

**U.S. Environmental Protection Agency
Western Ecology Division:**

**Sealed Sources
NRC Radioactive Materials License
No. 36-12343-02**

NOVEMBER 30, 2004

470287

**U.S. Environmental Protection Agency, Western Ecology Division:
Sealed Sources
NRC Radioactive Materials License No. 36-12343-02**

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**U.S. Environmental Protection Agency
Western Ecology Division:
Sealed Sources
NRC Radioactive Materials License No. 36-12343-02**

Introduction

Enclosed are the US EPA-WED disposition records for the sealed sources that, with the exception of the first record, were used at the Corvallis facilities from 1977 to the present and at the Newport facility from 1995 – 1997 under the authority of the NRC Radioactive Materials License No. 36-12343-02. The records are complete for all the sources disposed between 1986 and 2004. These sources were returned to the manufacturer or disposed to other appropriate licensees. No significant leakages (> 0.005 uCi) were detected on these sources (all were Ni-63).

The records are not as complete for sources disposed prior to 1986. Many of these sources were H-3:scandium replaceable foils which were not tracked by serial number. However the enclosed records indicate that the foils were typically returned to the manufacturer or disposed as radioactive waste for burial.

These sealed source records are identified by serial number and arranged by date from front to back beginning with the most recent dispositions. Notes regarding the disposition of the H-3:Sc foils and some early Ni-63 detectors are listed in the section labeled "Notes".

The first record, a 200 mCi H-3 Electron Capture Detector Gas Flow monitor manufactured by ScienTech Inc., will remain on site. It is possessed and operated under a State of Washington General License.

There were two incidents that may have involved leaking sealed sources. However, leakage of the detectors was never confirmed. In March, 1979, a sealed source containing a tritium-scandium foil was operated without the appropriate venting. It is not clear whether the foil was overheated or whether it was "bleeding-off" isotope. It was common for these tritium foils to "bleed" isotope. Operating the detector without proper ventilation resulted in contamination of a triple-wide lab (approx 675 ft²). The lab was thoroughly cleaned and decontaminated. The notes from the event are included in this report in the volume titled "2004 U.S. EPA WED Radioisotope Room Disposition Records" under MB rooms 129/131/133.

A second event occurred in June 1982. It was never determined if a leaking Ni-63 sealed source detector caused the contamination event in MB 266 or if radiotracers (tritium) were injected into the gas chromatograph. It was believed that the detector did not leak and that the contaminate was tritium. It is not clear whether or not the electron capture detector was properly vented. Records do

not indicate if the manufacturer of the sealed source later determined that the detector failed. The 450 ft² lab was decontaminated and the event reported to the NRC. Notes from this event are included in this report in the volume titled "2004 U.S. EPA WED Radioisotope Room Disposition Records" under MB 266.

Enclosed in this volume is a table listing of the sealed sources which includes the isotope, quantity and other pertinent information, copies of the transfer or disposal records, and the most recent leak test.

Abbreviations and Glossary

Bkgrd = Background

Bq = Becquerel

CEB = Coastal Ecology Branch (Newport Facility)

CERL- Corvallis Environmental Research Laboratory (now called WED)

Check Source = Refers to an radioisotope source that is used as a reference radioactive source or standard which is either fixed on a surface or sealed into a container.

CSB = Chemical Storage Building

CPM = counts per minute

Dpm = disintegrations per minute

E = East

ECD = Electron Capture Detector

ERL-C = Environmental Research Laboratory – Corvallis (now called WED)

Ex = Exhaust. Used to refer to a ventilation exhaust vent or duct.

GC = Gas Chromatograph

GFPC = Gas Flow Proportional Counter

G-M = Geiger-Muller

Fixed = Used to refer to non-removable contamination.

HVAC = Heating, Ventilation, and Air Conditioning

LLD₉₅ = Lower Limits of Detection at the 95% confidence level

LSC = Liquid Scintillation Counter

MB = Main Building

N = North

NA = Not Applicable

ND = Not determined

NEW = Newport

Non-removable = Use to refer to contamination that can not be readily removed from surfaces without abrasion.

PCEB = Pacific Coastal Ecology Branch (Newport Facility)

PCi = picoCuries

PEB = Plant Ecology Building

Removable = Refers to contamination that can readily be removed from surfaces.

Rm = Room

S = South

S Source = Sealed Source

Std = Standard. Refers to a radioisotope source that is used for an analytical standard.

TERA = Terrestrial Ecophysiological Research Area

TERF = Terrestrial Ecology Research Facility

Tracer = A radioisotope that is in a loose form (liquid, solid, or gas).

W = West

WED = Western Ecology Division

WFTS = Western Fish Toxicology Station

WLD = Wildlife Building (also called PEB)

WRF = Wildlife Research Facility (also called PEB)

WRS = Willamette Research Station

Disposition of EPA -WED Sealed Sources

Source Serial Number	Manufacturer	Isotope	Activity	Disposed	Year Disposed	Record of Disposal	Swipe Records (Yes/No)	Disposal Test <0.005 uCi (185 Bq)	Notes
ST95-420	ScienceTech	H-3	200mCi	In-Use	NA	NA	NA	NA	State of Washington Radioactive Materials General License
M2198	HP	Ni-63	15mCi	2/24/04	2004	2/24/04	Y	Y	
S8735	HP	Ni-63	15mCi	6/26/05	2004	2/24/04	Y	Y	
F4571	HP	Ni-63	15mCi	2/24/04	2004	2/24/04	Y	Y	
1437	PE	Ni-63	15mCi	2/5/04	2004	2/5/04	Y	Y	
276	Troxler	Am-241:Be	200mCi	12/11/98	1998	12/11/98	Y	Y	
F641	Varian	Ni-63	8mCi	4/30/97	1997	4/30/97	Y	Y	
F506	Varian	Ni-63	8 mCi	4/30/97	1997	4/30/97	Y	Y	
C0154	HP	Ni-63	15mCi	4/23/97	1997	4/23/97	Y	Y	
H2098	HP	Ni-63	15mCi	4/23/97	1997	4/23/97	Y	Y	
H1230	HP	Ni-63	14.5mCi	4/23/97	1997	4/23/97	Y	Y	
S8829	HP	Ni-63	15mCi	6/19/05	1997	4/23/97	Y	Y	
S10157	HP	Ni-63	15mCi	4/14/97	1997	4/23/97	Y	Y	
4803	Tracor	Ni-63	14.5mCi	4/10/97	1997	5/1/97	Y	Y	
F4487	HP	Ni-63	15mCi	12/5/94	1994	12/5/94	Y	Y	
79451		Pb-210	5.6uCi	9/28/94	1994	9/29/94	N	N	
79450		Sr-90	6.5uCi	9/28/94	1994	9/29/94	N	N	
3845	PE	Ni-63	15mCi	5/11/94	1994	5/11/94	Y	Y	
676	PE	Ni-63	15mCi	12/23/92	1992	12/23/92	Y	Y	
089	PE	Ni-63	15mCi	12/23/92	1992	12/23/92	Y	Y	
439	PE	Ni-63	10mCi	12/23/92	1992	12/23/92	Y	Y	
4493	Tracor	Ni-63	14.5mCi	11/14/86	1986	11/14/86	Y	Y	
3214	Tracor	Ni-63	14.5mCi	11/14/86	1986	11/14/86	Y	Y	
2960	Tracor	Ni-63	14.5mCi	11/14/86	1986	11/14/86	Y	Y	
3177	Tracor	Ni-63	14.5mCi	12/1/82	1982	12/1/82	Y	No Record	
6697	Varian	H-3	250 mCi	1979	1979		Y	No Record	Notes indicating disposal of source. No specific record.
119308	HP	Ni-63	15 mCi	No record			Y	No Record	No specific record.
	Varian	H-3/Sc	1 Ci	7/15/82	1982		N	No Record	No serial numbers available. Notes indicating disposal of source. No specific record.
	Varian	H-3/Sc	1 Ci	7/15/82	1982		N	No Record	No serial numbers available. Notes indicating disposal of source. No specific record.
		H-3/Sc	1 Ci	8/1/82	1982		N	No Record	No serial numbers available. Notes indicating disposal of source. No specific record.

Note: **** Sources acquired in early 1970:

disposal of specific sources cannot be tracked.

Disposition of EPA -WED Sealed Sources

**** Notes		H-3/Sc	1 Ci	1/8/80	1980		N	No Record	No serial numbers available. Notes indicating disposal of source. No specific record.
		H-3/Sc	1 Ci	8/29/79	1979		N	No Record	No serial numbers available. Notes indicating disposal of source. No specific record.
		H-3/Sc	1 Ci	8/29/79	1979		N	No Record	No serial numbers available. Notes indicating disposal of source. No specific record.
		H-3/Sc	1 Ci	8/29/79	1979		N	No Record	No serial numbers available. Notes indicating disposal of source. No specific record.
		Ni-63	14.5mCi	No record			N	No Record	No serial numbers available. No specific record.
		Ni-63	14.5mCi	No record			N	No Record	No serial numbers available. No specific record.
		Ni-63	14.5mCi	No record			N	No Record	No serial numbers available. No specific record.
		Ni-63	10mCi	No record			N	No Record	No serial numbers available. No specific record.

Note: **** Sources acquired in early 1970:

disposal of specific sources cannot be tracked.

REGISTRY OF RADIOACTIVE SEALED SOURCES AND DEVICES
SAFETY EVALUATION OF A RADIOACTIVE DEVICE

NO.: WA-677-D-101-G

DATE: February 7, 1990

PAGE: 1 of 4

DEVICE TYPE: Electron Capture Detector

MODEL: ECD-289

MANUFACTURER/DISTRIBUTOR: ScienTech, Incorporated
P.O. Box 118
Pullman, Washington 99163

SEALED SOURCE MODEL DESIGNATION: Hydrogen-3
Safety Light Corporation
(formerly U.S. Radium Corp.)
Model 508-3

ISOTOPE: Hydrogen-3;

MAXIMUM ACTIVITY: 200 Millicuries

LEAK TEST FREQUENCY: None

PRINCIPLE USE: (N) Ion Generator, Chromatography

CUSTOM DEVICE: No

DESCRIPTION: The ECD-289 detector cell is fabricated from stainless steel and Vespel components. The components are threaded together to form a cylinder. The titanium tritide foil source is shaped into a cylinder and placed inside the assembled components. The completed detector cell is approximately four inches long and one half inch wide. The Hydrogen-3 foil will remain secure inside the components until it is physically moved. The assembled detector cell is then placed into a chassis and fastened in place with block clamps. The block clamps are held in place with tamper resistant screws.

REGISTRY OF RADIOACTIVE SEALED SOURCES AND DEVICES
SAFETY EVALUATION OF A RADIOACTIVE DEVICE

NO: WA-677-D-101-G

DATE: February 7, 1990

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DEVICE TYPE: Electron Capture Detector

LABELING: The outer surface of the detector cell chassis cover bears a label. This label contains the trefoil, the words "CAUTION-RADIOACTIVE MATERIAL", and a statement notifying the licensee of the obligations of possession, receipt, use and transfer of this device.

DIAGRAM: See diagram of detector cell.

CONDITIONS OF NORMAL USE: This electron capture detector is used to measure trace amounts of electro-negative gases used as taggents in the study of atmospheric transport and diffusion. It may also be used to detect leaks in industrial components. The operating environment will be from 0 to 55 degrees Centigrade and 0 to 90 percent relative humidity. The users of these devices will be scientific support personnel. The ECD-289 which will be contained in either the Model TGA-4000 or the GC-20 instruments may be used in both laboratory and field environments. Both the TGA-4000 and the GC-20 are ambient temperature instruments so no possibility of over heating the Hydrogen-3 foil exists.

PROTOTYPE TESTING: Washington State University, Pullman, WA has built, tested and used essentially this same detector (identified as Model LBF-3) for approximately ten years with no incidents of radiation safety related problems. The detectors have been used in both laboratory and field studies.

EXTERNAL RADIATION LEVELS: No external radiation levels are present in the ECD-289.

QUALITY ASSURANCE AND CONTROL: the quality assurance control procedures used by the manufacturer are as follows:

1. A wipe test of each detector cell will be performed after assembly.
2. A wipe test of each instrument will be performed after complete assembly.
3. The hermeticity of each detector cell will be determined to assure leak tight assembly.

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DEVICE TYPE: Electron Capture Detector

LIMITATIONS AND/OR OTHER CONSIDERATIONS OF USE:

1. The Model ECD-289 electron capture detector cell may be distributed to persons generally licensed for use in either the ScienTech Inc. Models TGA-4000 or GC-20 gas chromatograph
2. The Model ECD-289 shall be serviced by the manufacturer if required.
3. It is recommended that when used in a laboratory and/or enclosed environment the instruments containing the ECD-289 detector cell should be vented to the outside or to a fume hood.
4. The Model ECD-289 detector cell shall be used in either Model TGA-4000, GC-20 or LBF-3 gas chromatographs.
5. ScienTech, Inc. may service or repair Model LBF-3 gas chromatographs.

SAFETY ANALYSIS SUMMARY: Based on review of the information and data contained in the references listed below, the Washington state Department of Health, Division of Radiation Protection concludes that the ScienTech Inc. Model ECD-289 electron capture detector can be operated by persons having no training in radiation safety. Furthermore, under ordinary conditions of use the Hydrogen-3 source contained in the ECD-289 cannot be inadvertently removed. Also, it is unlikely that any person will receive an external radiation dose in excess of the limits specified in WAC-402-22-110 (4) (a) (C).

Since the two instruments in which the Model ECD-289 is used in are ambient temperature gas chromatograph it is expected that only normal amounts of off-gassed Hydrogen-3 will be present.

REFERENCES: This safety review was prepared from information from ScienTech, Inc. dated May 24, 1989; December 6, 1989.

DATE: February 7, 1990

REVIEWED BY: Leo Wambauer

DATE: 2/17/90

CONCURRENCE: Paul M. Bausch

ISSUING AGENCY: State of Washington, Department of Health
Division of Radiation Protection

REGISTRY OF RADIOACTIVE SEALED SOURCES AND DEVICES
SAFETY EVALUATION OF A RADIOACTIVE DEVICE

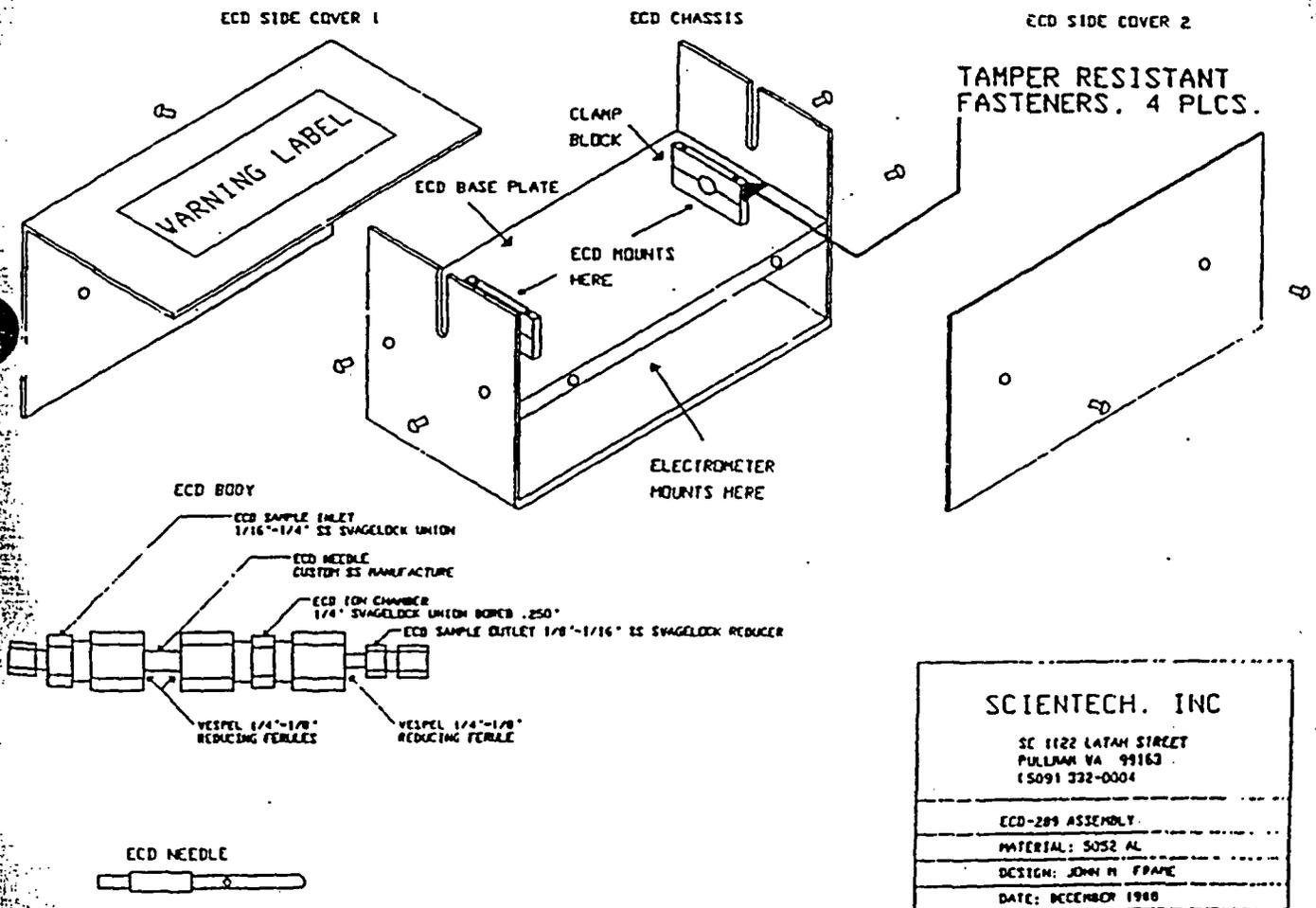
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DEVICE TYPE: Electron Capture Detector

MODEL: ECD-289



SCIENTECH, INC
SE 1122 LATAM STREET PULLMAN VA 99163 (509) 332-0004
ECD-289 ASSEMBLY
MATERIAL: 5052 AL
DESIGN: JOHN R FRANK
DATE: DECEMBER 1988

SCIENTECH INC. TGA-4000 ECD-289 GAS MONITOR

Summary Protocol

General Information

The ScienTech Inc. TGA-4000 ECD-189 Gas Monitor (S/N ST-95-420) was received July 11, 1995 and assigned EPA Property Number 817215. The instrument contains a 200 mCi Tritium (3-H) Radioactive Sealed Source. Its distribution and possession is allowed by a Radioactive Materials General License issued to the manufacturer by the State of Washington. The possession, use, maintenance, storage, repair, and transfer of the instrument are regulated by the Radioactive Material License. Therefore, it is of utmost importance to strictly follow this protocol:

1. This instrument must not be repaired, moved to a new location, shipped, transferred, or disposed without first consulting with the NHEERL-WED Radiation Safety Officer (RSO). Moving, transferring, shipping, and disposing of radioactive materials requires the knowledge and use of special procedures.
2. This instrument is tracked on the Radiation Safety Officer's inventory.
3. The instrument must be located or stored in a secured facility. Notify the RSO as to instrument location.
4. Do not operate the instrument without studying the Operators Manual and the manual section titled: ECD-289 Electron Capture Detector: Operational Radiological Safety Considerations and Instructions.
5. Do not remove or disassemble the Electron Capture Detector (ECD).
6. Prior to operation, the detector must be vented to outside the building.
7. Under ordinary conditions, the ECD is exempt from leak testing requirements.
8. If at any time questions arise concerning the safety, maintenance, and operation of the unit, contact the Radiation Safety Officer.

SciencTech Inc ECD-289
TGA-4000
EPA #817215

7/95
Instrument S/N ST-95-426
7/95

ECD-289 Electron Capture Detector

Operational Radiological Safety Considerations and Instructions

The SciencTech Inc. ECD-289 electron capture detector contains a 200 MCi hydrogen 3 (tritium) sealed source to generate the ions to be detected. While tritium is a relatively benign radioactive by product material, it's employment is regulated by the United States Nuclear Regulatory Commission (NRC) and/or regulations set forth by Agreement States or Non Agreement States. The licensing and regulatory situation is complex, therefore the user is cautioned not to attempt any service or modification of the ECD-289 detector without ascertaining that the procedures and processes contemplated are correct from a regulatory point of view.

APPLICABLE REGULATORY AUTHORITIES

Specifically, incorporated within the detector cell inside the detector housing is a sealed source containing approximately 200 MilliCurries of Hydrogen-3. This detector assembly shall not be transferred, abandoned, disposed of, repaired or modified except by a person or agency specifically licensed by the United States Nuclear Regulatory Commission (NRC) and or by an Agreement State to receive the device and perform such work. The receipt, possession, use, and transfer of this electron capture detector assembly are subject to the terms and conditions expressed in a general license, as well as the regulations of the NRC and/or of an Agreement State.

If there is any indication of mechanical damage to the detector assembly that could compromise the integrity of the detector cell, operation should immediately be suspended until a determination of an appropriate course of action has been made by an appropriate person or agency. It is highly recommended that the factory, SciencTech Inc., be contacted in any case of apparent mechanical damage, however minor, to the ECD-289 detector.

The ECD-289 detector is designed to be used as installed by SciencTech Inc. in instrumentation manufactured by SciencTech Inc. The ECD-289 detector should not be physically modified or employed for any other use without specific written authorization from SciencTech Inc. or another agency specifically empowered and licensed to authorize and perform such work.

MECHANICAL DAMAGE TO DETECTOR CELL OR CHASSIS

It is extremely unlikely that the ECD-289 detector cell could be ruptured during normal operation due to the strength of the detector cell itself and the strength of the two separate chassis further protecting the detector cell. In any reasonably foreseeable circumstance, the ScienTech Inc. instrument containing the ECD-289 detector cell will be physically destroyed before detector cell mechanical integrity is compromised. However, if it appears that the mechanical integrity of the ECD-289 chassis and/or the stainless steel detector cell within the chassis is compromised, immediately cease operation. Next, while wearing rubber gloves, and in a well ventilated area, remove the ECD-289 chassis, which contains the detector cell, from the instrument and place the entire chassis and detector cell in a sealable container such as a one gallon "paint can" which is available at most hardware stores. Next, contact ScienTech for further instructions.

MALFUNCTION OF DETECTOR

Malfunction of the ECD-289 detector may be indicated by a low output signal. Most likely, the low output signal will not be caused by a mechanical failure. More probably, the low output signal will be caused by inappropriate adjustment of instrumental operational parameters. The correct adjustment of these operational parameters is completely covered in the instrumental operational manual furnished by ScienTech with each instrument.

EXTERNAL RADIATION PROFILE

The external radiation level for the ECD-289 detector, resulting from emission from the sealed source internal to the detector cell, is zero everywhere owing to complete shielding of emissions of the hydrogen-3 source by the stainless steel detector cell.

TAMPERING

WARNING, the ECD-289 detector contains a 200 Millicurie hydrogen-3 radioactive source inside the detector body. Under all normal circumstances, this source is of minimal consequence so long as it remains contained within the ECD-289 detector cell. UNDER NO CIRCUMSTANCES SHOULD THE DETECTOR CELL BE REMOVED FROM THE DETECTOR CHASSIS. UNDER NO CIRCUMSTANCES SHOULD THE DETECTOR CELL BE TAKEN APART OR MODIFIED. ALL MATTERS REQUIRING REMOVAL OR MODIFICATION OF THE ECD-289 DETECTOR MUST BE PERFORMED BY SCIENOTECH INC. OR ANOTHER PARTY SPECIFICALLY LICENSED BY THE UNITED STATES NUCLEAR REGULATORY AGENCY OR AN AGREEMENT STATE TO PERFORM SUCH WORK.

DISPOSAL OF ECD-289 DETECTOR

Disposal of the ECD-289 detector must be performed by ScienTech Inc. or another agency specifically licensed by the United States Nuclear Regulatory Commission, or an Agreement State to perform such work. It is recommended that ScienTech Inc. be contacted before any action is taken in any case where disposal of the ECD-289 detector is contemplated.

SERVICING OF THE ECD-289 DETECTOR

ScienTech Inc. offers complete repair services for the ECD-289 Detector including replacing the source if required. Specific packing and shipping instructions are included in the instruction manual furnished with each instrument and/ or detector. An external tritium assay will be taken and furnished with each repaired detector. ScienTech also offers, as an option with each instrument purchase, on site training for instrument use and service. The operation and maintenance of the ECD-289 Detector are thoroughly covered during this optional on-site training.

LEAK TESTING

The source used in the ECD-289 is hydrogen 3. The NRC does not require leak testing of devices using hydrogen 3. Therefore, no leak testing is contemplated or proposed. An external tritium assay will be performed at the point of ECD-289 manufacture or repair to assure that surface tritium levels are acceptable. Records of this testing will be maintained at ScienTech Inc.

SAFETY FEATURES

Some important safety features of the ECD-289 Detector are as follows:

1. The detector utilizes a commercially available and certified sealed Hydrogen 3 source for ion generation. In all normal operating conditions the release rate from this source is expected to be below detectable limits. Therefore, the source should pose no safety hazard.
2. The sealed source is completely contained within a stainless steel detector cell of sufficient thickness to completely shield the emission from the hydrogen 3 source. Therefore, the external radiation from the sealed source is zero everywhere and should pose no safety hazard.
3. The detector cell is mounted within an enclosed chassis via the use of tamper resistant fasteners. The tamper resistant fasteners completely eliminate the inadvertent disassembly of the detector cell.
4. The chassis containing the detector cell is clearly labelled as containing radioactive material and has specific instructions regarding the use and disposal of the detector cell. Further, a complete and detailed

operational manual further detailing safety considerations is furnished with each ECD-289 detector.

5. As indicated in 10 CFR 32.51(a)(2)(i) it is appropriate that the ECD 289 detector can be operated by persons having no training in radiological protection. The relevant design factors are that:

1. The sealed hydrogen 3 source is not accessible to the user.
2. The external radiation profile is zero everywhere.
3. The hydrogen three release is below detectable limits.
4. A warning label exists on the detector cell chassis.
5. Explicit instructions are furnished with each ECD-289 detector adequately detailing detector usage and disposal.

6. As required in 10 CFR 32.51(a)(2)(ii) It is not possible, under ordinary conditions of handling, storage, and use of the ECD-289 detector that the byproduct material will be released or inadvertently removed from the detector cell. Preventing inadvertent access to or release of byproduct material is assured to a high confidence level by two design factors. First, the source used in the ECD-289 is itself a certified "sealed" source and under normal operation will not release hydrogen 3 in detectable, let alone harmful, amounts. Second, the source is first contained within a stainless steel detector which is itself contained within a clearly labelled detector chassis which is assembled with tamper resistant fasteners. The combination of the double enclosure and tamper resistant fasteners assures that the sealed source can only be accessed with considerable effort and via a deliberate, wilful act such as might be done by the factory to repair the ECD-289 detector.

7. As further required in 10 CFR 32.51(a)(2)(ii), It is unlikely for an individual to receive in any one calendar quarter a dose in excess of 10 percent of the limits specified in the table in 20.10 because the dose at the exterior surface of the ECD-289 detector cell is zero everywhere.

8. As further required in 10 CFR 32.51(a)(2)(iii), it is unlikely that under accident conditions (such as fire and explosion) associated with handling, storage and use of the device that any person would receive an external radiation dose or dose commitment in excess of the dose to the appropriate organ as specified in Column IV of the table in 32.24. The factors assuring that this requirement is met are:

1. The source is hydrogen 3 which is volatile and will rapidly disperse given that the sealed source is heated beyond specification. It is extremely unlikely that a person would be proximate to the source at temperatures (above 200 C) that could cause hydrogen 3 to exit the sealed source. Therefore, it is unlikely that a person could be exposed to hydrogen 3 during an accidental heating of the ECD-289 detector.

2. The ECD-289 is fabricated from stainless steel and is mechanically robust. A person proximate to the ECD-289 detector would most likely not survive an explosion severe enough to

rupture the detector cell and or cause heating sufficient to cause hydrogen 3 to sublime from the sealed source.

ECD-289 Electron Capture Detector

Removal, Packing, and Shipping Instructions

Incorporated within the detector cell inside the detector housing is a sealed source containing approximately 200 MilliCurries of Hydrogen-3. This detector assembly shall not be transferred, abandoned, disposed of, repaired or modified except by a person or agency specifically licensed by the United States Nuclear Regulatory Commission (NRC) and or by an Agreement State to receive the device and perform such work. The receipt, possession, use, and transfer of this electron capture detector assembly are subject to the terms and conditions expressed in a general license and the regulations of the NRC and or of an Agreement State.

TAMPERING

WARNING, the ECD-289 detector contains a 200 Millicurie hydrogen-3 radioactive source inside the detector body. Under all normal circumstances, this source is of minimal consequence so long as it remains contained within the ECD-289 detector cell. UNDER NO CIRCUMSTANCES SHOULD THE DETECTOR CELL BE REMOVED FROM THE DETECTOR CHASSIS. UNDER NO CIRCUMSTANCES SHOULD THE DETECTOR CELL BE TAKEN APART OR MODIFIED. ALL MATTERS REQUIRING REMOVAL OR MODIFICATION OF THE ECD-289 DETECTOR MUST BE PERFORMED BY SCIEN TECH INC. OR ANOTHER PARTY SPECIFICALLY LICENSED BY THE UNITED STATES NUCLEAR REGULATORY AGENCY OR AN AGREEMENT STATE TO PERFORM SUCH WORK.

REMOVAL OF ECD-289 DETECTOR FROM INSTRUMENT

The ECD-289 detector is contained within an aluminum chassis labeled with a "Warning Radioactive Material" label. Disconnect the two 1/16" stainless steel lines coming from the ECD-289 chassis at their destinations away from the ECD-289 chassis. Cap these two 1/16" lines with plastic tubing such as "tygon" or "shrink" tubing. Remove the two screws fastening the cover of the ECD-289 chassis. Remove the two chassis hold down screws. At this point, the ECD-289 chassis may be removed from the instrument. Replace the cover of the ECD-289 chassis using the previously removed screws. At this point, the ECD-289 detector is ready to be packaged for shipment.

PACKAGING FOR SHIPMENT

The ECD-289 detector may be shipped by any United States Common Carrier. It may not be transported as baggage or within passenger aircraft. There are no specific packaging requirements. However, ScienTech Inc. recommends that the detector be first wrapped in packing material such as polyurethane foam and then placed in a small sealable can such as a "paint"

can prior to shipment. This procedure is suggested to minimize the possibility of physical damage during transit. ScienTech also suggests that the detector be insured for full value.

ScienTech Inc. ECD-289 Chassis and Detector Cell Containment

As indicated in the attached drawing, the ECD-289 detector cell is fabricated from stainless steel and vespel components. The 200 MCi H3 sealed source resides interior to the ion chamber on the interior surface of the chamber. The ECD-289 is a coaxial type of ECD detector. The ECD-289 detector cell is firmly threaded together after the sealed source is placed into the interior of the detector cell. The complete detector cell assembly is then placed in the ECD chassis and firmly fastened into place with two clamp blocks.

Tamper resistant fasteners are used to assemble the clamp blocks. It is not possible to disassemble or remove the ECD-289 detector cell from the ECD chassis without removing the tamper resistant fasteners. It is not possible to remove the sealed H3 source from the ion chamber without disassembling the detector cell.

ECD Side Covers #1 and #2 completely enclose the detector cell making it impossible to inadvertently gain access to the ECD-289 detector cell. ECD Side Cover #1 is clearly labeled as containing a radioactive material. This label clearly conveys the message that the detector cell is not to be removed, repaired, modified etc. except by ScienTech Inc., the original manufacturer, or another person or agency specifically licensed by the U.S. NRC, an Agreement State, or another appropriate agency.

The completely assembled ECD-289 chassis containing the detector cell and electrometer is mounted to the main chassis of instruments by two fasteners proximate to the clamp blocks. These fasteners are not visible in the isometric drawing furnished, but are usually 10-32 screws which are put in place via access holes through the ECD Base Plate and fasten the bottom of the "u" shaped ECD Chassis to the main instrumental chassis.

The sealed H3 source in the ECD-289 detector is triply contained in ScienTech instruments. First, by the stainless steel detector cell. Secondly by the assemble ECD-289 chassis. Third, by the instrument main chassis and the cover for the main chassis.

Operational, safety and security were paramount design considerations for the ECD-289 detector. It is believe that the combination of robust mechanical design, use of tamper resistant fasteners and warning labels meets all design and safety requirements.

Chapter 246-233 WAC

RADIOACTIVE MATERIALS—GENERAL LICENSES

WAC	
246-233-001	Purpose and scope.
246-233-010	General licenses—Source material.
246-233-020	General licenses*—Radioactive material other than source material.

WAC 246-233-001 Purpose and scope. This chapter establishes general licenses for the possession and use of radioactive material contained in certain items and a general license for ownership of radioactive material. Chapter 246-232 WAC also contains provisions applicable to the subject matter of this part. [Statutory Authority: RCW 70.98.050 and 70.98.080. 91-15-112 (Order 184), § 246-233-001, filed 7/24/91, effective 8/24/91. Statutory Authority: RCW 43.70.040. 91-02-049 (Order 121), recodified as § 246-233-001, filed 12/27/90, effective 1/31/91. Statutory Authority: RCW 70.98.080. 79-12-073 (Order 1459), § 402-21-010, filed 11/30/79, effective 1/1/80. Formerly chapter 402-20 WAC.]

WAC 246-233-010 General licenses—Source material. (1) A general license is hereby issued authorizing use, possession, and transfer of not more than fifteen pounds of source material at any one time by persons in the following categories:

(a) Pharmacists using the source material solely for the preparation of medicinal compounds;

(b) Physicians using the source material for medicinal purposes;

(c) Persons receiving possession of source material from pharmacists and physicians in the form of medicinals or drugs;

(d) Commercial and industrial firms, and research, educational, and medical institutions, and state and local government agencies for research, development, educational, operational, or commercial purposes: *And provided*, That no such person shall, pursuant to this general license, receive more than a total of one hundred fifty pounds of source material in any one calendar year.

(2) Persons who receive, possess, use, or transfer source material pursuant to the general license issued in subsection (1) of this section are exempt from the provisions of chapters 246-221 and 246-222 WAC to the extent that such receipt, possession, use, or transfer is within the terms of such general license: *Provided, however*, That this exemption shall not be deemed to apply to any such person who is also in possession of source material under a specific license issued pursuant to chapter 246-235 WAC.

(3) A general license is hereby issued authorizing the receipt of title to source material without regard to quantity. This general license does not authorize any

person to receive, possess, use, or transfer source material.

(4) Depleted uranium in industrial products and devices.

(a) A general license is hereby issued to receive, acquire, possess, use, or transfer, in accordance with the provisions of paragraphs (4)(b), (c), (d), and (e) of this section, depleted uranium contained in industrial products or devices for the purpose of providing a concentrated mass in a small volume of the product or device.

(b) The general license in paragraph (4)(a) of this section applies only to industrial products or devices which have been manufactured either in accordance with a specific license issued to the manufacturer of the products or devices pursuant to WAC 246-235-100(13) or in accordance with a specific license issued to the manufacturer by the United States Nuclear Regulatory Commission or an agreement state which authorizes manufacture of the products or devices for distribution to persons generally licensed by the United States Nuclear Regulatory Commission or an agreement state.

(c)(i) Persons who receive, acquire, possess, or use depleted uranium pursuant to the general license established by paragraph (4)(a) of this section shall file department form RHF-20 "Registration certificate - Use of depleted uranium under general license," with the department. The form shall be submitted within thirty days after the first receipt or acquisition of such depleted uranium. The registrant shall furnish on department form RHF-20 the following information and such other information as may be required by that form:

(A) Name and address of the registrant;

(B) A statement that the registrant has developed and will maintain procedures designed to establish physical control over the depleted uranium described in paragraph (4)(a) of this section and designed to prevent transfer of such depleted uranium in any form, including metal scrap, to persons not authorized to receive the depleted uranium; and

(C) Name and/or title, address, and telephone number of the individual duly authorized to act for and on behalf of the registrant in supervising the procedures identified in item (4)(c)(i)(B) of this section.

(ii) The registrant possessing or using depleted uranium under the general license established by paragraph (4)(a) of this section shall report in writing to the department any changes in information previously furnished on the "Registration certificate - Use of depleted uranium under general license." The report shall be submitted within thirty days after the effective date of such change.

(ii) Shall assure that the device is tested for leakage of radioactive material and proper operation of the on-off mechanism and indicator, if any, at no longer than six-month intervals or at such other intervals as are specified in the label, however:

(A) Devices containing only krypton need not be tested for leakage of radioactive material; and

(B) Devices containing only tritium or not more than 100 microcuries of other beta and/or gamma emitting material or 10 microcuries of alpha emitting material need not be tested for any purpose. Devices held in storage in the original shipping container prior to initial installation need not be tested until immediately prior to use;

(iii) Shall assure that the tests required by (c)(ii) of this subsection and other testing, installing, servicing, and removing from installation involving the radioactive materials, its shielding or containment, are performed:

(A) In accordance with the instructions provided by the labels; or

(B) By a person holding a specific license from the department or from the United States Nuclear Regulatory Commission or from any agreement state or from a licensing state to perform such activities;

(iv) Shall maintain records showing compliance with the requirements of (c)(ii) and (iii) of this subsection. The records shall show the results of tests. The records also shall show the dates of performance and the names of persons performing, testing, installing, servicing, and removing from installation concerning the radioactive material, its shielding or containment. Records of tests for leakage of radioactive material required by (c)(ii) of this subsection shall be maintained for one year after the next required leak test is performed or the sealed source is transferred or disposed. Records of tests of the on/off mechanism and indicator required by (c)(ii) of this subsection shall be maintained for one year after the next required test of the on/off mechanism and indicator is performed or the sealed source is transferred or disposed. Records of other testing, installation, servicing, and removal from installation required by (c)(iii) of this subsection shall be maintained for a period of two years from the date of the recorded event or until the device is transferred or disposed;

(v) Upon the occurrence of a failure of or damage to, or any indication of a possible failure of or damage to, the shielding of the radioactive material or the on/off mechanism or indicator, or upon the detection of 0.005 microcuries or more removable radioactive material, shall immediately suspend operation of the device until it has been repaired by the manufacturer or other person holding a specific license from the department, the United States Nuclear Regulatory Commission, or from an agreement state or a licensing state to repair such devices, or disposed by transfer to a person authorized by a specific license to receive the radioactive material contained in the device and, within thirty days, furnish to the department a written report containing a brief description of the event and the remedial action taken;

(vi) Shall not abandon the device containing radioactive material;

(vii) Except as provided in (c)(viii) of this subsection, shall transfer or dispose the device containing radioactive material only by transfer to a person holding a specific license of the department, the United States Nuclear Regulatory Commission, or an agreement state, or a licensing state whose specific license authorizes the person to receive the device and within thirty days after transfer of a device to a specific licensee shall furnish to the department a report containing identification of the device by manufacturer's name, model number and the name and address of the person receiving the device. No report is required if the device is transferred to the specific licensee in order to obtain a replacement device;

(viii) Shall transfer the device to another general licensee only:

(A) Where the device remains in use at a particular location. In such case, the transferor shall give the transferee a copy of this subsection and any safety documents identified in the label of the device and within thirty days of the transfer, report to the department (the manufacturer's name, model number of device transferred, the name and address of the transferee, and the name and/or position of an individual who may constitute a point of contact between the department and the transferee; or

(B) Where the device is held in storage in the original shipping container at its intended location of use prior to initial use by a general licensee:

(ix) Shall comply with the provisions of WAC 246-221-240 and 246-221-250 for reporting radiation incidents, theft or loss of licensed material, but shall be exempt from the other requirements of chapters 246-221 and 246-222 WAC.

(d) The general license in (a) of this subsection does not authorize the manufacture, import or export of devices containing radioactive material.

(e) The general license provided in this subsection is subject to the provisions of WAC 246-220-020, 246-220-030, 246-220-040, 246-220-060, 246-220-070, 246-220-100, 246-232-050, 246-232-070, 246-232-080, and 246-232-090.

(5) Luminous safety devices for aircraft.

(a) A general license is hereby issued to own, receive, acquire, possess and use tritium or Promethium-147 contained in luminous safety devices for use in aircraft, provided:

(i) Each device contains not more than 10 curies of tritium or 300 millicuries of Promethium-147; and

(ii) Each device has been manufactured, assembled or imported in accordance with a specific license issued by the United States Nuclear Regulatory Commission, or each device has been manufactured or assembled in accordance with the specifications contained in a specific license issued by the department or any agreement state to the manufacturer or assembler of such device pursuant to licensing requirements equivalent to those in Section 32.53 of 10 CFR Part 32 of the regulations of the United States Nuclear Regulatory Commission.

(b) Persons who own, receive, acquire, possess or use luminous safety devices pursuant to the general license in this subsection are exempt from the requirements of

(d) A person who receives, acquires, possesses, or uses depleted uranium pursuant to the general license established by paragraph (4)(a) of this section:

(i) Shall not introduce such depleted uranium, in any form, into a chemical, physical, or metallurgical treatment or process, except a treatment or process for repair or restoration of any plating or other covering of the depleted uranium.

(ii) Shall not abandon such depleted uranium.

(iii) Shall transfer or dispose of such depleted uranium only by transfer in accordance with the provision of chapter 246-232 WAC. In the case where the transferee receives the depleted uranium pursuant to the general license established by paragraph (4)(a) of this section the transferor shall furnish the transferee a copy of this regulation and a copy of department form RHF-20.

In the case where the transferee receives the depleted uranium pursuant to a general license contained in the United States Nuclear Regulatory Commission's or agreement state's regulation equivalent to paragraph (4)(a) of this section the transferor shall furnish the transferee a copy of this regulation and a copy of department form RHF-20 accompanied by a note explaining that use of the product or device is regulated by the United States Nuclear Regulatory Commission or agreement state under requirements substantially the same as those in this regulation.

(iv) Shall maintain and make available to the department upon request the name and address of the person receiving the depleted uranium pursuant to such transfer.

(v) Shall not export such depleted uranium except in accordance with a license issued by the United States Nuclear Regulatory Commission pursuant to 10 CFR Part 110.

(e) Any person receiving, acquiring, possessing, using, or transferring depleted uranium pursuant to the general license established by paragraph (4)(a) of this section is exempt from the requirements of chapters 246-221 and 246-222 WAC of these regulations with respect to the depleted uranium covered by that general license. [Statutory Authority: RCW 70.98.050 and 70.98.080, 91-15-112 (Order 184), § 246-233-010, filed 7/24/91, effective 8/24/91. Statutory Authority: RCW 43.70.040, 91-02-049 (Order 121), recodified as § 246-233-010, filed 12/27/90, effective 1/31/91. Statutory Authority: RCW 70.98.050, 81-01-011 (Order 1570), § 402-21-030, filed 12/8/80. Statutory Authority: RCW 70.98.080, 79-12-073 (Order 1459), § 402-21-030, filed 11/30/79, effective 1/1/80. Formerly WAC 402-20-030.]

WAC 246-233-020 General licenses*—Radioactive material other than source material.

*Note: Different general licenses are issued in this section, each of which has its own specific conditions and requirements.

(1) *Certain devices and equipment.* A general license is hereby issued to transfer, receive, acquire, own, possess, and use radioactive material incorporated in the

following devices or equipment which have been manufactured, tested and labeled by the manufacturer in accordance with a specific license issued to the manufacturer by the United States Nuclear Regulatory Commission for use pursuant to Section 31.3 of 10 CFR Part 31. This general license is subject to the provisions of WAC 246-220-020, 246-220-030, 246-220-040, 246-220-050, 246-220-060, 246-220-070, chapters 246-232, 246-221** and 246-222 WAC.

(a) *Static elimination device.* Devices designed for use as static eliminators which contain, as a sealed source or sources, radioactive material consisting of a total of not more than 500 microcuries of Polonium-210 per device.

(b) *Ion generating tube.* Devices designed for ionization of air which contain, as a sealed source or sources, radioactive material consisting of a total of not more than 500 microcuries of Polonium-210 per device or a total of not more than 50 millicuries of Hydrogen-3 (tritium) per device.

**Attention is directed particularly to the provisions of chapter 246-221 WAC of these regulations which relate to the labeling of containers.

(2) Reserved.

(3) Reserved.

(4) *Certain measuring, gauging or controlling devices.*

(a) A general license is hereby issued to commercial and industrial firms and research, educational and medical institutions, individuals in the conduct of their business, and state or local government agencies to own, acquire, receive, possess, use or transfer, in accordance with the provisions of (b), (c), and (d) of this subsection, radioactive material excluding special nuclear material contained in devices designed and manufactured for the purpose of detecting, measuring, gauging or controlling thickness, density, level, interface location, radiation, leakage, or qualitative or quantitative chemical composition, or for producing light or an ionized atmosphere.

(b) The general license in (a) of this subsection applies only to radioactive material contained in devices which have been manufactured and labeled in accordance with the specifications contained in a specific license issued by the department pursuant to WAC 246-235-100(4) or in accordance with the Nuclear Regulatory Commission, an agreement state or a licensing state, which authorizes distribution of devices to persons generally licensed by the United States Nuclear Regulatory Commission, an agreement state or licensing state**.

*Note: Regulations under the Federal Food, Drug, and Cosmetic Act authorizing the use of radioactive control devices in food production require certain additional labeling thereon which is found in Section 179.21 of 21 CFR Part 179.

(c) Any person who owns, acquires, receives, possesses, uses or transfers radioactive material in a device pursuant to the general license in (a) of this subsection:

(i) Shall assure that all labels affixed to the device at the time of receipt and bearing a statement that removal of the label is prohibited are maintained thereon and shall comply with all instructions and precautions provided by such labels;

chapters 246-221 and 246-222 WAC except that they shall comply with the provisions of WAC 246-221-240 and 246-221-250.

(c) This general license does not authorize the manufacture, assembly, or repair of luminous safety devices containing tritium or Promethium-147.

(d) This general license does not authorize the ownership, receipt, acquisition, possession or use of Promethium-147 contained in instrument dials.

(e) This general license is subject to the provisions of WAC 246-220-020, 246-220-030, 246-220-040, 246-220-050, 246-220-060, 246-220-070, 246-220-100, 246-232-050, 246-232-070, 246-232-080, and 246-232-090.

(6) *Ownership of radioactive material.* A general license is hereby issued to own radioactive material without regard to quantity. Notwithstanding any other provisions of this chapter, this general license does not authorize the manufacture, production, transfer, receipt, possession or use of radioactive material.

(7) *Calibration and reference sources.*

(a) A general license is hereby issued to those persons listed below to own, receive, acquire, possess, use and transfer, in accordance with the provisions of (d) and (e) of this subsection, Americium-241 in the form of calibration or reference sources:

(i) Any person who holds a specific license issued by the department which authorizes that person to receive, possess, use and transfer radioactive material; or

(ii) Any person who holds a specific license issued by the United States Nuclear Regulatory Commission which authorizes that person to receive, possess, use and transfer special nuclear material.

(b) A general license is hereby issued to own, receive, possess, use and transfer plutonium in the form of calibration or reference sources in accordance with the provisions of (d) and (e) of this subsection to any person who holds a specific license issued by the department which authorizes that person to receive, possess, use and transfer radioactive material.

(c) A general license is hereby issued to own, receive, possess, use and transfer Radium-226 in the form of calibration or reference sources in accordance with the provisions of (d) and (e) of this subsection to any person who holds a specific license issued by the department which authorizes that person to receive, possess, use and transfer radioactive material.

(d) The general licenses in (a), (b) and (c) of this subsection apply only to calibration or reference sources which have been manufactured in accordance with the specifications contained in a specific license issued to the manufacturer or importer of the sources by the United States Nuclear Regulatory Commission pursuant to Section 32.57 of 10 CFR Part 32 or Section 70.39 of 10 CFR Part 70 or which have been manufactured in accordance with the specifications contained in a specific license issued to the manufacturer by the department or any agreement state or licensing state pursuant to licensing requirements equivalent to those contained in Section 32.57 of 10 CFR Part 32 or Section 70.39 of 10

CFR Part 70 of the regulations of the United States Nuclear Regulatory Commission.

(e) The general licenses provided in (a), (b) and (c) of this subsection are subject to the provisions of WAC 246-220-020, 246-220-030, 246-220-040, 246-220-060, 246-220-070, 246-220-100, 246-232-050, 246-232-070, 246-232-080, 246-232-090, chapters 246-221 and 246-222 WAC.

In addition, persons who own, receive, acquire, possess, use or transfer one or more calibration or reference sources pursuant to these general licenses:

(i) Shall not possess at any one time, at any one location of storage or use, more than 5 microcuries of Americium-241 and 5 microcuries of plutonium and 5 microcuries of Radium-226 in such sources;

(ii) Shall not receive, possess, use or transfer such source unless the source, or the storage container, bears a label which includes one of the following statements or a substantially similar statement which contains the information called for in the following statement:

(A) The receipt, possession, use and transfer of this source, Model _____, Serial No. _____, are subject to a general license and the regulations of the United States Nuclear Regulatory Commission or of a state with which the commission has entered into an agreement for the exercise of regulatory authority. Do not remove this label.

CAUTION - RADIOACTIVE MATERIAL - THIS SOURCE CONTAINS (AMERICIUM-241). (PLUTONIUM)*. DO NOT TOUCH RADIOACTIVE PORTION OF THIS SOURCE

Name of manufacturer or importer

*Note: Showing only the name of the appropriate material.

(B) The receipt, possession, use and transfer of this source, Model _____, Serial No. _____, are subject to a general license and the regulations of any licensing state. Do not remove this label.

CAUTION - RADIOACTIVE MATERIAL - THIS SOURCE CONTAINS RADIUM-226. DO NOT TOUCH RADIOACTIVE PORTION OF THIS SOURCE.

Name of manufacturer or importer

(iii) Shall not transfer, abandon, or dispose of such source except by transfer to a person authorized by a license from the department, the United States Nuclear Regulatory Commission, or an agreement state or licensing state to receive the source;

(iv) Shall store such source, except when the source is being used, in a closed container adequately designed and constructed to contain Americium-241, Plutonium, or Radium-226/Radon-222 which might otherwise escape during storage; and

(v) Shall not use such source for any purpose other than the calibration of radiation detectors or the standardization of other sources.

(f) These general licenses do not authorize the manufacture of calibration or reference sources containing Americium-241, Plutonium, or Radium-226.

(8) *General license for use of radioactive material for certain in vitro clinical or laboratory testing.**

(a) A general license is hereby issued to any physician, veterinarian, clinical laboratory or hospital to receive, acquire, possess, transfer or use, for any of the following stated tests, in accordance with the provisions of or use, for any of the following stated tests, in accordance with the provisions of (b), (c), (d), (e), and (f) of this subsection the following radioactive materials in prepackaged units:

(i) Iodine-125, in units not exceeding 10 microcuries each for use in *in vitro* clinical or laboratory tests not involving internal or external administration of radioactive material, or the radiation therefrom, to human beings or animals.

(ii) Iodine-131, in units not exceeding 10 microcuries each for use in *in vitro* clinical or laboratory tests not involving internal or external administration of radioactive material, or the radiation therefrom, to human beings or animals.

(iii) Carbon-14, in units not exceeding 10 microcuries each for use in *in vitro* clinical or laboratory tests not involving internal or external administration of radioactive material, or the radiation therefrom, to human beings or animals.

(iv) Hydrogen-3 (tritium), in units not exceeding 50 microcuries each for use in *in vitro* clinical or laboratory tests not involving internal or external administration of radioactive material, or the radiation therefrom, to human beings or animals.

(v) Iron-59, in units not exceeding 20 microcuries each for use in *in vitro* clinical or laboratory tests not involving internal or external administration of radioactive material, or the radiation therefrom, to human beings or animals.

(vi) Cobalt-57, in units not exceeding 10 microcuries each for use in *in vitro* clinical or laboratory tests not involving internal or external administration of radioactive material, or the radiation therefrom, to human beings or animals.

(vii) Selenium-75, in units not to exceed 10 microcuries each for use in *in vitro* clinical or laboratory tests not involving internal or external administration of radioactive material, or the radiation therefrom, to human beings or animals.

(viii) Mock Iodine-125 reference or calibration sources, in units not exceeding 0.05 microcurie of Iodine-129 and 0.005 microcurie of Americium-241 each for use in *in vitro* clinical or laboratory tests not involving internal or external administration of radioactive material, or the radiation therefrom, to human beings or animals.

*Note: The new drug provisions of the Federal Food, Drug and Cosmetic Act also govern the availability and use of any specific diagnostic drugs in interstate commerce.

(b) No person shall receive, acquire, possess, use or transfer radioactive material pursuant to the general license established by (a) of this subsection until that

person has received a validated copy of department Form RHF-15 "Certificate-in vitro testing with radioactive material under general license." Annual validation requires resubmittal of revised department Form RHF-15 and submittal of the annual fee to the department. The physician, veterinarian, clinical laboratory or hospital shall furnish on department Form RHF-15 the following information and such other information as may be required by that form:

(i) Name and address of the physician, veterinarian, clinical laboratory or hospital;

(ii) The location of use; and

(iii) A statement that the physician, veterinarian, clinical laboratory or hospital has appropriate radiation measuring instruments to carry out *in vitro* clinical or laboratory tests with radioactive material as authorized under the general license in (a) of this subsection and that such tests will be performed only by personnel competent in the use of such instruments and in the handling of the radioactive material.

(c) A person who receives, acquires, possesses or uses radioactive material pursuant to the general license established by (a) of this subsection shall comply with the following:

(i) The general licensee shall not possess at any one time, pursuant to the general license in (a) of this subsection at any one location of storage or use, a total amount of Iodine-125, Iodine-131, Selenium-75, Iron-59, and/or Cobalt-57 in excess of 200 microcuries.

(ii) The general licensee shall store the radioactive material, until used, in the original shipping container or in a container providing equivalent radiation protection.

(iii) The general licensee shall use the radioactive material only for the uses authorized by (a) of this subsection.

(iv) The general licensee shall not transfer the radioactive material to a person who is not authorized to receive it pursuant to a license issued by the department, the United States Nuclear Regulatory Commission, any agreement state or licensing state, nor transfer the radioactive material in any manner other than in the unopened, labeled shipping container as received from the supplier.

(v) The general licensee shall dispose of the Mock Iodine-125 reference or calibration sources described in (a)(viii) of this subsection as required by WAC 246-221-170.

(d) The general licensee shall not receive, acquire, possess, or use radioactive material pursuant to (a) of this subsection:

(i) Except as prepackaged units which are labeled in accordance with the provision of an applicable specific license issued pursuant to WAC 246-235-100(8) or in accordance with the provisions of a specific license issued by the United States Nuclear Regulatory Commission, or any agreement state or licensing state which authorizes the manufacture and distribution of Iodine-125, Iodine-131, Carbon-14, Hydrogen-3 (tritium), Iron-59, Selenium-75, Cobalt-57, or Mock Iodine-125 to persons generally licensed under this subsection or its equivalent; and

(ii) Unless one of the following statements, as appropriate, or a substantially similar statement which contains the information called for in one of the following statements, appears on a label affixed to each prepackaged unit or appears in a leaflet or brochure which accompanies the package:

This radioactive material shall be received, acquired, possessed and used only by physicians, veterinarians, clinical laboratories or hospitals and only for *in vitro* clinical or laboratory tests not involving internal or external administration of the material, or the radiation therefrom, to human beings or animals. Its receipt, acquisition, possession, use and transfer are subject to the regulations and a general license of the United States Nuclear Regulatory Commission or of a state with which the commission has entered into an agreement for the exercise of regulatory authority.

Name of manufacturer

This radioactive material shall be received, acquired, possessed and used only by physicians, veterinarians, clinical laboratories or hospitals and only for *in vitro* clinical or laboratory tests not involving internal or external administration of the material, or the radiation therefrom, to human beings or animals. Its receipt, acquisition, possession, use and transfer are subject to the regulations and a general license of a licensing state.

Name of manufacturer

(e) The physician, veterinarian, clinical laboratory or hospital possessing or using radioactive material under the general license of (a) of this subsection shall report in writing to the department, any changes in the information previously furnished in the "Certificate - *in vitro* testing with radioactive material under general license," department Form RHF-15. The report shall be furnished within thirty days after the effective date of such change.

(f) This general license is subject to the provisions of WAC 246-220-020, 246-220-030, 246-220-040, 246-220-060, 246-220-070, 246-220-090 and 246-220-100. In addition, any person using radioactive material pursuant to the general license of (a) of this subsection is exempt from the requirements of chapters 246-221 and 246-222 WAC with respect to radioactive material covered by that general license, except that such persons using the Mock Iodine-125 described in (a)(viii) of this subsection shall comply with the provisions of WAC 246-221-170, 246-221-240, and 246-221-250 and of these regulations.

(9) *Ice detection devices.*

(a) A general license is hereby issued to own, receive, acquire, possess, use and transfer Strontium-90 contained in ice detection devices, provided each device contains not more than 50 microcuries of Strontium-90 and each device has been manufactured or imported in accordance with a specific license issued by the United

States Nuclear Regulatory Commission or each device has been manufactured in accordance with the specifications contained in a specific license issued by the department or any agreement state to the manufacturer of such device pursuant to licensing requirements equivalent to those in Section 32.61 of 10 CFR Part 32 of the regulations of the United States Nuclear Regulatory Commission.

(b) Persons who own, receive, acquire, possess, use or transfer Strontium-90 contained in ice detection devices pursuant to the general license in (a) of this subsection:

(i) Shall, upon occurrence of visually observable damage, such as a bend or crack or discoloration from overheating to the device, discontinue use of the device until it has been inspected, tested for leakage and repaired by a person holding a specific license from the United States Nuclear Regulatory Commission or an agreement state to manufacture or service such devices; or shall dispose of the device pursuant to the provisions of these regulations;

(ii) Shall assure that all labels affixed to the device at the time of receipt, and which bear a statement which prohibits removal of the labels, are maintained thereon; and

(iii) Are exempt from the requirements of chapters 246-221 and 246-222 WAC except that such persons shall comply with the provisions of WAC 246-221-170, 246-221-240, and 246-221-250.

(c) This general license does not authorize the manufacture, assembly, disassembly or repair of Strontium-90 sources in ice detection devices.

(d) This general license is subject to the provisions of WAC 246-220-020, 246-220-030, 246-220-040, 246-220-060, 246-220-070, 246-220-100, 246-232-050, 246-232-070, 246-232-080, and 246-232-090. [Statutory Authority: RCW 70.98.050 and 70.98.080. 91-15-112 (Order 184), § 246-233-020, filed 7/24/91, effective 8/24/91. Statutory Authority: RCW 43.70.040. 91-02-049 (Order 121), recodified as § 246-233-020, filed 12/27/90, effective 1/31/91. Statutory Authority: RCW 70.98.080. 87-01-031 (Order 2450), § 402-21-050, filed 12/11/86; 83-19-050 (Order 2026), § 402-21-050, filed 9/16/83. Statutory Authority: RCW 70.98.050. 81-01-011 (Order 1570), § 402-21-050, filed 12/8/80. Statutory Authority: RCW 70.98.080. 79-12-073 (Order 1459), § 402-21-050, filed 11/30/79, effective 1/1/80. Formerly WAC 402-20-040.]



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
NATIONAL HEALTH AND ENVIRONMENTAL EFFECTS
RESEARCH LABORATORY
WESTERN ECOLOGY DIVISION
200 S.W. 35TH STREET • CORVALLIS, OR 97333

M 2198

January 22, 2004

OFFICE OF
RESEARCH AND DEVELOPMENT

Agilent Technologies
2850 Centerville Road
Wilmington, De 19808-1610

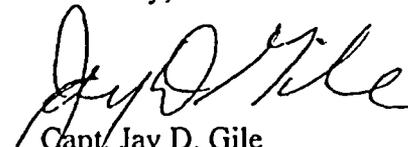
Attn: Mr. David Bennett

Enclosed you will find three HP nickel-63 electron capture detectors that we are transferring to Agilent Technologies for disposal. The serial numbers for the three detectors are as follows: M2198, S8735 and F4571.

The method of payment is a U. S. Government credit card. The card holder, Renee Watt, will have already contacted Agilent Technologies to provide the credit card number.

Thank you for your cooperation. If you have any questions, please contact me at 541/754-4721.

Sincerely,


Capt. Jay D. Gile
Facility/Safety Manager



Plaid
NO USE
Please use this
helpful note if
one I gave
you before.

For more information, call the Federal Energy Management Program at 1-800-363-3732 or visit our Web site: www.eeren.doe.gov/femp



Jay Gile

02/10/04 11:02 AM

To: RidsRgn4MailCenter@nrc.gov

cc: Jay Gile/COR/USEPA/US@EPA

Subject: NRC License 36-12343-02/Transfer of Sealed Sources

On February 9, 2004 the U. S. Environmental Protection Agency's Western Ecology Division (NRC license 36-12343-02) transferred the following sealed sources:

Perkin-Elmer Nickel-63 (15 mci) electron capture detector (SN 1437) was transferred to Nuclear Radiation Development, LLC, 2937 Alt Blvd., Grand Island, NY 14072-0310 (New York license # 1391-1811 exp. 07/05).

Hewlett Packard Nickel-63 (15 mCi) electron capture detectors.(SNs M2198, S8735 and F4571) was transferred to Agilent Technologies, Inc., 2850 Centerville Road, Wilmington, DE 19808-1610 (NRC license # 07-28762-01 exp. 11/12).

If you have any questions you may e-mail them to me at gile.jay@epa.gov or call 541/754-5721.

NHEERL-WED
SEALED SOURCE LEAK TEST SURVEY

LOG NO. 04-01

DATE: 2-4-04 TYPE OF SURVEY: Residual - Removable INSTRUMENT: Packard 2200CA SIN: 036755

GROSS BKGRD 75 CPM TOTAL COUNT TIME 2 TOTAL COUNTS 70 NET DPM 44

LLD_{95%} = $\left[\left(\frac{70}{2} \right) \times 2.96 \right] + 35 = \underline{47}$ CPM

STANDARD (⁶³Ni 111,100 DPM) = 1177/6 DPM
 (⁶³Ni 11,110 DPM) = 11,113 DPM

SWIPE NO.	SWIPE	MANUFACT.	SIN	NUCLIDE	GROSS CPM	NET DPM	NET ACTIVITY	<185 Bq? (YES/NO)	LOC.
1	Housing	H-P	F4571	⁶³ Ni	42	<LLD ₉₅	ND*	YES	MB 190
2	Housing	H-P	S8735	⁶³ Ni	40	<LLD ₉₅	ND*	YES	MB 190
3	Housing	H-P	M2198	⁶³ Ni	25	<LLD ₉₅	ND*	YES	MB 190
4	Housing	PE	1437	⁶³ Ni	42	<LLD ₉₅	ND*	YES	MB 190

COMMENTS: ND* = NOT DETERMINED; ~~is~~ Below the Detection Limits of the instrument

D. A. Monaco
RADIATION SAFETY SPECIALIST

2/5/04
DATE

NHEERL-WED
SEALED SOURCE LEAK TEST SURVEY

LOG NO. 02-02

DATE 8-26-02 TYPE OF SURVEY Removable INSTRUMENT Packard 2200 CA S/N 036755

GROSS BKGRD 150²⁶ CPM TOTAL COUNT TIME 5 TOTAL COUNTS 130 NET DPM 35

LLD_{95%} = $[(\sqrt{130}) \times 2.96] + 26 = 32$ CPM STANDARD (⁶³Ni 111,100 dpm) = 116,153

SWIPE NO.	SWIPE	MANUFACT.	S/N	NUCLIDE	GROSS CPM	NET DPM	NET ACTIVITY	<185 Bq? (YES/NO)	LOC.
1	Detector	HP	M2198	⁶³ Ni	30	6 LLD ₉₅	ND*	YES	236
2	GC Chassis	HP	5870	⁶³ Ni	26	6 LLD ₉₅	ND*	YES	236
3	Detector Assembly	HP	M2198	⁶³ Ni	25	6 LLD ₉₅	ND*	YES	236
4	Bkgrd				26	—			

COMMENTS: *ND = NOT DETERMINED. Less than the detection limit.

[Signature]
RADIATION SAFETY SPECIALIST

8-26-02
DATE



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
NATIONAL HEALTH AND ENVIRONMENTAL EFFECTS
RESEARCH LABORATORY
WESTERN ECOLOGY DIVISION
COASTAL ECOLOGY BRANCH
2111 S.E. MARINE SCIENCE DR. • NEWPORT, OR 97365-5260

OFFICE OF
RESEARCH AND DEVELOPMENT

January 26, 2004

Agilent Technologies, Inc.
Attention: ECD LAB
2850 Centerville Road
Wilmington, DE 19808-1610

Gentlemen:

This is to request a transfer of three HP nickel-63 ECDs to Agilent for disposal. The serial numbers are as follows: M2198, S8735 and F4571. The method of payment will be via credit card. As agreed, upon receipt of ECDs, please call me at (541) 867-4035 for the credit card information

If you have any technical questions regarding the ECDs, please contact Jay Gile at (541) 754-4721.

Sincerely,

A handwritten signature in cursive script that reads "Reene M. Watt".

Reene M. Watt
Program Support Specialist
U.S. EPA, Pacific Coast Ecology Branch
2111 SE Marine Science Dr.
Newport, OR 97365
(541) 867-4035
(541) 867-5049 fax



2850 Centerville Road
Wilmington, DE 19808

U.S. EPA Pacific Coast Ecology Branch
Attn: Reene' M. Watt
2111 SE Marine Science Dr.
Newport, OR 97365

2/24/2004

Reference: Receipt of Radioactive Device(s)

To Whom It May Concern:

This letter is to notify you that the Electron Capture Detector(s) listed below have been returned to, and are in possession of, Agilent Technologies Inc., 2850 Centerville Road, Wilmington, DE 19808, USA for further disposition.

<u>Serial Number</u>	<u>Model Number</u>	<u>Date Received</u>	<u>Local Visa Number</u>
F4571	19233-69576	2-11-04	NA
M2198	19235-69530	2-11-04	NA
S8735	19303-69550	2-11-04	NA

Please understand that this letter does not relieve you of your responsibility to notify either your state nuclear regulatory agency (if you reside in an Agreement State) or the Nuclear Regulatory Commission (if you do not) of the transfer in accordance with 10 CFR 31.5 (c) (8) (i) and (ii).

Please contact your local Agilent Technologies, Inc. service representative if you have any questions.

Regards,

David S. Bennett
Radiation Safety Office, U.S. Operations

PACKING LIST

FROM: U.S. EPA
NATIONAL HEALTH AND ENVIRONMENTAL EFFECTS
RESEARCH LABORATORY - WESTERN ECOLOGY DIVISION
200 SW 35TH STREET CORVALLIS, OREGON 97333
541-754-4600

TO: AGILENT TECHNOLOGIES, INC.
ATTENTION: ECD LAB
2850 CENYTERVILLE ROAD
WILMINGTON, DE 19808-1610

1)	EC Detector SN M2198	15 mCi	NICKEL-63
2)	EC Detector SN S8735	15 mCi	NICKEL-63
3)	EC Detector SN F4571	<u>15 mCi</u> 45 mCi	NICKEL-63

Radioactive material, excepted package, articles UN2911

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Tracking number 5093377166
 Signed for by J.PARKER
 Ship date Feb 9, 2004
 Delivery date/time Feb 11, 2004 9:09 am

Reference number PACKAGE ARTICLES
 US 2911
 Delivery location WILMINGTON DE
 Service type FedEx 2Day Service

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Date/time	Status	Location	Comments
Feb 11, 2004 9:09 am	Delivered	WILMINGTON DE	

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Tracking number	5093377166	Reference number	PACKAGE ARTICLES
Signed for by	J.PARKER		US 2911
Ship date	Feb 9, 2004	Delivery location	WILMINGTON DE
Delivery date/time	Feb 11, 2004 9:09 am	Service type	FedEx 2Day Service

Date/time	Status	Location	Comments
Feb 11, 2004 9:09 am	Delivered	WILMINGTON DE	

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Enter your email, submit up to three email addresses (separated by commas), add your message (optional), and click **Send email**.

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3875 Airways Boulevard
Module H, 4th Floor
Memphis, TN 38116

U.S. Mail: PO Box 727
Memphis, TN 38194-4643

Telephone: 901-369-3600

2004

Dear Customer:

Here is the proof of delivery for the shipment with tracking number 5093377166. Our records reflect the following information.

Delivery Information:

Signed For By: J.PARKER



Delivery Location: 2850 CENTERVILLE RD

Delivery Date: February 11, 2004

Delivery Time: 0909

Shipping Information:

Tracking No: 5093377166

Ship Date: February 9, 2004

Recipient:
ATTENTION ECD LAB
AGILENT TECHNOLOGIES
2850 CENTERVILLE RD
WILMINGTON, DE 19808
US

Shipper:
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ENVIRONMENTAL PROTECTION AGENC
200 SW 35TH ST
CORVALLIS, OR 973334902
US

Shipment Reference Information:

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UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
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RESEARCH LABORATORY
WESTERN ECOLOGY DIVISION
200 S.W. 35TH STREET • CORVALLIS, OR 97333

S8735

January 22, 2004

OFFICE OF
RESEARCH AND DEVELOPMENT

Agilent Technologies
2850 Centerville Road
Wilmington, De 19808-1610

Attn: Mr. David Bennett

Enclosed you will find three HP nickel-63 electron capture detectors that we are transferring to Agilent Technologies for disposal. The serial numbers for the three detectors are as follows: M2198, S8735 and F4571.

The method of payment is a U. S. Government credit card. The card holder, Renee Watt, will have already contacted Agilent Technologies to provide the credit card number.

Thank you for your cooperation. If you have any questions, please contact me at 541/754-4721.

Sincerely,

Jay D. Gile
Capt. Jay D. Gile
Facility/Safety Manager



*Phil NO used
Please use this
helpful note if
one I gave
you before*

For more information, call the Federal Energy Management Program
at 1-800-363-3732 or visit our Web site: www.eren.doc.gov/femp



Jay Gile

02/10/04 11:02 AM

To: RidsRgn4MailCenter@nrc.gov

cc: Jay Gile/COR/USEPA/US@EPA

Subject: NRC License 36-12343-02/Transfer of Sealed Sources

On February 9, 2004 the U. S. Environmental Protection Agency's Western Ecology Division (NRC license 36-12343-02) transferred the following sealed sources:

Perkin-Elmer Nickel-63 (15 mci) electron capture detector (SN 1437) was transferred to Nuclear Radiation Development, LLC, 2937 Alt Blvd., Grand Island, NY 14072-0310 (New York license # 1391-1811 exp. 07/05).

Hewlett Packard Nickel-63 (15 mCi) electron capture detectors (SNs M2198, S8735 and F4571) was transferred to Agilent Technologies, Inc., 2850 Centerville Road, Wilmington, DE 19808-1610 (NRC license # 07-28762-01 exp. 11/12).

If you have any questions you may e-mail them to me at gile.jay@epa.gov or call 541/754-5721.

NHEERL-WED
SEALED SOURCE LEAK TEST SURVEY

LOG NO. 04-01

DATE: 2-4-04 TYPE OF SURVEY Removable Routine INSTRUMENT Packard 2200CA SIN 036755

GROSS BKGRD 75 CPM TOTAL COUNT TIME 2 TOTAL COUNTS 70 NET DPM 44

LLD_{95%} = $\left[\left(\frac{70}{2} \right) \times 2.96 \right] + 35 = 47$ CPM
 STANDARD (⁶³Ni 111,100 DPM) = 117766 DPM
 (⁶³Ni 11,110 DPM) = 11,113 DPM

SWIPE NO.	SWIPE	MANUFACT.	S/N	NUCLIDE	GROSS CPM	NET DPM	NET ACTIVITY	<185 Bq? (YES/NO)	LOC.
1	Housing	H-P	F4571	⁶³ Ni	42	<LLD ₉₅	ND*	YES	MB 190
2	Housing	H-P	S8735	⁶³ Ni	40	<LLD ₉₅	ND*	YES	MB 190
3	Housing	H-P	M2198	⁶³ Ni	25	<LLD ₉₅	ND*	YES	MB 190
4	Housing	PE	1437	⁶³ Ni	42	<LLD ₉₅	ND*	YES	MB 190

COMMENTS: ND* = NOT DETERMINED; ~~BE~~ BELOW THE DETECTION LIMITS OF THE INSTRUMENT

Richard M. ...
RADIATION SAFETY SPECIALIST

2/5/04
DATE



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
NATIONAL HEALTH AND ENVIRONMENTAL EFFECTS
RESEARCH LABORATORY
WESTERN ECOLOGY DIVISION
COASTAL ECOLOGY BRANCH
2111 S.E. MARINE SCIENCE DR. • NEWPORT, OR 97365-5260

OFFICE OF
RESEARCH AND DEVELOPMENT

January 26, 2004

Agilent Technologies, Inc.
Attention: ECD LAB
2850 Centerville Road
Wilmington, DE 19808-1610

Gentlemen:

This is to request a transfer of three HP nickel-63 ECDs to Agilent for disposal. The serial numbers are as follows: M2198, S8735 and F4571. The method of payment will be via credit card. As agreed, upon receipt of ECDs, please call me at (541) 867-4035 for the credit card information

If you have any technical questions regarding the ECDs, please contact Jay Gile at (541) 754-4721.

Sincerely,

A handwritten signature in black ink that reads "Reene M. Watt".

Reene M. Watt
Program Support Specialist
U.S. EPA, Pacific Coast Ecology Branch
2111 SE Marine Science Dr.
Newport, OR 97365
(541) 867-4035
(541) 867-5049 fax



2850 Centerville Road
Wilmington, DE 19808

U.S. EPA Pacific Coast Ecology Branch
Attn: Reene' M. Watt
2111 SE Marine Science Dr.
Newport, OR 97365

2/24/2004

Reference: Receipt of Radioactive Device(s)

To Whom It May Concern:

This letter is to notify you that the Electron Capture Detector(s) listed below have been returned to, and are in possession of, Agilent Technologies Inc., 2850 Centerville Road, Wilmington, DE 19808, USA for further disposition.

<u>Serial Number</u>	<u>Model Number</u>	<u>Date Received</u>	<u>Local Visa Number</u>
F4571	19233-69576	2-11-04	NA
M2198	19235-69530	2-11-04	NA
S8735	19303-69550	2-11-04	NA

Please understand that this letter does not relieve you of your responsibility to notify either your state nuclear regulatory agency (if you reside in an Agreement State) or the Nuclear Regulatory Commission (if you do not) of the transfer in accordance with 10 CFR 31.5 (c) (8) (i) and (ii).

Please contact your local Agilent Technologies, Inc. service representative if you have any questions.

Regards,

David S. Bennett
Radiation Safety Office, U.S. Operations

PACKING LIST

FROM: U.S. EPA
NATIONAL HEALTH AND ENVIRONMENTAL EFFECTS
RESEARCH LABORATORY – WESTERN ECOLOGY DIVISION
200 SW 35TH STREET CORVALLIS, OREGON 97333
541-754-4600

TO: AGILENT TECHNOLOGIES, INC.
ATTENTION: ECD LAB
2850 CENYTERVILLE ROAD
WILMINGTON, DE 19808-1610

1)	EC Detector SN M2198	15 mCi	NICKEL-63
2)	EC Detector SN S8735	15 mCi	NICKEL-63
3)	EC Detector SN F4571	<u>15 mCi</u> 45 mCi	NICKEL-63

Radioactive material, excepted package, articles UN2911

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Tracking number	5093377166	Reference number	PACKAGE ARTICLES
Signed for by	J.PARKER		US 2911
Ship date	Feb 9, 2004	Delivery location	WILMINGTON DE
Delivery date/time	Feb 11, 2004 9:09 am	Service type	FedEx 2Day Service

Date/time	Status	Location	Comments
Feb 11, 2004	9:09 am Delivered	WILMINGTON DE	

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To



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Module H, 4th Floor
Memphis, TN 38116

U.S. Mail: PO Box 727
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Telephone: 901-369-3600



2004

Dear Customer:

Here is the proof of delivery for the shipment with tracking number 5093377166. Our records reflect the following information.

Delivery Information:

Signed For By: J.PARKER



Delivery Location: 2850 CENTERVILLE RD

Delivery Date: February 11, 2004

Delivery Time: 0909

Shipping Information:

Tracking No: 5093377166

Ship Date: February 9, 2004

Recipient:
ATTENTION ECD LAB
AGILENT TECHNOLOGIES
850 CENTERVILLE RD
WILMINGTON, DE 19808
US

Shipper:
JAY GILE
ENVIRONMENTAL PROTECTION AGENC
200 SW 35TH ST
CORVALLIS, OR 973334902
US

Shipment Reference Information: PACKAGE ARTICLES US 2911

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NHEERL-WED
SEALED SOURCE LEAK TEST SURVEY

LOG NO. 04-01

DATE: 2-4-04 TYPE OF SURVEY Removable - INSTRUMENT Packard 2200CA SIN 036755

GROSS BKGRD 75 CPM TOTAL COUNT TIME 2 TOTAL COUNTS 70 NET DPM 44

LLD_{95%} = $\left[\left(\frac{70}{2} \right) \times 2.96 \right] + 35 = \underline{47}$ CPM

STANDARD (⁶³Ni 111,100 DPM) = 117.766 DPM
 (⁶³Ni 11,110 DPM) = 11.13 DPM

SWIPE NO.	SWIPE	MANUFACT.	S/N	NUCLIDE	GROSS CPM	NET DPM	NET ACTIVITY	<185 Bq? (YES/NO)	LOC.
1	Housing	H-P	F4571	⁶³ Ni	42	<LLD ₉₅	ND*	YES	MB 190
2	Housing	H-P	S8735	⁶³ Ni	40	<LLD ₉₅	ND*	YES	MB 190
3	Housing	H-P	M2198	⁶³ Ni	25	<LLD ₉₅	ND*	YES	MB 190
4	Housing	PE	1437	⁶³ Ni	42	<LLD ₉₅	ND*	YES	MB 190

COMMENTS: ND* = NOT DETERMINED; ~~FEW~~ BELOW THE DETECTION LIMITS OF THE INSTRUMENT

Pat Monahan
RADIATION SAFETY SPECIALIST

2/5/04
DATE

NHEERL-WED
SEALED SOURCE LEAK TEST SURVEY

LOG NO. 96-02

DATE 12-10-96 TYPE OF SURVEY Semi-Annual INSTRUMENT Packard 7700 CA S/N 036735

GROSS BKGRD 14.5 CPM TOTAL COUNT TIME 5' TOTAL COUNTS 72.5 NET DPM 25

LLD_{95%} = $\left[\left(\frac{\sqrt{14.5 \times 6}}{5} \right) \times 2.96 \right] + 14.5 = \underline{20} CPM STANDARD (⁶³Ni) 1191 DPM) = 136.7
115% off.$

SWIPE NO.	SWIPE	MANUFACT.	S/N	NUCLIDE	GROSS CPM	NET DPM	NET ACTIVITY	<185 Bq ? (YES/NO)	LOC.
2	H-P EXIT VENT	H-P	58735	Ni ⁶³	19	<LLD _{95%}	ND	YES	MB 2326
3	H-P Housing	H-P	58735	⁶³ Ni	15	<LLD _{95%}	↓	↓	"
4	EXIT VENT	HP	F4571	⁶³ Ni	16	↓	↓	↓	MB 258
5	Housing	HP	F4571	⁶³ Ni	18	↓	↓	↓	"
6	EXIT VENT	PE	1437	⁶³ Ni	31	28	0.45 Bq	YES	MB 282
7	Housing	PE	1437	⁶³ Ni	14	<LLD _{95%}	ND	↓	"
8	EXIT VENT	TRACOR	4803	⁶³ Ni	17	↓	↓	↓	MB 284
9	Housing	TRACOR	4803	⁶³ Ni	20	∅	∅	↓	"
10	EXIT VENT	HP	H1230	⁶³ Ni	18	<LLD _{95%}	ND	↓	MB 284
11	Housing	HP	H1230	⁶³ Ni	18	<LLD _{95%}	↓	↓	"

COMMENTS:

Oliver A. Moran
RADIATION SAFETY SPECIALIST

12/17/96
DATE



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
NATIONAL HEALTH AND ENVIRONMENTAL EFFECTS
RESEARCH LABORATORY
WESTERN ECOLOGY DIVISION
200 S.W. 35TH STREET • CORVALLIS, OR 97333

F4571

January 22, 2004

OFFICE OF
RESEARCH AND DEVELOPMENT

Agilent Technologies
2850 Centerville Road
Wilmington, De 19808-1610

Attn: Mr. David Bennett

Enclosed you will find three HP nickel-63 electron capture detectors that we are transferring to Agilent Technologies for disposal. The serial numbers for the three detectors are as follows: M2198, S8735 and F4571.

The method of payment is a U. S. Government credit card. The card holder, Renee Watt, will have already contacted Agilent Technologies to provide the credit card number.

Thank you for your cooperation. If you have any questions, please contact me at 541/754-4721.

Sincerely,

Jay D. Gile
Capt. Jay D. Gile
Facility/Safety Manager



*Please NO use this
helpful not of the
one I gave
you before*

For more information, call the Federal Energy Management Program at 1-800-363-3732 or visit our Web site: www.eeren.doe.gov/femp



Jay Gile

02/10/04 11:02 AM

To: RidsRgn4MailCenter@nrc.gov
cc: Jay Gile/COR/USEPA/US@EPA
Subject: NRC License 36-12343-02/Transfer of Sealed Sources

On February 9, 2004 the U. S. Environmental Protection Agency's Western Ecology Division (NRC license 36-12343-02) transferred the following sealed sources:

Perkin-Elmer Nickel-63 (15 mci) electron capture detector (SN 1437) was transferred to Nuclear Radiation Development, LLC, 2937 Alt Blvd., Grand Island, NY 14072-0310 (New York license # 1391-1811 exp. 07/05).

Hewlett Packard Nickel-63 (15 mCi) electron capture detectors.(SNs M2198, S8735 and F4571) was transferred to Agilent Technologies, Inc., 2850 Centerville Road, Wilmington, DE 19808-1610 (NRC license # 07-28762-01 exp. 11/12).

If you have any questions you may e-mail them to me at gile.jay@epa.gov or call 541/754-5721.

NHEERL-WED
SEALED SOURCE LEAK TEST SURVEY

LOG NO. 04-01

DATE: 2-4-04 TYPE OF SURVEY Routine -
Removable INSTRUMENT Packard 2200CA SIN 036755
GROSS BKGRD 75 CPM TOTAL COUNT TIME 2 TOTAL COUNTS 70 NET DPM 44

LLD_{95%} = $\left[\left(\frac{70}{2} \right) \times 2.96 \right] + 35 = \underline{47}$ CPM
STANDARD (⁶³Ni 111,100 DPM) = 117766 DPM
(⁶³Ni 11,110 DPM) = 11,113 DPM

SWIPE NO.	SWIPE	MANUFACT.	S/N	NUCLIDE	GROSS CPM	NET DPM	NET ACTIVITY	<185 Bq? (YES/NO)	LOC.
1	Housing	H-P	F4571	⁶³ Ni	42	<LLD ₉₅	ND*	YES	MB 190
2	Housing	H-P	S8735	⁶³ Ni	40	<LLD ₉₅	ND*	YES	MB 190
3	Housing	H-P	M2198	⁶³ Ni	25	<LLD ₉₅	ND*	YES	MB 190
4	Housing	PE	1437	⁶³ Ni	42	<LLD ₉₅	ND*	YES	MB 190

COMMENTS: ND* = NOT DETERMINED; ~~BE~~ BELOW THE DETECTION LIMITS OF THE INSTRUMENT

P. A. Monaco
RADIATION SAFETY SPECIALIST

2/5/04
DATE

NHEERL-WED
SEALED SOURCE LEAK TEST SURVEY

LOG NO. 96-02

DATE 12-10-96 TYPE OF SURVEY Semi-Annual INSTRUMENT Packard 7200 CA S/N 036755

GROSS BKGRD 14.5 CPM TOTAL COUNT TIME 5' TOTAL COUNTS 72.5 NET DPM 25

LLD_{95%} = $\left[\left(\frac{\sqrt{14.5 \times 6}}{5} \right) \times 2.96 \right] + 14.5 = \underline{20} CPM STANDARD (⁶³Ni) 1367 DPM) = 1367
115% off.$

SWIPE NO.	SWIPE	MANUFACT.	S/N	NUCLIDE	GROSS CPM	NET DPM	NET ACTIVITY	<185 Bq? (YES/NO)	LOC.
2	H-P EXIT VENT	H-P	58735	Ni ⁶³	19	<LLD ₉₅	ND	YES	MB 282b
3	H-P Housing	H-P	58735	⁶³ Ni	15	<LLD ₉₅	↓	Y	"
4	EXIT VENT	HP	F4571	⁶³ Ni	16	↓	↓	↓	MB 258
5	Housing	HP	F4571	⁶³ Ni	18	↓	↓	↓	"
6	EXIT VENT	PE	1437	⁶³ Ni	31	28	0.45 Bq	YES	MB 282
7	Housing	PE	1437	⁶³ Ni	14	<LLD ₉₅	ND	Y	"
8	EXIT VENT	TRACOR	4803	⁶³ Ni	17	↓	↓	↓	MB 284
9	Housing	TRACOR	4803	⁶³ Ni	20	∅	∅	↓	"
10	EXIT VENT	HP	H1230	⁶³ Ni	18	<LLD ₉₅	ND	↓	MB 284
11	Housing	H-P	H1230	⁶³ Ni	18	<LLD ₉₅	↓	↓	"

COMMENTS:

David Mow
RADIATION SAFETY SPECIALIST

12/17/96
DATE



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
NATIONAL HEALTH AND ENVIRONMENTAL EFFECTS
RESEARCH LABORATORY
WESTERN ECOLOGY DIVISION
COASTAL ECOLOGY BRANCH
2111 S.E. MARINE SCIENCE DR. • NEWPORT, OR 97365-5260

OFFICE OF
RESEARCH AND DEVELOPMENT

January 26, 2004

Agilent Technologies, Inc.
Attention: ECD LAB
2850 Centerville Road
Wilmington, DE 19808-1610

Gentlemen:

This is to request a transfer of three HP nickel-63 ECDs to Agilent for disposal. The serial numbers are as follows: M2198, S8735 and F4571. The method of payment will be via credit card. As agreed, upon receipt of ECDs, please call me at (541) 867-4035 for the credit card information

If you have any technical questions regarding the ECDs, please contact Jay Gile at (541) 754-4721.

Sincerely,

A handwritten signature in cursive script that reads "Renee M. Watt".

Renee M. Watt
Program Support Specialist
U.S. EPA, Pacific Coast Ecology Branch
2111 SE Marine Science Dr.
Newport, OR 97365
(541) 867-4035
(541) 867-5049 fax



2850 Centerville Road
Wilmington, DE 19808

U.S. EPA Pacific Coast Ecology Branch
Attn: Reene M. Watt
2111 SE Marine Science Dr.
Newport, OR 97365

2/24/2004

Reference: **Receipt of Radioactive Device(s)**

To Whom It May Concern:

This letter is to notify you that the Electron Capture Detector(s) listed below have been returned to, and are in possession of, Agilent Technologies Inc., 2850 Centerville Road, Wilmington, DE 19808, USA for further disposition.

<u>Serial Number</u>	<u>Model Number</u>	<u>Date Received</u>	<u>Local Visa Number</u>
F4571	19233-69576	2-11-04	NA
M2198	19235-69530	2-11-04	NA
S8735	19303-69550	2-11-04	NA

Please understand that this letter does not relieve you of your responsibility to notify either your state nuclear regulatory agency (if you reside in an Agreement State) or the Nuclear Regulatory Commission (if you do not) of the transfer in accordance with 10 CFR 31.5 (c) (8) (i) and (ii).

Please contact your local Agilent Technologies, Inc. service representative if you have any questions.

Regards,

David S. Bennett
Radiation Safety Office, U.S. Operations

PACKING LIST

FROM: U.S. EPA
NATIONAL HEALTH AND ENVIRONMENTAL EFFECTS
RESEARCH LABORATORY – WESTERN ECOLOGY DIVISION
200 SW 35TH STREET CORVALLIS, OREGON 97333
541-754-4600

TO: AGILENT TECHNOLOGIES, INC.
ATTENTION: ECD LAB
2850 CENYTERVILLE ROAD
WILMINGTON, DE 19808-1610

1)	EC Detector SN M2198	15 mCi	NICKEL-63
2)	EC Detector SN S8735	15 mCi	NICKEL-63
3)	EC Detector SN F4571	<u>15 mCi</u> 45 mCi	NICKEL-63

Radioactive material, excepted package, articles UN2911

Shippers Declaration Not Required.

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Transit Time

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Track Shipments Detailed Results

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Select another track:

Next You can also track:

Tracking number 5093377166
Signed for by J.PARKER
Ship date Feb 9, 2004
Delivery date/time Feb 11, 2004 9:09 am

Reference number PACKAGE ARTICLES
US 2911
Delivery location WILMINGTON DE
Service type FedEx 2Day Service

- [By Alternate Reference](#)
- [By Email](#)
- [TCN \(Gov't Shippers\)](#)

- Track other FedEx services
- [FedEx Custom Critical shipments](#)
 - [FedEx Trade Networks shipments](#)
 - [International Air Cargo](#)

Date/time	Status	Location	Comments
Feb 11, 2004 9:09 am	Delivered	WILMINGTON DE	



Email your detailed tracking results (optional)

Enter your email, submit up to three email addresses (separated by commas), add your message (optional), and click Send email.

From

To

Add a message to this email.



Wrong Address?
Reduce future mistakes by using [FedEx Address Checker](#).

Shipping Freight?
FedEx has [LTL](#), [air freight](#), [surface and air expedited freight](#), [multi piece package deliveries](#), and [ocean freight](#).

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Track Shipments
Detailed Results

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Tracking number	5093377166	Reference number	PACKAGE ARTICLES
Signed for by	J.PARKER		US 2911
Ship date	Feb 9, 2004	Delivery location	WILMINGTON DE
Delivery date/time	Feb 11, 2004 9:09 am	Service type	FedEx 2Day Service

Date/time	Status	Location	Comments
Feb 11, 2004 9:09 am	Delivered	WILMINGTON DE	

 Signature proof

 Track more shipments

&dsc=n&msc=n

Email your detailed tracking results (optional)

Enter your email, submit up to three email addresses (separated by commas), add your message (optional), and click Send email.

Add a message to this email.

From

To

 Send email



2004

FedEx Express
Customer Support Trace
3875 Airways Boulevard
Module H, 4th Floor
Memphis, TN 38116

U.S. Mail: PO Box 727
Memphis, TN 38194-4643

Telephone: 901-369-3600

Dear Customer:

Here is the proof of delivery for the shipment with tracking number 5093377166. Our records reflect the following information.

Delivery Information:

Signed For By: J.PARKER



Delivery Location: 2850 CENTERVILLE RD

Delivery Date: February 11, 2004

Delivery Time: 0909

Shipping Information:

Tracking No: 5093377166

Ship Date: February 9, 2004

Recipient:

ATTENTION ECD LAB
AGILENT TECHNOLOGIES
850 CENTERVILLE RD
WILMINGTON, DE 19808
US

Shipper:

JAY GILE
ENVIRONMENTAL PROTECTION AGENC
200 SW 35TH ST
CORVALLIS, OR 973334902
US

Shipment Reference Information:

PACKAGE ARTICLES US 2911

Thank you for choosing FedEx Express. We look forward to working with you in the future.

FedEx Worldwide Customer Service
1-800-Go-FedEx®
Reference No.: R2004061400136034563

NHEERL-WED
SEALED SOURCE LEAK TEST SURVEY

LOG NO. 99-3

DATE 11-9-99 TYPE OF SURVEY SPECIAL INSTRUMENT Packard CA7200 SIN 036755

GROSS BKGRD _____ CPM TOTAL COUNT TIME 3 TOTAL COUNTS 135 NET DPM _____

LLD_{95%} = $\left[\left(\frac{\sqrt{45 \times 3}}{3} \right) \times 2.96 \right] + 79 = \underline{79}$ CPM STANDARD (~~11,190 DPM~~ = ^{11,432 DPM} 11,190 DPM (185 Bq)) = ~~11,190 DPM~~

SWIPE NO.	SWIPE	MANUFACT.	S/N	NUCLIDE	GROSS CPM	NET DPM	NET ACTIVITY	<185 Bq ? (YES/NO)	LOC.
1	ECD-ent	PE	1437	⁶³ Ni	108	81	1.35 Bq	YES	270
2	LD-tube	PE	1437	⁶³ Ni	248	269	4.48 Bq	YES	270
3	WEST WALL & WEST W tube	MPS 270			44	LLD ₉₅			270
4	South wall + tube				46	LLD ₉₅			270

COMMENTS:

PA Monaco
RADIATION SAFETY SPECIALIST

11-9-99
DATE

Jay Gile

02/10/04 11:02 AM

To: RidsRgn4MailCenter@nrc.gov

cc: Jay Gile/COR/USEPA/US@EPA

Subject: NRC License 36-12343-02/Transfer of Sealed Sources

On February 9, 2004 the U. S. Environmental Protection Agency's Western Ecology Division (NRC license 36-12343-02) transferred the following sealed sources:

Perkin-Elmer Nickel-63 (15 mci) electron capture detector (SN 1437) was transferred to Nuclear Radiation Development, LLC, 2937 Alt Blvd., Grand Island, NY 14072-0310 (New York license # 1391-1811 exp. 07/05).

Hewlett Packard Nickel-63 (15 mCi) electron capture detectors (SNs M2198, S8735 and F4571) was transferred to Agilent Technologies, Inc., 2850 Centerville Road, Wilmington, DE 19808-1610 (NRC license # 07-28762-01 exp. 11/12).

If you have any questions you may e-mail them to me at gile.jay@epa.gov or call 541/754-5721.

NHEERL-WED
SEALED SOURCE LEAK TEST SURVEY

LOG NO. 04-01

DATE 2-4-04 TYPE OF SURVEY Removable INSTRUMENT Packard 2200CA S/N 036755

GROSS BKGRD 75 CPM TOTAL COUNT TIME 2 TOTAL COUNTS 70 NET DPM 44

LLD_{95%} = $[(\frac{\sqrt{70}}{2}) \times 2.96] + 35 = 47$ CPM
 STANDARD (⁶³Ni 111,100 DPM) = 117.7% DPM
 (⁶³Ni 11,110 DPM) = 11.13 DPM

SWIPE NO.	SWIPE	MANUFACT.	S/N	NUCLIDE	GROSS CPM	NET DPM	NET ACTIVITY	<185 Bq? (YES/NO)	LOC.
1	Housing	H-P	F4571	⁶³ Ni	42	<LLD ₉₅	ND*	YES	MB190
2	Housing	H-P	S8735	⁶³ Ni	40	<LLD ₉₅	ND*	YES	MB190
3	Housing	H-P	M2198	⁶³ Ni	25	<LLD ₉₅	ND*	YES	MB190
4	Housing	PE	1437	⁶³ Ni	42	<LLD ₉₅	ND*	YES	MB190

COMMENTS: ND* = NOT DETERMINED; ~~FEW~~ BELOW THE DETECTION LIMITS OF THE INSTRUMENT

D. A. Monaco
RADIATION SAFETY SPECIALIST

2/5/04
DATE

470287



2004

FedEx Express
Customer Support Trace
3875 Airways Boulevard
Module H, 4th Floor
Memphis, TN 38116

U.S. Mail: PO Box 727
Memphis, TN 38194-4643

Telephone: 901-369-3600

Dear Customer:

Here is the proof of delivery for the shipment with tracking number 5093377133. Our records reflect the following information.

Delivery Information:

Signed For By: T.WILKINSON



Delivery Location: 2937 ALT
Delivery Date: February 11, 2004
Delivery Time: 1045

Shipping Information:

Tracking No: 5093377133

Ship Date: February 9, 2004

Recipient:
RA 274
NRD LLC
2937 AIT BLVD
GRAND ISLAND, NY 14072
US

Shipper:
JAY GILE
ENVIRONMENTAL PROTECTION AGENC
200 SW 35TH ST
CORVALLIS, OR 973334902
US

Shipment Reference Information:

PACKAGE ARTICLES LLN 291

Thank you for choosing FedEx Express. We look forward to working with you in the future.

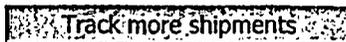
FedEx Worldwide Customer Service
1-800-Go-FedEx®
Reference No.: R2004061400132660241

Track Shipments
Detailed Results

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Tracking number	5093377133	Reference number	PACKAGE ARTICLES
Signed for by	T.WILKINSON		LLN 291
Ship date	Feb 9, 2004	Delivery location	GRAND ISLAND NY
Delivery date/time	Feb 11, 2004 10:45 am	Service type	FedEx 2Day Service

Date/time	Status	Location	Comments
Feb 11, 2004 10:45 am	Delivered	GRAND ISLAND NY	



[&dsc=n&msc=n](#)

Email your detailed tracking results (optional)

Enter your email, submit up to three email addresses (separated by commas), add your message (optional), and click Send email.

From

To

Add a message to this email.



PACKING LIST

FROM: U.S. EPA
NATIONAL HEALTH AND ENVIRONMENTAL EFFECTS
RESEARCH LABORATORY – WESTERN ECOLOGY DIVISION
200 SW 35TH STREET CORVALLIS, OREGON 97333
541-754-4600

TO: NUCLEAR RADIATION DEVELOPMENT, LLC
2937 ALT BLVD
GRAND ISLAND, NY 14072-0310

1) EC Detector SN 1437 15 mCi NICKEL-63

Radioactive material, excepted package, articles UN2911

Shippers Declaration Not Required

UNITED STATES GOVERNMENT

2-Way Memo

Subject: 4B0094NNSA/#4-048
RA #274

To : Nuclear Radiation Development, LLC
2937 Alt Blvd
Grand Island, NY 14072-0310

INSTRUCTIONS	
Use routing symbols whenever possible	
SENDER (Originator of Message): Use brief, informal language. Conserve space. Forward original and one copy.	
RECEIVER (Replier to message): Reply below the message, keep one copy, return one copy.	
DATE OF MESSAGE	ROUTING SYMBOL
1/28/04	
SIGNATURE OF ORIGINATOR	
<i>Kathy Martin</i>	
TITLE OF ORIGINATOR	
SA Contracting Officer	

FOLD

MESSAGE

FOLD

Enclosed you will find one (1) Perkin-Elmer brand Nickel-63 Electron Capture Detector, Serial #1437.

It is being sent to your company for proper disposal.

If you have any questions, please feel free to call 541-754-4654.

Thank you.

REPLY

FROM : U.S. Environmental Protection Agency
200 S.W. 35th Street
Corvallis, Oregon 97333

DATE OF REPLY	ROUTING SYMBOL
SIGNATURE OF REPLIER	
TITLE OF REPLIER	

5027-109

OPTIONAL FORM 27 (Rev. 1-94)

NSN 7540-00-082-2447

1. RETAINED BY ADDRESSEE



December 22, 1998

Mr. Jay Gile
US Environmental
Protection Agency
200 SW 35th Street
Corvallis, OR 97333

Dear Mr. Gile:

This is to acknowledge receipt of the below-referenced nuclear gauge under North Carolina Radioactive Materials License #032-0182-1. You should retain this letter in your files to document transfer of the gauge.

Model: 4302

S/N: 276

Received: Dec. 11, 1998

Sincerely,


Dena Helms

TROXLER ELECTRONIC LABORATORIES, INC.
P.O. Box 12057. Research Triangle Park, NC 27709
Telephone: 919-549-8861 Fax: 919-549-0781



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
NATIONAL HEALTH AND ENVIRONMENTAL EFFECTS
RESEARCH LABORATORY
WESTERN ECOLOGY DIVISION
200 S.W. 35TH STREET • CORVALLIS, OR 97333

December 9, 1998

OFFICE OF
RESEARCH AND DEVELOPMENT

John Kadwell
Troxler Electronics
3008 Cornwallis Road
Research Triangle Park, NC 27709

Dear Mr. Kadwell:

As per prior arrangements with Mr. Bill Worrell, I am returning a Troxler 4300 Moisture Gauge for disposal. Please provide a written certification of destruction with specific reference to this device.

If you have any questions, please contact me at 541/754-4721. I appreciate your assistance in this matter.

Sincerely,

A handwritten signature in cursive script that reads "Jay D. Gile".

Jay D. Gile
Facility/Safety Manager



December 22, 1998

Mr. Jay Gile
US Environmental
Protection Agency
200 SW 35th Street
Corvallis, OR 97333

Dear Mr. Gile:

This is to acknowledge receipt of the below-referenced nuclear gauge under North Carolina Radioactive Materials License #032-0182-1. You should retain this letter in your files to document transfer of the gauge.

Model: 4302

S/N: 276

Received: Dec. 11, 1998

Sincerely,


Dena Helms

TROXLER ELECTRONIC LABORATORIES, INC.
P.O. Box 12057. Research Triangle Park, NC 27709
Telephone: 919-549-8681 Fax: 919-549-0781

12/22/98
AM:DEPR0025

REPAIR HISTORY REPORT

TIME 12:12:05

ORDER 57521 CUST.# 999200 IMDD 4302 S/N 002761 STATUS READY TO SHIP PREPAID
 RECEIVED FROM
 US ENVIOR. (RECD DATE 98/12/11 VIA FED EX COLLECT
 CORVALLIS OR (SOLD DATE 91/11/12 WAYBILL 7523674874
 SHIP TO ----- (WARR EXP 92/11/12 WT TI .0 BLACK CASE
 TROXLER ELECTRONICS (RETURN - VIA MEAS DATE TYPE QTY S/N
 3008 CORNWALLIS ROAD (0/00/00
 DO NOT SHIP THIS BELONGS : DG NOT SHIP :90/03/05AM-241:EE 10 57 1513
 RTP

NC 27709 | ACCESSORIES
 BILL TO ----- FED EXP ADCT # | LOCK & KEY DENSITY MO
 US ENVIRONMENTAL | DRILL ROD EXTR TOOL
 PROTECTION AGENCY | CONTACT NAME | AC CHARGER BATTERY PK
 200 SW 35TH ST. | JAY GILE | SCALER SCALER CAB
 CORVALLIS, | | SCALER PRM DEPTH GAGE
 OR 97333 | | SURFACE GA REF STAND
 P.O. NUMBER | PHONE NUMBER | BATT MODUL HV MODULE
 WORRELL BILL | 541-754-4721 | SCRAPER PL CABLE CLMP
 | | DC CHARGER RS232 CABL

REPAIR SHIP DATE	0/00/00	LABOR	TECH	AMT	DATE	WTY	DISC
RECAIB DATE	0/00/00	DW		.25	98/12/11	X	.00
	7 29	EC		1.00	98/12/22	X	.00
AGE YY MM	DD			.00	0/00/00	N	.00
BUILD DATE	91/05/29			.00	0/00/00	N	.00
LICENSE CODE	9992000						

THIS GAUGE WAS GIVEN BACK TO US A NO CHARGE PER BILL WORRELL. CHECKED ALL FUNCTIONS. WILL BE PUT INTO LEASE PROGRAM AFTER CAL.

ITEM #	QTY	DESCRIPTION	EXT. PRICE	WTY	DISC
893300.4000	1	4300 RECALIBRATION	220.50	X	.00
950000.0007	1	LEAK/WIPE TEST ANALYSIS	12.90	X	.00
	.00	(ITEMS)			
	.00	(LABOR)			
	.00	TOTAL			

P/T NO: 97247

PACKING LIST

DATE 11/12/91

PAGE 1

TO ADDRESS:

ORIGINAL

ENVIRONMENTAL PROTECTION
AGENCY
200 SW 35TH ST.
STOCKROOM
CORVALLIS, OR 97333

CUSTOMER 1- 999200

ORDER NUMBER: 19843 ORDER DATE: 8/12/91

P/O NO: IB0744NTSA

*** ACCEPTS BACKORDER

* * ACCEPTS PARTIAL SHIPMENTS

* SPLIT SHIP ITEMS WILL BE SHIPPED AT A LATER DATE.

SHIP INSTRUCTIONS: MOTOR FREIGHT FOB DESTINATION

ORDER COMMENTS: KATHY MARTIN 503/757-4654
ESTABLISHED CUSTOMER
PURCHASE ORDER RECEIVED

BK 11-12-91

ITEM NUMBER	ITEM DESCRIPTION	QTY ORDERED	U/M	QTY SHIPPED	U/M
104865.2000	4302 GAUGE ASSY. 1.845" S/N <u>76</u>	1	EA	<u>1</u>	<u>✓</u>
104875	4300 SHIPPING CASE AND CARTON	1	EA	<u>1</u>	<u>✓</u>
104873	4300 INSTRUCTION MANUAL	1	EA	<u>1</u>	<u>✓</u>
104410	AC CHARGER, 12 VDC 500MA	1	EA	<u>1</u>	<u>✓</u>
104156	DC CHARGER	1	EA	<u>1</u>	<u>✓</u>
104874	CABLE CLAMP PACKAGE 4300	1	EA	<u>1</u>	<u>✓</u>
012177	LOCK WITH 2 KEYS (H-1209)	1	EA	<u>1</u>	<u>✓</u>
900008	10 MCI AM241:BE S/N <u>57-1513</u>	1	EA	<u>1</u>	<u>✓</u>
900000	SOURCE CERTIF CALIB	1	EA	<u>1</u>	<u>✓</u>

WAP

11-12-91

PACKING LIST

December 9, 1998

From: Radiation Safety
U.S. Environmental Protection Agency
200 SW 35th Street
Corvallis, OR 97333
541-754-4721

To: Troxler Electronics
P.O. Box 12057
3008 Cornwallis road
Resesarch Triangle Park, NC 27709
919-549-8661
Attn. John Kadwell

- 1 Troxler Depth Moisture Guage Model 4302 S/N 276
Americium-241: Beryllium 0.37GBq S/N 57-1513

Leak Test NHEERL 98-⁴ revealed the removable activity to be less than
0.005 μ Ci (12/8/98).

Philip A. Monaco
Dynamac Radiation and Health Safety

Date

Emergency Number: 919-839-2676

NRC FORM 314
10 CFR 20.36(d)(1)(iv)
10 CFR 40.42(d)(1)(iv)
10 CFR 70.28(d)(1)(iv)

U.S. NUCLEAR REGULATORY COMMISSION

APPROVED BY OMB: 3150-0028
EXPIRES: 4/30/92

CERTIFICATE OF DISPOSITION OF MATERIALS

ESTIMATED BURDEN PER RESPONSE TO COMPLY WITH THIS INFORMATION COLLECTION REQUEST: 5 HRS. FORWARD COMMENTS REGARDING BURDEN ESTIMATE TO THE RECORDS AND REPORTS MANAGEMENT BRANCH (P-630), U.S. NUCLEAR REGULATORY COMMISSION, WASHINGTON, DC 20555 AND TO THE PAPERWORK REDUCTION PROJECT (3150-0028), OFFICE OF MANAGEMENT AND BUDGET, WASHINGTON, DC 20503.

ACTIONS: SEND THE COMPLETED CERTIFICATE TO THE NRC OFFICE SPECIFIED ON THE REVERSE.

(All items MUST be completed - print or type)

LICENSEE NAME AND ADDRESS

U.S.E.P.A.
NATIONAL HEALTH & ENVIRONMENTAL EFFECTS
200 S.W. 35th STREET
CORVALIS, OR 97333

LICENSE NUMBER

LICENSE EXPIRATION DATE

THE LICENSEE OR ANY INDIVIDUAL EXECUTING THIS CERTIFICATE ON BEHALF OF THE LICENSEE CERTIFIES THAT:

(Check and/or complete the appropriate item(s) below.)

JAY D. GILE, RSO

A. MATERIALS DATA (Check one and complete as necessary)

1. NO MATERIALS HAVE EVER BEEN PROCURED OR POSSESSED BY THE LICENSEE UNDER THIS LICENSE.

OR The described GENERAL LICENSEE

2. ALL MATERIALS PROCURED AND/OR POSSESSED BY THE LICENSEE UNDER THE LICENSE NUMBER CITED ABOVE HAVE BEEN DISPOSED OF IN THE FOLLOWING MANNER. (If additional space is needed, use the reverse side or provide attachments.)

Shipped to: VARIAN CHROMATOGRAPHY SYSTEMS

Describe specific material transfer actions and, if there were radioactive wastes generated in terminating this license, the disposal actions, including the disposition of low-level radioactive waste, mixed waste, Greater-than-Class-C waste, and sealed sources, if applicable.

GAS CHROMATOGRAPH, ELECTRON CAPTURE DETECTOR P/N 02-965 S/N F506 & F641

RADIOISOTOPE: NICKEL 63 AMOUNT: 8mCi

For transfers, specify the date of the transfer, the name of the licensed recipient, and the recipient's NRC license number or Agreement State name and license number.

DATE: 4/28/97 VARIAN LICENSE # 0256-07 (CALIFORNIA)

If materials were disposed of directly by the licensee rather than transferred to another licensee, licensed disposal site or waste contractor, describe the specific disposal procedures (e.g., decay in storage).

STORED AT: VARIAN CHROMATOGRAPHY SYSTEMS, 2700 MITCHELL DR., WALNUT CREEK, CA 94598
PHONE: (510) 9392400

B. OTHER DATA

OUR LICENSE HAS NOT YET EXPIRED; PLEASE TERMINATE IT.

2. WAS A RADIATION SURVEY CONDUCTED TO CONFIRM THE ABSENCE OF LICENSED RADIOACTIVE MATERIALS AND TO DETERMINE WHETHER ANY CONTAMINATION REMAINS ON THE PREMISES COVERED BY THE LICENSE? (Check one)

NO (Attach explanation)

YES, THE RESULTS (Check one)

ARE ATTACHED, or

WERE FORWARDED TO NRC ON (Date)

3. THE PERSON TO BE CONTACTED REGARDING THE INFORMATION PROVIDED ON THIS FORM

NAME

Larry Steinwandt, Radiation Safety Officer

TELEPHONE NUMBER

(510) 9392400

4. MAIL ALL FUTURE CORRESPONDENCE REGARDING THIS LICENSE TO

CERTIFYING OFFICIAL

I CERTIFY UNDER PENALTY OF PERJURY THAT THE FOREGOING IS TRUE AND CORRECT.

SIGNATURE

DATE

4-30-97

PRINTED NAME AND TITLE

Larry Steinwandt, Radiation Safety Officer for VARIAN ASSOCIATES

WARNING: FALSE STATEMENTS IN THIS CERTIFICATE MAY BE SUBJECT TO CIVIL AND/OR CRIMINAL PENALTIES. NRC REGULATIONS REQUIRE THAT SUBMISSIONS TO THE NRC BE COMPLETE AND ACCURATE IN ALL MATERIAL RESPECTS. U.S.C. SECTION 1001 MAKES IT A CRIMINAL OFFENSE TO MAKE A WILLFULLY FALSE STATEMENT OR REPRESENTATION ANY DEPARTMENT OR AGENCY OF THE UNITED STATES AS TO ANY MATTER WITHIN ITS JURISDICTION.

IMPORTANT DOCUMENT

Keep this certificate and future leak test records for display on request by an inspecting radiation official. Failure to supply records may result in a citation, suspension of your license, and/or a fine.

CERTIFICATE OF LEAK TEST

The Electron Capture Detector (ECD) indicated below has been surveyed for external radioactive contamination as indicated in the ^{63}Ni Radiation Safety Manual, Publication 03-913999-00, paragraph 3.

Isotope: ^{63}Ni

Date: 4/28/97

Model No.: 02-965

Serial No.: F641

Cell No.: _____

The removable radioactivity from the surface of this ECD cell was measured to be:

.0004 microcuries

NOTE: Varian Chromatography Systems is required by the U.S. NRC and the California Department of Health to inform you that the ^{63}Ni ECD must be leak tested every 36 months.

The California Department of Health - Radiation Authority has granted an extension of the time required between leak tests (for Varian ECDs) from the standard 6 month interval, to a 36 month interval per "Registry of Radioactive Sealed Sources and Devices, Safety Evaluation of Devices," Number CA662D101B, which is on file with all radiation authorities.



Larry Steinwandt
Radiation Safety Officer
Varian Chromatography Systems
2700 Mitchell Drive
Walnut Creek, CA 94598-1675



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
NATIONAL HEALTH AND ENVIRONMENTAL EFFECTS
RESEARCH LABORATORY
WESTERN ECOLOGY DIVISION
200 S.W. 35TH STREET • CORVALLIS, OR 97333

April 7, 1997

OFFICE OF
RESEARCH AND DEVELOPMENT

Varian Chromatography Systems
Attn: Radiation Laboratory
2700 Mitchell Drive
Walnut Creek, CA 94598-1675

Attention:

Enclosed you will please find two Varian Ni-63 Electron Capture Detectors (serial # F506 and F641). Both detectors are 8mCi sources. I request that you dispose of these detectors in accordance with NRC regulations.

Please return a Certificate of Destruction to my attention. Thank you for assistance.

Sincerely,

A handwritten signature in cursive script that reads "Jay D. Gile".

Jay D. Gile, Radiation Safety Officer
U.S.E.P.A.
200 SW 35th Street
Corvallis, Or 97333

DYNAMAC CORPORATION

200 SW 35TH STREET
CORVALLIS, OREGON 97333
541-754-4787

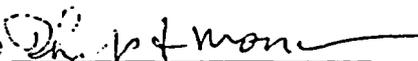
Sealed Source Verification Tests

Description: Gas Chromatograph Electron Capture Detector Source
Manufacturer: Varian
Serial Number: F641
Radionuclide: Ni-63
Maximum Activity: 370 MBq

Smear Test

Date of Test: April 8, 1997
Results: 2.1 Bq
Less than 185 Bq? Yes
Instrument: GFPC/Scaler NMC S/N 7358; Ludlum S/N 83810

Analyst's Signature



Philip A. Monaco
Radiation Safety

DATE

4-8-97

April 10, 1997

Memo

To: NHEERL-WED Radiation Safety Files

The two radioactive sources listed were returned to the manufacturer for disposal:

Varian S/N F506	Ni-63	8-10 mCi (Max. 370 MBq)
Varian S/N F641	Ni-63	8-10 mCi (Max. 370 Mbq)

DA Mann 4-10-97

NHEERL-WED
SEALED SOURCE LEAK TEST SURVEY

LOG NO. 97-1

DATE 4-3-97 TYPE OF SURVEY Removable/Shipping INSTRUMENT GAC NRC/Ludlum S/N 7358/93810

GROSS BKGRD 43 CPM TOTAL COUNT TIME 3 TOTAL COUNTS 129 NET DPM _____

LLD_{95%} = $\left[\left(\sqrt{\frac{129}{3}} \right) \times 2.96 \right] + 43 = \underline{54}$ CPM
 STANDARD (⁶³Ni IPL 405-92 11100 cpm) = $\frac{7047 \text{ cpm} / 11100}{(x 1.56)} = 64\% \text{ eff.}$

SWIPE NO.	SWIPE	MANUFACT.	S/N	NUCLIDE	GROSS CPM	NET DPM	NET ACTIVITY Bq	<185 Bq? (YES/NO)	LOC.
1	Detector Housing inside	VARIAN	F641	⁶³ Ni	490	698	11.6 Bq	YES	190
2	Detector Housing outside	"			52	14	2.3 x 10 ⁻¹	YES	
3	Detector Block	"			203	317	5.2	YES	
4	Foil Housing	"			80	125	2.1	YES	
5	Electrode	"			181	283	4.7	YES	
6	Detector Housing inside	VARIAN	F506	⁶³ Ni	163	255	4.3	YES	
7	Detector Housing outside	"			43	LLD ₉₅	Qnet	YES	
8	Detector Foil Block container	"			38	LLD ₉₅	Qnet	YES	
9	Foil Housing	"			68	106	1.8	YES	
10	Electrode	"			39	LLD ₉₅	Qnet	YES	✓
11	BLANK								

COMMENTS:

Chris Mon
RADIATION SAFETY SPECIALIST

4-8-97
DATE



United States
Environmental Protection Agency
Washington, DC 20460

PURCHASE ORDER

Transmit the Original of the Invoice to:
ENVIRONMENTAL PROTECTION AGENCY
200 SW 35TH STREET
KATHY MARTIN
CORVALLIS, OR 97333

Ship To:

Mark All Packages and Papers with Contract and / or Order Numbers

16. Date of Order 4/21/91	17. Order Number 1803320000	18. Contract Number (if any)	19. Discount Terms 1130
20. FOB Point	21. Delivery to FOB Point by ON or before (Date) 30. DATE:	22. Person Taking Order/ Quote and Phone Number Steve Ormond	
23. Contractor (Name, address, ZIP Code) Valtran Geochronology Systems Attn: Radiation Laboratory, 1700 Mitchell Drive Walnut Creek CA 94596-1613		24. Type of Order <input type="checkbox"/> a. Purchase Reference your quote (See Block 22) 1803320000-003 Please furnish the above on the terms specified on both sides of this order and on the attached sheets, if any, including delivery as indicated. <input type="checkbox"/> b. Delivery provisions on the reverse are deleted. The delivery order is subject to the terms and conditions of the contract. (See Block 19) <input type="checkbox"/> Oral <input checked="" type="checkbox"/> Written <input type="checkbox"/> Confirming	

25. Schedule

Item Number (a)	Supplies or Services (b)	Quantity Ordered (c)	Unit (d)	Estimated Unit Price (e)	Unit Price (f)	Amount (g)	Quantity Accepted (h)
	radiation capture detectors; 8x101 cm; SN: 180017041				35.00	330.00	
note: require Certificate of Destruction; contact Dr. Dale, OR EPA, 200 SW 35th Street, Corvallis OR 97333.		VENDOR HAS BEEN APPROVED OF		Total \$		330.00	

26. Financial and Accounting Data

Line	DCN (Max 6)	Budget/FYs (Max 4)	Appropriation Code (Max 6)	Budget Org/Code (Max 7)	Program Element (Max 6)	Object Class (Max 4)	SFO
1	180032	9750		1803320000		2503	33
2							
3							
	Amount (Dollars) (Cents)		Site/Project (Max 8)	Cost Org/Code (Max 7)			(Max 2)
1	330.00						
2							
3							

United States of America By (Signature) <i>[Signature]</i>	20. Typed Name and Phone of Contracting Officer Dale, Purchasing Agent	Phone 541-254-4000
---------------------------------------------------------------	---------------------------------------------------------------------------	-----------------------

Shipper's Certificate

This parcel contains an excepted radioactive article.

Shipping Name: Excepted Radioactive Material, Instruments and Articles
Hazard Class: Radioactive Material-Identification Number: UN 2910 / UN 2911
Containing: 555 MBq maximum (15 mCi) - ⁶³Ni - Transportation Group IV - Solid Form
No. D.O.T. label required.

This is to certify that the above named article(s) are properly classified, described, packaged, marked, and labeled and are in proper condition for transportation according to applicable regulations of the Department of Transportation, the IATA Dangerous Goods Regulations and the ICAO Technical Instructions for the safe transportation of dangerous goods by air.

D.O.T.: 49CFR173.422 IATA: Section 62.1.5 ICAO: 7.5.3

Name and Address of Shipper:

USEPA
200 SW 35th
Cornwallis, Or 97333

Shipping Date: _____

By: Jan E. Telle

Title: Radiation Safety Officer

Phone: (541) 754-4721

Purchase Order No. 7B0319 NASA
attached

Reason for return:

- Radioactive Decontamination
- Disposal (Varian Chromatography Systems will send a Certificate of Disposition of Materials to the customer)
- Correct Defect
- Transfer of ownership of General License Device
- Convert Specific License Device to a General License Device

Send to: **Varian Chromatography Systems**
Attention: Radiation Laboratory
2700 Mitchell Drive
Walnut Creek, California 94598-1675

Notes:

1. Categorization, labeling and Shipper's Declaration are not required.
2. Each article must be marked "RADIOACTIVE".
3. Securely package in cardboard container (minimum size 4" x 4").
4. Place a completed copy of this document inside the outer container.
5. The consignment must be described on the waybill as "Excepted Radioactive Material, Instruments and Articles".

IMPORTANT DOCUMENT

Keep this certificate and future leak test records for display on request by an inspecting radiation official. Failure to supply records may result in a citation, suspension of your license, and/or a fine.

CERTIFICATE OF LEAK TEST

The Electron Capture Detector (ECD) indicated below has been surveyed for external radioactive contamination as indicated in the ^{63}Ni Radiation Safety Manual, Publication 03-913999-00, paragraph 3.

Isotope: ^{63}Ni

Date: 4/28/97

Model No.: 02-965

Serial No.: F 506

Cell No.: _____

The removable radioactivity from the surface of this ECD cell was measured to be:

.00007 microcuries

NOTE: Varian Chromatography Systems is required by the U.S. NRC and the California Department of Health to inform you that the ^{63}Ni ECD must be leak tested every 36 months.

The California Department of Health - Radiation Authority has granted an extension of the time required between leak tests (for Varian ECDs) from the standard 6 month interval, to a 36 month interval per "Registry of Radioactive Sealed Sources and Devices, Safety Evaluation of Devices," Number CA662D101B, which is on file with all radiation authorities.



Larry Steinwandt
Radiation Safety Officer
Varian Chromatography Systems
2700 Mitchell Drive
Walnut Creek, CA 94598-1675



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
NATIONAL HEALTH AND ENVIRONMENTAL EFFECTS
RESEARCH LABORATORY
WESTERN ECOLOGY DIVISION
200 S.W. 35TH STREET • CORVALLIS, OR 97333

April 7, 1997

OFFICE OF
RESEARCH AND DEVELOPMENT

Varian Chromatography Systems
Attn: Radiation Laboratory
2700 Mitchell Drive
Walnut Creek, CA 94598-1675

Attention:

Enclosed you will please find two Varian Ni-63 Electron Capture Detectors (serial # F506 and F641). Both detectors are 8mCi sources. I request that you dispose of these detectors in accordance with NRC regulations.

Please return a Certificate of Destruction to my attention. Thank you for assistance.

Sincerely,

A handwritten signature in cursive script that reads "Jay D. Gile".

Jay D. Gile, Radiation Safety Officer
U.S.E.P.A.
200 SW 35th Street
Corvallis, Or 97333

DYNAMAC CORPORATION

200 SW 35TH STREET
CORVALLIS, OREGON 97333
541-754-4787

new

Sealed Source Verification Tests

Description: Gas Chromatograph Electron Capture Detector Source
Manufacturer: Varian
Serial Number: F506
Radionuclide: Ni-63
Maximum Activity: 370 MBq

Smear Test

Date of Test: April 8, 1997
Results: 1.8 Bq
Less than 185 Bq? Yes
Instrument: GFPC/Scaler NMC S/N 7358; Ludlum S/N 83810

Analyst's Signature *Philip A. Monaco*
Philip A. Monaco
Radiation Safety

DATE 4-8-97

April 10, 1997

Memo

To: NHEERL-WED Radiation Safety Files

The two radioactive sources listed were returned to the manufacturer for disposal:

Varian S/N F506	Ni-63	8-10 mCi (Max. 370 MBq)
Varian S/N F641	Ni-63	8-10 mCi (Max. 370 Mbq)

DA Mann 4-10-97

NHEERL-WED
SEALED SOURCE LEAK TEST SURVEY

LOG NO. 97-1

DATE 4-3-97 TYPE OF SURVEY Removable/Shipping INSTRUMENT GAC NRC/Ludlum S/N 7358/83810

GROSS BKGRD 43 CPM TOTAL COUNT TIME 3 TOTAL COUNTS 129 NET DPM _____

LLD_{95%} = $[(\sqrt{\frac{129}{3}}) \times 2.96] + 43 = \underline{54}$ CPM STANDARD (⁶³Ni IRL 405-92 11100 cpm) = $\frac{7077 \text{ cpm} / 11100}{(\times 1.56)} = 64\% \text{ eff.}$

SWIPE NO.	SWIPE	MANUFACT.	S/N	NUCLIDE	GROSS CPM	NET DPM	NET ACTIVITY Bq	<185 Bq? (YES/NO)	LOC.
1	Detector Housing inside	VARIAN	F641	⁶³ Ni	490	698	11.6 Bq	YES	190
2	Detector Housing outside	"			52	14	2.3x10 ⁻¹	YES	
3	Detector Block	"			203	317	5.2	YES	
4	Foil Housing	"			80	125	2.1	YES	
5	Electrode	"			181	283	4.7	YES	
6	Detector Housing inside	VARIAN	F506	⁶³ Ni	163	255	4.3	YES	
7	Detector Housing outside	"			43	LLD ₉₅	Qnet	YES	
8	Detector Foil Block Container	"			38	LLD ₉₅	Qnet	YES	
9	Foil Housing	"			68	106	1.8	YES	
10	Electrode	"			39	LLD ₉₅	Qnet	YES	✓
11	BLANK								

COMMENTS:

Chris Mon
RADIATION SAFETY SPECIALIST

4-8-97
DATE

(RAD FORMS A:SEALED 09/18/96)

1-16

Shipper's Certificate

This parcel contains an excepted radioactive article.

Shipping Name: Excepted Radioactive Material, Instruments and Articles
Hazard Class: Radioactive Material-Identification Number: UN 2910 / UN 2911
Containing: 555 MBq maximum (15 mCi) - ^{63}Ni - Transportation Group IV - Solid Form
No. D.O.T. label required.

This is to certify that the above named article(s) are properly classified, described, packaged, marked, and labeled and are in proper condition for transportation according to applicable regulations of the Department of Transportation, the IATA Dangerous Goods Regulations and the ICAO Technical Instructions for the safe transportation of dangerous goods by air.

D.O.T.: 49CFR173.422 IATA: Section 6.2.1.5 ICAO: 7.5.3

Name and Address of Shipper:

USEPA
200 SW 35th
Corvallis, Or 97333

Shipping Date: _____

By: Ray D. Telle

Title: Radiation Safety Officer

Phone: (541) 754-4721

Purchase Order No. 7B0319 NASA
attached

Reason for return:

- Radioactive Decontamination
- Disposal (Varian Chromatography Systems will send a Certificate of Disposition of Materials to the customer)
- Correct Defect
- Transfer of ownership of General License Device
- Convert Specific License Device to a General License Device

Send to: **Varian Chromatography Systems**
Attention: Radiation Laboratory
2700 Mitchell Drive
Walnut Creek, California 94598-1675

Notes:

1. Categorization, labeling and Shipper's Declaration are not required.
2. Each article must be marked "RADIOACTIVE".
3. Security package in cardboard container (minimum size 4' x 4').
4. Place a completed copy of this document inside the outer container.
5. The consignment must be described on the waybill as "Excepted Radioactive Material, Instruments and Articles".

DYNAMAC CORPORATION
200 SW 35TH STREET
CORVALLIS, OREGON 97333
541-754-4787

Sealed Source Verification Tests

Description: Gas Chromatograph Electron Capture Detector Source
Manufacturer: Hewlett-Packard
Serial Number: ~~C1054~~ C0154 (circled)
Radionuclide: Ni-63
Maximum Activity: 555 MBq

Smear Test

Date of Test: April 10, 1997
Results: 1.6 Bq
Less than 185 Bq? Yes
Instrument: GFPC/Scaler NMC S/N 7358; Ludlum S/N 83810

Analyst's Signature

Phillip A. Monaco
Phillip A. Monaco
Radiation Safety

DATE

4-10-97



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
NATIONAL HEALTH AND ENVIRONMENTAL EFFECTS
RESEARCH LABORATORY
WESTERN ECOLOGY DIVISION
200 S.W. 35TH STREET • CORVALLIS, OR 97333

April 7, 1997

OFFICE OF
RESEARCH AND DEVELOPMENT

Hewlett-Packard Company
Little Falls Site
2850 Centerville Road
Wilmington, De 19808

Attention:

Enclosed you will please find five H-P Ni-63 Electron Capture Detectors (serial #S10157, G0154, H2098, H1230, S8829). All detectors are 15mCi sources. I request that you dispose of these detectors in accordance with NRC regulations.

Please return a Certificate of Destruction to my attention. Thank you for assistance.

Sincerely,

Jay D. Gile, Radiation Safety Officer
U.S.E.P.A.
200 SW 35th Street
Corvallis, Or 97333

DISPOSAL

S8829
19303-69550
SP

S10157
19303-69550
SP

H1230
18713A
GEN

G0154
18803A
GEN

H2098
18713A
GEN

4/22



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
NATIONAL HEALTH AND ENVIRONMENTAL EFFECTS
RESEARCH LABORATORY
WESTERN ECOLOGY DIVISION
200 S.W. 35TH STREET • CORVALLIS, OR 97333

April 7, 1997

OFFICE OF
RESEARCH AND DEVELOPMENT

Hewlett-Packard Company
Little Falls Site
2850 Centerville Road
Wilmington, De 19808

Attention:

Enclosed you will please find five H-P Ni-63 Electron Capture Detectors (serial #'S10157, C0154, H2098, H1230, S8829). All detectors are 15mCi sources. I request that you dispose of these detectors in accordance with NRC regulations.

Please return a Certificate of Destruction to my attention. Thank you for assistance.

Sincerely,

A handwritten signature in cursive script that reads "Jay D. Gile".

Jay D. Gile, Radiation Safety Officer
U.S.E.P.A.
200 SW 35th Street
Corvallis, Or 97333



Hewlett-Packard Company
Little Falls Site
2850 Centerville Rd
Wilmington, De. 19808
302-633-8000

Fite

April 23, 1997

U.S.E.P.A.

National Health and Environmental Effects

Research Laboratory

200 S.W. 35th St.

Corvallis, Or 97333

Re: Acknowledgment of Receipt of Electron Capture Detector

Dear Customer,

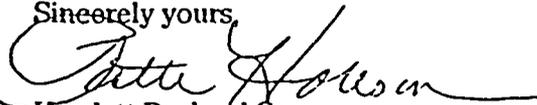
This is to acknowledge that Electron Capture Detector(s), Serial Number(s),

_____ S8829, S10157, H1230, C0154, & H2098_

were received on 4/22/97 and are in possession of the

Hewlett-Packard Company, Wilmington, De. U.S.A.

Sincerely yours,



Hewlett Packard Company
NRC License No. 07-28762-01

MEMO

To: NHEERL-WED Radiation Safety Files
Date: April 14, 1997

The Gas Chromatograph Electron Capture Detectors listed were returned to the manufacturer for disposal:

Hewlett-Packard	H1230	Ni-63	15 mCi (555 MBq)
Hewlett-Packard	S10157	Ni-63	15 mCi (555 MBq)
Hewlett-Packard	S8829	Ni-63	15 mCi (555 MBq)
Hewlett-Packard	C0154	Ni-63	15 mCi (555 MBq)
Hewlett-Packard	H2098	Ni-63	15 mCi (555 Mbq)

Phyllis A. Monaco 4-14-97

NHEERL-WED
SEALED SOURCE LEAK TEST SURVEY

LOG NO. 97-3

DATE 4-10-97 TYPE OF SURVEY Removable/Smears INSTRUMENT GAC/Scaler NMC/Ludlum SIN 7358/83810

GROSS BKGRD ED 44 CPM TOTAL COUNT TIME 3' TOTAL COUNTS 130 NET DPM _____

LLD_{95%} = $[(\sqrt{\frac{130}{3}}) \times 2.96] + 44 = 55$ CPM STANDARD UPL 405-92 ^{63Ni} $(\frac{11,000 \text{ dpm}}{170}) = 6470 \text{ cpm}$ = 6827 cpm 62% eff.

LLD_{95%} = 1.5 Bq

SWIPE NO.	SWIPE Detectives - ECD	MANUFACT.	S/N	NUCLIDE	GROSS CPM	NET DPM	NET (Bq) ACTIVITY	<185 Bq? (YES/NO)	LOC.
	# Foil House	H-P	H1230	⁶³ Ni	CP 7313	438	634	10.6	YES
	Foil House	H-P	510157	⁶³ Ni	138	46	<LLD _{95%}	N/D	YES
	Foil House	H-P	58829	⁶³ Ni	188	63	31	0.6	YES
	Foil House	H-P	CP154 C1054	⁶³ Ni	317	106	100	1.6	YES
	Foil House	H-P	H2098	⁶³ Ni	140	47	<LLD _{95%}	N/D	YES
	Foil House	TRACOR	4803	⁶³ Ni	116	39	<LLD _{95%}	N/D	YES

<1.5 Bq

COMMENTS:

Chris A. Mann
RADIATION SAFETY SPECIALIST

4-10-97
DATE

DYNAMAC CORPORATION
200 SW 35TH STREET
CORVALLIS, OREGON 97333
541-754-4787

Sealed Source Verification Tests

Description: Gas Chromatograph Electron Capture Detector Source
Manufacturer: Hewlett-Packard
Serial Number: H2098
Radionuclide: Ni-63
Maximum Activity: 555 MBq

Smear Test

Date of Test: April 10, 1997
Results: 1.5 Bq
Less than 185 Bq? Yes
Instrument: GFPC/Scaler NMC S/N 7358; Ludlum S/N 83810

Analyst's Signature

Philip A. Monaco
Philip A. Monaco
Radiation Safety

DATE 4-10-97

SEALED SOURCE LEAK TEST WORKSHEET

TEST DATE: 6-20-86
P.M.

Radionuclide: ⁶³Ni

Calculation of Lower Limit of Detection (LLD)

Gross background counts: 389

Total background count time: 20

$$LLD(95\%) = \frac{\sqrt{\text{Gross background counts}}}{\text{Count time}} \times 4.66$$

LLD(95%) = 4.56

Wipe #	Sealed Source Make	Serial #	NET dpm	uCi	LESS THAN 0.005 uCi?
1	P-E CERL 190	439	LLD<		
2	Varian Fil House CERL 190	F506	457.6	2.0x10 ⁻⁴	ALL less < 0.005 uCi
3	Varian CERL 190	F506	LLD<		
4	TRACOR Housing 190	4493	LLD<		
5	TRACOR Housing 190	4493	LLD<		
6	TRACOR PORTS	2960	2499	1.1x10 ⁻⁴	
7	TRACOR Housing	2960	LLD<		
8	TRACOR PORTS	3214	22.06	9.9x10 ⁻⁶	
9	TRACOR Housing	3214	LLD<		
10	TRACOR PORTS	F641	LLD<		
11	Housing	F641	LLD<		
12	Port	4803	LLD<		
13	Port - TRACOR	H1230	58.4	2.6x10 ⁻⁵	
14	Port - H-P	H2098	LLD<		
15	Port - H-P steady	676	LLD<		
16	Port - P-E	58735	LLD<		
17	Port - H-P	S10157	LLD<		

Remarks:

Chris A. Monaco



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
 NATIONAL HEALTH AND ENVIRONMENTAL EFFECTS
 RESEARCH LABORATORY
 WESTERN ECOLOGY DIVISION
 200 S.W. 35TH STREET • CORVALLIS, OR 97333

April 7, 1997

OFFICE OF
 RESEARCH AND DEVELOPMENT

Hewlett-Packard Company
 Little Falls Site
 2850 Centerville Road
 Wilmington, De 19808

Attention:

Enclosed you will please find five H-P Ni-63 Electron Capture Detectors (serial #'S10157, C0154, H2098, H1230, S8829). All detectors are 15mCi sources. I request that you dispose of these detectors in accordance with NRC regulations.

Please return a Certificate of Destruction to my attention. Thank you for assistance.

Sincerely,

Jay D. Gile, Radiation Safety Officer
 U.S.E.P.A.
 200 SW 35th Street
 Corvallis, Or 97333

DISPOSAL

S8829
 19303-69550
 SP

S10157
 19303-69550
 SP

H1230
 18713A
 GEN

C0154
 18803A
 GEN

H2098
 18713A
 GEN

4/22



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
NATIONAL HEALTH AND ENVIRONMENTAL EFFECTS
RESEARCH LABORATORY
WESTERN ECOLOGY DIVISION
200 S.W. 35TH STREET • CORVALLIS, OR 97333

April 7, 1997

OFFICE OF
RESEARCH AND DEVELOPMENT

Hewlett-Packard Company
Little Falls Site
2850 Centerville Road
Wilmington, De 19808

Attention:

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Please return a Certificate of Destruction to my attention. Thank you for assistance.

Sincerely,

A handwritten signature in cursive script that reads "Jay D. Gile".

Jay D. Gile, Radiation Safety Officer
U.S.E.P.A.
200 SW 35th Street
Corvallis, Or 97333



Hewlett-Packard Company
Little Falls Site
2850 Centerville Rd
Wilmington, De. 19808
302-633-8000

F. J. Telle

April 23, 1997

U.S.E.P.A.

National Health and Environmental Effects

Research Laboratory

200 S.W. 35th St.

Corvallis, Or 97333

Re: Acknowledgment of Receipt of Electron Capture Detector

Dear Customer,

This is to acknowledge that Electron Capture Detector(s), Serial Number(s),

_____S8829, S10157, H1230, C0154, & H2098_

were received on 4/22/97 and are in possession of the

Hewlett-Packard Company, Wilmington, De. U.S.A.

Sincerely yours,

Patricia Holloman

Hewlett Packard Company
NRC License No. 07-28762-01

MEMO

To: NHEERL-WED Radiation Safety Files
Date: April 14, 1997

The Gas Chromatograph Electron Capture Detectors listed were returned to the manufacturer for disposal:

Hewlett-Packard	H1230	Ni-63	15 mCi (555 MBq)
Hewlett-Packard	S10157	Ni-63	15 mCi (555 MBq)
Hewlett-Packard	S8829	Ni-63	15 mCi (555 MBq)
Hewlett-Packard	C0154	Ni-63	15 mCi (555 MBq)
Hewlett-Packard	H2098	Ni-63	15 mCi (555 Mbq)

Phyllis A. Monaco 4-14-97

NHEERL-WED
SEALED SOURCE LEAK TEST SURVEY

LOG NO. 97-3

DATE 4-10-97 TYPE OF SURVEY Removable/Smears INSTRUMENT GFC/Scaler NMC/Ludlum SN 7358/83810
 GROSS BKGRD 50 ⁴⁴CPM TOTAL COUNT TIME 3' TOTAL COUNTS 130 NET DPM _____

LLD_{95%} = $[(\sqrt{\frac{130}{3}}) \times 2.96] // + 44 = 55$ CPM STANDARD UPL 405-92 ^{63Ni} 11,000 dpm = 6827 cpm
 62% eff.

LLD₉₅ = 1.5 Bq

SWIPE NO.	SWIPE Detectives - ECD	MANUFACT.	SN	NUCLIDE	GROSS CPM	NET DPM	NET (Bq) ACTIVITY	<185 Bq? (YES/NO)	LOC.
	H Foil House	H-P	41230	⁶³ Ni	7313 438	634	10.6	YES	
	Foil House	H-P	510157	⁶³ Ni	138	46	<LLD ₉₅	N/D	
	Foil House	H-P	58829	⁶³ Ni	188	63	0.6	YES	
	Foil House	H-P	CP134 61054	⁶³ Ni	317	106	1.6	YES	<1.5 Bq
	Foil House	H-P	H2098	⁶³ Ni	140	47	<LLD ₉₅	N/D	
	Foil House	TRACOR	4803	⁶³ Ni	116	39	<LLD ₉₅	N/D	

COMMENTS:

Chris A. Mann
RADIATION SAFETY SPECIALIST

4-10-97
DATE

MEMO

TO: File
FROM: Phil Monaco
DATE: February 11, 1997

SUBJECT: Ni-63 Detector

Bill Griffis removed and turned over to the RSO a Hewlett-Packard GC electron capture detector containing 15 mCi of Nickel-63 (S/N H1230; Model No. 18713A) The detector is stored in MB 190.

Removable Contamination

Housing	<u>ND</u>	uCi
Exit Vent	<u>ND</u>	uCi
Less than 0.05 uCi	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No

PA Monaco 2-18-97
Radiation Safety
699C 97-1

SEALED SOURCE LEAK TEST WORKSHEET

TEST DATE: 6-20-86

Radionuclide: ⁶³Ni

P.M.

Calculation of Lower Limit of Detection (LLD)

Gross background counts: 389

Total background count time: 20

$$LLD(95\%) = \frac{\sqrt{\text{Gross background counts}}}{\text{Count time}} \times 4.66$$

LLD(95%) = 4.56

Wipe #	Sealed Source Make	Serial #	NET dpm	uCi	LESS THAN 0.005 uCi?
1	P-E CERL 190	439	LLD<		
2	Varian Fail House CERL 190	F506	457.6	2.0x10 ⁻⁴	ALL less < 0.005 uCi
3	Varian Housing CERL 190	F506	LLD<		
4	TRACOR Housing	4493	LLD<		
5	TRACOR PORTS	4493	LLD<		
6	TRACOR Housing	2960	2499	1.1x10 ⁻⁴	
7	TRACOR PORTS	2960	LLD<		
8	TRACOR Housing	3214	22.06	9.9x10 ⁻⁶	
9	TRACOR PORTS	3214	LLD<		
10	Housing	F641	LLD<		
11	Port	F641	LLD<		
12	Port - TRACOR	4803	LLD<		
13	Port - H-P	H1230	58.7	2.6x10 ⁻⁵	
14	Port - H-P Storage	H2098	LLD<		
15	Port - P-E	676	LLD<		
16	Port - H-P	58735	LLD<		
17	H-P vent	510157	LLD<		

Remarks:

Philip A. Monaco

NHEERL-WED
SEALED SOURCE LEAK TEST SURVEY

LOG NO. 96-02

DATE 12-10-96 TYPE OF SURVEY Semi-Annual INSTRUMENT Packard 7700 CA S/N 036755

GROSS BKGRD 14.5 CPM TOTAL COUNT TIME 5' TOTAL COUNTS 72.5 NET DPM 25

LLD_{95%} = $\left[\frac{(\sqrt{14.5 \times 6})}{5} \times 2.96 \right] + 14.5 = \underline{20} CPM STANDARD (⁶³Ni) = 1367
115% off.$

SWIPE NO.	SWIPE	MANUFACT.	S/N	NUCLIDE	GROSS CPM	NET DPM	NET ACTIVITY	<185 Bq? (YES/NO)	LOC.
2	H-P EXIT VENT	H-P	58735	Ni ⁶³	19	<LLD ₉₅	ND	YES	MB 2326
3	H-P Housing	H-P	58735	⁶³ Ni	15	<LLD ₉₅	↓	↓	"
4	EXIT VENT	HP	F4571	⁶³ Ni	16	↓	↓	↓	MB 258
5	Housing	HP	F4571	⁶³ Ni	18	↓	↓	↓	"
6	EXIT VENT	PE	1437	⁶³ Ni	31	28	0.45 Bq	YES	MB 282
7	Housing	PE	1437	⁶³ Ni	14	<LLD ₉₅	ND	↓	"
8	EXIT VENT	TRACOR	4803	⁶³ Ni	17	↓	↓	↓	MB 284
9	Housing	TRACOR	4803	⁶³ Ni	20	∅	∅	↓	"
10	EXIT VENT	HP	H1230	⁶³ Ni	18	<LLD ₉₅	ND	↓	MB 284
11	Housing	HP	H1230	⁶³ Ni	18	<LLD ₉₅	↓	↓	"

COMMENTS:

Oliver Mon
RADIATION SAFETY SPECIALIST

12/17/96
DATE

DYNAMAC CORPORATION
200 SW 35TH STREET
CORVALLIS, OREGON 97333
541-754-4787

Sealed Source Verification Tests

Description: Gas Chromatograph Electron Capture Detector Source
Manufacturer: Hewlett-Packard
Serial Number: H1230
Radionuclide: Ni-63
Maximum Activity: 555 MBq

Smear Test

Date of Test: April 10, 1997
Results: 10.6 Bq
Less than 185 Bq? Yes
Instrument: GFPC/Scaler NMC S/N 7358; Ludlum S/N 83810

Analyst's Signature Philip A. Monaco
Philip A. Monaco
Radiation Safety

DATE 4-10-97



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
 NATIONAL HEALTH AND ENVIRONMENTAL EFFECTS
 RESEARCH LABORATORY
 WESTERN ECOLOGY DIVISION
 200 S.W. 35TH STREET • CORVALLIS, OR 97333

April 7, 1997

OFFICE OF
 RESEARCH AND DEVELOPMENT

Hewlett-Packard Company
 Little Falls Site
 2850 Centerville Road
 Wilmington, De 19808

Attention:

Enclosed you will please find five H-P Ni-63 Electron Capture Detectors (serial #'S10157, C0154, H2098, H1230, S8829). All detectors are 15mCi sources. I request that you dispose of these detectors in accordance with NRC regulations.

Please return a Certificate of Distruction to my attention. Thank you for assistance.

Sincerely,

Jay D. Gile, Radiation Safety Officer
 U.S.E.P.A.
 200 SW 35th Street
 Corvallis, Or 97333

DISPOSAL

58829
 19303-69550
 SP

510157
 19303-69550
 SP

H1230
 18713A
 GEN

C0154
 18803A
 GEN

H2098
 18713A
 GEN

4/22



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
NATIONAL HEALTH AND ENVIRONMENTAL EFFECTS
RESEARCH LABORATORY
WESTERN ECOLOGY DIVISION
200 S.W. 35TH STREET • CORVALLIS, OR 97333

April 7, 1997.

OFFICE OF
RESEARCH AND DEVELOPMENT

Hewlett-Packard Company
Little Falls Site
2850 Centerville Road
Wilmington, De 19808

Attention:

Enclosed you will please find five H-P Ni-63 Electron Capture Detectors (serial #'S10157, C0154, H2098, H1230, S8829). All detectors are 15mCi sources. I request that you dispose of these detectors in accordance with NRC regulations.

Please return a Certificate of Destruction to my attention. Thank you for assistance.

Sincerely,

A handwritten signature in cursive script that reads "Jay D. Gile".

Jay D. Gile, Radiation Safety Officer
U.S.E.P.A.
200 SW 35th Street
Corvallis, Or 97333



Hewlett-Packard Company
Little Falls Site
2850 Centerville Rd
Wilmington, De. 19808
302-633-8000

F. J. T.

April 23, 1997

U.S.E..P.A.

National Health and Environmental Effects

Research Laboratory

200 S.W. 35th St.

Corvallis, Or 97333

Re: Acknowledgment of Receipt of Electron Capture Detector

Dear Customer,

This is to acknowledge that Electron Capture Detector(s), Serial Number(s),

 S8829, S10157, H1230, C0154, & H2098

were received on 4/22/97 and are in possession of the

Hewlett-Packard Company, Wilmington, De. U.S.A.

Sincerely yours,

Hewlett Packard Company
NRC License No. 07-28762-01

MEMO

To: NHEERL-WED Radiation Safety Files
Date: April 14, 1997

The Gas Chromatograph Electron Capture Detectors listed were returned to the manufacturer for disposal:

Hewlett-Packard	H1230	Ni-63	15 mCi (555 MBq)
Hewlett-Packard	S10157	Ni-63	15 mCi (555 MBq)
Hewlett-Packard	S8829	Ni-63	15 mCi (555 MBq)
Hewlett-Packard	C0154	Ni-63	15 mCi (555 MBq)
Hewlett-Packard	H2098	Ni-63	15 mCi (555 Mbq)

Thy A Monce 4-14-97

NHEERL-WED
SEALED SOURCE LEAK TEST SURVEY

LOG NO. 97-3

DATE 4-10-97 TYPE OF SURVEY Removable/Smears INSTRUMENT GAC/Scaler NMC/Ludlum SIN 7358/83810

GROSS BKGRD ED CPM TOTAL COUNT TIME 3' TOTAL COUNTS 130 NET DPM _____

LLD_{95%} = $[(\sqrt{\frac{130}{3}}) \times 2.96] / 44 = 55$ CPM STANDARD (VPL 405-92 ⁶³Ni 11,000 dpm) = 6827 cpm 62% eff.

LLD_{95%} = 1.5 Bq

SWIPE NO.	SWIPE Defectors - ECD	MANUFACT.	S/N	NUCLIDE	GROSS CPM	NET DPM	NET (Bq) ACTIVITY	<185 Bq? (YES/NO)	LOC.
	HP Foil House	H-P	41230	⁶³ Ni	CP 7313	438	634	10.6 Bq	YES
	Foil House	H-P	510157	⁶³ Ni	138	46	<LLD _{95%}	N/D	YES
	Foil House	H-P	58829	⁶³ Ni	188	63	31	0.6	YES
	Foil House	H-P	CP154 61054	⁶³ Ni	317	106	100	1.6	YES
	Foil House	H-P	112098	⁶³ Ni	140	47	<LLD _{95%}	N/D	YES
	Foil House	TRACOR	4803	⁶³ Ni	116	39	<LLD _{95%}	N/D	YES

<1.5 Bq

COMMENTS:

Chris A. Mann
RADIATION SAFETY SPECIALIST

4-10-97
DATE

USEPA - CERL
 RECORD OF RADIATION SURVEY, NEAR
 ROOM#

FIELD AREA MARINE SCIENCE CENTER
 SPECIAL SURVEY #
 LEAK TEST OF Ni-63 SOURCE S-8829

Subject: Leak Testings of Sealed Source
 From: Don Schuler, EPA - Marine Science Center
 To: Dr. Ron Senechal, OSU Radiation Safety Office

Date: January 10, 1984

JAY GILFILLAN

DATE: 1/10/84
 TIME: 11:23

The following data shows the cpm of a swipe of the Hewlett-Packard GC 463 detector (8/R 88829) which is located in Lab #229 at the Marine Science Center. Counting time was 50 minutes.

Background 21.5 ± 0.2 cpm (n=3)

Swipe of EC Detector 24.3 ± 0.3 cpm (n=3)

NET CPM	NET CPM	NET CPM	GROSS CPM	DISTANCE	INSTRUMENT USED
0.0	0.0	0.0	-		LISSAS SCINTILLATION
0.0	0.0	0.0	-		LISSAS SCINTILLATION

SEE BACK OF PAGE FOR SEEDED DIAGRAMS

LOWER LIMIT OF DETECTOR	CPM	NET CPM
2.1		

LOWER LIMIT OF DETECTOR	CPM	NET CPM

BETA COUNTS	REMARKS
0	- NO REMOVABLE CONTAMINATION ON FILTER PAPER

(ALL / SOURCE) 001
 REMOVABLE CONTAMINATION EXCEPTIONS:

RADIATION MONITOR: 66112 / 1

REVIEWED BY

DYNAMAC CORPORATION

200 SW 35TH STREET
CORVALLIS, OREGON 97333
541-754-4787

Sealed Source Verification Tests

Description: Gas Chromatograph Electron Capture Detector Source
Manufacturer: Hewlett-Packard
Serial Number: S8829
Radionuclide: Ni-63
Maximum Activity: 555 MBq

Smear Test

Date of Test: April 10, 1997
Results: <1.5 Bq
Less than 185 Bq? Yes
Instrument: GFPC/Scaler NMC S/N 7358; Ludlum S/N 83810

Analyst's Signature Philip A. Monaco
Philip A. Monaco
Radiation Safety

DATE 4-10-97



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
 NATIONAL HEALTH AND ENVIRONMENTAL EFFECTS
 RESEARCH LABORATORY
 WESTERN ECOLOGY DIVISION
 200 S.W. 35TH STREET • CORVALLIS, OR 97333

April 7, 1997

OFFICE OF
 RESEARCH AND DEVELOPMENT

Hewlett-Packard Company
 Little Falls Site
 2850 Centerville Road
 Wilmington, De 19808

Attention:

Enclosed you will please find five H-P Ni-63 Electron Capture Detectors (serial #'S10157, C0154, H2098, H1230, 88829). All detectors are 15mCi sources. I request that you dispose of these detectors in accordance with NRC regulations.

Please return a Certificate of Destruction to my attention. Thank you for assistance.

Sincerely,

Jay D. Gile, Radiation Safety Officer
 U.S.E.P.A.
 200 SW 35th Street
 Corvallis, Or 97333

DISPOSAL

58829
 19303-69550
 SP

8510157
 19303-69550
 SP

H1230
 18713A
 GEN

C0154
 18803A
 GEN

192098
 18713A
 GEN

4/22



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
NATIONAL HEALTH AND ENVIRONMENTAL EFFECTS
RESEARCH LABORATORY
WESTERN ECOLOGY DIVISION
200 S.W. 35TH STREET • CORVALLIS, OR 97333

April 7, 1997

OFFICE OF
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Please return a Certificate of Destruction to my attention. Thank you for assistance.

Sincerely,

A handwritten signature in cursive script that reads "Jay D. Gile".

Jay D. Gile, Radiation Safety Officer
U.S.E.P.A.
200 SW 35th Street
Corvallis, Or 97333



Hewlett-Packard Company
Little Falls Site
2850 Centerville Rd
Wilmington, De. 19808
302-633-8000

Fite

April 23, 1997

U.S.E..P.A.

National Health and Environmental Effects

Research Laboratory

200 S.W. 35th St.

Corvallis, Or 97333

Re: Acknowledgment of Receipt of Electron Capture Detector

Dear Customer,

This is to acknowledge that Electron Capture Detector(s), Serial Number(s),

____S8829, S10157, H1230, C0154, & H2098_

were received on 4/22/97 and are in possession of the

Hewlett-Packard Company, Wilmington, De. U.S.A.

Sincerely yours,

Hewlett Packard Company
NRC License No. 07-28762-01

MEMO

To: NHEERL-WED Radiation Safety Files
Date: April 14, 1997

The Gas Chromatograph Electron Capture Detectors listed were returned to the manufacturer for disposal:

Hewlett-Packard	H1230	Ni-63	15 mCi (555 MBq)
Hewlett-Packard	S10157	Ni-63	15 mCi (555 MBq)
Hewlett-Packard	S8829	Ni-63	15 mCi (555 MBq)
Hewlett-Packard	C0154	Ni-63	15 mCi (555 MBq)
Hewlett-Packard	H2098	Ni-63	15 mCi (555 Mbq)

Thy A Monahan 4-14-97

NHEERL-WED
SEALED SOURCE LEAK TEST SURVEY

LOG NO. 97-3

DATE 4-10-97 TYPE OF SURVEY Removable/Smears INSTRUMENT GPC/Scaler NMC/Kudlum SN 7358/83410
GROSS BKGRD 50 ⁴⁴CPM TOTAL COUNT TIME 3' TOTAL COUNTS 130 NET DPM _____

LLD_{95%} = $[(\sqrt{\frac{130}{3}}) \times 2.96] / 1 + 44 = 55$ CPM STANDARD (VPL 405-92 ⁶³Ni 11,000 dpm) = 6827 cpm 62% eff.

LLD₉₅ = 1.5 Bq

SWIPE NO.	SWIPE Defectors - ELD	MANUFACT.	S/N	NUCLIDE	GROSS CPM	NET DPM	NET (Bq) ACTIVITY	<185 Bq? (YES/NO)	LOC.
	HP Foil House	H-P	41230	⁶³ Ni	CP 7313	438	634	10.6	YES
	Foil House	H-P	510157	⁶³ Ni	138	46	<LLD ₉₅	N/D	YES
	Foil House	H-P	58829	⁶³ Ni	188	63	31	0.5	YES
	Foil House	H-P	CP134 CF054	⁶³ Ni	317	106	100	1.6	YES
	Foil House	H-P	H2098	⁶³ Ni	140	47	<LLD ₉₅	N/D	YES
	Foil House	TRACOR	4803	⁶³ Ni	116	39	<LLD ₉₅	N/D	YES

<1.5 Bq

COMMENTS:

Chris Mon
RADIATION SAFETY SPECIALIST

4-10-97
DATE

USEPA - CERL
 RECORD OF RADIATION SURVEY/SMEAR

BUILDING/AREA MARINE SCIENCE CENTER

ROOM# _____

DATE SWIPE: 7/7/83
COUNT: 7/25/83

TIME _____

DESCRIPTION LEAK TEST OF Ni-63 SOURCE S-8829

SPECIAL SURVEY # _____

ITEM OR AREA	INSTRUMENT USED	DISTANCE	GROSS CPM	NET CPM	NET DPM	NET DPM / 100 cm ²	GAMMA mr/hr	BETA mrad/hr	NEUTRONS mrem/hr	REMARKS
MSC-1: LOWER VENT AREA	Liquid Scintillation Counter - Rm 131;		-	0.0	0					- NO REMOVABLE CONTAMINATION ON EITHER SWIPE.
MSC-2: UPPER VENT AREA	CERL.		-	0.0	0					

USE BACK OF PAGE FOR NEEDED DIAGRAMS

COUNTER BACKGROUND DATA		
CPM	EFFICIENCY/ISOTOPE	DPM
	Efficiency for these two vials was app. 75%	

LOWER LIMIT OF DETECTION DATA		
CPM	DPM	NET μ CURIES
2.4		

SUMMARY OF RESULTS: (All / ~~Some~~) smears (~~did~~ / did not) show removable radioactivity above the LLD. EXCEPTIONS: _____

RADIATION MONITOR: Schultz / Melkowitz - Carter

REVIEWED BY HEALTH PHYSICIST: M. Melkowitz - Carter

USEPA CERL
MOVEMENT OF BYPRODUCT MATERIAL

Date/Time: 10⁰⁰ a 5-10-89

No. 89-09

Received from: H-P Exchange Service Rt #1 Avondale PA 19311

P.O. NO. 4530P7551 Carrier Fex Ex 564579-574

Condition of Package (O.K., punctured, crushed, wet): OK

3. Shipped to: _____

NRC/State License of Recipient: _____
(attach copy of license)

User Approval Number: _____

4. In-house transfer: from _____ to _____

5. Surveyed Radiation Levels: a. Package surface 0 mR/hr

b. 3' from surface 0 mR/hr

6. Survey of Packing materials and carton 0 mR/hr

Instrument Used/SN: GM 515 Efficiency: 3% 14C%

7. Description of Material (Do packing slip and vial agree?)

Radionuclide: ⁶³Ni Quantity: 15 mCi

Chemical Form: Instrument - special

8. Swipe Results from: a. Outer _____ CPM = _____ DPM

b. Source Container _____ CPM = _____ DPM

Instrument Used/SN: LSC 2000 Efficiency: _____ %

9. Material Stored in Rm 190.

10. Material Released to: Paul Wickster MB-246 10³⁰ a 5-10-89
(date/time)

11. Disposition of Packaging materials and carton: _____

Notes:

(radiation safety) / (date)

DYNAMAC CORPORATION
200 SW 35TH STREET
CORVALLIS, OREGON 97333
541-754-4787

Sealed Source Verification Tests

Description: Gas Chromatograph Electron Capture Detector Source
Manufacturer: Hewlett-Packard
Serial Number: S10157
Radionuclide: Ni-63
Maximum Activity: 555 MBq

Smear Test

Date of Test: April 10, 1997
Results: <1.5 Bq
Less than 185 Bq? Yes
Instrument: GFPC/Scaler NMC S/N 7358; Ludlum S/N 83810

Analyst's Signature Philip A. Monaco
Philip A. Monaco
Radiation Safety

DATE 4-10-97



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
 NATIONAL HEALTH AND ENVIRONMENTAL EFFECTS
 RESEARCH LABORATORY
 WESTERN ECOLOGY DIVISION
 200 S.W. 35TH STREET • CORVALLIS, OR 97333

April 7, 1997

OFFICE OF
 RESEARCH AND DEVELOPMENT

Hewlett-Packard Company
 Little Falls Site
 2850 Centerville Road
 Wilmington, De 19808

Attention:

Enclosed you will please find five H-P Ni-63 Electron Capture Detectors (serial # ~~S10157~~, C0154, H2098, H1230, S8829). All detectors are 15mCi sources. I request that you dispose of these detectors in accordance with NRC regulations.

Please return a Certificate of Distruction to my attention. Thank you for assistance.

Sincerely,

Jay D. Gile

Jay D. Gile, Radiation Safety Officer
 U.S.E.P.A.
 200 SW 35th Street
 Corvallis, Or 97333

DISPOSAL

58829
 19303-69550
 SP

510157
 19303-69550
 SP

H1230
 18713A
 GEN

C0154
 18803A
 GEN

H2098
 18713A
 GEN

4/22



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
NATIONAL HEALTH AND ENVIRONMENTAL EFFECTS
RESEARCH LABORATORY
WESTERN ECOLOGY DIVISION
200 S.W. 35TH STREET • CORVALLIS, OR 97333

April 7, 1997

OFFICE OF
RESEARCH AND DEVELOPMENT

Hewlett-Packard Company
Little Falls Site
2850 Centerville Road
Wilmington, De 19808

Attention:

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Please return a Certificate of Destruction to my attention. Thank you for assistance.

Sincerely,

A handwritten signature in cursive script that reads "Jay D. Gile".

Jay D. Gile, Radiation Safety Officer
U.S.E.P.A.
200 SW 35th Street
Corvallis, Or 97333



Hewlett-Packard Company
Little Falls Site
2850 Centerville Rd
Wilmington, De. 19808
302-633-8000

Fite

April 23, 1997

U.S.E..P.A.

National Health and Environmental Effects

Research Laboratory

200 S.W. 35th St.

Corvallis, Or 97333

Re: Acknowledgment of Receipt of Electron Capture Detector

Dear Customer,

This is to acknowledge that Electron Capture Detector(s), Serial Number(s),

S8829, S10157, H1230, C0154, & H2098

were received on 4/22/97 and are in possession of the

Hewlett-Packard Company, Wilmington, De. U.S.A.

Sincerely yours,

Hewlett Packard Company
NRC License No. 07-28762-01

MEMO

To: NHEERL-WED Radiation Safety Files
Date: April 14, 1997

The Gas Chromatograph Electron Capture Detectors listed were returned to the manufacturer for disposal:

Hewlett-Packard	H1230	Ni-63	15 mCi (555 MBq)
Hewlett-Packard	S10157	Ni-63	15 mCi (555 MBq)
Hewlett-Packard	S8829	Ni-63	15 mCi (555 MBq)
Hewlett-Packard	C0154	Ni-63	15 mCi (555 MBq)
Hewlett-Packard	H2098	Ni-63	15 mCi (555 MBq)

Philip A. Monaco 4-14-97

NHEERL-WED
SEALED SOURCE LEAK TEST SURVEY

LOG NO. 97-3

DATE 4-10-97 TYPE OF SURVEY Removable/Smears INSTRUMENT GPC/Scaler MM/Ludlum SN 7358/83810
GROSS BKGRD 50 44 CPM TOTAL COUNT TIME 3' TOTAL COUNTS 130 NET DPM _____

LLD_{95%} = $[(\sqrt{\frac{130}{3}}) \times 2.96] + 44 = 55$ CPM STANDARD VPL 405-92 ^{63Ni} $(\frac{11,000 \text{ dpm}}{11,000 \text{ dpm}}) = 6827 \text{ cpm}$ 62% eff.

LLD₉₅ = 1.5 Bq

SWIPE NO.	SWIPE Defectors - ECD	MANUFACT.	S/N	NUCLIDE	GROSS CPM	CPM	NET DPM	NET (Bq) ACTIVITY	<185 Bq? (YES/NO)	LOC.
	44 Foil House	H-P	41230	⁶³ Ni	130 7313	438	634	10.6	YES	
	Foil House	H-P	510157	⁶³ Ni	138	46	<LLD ₉₅	N/D	YES	
	Foil House	H-P	58829	⁶³ Ni	188	63	31	0.5	YES	
	Foil House	H-P	510157 61054	⁶³ Ni	317	106	100	1.6	YES	
	Foil House	H-P	42098	⁶³ Ni	140	47	<LLD ₉₅	N/D	YES	
	Foil House	TRACOR	4803	⁶³ Ni	116	39	<LLD ₉₅	N/D	YES	

<1.5 Bq

COMMENTS:

Chris Mann
RADIATION SAFETY SPECIALIST

4-10-97
DATE

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
ENVIRONMENTAL RESEARCH LABORATORY—CORVALLIS

SUBJECT REMOVAL OF RADIOACTIVE ELECTRON CAPTURE
DETECTOR FROM LICENSE AND INVENTORY
FROM Philip A. M haco Radiation Specialist
TO File

DATE MAY 5, 1989

ON MAY 4, 1989 one Hewlett-Packard Electron Capture Detector (S/N S10157) containing 15 mCi Nickle-63 was removed from the custody of this laboratory (Paul Wickster) and shipped to H-P, EC Detector Exchange, Rt. 41 & Starr Rd Avondale, PA 19311 for exchange.

Swipes were taken to detect beta contamination of the instrument. Results are as follows.

Swipe/Sample	net cpm	net dpm	uCi
foil housing	6	< LLD ₉₅	< 0.005
exit port	0	0	< 0.005

Philip A. M haco 5-4-89
Radiation Safety Specialist



HEWLETT
PACKARD

Analytical Instruments Wipe Test Certificate

Listed below are the results of our wipe test on your Ni₆₃
Electron Capture Detector.

Detector Model # 19303

Detector Serial # 510157

Source # N/A

Wipe Test Result < 0.002 microcuries
becquerel

Test Date 5-9-89

Analyst Signature Darlene Buffett

As detailed in your instruction manual and license, additional
wipe tests are required at intervals not exceeding six months.

ORIGIN DATE MT MSG # DEST

5/8/89



HEWLETT PACKARD

5/9

SHIP TO M/F

NSI TECH SERVICES CORP.
200 S.W. 35TH ST.
CORVALLIS, OR. 97333

ATTN: PAUL WICKSTER

SHIPPING ONLY/EC EXCHANGE
BILLING TO FOLLOW

B/L NUMBER		
4305F060A		
OT	ORDER NUMBER	SECTION
	241352878	001

R-9:30
C-10:25

006408

SOLD TO

CUSTOMER ORDER NUMBER 4530P7551				GOVERNMENT CONTRACT NUMBER				H.P. GSA		H.P. PURCH.		H.P. QUOTE NO.			
TT	CUSTOMER NO.	CT	W-CR	ENG	T.R.C.	RATING	REQ. DATE	DISC MFG	DISC REG	DISC S.O.	TERMS				
CPR	INSP	FAST P	COC	INS	2 MAN	NO PARTIAL	DD 250	SHIP VIA INSTRUCTIONS FEDERAL EXPRESS				CAO			
SPECIAL INSTRU															
				564579574				564 579 574							
CUSTOMER PACKAGE TRACKING NUMBER - PULL UP PURPLE TAB															
SHIP DATE 5/9/89		METHOD AIR		CARRIER FedEx		FREIGHT \$19.00		COD CHG.		PARTIAL NO. 102#					
ITEM	SUB-ITEM	ENT NO	ENT 1K	PRODUCT NUMBER		DESCRIPTION		SUB-UNIT PRICE	MKT	SUP	QC	ID	QTY ORDER	REQ. DATE SPECIAL	QTY ACK
1				19303-69550		S10157 5989							1		
HEWLETT PACKARD CO. ROUTE 41 AVONDALE, PA. 19311 "THIS PACKAGE CONFORMS TO THE CONDITIONS AND LIMITATIONS SPECIFIED IN 49 CFR 173.422 FOR EXCEPTED RADIOACTIVE MATERIAL INSTRUMENTS AND ARTICLES, UN2911"															

RETURN PINK COPY TO JIM F/thanks



NSI TECHNOLOGY SERVICES CORPORATION
ENVIRONMENTAL SCIENCES

PURCHASE ORDER

DATE 5/04/89	SHIP VIA FED EX	PAY. TERMS N30	FOB DESTINATION	REQUISITION NUMBER 7551	P.O. NO. 4530P7551	RE
-----------------	--------------------	-------------------	--------------------	----------------------------	-----------------------	----

NAME HEWLETT PACKARD-AVENDALE EC DETECTOR EXCHANGE PRG ROUTE 41 & STAR ROAD AVONDALE, PA 19311		FREIGHT TERMS		SPECIAL INSTRUCTIONS NONEXPENDABLE-NO 1730.1 VENDOR COPY		
VENDOR NO. HP-AD		AREA CODE				
RESALE NO.		BUS CODE 80		4530		WICKSTER

CONTRACT NO. 68-C8-0006	CONFIRM	ACKNOWLEDGEMENT NOT REQUIRED	INTERNAL DIST.	PRIORITY RATING DMS REC
----------------------------	---------	---------------------------------	----------------	-------------------------

ITEM NO.	QTY. ORDERED	UNIT OF MEAS.	ACCOUNT NO.	DESCRIPTION	ITEM		ITEM TOTAL	
			SALES ORDER NO.		DOLLARS	CTS.	DOLLARS	CTS.
	1.00	EA	4530/4442-3700	EC DETECTOR # 9303-69550 EXCHANGE DECAL #463864 (NSI)	505.00		505.00	
				TOTAL			505.00	

SEND INVOICES TO:
 NSI TECH SVCS CORP
 ATTN: ACC'S PAYABLE
 P.O. BOX 2313
 RTP NC 27709

THE FOLLOWING TERMS
 INCORPORATED HEREIN
 BY REFERENCE:
 T-1

PLEASE SIGN & RETURN
 DUPLICATE COPY OF THIS P.O.
 ACKNOWLEDGING RECEIPT OF
 SHIP P.O. & ACCEPTANCE OF
 ALL TERMS & CONDITIONS.

REFERENCE P.O. NUMBER ON ALL CORRESPONDENCE

DATE: _____
 SIGNATURE: _____

ELECT INQUIRIES REGARDING THIS ORDER TO —

KAREN L. GILES
 NSI TECH. SVRS., CORP.
 1600 S.W. WESTERN BLVD.
 CORVALLIS, OR 97333
 (503) 753-6221

RTP/FILE BUYER	DATE 5/4/89
<i>Karen Giles</i> PROCUREMENT MANAGER	DATE
PAGE	OF



HEWLETT
PACKARD



43-5953-1626
Rev. 8/83
replaces form
43-5953-1598

BYPRODUCT MATERIALS (RADIOACTIVE) LICENSE VERIFICATION

For new purchase and return for exchange of specific license radioactive electron capture detectors no. 18713A, 18803-60520, 19235, and 19303. Also for return for exchange of general license detectors no. 19282, 19233 and 19312, and for purchase of conversion kits 18724E and 19393. For use within the U.S. only.

For new purchase of general license detector no. 19282, 19233 or 19312, customer certification card part no. 43-5953-1725 must be completed.

INSTRUCTIONS:

1. Complete section A below. Read section B and complete the appropriate certification statement (specific license below, general license on reverse side).
2. For new purchases mail this form to your local HP sales office.
3. For returns for exchange/servicing of used detectors, see section C reverse side.

A. COMPANY NSI Technology Services Corporation CUSTOMER NAME Paul Wickster
 ADDRESS 200 SW 35th st. CUSTOMER P.O. NO. 4536P7551
Corvallis, OR 97333 HP SALES OFFICE _____
 _____ HP SALES ORDER NO. _____
 TELEPHONE NO. 503-757-4227 TAX STATUS TAXABLE EXEMPT

B. LICENSE VERIFICATION

Failure to comply with licensing requirements can cause serious consequences for both your company and Hewlett-Packard. Having a designated licensee read and complete the applicable certification statement (specific license below, general license on reverse side) will serve as a check that you are properly licensed to receive the material indicated.

SPECIFIC LICENSE CERTIFICATION

The Nuclear Regulatory Commission Regulations require Hewlett-Packard to have on file verification of your N.R.C. License (or State License if you live in an "Agreement" State) before shipping your detector. This license must be current and it must apply to the type, quantity, and form being purchased on the above-referenced order. (See latest revision of HP form 5950-5145, CFR Title 10, and NRC form 313 and Regulatory Guide 10.7 for licensing information).

This is to certify that our N.R.C. or Agreement State License is current and permits us to receive the type, quantity, and form of radioactive materials for the use specified as described below.

QTY		NEW PURCHASE	EXCHANGE	CLEAN	REBUILD	SERIAL NO.
_____	HP EC Detector no. 19235, 15 mCi Ni63 plated part, for use on 5890 series gas chromatographs.	<input type="checkbox"/>	<input type="checkbox"/>			_____
_____	HP EC Detector no. 18713A, 15 mCi Ni63 plated part, for use on 5700 and 5790 series gas chromatographs.	<input type="checkbox"/>	<input type="checkbox"/>			_____
_____	HP EC Detector no. 18803-60520, 15 mCi Ni63 plated part, for use on 5830/5840 series gas chromatographs.	<input type="checkbox"/>	<input type="checkbox"/>			_____
<u>X</u>	HP EC Detector no. 19303, 15 mCi Ni63 plated part, for use on 5880 series gas chromatographs.	<input type="checkbox"/>	<input checked="" type="checkbox"/>			<u>510157</u>
_____	HP Accessory no. 18724E, for converting general license EC (19282) to specific license (18713A).	<input type="checkbox"/>				_____
_____	HP Accessory no. 19393, for converting general license EC (19312) to specific license (19303).	<input type="checkbox"/>				_____
_____	HP EC Detector no. 2-6195, 2 mCi Ni63 foil (NRD, N-1002), for use on 402, 700, 5750, and 7610/20 series gas chromatographs.			<input type="checkbox"/>	<input type="checkbox"/>	_____

LICENSE NUMBER 36-12343-02
 ISSUING AGENCY NRC
 EXPIRATION DATE 12-31-89

Philip A. Mann RSC
 SIGNATURE OF AUTHORIZED OFFICER OR LICENSED USER
 DATE 5-4-89

GENERAL LICENSE CERTIFICATION

(For exchange of general license detectors only. New purchase of general license EC detector requires completion of customer certification card, part no. 43-5953-1725).

This is to certify that we understand and are in compliance with regulations governing the general license EC detector described in Information for General Licensees (part no. 43-5953-1725).

QTY		EXCHANGE	SERIAL NO.
_____	HP EC Detector no. 19233, 15 mCi Ni63 plated part, general license EC for use on 5890 series gas chromatographs.	<input type="checkbox"/>	_____
_____	HP EC Detector no. 19312, 15 mCi Ni63 plated part, general license EC for use on 5880 series gas chromatographs.	<input type="checkbox"/>	_____
_____	HP EC Detector no. 19282, 15 mCi Ni63 plated part, general license EC for use on 5700 and 5790 series gas chromatographs.	<input type="checkbox"/>	_____

SIGNATURE OF GENERAL LICENSEE

DATE

C. EC DETECTOR EXCHANGE PROGRAM – EC Detectors no. 19233, 19235, 19303, 19312, 18713A, 19282, and 18803-60520.

HP will ship a rebuilt detector subject to the following:

- This form must be properly completed and accompanied by a fully assembled detector no. 19235, 19233, 19303 or 19312, 18713A, 19282, or 18803-60520.
- This program does not apply to any electronic parts or non-standard hardware. Any such items received will be returned with the rebuilt detector.
- All rebuilt detectors are guaranteed to meet HP specifications for new detectors.
- HP must receive the used detector before a replacement detector can be shipped. A rebuilt detector will be shipped within five working days after receipt of the used detector.
- Unless otherwise specified, return shipments will be by the fastest available method. All shipments will be FOB origin, freight prepaid and added to the invoice.
- For prices, call your local HP sales office and request the price for the appropriate exchange part number shown below.

When returning a detector for exchange,

1. Do not place an order with your local office. Leave blank the space for sales order number on the reverse side.
2. Consult your radiation safety officer and the latest revision of the Code of Federal Regulations, Titles 10 and 49 (sec. 173.391), and applicable local and state regulations for packaging, labeling and shipping instructions.
3. Send this form, a copy of your purchase order, and the detector directly to:

EC Detector Exchange Program
Hewlett-Packard Co. - Avondale Division
Rte 41 & Starr Rd.
Avondale, Pennsylvania 19311

NOTE: If your detector is covered by warranty or by an HP service contract, contact your local service engineer before shipping your detector. The engineer will provide an order number to be entered on the reverse side instead of your purchase order number. In this case, you need not supply a purchase order.

Model No.	Detector No.	Exchange Part No.
5890 Series	19235, 19233	19233-69570 (general) 19235-69530 (specific)
5700/5790 Series	18713A, 19282	18713-69501
5830/40 Series	18803-60520	18803-69520
5880 Series	19303, 19312	19303-69550

Other Instruments

EC Detector no. 2-6195 is not included in the exchange program, but can be returned to Avondale Division for servicing. Please send this completed form and the detector directly to the attention of "EC Detector Service" at the above address. Allow 6-8 weeks for delivery.



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
 ENVIRONMENTAL RESEARCH LABORATORY
 200 S.W. 35TH STREET
 CORVALLIS, OREGON 97333

SHIPPING CERTIFICATE

COMPOUND (Chemical Form):

Sealed Source S/N
EC Detector HP 510157
 1985

RADIONUCLIDE: *Ni 63*

RADIOACTIVITY: *15 mCi*

SPECIFIC ACTIVITY: _____

SHIPPED TO:

EC Detector Exchange Program
Hewlett-Packard Co.
Rte 41 & Starr Rd
Avondale, PA 19311
 address

5-4-89
 date
1-800-541-0018
 phone

All detector swipes less than 0.005 μ ci
5-4-89

Philip A. Monaco
Radiation Safety

This package conforms to the conditions and limitations specified in 49 CFR 173.421 for exempted radioactive material, limited quantity, n.o.s., UN2910

NHEERL-WED
SEALED SOURCE LEAK TEST SURVEY

LOG NO. 96-02

DATE 12-10-96 TYPE OF SURVEY Semi-Annual INSTRUMENT Packard 7200 CA SN 036755

GROSS BKGRD 14.5 CPM TOTAL COUNT TIME 5' TOTAL COUNTS 72.5 NET DPM 25

LLD_{95%} = $\left[\left(\frac{\sqrt{14.5 \times 6}}{5} \right) \times 2.96 \right] + 14.5 = \underline{20} CPM STANDARD (⁶³Ni) 1,191 DPM) = 1367
115% eff.$

SWIPE NO.	SWIPE	MANUFACT.	SN	NUCLIDE	GROSS CPM	NET DPM	NET ACTIVITY	<185 Bq ? (YES/NO)	LOC.
2	H-P EXIT VENT	H-P	58735	Ni ⁶³	19	<LLD ₉₅	ND	YES	MB 232b
3	H-P Housing	H-P	58735	⁶³ Ni	15	<LLD ₉₅	↓	↓	"
4	EXIT VENT	HP	F4571	⁶³ Ni	16	↓	↓	↓	MB 258
5	Housing	HP	F4571	⁶³ Ni	18	↓	↓	↓	"
6	EXIT VENT	PE	1437	⁶³ Ni	31	28	0.45 Bq	YES	MB 282
7	Housing	PE	1437	⁶³ Ni	14	<LLD ₉₅	ND	↓	"
8	EXIT VENT	TRACOR	4803	⁶³ Ni	17	↓	↓	↓	MB 284
9	Housing	TRACOR	4803	⁶³ Ni	20	∅	∅	↓	"
10	EXIT VENT	HP	H1230	⁶³ Ni	18	<LLD ₉₅	ND	↓	MB 284
11	Housing	HP	H1230	⁶³ Ni	18	<LLD ₉₅	↓	↓	"

COMMENTS:

Richard M. ...
RADIATION SAFETY SPECIALIST

12/17/96
DATE



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
NATIONAL HEALTH AND ENVIRONMENTAL EFFECTS
RESEARCH LABORATORY
WESTERN ECOLOGY DIVISION
200 S.W. 35TH STREET • CORVALLIS, OR 97333

April 10, 1997

OFFICE OF
RESEARCH AND DEVELOPMENT

Tremetrics of Texas
Finnigan Corp.
2215 Grand Avenue Parkway
Austin, TX 78728-3812

Attention:

Enclosed you will please find one Tracor Ni-63 Electron Capture Detector (serial # 4803). The detector is a 15mCi source. I request that you dispose of this detector in accordance with NRC regulations.

Please return a Certificate of Destruction to my attention. Thank you for assistance.

Sincerely,

A handwritten signature in cursive script, reading "Jay D. Gile", is written over a horizontal line.

Jay D. Gile, Radiation Safety Officer

U.S.E.P.A.

200 SW 35th Street
Corvallis, Or 97333

MEMO

To: NHEERL-WED Radiation Safety Files
Date: April 14, 1997

The Gas Chromatograph Electron Capture Detectors listed were returned to the manufacturer for disposal:

Tracor	4803	Ni-63	15 mCi (555MBq)
--------	------	-------	-----------------

Sheila A. Monar 4-15-97
Radiation Safety



2215 Grand Avenue Pkwy
Austin, TX 78728-3812
(512) 251-1400
Fax: (512) 251-1596

Please File

May 5, 1997

Ms. Kathy Morton
US EPA
200 Southwest 35th St.
Corvallis, OR 97333

Dear Ms. Kathy Morton:

Enclosed are the disposal letter(s) for the ECD (NI-63) detector(s) that you recently sent to Finnigan Tremetrics for disposal. Any questions regarding these results should be directed to Mr. Carlton Lorring at 512/251-1418.

Enclosed is the preliminary copy of the invoice for the disposal services.

Sincerely,

A handwritten signature in cursive script that reads 'Gary Regier'.

Gary Regier
Factory Service Representative

s/n 4803



BILL/CHARGE TO USFPA
200 Southwest 35th St.

NEW MODEL N/A
 CUSTOMER ID NO. 560 SERV. REQ. DATE N/A

INCIDENT NO. 577 126 00
 INSTRUMENT SERIAL NO. 99999

INSTRUMENT LOC. ORVALLIS DR 97333

TELEPHONE (541) 754-4654 F/E NAME G. P. Rogien
 USER/OPERATOR Kathy MORTON

JOB TYPE: INSTALL WARRANTY CONTRACT BILLABLE RETRO FIELD RETURN OTHER SPECIFY _____

CUST. P.O. 7B0337 NASA

F/E ARRIVAL DATE 4/23/97

JOB COMPLETE DATE 5/6/97

COST - CTR. 579

SERVICE ENG. NO. 1663

JOB COMPLETE YES NO

EXPENSE REPORT

AUTO MILEAGE	_____
ZONE CHARGE	_____
AIRFARE	_____
LODGING	_____
TOLL FEE / PARKING	_____
AUTO RENTAL	_____
SUM TOTAL	_____

RECORD OF WORKING HOURS

1ST DAY	_____	REGULAR HOURS	_____
2ND DAY	_____	WEEKEND HOURS	_____
3RD DAY	_____	HOLIDAY HOURS	_____
4TH DAY	_____	OBSOLETE HOURS	_____
5TH DAY	_____	TRAVEL HOURS	_____
6TH DAY	_____	SUM TOTAL HOURS	_____
7TH DAY	_____		

NOTE: ONE SERVICE REPORT PER WEEK.

PROBLEM

- Customer wanted detector
- Leaves O, N, G3 and SW 4803

ACTION TAKEN

- Disposed to detector
- As requested
- Ref ADA # D4285
- F. P. neto \$2.00 each

COMPONENT S/N	REAS CODE	ITEM CODE	FAIL CODE	PLNT	PART NUMBER	QTY	EX	DESCRIPTION	PRICE EST	ORDER ID

INVOICE SUMMARY ESTIMATE

PARTS	_____
FREIGHT CHG.	_____
EXPENSES	_____
LABOR	<u>12100.00</u>

CUSTOMER ACKNOWLEDGEMENT

This is to acknowledge receipt of the above repair / replacement. I understand that specified in-warranty service is performed at no charge (see terms and conditions "SOTC REV "A") and that all expenses are invoiced in the usual manner. Parts are shipped F.O.B. San Jose, CA. Therefore, customer will be billed for all freight and handling charges. Payment terms: 100% net due 10 days from receipt of invoice.

AUTHORIZED CUSTOMER APPROVAL _____ DATE _____

AUTHORIZED FINNIGAN REPRESENTATIVE G. P. Rogien DATE 5/14/97



ISO 9001 registered Company

TREMETRICS CHROMATOGRAPHY GROUP

2215 Grand Avenue Pkwy
Austin, TX 78728-3812
(512) 251-1400
Fax: (512) 251-1596

RECORD OF RETURN FOR DISPOSAL OF SEALED DETECTOR(S) PER STANDARD
FINNIGAN/TREMETRICS CHROMATOGRAPHY GROUP PROCEDURES

NAME OF VENDOR:

FINNIGAN CORPORATION/TREMETRICS GRP.
2215 GRAND AVE PARKWAY
AUSTIN, TEXAS 78728
(512) 251-1400

DATE OF DISPOSAL:

LICENSE NUMBER:

TEXAS LO1186 AMENDMENT 35
EXPIRES 04/31/2000

DATE RECEIVED | DATE SCRAPPED

04/23/97 | 05/01/97

LICENSEE INFORMATION

COMPANY NAME: U.S.E.P.A. OREGON

Enviromental Research Lab.
220 S.W. 35th Street

CITY: Corvallis
STATE: OR
ZIP: 97353

PERSON RESPONSIBLE FOR CONTROL OF DEVICE

NAME:
TITLE:
TELEPHONE
NUMBER: 541-754-4654

FOR EACH DEVICE PROVIDE THE FOLLOWING

MODEL NUMBER	SERIAL NUMBER	ISOTOPE	ACTIVITY AND UNIT
115500	4803	NI63	Less than 20mci

1997 MAY 12 P 11:41

RADIATION SAFETY OFFICER
CARLTON LORFING

Carlton Lorfing

DYNAMAC CORPORATION

200 SW 35TH STREET
CORVALLIS, OREGON 97333
541-754-4787

Sealed Source Verification Tests

Description: Gas Chromatograph Electron Capture Detector Source
Manufacturer: Tracor
Serial Number: 4803
Radionuclide: Ni-63
Maximum Activity: 555 MBq

Smear Test

Date of Test: April 10, 1997
Results: 1.5 Bq
Less than 185 Bq? Yes
Instrument: GFPC/Scaler NMC S/N 7358; Ludlum S/N 83810

Analyst's Signature Philip A. Monaco
Philip A. Monaco
Radiation Safety

DATE 4-10-97

MEMO

TO: File
FROM: Phil Monaco
DATE: February 12, 1997

SUBJECT: Ni-63 Detector

Bill Griffis removed and turned over to the RSO a Tracor GC electron capture detector containing 15 mCi of Nickel-63 (S/N 4803; Model No. 115500.001; Manufacture Date 1-9-84) The detector is stored in MB 190.

Removable Contamination

Housing	<u>3.6 x 10⁻⁵</u> μ Ci
Exit Vent	<u>ND</u> μ Ci

Less than 0.05 μ Ci Yes No

O.A. Monaco 2-18-97
Radiation Safety GAC 97-1



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
NATIONAL HEALTH AND ENVIRONMENTAL EFFECTS
RESEARCH LABORATORY
WESTERN ECOLOGY DIVISION
200 S.W. 35TH STREET • CORVALLIS, OR 97333

April 10, 1997

OFFICE OF
RESEARCH AND DEVELOPMENT

Tremetrics of Texas
Finnigan Corp.
2215 Grand Avenue Parkway
Austin, TX 78728-3812

Attention:

Enclosed you will please find one Tracor Ni-63 Electron Capture Detector (serial # 4803). The detector is a 15mCi source. I request that you dispose of this detector in accordance with NRC regulations.

Please return a Certificate of Destruction to my attention. Thank you for assistance.

Sincerely,

A handwritten signature in cursive script that reads "Jay D. Gile".

Jay D. Gile, Radiation Safety Officer

U.S.E.P.A.
200 SW 35th Street
Corvallis, Or 97333



United States
Environmental Protection Agency
Washington, DC 20460

PURCHASE ORDER

Submit the Original of the Invoice to:

ENVIRONMENTAL PROTECTION AGENCY
200 SW 35TH STREET
KATHY MARTIN
CORVALLIS, OR 97333

Ship To:

ENVIRONMENTAL PROTECTION AGENCY
200 SW 35TH STREET
STOCKROOM
CORVALLIS, OR 97333

Mark All Packages and Papers with Contract and / or Order Numbers

16. Date of Order 4/9/97	17. Order Number 7B0337NASA	18. Contract Number (if any)	19. Discount Terms N30
20. FOB Point Destination	21. Delivery to FOB Point by ON or before (Date) 2 WAO	22. Person Taking Order/ Quote and Phone Number	
23. Contractor (Name, address; ZIP Code) Finnegan Corporation 2215 Grand Ave Pkwy Austin TX 78728-3812 Attn: RA# ARA04285		24. Type of Order <input type="checkbox"/> a. Purchase <input checked="" type="checkbox"/> b. Delivery provisions on the reverse are deleted. The delivery order is subject to the terms and conditions of the contract. (See Block 13) <input type="checkbox"/> Oral <input checked="" type="checkbox"/> Written <input type="checkbox"/> Confirming	

Item Number (a)	Supplies or Services (b)	Quantity Ordered (c)	Unit (d)	Estimated Unit Price (e)	Unit Price (f)	Amount (g)	Quantity Accepted (h)
	Provide all labor, supplies and equipment necessary for disposal of one (1) Tracor Ni-63 ECD, SN: 4803, in accordance with all proper regulations. Vendor shall provide statement verifying disposal.	1	ea		100.00	200.00	
VENDOR HAS BEEN ADVISED OF ALL APPLICABLE TERMS & CONDITIONS						Total \$	200.00

26. Financial and Accounting Data

Line 9726	DCN (Max 8) NC0013	Budget/FYs (Max 4) 9798	Appropriation Code (Max 6) 6	Budget Org/Code (Max 7) 26100NB	Program Element (Max 9) AZX	Object Class (Max 4) 2504	SFO 33 (Max 2)
1	2	3	4	5	6	7	8
1	200.00						

27. United States of America By (Signature) <i>Kathy Martin</i>	28. Typed Name and Phone of Contracting Officer Kathy Martin, Purchasing Agent	Phone 541-754-4654
--------------------------------------------------------------------	-----------------------------------------------------------------------------------	-----------------------

WIPE TEST REPORT

CUSTOMER : U.S. Environmental Protection Agency

DIVISION : _____

ADDRESS : Corvallis Or.

TELEPHONE : _____

ATTENTION : _____

DETECTOR TYPE : N163 SERIAL NUMBER : 4803

INDIVIDUAL PERFORMING WIPE : M. Guerra

DATE WIPE PERFORMED : 12 16 191

TEST RESULTS

- LESS THEN .0005 UCI (NORMAL LIMIT)
- BETWEEN .0005 & .005 UCI (OUTSIDE NORMAL LIMITS)
- UCI (CALCULATED)

BY : Mary Guerra , INSPECTOR
TEXAS LICENSE : 6-1186

NEXT WIPE TEST DICTATED BY TERMS OF YOUR LICENSE.

STATE OR NRC LICENSE NUMBER : _____

EXPIRATION DATE : ___/___/___

STATE OF : _____



A Baker Hughes company

Analytical Division

TREMOMETRICS Inc. 6500 Tracor Lane Austin, Texas 78725-2100 Telephone 512: 929-2051



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
 ENVIRONMENTAL RESEARCH LABORATORY
 200 S.W. 35TH STREET
 CORVALLIS, OREGON 97333

RADIOACTIVE
 SHIPPING CERTIFICATE

COMPOUND (Chemical Form): Nickle Solid on Foil (instrument)

RADIONUCLIDE: ⁶³Ni

RADIOACTIVITY (Total): 15 mCi (date): 1-9-84 S/N 4803
 TRACOR

SPECIFIC ACTIVITY: NA

SWIPES (Location) beta: Ø net
 (Foil Housing) gamma: NA
 # 115500.0001

(Location) beta: Ø net
 (detector exit) gamma: NA

SHIPPED TO: TREMETRICS, INC
 (name)
2215 GRAND AVENUE PARKWAY
AUSTIN, TX 78728
 (address)
ATTN: AR 1270
License # L01186 (TEXAS)

1-2-91
 (date)
1-800-876-6711
 (phone)

ACKNOWLEDGEMENT OF RECEIPT: not applicable

I, _____,
 (name/title) received the above material
 on the _____ day of _____, 19____.

 (signature)

Please return to _____, Radiation Safety Office,
 U.S. EPA Corvallis Environmental Research Lab, 200 SW 35th Street,
 Corvallis, Oregon 97333. (503) 757-4787 or 757-4600.

Purchase Order

Address —
Original of the Invoice to:

ENVIRONMENTAL PROTECTION AGENCY
200 SW 35TH STREET
KATHY MARTIN
CORVALLIS, OR 97333

Ship To:

ENVIRONMENTAL PROTECTION AGENCY
200 SW 35TH STREET
STOCKROOM
CORVALLIS, OR 97333

ATTN: Radiation Safety

Mark All Packages and Papers with Contract and/or Order Numbers

Order	18. Order Number	19. Contract Number (if any)	20. Discount Terms
91	2B0056NASA		Net 30
PP&ADD	22: Delivery to FOB Point by On or before (Date)	23: Person Taking Order/Quote and Phone No.	
	10-14 DARO	Gary	
25. Type of Order		Reference your quote (See block 23)	
<input checked="" type="checkbox"/> a. Purchase		800-876-6711	
Please furnish the above on the terms specified on both sides of this order and on the attached sheets, if any, including delivery as indicated.			
<input type="checkbox"/> b. Delivery provisions on the reverse are deleted. The delivery order is subject to the terms and conditions of the contract. (See Block 19)			
c. <input type="checkbox"/> Oral <input checked="" type="checkbox"/> Written <input type="checkbox"/> Confirming			

26. Schedule						
Supplies or Services (b)	Quantity Ordered (c)	Unit (d)	Estimated Unit Price (e)	Unit Price (f)	Amount (g)	Quantity Accepted (h)
Recondition Electron Capture Detector Price reflects cleaning charge and replacement of foil (only if necessary)	1	JOB		800.00	800.00	
ESTIMATED SHIPPING					15.00	
<p>NOTICE TO SUPPLIERS (APR 1984)</p> <p>Vendor HAS BEEN APPRAISED OF ALL APPLICABLE TERMS & CONDITIONS</p> <p>Place a bid order ONLY if your price does not exceed the sum line item or total price in the Schedule. Submit to the Contracting Officer. If you cannot perform in accordance with this order, WITHHOLD PERFORMANCE and advise the Contracting Officer immediately, giving your quotation.</p>						
					Total \$	815.00

28. Typed Name and Title of Contracting Officer

Kathy Martin, Purchasing Agent



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
ENVIRONMENTAL RESEARCH LABORATORY
200 S.W. 35TH STREET
CORVALLIS, OREGON 97333

November 25, 1991

Tremetrics, Inc.
2215 Grand Avenue Parkway
Austin, TX 78728

Attention Service Department:

Enclosed is one (1) electron capture gas chromatographic detector model #115500.0001, serial number 4803, containing 15 millicuries of nickel 63. The detector experienced sudden sensitivity loss. It seems unlikely that the detector foil experienced any exposure to gross contamination since the detector is used on a capillary system at high split ratios. Further examination of the detector reveals that the ceramic material used to insulate the electrodes has badly deteriorated, especially in the upper electrode. It seems likely that leakage in the area could be causing the sensitivity problem we are experiencing.

Recondition the detector as necessary. Enclosed are copies of our NRC license and a purchase order for the cost of the required work. If you have further questions, you may contact me at 503-757-4761. Thank you for your assistance.

A handwritten signature in black ink, appearing to read "W. Griffis", with a long, sweeping underline.

William L. Griffis
Chemist
Wildlife Ecology Team

Note: The return authorization for this work is #AR 1270.



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
 ENVIRONMENTAL RESEARCH LABORATORY
 200 S.W. 35TH STREET
 CORVALLIS, OREGON 97333

RADIOACTIVE
 SHIPPING CERTIFICATE

COMPOUND (Chemical Form): GC Detector H-P S/N F4487

RADIONUCLIDE: ⁶³Ni

RADIOACTIVITY (Total): 15 mCi (date): 5/92

SPECIFIC ACTIVITY: N/A

SWIPES (Location) Detector beta: ∅

P.A. Monahan
12/5/94

gamma: N/A

(Location) Instrument Housing beta: ND (NOT Detectable)

gamma: N/A (NOT Applicable)

SHIPPED TO: Oregon State University
 (name)

12/5/94
 (date)

Inse # ORE-0005-3
CORVALLIS OR 97331

(phone)

(address)
Radiation Safety Office

ACKNOWLEDGEMENT OF RECEIPT:

I, Dan Harlan / Radiation Specialist
 (name/title) received the above material

on the 5 day of December, 1994.

Dan Harlan
 (signature)

Please return to J. G. Cole, Radiation Safety Office,
 U.S. EPA Corvallis Environmental Research Lab, 200 SW 35th Street,
 Corvallis, Oregon 97333. (503) 757-4787 or 757-4600.



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
 ENVIRONMENTAL RESEARCH LABORATORY
 200 S.W. 35TH STREET
 CORVALLIS, OREGON 97333

RECEIVED
 SEP 29 1994
 RADIATION, CHEMICAL &
 BIOLOGICAL SAFETY OFFICE
 MICHIGAN STATE UNIVERSITY

RADIOACTIVE
 SHIPPING CERTIFICATE

COMPOUND (Chemical Form): Sources

RADIONUCLIDE: ⁹⁰Sr; ²¹⁰Pb;

RADIOACTIVITY (Total): ⁹⁰Sr (6.5 μ li); ²¹⁰Pb (5.6 μ li) (date): 9/94

SPECIFIC ACTIVITY: 79450 79451

SWIPES (Location) beta: _____

gamma: _____

(Location) beta: _____

gamma: _____

*sealed source
 Backscatter
 gauge*

SHIPPED TO: Radiation Safety Officer
 (name)

9-28-94
 (date)
517-355-0153
 (phone)

Office of Radiation, Chemical & Biological Safety
C-124 Engineering Research Complex
 (address)
~~East Lansing~~ Michigan State University
East Lansing, MI 48824

ACKNOWLEDGEMENT OF RECEIPT:

I, Kristin Erickson RSO
 (name/title) KRISTIN ERICKSON received the above material
 on the 27th day of September, 1994

Kristin F. Erickson
 (signature)

Please return to Jay D. Gile, Radiation Safety Office,
 U.S. EPA Corvallis Environmental Research Lab, 200 SW 35th Street,
 Corvallis, Oregon 97333. (503) 757-4787 or 757-4600.

CORVALLIS ENVIRONMENTAL RESEARCH LAB
200 S. W. 35th STREET
CORVALLIS, OREGON 97333
BACKSCATTER GAUGE

<u>Isotope Sources</u>	Manufacturer	Activity (A_0) (Date)	Present Activity (9/15/94)
Strontium-90	ICN	10 μ Ci (4/76)	6.45 μ Ci
Lead-210	ICN	10 μ Ci (2/76)	5.6 μ Ci

To whom it may concern:

The listed isotope sources are included in this package. The gauging device/instrument is being shipped under separate package to you. There are no radioactive sources in the gauging device.

U.S. Environmental Protection Agency
Environmental Research Laboratory - Corvallis

RADIOACTIVE MATERIAL TRANSFER

Date: 5-11-94 Time: _____ Log No.: 94-5

In House Transfer: From _____ to _____

Received from: _____ P.O. # _____

Carrier: _____ No. _____

Shipped To: Perkin-Elmer Co RMA# #SG11406NH (See Attached)

Carrier: _____ No. _____

License: _____

Isotope	mCi	Assay date	Chemical Form
⁶³ Ni	15	3/84	foil solid spec form SP 3845

	mrem/hr @ contact	mrem/hr @ 3 ft.	swipes: csm	dom/100cm ²
outside shipping container				
packing material	 	 	 	
inner container	 	 	 	
primary container	 	 	 	
instruments used:				

Labels OK _____ Package OK _____ Dry Ice OK _____

Material stored in RSO _____

Material Released to: _____ date/time: _____

Comments: _____

Responsible Safety: D. A. Mena Date: 5/11/94

2-Way Memo

Subject: Our Purchase Order #4B0316NDSA
Your RMA #SG11406NH

To : Perkin-Elmer Company
761 Main Avenue
Norwalk, CT 06859
Attn: RMA #SG11406NH

INSTRUCTIONS
Use routing symbols whenever possible.
SENDER (Originator of message):
Use brief, informal language.
Conserve space.
Forward original and one copy.
RECEIVER (Replier to message):
Reply below the message, keep one copy, return one copy.

DATE OF MESSAGE	ROUTING SYMBOL
5/3/94	
SIGNATURE OF ORIGINATOR	
<i>Kathy Martin</i>	
TITLE OF ORIGINATOR	
Purchasing Agent 503-754-4654	

MESSAGE

The enclosed ECD Module #117V, N600-0113 is being returned to your company for full credit. Please issue a Credit Memo in the amount of \$1287.80 for its' return.

If you have any questions, please feel free to call our office at the number listed above.

REPLY

^{63}Ni $A_1 = 1000 \text{ Ci}$

Expected Arhides spec. from
 $10^{-2} A_2 = 1000 \times 1 \times 10^{-2} = 10 \text{ Ci}$

PE Dekker = 15 mCi

From : U.S. Environmental Protection Agency
200 S.W. 35th Street
Corvallis, Oregon 97333

DATE OF REPLY	ROUTING SYMBOL
SIGNATURE OF REPLIER	
TITLE OF REPLIER	

ESTIQ ALL 87 5355 FREE

2058M 2180273620

RECEIVED

9240

481

503

ORIGIN COPY

CUSTOMER PLEASE REMOVE ONE OF THESE LABELS AND PLACE IT ABOVE THE AIRBILL ON YOUR PACKAGE

029E2208T2 2180273620

029E2208T2 2180273620

SENDER'S FEDERAL EXPRESS ACCOUNT NUMBER: 1167-7564-6 Date: 5-11-94

From (Your Name) Please Print: KATHY MARTIN Your Phone Number (Very Important): 503 754-4600 To (Recipient's Name) Please Print: PERKIN ELMER COMPANY Recipient's Phone Number (Very Important): 800 203-763-4811

Company: ENVIRONMENTAL PROTECTION AGENC Department/Floor No.: RMA SGI1406NH

Street Address: 200 SW 35TH ST Exact Street Address (We Cannot Deliver to P.O. Boxes or P.O. Zip Codes): 761 MAIN AVENUE

City: CORVALLIS OR ZIP Required: 9 7 3 3 3 City: NORWALK CT ZIP Required: 06859

YOUR INTERNAL BILLING REFERENCE INFORMATION (optional) (First 24 characters will appear on invoice): DANGEROUS GOODS IN EXCEPTED QUANTITY. SHIPPERS DECL. NO. 1

IF HOLD FOR PICK-UP, Print FEDEX Address Here: Street: City: State: ZIP Required:

PAYMENT: Cash Check Acct. No. Rec'd Bill Payment (FedEx Acct. No.) Bill Credit Card Bill Credit Card No. below (req'd) Exp. Date

SERVICES (Check only one box)		DELIVERY AND SPECIAL HANDLING (Check services required)		PACKAGES	WEIGHT in Pounds Div	YOUR DECLARED VALUE (See 4pt)
Priority Overnight (Delivery by next business morning) 11 <input type="checkbox"/> YOUR PACKAGING 16 <input type="checkbox"/> FEDEX LETTER 12 <input type="checkbox"/> FEDEX PAK * 13 <input type="checkbox"/> FEDEX BOX 14 <input type="checkbox"/> FEDEX TUBE Economy Two-Day (Delivery by second business day) 30 <input type="checkbox"/> ECONOMY Freight Service (for Extra Large or any package over 150 lbs) 70 <input type="checkbox"/> OVERNIGHT FREIGHT ** *Declared Value Limit \$100 **Call for delivery schedule	Standard Overnight (Delivery by next business morning) 51 <input type="checkbox"/> YOUR PACKAGING 56 <input type="checkbox"/> FEDEX LETTER * 52 <input type="checkbox"/> FEDEX PAK * 53 <input type="checkbox"/> FEDEX BOX 54 <input type="checkbox"/> FEDEX TUBE Government Overnight (Restricted to authorized users only) 46 <input type="checkbox"/> GOVT LETTER 41 <input type="checkbox"/> GOVT PACKAGE 80 <input type="checkbox"/> TWO-DAY FREIGHT ** **Call for delivery schedule	1 <input type="checkbox"/> HOLD FOR PICK-UP (See in Box 11) 2 <input type="checkbox"/> DELIVER WEEKDAY 3 <input type="checkbox"/> DELIVER SATURDAY (Extra charge) (Not available to all locations) 4 <input type="checkbox"/> DANGEROUS GOODS (Extra charge) 5 <input type="checkbox"/> 6 <input type="checkbox"/> DRY ICE _____ lbs 7 <input type="checkbox"/> OTHER SPECIAL SERVICE _____ 8 <input type="checkbox"/> 9 <input type="checkbox"/> SATURDAY PICK-UP (if extra charge) 10 <input type="checkbox"/> 11 <input type="checkbox"/> DESCRIPTION _____ 12 <input type="checkbox"/> HOLIDAY DELIVERY (if offered) (Extra charge)	Total Total Total DIM SHIPMENT (if applicable) Weight: _____ lbs Received At: 1 <input type="checkbox"/> Regular Stop 3 <input type="checkbox"/> Drop Box 2 <input type="checkbox"/> On-Call Stop 5 <input type="checkbox"/> Station	SERVICE CONDITIONS, DECLARED VALUE AND LIMIT OF LIABILITY Use of this airbill constitutes your agreement to the service conditions in our current Service Guide, available upon request. See back of sender's copy of this airbill for information. Service conditions may vary for Government Overnight Service. See U.S. Government Service Guide for details. We will not be responsible for any claim in excess of \$100 per package, whether the result of loss, damage, delay, non-delivery, misdelivery, or re-shipment, unless you declare a higher value, pay an additional charge, and document your actual loss for a timely claim. Limitations found in the current Federal Express Service Guide apply. Your right to recover from Federal Express for any loss, including intrinsic value of the package, loss of sales, income interest, profit, attorney's fees, costs, and other forms of damage whether direct, incidental, consequential, or special is limited to the greater of \$100 or the declared value specified to the bill. Recovery cannot exceed actual documented loss. The maximum Declared Value for FedEx Letter and FedEx Pak packages is \$100.00. In the event of untimely delivery, Federal Express will at your request and with some limitations, refund all transportation charges paid. See Service Guide for further information. Sender authorizes Federal Express to deliver this shipment without obtaining a delivery signature and shall indemnify and hold harmless Federal Express from any claims resulting therefrom. Release Signature: _____ Date/Time: _____ FedEx Emp No. _____	Federal Express Use Base Charges Declared Value Charge Other 1 Other 2 Total Charges REVISION DATE 8/91 PART #137204 FXEM 2-92 FORMAT #099 © 1990 BY FEDEX PRINTED IN U.S.A.	

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
ENVIRONMENTAL RESEARCH LABORATORY—CORVALLIS

89-8

SUBJECT Addition of Electron Capture Detector to
ERL-C US EPA inventory

FROM Phil Monaco, Radiation Safety Office

TO File

DATE 12/15/89

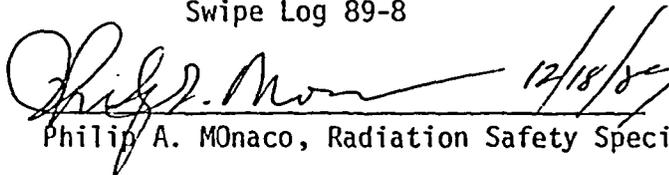
It was discovered when completing the semi-annual sealed-source inventory that an additional Ni-63 Electron Capture Detector (ECD) containing 15 mCi of Ni-63 was brought on site. It occurred during maintenance of the P-E 2000 Gas Chromatograph (MB 228B). The inventory should read as follows:

Addition: ECD Perkin-Elmer 089 Ni-63 15 mCi 09/82 Mb228b
Swipe Tested 12/15/89 vent 5.1×10^{-5} uCi < 0.005 uCi
house 2.6×10^{-5} < 0.005 uCi

Removed to storage:

ECD Perkin-Elmer 676 Ni-63 15mCi 11/84 MB190
Swipe Tested 12/15/89 vent < LLD₉₅ < 0.005 uCi
house < LLD₉₅ < 0.005

Swipe Log 89-8

 12/15/89
Philip A. Monaco, Radiation Safety Specialist



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
 ENVIRONMENTAL RESEARCH LABORATORY
 200 S.W. 35TH STREET
 CORVALLIS, OREGON 97333

676

SHIPPING CERTIFICATE

Three (3) radioactive sources as described below:
 COMPOUND (Chemical Form): Nickel

RADIONUCLIDE: Ni-63

Manufacturer: Perkin-Elmer

RADIOACTIVITY:	(1) S/N 439	10 mCi
	(2) S/N 676	15 mCi
	(3) S/N 089	15 mCi
SPECIFIC ACTIVITY:	Total	40 mCi

Removable Contamination
 Swipe Test (uCi)

0.0001
 0.0001
 0.028

SHIPPED TO: Nuclear Development Corp
 name
Attn: Larry Keating
2837 Alt Blvd. N.
Grand Island, NY 14072
 address

12-22-92
 date
(716) 773-7634
 phone

Philip A. Monaco

Philip A. Monaco, Health and Radiation Safety
 ManTech Environmental Technology, Inc.
 503-754-4787

"RADIOACTIVE"

This package conforms to the conditions and limitations specified in 49
 CFR 173.421 for exempted radioactive material, limited quantity, n.o.s.,
 UN2910

EXPRESS

USE THIS AIRBILL FOR DOMESTIC SHIPMENTS WITHIN THE CONTINENTAL U.S.A., ALASKA AND HAWAII.
USE THE INTERNATIONAL AIR WAYBILL FOR SHIPMENTS TO PUERTO RICO.
QUESTIONS CALL 800-238-8305 TOLL FREE.

PACKAGE TRACKING NUMBER

8307459204

811H 8307459204



6080
0715

Sender's Federal Express Account Number
1167-7564-6

Date
12-23-92

From (Your Name) Please Print
JAY D. GILE

Your Phone Number (Very Important)
503-754-4600

To (Recipient's Name) Please Print
LARRY KEATING

Recipient's Phone Number (Very Important)
716 773-7634

Company
ENVIRONMENTAL PROTECTION AGENCY

Department/Floor No.

Company
NRD, INC.

Department/Floor No.

Street Address
200 SW 35TH ST

Exact Street Address (We Cannot Deliver to P.O. Boxes or P.O. Zip Codes.)
2937 ALT BLVD. N.

City
CORVALLIS

State
OR

ZIP Required
97333

City
GRAND ISLAND

State
NY

ZIP Required
14072

YOUR BILLING REFERENCE INFORMATION (FIRST 24 CHARACTERS WILL APPEAR ON INVOICE.)
EXCEPTED PACKAGE. SHIPPERS DECLARATION NOT REQUIRED

IF HOLD FOR PICK-UP, Print FEDEX Address Here
Street Address

PAYMENT: Bill Sender Bill Recipient's FedEx Acct. No. Bill 3rd Party FedEx Acct. No. Bill Credit Card
RADIOACTIVE MATERIAL, EXCEPTED PACKAGE -ARTICLES UN2910

City
State
ZIP Required

8307459204
8307459204

SERVICES	DELIVERY AND SPECIAL HANDLING	PACKAGES	WEIGHT	YOUR DECLARED VALUE (See page 1)	OTHER SIZE
<input checked="" type="checkbox"/> PRIORITY 1 Overnight Delivery	<input type="checkbox"/> HOLD FOR PICK-UP (See page 1)	1	14.5		
<input type="checkbox"/> OVERNIGHT LETTER	<input type="checkbox"/> DELIVER WEEKDAY		LBS		
<input type="checkbox"/> COURIER-PAK	<input type="checkbox"/> DELIVER SATURDAY (Extra charge)		LBS		
<input type="checkbox"/> OVERNIGHT ENVELOPE	<input type="checkbox"/> DANGEROUS GOODS (Extra charge)		LBS		
<input type="checkbox"/> OVERNIGHT BOX	<input type="checkbox"/> CONSTANT SURVEILLANCE SERVICE (CSS) (Extra charge) (Passport Signatures not Applicable)	Total	Total	Total	
<input type="checkbox"/> OVERNIGHT TUBE	<input type="checkbox"/> DAT ICE (See page 1)	Received At			
<input type="checkbox"/> STANDARD AIR Delivery not later than second business day	<input type="checkbox"/> OTHER SPECIAL SERVICE	1 <input type="checkbox"/> Regular Stop			
		2 <input type="checkbox"/> On-Call Stop			
		3 <input type="checkbox"/> Drop Box			
		4 <input type="checkbox"/> B.S.C.			
		5 <input type="checkbox"/> Station			
	<input type="checkbox"/> SATURDAY PICK-UP (Extra charge)	FEDEX Corp. Employee No.			
	<input type="checkbox"/> HOLIDAY DELIVERY (Extra charge)	Date/Time for FEDEX Use			

SERVICE CONDITIONS, DECLARED VALUE AND LIMIT OF LIABILITY

Use of the label constitutes your agreement to the service conditions in our current Service Guide which is available upon request. See back of sender's copy of the label for further information.

We will not be responsible for any claim in excess of \$100 per package, whether the result of loss, damage, delay or non-delivery, unless you specify a higher amount in the space to the left, pay 43¢ per additional \$100 specified and document your actual loss in the event of a claim. Maximum amount limitations found in the current Federal Express Service Guide apply. Your rights to recover from Federal Express for loss of the intrinsic value of the package, as well as for loss of sales, income, interest, profit, attorneys fees, costs and any other form of damage, whether direct, incidental, consequential or special, is limited to the greater of \$100 or the declared value indicated on the label. In no event shall your recovery exceed your actual loss.

In the event of untimely delivery, Federal Express will at your request and with such limitations, refund all transportation charges (and give Service Guide for further information).

Sender authorizes Federal Express to deliver this shipment without obtaining a delivery signature and shall indemnify and hold harmless Federal Express from any claims resulting therefrom.

Release Signature: *Jay D. Gile*

Federal Express Use

Base Charges

Declared Value Charge

Other 1

Other 2

Total Charges

PART 6111800
REVISION DATE 1/88
PRINTED IN U.S.A. SACFL

009

© 1988 F.E.C.

ORIGIN COPY

394
OF
50



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
ENVIRONMENTAL RESEARCH LABORATORY
200 S.W. 35TH STREET
CORVALLIS, OREGON 97333

December 22, 1992

Nuclear Development Corp.
Attn: Larry Keating
2937 Alt Blvd. N.
Grand Island, NY 14072
(716) 773-7634

Dear Larry:

RE: Purchase Order #3B0177NNSA

Please destroy the three (3) enclosed cylinders of NI-63 ECD detector.

Send the Certificate of Destruction to:

US EPA
ATTN Kathy Martin
200 SW 35th Street
Corvallis, OR 97333

I would appreciate it if you could send a copy of the certificate to Jay Gile at the above address.

If you have any questions, please call me at (503) 754-4501 or Jay at (503) 754-4721.

Thank you,

A handwritten signature in cursive script that reads "Lori L. McCartan".

Lori L. McCartan

U.S. EPA
ENVIRONMENTAL RESEARCH LABORATORY - CORVALLIS

Log No. 92

RADIATION CONTAMINATION SURVEY

Date: 12/15/92 Type of Survey: Removable Contamination
Isotope(s): ⁶³Ni P-E 089 Detector For Shipping

Gross Background Counts: 3 ± CPM Total Count Time (min.): 1

Lower Limits of Detection: $(\sqrt{3/1})2.96 = 5$ cpm

Instrument Used: GPC LSC Ion Chamber Model: NMC 7358 S/N: _____
 GM Scintillation Ni 63 STD 5.0 Ci

Background: _____ CPM±SD _____ DPM±SD Standard (5529/11,000): 50% Lf

Swipe No.	Room No.	Swipe Description	Nuclide: _____ per 100 cm ²			Nuclide: _____ per 100 cm ²		
			CPM±SD	Net DPM	Net Activity	CPM±SD	Net DPM	Net Activity
		inlet	753	750	2.3×10^{-4} dCi			
		collector housing wet	31,139	62,272	0.028			
		inlet	60	120	5.4×10^{-5}			
		thermal box	34	68	3.1×10^{-5}			
		outlet	2743	5,486	2.47×10^{-3}			
		housing	110	220	9.9×10^{-5}			
		collector housing (dry)	10	20	9.0×10^{-6}			
		collector (dry)	534	1,068	4.8×10^{-4}			
		collector housing (dry)	49	98	4.4×10^{-5}			
		housing	120	240	1.1×10^{-4}			
		collector	121	142	6.4×10^{-5}			
		shipping bag	6	9	LLD95			

Comments: _____
Radiation Safety _____ Date _____



DIVISION OF SAFETY AND HEALTH
RADIOACTIVE MATERIALS LICENSE
AMENDMENT

PURSUANT TO THE LABOR LAW AND INDUSTRIAL CODE RULE 38, AND IN RELIANCE ON STATEMENTS AND REPRESENTATIONS HERETOFORE MADE, BY THE LICENSEE DESIGNATED BELOW, A LICENSE IS HEREBY ISSUED AUTHORIZING SUCH LICENSEE TO RECEIVE, POSSESS, USE AND TRANSFER RADIOACTIVE MATERIAL(S) DESIGNATED BELOW; AND TO USE SUCH RADIOACTIVE MATERIAL(S) FOR THE PURPOSE(S) AND AT THE PLACE(S) DESIGNATED BELOW. THIS LICENSE IS SUBJECT TO ALL APPLICABLE RULES, REGULATIONS, AND ORDERS NOW OR HEREAFTER IN EFFECT OF ALL APPROPRIATE REGULATORY AGENCIES AND TO ANY CONDITIONS SPECIFIED BELOW.

1. NAME OF LICENSEE NRD, Inc.	3. LICENSE NUMBER 1391-1811
2. ADDRESS OF LICENSEE 2937 Alt Boulevard North Grand Island, New York 14072	4. EXPIRATION DATE July 31, 1993
	5a. REFERENCE NO. b. AMENDMENT NO. 2 27

Amendments Nos. 4, 6, 8, 10, 13, 15, 17, 23 and 24 Deleted from the License.

9. Authorized use:

Condition 4. Expiration Date changed.

Condition 12. Changed to read:

- 2. License Renewal Request dated June 10, 1990, signed by J. David McGraw with Licensee Annual financial report for 1990.

*Condition (Item)

Maria L. Colavito, Director
for: THE COMMISSIONER OF LABOR

RMP Pratt
by: Rose Marie Pratt
Associate Radiophysicist

DATE: January 10, 1991
RMP:wp



**RADIOACTIVE MATERIALS LICENSE
AMENDMENT**

PURSUANT TO THE LABOR LAW AND INDUSTRIAL CODE RULE 38, AND IN RELIANCE ON STATEMENTS AND REPRESENTATIONS HERETOFORE MADE BY THE LICENSEE DESIGNATED BELOW, A LICENSE IS HEREBY ISSUED AUTHORIZING SUCH LICENSEE TO RECEIVE, POSSESS, USE AND TRANSFER RADIOACTIVE MATERIALS(S) DESIGNATED BELOW; AND TO USE SUCH RADIOACTIVE MATERIALS FOR THE PURPOSE(S) AND AT THE PLACE(S) DESIGNATED BELOW. THIS LICENSE IS SUBJECT TO ALL APPLICABLE RULES, REGULATIONS, AND ORDERS NOW OR HEREAFTER IN EFFECT OF ALL APPROPRIATE REGULATORY AGENCIES AND TO ANY CONDITIONS SPECIFIED BELOW.

1. NAME OF LICENSEE NRD, Inc.	3. LICENSE NUMBER 1391-1811
2. ADDRESS OF LICENSEE 2937 Alt Boulevard North Grand Island, New York 14072	4. EXPIRATION DATE July 31, 1990 5a. REFERENCE NO. b. AMENDMENT NO. 2 24

- | | | |
|------------------------------------------------------------------------------------------|----------------------------------------------------------|---------------------------------------------------------------------------------------------------|
| 5. Radioactive materials (element & mass no.)

A. (3) Nickel 63
B. Polonium 210 | 7. Chemical and/or physical form

A. Any
B. Any | 8. Maximum quantity licensee may possess at any one time

A. (3) 10 Curies
B. 100 Curies |
|------------------------------------------------------------------------------------------|----------------------------------------------------------|---------------------------------------------------------------------------------------------------|

Amendments Nos. 4, 6, 8, 10, 13, 15 and 17 Deleted from the License.

9. Authorized use:

*Conditions 8.A.(5) and 8.B. Maximum quantity licensee may possess at any one time increased.

*Condition 12. Document added:

BB. His letter dated November 16, 1987, signed by J. David McGraw.

*Condition (Item)

Robert Gollnick, Director
for: THE COMMISSIONER OF LABOR

George L. Kasyk
by George L. Kasyk
Associate Radiophysicist

TE: February 11, 1988
GLK:wp

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
ENVIRONMENTAL RESEARCH LABORATORY—CORVALLIS

89-8

SUBJECT Addition of Electron Capture Detector to
ERL-C US EPA inventory

FROM Phil Monaco, Radiation Safety Office

TO File

DATE 12/15/89

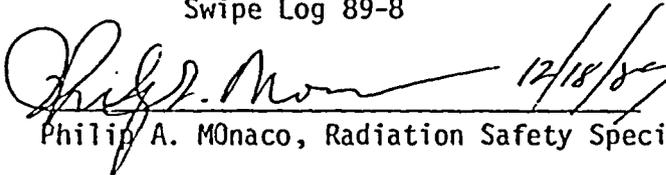
It was discovered when completing the semi-annual sealed-source inventory that an additional Ni-63 Electron Capture Detector (ECD) containing 15 mCi of Ni-63 was brought on site. It occurred during maintenance of the P-E 2000 Gas Chromatograph (MB 228B). The inventory should read as follows:

Addition:	ECD Perkin-Elmer 089	Ni-63	15 mCi	09/82	Mb228b
	Swipe Tested 12/15/89	vent	5.1×10^{-5} uCi	<0.005uCi	
		house	2.6×10^{-5}	<0.005uCi	

Removed to storage:

	ECD Perkin-Elmer 676	Ni-63	15mCi	11/84	MB190
	Swipe Tested 12/15/89	vent	<LLD ₉₅	<0.005uCi	
		house	<LLD ₉₅	<0.005	

Swipe Log 89-8


Philip A. Monaco, Radiation Safety Specialist

EXPRESS

USE THIS AIRBILL FOR DOMESTIC SHIPMENTS WITHIN THE CONTINENTAL U.S.A., ALASKA AND HAWAII.
USE THE INTERNATIONAL AIR WAYBILL FOR SHIPMENTS TO PUERTO RICO.
QUESTIONS? CALL 800-238-8359 TOLL FREE.

PACKAGE TRACKING NUMBER **8307459204**

8111H **8307459204**



6080
0715

Sender's Federal Express Account Number **1167-7564-6**
Date **12-23-92**

From (Your Name) Please Print **JAY D. GILE**

Your Phone Number (Very Important) **503-754-4600**

To (Recipient's Name) Please Print **LARRY KEATING**

Recipient's Phone Number (Very Important) **716-773-7634**

Company **ENVIRONMENTAL PROTECTION AGENCY**
Department/Floor No.

Company **NRD, INC.**
Department/Floor No.

Street Address **200 SW 35TH ST**

Exact Street Address (We Cannot Deliver to P.O. Boxes or P.O. Zip Codes.)
2937 ALT BLVD. N.

City **CORVALLIS** State **OR** ZIP Required **97333**

City **GRAND ISLAND** State **NY** ZIP Required **14072**

394
0F
SC

YOUR BILLING REFERENCE INFORMATION (FIRST 24 CHARACTERS WILL APPEAR ON INVOICE)
EXCEPTED PACKAGE. SHIPPERS DECLARATION NOT REQUIRED

IF HOLD FOR PICK-UP, Print FEDEX Address Here
Street Address

PAYMENT: Bill Sender Bill Recipient's FedEx Acct. No. Bill 3rd Party FedEx Acct. No. Bill Credit Card
Fill in Account Number below Fill in Account Number below Fill in Credit Card Number below
RADIOACTIVE MATERIAL, EXCEPTED PACKAGE - ARTICLES UN2910

City State ZIP Required

ORIGIN COPY

SERVICES

PRIORITY OVERNIGHT DELIVERY **OVERNIGHT LETTER**

COURIER-PAK OVERNIGHT ENVELOPES

OVERNIGHT BOX

OVERNIGHT TUBE

STANDARD AIR Delivery not later than second business day

Declared Value Limit \$100.

DELIVERY AND SPECIAL HANDLING

HOLD FOR PICK-UP (if on Box 14)

DELIVER WEEKDAY

DELIVER SATURDAY (Extra charge)

DANGEROUS GOODS (Extra charge)

CONSTANT SURVEILLANCE SERVICE (CSS) (Extra charge) (Please Sign and Seal)

DRY ICE Lbs.

OTHER SPECIAL SERVICE

SATURDAY PICK-UP (Extra charge)

HOLIDAY DELIVERY (if offered) (Extra charge)

PACKABLES	WEIGHT	TOTAL DECLARED VALUE (See 744)	OVER SIZE
1	LBS		
2	LBS		
3	LBS		
4	LBS		
Total	Total	Total	

Received At
 Regular Stop
 On-Call Stop
 Drop Box B.S.C. Station

FEDEX Corp. Employee No.

Date/Time for FEDEX Use

SERVICE CONDITIONS, DECLARED VALUE AND LIMIT OF LIABILITY

Use of this airbill constitutes your agreement to the service conditions in our current Service Guide which is available upon request. See back of sender's copy of the airbill for further information.

We will not be responsible for any claim in excess of \$100 per package, whether the result of loss, damage, delay or non-delivery, unless you specify a higher amount in the space to the left, pay 40¢ per additional \$100 specified and document your actual loss in the event of a claim. Maximum amount limitations found in the current Federal Express Service Guide apply. Your rights to recovery from Federal Express for loss of the intrinsic value of the package, as well as for loss of sales, income, interest, profit, attorney's fees, costs and any other form of damage whether direct, incidental, consequential or special is limited to the greater of \$100 or the declared value specified to the left. In no event shall your recovery exceed your actual loss.

In the event of untimely delivery Federal Express will at your request and with some limitations, refund all transportation charges paid. See Service Guide for further information.

Sender authorizes Federal Express to deliver this shipment without obtaining a delivery signature and shall indemnify and hold harmless Federal Express from any claims resulting therefrom.

Release Signature *Jay D. Gile*

Federal Express Use

Base Charges

Declared Value Charge

Other 1

Other 2

Total Charges

PART #111800
REVISION DATE 1/94
PRINTED IN U.S.A. S.R.C.F.
009
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8307459204
8307459204



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
ENVIRONMENTAL RESEARCH LABORATORY
200 S.W. 35TH STREET
CORVALLIS, OREGON 97333

December 22, 1992

Nuclear Development Corp.
Attn: Larry Keating
2937 Alt Blvd. N.
Grand Island, NY 14072
(716) 773-7634

Dear Larry:

RE: Purchase Order #3B0177NNSA

Please destroy the three (3) enclosed cylinders of NI-63 ECD detector.

Send the Certificate of Destruction to:

US EPA
ATTN Kathy Martin
200 SW 35th Street
Corvallis, OR 97333

I would appreciate it if you could send a copy of the certificate to Jay Gile at the above address.

If you have any questions, please call me at (503) 754-4501 or Jay at (503) 754-4721.

Thank you,

A handwritten signature in cursive script that reads "Lori L. McCartan".

Lori L. McCartan



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
 ENVIRONMENTAL RESEARCH LABORATORY
 200 S.W. 35TH STREET
 CORVALLIS, OREGON 97333

SHIPPING CERTIFICATE

Three (3) radioactive sources as described below:
 COMPOUND (Chemical Form): Nickel

RADIONUCLIDE: Ni-63

Manufacturer: Perkin-Elmer

RADIOACTIVITY:	(1) S/N 439	10 mCi
	(2) S/N 676	15 mCi
	(3) S/N 089	15 mCi
SPECIFIC ACTIVITY:	Total	40 mCi

Removable Contamination
 Swipe Test (uCi)

0.0001
 0.0001
 0.028

SHIPPED TO: Nuclear Development Corp
 name
Attn: Larry Keating
2837 Alt Blvd. N.
Grand Island, NY 14072
 address

12-22-92
 date
(716) 773-7634
 phone

Philip A. Monaco
 Philip A. Monaco, Health and Radiation Safety
 ManTech Environmental Technology, Inc.
 503-754-4787

"RADIOACTIVE"

This package conforms to the conditions and limitations specified in 49
 CFR 173.421 for exempted radioactive material, limited quantity, n.o.s.,
 UN2910

DIVISION OF SAFETY AND HEALTH

RADIOACTIVE MATERIALS LICENSE
AMENDMENT

Page 1 of 1 Page(s)

PURSUANT TO THE LABOR LAW AND INDUSTRIAL CODE RULE 38, AND IN RELIANCE ON STATEMENTS AND REPRESENTATIONS HERETOFORE MADE BY THE LICENSEE DESIGNATED BELOW, A LICENSE IS HEREBY ISSUED AUTHORIZING SUCH LICENSEE TO RECEIVE, POSSESS, USE AND TRANSFER RADIOACTIVE MATERIAL(S) DESIGNATED BELOW; AND TO USE SUCH RADIOACTIVE MATERIAL(S) FOR THE PURPOSE(S) AND AT THE PLACE(S) DESIGNATED BELOW. THIS LICENSE IS SUBJECT TO ALL APPLICABLE RULES, REGULATIONS, AND ORDERS NOW OR HEREAFTER IN EFFECT OF ALL APPROPRIATE REGULATORY AGENCIES AND TO ANY CONDITIONS SPECIFIED BELOW.

1. NAME OF LICENSEE

NRD, Inc.

3. LICENSE NUMBER

1391-1811

2. ADDRESS OF LICENSEE

2937 Alt Boulevard North
Grand Island, New York 14072

4. EXPIRATION DATE

July 31, 1993

5a. REFERENCE NO.

b. AMENDMENT NO.

2

27

Amendments Nos. 4, 6, 8, 10, 13, 15, 17, 23 and 24 Deleted from the License.

9. Authorized use:

Condition 4. Expiration Date changed.

Condition 12. Changed to read:

2. License Renewal Request dated June 10, 1990, signed by J. David McGraw with Licensee Annual financial report for 1990.

*Condition (Item)

Maria L. Colavito, Director
for: THE COMMISSIONER OF LABOR

RMP
by: Rose Marie Pratt
Associate Radiophysicist

DATE: January 10, 1991
RMP:wp

STATE OF NEW YORK - DEPARTMENT OF LABOR
DIVISION OF SAFETY AND HEALTH



RADIOACTIVE MATERIALS LICENSE
AMENDMENT

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1. NAME OF LICENSEE NRD, Inc.	3. LICENSE NUMBER 1391-1811
2. ADDRESS OF LICENSEE 2937 Alt Boulevard North Grand Island, New York 14072	4. EXPIRATION DATE July 31, 1990 5a. REFERENCE NO. 6. AMENDMENT NO. 2 24

5. Radioactive materials (element & mass no.) A. (3) Nickel 63 B. Polonium 210	7. Chemical and/or physical form A. Any B. Any	8. Maximum quantity licensee may possess at any one time A. (3) 10 Curies B. 100 Curies
------------------------------------------------------------------------------------------	----------------------------------------------------------	---------------------------------------------------------------------------------------------------

Amendments Nos. 4, 6, 8, 10, 13, 15 and 17 Deleted from the License.

9. Authorized use:

*Conditions 8.A.(3) and 8.B. Maximum quantity licensee may possess at any one time increased.

*Condition 12. Document added:

BB. His letter dated November 16, 1987, signed by J. David McGraw.

*Condition (Item)

Robert Gollnick, Director
for: THE COMMISSIONER OF LABOR

George L. Kasyk

by George L. Kasyk
Associate Radiophysicist

DATE: February 11, 1988
GLK:wp



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
 ENVIRONMENTAL RESEARCH LABORATORY
 200 S.W. 35TH STREET
 CORVALLIS, OREGON 97333

SHIPPING CERTIFICATE

Three (3) radioactive sources as described below:
 COMPOUND (Chemical Form): Nickel

RADIONUCLIDE: Ni-63

Manufacturer: Perkin-Elmer

RADIOACTIVITY:	(1) S/N 439	10 mCi
	(2) S/N 676	15 mCi
	(3) S/N 089	15 mCi
SPECIFIC ACTIVITY:	Total	40 mCi

Removable Contamination
 Swipe Test (uCi)

0.0001
 0.0001
 0.028

SHIPPED TO: Nuclear Development Corp
 name
Attn: Larry Keating
2837 Alt Blvd. N.
Grand Island, NY 14072
 address

12-22-92
 date
(716) 773-7634
 phone

Philip A. Monaco
 Philip A. Monaco, Health and Radiation Safety
 ManTech Environmental Technology, Inc.
 503-754-4787

"RADIOACTIVE"

This package conforms to the conditions and limitations specified in 49
 CFR 173.421 for exempted radioactive material, limited quantity, n.o.s.,
 UN2910

EXPRESS

USE THIS AIRBILL FOR DOMESTIC SHIPMENTS WITHIN THE CONTINENTAL U.S.A., ALASKA AND HAWAII.
USE THE INTERNATIONAL AIR WAYBILL FOR SHIPMENTS TO PUERTO RICO.
QUESTIONS? CALL 800-738-8288 TOLL FREE.

PACKAGE TRACKING NUMBER

8307459204

81114 8307459204



6080
0715

Sender's Federal Express Account Number 1167-7564-6		Date 12-23-92
From (Your Name) Please Print JAY D. GILE		Your Phone Number (Very Important) 503- , 754-4600
To (Recipient's Name) Please Print LARRY KEATING		Recipient's Phone Number (Very Important) 716 , 773-7634
Company ENVIRONMENTAL PROTECTION AGENCY		Department/Floor No.
Company NRD, INC.		Department/Floor No.
Street Address 200 SW 35TH ST		
Exact Street Address (We Cannot Deliver to P.O. Boxes or P.O. Zip Codes.) 2937 ALT BLVD. N.		
City CORVALLIS	State OR	ZIP Required 9 7 3 3 3
City GRAND ISLAND	State NY	ZIP Required 14072
YOUR BILLING REFERENCE INFORMATION (FIRST 24 CHARACTERS WILL APPEAR ON INVOICE.) EXCEPTED PACKAGE. SHIPPERS DECLARATION NOT REQUIRED		IF HOLD FOR PICK-UP, Print FEDEX Address Here Street Address
PAYMENT <input checked="" type="checkbox"/> Bill Sender <input type="checkbox"/> Bill Recipient's FedEx Acct. No. <input type="checkbox"/> Bill 3rd Party FedEx Acct. No. <input type="checkbox"/> Bill Credit Card Fill in Account Number below		City State ZIP Required
RADIOACTIVE MATERIAL, EXCEPTED PACKAGE -ARTICLES UN2910		

394
OF
SC

ORIGIN COPY

SERVICES	DELIVERY AND SPECIAL HANDLING	PACKAGES	WEIGHT	YOUR DECLARED VALUE (See page 1)	OTHER SIZE	SERVICE CONDITIONS, DECLARED VALUE AND LIMIT OF LIABILITY	Federal Express Use
<input checked="" type="checkbox"/> PRIORITY 1 Overnight Delivery	<input type="checkbox"/> HOLD FOR PICK-UP (See page 1)	1	LBS			Use of this airbill constitutes your agreement to the service conditions in our current Service Guide which is available upon request. See back of sender's copy of the airbill for further information. We will not be responsible for any claim in excess of \$100 per package, whether the result of loss, damage, delay or non-delivery, unless you specify a higher amount in the space to the left, pay 40¢ per additional \$100 specified and document your actual loss in the event of a claim. Maximum amount limitations found in the current Federal Express Service Guide apply. Your right to recover from Federal Express for loss of the intrinsic value of the package, as well as for loss of sales, income, interest, profit, attorneys fees, costs and any other form of damage whether direct, incidental, consequential or special is limited to the greater of \$100 or the declared value specified to the left, in no event shall your recovery exceed your actual loss. In the event of untimely delivery, Federal Express will at your request and with some limitations, refund all transportation charges and give Service Guide for further information.	Base Charges
<input type="checkbox"/> OVERNIGHT LETTER	<input type="checkbox"/> DELIVER WEEKDAY		LBS				Declared Value Charge
<input type="checkbox"/> COURIER-PAK OVERNIGHT ENVELOPE	<input type="checkbox"/> DELIVER SATURDAY (See charge)		LBS				Other 1
<input type="checkbox"/> OVERNIGHT BOX	<input type="checkbox"/> DAANGEROUS GOODS (See charge)	Total	LBS	Total			Other 2
<input type="checkbox"/> OVERNIGHT TUBE	<input type="checkbox"/> CONSTANT SURVEILLANCE SERVICE (CSS) (See charge) (Insurance not applicable)	1		4			Total Charges
<input type="checkbox"/> STANDARD AIR Delivery not later than second business day	<input type="checkbox"/> ARTICLE Use						
	<input type="checkbox"/> OTHER SPECIAL SERVICE						
	<input type="checkbox"/> SATURDAY PICK-UP (See charge)						
	<input type="checkbox"/> HOLIDAY DELIVERY (See charge)						
		Received At					
		1 <input type="checkbox"/> Regular Stop					
		2 <input type="checkbox"/> On-Call Stop					
		3 <input type="checkbox"/> Drop Box					
		4 <input type="checkbox"/> B.S.C.					
		5 <input type="checkbox"/> Station					
		FEDEX Corp. Employee No.					
		Date/Time for FEDEX Use					
		Sender authorizes Federal Express to deliver this shipment without obtaining a delivery signature and shall indemnify and hold harmless Federal Express from any claims resulting therefrom.					
		Release Signature <i>Jay D. Gile</i>					

PAINT #111800
REVISION DATE 1/88
PRINTED IN U.S.A. SACEP
009
© 1988 FEC

8307459204
8307459204



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
ENVIRONMENTAL RESEARCH LABORATORY
200 S.W. 35TH STREET
CORVALLIS, OREGON 97333

December 22, 1992

Nuclear Development Corp.
Attn: Larry Keating
2937 Alt Blvd. N.
Grand Island, NY 14072
(716) 773-7634

Dear Larry:

RE: Purchase Order #3B0177NNSA

Please destroy the three (3) enclosed cylinders of NI-63 ECD detector.

Send the Certificate of Destruction to:

US EPA
ATTN Kathy Martin
200 SW 35th Street
Corvallis, OR 97333

I would appreciate it if you could send a copy of the certificate to Jay Gile at the above address.

If you have any questions, please call me at (503) 754-4501 or Jay at (503) 754-4721.

Thank you,

A handwritten signature in cursive script, appearing to read "Lori L. McCartan".

Lori L. McCartan

DIVISION OF SAFETY AND HEALTH

RADIOACTIVE MATERIALS LICENSE
AMENDMENT

PURSUANT TO THE LABOR LAW AND INDUSTRIAL CODE RULE 38, AND IN RELIANCE ON STATEMENTS AND REPRESENTATIONS HERETOFORE MADE BY THE LICENSEE DESIGNATED BELOW, A LICENSE IS HEREBY ISSUED AUTHORIZING SUCH LICENSEE TO RECEIVE, POSSESS, USE AND TRANSFER RADIOACTIVE MATERIAL(S) DESIGNATED BELOW; AND TO USE SUCH RADIOACTIVE MATERIAL(S) FOR THE PURPOSE(S) AND AT THE PLACE(S) DESIGNATED BELOW. THIS LICENSE IS SUBJECT TO ALL APPLICABLE RULES, REGULATIONS, AND ORDERS NOW OR HEREAFTER IN EFFECT OF ALL APPROPRIATE REGULATORY AGENCIES AND TO ANY CONDITIONS SPECIFIED BELOW.

<p>1. NAME OF LICENSEE</p> <p>NRD, Inc.</p>	<p>3. LICENSE NUMBER</p> <p>1391-1811</p>		
<p>2. ADDRESS OF LICENSEE</p> <p>2937 Alt Boulevard North Grand Island, New York 14072</p>	<p>4. EXPIRATION DATE</p> <p>July 31, 1993</p> <table border="1"> <tr> <td data-bbox="1082 755 1346 883"> <p>5a. REFERENCE NO.</p> <p>2</p> </td> <td data-bbox="1346 755 1602 883"> <p>b. AMENDMENT NO.</p> <p>27</p> </td> </tr> </table>	<p>5a. REFERENCE NO.</p> <p>2</p>	<p>b. AMENDMENT NO.</p> <p>27</p>
<p>5a. REFERENCE NO.</p> <p>2</p>	<p>b. AMENDMENT NO.</p> <p>27</p>		

Amendments Nos. 4, 6, 8, 10, 13, 15, 17, 23 and 24 Deleted from the License.

9. Authorized use:

Condition 4. Expiration Date changed.

Condition 12. Changed to read:

- 2. License Renewal Request dated June 10, 1990, signed by J. David McGraw with Licensee Annual financial report for 1990.

*Condition (Item)

Maria L. Colavito, Director
for: THE COMMISSIONER OF LABOR



by: Rose Marie Pratt
Associate Radiophysicist

DATE: January 10, 1991
RMP:wp

STATE OF NEW YORK - DEPARTMENT OF LABOR
DIVISION OF SAFETY AND HEALTH

RADIOACTIVE MATERIALS LICENSE
AMENDMENT

PURSUANT TO THE LABOR LAW AND INDUSTRIAL CODE RULE 38, AND IN RELIANCE ON STATEMENTS AND REPRESENTATIONS HERETOFORE MADE BY THE LICENSEE DESIGNATED BELOW, A LICENSE IS HEREBY ISSUED AUTHORIZING SUCH LICENSEE TO RECEIVE, POSSESS, USE AND TRANSFER RADIOACTIVE MATERIALS(S) DESIGNATED BELOW; AND TO USE SUCH RADIOACTIVE MATERIALS FOR THE PURPOSE(S) AND AT THE PLACE(S) DESIGNATED BELOW. THIS LICENSE IS SUBJECT TO ALL APPLICABLE RULES, REGULATIONS, AND ORDERS NOW OR HEREAFTER IN EFFECT OF ALL APPROPRIATE REGULATORY AGENCIES AND TO ANY CONDITIONS SPECIFIED BELOW.

1. NAME OF LICENSEE NRD, Inc.	3. LICENSE NUMBER 1391-1811
2. ADDRESS OF LICENSEE 2937 Alt Boulevard North Grand Island, New York 14072	4. EXPIRATION DATE July 31, 1990 5a. REFERENCE NO. b. AMENDMENT NO. 2 24

- | | | |
|-------------------------------------------------------------------------------------------|--------------------------------------------------------------|------------------------------------------------------------------------------------------------------|
| 5. Radioactive materials (element & mass no.)

(3) Nickel 63

B. Polonium 210 | 7. Chemical and/or physical form

A. Any

B. Any | 8. Maximum quantity licensee may possess at any one time

A.(3) 10 Curies

B. 100 Curies |
|-------------------------------------------------------------------------------------------|--------------------------------------------------------------|------------------------------------------------------------------------------------------------------|

Amendments Nos. 4, 6, 8, 10, 13, 15 and 17 Deleted from the License.

9. Authorized use:

*Conditions 3.A.(3) and 3.B. Maximum quantity licensee may possess at any one time increased.

*Condition 12. Document added:

BB. His letter dated November 16, 1987, signed by J. David McGraw.

*Condition (Item)

Robert Gollnick, Director
for: THE COMMISSIONER OF LABOR

George L. Kasyk
by George L. Kasyk
Associate Radiophysicist

TE: February 11, 1988
GLK:wp

SEALED SOURCE LEAK TEST WORKSHEET

TEST DATE: 6-20-86
P.M.

Radionuclide: ⁶³Ni

Calculation of Lower Limit of Detection (LLD)

Gross background counts: 389

Total background count time: 20

$$LLD(95\%) = \frac{\sqrt{\text{Gross background counts}}}{\text{Count time}} \times 4.66$$

LLD(95%) = 4.56

Wipe # Sealed Source Make Serial # NET dpm uCi LESS THAN 0.005 uCi?

1	P-E CERL 190	439	LLDK		
2	Varian Fil House CERL 190	F506	457.6	2.0x10 ⁻⁴	ALL less < 0.005 uCi
3	Varian Housing CERL 190	F506	LLDK		
4	TRACOR Housing	4493	LLDK		
5	TRACOR PORTS	4493	LLDK		
6	TRACOR Housing	2960	249.9	1.1x10 ⁻⁴	
7	TRACOR PORTS	2960	LLDK		
8	TRACOR Housing	3214	22.06	9.9x10 ⁻⁶	
9	TRACOR PORTS	3214	LLDK		
10	Housing	F641	LLDK		
11	Port	F641	LLDK		
12	Port - TRACOR	4803	LLDK		
13	Port - H-P	H1230	58.4	2.6x10 ⁻⁵	
14	Port - H-P Storage	H2098	LLDK		
15	Port - P-E H-P	676	LLDK		
16	Port - H-P	58735	LLDK		
17	H-P vent	510157	LLDK		

Remarks:

Chris B. Monaw

86-4

SEALED SOURCE INVENTORY REPORT

FOR TRACOR ECDs TRANSFER
11/14/86

Housing #	Manufacturer	Radionuclide	mCi Activity	Serial #	SIPE ACTIVITY*
111019-0001	TRACOR	Ni-63	14.5	3214	0
111019-0001	TRACOR	Ni-63	14.5	2960	1.395E-4 μ Ci
111019-0001	TRACOR	Ni-63	15.0	4493	0

These three detectors are being prepared for transfer to Marvin Montgomery at the Oregon State University Department of Agricultural Chemistry, ORE-0005-3, user Authorization No. SB175. See Byproduct transfer No. 86-13.

*The sealed sources described above have been leak tested in accordance with the applicable Federal Regulations and are certified to have less than 0.005 μ Ci (5.0E-3 μ Ci) of removable contamination. Swipe activity was determined using a Gas Flow Proportional Counter. Activity is expressed as μ Ci equivalents of C-14 (18.2% efficiency). (GFPC 86-13).

REMOVE FROM INVENTORY
11/17/86
P.M.

Remarks:

Philip A. ... 11/14/86
Radiation Safety Specialist
EPA-CERL

USEPA CERL
MOVEMENT OF BYPRODUCT MATERIAL

Date/Time: _____

No. 86-13

1. Received from: _____

P.O. NO. _____ Carrier _____

2. Condition of Package (O.K., punctured, crushed, wet): _____

3. Shipped to: MARVIN MONTGOMERY Wngr. Rm 312, 320, 322 222
Dept. Agricultural Chemistry
Oregon State University

NRC/State License of Recipient: ORE-0005-3 (OSU OSU)
(attach copy of license)

User Approval Number: SB 175

4. In-house transfer: from _____ to _____

5. Surveyed Radiation Levels: a. Package surface 0.015 mR/hr

b. 3' from surface 0.015 mR/hr

6. Survey of Packing materials and carton _____ mR/hr

Instrument Used/SN: G-M/515 Efficiency: 2.6 (C-14) %

7. Description of Material (Do packing slip and vial agree?)

Radionuclide: ⁶³Ni Quantity: 0.044 Ci

Chemical Form: elemental

8. Swipe Results from: a. Outer SEE ATTACHED SHEET CPM = _____ DPM

b. Source Container _____ CPM = _____ DPM

Instrument Used/SN: _____ Efficiency: _____ %

9. Material Stored in Rm 190.

10. Material Released to: Schneidling/Montgomery 11/17/86 10:15 a
(date/time)

10. Disposition of Packaging materials and carton: _____

11. Notes:

See Byproduct Attach. (detector survey for swipe activities).

Philip A. Moore 11/14/86
(radiation safety) (date)

UNITED STATES
 ENVIRONMENTAL PROTECTION AGENCY
 CORVALLIS ENVIRONMENTAL RESEARCH LABORATORY
 Radioactive Materials (R.A.M.) Transfer Record

SHIP TO: M. MONTGOMERY
DEPT. AGRIC. Chem
 Address: OREGON STATE UNIV
 City _____ State _____ Zip _____

LICENSE/AUTHORIZATION:
 Shipper's NRC; State License No. _____
 Recipient's License: On File.
 Within expiration date.
 Authorizes R.A.M. being shipped
 Shipping To NRC; State License No. ORE-0005-3
 Other Authorization (e.g. contract no., etc.) _____

MODE OF SHIPMENT:
 Common carrier truck Contract carrier truck-exclusive use
 Passenger aircraft Cargo-only aircraft (attach special label)
 U.S. Mail Private vehicle (supply driver's instructions)
 Federal vehicle State vehicle
 Other: HAND DELIVERED

SHIPMENT TOTALS:
 Total Number of Containers in This Shipment _____
 (A SEPARATE SHIPPING RECORD FORM IS USED FOR EACH CONTAINER)
 Total Curies This Shipment 0.044
 Total Grams Fissile Material This Shipment NONE

R.A.M. Label applied to container _____
 NO LABEL REQUIRED
 Radioactive white I
 Radioactive yellow II
 Radioactive yellow II
 Seal applied to container: _____ YES NO
 Container _____ Specification No. _____

Return address--commodity description--container spec. label applied to container _____ Yes No

DESCRIPTION OF R.A.M. IN CONTAINER: ⁶³Ni Sealed Sources (60) (USE SEPARATE SHIPPING RECORD FORM FOR EACH CONTAINER)

Radionuclides	Curies	Special Form		Normal Form	
		A ₁ Limit (Ci)	A ₂ Limit (Ci)	Chemical Form	Physical Form (solid, liquid, gas)
<u>⁶³Ni</u>	<u>0.044</u>			<u>Solid, Sealed</u>	<u>Solid</u>
Total Curies & Most Restrictive A ₁ , A ₂ or Other Limit	<u>0.044</u>	<u>1000</u>	<u>100</u>		

NON-FISSILE MATERIAL N/A
 FISSILE MATERIAL N/A
 Class: I Total Grams _____ Special Form, A₁ Limit (Ci) _____ Physical Form _____
 II Total Curies _____ Normal Form, A₂ Limit (Ci) _____ Chemical Form _____
 III

PROPER SHIPPING NAME: UN NO.: HAZARD CLASS: & R.A.M. QUANTITY TYPE:
 Radioactive Material, Fissile, n.o.s., UN 2918 Hazard Class: 7
 Radioactive Material, Low Specific Activity or L.S.A., n.o.s., UN 2912
 Radioactive Material, n.o.s., UN 2982 R.A.M. Quantity Type: Limited
 Radioactive Material, Limited Quantity, n.o.s., UN 2910 Type A
 Radioactive Material, Special Form, n.o.s., UN 2974 Type B
 Other: 2911 Radioactive Material Instruments Other: _____

RADIATION SURVEY DATA: PRE-loading transport vehicle survey completed: Yes N/A POST-loading transport vehicle survey completed: Yes N/A

FOR RADIOACTIVE MATERIALS BEING SHIPPED (before placing in the shipping container): Total millirem/hr @ contact _____ Total millirem/hr @ 1 foot _____ Total gamma millirem/hr @ 1 foot _____	FOR FULLY LOADED AND CLOSED CONTAINER NO. _____: Maximum total millirem/hr @ external surface _____ Maximum total millirem/hr @ 1 meter _____ Removable surface contamination: Alpha: _____ dpm/100 cm ² Beta-Gamma: _____ dpm/100 cm ²
NAME & SERIAL NO. OF SURVEY METERS USED FOR: R.A.M. mrem/hr values _____ Container mrem/hr values _____ Container surface contamination _____	Survey Date _____ Survey Time _____ Radiation Surveyor Signature _____

Is shipment within the limitations prescribed for passenger-carrying aircraft: YES NO Not applicable (N/A)
 Is shipment qualifies as exempt from specification packaging, marking, and labeling: YES NO

This is to certify that the above named articles are properly classified, described, packaged, marked, and labeled, and in proper condition for transportation, according to the applicable regulations of the Department of Transportation."

Radiation Safety Officer: _____

RECEIVED
105-4-21
SEP 17 1986

RADIATION SAFETY
OFFICE

APPLICATION FOR AMENDMENT OF AUTHORIZATION

NAME: <u>MARVIN MONTGOMERY</u>	AUTHORIZATION NO: <u>SB175</u>
DEPARTMENT: <u>Agricultural Chemistry</u>	NATURE OF PROGRAM: Instructional <u> </u> Research <u> X </u>
DATE: <u>September 16, 1986</u>	

1. Nature of proposed amendment:

We request that our license for possession of radioactive GC detectors being increased to include an additional limit of 3 ⁶³Ni detectors, each containing 14.5 mCi.

2. Justification for proposed amendment:

This increase is necessary for us to acquire another gas chromatograph. It is needed for pesticide residue analysis.

3. Remarks:

Marvin Montgomery
Signature of Program Director

FOR COMMITTEE USE ONLY:	Date: <u> </u>
Action Taken:	

SEALED SOURCE INVENTORY REPORT

FOR TRACOR ECD RECEIVING 5/1/86

Ising #	Manufacturer	Radionuclide	mCi Activity	Serial #	Location	User
019-0001	Tracor	63-Ni	14.5	3214	CERL 190	n/a
019-0001	Tracor	63-Ni	14.5	2960	CERL 190	n/a
019-0001	Tracor	63-Ni	15.0	4493	CERL 190	n/a

All detectors < 0.005 μ Ci on leak swipe
 5-2-86
 (see Sealed Source Inventory)

Remarks:

Phil A. Monaw

86-4

SEALED SOURCE INVENTORY REPORT
FOR TRACOR ECDs TRANSFER
11/14/86

Housing #	Manufacturer	Radionuclide	mCi Activity	Serial #	SHIPE ACTIVITY*
111019-0001	TRACOR	Ni-63	14.5	3214	0
111019-0001	TRACOR	Ni-63	14.5	2960	1.395E-4 μ Ci
111019-0001	TRACOR	Ni-63	15.0	4493	0

These three detectors are being prepared for transfer to Marvin Montgomery at the Oregon State University Department of Agricultural Chemistry, ORE-0005-3, user Authorization No. SB175. See Byproduct transfer No. 86-13.

*The sealed sources described above have been leak tested in accordance with the applicable Federal Regulations and are certified to have less than 0.005 μ Ci (5.0E-3 μ Ci) of removable contamination. Swipe activity was determined using a Gas Flow Proportional Counter. Activity is expressed as μ Ci equivalents of C-14 (18.2% efficiency). (GFPC 86-13).

REMOVE FROM INVENTORY
11/17/86 P.M.

Remarks:

W. J. A. ...
Radiation Safety Specialist
EPA-CERL

SEALED SOURCE INVENTORY REPORT

FOR TRACOR ECD RECEIVING 5/1/86

Identifying #	Manufacturer	Radionuclide	mCi Activity	Serial #	Location	User
019-0001	Tracor	63-Ni	14.5	3214	CERL 190	n/a
019-0001	Tracor	63-Ni	14.5	2960	CERL 190	n/a
019-0001	Tracor	63-Ni	15.0	4493	CERL 190	n/a

All detectors < 0.005 μ Ci on leak swipe

5-2-86

(See Sealed Source Inventory)

Remarks:

x Philip A. Monahan

470287

USEPA CERL
MOVEMENT OF BYPRODUCT MATERIAL

Date/Time: _____

No. 86-13

Received from: _____

P.O. NO. _____ Carrier _____

2. Condition of Package (O.K., punctured, crushed, wet): _____

3. Shipped to: MARVIN MONTGOMERY Wng. Rm 312, 320, 322, 222
Dept. Agricultural Chemistry
Oregon State University

NRC/State License of Recipient: ORE-0005-3 (OSU OSU)
(attach copy of license)

User Approval Number: SB 175

4. In-house transfer: from _____ to _____

5. Surveyed Radiation Levels: a. Package surface 0.015 mR/hr

b. 3' from surface 0.015 mR/hr

6. Survey of Packing materials and carton _____ mR/hr

Instrument Used/SN: G-M/515 Efficiency: 2.6 (C-14) %

7. Description of Material (Do packing slip and vial agree?)

Radionuclide: ⁶³Ni Quantity: 0.044 Ci

Chemical Form: elemental

8. Swipe Results from: a. Outer SEE ATTACHED SHEET CPM = _____ DPM
b. Source Container _____ CPM = _____ DPM

Instrument Used/SN: _____ Efficiency: _____ %

9. Material Stored in Rm 190.

10. Material Released to: Schneidling/Montgomery 11/17/86 10:15 a
(date/time)

10. Disposition of Packaging materials and carton: _____

11. Notes:

See Attached Attach. (detector survey for
swipe activities.

Philip A. Moore 11/14/86
(radiation safety) / (date)

UNITED STATES
ENVIRONMENTAL PROTECTION AGENCY
CORVALLIS ENVIRONMENTAL RESEARCH LABORATORY
Radioactive Materials (R.A.M.) Transfer Record

SHIPPED TO: M. MONTGOMERY
DEPT. AGRIC. CHEM
Address: OREGON STATE UNIV
City _____ State _____ Zip _____

LICENSE/AUTHORIZATION:
Shipper's NRC State License No. _____
Recipient's License: On file.
 Within expiration date.
 Authorizes R.A.M. being shipped
Shipping To NRC State License No. ORE-0005-3
Other Authorization (e.g. contract no., etc.) _____

MODE OF SHIPMENT:
 Common carrier truck Contract carrier truck-exclusive use
 Passenger aircraft Cargo-only aircraft (attach special label)
 U.S. Mail Private vehicle (supply driver's instructions)
 Federal vehicle State vehicle
 Other: HAND DELIVERED

SHIPMENT TOTALS:
Total Number of Containers in This Shipment _____
(A SEPARATE SHIPPING RECORD FORM IS USED FOR EACH CONTAINER)
Total Curies This Shipment 0.044
Total Grams Fissile Material This Shipment NONE

R.A.M. Label applied to container _____
 NO LABEL REQUIRED
 Radioactive white I
 Radioactive yellow II
 Radioactive yellow III
Seal applied to container: YES NO
Container _____ Specification No. _____

Return address--commodity description--container spec. label applied to container _____ Yes No

DESCRIPTION OF R.A.M. IN CONTAINER: ⁶³Ni Sealed Sources (60) (USE SEPARATE SHIPPING RECORD FORM FOR EACH CONTAINER)

Radionuclides	Curies	Special Form		Normal Form		Physical Form (solid, liquid, gas)
		A ₁ Limit (Ci)	A ₂ Limit (Ci)	Chemical Form		
<u>⁶³Ni</u>	<u>0.044</u>			<u>Solid, Sealed</u>		<u>Solid</u>
Total Curies & Most Restrictive A ₁ , A ₂ or Other Limit	<u>0.044</u>	<u>1000</u>	<u>100</u>			

NON-FISSILE MATERIAL N/A
 FISSILE MATERIAL N/A
Class: I II III Total Grams _____ Total Curies _____
Type: Special Form, A₁ Limit (Ci) _____ Normal Form, A₂ Limit (Ci) _____
Physical Form _____ Chemical Form _____

PROPER SHIPPING NAME: UN NO.: HAZARD CLASS: & R.A.M. QUANTITY TYPE:
 Radioactive Material, Fissile, n.o.s., UN 2918
 Radioactive Material, Low Specific Activity or L.S.A., n.o.s., UN 2912
 Radioactive Material, n.o.s., UN 2982
 Radioactive Material, Limited Quantity, n.o.s., UN 2910
 Radioactive Material, Special Form, n.o.s., UN 2974
 Other: 2911 Radioactive Material Instruments
Hazard Class: 7
R.A.M. Quantity Type: Limited Type A Type B Other: _____

ADDITIONAL SURVEY DATA: PRE-loading transport vehicle survey completed: Yes N/A POST-loading transport vehicle survey completed: Yes N/A

FOR RADIOACTIVE MATERIALS BEING SHIPPED (before placing in the shipping container): Total mR/hr @ contact _____ Total mR/hr @ 1 foot _____ Total gamma mR/hr @ 1 foot _____	FOR FULLY LOADED AND CLOSED CONTAINER NO. _____: Maximum total mR/hr @ external surface _____ Maximum total mR/hr @ 1 meter _____ Removable surface contamination: Alpha: _____ dpm/100 cm ² Beta-Gamma: _____ dpm/100 cm ²
NAME & SERIAL NO. OF SURVEY METERS USED FOR: R.A.M. mrem/hr values _____ Container mrem/hr values _____ Container surface contamination _____	Survey Date _____ Survey Time _____ Radiation Surveyor Signature _____

This shipment is within the limitations prescribed for passenger-carrying aircraft: YES NO Not applicable (N/A)
This shipment qualifies as exempt from specification packaging, marking, and labeling: YES NO

This is to certify that the above named articles are properly classified, described, packaged, marked, and labeled, and in proper condition for transportation, according to the applicable regulations of the Department of Transportation.

Radiation Safety Officer: _____

RADIATION SAFETY COMMITTEE

Form 105

(Please forward in triplicate)

Revised 9/76

RECEIVED
105-6-21
SEP 17 1986

RADIATION SAFETY
OFFICE

APPLICATION FOR AMENDMENT OF AUTHORIZATION

NAME: <u>MARVIN MONTGOMERY</u>	AUTHORIZATION NO: <u>SB175</u>
DEPARTMENT: <u>Agricultural Chemistry</u>	NATURE OF PROGRAM: Instructional <u> </u> Research <u> X </u>
DATE: <u>September 16, 1986</u>	
<p>1. Nature of proposed amendment: We request that our license for possession of radioactive GC detectors being increased to include an additional limit of 3 ⁶³Ni detectors, each containing 14.5 mCi.</p>	
<p>2. Justification for proposed amendment: This increase is necessary for us to acquire another gas chromatograph. It is needed for pesticide residue analysis.</p>	
<p>3. Remarks:</p>	

Marvin Montgomery
Signature of Program Director

FOR COMMITTEE USE ONLY:	Date: <u> </u>
Action Taken:	

86-4

SEALED SOURCE INVENTORY REPORT

FOR TRACOR ECDs TRANSFER
11/14/86

Housing #	Manufacturer	Radionuclide	mCi Activity	Serial #	SHIPE ACTIVITY
111019-0001	TRACOR	Ni-63	14.5	3214	0
111019-0001	TRACOR	Ni-63	14.5	2960	1.395E-4 μ Ci
111019-0001	TRACOR	Ni-63	15.0	4493	0

These three detectors are being prepared for transfer to Marvin Montgomery at the Oregon State University Department of Agricultural Chemistry, ORE-0005-3, user Authorization No. SB175. See Byproduct transfer No. 86-13.

*The sealed sources described above have been leak tested in accordance with the applicable Federal Regulations and are certified to have less than 0.005 μ Ci (5.0E-3 μ Ci) of removable contamination. Swipe activity was determined using a Gas Flow Proportional Counter. Activity is expressed as μ Ci equivalents of C-14 (18.2% efficiency). (GFPC 86-13).

REMOVE FROM INVENTORY
11/17/86
AMT.

Remarks:

Philip A. Montgomery 11/14/86
Radiation Safety Specialist
EPA-CERL

SEALED SOURCE INVENTORY REPORT

FOR TRACOR ECD RECEIVING 5/1/86

Tag #	Manufacturer	Radionuclide	mCi Activity	Serial #	Location	User
1019-0001	Tracor	63-Ni	14.5	3214	CERL 190	n/a
1019-0001	Tracor	63-Ni	14.5	2960	CERL 190	n/a
1019-0001	Tracor	63-Ni	15.0	4493	CERL 190	n/a

All detectors < 0.005 μ Ci on lead swipe

5-2-86

(see Sealed Source Inventory)

Remarks:

x Philip A. Monnow

USEPA CERL
MOVEMENT OF BYPRODUCT MATERIAL

Date/Time: _____

No. 86-13

Received from: _____

P.O. NO. _____ Carrier _____

2. Condition of Package (O.K., punctured, crushed, wet): _____

3. Shipped to: MARVIN MONTGOMERY Wngr. Rmc 312,320,322,222
Dept. Agricultural Chemistry
Oregon State University

NRC/State License of Recipient: ORE-0005-3 (OAS OSU)
(attach copy of license)

User Approval Number: SB 175

4. In-house transfer: from _____ to _____

5. Surveyed Radiation Levels: a. Package surface 0.015 mR/hr

b. 3' from surface 0.015 mR/hr

6. Survey of Packing materials and carton _____ mR/hr

Instrument Used/SN: G-M/515 Efficiency: 2.6 (C-14) %

7. Description of Material (Do packing slip and vial agree?)
Radionuclide: ⁶³Ni Quantity: 0.044 Ci
Chemical Form: elemental

8. Swipe Results from: a. Outer SEE ATTACHED SHEET CPM = _____ DPM
b. Source Container _____ CPM = _____ DPM

Instrument Used/SN: _____ Efficiency: _____ %

9. Material Stored in Rm 190.

10. Material Released to: Schneidling/Montgomery 11/17/86 10:15 a
(date/time)

10. Disposition of Packaging materials and carton: _____

11. Notes:

*See Byproduct Attach. (1) detector survey for
swipe activities.*

Philip A. Moner 11/14/86
(radiation safety) (date)

UNITED STATES
 ENVIRONMENTAL PROTECTION AGENCY
 CORVALLIS ENVIRONMENTAL RESEARCH LABORATORY
 Radioactive Materials (R.A.M.) Transfer Record

SHIPPED TO: M. MONTGOMERY
DEPT. AGRIC. Chem
 Address: OREGON STATE UNIV
 City _____ State _____ Zip _____

MODE OF SHIPMENT:
 Common carrier truck Contract carrier truck-exclusive use
 Passenger aircraft Cargo-only aircraft (attach special label)
 U.S. Mail Private vehicle (supply driver's instructions)
 Federal vehicle State vehicle
 Other: HAND-DELIVERED

LICENSE/AUTHORIZATION:
 Shipper's NRC; State License No. _____
 Recipient's License: Title.
 Within expiration date.
 Authorizes R.A.M. being shipped
 Shipping To NRC; State License No. ORE-0005-3
 Other Authorization (e.g. contract no., etc.) _____

SHIPMENT TOTALS:
 Total Number of Containers in This Shipment _____
 (A SEPARATE SHIPPING RECORD FORM IS USED FOR EACH CONTAINER)
 Total Curies This Shipment 0.044
 Total Gross Fissile Material This Shipment NONE

R.A.M. Label applied to container _____
 NO LABEL REQUIRED
 Radioactive white I
 Radioactive yellow I
 Radioactive yellow II
 Seal applied to container: _____ YES NO
 Container _____ Specification No. _____

Return address--commodity description--container spec. label applied to container _____ Yes No

DESCRIPTION OF R.A.M. IN CONTAINER: ⁶³Ni Sealed Sources (60) (USE SEPARATE SHIPPING RECORD FORM FOR EACH CONTAINER)

Radionuclides	Curies	Special Form		Normal Form		Physical form (solid, liquid, gas)
		A ₁ Limit (Ci)	A ₂ Limit (Ci)	Chemical Form		
<u>⁶³Ni</u>	<u>0.044</u>			<u>Solid, Sealed</u>		<u>Solid</u>
Total Curies & Most Restrictive A ₁ , A ₂ or Other Limit	<u>0.044</u>	<u>1000</u>	<u>100</u>			

NON-FISSILE MATERIAL N/A

Class: I Total Grams _____ Type _____ Physical Form _____
 II Total Curies _____ Special Form, A₁ Limit (Ci) _____ Chemical Form _____
 III Normal Form, A₂ Limit (Ci) _____

PROPER SHIPPING NAME; UN NO.; HAZARD CLASS; & R.A.M. QUANTITY TYPE:
 Radioactive Material, Fissile, n.o.s., UN 2918 Hazard Class: 7
 Radioactive Material, Low Specific Activity or L.S.A., n.o.s., UN 2912 R.A.M. Quantity Type: Limited
 Radioactive Material, n.o.s., UN 2982 Type A
 Radioactive Material, Limited Quantity, n.o.s., UN 2910 Type B
 Radioactive Material, Special Form, n.o.s., UN 2974 Other: _____
 Other: 2911 Radioactive Material Instruments

RADIATION SURVEY DATA: PRE-loading transport vehicle survey completed: Yes N/A POST-loading transport vehicle survey completed: Yes N/A

FOR RADIOACTIVE MATERIALS BEING SHIPPED (before placing in the shipping container): Total mR/hr @ contact _____ Total mR/hr @ 1 foot _____ Total gamma mR/hr @ 1 foot _____	FOR FULLY LOADED AND CLOSED CONTAINER NO. _____: Maximum total mR/hr @ external surface _____ Maximum total mR/hr @ 1 meter _____ Removable surface contamination: Alpha: _____ dpm/100 cm ² Beta-Gamma: _____ dpm/100 cm ²
NAME & SERIAL NO. OF SURVEY METERS USED FOR: R.A.M. mrem/hr values _____ Container mrem/hr values _____ Container surface contamination _____	Survey Date _____ Survey Time _____ Radiation Surveyor Signature _____

This shipment is within the limitations prescribed for passenger-carrying aircraft: YES NO Not applicable (N/A)
 This shipment qualifies as exempt from specification packaging, marking, and labeling: YES NO

This is to certify that the above named articles are properly classified, described, packaged, marked, and labeled, and in proper condition for transportation, according to the applicable regulations of the Department of Transportation."

Radiation Safety Officer: _____

RECEIVED
105-6-21
SEP 17 1986

RADIATION SAFETY
OFFICE

APPLICATION FOR AMENDMENT OF AUTHORIZATION

NAME: <u>MARVIN MONTGOMERY</u>	AUTHORIZATION NO: <u>SB175</u>
DEPARTMENT: <u>Agricultural Chemistry</u>	NATURE OF PROGRAM: Instructional <u> </u> Research <u> X </u>
DATE: <u>September 16, 1986</u>	
1. Nature of proposed amendment: We request that our license for possession of radioactive GC detectors being increased to include an additional limit of 3 ⁶³ Ni detectors, each containing 14.5 mCi.	
2. Justification for proposed amendment: This increase is necessary for us to acquire another gas chromatograph. It is needed for pesticide residue analysis.	
3. Remarks:	

Marvin Montgomery
Signature of Program Director

FOR COMMITTEE USE ONLY:	Date: <u> </u>
Action Taken:	

Radiation Safety Committee

Don Schults
EPA, MSC

DATE: 1 December 1982

DM: Dan Beers
Radiation Safety Office

SUBJECT: Disposal of ECD detector

This is to acknowledge that on 1 September 1982, the Radiation Safety Office took receipt from you of an unwanted electron capture detector, for the purposes of proper disposal.

Two items were picked up at that time, with the following data:

Item A: one (1) Tracor ECD detector cell; Cell Model # 111019-0001; Cell Serial # 3177, containing 14.5 milliCuries of ^{63}Ni (dated 1 August 1974); picked up 1 September 1982 at Marine Science Center Building 2 (EPA Wing), Room 235.

Item B: one (1) EMPTY Varian Aerograph ECD detector cell body only! No radioactive foil was in this cell. Cell Model # 96-94; Cell Serial # 128; previously contained 1.0 Curie of ^3H scandium Tritide (cell dated 8-74); picked up 1 September 1982 at Marine Science Center Building 2 (EPA Wing), Room 229; foil was returned to manufacturer previously by EPA personnel (no OSU personnel involved in that transfer).

These two items are in dead storage, waiting to be packaged and sent to burial with the next regular OSU radioactive waste shipment.

cc: Jay Gile, USEPA
OSU Waste Disposal files
D. Schults file

TRANSFER OF BYPRODUCT MATERIAL

#~~6679~~
6697

1. Name, address and telephone of proposed recipient:

UARIAN.

2. License number (a xerox copy of recipient's license must be attached)

3. Description of Material:

250 mCi ³H foil

foil was returned. No record was
saved or recorded. Investigator (D. Krawczyk)
informed RSO (J. Gile) source was
returned by former RSO. M. Feldman.

Radiation Safety Officer

Date

1979.

→ 669.7
F506
H2098

8/29/79

Disposed of 3 - 1 Ci ^3H impregnated Sc foils
from Feldman's License

9/19/79

Received 250 mCi ^3H impregnated Sc foil for Griffis
(Feldman's License) # 6697

foil returned during 1979, though no report was file investigator informed
H.P. and RSO it was returned.

10/22/79

Received ^{63}Ni source for Griffis (Feldman's License)

F506

(230)

~ 1/1/80

Dr. Yartzoff received a ^{63}Ni 15 mCi
 ^{63}Ni sealed source from Hewlett-Packard
without notifying Health Physics. Serial # H2098

8.0 mCi ^{63}Ni # F506 transferred from Griffis
to Krawczak

REMOVABLE CONTAMINATION LEVELS (SMEARS)*

DAN TULLO
Surveyor

Sealed Source Semi-Annual
Purpose of Survey Leak Test

8/11/81
Date

Location	1 BKG	2 Gross β cpm w/ ³ H	3 Net β cpm w/ ³ H	4 Gross β cpm w/o ³ H	5 Net β cpm w/o ³ H	6 Net β μCi w/o ³ H	7 Net ³ H cpm	8 Net ³ H μCi
CELL 284 SS H2098 storage	16.2	18.2	LLD 2.2					<.005
CELL 284 SS H1230 in G.C.	16.2	16.2	0.0					<.005
CELL 266 SS 2960 in G.C.	16.2	11.2	0.0					<.005
CELL 228 SS F641 in G.C.	16.2	12.8	0.0					<.005
CELL 232 SS 439 storage	16.2	9.2	0.0					<.005
CELL 190 SS F506 storage	16.2	24.8	8.6					<.005
CELL 150 SS 6697 storage in G.C.	16.2	68.0	51.8					~.023

* No smearing efficiency value is factored into these results. Eff ≈ .001

Instrument used: Gas flow Proport. Counter

LLD(95%) = 8.38 cpm $\frac{\sqrt{81}}{5} \times 4.66 = \frac{9}{5} \times 4.66$

LLD(β w/o ³H) in μCi = _____ μCi

LLD(³H) in μCi = _____ μCi

* started Detector.
Procedures took
Additional swipes.
(see survey)

USE REVERSE SIDE FOR CALCULATIONS



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
 ENVIRONMENTAL RESEARCH LABORATORY
 200 S.W. 35TH ST.
 CORVALLIS, OREGON 97330

Sealed Source Inventory 8/10/81

COMPANY	Source Type	Activity	Serial #	Location	Authorization
RACOR	^{63}Ni	14.5 mCi	3177	Newport Marine Science center	Schultz - under OSE Authorization
RACOR	^{63}Ni	14.5 mCi	2960	CERL 266 in G.C.	2/82 storage YARTZOFF
RACOR	^{63}Ni	14.5 mCi	3214	CERL 266 storage	2/82 invce. YARTZOFF
Hewlett-Packard	^{63}Ni	14.5 mCi	H1230	CERL 284 in G.C.	Griffis
Hewlett-Packard	^{63}Ni	14.5 mCi	H2098	CERL 284 Storage	Griffis
Rebkin-Elmer	^{63}Ni	10.0 mCi	439	CERL Greenhouse Storage - inst. RM.	Tingey
ARIAN	^{63}Ni	8.0 mCi	FS06	CERL-190 storage	Krawczyk
ARIAN	^3H	250 mCi	G697	CERL-150 Storage in G.C.	Krawczyk *
ARIAN	^{63}Ni	8.0 mCi	FG41	CERL-228	McCready - under G. Lett.

Notes: * Source 206.C. was 1 Curie H^3 Source - 250 mCi Source was returned several years ago by old RSD - Feldman.

9/11 - Discovered 2 Polonium 210 Sealed Sources in Rm 170, for a Calor microbalance Activity 500 μCi each. Date 12/74 on Sources.

2/12 - SS. G697 - believed to be lost. SS. Curie H^3 was in G.C. in Rm 150.
 - removed Curie source - storage in Rm 190.

2/82 - C. McFarland received ^{63}Ni source - located in G.C. in animal room at Greenhouse.

2/82 - Yartzoff sent ss. back to company 2960 for overhaul.

119308

SEALED SOURCE INVENTORY 7/26/82

Company	Source Type	Activity	Serial #	Location	Authorization
Tracor	^{63}Ni	14.5 mCi	3177	Newport	Schultz under OSU
Tracor	^{63}Ni	14.5 mCi	3214	CERL 190 in Storage	Yartzoff
Tracor	^{63}Ni	14.5 mCi	2960	CERL 190 in Storage	Yartzoff
Tracor	^{63}Ni	15.0 mCi	4493	Sent Back to Tracor	Yartzoff
Hewlett- Packard	^{63}Ni	14.5 mCi	H1230	CERL 2804 in GC	Griffis
Hewlett- Packard	^{63}Ni	14.5 mCi	H2098	CERL 284 in Storage	Griffis
Perkin- Elmer	^{63}Ni	10.0 mCi	439	CERL Green- house in Storage	Tingey
Varian	^{63}Ni	8.0 mCi	F506	CERL 190 in Storage	Krawczyk
Varian	^{63}Ni	8.0 mCi	F641	CERL 228 in GC	McCrary
Hewlett- Packard	^{63}Ni	15.0 mCi	EPA # 119308	CERL 228 in GC	McCrary
Hewlett- Packard	^{63}Ni	150 mCi	S-8735	CERL 228 in GC	McCrary

Tracor ^{63}Ni received 7/82 - # 4493 - in storage in Rm 190



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
ENVIRONMENTAL RESEARCH LABORATORY
200 S.W. 35TH ST.
CORVALLIS, OREGON 97330

7/15/82

Radiation Offices
Varian Instr. Group
Walnut Creek Instr. Div.

Dear Sir:

The enclosed Scandium (31) foil was purchased from Varian in 1974. We no longer have any need for this item, therefore we are returning it. It was Roy Hickman's suggestion that I return it to your attention. It has on occasion been suspected of leaking therefore we have enclosed a copy of the foil swipe test.

If you have any questions please contact me.

Sincerely,

Jay D. Gile

Radiation Safety Officer

Date	Received From	Shipped to	Nuclide	Amount (Ci)	Chemical form	Volume	Mode of Transportation	Carrier
180		NECO - Bentley	¹⁴ C	7.98×10^4	Pesticides, soils	2255 gal	Truck	Tri-state
179		NECO - Richland	¹⁴ C	6.46×10^4	Solids, u. air	194 cu. ft.	Truck	NECO
			³ H	2.55×10^4	Absorbed liq			
78		NECO - Richland	¹⁴ C	5.06×10^4	Solids	209.5 cu. ft.	Truck	NECO
			³ H	3.0				
			⁶⁰ Co	0.15×10^4				
77		NECO - Richland	¹⁴ C	2.06×10^3	Pesticides, S. liq.	341 cu. ft.	Truck	NECO
			¹⁰⁹ Cd	2.0×10^4	liquids			
76		NECO - Richland	¹⁴ C	3.5×10^4	Pesticides, Solids	217.3 cu. ft.	Truck	NECO
75		NECO - Richland	¹⁴ C	2.0×10^2	Solids	66.9 cu. ft.	Truck	NECO
			³ H	2.0×10^3				
			³² P	0.5×10^3	liquids	70 gal		
			⁸⁵ Kr	9.8×10^3				
TOTAL WASTE SHIPPED				3.04				

1979

Date	Received From	Shipped To	Number	Amount (Ci)	Chemical Form	Volume	Mode of Transportation	Carrier
12/4	Dynapal		14 C	1×10^{-4}	liquid		A. F.	
11/20	Dynapal		14 C	1×10^{-3}	liquid		A. F.	
11/15	..	U. of Wisconsin	14 C	1×10^{-3}	Dieldrin		A. F.	USPS
				5×10^{-4}	Propenil			
				2×10^{-3}	Trifluralin			
				4×10^{-3}	2,4,5-T			
				4×10^{-3}	Simazine			
				2×10^{-3}	Monuron			
11/6	Dynapal		14 C	2×10^{-3}	tri-n-butyl tin oxide liquid		A. F.	
10/24	Amersham		14 C	5×10^{-5}	Glucose		A. F.	Airborne
10/22	Varian		6^3 Ni	8×10^{-3}	Sealed Source			
9/14	Varian		3 H	2.5×10^{-1}	Sealed Source			
6/18	Amersham		14 C	1×10^{-4}	Methyl pyranoside		A. F.	Airborne
5/11		OSU Entomology	14 C	1×10^{-4}	Solid			
3/27		ARC	14 C	1×10^{-3}	Dieldrin			
3/8	Hewlett-Packard		6^3 Ni	1.45×10^{-2}	Sealed Source			
3/7	Tracor		6^3 Ni	1.45×10^{-2}	Sealed Source			
1/29	Amersham		14 C	3.5×10^{-6}	Toluene			
1/16		Hewlett-Packard	6^3 Ni	1.45×10^{-2}	Sealed Source			
1/16		Tracor	6^3 Ni	1.45×10^{-2}	Sealed Source			
1/2	NE		14 C	1×10^{-4}	Biphenyl			

1979

1979

Date	From	Shipped To	Nuclide	Amount (Ci)	Chemical form	Volume	Mode of Transport	Carrier
2/18			H ³	1.667 x 10 ³	H ₂ GAS	500 PSI		
2/15	Pathfinder		¹⁴ C	1 x 10 ⁴	Maleic Anhydride			UPS
1/3	PACKARD		¹⁴ C ¹⁴ C	9.2 x 10 ⁵ OPP/ml 1.9 x 10 ⁶	Spec check Hexadecane			
1/5	Calif. Bio-nuclear corp		¹⁴ C ¹⁴ C ¹⁴ C ¹⁴ C	1 x 10 ⁴ 5 x 10 ⁵ 5 x 10 ⁵ 1 x 10 ⁴	2,4,5 trichlorophenol Naphthalene Benzo pyrene Phthalic acid			
1/5	Dynapal		¹⁴ C	1 x 10 ³	2,4 Dichlorophenoxyacetic Acid		Air Freight	Federal Express
1/30	Pathfinder		¹⁴ C	1 x 10 ⁴	Ethylene Diamine 1,2 dichloroethane	1.51 mg		
1/21	PACKARD		¹⁴ C	~1.9 x 10 ⁶	Hexadecane	5.0 ml		
1/15	NEN		¹⁴ C	5 x 10 ³	Sodium bicarb. (Toluene)		Air Freight	
1/29	VARIAN		⁶³ Ni	8 x 10 ³	Sealed Source		Air Freight	
1/18	NEN		¹⁴ C	1 x 10 ⁴	Hexachlorobenzene		Air Freight	Federal Express
1/4	PACKARD		¹⁴ C		Spec check	25 ml	Air Freight	
1/19	Amersham		¹⁴ C	5 x 10 ⁵	Methyl pyruvate		Air Freight	Air borne
1/8		USEPA, Silver Springs	¹⁴ C ¹⁴ C ¹⁴ C	5 x 10 ⁴ 5 x 10 ⁴ 5 x 10 ⁴	Tri Fluor alin Sima zine Mowman		Air Freight	USPS
1/15		USDA, Beltsville	¹⁴ C	1 x 10 ⁴	Pentachloronitrobenzene		Air Freight	USPS
1/10		Newport Marine Sci Center	⁶³ Ni	1.45 x 10 ³	Sealed Source		Passenger Car	

Order	From	Supplier	Nuclide	Quantity (Ci)	Form	Solution	Transport	Delivery
117	DYNAPOL		^{14}C	5×10^3	1,2,4-trichlorobenzene		Air Freight	Federal express
118		VARIAN	^3H	2.0	Sealed Source			UPS
115	Amersham		^{14}C	5×10^3	Hexachloro Benzene			

G.C. Sources.

Source	Location	Person	Date Recd	Date Dispatched
H ³ IC/Sc		Feldman		J. Blazard
H ³ IC/Sc		Feldman		"
H ³ IC/Sc	L29	Yartsoff		
H ³ ..				
H ³ ..				
H ³ ..				
Ni ⁶³ 14.5mc	L29	Yartsoff	29 Oct 77	
Ni ⁶³ 14.5mc	L29	Yartsoff		
Ni ⁶³ 14.5mc	Greenland	Tingey Yartsoff	11 July 73	
H ³ IC/Sc		Gillett		
Nov 21 1975 Resumé.				

CRAD7

Radioactive Materials (R.A.M.) Transfer Record

Shipped to: HEWLETT PACKARD CO., AVONDALE DIVISION
 Address: ROUTE 41
 City: AVONDALE State: PENNSYLVANIA Zip: 19311

Shipment No.:
 Shipping Date:
 Page 1 of Page(s)

Shipper's AEC or State License No.: 36-12343-02
 Recipient's AEC or State License No.: 37-07002-02

Number of containers this shipment: 1
 (use separate page for each container)
 Total curies this shipment: 0.0145
 Total grams fissile material this shipment: N/A

Radio isotope(s)	Radioisotope Transport Group(s)*
	NICKEL 63. IV

Description of Radioactive Materials on this page:

Radioactive materials, small quantities.
 Radioactive devices.
 Fissile radioactive materials.
 Radioactive materials, low specific activity (L.S.A)
 Radioactive materials, special form.
 Radioactive materials, N.O.S.
 D. O. T. radioactive material form:
 special normal
 (use separate page for each D. O. T. form)
 Chemical form*:
 Physical form*: gas liquid solid
 Total grams fissile material: N/A
 Total activity (curies): 0.0145
 Most restrictive transport group:
 D. O. T. quantity type: Type A Type B
 Placed in container: 1

Fissile class of container: I, II, III N/A
 Total grams of fissile material in container 1 = N/A grams.
 Total activity in container 1 = 0.0145 curies.

R.A.M. Label applied to container 1

NO LABEL REQUIRED
 Radioactive white I
 Radioactive yellow II
 Radioactive yellow III

Seal applied to container 1: YES NO
 Container 1 Specification No. 7472

Return address—commodity description—container spec.—label applied to container: Yes No

Radioactive Material Radiation Survey Results	
Total millirem/hour at surface	6.0
Total millirem/hour at 3 feet	0.0
Gamma millirem/hour at 1 foot	0.0
Gamma millirem/hour at 3 feet	0.0
Date of Survey: <u>1/16/79</u>	Time: <u>9:00 AM</u>

Container: Radiation Survey Result	
Total millirem/hour at external surface	0.0
Total millirem/hour at 3 feet	0.0
Transport index for this container	0
Removable contamination from external surface:	<u>NONE</u>
Alpha (dpm/100 cm ²)	0.0
Beta-Gamma (dpm/100 cm ²)	0.0

Health Physics Surveyor (signature): R. Parton

Vehicle Placarded:
 YES NOT REQUIRED

This shipment is within the limitations prescribed for passenger-carrying aircraft YES NO Not applicable
 This shipment qualifies as exempt from specification packaging, marking and labeling: YES NO

"This is to certify that the above named articles are properly classified, described, packaged, marked and labeled, and are in condition for transportation, according to the applicable regulations of the Department of Transportation."

Staff Member Coordinating Shipment: R. Parton

Received by: Organization:

IPFUS 2960

Radioactive Materials (R.A.M.) Transfer Record

Shipped to: TRACER, INC. Shipment No.:
 Address: 6500 TRACER LANE Shipping Date:
 City: AUSTIN State: TEXAS Zip 78721 Page 1 of 1 Page(s)

Shipper's AEC or State License No.: 36-12347-02
 Recipient's AEC or State License No.: TEXAS 6-1186
 Number of containers this shipment: 1
 (use separate page for each container)
 Total curies this shipment: 0.0145
 Total grams fissile material this shipment: N/A

Radio isotope(s)	Radioisotope Transport Group(s)*
	<u>NICKEL 63 IV</u>

Description of Radioactive Materials on this page:
 Radioactive materials, small quantities.
 Radioactive devices.
 Fissile radioactive materials.
 Radioactive materials, low specific activity (L.S.A.)
 Radioactive materials, special form.
 Radioactive materials, N.O.S.
 D. O. T. radioactive material form:
 special normal
 (use separate page for each D. O. T. form)
 Chemical form*:
 Physical form*: gas liquid solid
 Total grams fissile material: N/A
 Total activity (curies): 0.0145
 Most restrictive transport group: IV
 D. O. T. quantity type: Type A Type B
 Placed in container:

Fissile class of container: I, II, III N/A
 Total grams of fissile material in container = N/A grams.
 Total activity in container = 0.0145 curies.

R.A.M. Label applied to container
 NO LABEL REQUIRED
 Radioactive white I
 Radioactive yellow II
 Radioactive yellow III
 Seal applied to container : YES NO
 Container Specification No. TYPE A 71

Return address—commodity description—container spec.—label applied to container : Yes No

Radioactive Material Radiation Survey Results	
Total millirem/hour at surface	<u>0.0</u>
Total millirem/hour at 3 feet	<u>0.0</u>
Gamma millirem/hour at 1 foot	<u>0.0</u>
Gamma millirem/hour at 3 feet	<u>0.0</u>
Date of Survey: <u>1/16/79</u>	Time: <u>9:00 AM</u>

Container: <u> </u> Radiation Survey Results	
Total millirem/hour at external surface	<u>0.0</u>
Total millirem/hour at 3 feet	<u>0.0</u>
Transport index for this container	<u>0</u>
Removable contamination from external surface:	<u>NONE</u>
Alpha (dpm/100 cm ²)	<u>0.0</u>
Beta-Gamma (dpm/100 cm ²)	<u>0.0</u>

Health Physics Surveyor (signature): R. Paster

Vehicle Placarded:
 YES NOT REQUIRED

This shipment is within the limitations prescribed for passenger-carrying aircraft: YES NO Not applicable (N/)
 This shipment qualifies as exempt from specification packaging, marking and labeling: YES NO

"This is to certify that the above named articles are properly classified, described, packaged, marked and labeled, and are in condition for transportation, according to the applicable regulations of the Department of Transportation."

Staff Member Coordinating Shipment: R. Paster

Received by: Organization:

CERTIFICATE OF DISPOSITION OF MATERIALS

(All Blocks MUST BE Completed)

LICENSEE NAME AND ADDRESS AH. RJO Daniel Lullo U.S. Environmental Protection Agency 200 SW 35th St. Corvallis OR 97330	LICENSE NUMBER 36-12343-02 0256-07 LICENSE EXPIRATION DATE
------------------------------------------------------------------------------------------------------------------------------------	---------------------------------------------------------------------

The licensee or any individual executing this certificate on behalf of the licensee certify that: (Check and/or complete appropriate item(s) below.)

- 1. No materials have been procured by licensee.
- 2. All materials procured and/or possessed by licensee under license number shown above, have been transferred to: _____

which has NRC license number: _____

- 3. All materials procured and/or possessed by licensee under license number shown above have been transferred to: Varian Instrument Division, 2700 Mitchell Drive, Walnut Creek, CA 94598

which has license number: 0256-59 issued by California Dept. of Health

an Agreement State pursuant to Section 274 of the Atomic Energy Act of 1954, as amended, and the Energy Reorganization Act of 1974.

- 4. Materials have been disposed of in the following manner. (Describe specific disposal procedures — if additional space is needed, use reverse side.)

Radioactive Material Disposal Service
 Southwest Nuclear Company
 7066-A Commerce Circle
 Pleasanton, CA 94566
 License #2873-60

Received for disposal by VID-RSO: SBAS Denker Date: Jan 23 / 81

Isotope: H3 absorbed Amount: 2 foils each 1 Curie Form: Solid
into Scandium

PLEASE RETURN TO: U.S. Nuclear Regulatory Commission Office of Nuclear Material Safety and Safeguards Washington, D.C. 20555	CERTIFYING OFFICIAL
	SIGNATURE DATE

See

B-21-80

B9353MNSX

6800200

McCready/TD

AM1757 B2353MNSX OA8763HOAR 8180 495.00

TT&HH41

Varian Aerograph
2700 Mitchell Drive
Walnut Creek, CA 94598

ATTN: Radiation Safety Officer

02-000-955-00 Electron Capture Detector
for Varian 2700

Exchange for Sc²H ECD

Exchange price

ea 495.00 495.00

NOTE: Sc²H ECD will be shipped to Varian
upon receiving RI

Copy of License attached

XX

495.00

UNITED STATES
 ENVIRONMENTAL PROTECTION AGENCY
 CORVALLIS ENVIRONMENTAL RESEARCH LABORATORY
 Radioactive Materials (R.A.M.) Transfer Record

Shipped to: UNIAN Aerograph
 Address: 2700 Mitchell Drive
 City: Walnut Creek State: CA Zip: 94598
 Shipment No.: _____
 Shipping Date: 1/8/81
 Page 1 of 2 Page(s)

Shipper's AEC or State License No.: 36-12343-02
 Recipient's AEC or State License No.: 0256-07
 Number of containers this shipment: 2
 (use separate page for each container)
 Total curies this shipment: 2
 Total grams fissile material this shipment: _____

Radioisotope(s)	Radioisotope Transport Group(s)*
<u>H³</u>	<u>IV</u>

Description of Radioactive Materials on this page:
 Radioactive materials, small quantities.
 Radioactive devices.
 Fissile radioactive materials.
 Radioactive materials, low specific activity (L.S.A.)
 Radioactive materials, special form.
 Radioactive materials, N.O.S.
 D. O. T. radioactive material form:
 special normal
 (use separate page for each D. O. T. form)
 Chemical form*: _____
 Physical form*: gas liquid solid
 Total grams fissile material: N/A
 Total activity (curies): 1
 Most restrictive transport group: IV
 D. O. T. quantity type: Type A Type B
 Placed in container: 1

U.S. DOT hazard class of container: I, II, III N/A
 Total grams of fissile material in container: _____ grams.
 Total activity in container: _____ curies.
 Return address—commodity description—container spec.—label applied to container: Yes No

R.A.M. Label applied to container: 2
 NO LABEL REQUIRED
 Radioactive white 1
 Radioactive yellow II
 Radioactive yellow III
 Seal applied to container: YES NO
 Container Specification No. TPA 7A

Radioactive Material Radiation Survey Results		Container: _____ Radiation Survey Results	
External surface Total millirem/hour	<u>0.0</u>	Total millirem/hour at external surface	<u>0.0</u>
External surface 3 feet Total millirem/hour	<u>0.0</u>	Total millirem/hour at 3 feet	<u>0.0</u>
External surface 1 foot Transport index	<u>N/A</u>	Transport index for this container	<u>0</u>
External surface 3 feet Removable contamination	<u>N/A</u>	Removable contamination from external surface:	
Date of Survey: <u>1/8/81</u> Time: <u>9:30</u>		Alpha (dpm/100 cm ²)	
		Beta-Gamma (dpm/100 cm ²)	

Health Physics Surveyor (signature): _____
 Vehicle Placarded:
 YES NOT REQUIRED

This shipment is within the limitations prescribed for passenger-carrying aircraft: YES NO Not applicable (N/A)
 This shipment qualifies as exempt from specification packaging, marking and labeling: YES NO

This is to certify that the above named articles are properly classified, described, packaged, marked and labeled, and are in condition for transportation, according to the applicable regulations of the Department of Transportation.
 Staff Member Coordinating Shipment: Daniel H. P.

Received by: _____ Organization: _____

UNITED STATES
 ENVIRONMENTAL PROTECTION AGENCY
 CORVALLIS ENVIRONMENTAL RESEARCH LABORATORY
 Radioactive Materials (R.A.M.) Transfer Record

Shipped to: VARIAN Aerograph
2700 Mitchell Drive
Walnut Creek State: CA Zip 94598

Shipment No.: _____
 Shipping Date: 1/8/81
 Page 2 of 2 Page(s)

Shipper's AEC or State License No.: 36-12343-02
 Recipient's AEC or State License No.: 0256-07

Number of containers this shipment: 2
 (use separate page for each container)
 Total curies this shipment: 2
 Total grams fissile material this shipment: _____

Radioisotope(s)	Radioisotope Transport Group(s)*
<u>13</u>	<u>IV</u>

Description of Radioactive Materials on this page:

Radioactive materials, small quantities.
 Radioactive devices.
 Fissile radioactive materials.
 Radioactive materials, low specific activity (L.S.A.)
 Radioactive materials, special form.
 Radioactive materials, N.O.S.
 D. O. T. radioactive material form:
 special normal
 (use separate page for each D. O. T. form)
 Chemical form*: _____
 Physical form*: gas liquid solid
 Total grams fissile material: N/A
 Total activity (curies): 2
 Most restrictive transport group: IV
 D. O. T. quantity type: Type A Type B
 Placed in container: 1

Fissile class of container: I, II, III N/A
 Total grams of fissile material in container = _____ grams.
 Total activity in container: _____ curies.

R.A.M. Label applied to container 2

NO LABEL REQUIRED
 Radioactive white I
 Radioactive yellow II
 Radioactive yellow III

Seal applied to container: YES NO
 Container 1 Specification No. Type A 7A

Origin address—commodity description—container spec.—label applied to container: Yes No

Radioactive Material Radiation Survey Results	
Total millirem/hour at surface	<u>0.0</u>
Total millirem/hour at 3 feet	<u>0.0</u>
Removable millirem/hour at 1 foot	<u>N/A</u>
Removable millirem/hour at 3 feet	<u>N/A</u>
Date of Survey: <u>1/8/81</u>	Time: <u>9:30</u>

Container: <u>1</u> Radiation Survey Results	
Total millirem/hour at external surface	<u>0.0</u>
Total millirem/hour at 3 feet	<u>0.0</u>
Transport index for this container	<u>0</u>
Removable contamination from external surface:	
Alpha (dpm/100 cm ²)	
Beta-Gamma (dpm/100 cm ²)	

Health Physics Surveyor (signature): David Puller

Vehicle Placarded:
 YES NOT REQUIRED

This shipment is within the limitations prescribed for passenger-carrying aircraft: YES NO Not applicable (N/A)
 This shipment qualifies as exempt from specification packaging, marking and labeling: YES NO

I hereby certify that the above named articles are properly classified, described, packaged, marked and labeled, and are in proper condition for transportation, according to the applicable regulations of the Department of Transportation.

Staff Member Coordinating Shipment: David Puller

Received by: _____ Organization: _____

Inventory	Company	Source Type	Activity	Serial #	Location	Authorization	Notes
-81	TRACOR	^{63}Ni	14.5 mCi	3177	Newport Marine Science Center	Schultz - under OSU Authorization	Moved to Newport from Lab 190 11/19/80 formally Radal Act.
-81	TRACOR	^{63}Ni	14.5 mCi	2960	WFTS - Rm 12 (6C)	Yantzoff	
-81	TRACOR	^{63}Ni	14.5 mCi	3214	WFTS - Storage const. Temp. chkb #2	Yantzoff	
-81	Hewlett-Packard	^{63}Ni	14.5 mCi	H1230	CEM - 284 (6C)	Griffis	Moved To CEM-284 from WFTS 10/23/80 formally Yantzoff
-81	Hewlett-Packard	^{63}Ni	14.5 mCi	H2098	CEM - 284 storage in rm. 284.	Griffis	Moved To CEM-284 from WFTS 10/23/80 formally Yantzoff
-81	Pebkin-Elmer	^{63}Ni	10.0 mCi	439	CEM - Grenduse Storage 10 Inst. room	Tingey	
-81	VARIAN	^{63}Ni	8.0 mCi	F506	CEM - 190 Temporary storage	Krawczyk	Previously lab 228 5/1/80
-81	VARIAN	^3H	250 mCi	6697	CEM - 294 (6C)	Krawczyk	
-81	VARIAN	^{63}Ni	8.0 mCi	F641	CEM - 228	McCady - under Gillett	received 8/29/80
Note:	VARIAN	^3H	1.0ci	F195	have been returned to VARIAN		
	VARIAN	^3H	1.0ci	F755			1/8/80
	7/24/80 VARIAN 6C 2700 moved from 130 to 2503.						

FELDMAN

9/14/78

1 G. 3H FOIL PUT IN WASTE FOR GRIFFIS

R. Pardon

REMOVED FOR USE BY TRILEY:

252 μ C 3H

151.5 μ C 14C

FELDMAN

QUARTERLY REPORT ON
USAGE AND DISPOSAL OF RADIOACTIVE MATERIALS

Please enter below the required information on the receipt, usage and disposal of each nuclide of radioactive materials. The completed form should be returned to M. Feldman by : 9/1/78.

1. Nuclide	<u>³H</u>	<u>¹⁴C</u>	<u>⁶³Ni</u>	<u>¹⁰⁹Cd</u>
2. Amounts of each nuclide on hand at beginning of quarter	<u>8.220 Ci</u>	<u>1.6668 mCi</u>	<u>68.005 mCi</u>	<u>.44 mCi</u>
3. Amounts received in quarter for each nuclide	<u> </u>	<u>1.5015 mCi</u>	<u> </u>	<u> </u>
4. Amounts used experimentally	<u> </u>	<u> </u>	<u> </u>	<u> </u>
5. Amounts put in waste for pickup	<u>2 Ci</u>	<u>.4653 mCi</u>	<u> </u>	<u> </u>
6. Amounts transferred to authorized persons (complete form NERC 13 prior to transfer)	<u> </u>	<u> </u>	<u> </u>	<u> </u>
7. Amounts now on hand (allow for decay)	<u>5.22 Ci*</u>	<u>2.103 mCi</u>	<u>68.005 mCi</u>	<u>.44 mCi</u>
8. Location of material on hand	<u>WASTE AREA, 190, Y</u>	<u>190</u>	<u>GREENHOUSE 'YARTECKE' 190</u>	<u>190</u>

Remarks concerning special circumstances:

* ONE ³H FOIL FOR G.C. CANNOT BE LOCATED AFTER THOROUGH SEARCH (1 Ci): bookkeeping ERROR THIS WAS DISPOSED OF IN WASTE, BUT NEVER RECORDED

- SEE ISOTOPE AUDIT 6/22/78 FOR COMPLETE ACCOUNTING OF MATERIALS

By M. Feldman
Date 31 Aug 78

COPY

Radioactive Materials (R.A.M.) Transfer Record

Shipped to: HEWLETT PACKARD CO., AYONDALF DIVISION
Address: ROUTE 41,
City: AYONDALF State: PENNSYLVANIA Zip: 19311

Shipment No.:
Shipping Date:
Page 1 of 1 Page(s)

Shipper's AEC or State License No.: 36-12343-02
Recipient's AEC or State License No.: 37-07002-02
Number of containers this shipment: 1
(use separate page for each container)
Total curies this shipment: 0.0145
Total grams fissile material this shipment: N/A

Description of Radioactive Materials on this page:
 Radioactive materials, small quantities.
 Radioactive devices.
 Fissile radioactive materials.
 Radioactive materials, low specific activity (L.S.A.)
 Radioactive materials, special form.
 Radioactive materials, N.O.S.
D. O. T. radioactive material form:
 special normal
(use separate page for each D. O. T. form)
Chemical form*:
Physical form*: gas liquid solid
Total grams fissile material: N/A
Total activity (curies): 0.0145
Most restrictive transport group:
D. O. T. quantity type: Type A Type B
Placed in container:

Radio isotope(s)	Radioisotope Transport Group(s)*
NICKEL 63	IV

Fissile class of container: I, II, III N/A
Total grams of fissile material in container: N/A grams.
Total activity in container: 0.0145 curies.

R.A.M. Label applied to container:
 NO LABEL REQUIRED
 Radioactive white I
 Radioactive yellow II
 Radioactive yellow III
Seal applied to container: YES NO
Container Specification No. 742-A-7A

Return address-commodity description-container spec.-label applied to container: Yes No

Total millirem/hour at surface	6.0
Total millirem/hour at 3 feet	0.0
Gamma millirem/hour at 1 foot	0.0
Gamma millirem/hour at 3 feet	0.0
Date of Survey: 1/16/79	Time: 9:00 AM

Total millirem/hour at external surface	0.0
Total millirem/hour at 3 feet	0.0
Transport index for this container	0
Removable contamination from external surface:	NONE
Alpha (dpm/100 cm ²)	0.0
Beta-Gamma (dpm/100 cm ²)	0.0

Health Physics Surveyor (signature):
R. Paxton

Vehicle Placarded:
 YES NOT REQUIRED

This shipment is within the limitations prescribed for passenger-carrying aircraft: YES NO Not applicable (N)
This shipment qualifies as exempt from specification packaging, marking and labeling: YES NO

"This is to certify that the above named articles are properly classified, described, packaged, marked and labeled, and are in proper condition for transportation, according to the applicable regulations of the Department of Transportation."

Staff Member Coordinating Shipment: *R. Paxton*

Received by:

Organization:

1/19/78

2 63Ni SOURCES SHIPPED

9/12/79

3

scandium foils impregnated with

1 Ci

^3H

each have been disposed of.

REMOVABLE CONTAMINATION LEVELS (SMEARS)*

DAN TULLO H.P.
Surveyor

Swipe survey of H³ sealed source
Purpose of Survey

7/15/82
Date

	1	2	3	4	5	6	7	8
Location	BKG	Gross β cpm w/ ³ H	Net β cpm w/ ³ H	Gross β cpm w/o ³ H	Net β cpm w/o ³ H	Net β μCi w/o ³ H	Net ³ H cpm	Net ³ H μCi
INNER SOURCE ABOVE	13.2	1,004.4	991.2	n/a	n/a	n/a	991.2	~.8 μCi
Source and housing	13.2	113.6	100.4	n/a	n/a	n/a	100.4	~.08 μCi
external Surface final Package	13.2	9.0	0.0	n/a	n/a	n/a		

* No smearing efficiency value is factored into these results.

Instrument used: Nuclear Measurements Co. Gas Flow Prop. Counter

LLD(95%) = _____ cpm

$$4.66 \times \frac{\sqrt{132}}{10}$$

LLD(β w/o ³H) in μCi = _____ μCi

LLD(³H) in μCi = _____ μCi

UNITED STATES
 ENVIRONMENTAL PROTECTION AGENCY
 CORVALLIS ENVIRONMENTAL RESEARCH LABORATORY
 Radioactive Materials (R.A.M.) Transfer Record

Shipped to: VARIAN Instr. Group Carrier Name: _____
 Address: 2700 Mitchell Dr. Invoice Number: _____
 City: Walnut Cr. State: _____ Zip: _____ Page _____ of _____ Page(s)

Shipper's NRC or State License No.: 36-12343-02
 Recipient's NRC or State License No.: 0256-07

Number of containers this shipment: 1
 (use separate page for each container)
 Total curies this shipment: 2
 Total grams fissile material this shipment: N/A

Radio isotope(s)	Radioisotope Transport Group(s)*
<u>H³</u>	<u>IV</u>

Description of Radioactive Materials on this page:
 Radioactive materials, small quantities.
 Radioactive devices.
 Fissile radioactive materials.
 Radioactive materials, low specific activity (L.S.A.)
 Radioactive materials, special form.
 Radioactive materials, N.O.S.
 D.O.T. radioactive material form:
 special normal
 (use separate page for each D.O.T. form)
 Chemical form*: _____
 Physical form*: gas liquid solid
 Total grams fissile material: _____
 Total activity (curies): _____
 Most restrictive transport group: _____
 D.O.T. quantity type: Type A Type B
 Placed in container: _____

Fissile class of container: I II III N/A
 Total grams of fissile material in container = _____ grams.
 Total activity in container _____ curies.

R.A.M. Label applied to container yes
 NO LABEL REQUIRED
 Radioactive white I
 Radioactive yellow II
 Radioactive yellow III
 Seal applied to container: YES NO
 Container _____ Specification No. _____

Return address--commodity description--container spec.--
 Label applied to container _____ Yes No

Radioactive Material Radiation Survey Results		Container: _____	Radiation Survey Results
Total millirem/hour at surface	<u>0.0</u>	Total millirem/hour at external surface	<u>0.0</u>
Total millirem/hour at 3 feet	<u>0.0</u>	Total millirem/hour at 3 feet	<u>0.0</u>
Gamma millirem/hour at 1 foot	<u>N/A</u>	Transport index for this container	<u>0</u>
Gamma millirem/hour at 3 feet	<u>N/A</u>	Removable contamination from external surface:	<u>0.0</u>
Date of Survey: <u>7/15/82</u>	Time: <u>11:00 AM.</u>	Alpha (dpm/100 cm ²)	_____
		Beta-Gamma (dpm/100 cm ²)	_____

Health Physics Surveyor (signature): Daniel Lullo Date: 7/15/82
 Vehicle Placarded: YES NOT REQUIRED

This shipment is within the limitations prescribed for passenger-carrying aircraft: YES NO Not applicable (N/A)
 This shipment qualifies as exempt from specification packaging, marking, and labeling: YES NO

"This is to certify that the above named articles are properly classified, described, packaged, marked, and labeled, and in proper condition for transportation, according to the applicable regulations of the Department of Transportation."

Radiation Safety Officer: Daniel Lullo H.P.

LOCATIONS OF 16³H FOLDS 6/22/78

- 4 IN YARTZOFF'S LAB (2 IN G.C.S, 2 IN KITS)
(FELDMAN'S LICENSE)
- 2 UNDER GILLETTE'S LICENSE IN LAB 130
- 2 FROM FELDMAN'S LICENSE WERE DISPOSED OF 6/22/78
(HAD BEEN IN LAB 190)

LOCATIONS OF 63Ni SOURCES 6/22/78

- 2 IN YARTZOFF'S LAB (14.5 mCi)
each
- 1 IN RANDALLS LAB (270) (14.5 mCi)
- 1 IN MCCRAID'S LAB (WFTS) (14.5 mCi) (FH 123)
- 1 IN GREENHOUSE - TINGEY (10.0 mCi)

Disp. H/SC

FORM NRC-314
(9-76)

U.S. NUCLEAR REGULATORY COMMISSION

APPROVED BY GAO
B-180225 (R0374)
Expires 5/31/79

CERTIFICATE OF DISPOSITION OF MATERIALS

(All Blocks MUST BE Completed)

LICENSEE NAME AND ADDRESS

U. S. Environmental Protection Agency
200 S. W. 35th Street
Corvallis, Oregon 97330

Attn: Jay D. Gile

LICENSE NUMBER

LICENSE EXPIRATION DATE

The licensee or any individual executing this certificate on behalf of the licensee certify that: (Check and/or complete appropriate item(s) below.)

- 1. No materials have been procured by licensee.
- 2. All materials procured and/or possessed by licensee under license number shown above, have been transferred to: _____

which has NRC license number: _____

- 3. All materials procured and/or possessed by licensee under license number shown above have been transferred to: _____
Varian Instrument Division, 2700 Mitchell Drive, Walnut Creek, CA 94598

which has license number: 0256-59 issued by California Dept. of Health

an Agreement State pursuant to Section 274 of the Atomic Energy Act of 1954, as amended, and the Energy Reorganization Act of 1974.

- 4. Materials have been disposed of in the following manner. (Describe specific disposal procedures - if additional space is needed, use reverse side.)

Radioactive Material Disposal Service
Southwest Nuclear Company
7066-A Commerce Circle
Pleasanton, CA 94566
License #2873-60

Received for disposal by VID-RSO:

J. B. Odenkugger

Date: 8-82

Isotope: H3 Absorbed onto Scandium Amount: 1 Curie

Form: Solid

PLEASE RETURN TO:

U.S. Nuclear Regulatory Commission
Office of Nuclear Material Safety and Safeguards
Washington, D.C. 20555

CERTIFYING OFFICIAL

SIGNATURE

DATE

