGIA, KENTUCKY, MISSISSIPPI, NORTH CAROLINA, PUERTO RICO, SOUTH CAROLINA, TENNESSEE, VIRGINIA, VIRGIN ISLANDS, OR WEST VIRGINIA, SEND APPLICATIONS TO:

NUCLEAR MATERIALS LICENSING SECTION
U.S. NUCLEAR REGULATORY COMMISSION, REGION II
101 MARIETTA STREET, NW, SUITE 2900
ATLANTA, GA 30323-0199

IF YOU ARE LOCATED IN:

ILLINOIS, INDIANA, IOWA, MICHIGAN, MINNESOTA, MISSOURI, OHIO, OR WISCONSIN, SEND APPLICATIONS TO:

MATERIALS LICENSING SECTION
U.S. NUCLEAR REGULATORY COMMISSION, REGION III
801 WARRENVILLE RD.
LISLE, IL 60532-4351

ARKANSAS, COLORADO, IDAHO, KANSAS, LOUISIANA, MONTANA, NEBRASKA, NEW MEXICO, NORTH DAKOTA, OKLAHOMA, SOUTH DAKOTA, TEXAS, UTAH, OR WYOMING, SEND APPLICATIONS TO:

NUCLEAR MATERIALS LICENSING SECTION
U.S. NUCLEAR REGULATORY COMMISSION, REGION IV
611 RYAN PLAZA DRIVE, SUITE 400
ARLINGTON, TX 76011-8064

ALASKA, ARIZONA, CALIFORNIA, HAWAII, NEVADA, OREGON, WASHINGTON, AND U.S. TERRITORIES AND POSSESSIONS IN THE PACIFIC, SEND APPLICATIONS TO:

RADIOACTIVE MATERIALS SAFETY BRANCH
U.S. NUCLEAR REGULATORY COMMISSION, REGION V
1450 MARIA LANE
WALNUT CREEK, CA 94596-5368

PERSONS LOCATED IN AGREEMENT STATES SEND APPLICATIONS TO THE U.S. NUCLEAR REGULATORY COMMISSION ONLY IF THEY WISH TO POSSESS AND USE LICENSED MATERIAL IN STATES SUBJECT TO U.S. NUCLEAR REGULATORY COMMISSION JURISDICTIONS.

1. THIS IS AN APPLICATION FOR *(Check appropriate item)*

- [ ] A. NEW LICENSE
- [X] B. AMENDMENT TO LICENSE NUMBER STB-286
- [X] C. RENEWAL OF LICENSE NUMBER STB-286

2. NAME AND MAILING ADDRESS OF APPLICANT *(Include Zip code)*

AlliedSignal Aerospace
GC&S - Target Systems
400 South Beiger Street
Mishawaka, IN 46544

3. ADDRESS(ES) WHERE LICENSED MATERIAL WILL BE USED OR POSSESSED

AlliedSignal Aerospace
GC&S - Target Systems
400 South Beiger Street
Mishawaka, IN 46544

4. NAME OF PERSON TO BE CONTACTED ABOUT THIS APPLICATION

John E. Sauter

TELEPHONE NUMBER

219-254-4289

SUBMIT ITEMS 5 THROUGH 11 ON 8-1/2 X 11" PAPER. THE TYPE AND SCOPE OF INFORMATION TO BE PROVIDED IS DESCRIBED IN THE LICENSE APPLICATION GUIDE.

5	RADIOACTIVE MATERIAL a. Element and mass number, b. chemical and/or physical form, and c. maximum amount which will be possessed at any one time.	6	PURPOSE(S) FOR WHICH LICENSED MATERIAL WILL BE USED.
7	INDIVIDUAL(S) RESPONSIBLE FOR RADIATION SAFETY PROGRAM AND THEIR TRAINING EXPERIENCE.	8	TRAINING FOR INDIVIDUALS WORKING IN OR FREQUENTING RESTRICTED AREAS.
9	FACILITIES AND EQUIPMENT.	10	RADIATION SAFETY PROGRAM.
11	WASTE MANAGEMENT.	12	LICENSEE FEES *(See 10 CFR 170 and Section 170.31)* FEE CATEGORY 2.C. AMOUNT ENCLOSED $ 1850.00

13. CERTIFICATION *(Must be completed by applicant)* THE APPLICANT UNDERSTANDS THAT ALL STATEMENTS AND REPRESENTATIONS MADE IN THIS APPLICATION ARE BINDING UPON THE APPLICANT.

THE APPLICANT AND ANY OFFICIAL EXECUTING THIS CERTIFICATION ON BEHALF OF THE APPLICANT NAMED IN ITEM 2 CERTIFY THAT THIS APPLICATION IS PREPARED IN CONFORMITY WITH TITLE 10, CODE OF FEDERAL REGULATIONS, PARTS 30, 32, 33, 34, 35, 36, 39 AND 40, AND THAT ALL INFORMATION CONTAINED HEREIN IS TRUE AND CORRECT TO THE BEST OF THEIR KNOWLEDGE AND BELIEF.

WARNING: 18 U.S.C. SECTION 1001 ACT OF JUNE 25, 1948 62 STAT. 749 MAKES IT A CRIMINAL OFFENSE TO MAKE A WILLFULLY FALSE STATEMENT OR REPRESENTATION TO ANY DEPARTMENT OR AGENCY OF THE UNITED STATES AS TO ANY MATTER WITHIN ITS JURISDICTION.

CERTIFYING OFFICER – TYPED/PRINTED NAME AND TITLE	SIGNATURE	DATE
John E. Sauter Radiation Safety Officer	John E. Sauter	02-14-95

FOR NRC USE ONLY

TYPE OF FEE	FEE LOG	FEE CATEGORY	AMOUNT RECEIVED	CHECK NUMBER	COMMENTS
Renewal	Feb 10 III	2C	$1850 ($1400)	091549	Refund $450
APPROVED BY			DATE		
SC			2/27/95		398159

RECEIVED
FEB 15 1995
REGION III

NRC FORM 313 (6-93)

AlliedSignal AEROSPACE

AlliedSignal Inc.
G&CS - Target Sys[illegible]
400 South Beiger Street
Mishawaka, IN 46544

219 255 2111
219 259 9106 FAX

February 14, 1995

Materials Licensing Section
U.S. Nuclear Regulatory Commission, Region III
801 Warrenville Road
Lisle, IL 60532-4351

Sections 5 - 11 Renewal/ Amendment STB-236

5. a. Natural Thorium

   b. Magnesium thorium alloy
   (up to 4% thorium)

   c. 1230 kilograms

6. To be used for possession, receipt and storage in missile and for minor modification of magnesium-thorium alloy parts.

7. Radiation Safety Officer - John E. Sauter

   Experience - 13 years experience in industrial laboratory work.

   Jan. 1988 - Dec. 1994 Responsible for the management and technical direction of all chemical and metallurgical testing activities within the facility, including failure analysis, evaluation of new parts and materials, process development and control of incoming hardware and materials, and qualification testing. In conjunction with laboratory responsibilities, Mr. Sauter was also responsible for Radiation Safety and disposal of hazardous waste.

   Jan. 1995 Health, Safety and Environmental Coordinator, Radiation Safety Officer.

8. Due to the low level of radioactivity associated with this magnesium-thorium material, there are no restricted areas located in the facility.

9. Due to the low level of radioactivity associated with this magnesium-thorium material, and the minor modifications made to some of the parts, no special provisions are needed to the facilities or equipment located at 400 South Beiger Street, Mishawaka IN.

10. Radiation Safety Program consist of actual survey of the work areas where materials are stored and/or physically processed at interval not exceeding six months in order to detect and prevent the possible spread of radioactive material contamination. A Picker model 2980, serial no. 1141, meter is used to perform the surveys. This meter is calibrated annually by RSSI located in Morton Grove, IL.

11. Waste metal (scrap pieces, chips, large filing, and drillings) are collected for disposal. In addition magnesium-thorium components which are in non-useable conditions are collected for disposal. Since all this material is the property of the U.S. Navy, we coordinate the disposal of all magnesium-thorium waste with the Navy. Such a disposal activity was done on December 7, 1992 under U.S. Navy shipment control number USN 92-110.

12. License Fees included are: $1450.00 Renewal of Source material (other)

$ 450.00 Amendment to update company name

from: AlliedSignal Aerospace
Guidance and Control Systems
Mishawaka, Operations
400 South Beiger Street
Mishawaka, IN 46544

to: AlliedSignal Aerospace
GC&S - Target Systems
400 South Beiger Street
Mishawaka, IN 46544.

398159

DIVISION OF ACCOUNTING AND FINANCE
REQUEST FOR REFUND TO EMPLOYEE/VENDOR

THE EMPLOYEE/VENDOR IDENTIFIED BELOW HAS OVERPAID THE NUCLEAR REGULATORY COMMISSION FOR GOODS OR SERVICES PROVIDED AND IS DUE A REFUND.

EMPLOYEE/VENDOR/PAYEE CODE: * _____

NAME: Allied Signal Aerospace

ADDRESS: Attn: John E. Sauter, RSO

ADDRESS: 400 South Beiger Street

CITY: Mishawaka STATE: IN ZIP: 46544

TRANS CODE: PX TRANS TYPE: FE FUND: X5280

JOB CODE: _____ (FOR FE TRANS TYPE) REFUND AMOUNT: $450

COMMENTS: Lic STB-286 REN Fee RFND
Ck 91549
(limit comments to 40 characters, including spaces)

PREPARED BY: Shirley Crutchfield DATE: Mar. 1, 1995

AUTHORIZED BY: Cheryl A Phillips TITLE: Lic Fee Analyst

OFFICE: OC/LFDCB DATE: 3/1/95

ORIGINAL
INVOICE #: _____ DATE PAID: _____ AMOUNT: $_____

REFUND ENTERED INTO COLLECT BY: _____ _____

REFUND DETERMINED BY: _____ DATE: _____

PLEASE ATTACH APPROPRIATE SUPPORTING DOCUMENTATION.

* AN ADDRESS MUST BE PROVIDED FOR VENDORS NOT FOUND ON THE VEND TABLE.

Feb 10 III 2C #1850 (400) 91549

MAR 3 1 1997

John E. Sauter
Radiation Safety Officer
AlliedSignal Aerospace
Michawaka Operations
400 S. Beiger Street
Mishawaka, IN 46544

Dear Mr. Sauter:

Enclosed is Amendment No. 07 to your NRC Material License No. STB-286 in accordance with your request.

Please note that in accordance with 10 CFR Part 30 of the regulations, your license expiration date has been extended by ten years.

Please review the enclosed document carefully and be sure that you understand all conditions. If there are any errors or questions, please notify the U.S. Nuclear Regulatory Commission, Region III office at (630) 829-9887 so that we can provide appropriate corrections and answers.

Please be advised that your license expires at the end of the day, in the month, and year stated in the license. Unless your license has been terminated, you must conduct your program involving byproduct materials in accordance with the conditions of your NRC license, representations made in your license application, and NRC regulations. In particular, note that you must:

1. Operate in accordance with NRC regulations 10 CFR Part 19, "Notices, Instructions and Reports to Workers; Inspections," 10 CFR Part 20, "Standards for Protection Against Radiation," and other applicable regulations.

2. Notify NRC, in writing, within 30 days:

   a. When the Radiation Safety Officer permanently discontinues performance of duties under the license or has a name change; or

   b. When the licensee's mailing address changes (no fee is required if the location of byproduct material remains the same).

398159

3. In accordance with 10 CFR 30.36(b) and/or license condition, notify NRC, promptly, in writing, and request termination of the license when you decide to terminate all activities involving materials authorized under the license.

4. Request and obtain a license amendment before you:

   a. Change Radiation Safety Officers;

   b. Order byproduct material in excess of the amount, or radionuclide, or form different than authorized on the license;

   c. Add or change the areas of use or address or addresses of use identified in the license application or on the license; or

   d. Change ownership of your organization.

5. Submit a complete renewal application with proper fee or termination request at least 30 days before the expiration date of your license. You will receive a reminder notice approximately 90 days before the expiration date. Possession of byproduct material after your license expires is a violation of NRC regulations. A license will not normally be renewed, except on a case-by-case basis, in instances where licensed material has never been possessed or used.

In addition, please note that NRC Form 313 requires the applicant, by his/her signature, to verify that the applicant understands that all statements contained in the application are true and correct to the best of the applicant's knowledge. The signatory for the application should be the licensee or certifying official rather than a consultant.

You will be periodically inspected by NRC. Failure to conduct your program in accordance with NRC regulations, license conditions, and representations made in your license application and supplemental correspondence with NRC will result in enforcement action against you. This could include issuance of a notice of violation, or imposition of a civil penalty, or an order suspending, modifying or revoking your license as specified in the General Policy and Procedures for NRC Enforcement Actions. Since serious consequences to employees and the public can result from failure to comply with NRC requirements,

prompt and vigorous enforcement action will be taken when dealing with licensees who do not achieve the necessary meticulous attention to detail and the high standard of compliance which NRC expects of its licensees.

Sincerely,

John D. Jones
Nuclear Materials Licensing Branch

License No. STB-286
Docket No. 040-04930

Enclosure: Amendment No. 07

DOCUMENT NAME: M:\04004930.PH7
To receive a copy of this document, indicate in the box: "**C**" = Copy without attachment/enclosure "**E**" = Copy with attachment/enclosure "**N**" = No copy

OFFICE	DNMS/RIII									
NAME	JDJones:brt									
DATE	03/ 24 /97									

OFFICIAL RECORD COPY

AlliedSignal
AEROSPACE

AlliedSignal Inc.
Guidance & Control Systems
400 South Beiger Street
Mishawaka, IN 46544

219 255 2111
219 259 9106 FAX

March 24, 1997

Mr. John D. Jones
Senior Radiation Specialist
U.S. Nuclear Regulatory Commission
Region III
801 Warrenville Road
Lisle, Illinois 60532-4351

Dear Mr. Jones:

Per the phone conversation I had with you on March 20, 1997 here is draft of the procedure that outlines what training employees of AlliedSignal - Target Systems will be given. This response can be related back to your correspondence dated February 21, 1997 (Control Number 398159).

In addition as of last week we have renamed our target missile. The name which shall start appearing in the future identifying our target missile will be Sea Snake. The thorium/magnesium components used on missile has not changed from the current EER Vandal model.

Please contact me at (219) 254-4289 if you have any questions or need further information. We truly appreciate your cooperation and assistance in improving our radiation safety and monitoring program

Sincerely

John E. Sauter

John E. Sauter
Radiation Safety Officer

AlliedSignal AEROSPACE

Target Systems - Mishawaka, IN

PROCEDURE/REV. NO. MIS-

PROCEDURE

RELEASE DATE:

PREPARED BY:

TITLE: Training for the Handling and Processing of TALOS/VANDAL/SEA SNAKE Thorium/Magnesium Missile Part

APPROVED:

_____

_____

1.0 PURPOSE

To ensure the safe handling thorium/magnesium missile components found on the TALOS/VANDAL/SEA SNAKE target missile

2.0 SCOPE

This procedure covers all employees at AlliedSignal, Target Systems Division, Mishawaka - IN in that all employees shall be given general knowledge of thorium/magnesium component identification and those employees who specifically alter the components shall be trained in the proper processing of thorium/magnesium components.

3.0 REFERENCES

4.0 RESPONSIBILITIES

The Radiation Safety Officer shall have the primary responsibility of ensuring this procedure is followed.

5.0 DEFINITIONS

6.0 PROCEDURE

6.1 Training

6.1.1 Training shall occur annually for current employees and for new employees prior to starting job assignment.

6.1.2 Two type of training shall be provided.

6.1.2.1 General training for all employees of Target Systems.

6.1.2.2 Specific training for those departments whose employees would perform work on thorium/magnesium components.

6.2 General Training

6.2.1 All employees shall receive general knowledge training, including:

6.2.1.1 That Target Systems has an NRC license and why we have a license.

6.2.1.2 A pictorial handout showing the missile thorium/magnesium components.

6.2.1.3 That they shall performed no work on the thorium/magnesium parts that would involve drilling, cutting, filing, grinding, sanding, etc.

6.2 Department Specific Training

6.2.1 Employees in departments 301 (Code 1430, Assembly & Repair - Manufacturing), 349 (Code: 3621, Bench & Machining - Experimental), and 349 (Code: 3646, Sheet Metal Worker - Experimental) shall be given specific training that includes:

6.2.1.2 General knowledge training given to all employees in section 6.1.2

6.2.1.3 Any work performed on thorium/magnesium components that would involve drilling, cutting, filing, grinding, etc shall be performed using a magnesium compatible cutting oil, and water for sanding.

6.2.1.4 Cleaning the area after an operation in which thorium/magnesium components have been altered due to drilling, cutting, filing, grinding, sanding, etc.

6.2.1.5 Perform radiation survey of area and equipment used to perform operation in which thorium/magnesium component(s) were altered.

6.2.1.6 Record survey results survey log book.

7.0 RELATED DOCUMENTS

8.0 QUALITY RECORDS

9.0 EXHIBITS

Attachment 1. Pictorial handout showing the missile thorium/magnesium components.

Attachment 2. Form 425 "Command Media Training Form"

Attachment 1

Photos to be place here

Attachment 2

Command Media No.	**Title:** Training for the Handling and Processing of TALOS/VANDAL/SEA SNAKE Thorium/Magnesium Missile Part
Writer: John E. Sauter	**Release Date:**
Individual Responsible for Training: John E. Sauter	

Instructions:

1. Use this form to identify individuals to be training. Indicate names and/or functional titles and/or department numbers of those individuals who should receive training.
2. Identify individual responsible for providing training on subject command media.
3. Submit with original command media document to Command Media representative (directorate or departmental)

Name	Functional Title or Department Number
All Employees	All Departments
Assembly & Repair - Manufacturing	Department 301
Bench & Machining - Experimental	Department 349
Sheet Metal Worker - Experimental	Department 349

The above information shall be reviewed and amended (as needed) concurrent with revisions of the command media it relates to.

Form No. 425

AlliedSignal
AEROSPACE

AlliedSignal Inc.
Guidance & Control Systems
400 South Beiger Street
Mishawaka, IN 46544

219 255 2111
219 259 9106 FAX

March 17, 1997

Mr. John B. Jones
Senior Radiation Specialist
U.S. Nuclear Regulatory Commission
Region III
801 Warrenville Road
Lisle, Illinois 60532-4351

Dear Mr. Jones:

This letter is in response to your correspondence dated February 21, 1997 (Control Number 398159) regarding from site visit by you and Ms B.J. Holt on February 4, 1997. Each of the issues raised is addressed below.

1. **Frequency and type of surveys:** Smear surveys for removable contamination and direct radiation surveys will be conducted at the end of the day after each operation involving thorium-magnesium alloy parts. The direct radiation survey will be conducted with an end window Geiger probe and the smear surveys will be evaluated with a Ludlum Model 43-65 alpha scintillator calibrated against an NIST traceable Thorium standard. This instrument is on order and should arrive within three weeks. Results of the survey will be compared to the surface contamination limits described below.

    - A removable surface contamination limit of 200 alpha disintegration's per minute (DPM) per 100cm^2 has been established for this facility. All smears will be evaluated against this limit and areas found to have removable contamination in excess of this amount will be cleaned and the area resurveyed.

    - A direct radiation limit of 1000 DPM/100cm^2 combined alpha, gamma, and beta radiations has been established for surfaces in the facility (thorium-magnesium pats excluded). Levels observed above this value will be cleaned. Normal radiation surveys show no observable contamination once the coarse cuttings and filings are collected.

2. **Survey Techniques.** Smear surveys will be collected from surfaces where the work has been performed on the thorium-magnesium parts and will be counted on the new alpha scintillator from Ludlum Measurements. This instruments has a lower limit of detection of <100 DPM.

3. **Internal Exposures.** Only wet drilling and other operations are performed on thorium-magnesium parts in the plant. These activities produce only coarse filings and turnings. No particles of respirable size are generated and therefore there should no airborne

suspensions of thorium and no internal exposures. To confirm this assumption we will conduct breathing zone air sampling for each job type (e.g. lathe operator) over several days when thorium-magnesium parts are being processed. These air samples will be sent to a licensed laboratory for counting. Currently we are using Radiation Safety Engineering in Arizona for the analytical work (EPA Lab Code UP, Arizona Lab Code AZ0460). Results of the air sampling will be forwarded to you upon completion.

4. **Wet Operations.** All cutting and filing of thorium-magnesium parts are conducted using the appropriate cutting oil. All operators will be instructed in the proper handling of thorium-magnesium parts (see paragraph 6 below).

5. **Liquid Waste.** Thorium-magnesium alloy is not soluble and none of the cutting or turnings are disposed of in the sanitary sewer.

6. **Training.** A training program for the machinists and production workers is being developed and will be forward to you upon completion. The title and position of workers that will receive the training is listed below. Training will be conducted within one month of an employee being hired, and a short refresher will be offered each year.

    - Positions of employees to be trained
        - Dept. 301, Code: 1430, Assembly & Repair (Manufacturing)
        - Dept. 349, Code: 3621, Bench & Machining (Experimental)
        - Dept. 349, Code: 3646, Sheet Metal Workers (Experimental)

7. **Clarification of Section D.** I was incorrect in saying during our conversation on February 4, 1997 that no employees at the AlliedSignal Mishawaka facility were likely to receive greater than 0.1 rem total annual internal and external dosages of radiation. Based on calculations made in October 1984 by the former RSO, a production floor employee is likely to receive per missile 7 mr exposure mainly to hands and arms. Based on the number of missiles being produced each year at 36 the exposure would be .251 rem/yr mainly to hands and arms. No actual employee monitoring has been performed. Our plans our to perform both area and personal monitoring for six (6) months to verify the above calculations starting within three weeks.

8. **Annual evaluation of Safety Program.** A review of the safety program will be conducted annually.

Please contact me at (219) 254-4289 if you have any questions or need further information. We truly appreciate your cooperation and assistance in improving our radiation safety and monitoring program

Sincerely

John E. Sauter

John E. Sauter
Radiation Safety Officer

FEB 21 1997

John E. Sauter
Radiation Safety Officer
Allied Signal Aerospace
GC&S - Target Systems
400 South Beiger Street
Mishawaka, IN 46544

Dear Mr. Sauter:

This is a followup letter to the recent site visit by Ms B.J. Holt and myself on February 4, 1997, to the Allied Signal Aerospace facilities in Mishawaka, Indiana, during which we discussed several issues raised by your letter dated September 27, 1996 in response to our letter dated September 3, 1996. During this visit, you were provided with copies of NRC Information Notice 96-18 "Compliance With 10 CFR Part 20 For Airborne Thorium" and Information Notice 94-07 "Solubility Criteria for Liquid Effluent Releases to Sanitary Sewerage Under the Revised 10 CFR Part 20".

Our discussion covered the following issues and it is our understanding that you will provide in writing, clarification and additional information related to these issues:

1. Frequency and type of surveys

   It is our understanding that the frequency of surveys will be revised from 2 times per year to each time any plant operations involving sanding, drilling, sawing, grinding, etc occur anywhere in the plant on magnesium thorium alloy, and further, that the surveys will include removable contamination surveys in addition to area surveys. Contamination trigger levels will be established with appropriate response requirements by staff. Results of surveys will be retained as a part of your records in accordance with 10 CFR Part 20.2103.

2. Survey techniques

   It is our understanding that the removable contamination survey of work areas will include a "swipe" test of the area with subsequent measurement of the radioactivity on the swipes by use of an end window GM counter. Please describe how you will verify the sensitivity of the measuring device prior to making the measurement.

3. Describe how you will assess potential thorium internal exposures that may occur to workers performing drilling, filing, sanding, sweeping or other activities that may result in airborne release of thorium.

4. "Wet" operations involving magnesium thorium alloy parts

During our discussions with yourself and other individuals at the Mishawaka plant it appeared that there was some misunderstanding as to when "wet" operations are required. Please state your policy regarding when "wet" operations are to be carried out in regard to operations involving magnesium thorium alloy at the plant.

5. Liquid Waste

Describe in detail how you will dispose of any liquid waste which may contain scrap magnesium thorium alloy. It is our understanding from our discussions that no liquid waste containing magnesium thorium alloy material will be disposed of by the plant sewer system.

6. Training

Describe your training and retraining program for workers. Include the title or positions of the workers who will receive the training and the frequency of the training.

7. Clarification of Section D. letter dated September 27, 1996

Based on our conversations it appears that contrary to the statement made in Section D of your letter dated September 27, 1996, you now believe none of the employees at the Allied Signal Mishawaka facility are likely to receive greater than 0.1 rem total annual internal and external dosages of radiation. Please describe based on your planned activities how you reached this conclusion.

8. Annual evaluation of Safety Program

In accordance with 10 CFR 20.1101(c) you will periodically (at least annually) review the radiation protection program content and implementation.

We will continue our review of your application upon receipt of this information. Please reply in duplicate, within 30 days, and refer to Control Number 398159.

If you have any questions or require clarification on any of the information stated above, you may contact us at (630) 829-9832.

We appreciate the courtesy extended by you, Tom Reiter and other staff during our site visit of your facility.

Sincerely,

Original Signed By
John D. Jones
Senior Radiation Specialist

License No. STB-286
Docket No. 040-04930

cc: B.J. Holt

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OFFICE	DNMS/RIII								
NAME	JDJones:brt								
DATE	02/ /97								

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AlliedSignal
AEROSPACE

AlliedSignal Inc.
Guidance & Control Systems
400 South Beiger Street
Mishawaka, IN 46544

219 255 2111
219 259 9106 FAX

September 27, 1996

USNRC, Region
801 Warrenville Road
Lisle, Illnoise 60532-4351

Attention: Mr. John D. Jones, Senior Radiation Specialist

Subject: Response for additional information, September 3, 1996 letter, License No. STB-286, Docket No. 040-04930

This letter will respond to each section of your September, 3 1996 letter.

Section A. Reference to previous documents

Section of the October 10, 1983, October 17, 1984, January 25, 1985 and February 2, 1990 letter are still required to describe your radiation safety program. Please see letter table below:

October 10, 1983 Letter

Still Required	Not Required
Amount of Increase of Source Material - Increase from 484 kilograms to 1,230 kilograms is still correct.	

October 17, 1984 Letter

Still Required	Not Required
Item 2, Condition 8 - Increase from 484 kilograms to 1,230 kilograms is still correct.	Item 1, Conditions 1 and 2, Company Name and Address - Has changed, please see request to change company name in the body of this letter below.
Item 3, Condition 10 - We still store and process source materials at the 400 South Beiger Street, Mishawaka, IN address and store source material at the 29297 U.S. 33 North, Elkhart, IN address.	

January 25, 1985 Letter

Still Required	Not Required
Paragraph 1 - AlliedSignal has not increased or changed any processes that would increase source material usage. Amount of source material possessed and processed by AlliedSignal is still so insignificant that the personal monitoring and restricted area portions of the Commission's regulations still not apply to AlliedSignal Processing operations.	Section A - Responsible Supervisors or Radiation Safety Officer (RSO) - February 2, 1990 letter RSO was changed from James L. Bicknell to John E. Sauter.
Paragraph 2 - AlliedSignal still receives and process the same missile types to become targets for the U.S. Navy. The magnesium-thorium alloys HK-31A (2.5% to 4.0% thorium, specific activity 0.0088 μCi/g max.) and HM-21A (1.5% to 2.5% thorium, specific activity 0.0055 μCi/g max.)	
Paragraph 2 - AlliedSignal continues to label the missile for shipment per the Department of Transportation labeling requirements	
Paragraph 3 - AlliedSignal is processes still only generate 7/10th of a one (1) pound of waste thorium per year, and submits that its operations do not fall within he 10 CFR Part 20 of the Commission's request for information in the order requested.	
Section B - Intended Use of Source Materials - (Same as Section A, January 25, 1985, Paragraph 2) - AlliedSignal still receives and process the same missile types to become targets for the U.S. Navy. The magnesium-thorium alloys HK-31A (2.5% to 4.0% thorium, specific activity 0.0088 μCi/g max.) and HM-21A (1.5% to 2.5% thorium, specific activity 0.0055 μCi/g max.)	
Section C - Facilities - Plant layout or ventilation systems have not changed.	
Section D - Training of Personnel - Same levels of instructions are being given to the employees.	

January 25, 1985 Letter (Continued)

Still Required	Not Required
Section E - Survey Program for Detection of Radioactive Material - We perform two semi-annual surveys of the facility. We have replaced our Model 2980 Geiger Survey Meter with a Harshaw-Bicron Surveyor 50 Survey Meter.	

Section A - February 2, 1990

Still Required	Not Required
Responsible Supervisors or Radiation Safety Officer (RSO) - John E. Sauter.	Company Name and Address - Has changed, please see request to change company name in the body of this letter below.

Section B. Intended Use of Source Material

As discussed in an earlier correspondence from us, date January 25, 1985 to Mr. George M. McCann to his letter dated December 6, 1984, AlliedSignal receives and processes 2 types of missiles, Talos Type IV and 6C1 to become target missiles for use by the U.S. Navy. Certain component parts of the missile contain magnesium-thorium alloys. The magnesium-thorium alloys are HK-31A (2.5% to 4.0% thorium by weight, 0.0088 μCi/g) and HM-21A (1.5% to 2.5% thorium by weight, 0.0055 μCi/g). These missiles have been converted into Vandal Target Missiles for the U.S. Navy. The Vandal Target Missile has five (5) separate configurations, with only Extended-Extended Range VANDAL (see Exhibit 1, page 4) now being produced. Exhibit 2 (see page 6) specifies the total weight of the thorium part that is processed, that is, drilled or saber sawed, and the total amount of magnesium-thorium alloy that may become waste as drilling chips or saw cutouts and chips. In addition to the drilling and saber sawing, removal of burrs is accomplished by a hand file. Prior to painting missiles parts receive some power grinding and hand sanding to remove old paint in certain areas. The intent of the grinding and sanding operations is to remove the old paint, not to remove any magnesium-thorium alloy. The waste magnesium-thorium generated from this filing, grinding, and sanding is so small that it cannot be measured without specialized instrumentation. In all cases the drilling, sawing, filling, grinding and sanding is done "wet" due to the fire hazard involved with the magnesium.

Exhibit 1 = Extended-Extended Range (EER) VANDAL Major Component Illustration

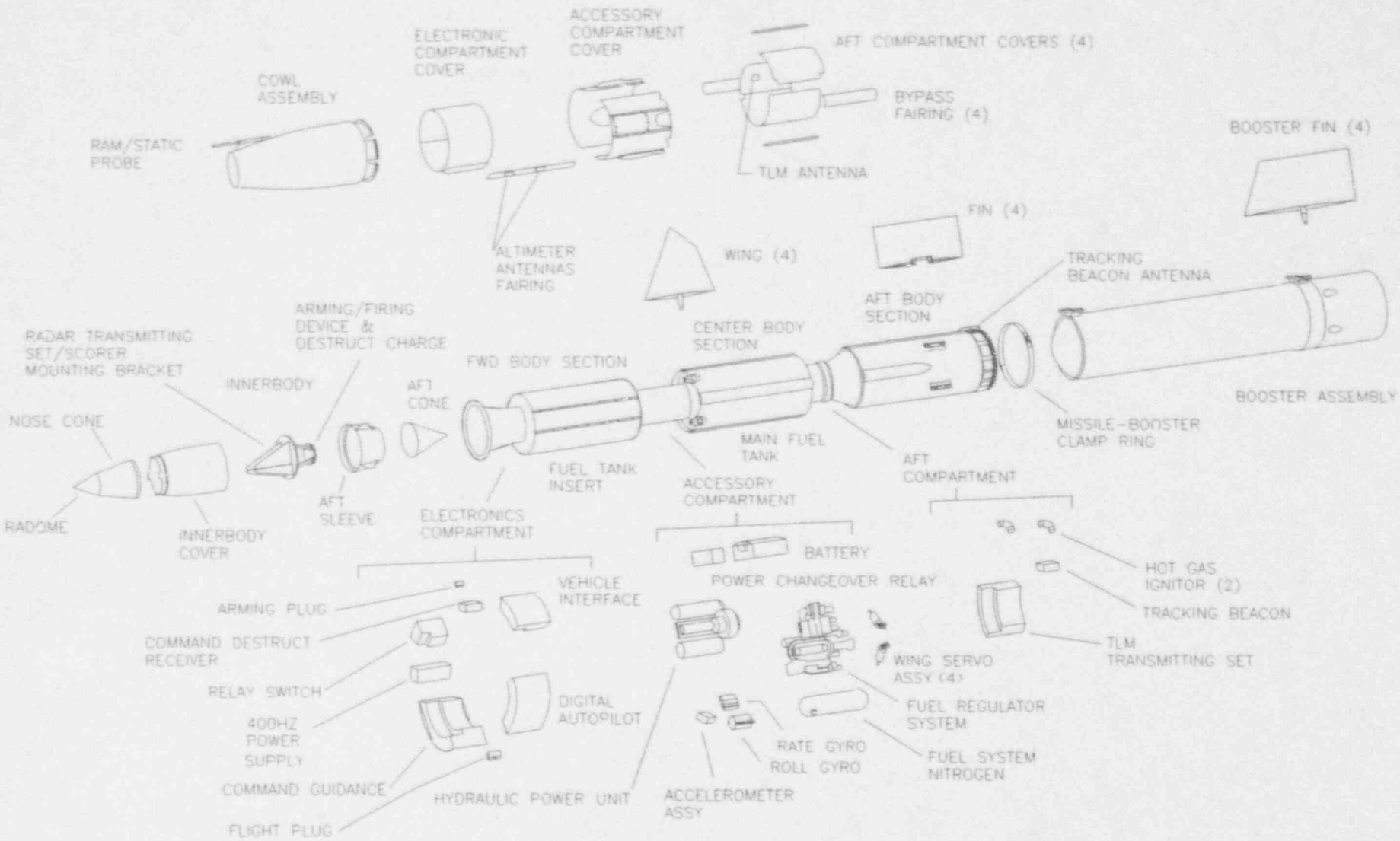

Exhibit 2 = Magnesium / Thorium Alloy Components Used On TALOS / VANDAL Missil

					Type IV TALOS			Type 6C1 TALOS					
								Conventional Warhead			Nuclear Warhead		
		Government	AlliedSignal		Weight	lbs. of Thorium in Part		Weight	lbs. of Thorium in Part		Weight	lbs. of Thorium in Part	
Common Part Name	Print Part Name	Part Number	Part Number	Alloys	of Parts in lbs	min.	max.	of lb	min.	max.	of Parts in lbs.	min.	max.
Nose Cone	Cone, Forward, Innerbody	1729256	1556761	HK-31A/HM-21A	----	----	----	8.9	0.22	0.36	8.9	0.22	0.3
Innerbody Aft Cone	Cone, Aft, Innerbody	1729269	1556785	HK-31A/HM-21A	----	----	----	5.4	0.14	0.22	5.4	0.14	0.2
Innerbody Aft Sleeve	Sleeve, Aft, Innerbody	1729267	1556782	HK-31A/HM-21A	----	----	----	22	0.55	0.88	22	0.55	0.8
Cowl	Cowl	1729372	1557400	HK-31A	----	----	----	37	0.93	1.48	37	0.93	1.4
Electronics Compartment	Cover, Compartment, Electronics	1729271/1729576	1556789	HK-31A	----	----	----	9	0.23	0.36	9	0.23	0.3
Air Scoop	Manifold, Fuel Turbine	1729382	1562243	HK-31A	----	----	----	5.2	0.13	0.21	5.2	0.13	0.2
Warhead Cover	Continuous Rod Warhead Fairing (C.R. Fairing)	1723415	1561081	HK-31A	----	----	----	43.6	1.09	1.74	----	----	---
Diffuser Forward Doubler	Former	1729275	1556795	HM-21A	----	----	----	6.5	0.1	0.16	6.5	0.1	0.1
Adapter Ring (Nuclear)	Former	1729277	1556797	HM-21A	----	----	----	----	----	----	15	0.23	0.3
Warhead Cover (Nuclear)	Sleeve, Forward, Innerbody	1791939/1729276	1558898	HK-31A	----	----	----	----	----	---	21.7	0.53	0.8
				Total Weight, Less Wings	0	0	0	137.6	3.39	5.41	130.3	3.06	4.9
Wing (qty 4)	Wing (qty 4)	1728949	1553308	HK-31A	42	1.05	1.68	42	1.05	1.68	42	1.05	1.6
				Total Weight, With Wings	42	1.05	1.68	179.6	4.44	7.09	172.3	4.11	6.5

The minimum-maximum weights are based on using HK-31A alloy (2.5% minimum, 4.0% maximum) except Diffuser Forward Double which is made solely of HM-21A (1.5% minimum, 2.5% maximum)

Fleet VANDAL			VANDAL												
			High Speed			Low Speed			Ram			Extended Range			Extended-Extended Range		
Weight of Parts in lbs.	lbs. of Thorium in Part		Weight of Parts in lbs.	lbs. of Thorium in Part		Weight of Parts in lbs.	lbs. of Thorium in Part		Weight of Parts in lbs.	lbs. of Thorium in Part		Weight of Parts in lbs.	lbs. of Thorium in Part		Weight of Parts in lbs.	lbs. of Thorium in Part	
	min.	max.		min.	max.		min.	max.		min.	max.		min.	max.		min.	max.
8.9	0.22	0.36	8.9	0.22	0.36	8.9	0.22	0.36	8.9	0.22	0.36	8.9	0.22	0.36	8.9	0.22	0.36
5.4	0.14	0.22	5.4	0.14	0.22	5.4	0.14	0.22	5.4	0.14	0.22	5.4	0.14	0.22	5.4	0.14	0.22
22	0.55	0.88	22	0.55	0.88	22	0.55	0.88	22	0.55	0.88	22	0.55	0.88	22	0.55	0.88
37	0.93	1.48	37	0.93	1.48	37	0.93	1.48	37	0.93	1.48	37	0.93	1.48	37	0.93	1.48
9	0.23	0.36	9	0.23	0.36	9	0.23	0.36	9	0.23	0.36	9	0.23	0.36	----	----	----
5.2	0.13	0.21	5.2	0.13	0.21	5.2	0.13	0.21	5.2	0.13	0.21	5.2	0.13	0.21	5.2	0.13	0.21
43.6	1.09	1.74	43.6	1.09	1.74	43.6	1.09	1.74	----	----	----	43.6	1.09	1.74	43.6	1.09	1.74
6.5	0.1	0.16	6.5	0.1	0.16	6.5	0.1	0.16	6.5	0.1	0.16	6.5	0.1	0.16	----	----	----
----	----	----	----	----	----	----	----	----	15	0.23	0.38	----	----	----	----	----	----
----	----	----	----	----	----	----	----	----	21.3	0.53	0.88	----	----	----	----	----	----
137.6	3.39	5.41	137.6	3.39	5.41	137.6	3.39	5.41	130.3	3.06	4.88	137.6	3.39	5.41	122.1	3.06	4.89
42	1.05	1.68	42	1.05	1.68	42	1.05	1.68	42	1.05	1.68	42	1.05	1.68	42	1.05	1.68
179.6	4.44	7.09	179.6	4.44	7.09	179.6	4.44	7.09	172.3	4.11	6.56	179.6	4.44	7.09	164.1	4.11	6.57

Magnesium used in the missile fins and booster fins does not contain Thorium

Exhibit 3 = Machining Operations Conducted on Magnesium-Thorium Alloys

Part	Total Part Weight	Operations	Waste Produced Weight of Alloy	Waste Produced Weight of Thorium
Nose Cone	8.9 lbs.	• Cut off forward 12 inches of cone leaving nose cone ring. Lathe operation.		
		• Machine ring. Lathe operation.	7.4 lbs.	.296 lbs.
		• Match drill ring, 35 places		
		• Break sharp corner - file		
Cowl	37.0 lbs.	• Machine off one inch from forward lip of cowl. Lathe operation.	.5 lbs	.02 lbs.
Diffuser	70.0 lbs.	• Machine flanges off ends of diffuser body. Non-Mag/Th	6.5 lbs.	.01625 lbs.
		Total Weight	14.4 lbs.	.33225 lbs.

Our current contracts with the U.S. Navy are to receive and modify 24 missiles per year for the next two (2) years. The total magnesium alloy scrap per year would be 345.6 lbs., and thorium 7.974 lbs.

Section C. Storage and control of licensed material

Storage - AlliedSignal has been storing missiles and missile components at the Roy L. Beck and Wiley Grindstaff Storage Facility, 29297 U.S. 33 North, Elkhart, IN 46514 since approximately November 1984. The facility is protected by lock and key possessed only by AlliedSignal and by an ADT alarm system.

Material not in Storage - The AlliedSignal Mishawaka facility is a limited access facility. The facility can only be entered through the main lobby, or an employee gate. The main lobby, when open, has an receptionist, and the employee gate is either occupied by a guard or uses a pass door system activated by employee identification cards.

Section D. Survey procedures

On a semi-annual bases radioactive checks are made on VANDAL target hardware and workshop area where hardware is modified. The latest readings were taken in April 2, 1996 (see below):

Part Identification	Radioactivity Range on Surface (mr/hr)
Electronic Compartment Cover	1.2
Nose Cone	1.3-1.5
Air Scoop (Fuel System Manifold)	1.4
Innerbody/ Aft Sleeve	1.9-2.5
Cowl	1.7-2.1
Warhead Cover	2.3-2.5
Innerbody Aft Cone	1.8-2.1
Diffuser Forward Doubler	1.5-1.7
Wings	2.2-2.5
Machine Shop Workbenches	0.0
Machine Shop Equipment	0.0

Surveys taken prior to April 2, 1996 were done using a Picker Model 2980 Geiger Survey Meter, SN 1141 (Side Window probe). The meter was annually calibrated by Radiation Safety Services Inc. (RSSI), Morton Grove, IL. The results of the last calibration, May 31, 1994, are as follow:

SOURCE	SCALE	FIELD mR/h	READING mR/h	FIELD mR/h	READING mR/h	CORRECTION FACTOR*
Cs-137	X100	15	15.5	35	38	
Cs-137	X10	1.5	1.4	3.5	3.7	
Cs-137	X1	0.15	0.15	0.35	0.38	

* If the accuracy of a scale is not within +/-10% but is within +/-20% a correction factor is supplied.

In December 1994 a Bicron Surveyor 50 Survey Meter, SNB873R, and probes EWGM, SN-B966K (End Window) and PGM, SN-B552R (Side Wall) were purchased to replace the Picker Survey Meter that failed to operate when checking some scrap magnesium. Starting with the April 2, 1995 surveys were performed using the Bicron Survery Meter. The results of the most recent calibration by RSSI, March 6, 1996, are as follows:

SOURCE	SCALE	FIELD cpm	READING cpm	FIELD cpm	READING cpm	CORRECTION FACTOR*
Electronic	X100	10k	10k	50k	51k	
Electronic	X10	1k	1k	5k	5k	
Electronic	X1	100	90	500	500	

* If the accuracy of a scale is not within +/-10% but is within +/-20% a correction factor is supplied.

PGM Probe efficiencies: γ_____ c/d( ) β 0.18 c/β (^{99}Tc) α 0.13 c/α(^{230}Th)

EWGM Probe efficiencies: γ_____ c/d( ) β 0.058 c/β (^{99}Tc) α 0.043 c/α(^{230}Th)

In addition as was reported to Mr. George McCann of the NRC in a January 25, 1985 letter that we performed a check using a film badge from R.S. Landauer J.., Company (Glennwood, IL). This badge was placed within a couple of inches of a large magnesium-thorium part for an extended period (40 hours). Survey meter checks on the part showed it to have a radioactivity level near its surface of 2.1-2.4 mr/hr. The Landauer report showed that this film badge received the following radioactive dosage:

Type of Exposure	Dosage, millirems
Shallow exposure from X or gramma rays	20
Shallow exposure from beta particles	50
Combined deep exposure from both X or gamma rays and beta particles	20
Total exposure	90 mr

This 90 mr dosage was received over a 40 hour period. Therefore, the average rate of exposure was 2.25 mr/hr (which agrees quite well with the survey meter measurement of 2.1-2.4 mr/hr).

Section D. Compliance with dose limits for individual members of the public

Certain employees at the AlliedSignal Mishawaka Facility are more than likely to receive 0.1 rem total annual internal and external dosages. These employees along with all employees in the plant annually receive for review the document shown on the next page.

HK-31 and HM-21A Magnesium-Thorium Alloys:
Guidelines for Operating-Level Personnel

General: The following parts of the TALOS/VANDAL missile are made of magnesium-thorium alloy: Electronic Compartment Cover, Nose Cone, Air Scoop (Fuel System Manifold), Aft Sleeve of Innerbody, Cowl, Warhead Cover, Aft Cone of Innerbody, Diffuser Forward Doubler, Wings. These magnesium parts contain a small amount of thorium which render the alloys very slightly radioactive. Because the activity is so low, the area in which such materials are stored, machined, and handled in "unrestricted" and personal monitoring devices are not required to be worn by employees.

Handling and Machining: The alloys can be handled, machined, or drilled without any danger to personnel. In order to keep magnesium dust to a minimum when sanding, sawing, grinding, or filing, standard practice for all magnesium-alloys requires that the operations have local exhausts and be conducted "wet" because of the fire hazard. These standard precautions are also adequate safeguards against the introduction of radioactive dust particles of magnesium-thorium into the air. Although not necessary, personnel dust mask could be worn as an added precaution.

Welding, Melting, and Chemical Dissolution: Operations that do require special safety precautions, however, are: melting, welding, pickling, chemical milling, and chemical cleaning. **DO NOT** perform any of these operations on any of the above parts without contacting the GCS-TS Radiation Safety Officer first.

Packaging and Shipping: Because of the low level of activity, these two magnesium alloys are exempt from all of the packaging and shipping restrictions in the Code of Federal Regulations, CFRs, except for a general Department of Transportation, DOT, labeling requirement of enclosing a notice with the shipped hardware stating that we are exempt from labeling requirements.

Waste Collection and Disposal: Waste metal (scrap pieces, chips, and large filings, and drillings) must be collected for future disposal by shipment to an authorized recipient.

If there are any questions, contact the undersign.

John E. Sauter

John E. Sauter
Radiation Safety Officer

F. Package Receipt and Transfer

No special procedures for the receipt and opening of packages containing licensed material are used at GCS-TS. The magnesium-thorium alloy materials are part of the TALOS/VANDAL missile components are detailed in Exhibit 1 (page 4) and Exhibit 2 (page 5) of this document with the source material being no more than 4.0% in HK-31A alloy.

We do not place any NRC type labeling on the VANDAL missile due to the μCi being less than the 100 μCi limit required by 10CFR20.1905 Appendix C. We do place the following DOT labeling notice with all shipping papers for materials containing HK-31A and/or HM-21A.

- NOTICE -

CONSIGNEE:

CONSIGNOR: AlliedSignal, Target Systems
400 South Beiger Street
Mishawaka, IN 46544

THE PACKAGE CONFORMS TO THE CONDITIONS AND LIMITATIONS SPECIFIED IN 49CFR173.422 FOR EXCEPTED RADIOACTIVE MATERIAL, INSTRUMENTS, AND ARTICLES, UN2911.

Certain parts of this package contain HK-31A magnesium-thorium alloy (specific activity of .0088 microcuries per gram maximum) and HM-21A magnesium-thorium alloy (specific activity of .0055 microcuries per gram maximum).

I hope the above section of this letter provides the necessary information you requested in your September 3, 1996 letter to us.

In addition to the above information as of as of October 1, 1996 we will be changing the name of our AlliedSignal division

from: AlliedSignal Aerospace
Guidance and Control Systems
400 South Beiger Street
Mishawaka, IN 46455

to: AlliedSignal Aerospace
Target Systems Divisions
400 South Beiger Street
Mishawaka, IN 46544

I am asking that our license STB-286 be amended to reflect this change.

If there is any other information or questions you have please feel free to contact me at 219-254-4289.

John E. Sauter

John E. Sauter
Radiation Safety Officer

SEP 03 1996

John E. Sauter
Radiation Safety Officer
Allied Signal Aerospace
GC&S - Target Systems
400 South Beiger Street
Mishawaka, IN 46544

Dear Mr. Sauter:

We have reviewed your application dated February 14, 1995 requesting renewal of your license STB-286 and find that we will need additional information as follows:

A. Reference to previous documents

Your application fails to refer to previously provided documents which are referenced in Condition 17. of Amendment 08 of your current license. Specifically, letters dated October 10, 1983, October 17, 1984, January 25, 1985 and February 2, 1990 were not mentioned in your application. These letters may contain commitments to procedures and elements of your program which are important to our understanding of your proposed activities. After review of the letters please determine if information contained in the letters are needed to fully describe your radiation safety program. If the contents of the letters no longer accurately describe your radiation safety program provide justification for their deletion.

B. Intended Use of Source Material

Describe in greater detail your statements regarding the operations performed upon the magnesium - thorium alloys at your facilities (e.g., minor modifications of, grinding, sawing, drilling, etc.). Since these physical processes may generate airborne radioactive material, your description should provide assurance that facilities and equipment used will provide adequate protection to health and minimize danger to life and property. Your description should include evaluations of each process and indicate the minimum facilities and equipment needed to comply with 10 CFR Part 20 requirements, e.g. Sections 20.1701, 20.1702, 20.1703, and 20.1704.

C. Storage and control of licensed material

Describe how you provide access control of licensed material in accordance with 10 CFR 20.1801 (Security of stored Material) and 20.1802 (Control of material not in storage).

~~2981~~ 2981

D. Survey procedures

Describe in detail, your survey procedures including information regarding the instrument(s) that will be used in performing the surveys, e.g. sensitivity and trigger levels for detecting removable and fixed contamination.

E. Compliance with dose limits for individual members of the public

Item 8. of your application, states that due to the low level of radioactivity associated with the magnesium-thorium material, there are no restricted areas located in the facility. Provide recent relevant radiation measurements or calculations which demonstrate reasonable assurance that employees are not likely to receive a total effective dose from licensed operations in excess of 0.1 rem in a year (0.05 mR/hr). If your calculations or measurements do not indicate with reasonable assurance that an employee is likely to receive less than 0.1 rem total annual internal and external dose, describe how you intend to show compliance with 10 CFR Part 19.12 requirements for training of individuals.

F. Package Receipt and Transfer

Describe your procedures for receipt and opening of packages containing licensed material and describe how you will ensure that the procedures are followed. Also describe your procedures for complying with NRC and DOT regulations for labeling and shipping licensed material.

We will continue our review of your application upon receipt of this information. Please reply in duplicate, within 30 days, and refer to Control Number 398159.

If you have any questions or require clarification on any of the information stated above, you may contact us at (630) 829-9832.

Sincerely,

Original Signed By
John D. Jones
Senior Radiation Specialist

License No. STB-286
Docket No. 040-04930

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OFFICE	DNMS/RIII										
NAME	JDJones:brt										
DATE	08/30/96										

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February 21, 1995

Alliedsignal Aerospace
GC&S - Target Systems
ATTN: John E. Sauter
Radiation Safety Officer
400 S. Beiger Street
Mishawaka, IN 46544

SUBJECT: LICENSE RENEWAL APPLICATION

Dear Mr. Sauter:

This is to acknowledge receipt of your application for renewal of the material(s) license identified above. Your application is deemed timely filed, and accordingly, the license will not expire until final action has been taken by this office.

Any correspondence regarding the renewal application should reference the control number specified and your license number.

Sincerely,

Original Signed By
Marianne Meenan, Chief
Nuclear Materials Support Section

License No. STB-286
Control No. 398159

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