## VOID SHEET

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FRO	BJECT: VOIDED APPLICATION	
Apı	plicant: 87965  plicant: US Corporation  te Voided: 12/8/80	
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510 W	os requested by Licensee	
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	Kein 6.1	1-11 2/8/0
	Signature	Jake
	ttachment: rficial Record Copy of Voided Action	
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3 F	OR LEMB USE ONLY	
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	inal Review of VUID Completed:	
	nal Review of VUID Completed:  Refund Authorized and processed  No Refund Due  Fee Exempt or Fee Not Required	
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55	TWEEN:		
LI	CENSE FEE MANAGEMENT B	RANCH, ARM	PROGRAM CODE:
	AND		: STATUS CODE: 3
RE	GIONAL LICENSING SECTI	ONS	: FEE CATEGORY:
			: EXP. DATE: 0 : FEE COMMENTS:
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	APPLICATION ATTACHED APPLICANT/LICENSEE:	NIIS COODOOATT	ONZII S. E. D. A.
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		3031319	
	CONTROL NO.:	387965	
	LICENSE NO .:		
	ACTION TYPE:	NEW LICENSE	
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			DA.
		SIGNED .	P. D. 9-19-89
		DATE .	
В.	LICENSE PEE MANAGEMEN	T BRANCH (CHECK	K WHEN MILESTONE 03 IS ENTERED /-/
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(FOR LFMS USE)
INFORMATION FROM LTS

## DEC 11 1989

NUS Corporation ATTN: Joe Michael Lefton Manager 3280 River Road Cincinnati, OH 45204

SUBJECT: ABANDONMENT OF YOUR REQUEST FOR AN NRC LICENSE DATED

SEPTEMBER 15, 1989.

Gentlemen:

Pursuant to a telephone conversation between Allan Theyken of your organization and me, on November 29, 1989, it is our understanding that you wish to abandon your request for an NRC license dated September 15, 1989.

You are hereby notified that we have voided the request. This is without prejudice to resubmission.

If you resubmit the same request within one year of the date of this letter, we will reactivate our review. Information submitted in response to this letter should refer to VOIDED CONTROL NUMBER 87965.

Sincerely.

Kevin G. Null Materials Licensing Section

RIII (N Null/dp 12/8/89

CONVERSATION	RECORD	TIME	DATE	
YPE VISIT  ocation of Visit/Conference:	CONFERENCE		II 2 9 69	
ME OF PERSON(S) CONTACTED OR IN CONTA		dept., bureau. TELEPHO	ONE NO.	
UBJECT PARKER	JN 879	65		
Mr. Theyken	e : 0 42	+ Nue	. >	
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0271-101 - +U.S. GPO: 1988-201-160/60190	(40231) CONVERSATION R	ECORD	OPTIONAL F	ORM 271 (12-76

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APPLICATION FOR MATERIAL LICENSE 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 IF YOU ARE LOCATED IN PEDIGAL AGENCIES FILE APPLICATIONS WITH ILLINOIS INDIANA SONA INCHICAN MINNESOTA MISSOURI, DMIC DR MISCONEIN, SEND APPLICATIONS TO U.S. NUCLEAR REGULATORY COMMISSION DIVISION OF FUEL CYCLE AND MATERIAL SAFETY, MMSI WASHINGTON, DC 20555 U.S MUCLEAR REGULATORY COMMISSION REGION III MATERIALS LICENSING SECTION THE RODSEVELT ROAD GLEN ELLYN, IL BOIST ALL OTHER PERSONS FILE APPLICATIONS AS FOLLOWS IF YOU ARE AREANSAS EDIDRADO, IDAND KANSAS LOUISIANA MONTANA NEBRASEA, NEW MERCO, ROREN DAKOTA DELANDINA, BOUTH DAKOTA, TERAS, UTAN, DA WYDMING, SEND APPLICATIONS TO: CONNECTICUT DELAMARI DISTRICT OF COLUMBIA MAINE MARYLAND MASSACHUSCTTE NEW JERET NEW YORK, PENNSYLVANIA RHODE ISLAND, DR VERMONT, BEND APPLICATIONS TO UI NUCLEAR REGULATORY COMMISSION REGION IV MATERIAL RADIATION PROTECTION SECTION 911 RYAN PLAZA DRIVE, BUITE 1000 ARLINGTON, TX 78011 NUCLEAR REGULATORY COMMISSION REGION I NUCLEAR MATERIAL SECTION OF PARK AVENUE FARE AVENUE FARE AVENUE ALASKA ARIZONA CALIFORNIA NAWAII NEVADA DREGON WASHINDTON AND US TERRITORIES AND POSSESSIONS IN THE PACIFIC, SEND APPLICATIONS TO ALABAMA CLORIDA DEDRGIA KENTUCKY MISSISSIPPI NDETK CARDI INA PURKTO RICO, BOUTH CARDI INA TENNESSEE VIRGINIA, VIRGIN ISLANDS DR WEST VIRGINIA, SEND APPLICATIONS TO: US NUCLEAR REGULATORY COMMISSION REGION V MATERIAL RADIATION PROTECTION SECTION 1450 MARIA LANE, SUITE 710 WALNUT CREEK, CA. 04500 US NUCLEAR REQUISTORY COMMISSION REGION II MATERIAL RADIATION PROTECTION SECTION TOI MARIETTA STREET, SUITE 7900 ATLANTA, GA. 30123 PERSONS LOCATED IN ADRESMENT STATES SEND APPLICATIONS TO THE U.S. NUCLEAR REGULATORY COMMISSION DNLY IF THEY WISH TO POSSESS AND USE LICENSED MATERIAL IN STATES SUBJECT TO U.S. NUCLEAR REGULATORY COMMISSION JURISDICTION 2. NAME AND MAILING ADDRESS OF APPLICANT fineron 2 o Com. 1. THIS IS AN APPLICATION FOR ICHOL SEPTEMBER 1000 NUS Corporation / U.S.EPA A NEW LICENSE 3280 River Road . AMENDMENT TO LICENSE NUMBER \_\_ Cincinnati, OH 45204 C. RENEWAL OF LICENSE NUMBER .. 3. ADDRESSIES WHERE LICENSED MATERIAL WILL BE USED OR POSSESSED 3280 River Road Cincinnati, OH 45204 and temporary training facilities used by the applicant TELEPHONE NUMBER 4. NAME UF PERSON TO BE CONTACTED ABOUT THIS APPLICATION 513/251-2730 Alan D. Theyken SUBMIT ITEMS 5 THROUGH 11 ON 8% & 11" PAPER. THE TYPE AND SCOPE OF INFORMATION TO BE PROVIDED IS DESCRIBED IN THE LICENSE APPLICATION GUIDE 6. PURPOSEIS! FOR WHICH LICENSED MATERIAL WILL BE USED. RADIDACTIVE MATERIAL

4. Europei and mass number, b. cher which will be postered at any one time ical and/or anytical term, and c. maximum a E. TRAINING FOR INDIVIDUALS WORKING IN OR PREDUENTING RESTRICTED AREAS. INDIVIDUALIS RESPONSIBLE FOR RADIATION SAFETY PROGRAM AND THEIR 10. RADIATION SAFETY PROGRAM S. FACILITIES AND EQUIPMENT. 12. LICENSEE FEES (See 10 CFA 170 and Section 170.31) ENCLOSED \$ 230 FEI CATEGORY 37 11. WASTE MANAGEMENT. 13. CERTIFICATION. Mult be completed by scoremy THE APPLICANT UNDERSTANDS THAT ALL STATEMENTS AND REPRESENTATIONS MADE IN THIS APPLICATION ARE DINDING UPON THE APPLICANT. THE APPLICANT AND ANY DIFICIAL EXECUTING THIS CERTIFICATION ON BEHALF OF THE APPLICANT, NAMED IN ITEM 2, CERTIFY THAT THIS APPLICATION IS PREPARED IN CONFORMITY WITK TITLE 10, CODE OF FEDERAL REGULATIONS, PARTS 30, 32, 33, 34, 35, 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, 249 MAKES IT A CRIMINAL DEFENSE TO MAKE A WILLFULLY FALSE STATEMENT OR REPRESENTATION TO ANY DEPARTMENT OR AGENCY OF THE UNITED STATES AS TO ANY MATTER WITHIN ITS JURISDICTION. 9/15/89 TYPED/PRINTED NAME SIGNATURE -CERTIFYING DIFICES Manager Lofton Joe Michael Lofton MUMBER OF EMPLOYEES 17 OW TO IS WOULD YOU WOULD YOU BE WILLING TO FURNISH COST INFORMATION (JOHN MORE) BY AN WOULD YOU BE WILLING TO FURNISH COST INFORMATION OR ANY FUTURE PROPOSED HAR REGULATIONS THAT MAY AFFECT YOU! (MAC regulations provided to propose confidence) remnanced or immediately confidence to the proposed confidence in X1M-3 5M \$250K -500K I NUMBER OF BEDS 57M-10M 1500K - 750K NO > 1100 FOR NEC USE ONL' PEROVIDE COMMENTS TEL CATEGOR 1989 DATE

#### NRC Form 313

#### 5. Radioactive Material

- 1. a. cesium 137
  - b. cesium/ceramic pellet
  - c. 2 millicuries (two 1 mCl sources)

#### Safety Performance Testing

Capsule: X.8 (doubly encapsulated)
ANSI/ISO classification: 77C66545
IAEA special form: GB/24/5
NRC model no.: CDC.800

- 2. a. strontium 90 (+ yttrium 90)
  - b. stroutium/ceramic pellet
  - c. 4 millicuries (two 2 m Cl sources)

#### Salety Performance Testing

capsule: X.117 (doubly encapsulated)
ANSI/ISO classification: 77C 64343
IAEA special form: GB/171/S
NRC model no.: SIF.D1

- 3. a. plutonium 239
  - b. electrodeposited on nickel disc
  - c. 1.5 microcuries (three 0.5 m Cl sets)
     model: Eberline 594-4

#### Purpose(s) For Which Licensed Material Will Be Used 6.

All licensed materials will be used for training students in the use of radiation monitors. The course is part of the U.S.EPA Hazardous Materials Incident Response Training Program (HMIRTP) and is titled "Radiation Safety at Superfund Sites". A copy of the course agenda is enclosed.

#### Individuals Responsible For Radiation Safety Program and Their Training and Experience 7.

Alan D. Theyken

Radiation Safety Officer

EDUCATION: B.S. Environmental Science

Chemistry/Physics Option

Morehead State University, 1978

EXPERIENCE: Westinghouse Electric Co., 1981 - 1987

Assistant Radiological Safety Officer

Maxey Flats Low Level Waste Disposal Site

Route 2, Box 238 A

Hillsboro, KY (606)748-6512

Frederick I. Ravenscraft

Assistant Radiation Safety Officer

EDUCATION: Undergraduate Studies in General Chemistry

University of Cincinnati, 1982

Cincinnati, OH

"Basic Radiological Health", 1983

Health Physics Society

Battimore - Washington Chapter

EXPERIENCE: Radiation Service Organization, Inc. 1984 - 1985

Health Physics Technician

Laurel, MD

Southwest Nuclear 1982 - 1984

Beltsville, MD

Chris A. Baggot

Radiological Safety Staff

EDUCATION: Undergraduate Studies in Business 1987

University of New Hampshire

EXPERIENCE: Hydro Nuclear Services 1985 - 1987

Shift Supervisor

These individuals constitute the HMIRTP Radiological Safety Staff.

#### Training for Individuals Working In or Frequenting Restricted Areas 8.

All individuals using licensed radioactive sources shall receive training on safe handling techniques. This training will consist of a review of Work Procedure 1, "Safe Handling Practices for Unsealed and High Activity Sources' (see 10.6). The review of Work Procedure 1 will be conducted prior to the use of licensed sources. Students will receive instruction, prior to the use of licensed material, on the following radiological safety topics:

- 1. ALARA
- Biological effects and relative risk of radiation in the workplace 2.
- Regulation governing the use of licensed materials 3.
- Methods to Minimize external radiation exposure 4.
- 5. Use of personnel dosimetry
- Techniques for personnel contamination surveys.

The student's understanding of these radiological safety concepts will be determined by the successful completion of the Non-Exempt Radiation Source User Exam. A score of 70 percent or more will constitute successful completion of the exam. Student who do not successfully complete the exam shall be directly supervised by radiological safety staff while using licensed sources.

### 9. Facilities and Equipment

The two 1 mCi Amersham X.8 doubly encapsulated Cs-137 sources shall be stored in lead pots. Each lead pot, containing a Cs-137 source, shall be placed in the center of a Department of Transportation (DOT) "Type A" package (55 gallon steel drum). Surface exposures for the Type A packages are anticipated to be substantially less than 0.5 mR/hr due to shielding and distance. The Type A packages will also be used for transport of the Cs-137 sources to temporary training facilities. Exposure from unshielded Cs-137 sources shall be administratively controlled by limiting exposure time and by limiting direct assess of the sources to HMIRTP Radiological Safety Staff.

The two 2 mCi Amersham X.117 doubly encapsulated Strontium - 90 (+ Ytrium - 90) sources shall be stored in the center of a DOT Type A package (55 gallon steel drum). Surface exposures of the Type A packages are anticipated to be substantially less than 0.5 mR/hr due to shielding and attenuation in air. The Type A packages will also be used for transport of the Sr-90/Y-90 sources to temporary training facilities. Exposure from the unshielded Sr-90/Y-90 sources shall be administratively controlled by limiting exposure time and by limiting direct access of the sources to HMIRTP Radiological Safety Staff.

Remote handling devices (tongs, etc.) shall be used when transferring 1 mCi Cs-137 and 2 mCi Sr-90/Y-90 sources from Type A packages to other locations whenever possible. Additional personnel dosimetry is required for direct handling of these sources (see 10.1). All other sources shall be stored and transported in secure Type A packages.

All Type A packages shall be labeled according to DOT regulations. Sources transported by commercial air carriers shall be packaged, labeled, and shipped according to <u>Dangerous Goods Regulations</u>, 30th edition (effective Jan 1, 1989) and subsequent up-dates issued by the international Air Transport Association.

All sources shall be stored in a locked, normally unoccupied room, when located at 3280 River Road, Cincinnati, Ohio. All sources shall be stored in a secure, unoccupied room when located at temporary training locations.

#### 10 Radiation Safety Program

#### 10.1 Personnel Monitoring Equipment

All individuals using licensed radioactive sources shall be required to wear personnel dosimetry devices. Personnel dosimetry will include Eberline TLD-100 lithium fluoride thermoluminescent dosimeters, or equivalent, as the primary dosimeters and Dosimeter Corporation model 862 direct reading dosimeters to allow the individuals to track their own exposure. Changes of TLD's shall occur at intervals not to exceed 3 months. Individuals directly handling the 1 mCl Cs-137 and 2 mCl Sr-90/Y-90 sources shall be required to wear finger dosimetry.

#### 10.2 Personnel Contamination Surveys

All individuals using licensed sources shall be required to conduct personnel contamination surveys prior to leaving the area in which the sources are located. Detectors for personnel contamination surveys will have 1.4 - 2.0 mg/cm2 thick mica windows to allow the detection of most alpha, beta, and gamma emissions from sources used in this program. All personal surveys will documented in a log containing the individuals name, time and date, and meter reading.

If contamination survey meter readings exceed background, detectors with greater sensitivity will be included in the survey. If contamination is confirmed, bloassay will be considered in situations where internal up take is possible.

#### 10.3 Personnel Decontamination

Localized skin decontamination will be accomplished using simple washing methods (soaps and detergents). Disposal of contaminated wastes is address in section 10.7 of this document.

#### 10.4 Radiation Detection Instruments

The licensee will have radiation detection instruments capable of detecting and/or measuring most alpha and beta particles and photons with energies greater than  $10\,$  keV. The instruments will be calibrated by a commercial entity at least annually and after servicing. The calibration error tolerance shall be not more than  $\pm$  20% of the actual values over the range of the instrument. The licensee will obtain calibration charts showing the results of calibration(s), the date of the last calibration, and the due date for the next calibration affixed to the instrument. Calibration charts will be retained for not less than two years.

#### instrument calibrations will be conducted by:

Eberline Instrument Corporation 312 Miami Street West Columbia, SC 29169 South Carolina Department of Health & Environmental Control - license number 155, Amendment number 14

Victoreen 6000 Cochran Road Cleveland, OH 44139 U.S. NRC Region III - license number 34-25957-01

Ludium Measurements Inc. P.O. Box 248 501 Oak Street Sweetwater, TX 79556 Texas State Department of Health License number LO 1963

comparable vendor

#### 10.5 Look Testing

The two - 1 mCi Cs-137 sources and the two - 2 mCi Sr - 90 (+Y-90) sources shall be leak tested every 6 months. The leak tests will be accomplished using commercial leak-test kits supplied by:

Gulf Nuclear P.O. Box 58716 Wabster, TX 77598 (713)332-3581 Texas Bureau of Radiation Control license no. 11-2995

John F. Dometti Box 600 Simonton, TX 77476 (713)346-1674

comparable equivalent vender

#### 10.6 Work Procedure Number 1

### Safe Handling Practices for Unsealed and High Activity Sources

#### A. General

- Students are prohibited from using any radioactive sources until reviewing this document.
- Use of licensed sources is contingent on successful completion of the Non-Exempt Radiation Source Exam.

#### B. ALARA

- 1. All radiation exposure should be kept As Low As Reasonably Achievable.
- 2. Radiation exposure is minimized by:
  - a. minimizing time of exposure.
  - b. maximizing distance from the radioactive source.
  - c. use of shielding.
  - d. prohibiting actions which could result in the internal uptake of radioactive materials.

#### C. Personnel Dosimetry

- Personnel dosimetry devices must be worn whenever licensed radioactive sources are being used.
- Whole body dosimeters should be worn between the neck and the waist.

#### D. Prohibited Operations

- Eating, drinking and smoking are prohibited in areas where radioactive sources are used or stored.
- Students are prohibited from handling the 1 mCi Cs-137 and 2 mCi Sr-90/Y-90 sources.
- Students not successfully completing the Non-exempt Radiation Source
  User Exam are prohibited from handling licensed sources without the
  direct supervision of HMIRTP Radiological Safety Staff.

### E. Source Handling Techniques

- Disposable gloves shall be worn when handling licensed sources.
- Handle sources by the edges. <u>Do Not</u> touch the active area of an unsealed source.
- After handling licensed sources, <u>Do Not</u> touch any part of your body until the absence of radioactive contamination is confirmed.
- Dispose of gloves in the designated container.
- Complete a total body survey, with emphasis on hands and arms, prior to leaving the area.
- Notify HMIRTP Radiological Safety Staff immediately if personnel contamination is suspected.
- Wash hands thoroughly after handling sources.

#### 11. Waste Management

All Radioactive wastes will be transferred to an authorized recipient as specified in paragraph 20.301 (a) of 10CFR part 20.

Bagged waste materials will be surveyed with a 2 x 2 NaI(TI) gamma scintillation detector coupled with a meter capable of determining activity within fixed precision limits. Fixed precision will be set at 2% and background activity will be determined. If the activity of the bagged waste is grater than 5% of the background activity, the waste shall be designated as radioactive waste. Additional analysis may be conducted to confirm that the waste is contaminated.

If personnel decontamination is conducted, all liquid and solid wastes generated shall be collected and designated as radioactive waste. Additional analysis may be conducted to confirm that the waste is contaminated.

## AGENDA

# RADIATION SAFETY AT SUPERFUND SITES (165.11)

COURSE DIRECTOR:

DAY & TIME	SUBJECT	SPEAKER
MONDAY.		
8:00 - 9:00 a.m.	REGISTRATION/INTRODUCTION	
9.10 - 10:10 a.m.	ATOMIC STRUCTURE AND RADIOACTIVE DECAY	
10:20 - 11:20 a.m.	TYPES AND CHARACTERISTICS OF RADIOACTIVE EMISSIONS	
11:30 - 12:30 p.m.	INTERACTION OF RADIATION WITH MATTER	
12:30 - 1:30 p.m.	LUNCH	
1:30 - 2:30 p.m.	RADIATION EXPOSURE AND DOSE	
2:40 - 3:40 p.m.	PERSONNEL DOSIMETRY AND METHODS TO CONTROL EXTERNAL EXPOSURE	
3:50 - 5:00 p.m.	BIOLOGICAL EFFECTS OF RADIATION	
TUESDAY,		
8:00 - 9:00 a.m.	EXERCISE: CALIBRATION OF DIRECT READING DOSIMETERS	
9:10 - 10:20 a.m.	BASIC CONCEPTS IN RADIATION DETECTION AND MEASUREMENT	
10:30 - 11:45 a.m.	RADIATION DETECTION INSTRUMENTS	
11:45 - 12:45 p.m.	LUNCH	
12:45 - 1:50 p.m.	CALIBRATION, SELECTION AND USE OF RADIATION SURVEY METERS	
2:00 - 2:50 p.m.	NON-EXEMPT RADIATION SOURCE USERS EXAM	

DAY & TIME	SUBJECT	
TUESDAY, con'd		
3:00 - 5:00 p.m.	FYFRCISE: RADIATION SURVEY METERS	
WEDNESDAY,		
8:00 - 10:50 a.m.	EXERCISE: CHARACTERIZATION OF UNKNOWN SOURCES/DOSE ASSESSMENT	
11:00 - 12:00 p.m.	RADIATION SIGNS AND LABELS	
12:00 - 1:00 p.m.	LUNCH	
1:00 - 1:50 p.m.	AIR SURVEILLANCE FOR RADIOACTIVE MATERIALS	
2:00 - 2:50 p.m.	EXERCISE: HIGH VOLUME AIR SAMPLERS	
3:00 - 3:50 p.m.	RESPIRATORY PROTECTION AGAINST AIRBORNE RADIOACTIVE MATERIALS	
4:00 - 5:00 p.m.	EXERCISE: APR FIT TEST	
THURSDAY,		
8:00 - 8:50 a.m.	CONTAMINATION CONTROL AND DECONTAMINATION	
9:00 - 9:50 a.m.	RADIOACTIVE MATERIAL PACKAGING, LABELING AND SHIPPING	
10:00 - 11:20 a.m.	EXERCISE: RADIOACTIVE MATERIAL PACKAGING AND LABELING	

RESPONSE ORGANIZATION

LUNCH

11:30 - 12:00 p.m.

12:00 - 1:00 p.m.

SPEAKER

SPEAKER SUBJECT DAY & TIME

THURSDAY, con'd

ENTRY SIMULATION: RADIOLOGICAL 1:00 - 5:00 p.m.

CONTROL AREA

FRIDAY,

REMEDIAL AND DISPOSAL OPTIONS 8:00 - 9:00 a.m.

REMEDIAL RESOURCES, AGENCIES AND CONTRACTORS 9:10 - 10:20 a.m.

CLOSING 10:30 - 11:00 a.m.

COURSE EXAM 11:10 - 12:00 p.m.