



U.S. Department of Labor  
Occupational Safety and Health Administration  
Salt Lake Technical Center  
8660 South Sandy Parkway  
Sandy, UT 84070



Phone: 801-233-4900  
FAX: 801-233-5000

FAXED BY: Jl Germ

DATE: 5-25-04  
TIME: 3:30 pm



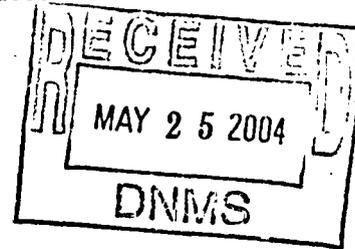
Please deliver the following pages to:

NAME: Judith Walker  
LOCATION: NRC - Arlington, TX  
FAX NUMBER: 817-860-8263  
FROM (NAME): John Germ

PHONE NUMBER: (801) 233-4900  
FAX NUMBER: (801) 233-5000

We are transmitting 6 pages (including cover letter). Please call if problems occur with this transaction.

COMMENTS: The K-85 info appears in Section 10-11 on page 2. It is my understanding these do not need to be on our NRC license.



## Radiation Safety Program - SLTC May 24, 2004

This is the Radiation Safety Program for the Salt Lake Technical Center (SLTC) and is based on NUREG - 1556, Vol. 7 of the Nuclear Regulatory Commission Item 10: Radiation Safety Program.

### 10.1 Audit Program

As an NRC license holder, the SLTC will review the content and implementation of the radiation protection program annually to ensure compliance with NRC regulations and with the terms and conditions of the license.

### 10.2 Radiation Detection Instruments

While some general maintenance and repair operations will be performed on GCs and XRFs, no work will be performed that involves the sealed sources beyond replacement of an entire enclosed source containment. Therefore, no specific training and experience in the use and handling of radioactive materials is necessary for individuals who will use the equipment and/or supervise their use.

### 10.3 Material Receipt and Accountability

The SLTC will maintain records of receipt, transfer and disposal of licensed material. This licensed material is identified in the SLTC license. The SLTC will perform an inventory of sealed sources every six months which includes in-use and in-storage sources.

### 10.4 Personnel Monitoring Equipment

Personal thermoluminescence (TLD) badges will be provided to employees who work in the X-ray Diffraction, Fluorescence, and robotics weighing operations at the SLTC. Additionally, area badges will be provided in specific locations where radiation sources are present such as the scanning and transmission electron microscopes, and the ionization neutralization sources that are used in methods development operations. Occasionally, the SLTC will provide a TLD to a specific OSHA Area Office upon request.

SLTC personnel will not perform maintenance or repair operations that include accessing a sealed source.

### 10.5 Leak Testing

The SLTC will perform leak testing every six months for the Ni-63 ECD sealed sources. The two H-3 sealed sources do not need to be leak tested per SLTC license item 15, D., (i). Leak testing will be performed by or under the supervision of Wayne Potter. Records of these test results are maintained by Wayne Potter and are located in a 3-ring binder in the GC laboratory.

#### 10.6 Maintenance and Repair

No maintenance or repair operations will be performed by SLTC personnel beyond that described in paragraph 10.2, herein.

#### 10.7 Transportation

At the present time, the only source that will be transported is a Niton XRF, 10uCi Cd-109 portable Pb analyzer which is already licensed by the manufacturer. This source is not covered by the facility license based on 10CFR30.71 which exempts quantities of Cd-109 up to 10 uCi. This includes up to 10 of these individual sources.

#### 10.8 Minimization of Contamination

There should be essentially no contamination from the sealed sources. Small amounts of chemical reagents (eg: uranyl acetate 25 gm, UO<sub>2</sub> 10 gm) are occasionally used for sample analysis procedures.

#### 10.9 [Not identified in NUREG]

#### 10.10 [Not identified in NUREG]

#### 10.11 Waste Management

Disposal of used/spent sealed sources will be by transfer of these materials to the original manufacturer or supplier. As an example, there are three K-85 sources (2, 2 and 10 mCi, half life 10.8 years) in the Chromatography Storage room, Rm. 179, from TSI, Inc. While the SLTC became a general licensee under NRC regulations upon receipt of these, they will be returned to TSI when the SLTC is through with them (see Jeff Swanson, TSI 651-490-4066 for shipping containers and instructions).

Other concerns:

1. Safe use of Radionuclides and Emergency Procedures.

Procedures for the safe use, including security of materials, and emergencies, have been developed. Procedures for safe use of radionuclides and emergency procedures are contained in this radiation safety program. Radionuclides are not handled by chemists (or analysts) in their general analytical duties. Electron capture detectors (ECD) are handled only by Wayne Potter. The calibration check sources are handled only by OSHA Health Response Team members who would use them to check the operation of or calibrate equipment.

In SR 1556, V7: Item 7, paragraph 2, "If no repair or maintenance on the GC/XRFs is proposed by the applicant, then no specific training and experience in the use and handling of radioactive materials is necessary for individuals who will use the devices or supervise the use. This would apply only from the standpoint that SLTC personnel do not enter the enclosed ECD units.

From a radiation source standpoint, the GC laboratory (Rm 178), the Chromatography Storage room (Rm 179), and the Health Response Team Laboratory (Rm 158) are defined as restricted areas. Generally, people who enter the SLTC as a service person or technical representative are escorted by an SLTC employee. Custodians who enter laboratory areas will be instructed to only sweep the floors and empty trash cans; they are to not touch anything on benches or equipment.

The local fire department (Sandy City) will be made aware of the chemical and radiation/radiological hazards that exist at this location. On-site emergencies related to this program will be managed by John Germ, Chemist and RSO (801-233-4925), Wayne Potter, Team Leader (801-233-4942), or Jeff Lodwick, Health Physicist (801-233-4913).

2. Materials to be possessed and proposed uses.

Purpose for Which Licensed Material Will Be Used: Analytical research or routine sample analysis, field evaluations.

No repair or maintenance work will be performed on the sealed sources beyond the replacement of entire contained ECD modules.

3. Training provided to users: Training for people and applications covered by this program is done as needed. The areas include the x-ray laboratory, Gas Chromatography (GC) laboratory, and the Health Response Team Laboratory.

Inventory of Radiation Sources

Inventory done by: JCG/WP \_\_\_\_\_

A physical inventory of radiation sources was performed according to the OSHA SLTC NRC license Number 43-17059-01

<u>Source Identification</u>	<u>Source serial number</u>	<u>Source Model number</u>	<u>Location</u>	<u>Date</u>	<u>Manufacturer</u>	<u>Purpose or Use</u>
Am-241	0691	DNS-5SP	HRT Lab, Rm158	5/21/04	Eberline <sup>A</sup>	Lab/Field Calibration
Am-241	8155	DNS-5	HRT Lab "	5/21/04	Eberline	Lab/Field Calibration
Th-230	9886	DNS-4SP	HRT Lab "	5/21/04	Eberline	Lab/Field Calibration
Th-230	11103	N/A	HRT Lab "	5/21/04	Eberline	Lab/Field Calibration
Th-230	11104	N/A	HRT Lab "	5/21/04	Eberline	Lab/Field Calibration
Th-230	3931-01	S-1	HRT Lab "	5/21/04	Eberline	Lab/Field Calibration
Tc-99	415/79	N/A	HRT Lab "	5/21/04	Eberline	Lab/Field Calibration
Tc-99	3932-01	S-5	HRT Lab "	5/21/04	Eberline	Lab/Field Calibration
Pu-239	N/A	N/A	HRT Lab "	5/21/04	N/A	Storage for Disposal

Electron Capture Detector Sources:

<u>Identification</u>	<u>Source serial number</u>	<u>Location</u>	<u>Date</u>	<u>Manufacturer</u>	<u>Purpose or Use</u>
Ni-63	U2521	GC Lab, Rm 178	2/26/04	Agilent*	Laboratory Analysis
Ni-63	K1837	GC Lab"	2/26/04	Agilent	Laboratory Analysis
Ni-63	U2859	Methods Lab, Rm 175	2/26/04	Agilent	Laboratory Analysis
Ni-63	U0569	GC Lab, Rm 178	2/26/04	Agilent	Laboratory Analysis
Ni-63	U0286	GC Lab,"	2/26/04	Agilent	Laboratory Analysis
Ni-63	L3927	GC Lab"	2/26/04	Agilent	Laboratory Analysis
Ni-63	U0568	Methods Lab, Rm 175	2/26/04	Agilent	Laboratory Analysis
Ni-63	U4607	GC Lab, Rm 178	2/26/04	Agilent	Laboratory Analysis
Ni-63	L2274	Ret to Agilent	8-6-01	Agilent	Laboratory Analysis
Ni-63	L5568	Ret to Agilent	8-6-01	Agilent	Laboratory Analysis
Ni-63	H1455	Ret to Agilent	8-6-01	Agilent	Laboratory Analysis
Ni-63	F4540	Surpl to Weber St	11-26-03	Agilent	Laboratory Analysis
Ni-63	L2957	Surplus to UT State	12-02	Agilent	Laboratory Analysis
Ni-63	L3933	Surplus to RMCenter	02-03	Agilent	Laboratory Analysis
H-3	223	HRT Lab, Rm158	5/21/04	Thermo Env	Storage for Disposal
H-3	225	HRT Lab, Rm158	5/21/04	Thermo Env	Storage for Disposal

These two tritium sources will be disposed of as soon as possible. Thermo Environmental

Instruments, Inc., formerly AID. Onyx Environmental Services, Salt Lake City, Utah, has submitted a bid to transport and dispose of these two sources for \$15,585.00. This seemed very high.

\*These are identified by Agilent when the devices were distributed in 2000. Prior to 2000, the devices were distributed under the company name "Hewlett Packard".

N/A implies not available

\*Eberline may now be identified as Thermo-Eberline or Thermo Electron Corporation