

## ACCEPTANCE REVIEW MEMO (ARM)

**Licensee:** Dept of Commerce (NIST) License No.: 05-03166-05  
 Boulder, CO  
**Docket No.:** 030-03732 **Mail Control No.:** 471164  
**Type of Action:** Amend **Date of Requested Action:** 10-19-06  
**Reviewer Assigned:** ARM reviewer(s): Torres

Response	Deficiencies Noted During Acceptance Review
	<input type="checkbox"/> Open ended possession limits. Limit possession. Submit inventory. <input type="checkbox"/> Submit copies of most recent leak test results. <input type="checkbox"/> Add - delete IC license condition. Add IC paragraph in cover letter. <input type="checkbox"/> Split license from cover letter. Add SUNSI marking to license. <input type="checkbox"/> Ask the licensee if they have any type-amount of EPAct Material.

**Reviewer's Initials:** \_\_\_\_\_ **Date:** \_\_\_\_\_

Yes  No Unrestricted release Group 2 or >: Transfer memo to FCDB within 10 days.  
 Yes  No Decommissioning notification should be completed within 30 days.  
 Yes  No Termination request < 90 days from date of expiration  
 Yes  No Expedite (medical emergency, no RSO, location of use/storage not on license, RAM in possession not on license, other)  
 Yes  No TAR needed to complete action.

**Branch Chief's and/or Sr. HP's Initials:** \_\_\_\_\_ **Date:** \_\_\_\_\_

**SUNSI Screening according to RIS 2005-31**

Yes  No **Non-Publicly Available, Sensitive** if any item below is checked

General guidance:

- \_\_\_\_\_ RAM = or > than Category 3 (Table 1, RIS 2005-31), use Unity Rule
- \_\_\_\_\_ Exact location of RAM (whether = or > than Category 3 or not)
- \_\_\_\_\_ Design of structure and/or equipment (site specific)
- \_\_\_\_\_ Information on nearby facilities
- \_\_\_\_\_ Detailed design drawings and/or performance information
- \_\_\_\_\_ Emergency planning and/or fire protection systems

Specific guidance for medical, industrial and academic (above Category 3):

- \_\_\_\_\_ RAM quantities and inventory
- \_\_\_\_\_ Manufacturer's name and model number of sealed sources & devices
- \_\_\_\_\_ Site drawings with exact location of RAM, description of facility
- \_\_\_\_\_ RAM security program information (locks, alarms, etc.)
- \_\_\_\_\_ Emergency Plan specifics (routes to/from RAM, response to security events)
- \_\_\_\_\_ Vulnerability/security assessment/accident-safety analysis/risk assess
- \_\_\_\_\_ Mailing lists related to security response

**Branch Chief's and/or Sr. HP's Initials:** RT **Date:** 10/30/06

## Pre-Licensing Screening

### Applicant Information:

Control No. 471164

Name: Dept of Commerce (NIST) Boulder, CO	Type of Request: Amend Program Code(s):
Location: CO	License No.: 05-03166-05      Docket No.: 030-03732

### STEP 1—Radioactive Materials and Quantities Requested:

<b>Instructions for Step 1: Complete Step 1 for all applications.</b> If all your responses in Step 1 are "No" then do not complete Step 2 (Screening Criteria). Sign and date the completed step-sheet and add it as the sensitive and non-publicly available OAR in ADAMS. If a "yes" response is indicated for any item in Step 1, also complete Step 2. If the type of use is subject to a Security Order or the requirements for increased controls, complete Step 3 (Item A or Item B) without delay.	Yes or No
A. The request is from a new applicant.	No
B. NUREG-1556, Volume 20, Section 4.9 indicates a licensing site visit is needed for the requested type of use, e.g., (1) Type A broad scope license, (2) panoramic irradiator containing > 10000 curies, (3) manufacturers or distributors using unsealed radioactive material or significant quantities of sealed material, (4) radioactive waste brokers, (5) radioactive waste incinerators, (6) commercial nuclear laundries, and (7) any other application that in the judgement of the reviewer and cognizant supervisor involves complex technical issues, complex safety questions, or unprecedented issues that warrant a site visit.	No
C. The applicant requested certain radionuclides and quantities that equal or exceed the Risk Significant Quantity (TBq) values in the table, below, that have been "highlighted" by the reviewer	No

### Table of Risk Significant Quantities

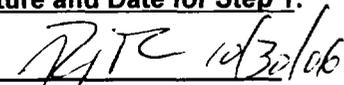
(Category 2 Quantities, IAEA Safety Guide No. RS-G-1.9, Categorization of Radioactive Sources, August 2005)

Radionuclide	Risk Significant Quantity (TBq <sup>1</sup> )	Risk Significant Quantity (Ci <sup>1</sup> )	Radionuclide	Risk Significant Quantity (TBq <sup>1</sup> )	Risk Significant Quantity (Ci <sup>1</sup> )
Am-241	0.6	16	Pm-147	400	11,000
Am-241/Be	0.6	16	Pu-238	0.6	16
Cf-252	0.2	5.4	Pu-239/Be	0.6	16
Cm-244	0.5	14	Ra-226 <sup>2</sup>	0.4	11
Co-60	0.3	8.1	Se-75	2	54
Cs-137	1	27	Sr-90 (Y-90)	10	270
Gd-153	10	270	Tm-170	200	5,400
Ir-192	0.8	22	Yb-169	3	81

<sup>1</sup> The primary values are TBq. The curie (Ci) values are for informational purposes only.  
<sup>2</sup> The Atomic Energy Act, as amended by the Energy Policy Act of 2005, authorizes NRC to regulate Ra-226 and NRC is in the process of amending its regulations for discrete sources of Ra-226.

Calculations of the Total Activity or the Unity Rule are attached to document whether or not the screening criteria in Step 2 were also completed to evaluate the application. <b>NOTE—If an amendment of an existing license is being requested, the calculations will include the previously authorized quantities for the radionuclide(s).</b>	Yes, No, or Not Applicable (NA)
Total Activity—multiple activities are requested for a single radionuclide and the sum of the activities equals or exceeds the quantity of concern for the radionuclide	—
Unity Rule—multiple radionuclides are requested and the sum of the ratios equals or exceeds unity, e.g., [(total activity for radionuclide A) + (risk significant quantity for radionuclide A)] + [(total activity for radionuclide B) + (risk significant quantity for radionuclide B)] ≥ 1.0.	—

### Signature and Date for Step 1:

  
 License Reviewer and Date



UNITED STATES DEPARTMENT OF COMMERCE  
National Institute of Standards and Technology  
325 Broadway  
Boulder, Colorado 80305-3328  
MC 104.02

RECEIVED

OCT 23 2006

DNMS

10/19/06

Jacqueline D. Cook, Senior Health Physicist  
US NRC/Nuclear Materials Licensing Branch  
Region IV  
611 Ryan Plaza Drive  
Arlington, TX 76011-8054

*RTC*

Re: License 05-03166-05, Amendment, Radiation Safety Officer Change

Dear Ms. Cook:

Please amend license # 05-03166-05, Conditions 11 A. and B. to read:

11. A. Licensed material shall be used by or, under the supervision of, Lawrence E. Grimm, Sonja G. Ringen, Thomas J. Bruno, Ph.D. or Joel Ullom, Ph.D.
- B. The Radiation Safety Officer for this license is Lawrence E. Grimm.

The above change adds Lawrence E. Grimm to the license and makes him the RSO. Mr. Grimm's resume is attached. He has 30 years of radioactive material and radiation safety experience. His experience includes being the named RSO at Benedict Nuclear Pharmaceuticals and at the University of Nebraska - Lincoln. Recently he was the Alternate Radiation Safety Officer for the University of California Los Angeles (UCLA) as noted on California broad scope license 1335-19, amendment 170, condition 14(e).

For more information please contact me at 303/497-7389 and/or email [sonja.ringen@nist.gov](mailto:sonja.ringen@nist.gov), or contact Mr. Grimm at 303/497-5019 and/or [larry.grimm@nist.gov](mailto:larry.grimm@nist.gov).

Sincerely,

Sonja G. Ringen, Manager  
Safety, Health and Environment

CC: Lawrence E. Grimm, Health Physicist, NIST/Boulder  
Timothy Mengers, Health Physics, NIST/Gaithersburg  
Patrick Gallagher, Chairman of the Institutional Radiation Safety Committee, NIST

**NIST**

L 471164

## RESUME

### Lawrence E. Grimm

#### PROFESSIONAL EXPERIENCE

**Senior Health Physicist** - University of California Los Angeles (UCLA), Los Angeles, CA  
Aug. 2000- Present

Responsibilities:

- Assist Radiation Safety Officer in all radiation safety, regulatory and general safety matters.
- Suggest and implement policy. Assure policies are followed.
- Oversee and manage Health Physicists and technicians. Recommend hiring of personnel, perform evaluations, recommend salary increases, and terminate employees.
- Develop procedures and processes to improve overall Radiation Safety Division effectiveness and efficiency.
- Assure that programs, such as the Waste program and Authorization program, are effective and meet regulatory requirements.
- Assure that the RSD provides the highest quality customer service.
- Assure that the RSD provides the highest quality training to customers and employees.
- Coordinate RSD programs and projects.
- Manage and develop processes for major/minor projects and assure they are completed in a timely fashion.
- Review all authorization work and process human use applications.

**Health Physicist** - University of California Los Angeles (UCLA), Los Angeles, CA  
Feb 1999- Aug. 2000

Responsibilities:

- Duties included: 40% of all RAM user authorizations and audits, major audits such as Nuclear Medicine, manage the survey program, and manage the training program.
- Assist the Radiation Safety Officer and Senior Health Physicist in general radiation safety matters.
- Manage and perform evaluations of radiation safety technicians.
- Provide emergency response.
- Develop new procedures to improve programs.
- Coordinate managed programs with other program managers.

**Radiation Safety Officer/Safety Manager** – J. L. Shepherd and Associates, San Fernando, CA  
1997 – 1998 J.L. Shepherd is a manufacturer of irradiators.

Responsibilities:

- Directing, planning and auditing the radiation safety program.
- Directing, planning, implementing and enforcing general safety programs.
- Interface with and apply the regulatory requirements of the following agencies: Nuclear Regulatory Commission; OSHA, EPA, DOT, FDA and the corresponding California/local agencies. Includes licensing applications, correspondence and all interactions.
- Provide radiation, OSHA, EPA and general safety training of employees, field representatives and customers.
- Develop, implement and manage a broad scale integrated database to manage the large inventory of highly radioactive sources and to manage the radiation and safety programs.

- Act as back up to service and install irradiators and resolve customer problems anywhere in the world.
- Provide technical expertise in the design and manufacture of irradiators.
- Develop new calibration procedures and maintain calibrations of instruments.

**Radiation Safety Officer - University of Nebraska - Lincoln**  
1985 – 1997

Responsibilities:

- Directing, planning and auditing the radiation safety program. Prepare safety policy,
- All radiation safety training of University staff, students, workers and frequenters; guest lecture in accredited classes.
- Duties included: emergency response, radioactive material inventory and receipt, radioactive and mixed waste disposal, user authorization and inspection, dosimetry and bioassays, and management of daily operations including budgeting.
- Manage full-time and part-time employees.
- All interactions with federal, state, and local officials regarding radioactive materials; respond to news media inquiries.
- Assist Environmental Health & Safety and Hazardous Material personnel regarding chemicals, mixed waste and other worker safety related problems.

**Director of Radiological Health - Benedict Nuclear Pharmaceuticals, Inc., Golden, Colorado**  
1981 – 1985                      Benedict Nuclear manufactured radioactive pharmaceuticals.

Responsibilities:

- Similar to above but on a smaller scale. Other duties:
- Developed the nation-wide package distribution system; back up to the Distribution Director.
- Closely involved with production and research including development of a computerized analytical system.

**Manager of Health Physics & Operations - RAMP Industries, Inc., Denver, Colorado**  
1984-1985                      RAMP was a low-level radioactive waste brokerage business.

Responsibilities:

- Manage daily operations of waste minimization, compaction, receipt, and shipping.
- Health physics duties, instrument calibration and regulatory compliance.
- Training of personnel in radiation, environmental and general safety,

**Radiation Health Physicist I - Washington State DSHS, Radiation Control Program, Olympia, Washington**  
1979-1981

Responsibilities:

- Performed inspections of radioactive material licensees for compliance with regulations. Obtained lead inspector position.
- Performed inspections for compliance with U.S. DOT regulations relating to the transport of radioactive materials.
- Developed inspection techniques and trained fellow inspectors in the U.S. DOT regulations.
- Responded to numerous radiation emergencies.

**Nuclear Medicine Technologist - Nuclear Medico Services, Inc., Van Nuys, California**  
1976 - 1979

Responsibilities:

- Set up and managed a nuclear medicine service leased to Allenmore Community Hospital in Tacoma, Washington.
- Performed nuclear medicine procedures and operations including: radiopharmaceutical preparation, patient imaging, radioactive waste, regulatory compliance and managing the business records.
- In 1978, took over, managed and operated the Lakewood General Hospital nuclear medicine department in Lakewood, Washington while also managing the Allenmore operation.

**Owner of Health Physics Consulting Company - Rad-Tec Midwest**

1982 – 1997

A general health physics service that:

- Contracted with Iotech, Inc., Northglenn, Colorado to install a 12 million Curie Cs-137 medical products irradiator. Performed leak test services, installation of sources from cask, to storage pool, then to irradiator.
- Cleaned up a Radium spill at the Colorado School of Mines.
- Performed instrument calibration, leak tests, training, X-ray and regulatory consultations for Colorado and Nebraska customers.
- Contracted with Nuclear Energy Institute, previously the US Council on Energy Awareness, to do four 2-day media tours, which entailed speaking on or to TV, radio and newspapers concerning radiation issues.

**EDUCATION**

- Seattle Preparatory HS, 1967
- Shoreline Community College, Seattle, WA., 1968
- Seattle University, 1976, BS Nuclear Medicine Technology
  - Certified Nuclear Medicine Technologist (ARRT-NM)
- University of Nebraska, Master of Public Administration (30 credit hours completed)
- Other Pertinent Training:
  - U.S. Nuclear Regulatory Commission courses, 1980: Inspection and Enforcement; Industrial Radiography; and Radiological Emergency Response
  - USDA 1986: Neutron Moisture-Density Gauge Course
  - National Safety Council 1992: Environmental Management
  - Univ. of Missouri 1993: Hazardous Waste Management (40 hr Hazwoper)
  - US Council For Energy Awareness (USCEA) 1993: Third Party Speaker Training, and Media Outreach and Communication Strategies
  - Univ. of Nebraska 1994, 1995, 1996, 1997: EPA/RCRA Refresher Training
  - Rockwell Laser Institute 1995: Laser Safety Officer Course
  - Consultec Scientific 1995: American Board of Health Physics Review Course

**PROFESSIONAL AFFILIATIONS**

Health Physics Society

Southern California Chapter of the Health Physics Society (Secretary 2000-2003)

**ORGANIZATION AND COMMITTEE APPOINTMENTS**

President, Pacific NW Tech Section, Society of Nuclear Medicine, 1979

President, Grant Elementary School Booster Club, Tacoma, WA, 1980

Exhibitor Chairman, Environmental Radiation Symposium, Health Physics Society, Colorado Springs, CO 1985

Vice-president, Capital Soccer Association, Lincoln, NE 1987

Gubernatorial Appointment: Advisory Committee on Low Level Radioactive Waste for the Nebraska Department of Environmental Control, 1987

Gubernatorial Appointment: Governor Orr's State of Nebraska Low Level Radioactive Waste Task Force, 1987

Founder/Treasurer, Nebraskan's for Environmental Responsibility 1989 - 1991

Exhibitor Chairman, Governor's Health and Safety Conference 1990, 1992, 1994

Co-chairman, Campus Radiation Safety Officer's Conference, Omaha, 1996

Secretary, Southern California Chapter of the Health Physics Society 1999 – present.

**MILITARY SERVICE**

United States Navy and Naval Reserve, 1968 - 1974

- Seaman recruit to Field Corpsman PO3
- Served in Vietnam with the U.S. Marines, 1st Recon 1969 - 1970
- Honorable discharge; Navy Achievement Medal, Vietnam service ribbon with combat star.

**PERSONAL PROFILE**

Birth: .

Family:

Interests:

- Public speaking, especially on controversial radiation and environmental issues.
- Computers: hardware, software, databases, spreadsheets, Internet, etc.
- Soccer player, coach, referee: Certified USSF D licensed youth soccer coach (16 years); certified soccer referee in USSF (11 years), NISOA (college, 7 years), and NF (high school, 9 years); certified USSF referee assessor & instructor (8 years)
- Home remodeling and wood working
- Traveling

OCT 31 2006

This is to acknowledge the receipt of your letter/application dated  
12-09-06, and to inform you that the initial processing,  
which includes an administrative review, has been performed.

DATE

There were no administrative omissions. Your application will be assigned to a technical reviewer. Please note that the technical review may identify additional omissions or require additional information.

Please provide to this office within 30 days of your receipt of this card:

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The action you requested is normally processed within 90 days.

A copy of your action has been forwarded to our License Fee & Accounts Receivable Branch, who will contact you separately if there is a fee issue involved.

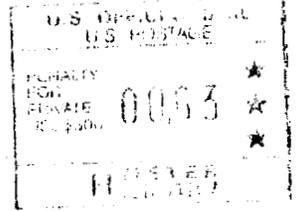
Your action has been assigned **Mail Control Number** 471164.  
When calling to inquire about this action, please refer to this mail control number.  
You may call me at 817-860-8103.

Sincerely,

*Colleen Murnahan*  
Licensing Assistant



CE  
JGY



Jacqueline D. Cook, Senior Health Physicist  
US NRC/Nuclear Materials Licensing Branch  
Region IV  
611 Ryan Plaza Drive  
Arlington, TX 76011-8054

030-0033432  
150-0316  
95-031

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Boulder, Colorado 80305-3328

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US NRC/Nuclear Materials L  
Region IV  
611 Ryan Plaza Drive  
Arlington, TX 76011-8054

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