



Cornell University  
Environmental  
Health and Safety

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REGION 1

2008 JAN -9 AM 10: 24

Thomas McGiff  
Radiation Safety Officer  
Laboratory and Radiation Safety Section  
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January 2, 2008

NMSB2

Licensing Assistance Team  
Division of Nuclear Materials Safety  
U.S. Nuclear Regulatory Commission, Region 1  
475 Allendale Road  
King of Prussia, PA 19406-1415

03036633

Subj: License 31-30936-01 amendment for a new RSO

Dear Dr. Sattar Lodhi:

I am writing to request an amendment to Cornell University's license 31-30936-01 to appoint a new Radiation Safety Officer (RSO). Due to reorganization within my department, I will be assuming new responsibilities that do not have radiation safety as a primary function. I therefore request that my Assistant Radiation Safety Officer, Mr. Jeffrey Leavey, be appointed as the new RSO for this license.

Enclosed are the following: Form 313, a summary of Mr. Leavey's experience, and Mr. Leavey's full resume. All other items on Form 313 (5, 6, and 8 - 12) remain the same.

Please contact me or Mr. Leavey (607-255-7397 or JAL247@cornell.edu) if you have any questions or require additional information.

Sincerely,

A handwritten signature in black ink that reads "Thomas McGiff".

Thomas McGiff  
Radiation Safety Officer

CC/cc

141569

NMSS/RGN1 MATERIALS-002

|  |   |   |                            |
|--|---|---|----------------------------|
| <b>NRC FORM 313</b><br>(10-2005)<br>10 CFR 30, 32, 33,<br>34, 35, 36, 39, and 40 | <b>U.S. NUCLEAR REGULATORY COMMISSION</b> | <b>APPROVED BY OMB: NO. 3150-0120</b><br>Estimated burden per response to comply with this mandatory collection request: 4.4 hours. Submittal of the application is necessary to determine that the applicant is qualified and that adequate procedures exist to protect the public health and safety. Send comments regarding burden estimate to the Records and FOIA/Privacy Services Branch (T-5 F53), U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001, or by internet e-mail to infocollects@nrc.gov, and to the Desk Officer, Office of Information and Regulatory Affairs, NEOB-10202, (3150-0120), Office of Management and Budget, Washington, DC 20503. If a means used to impose an information collection does not display a currently valid OMB control number, the NRC may not conduct or sponsor, and a person is not required to respond to, the information collection. | <b>EXPIRES: 10/31/2008</b> |
| <b>APPLICATION FOR MATERIALS LICENSE</b>   |   |   |                            |

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

|  |  |
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| <b>APPLICATION FOR DISTRIBUTION OF EXEMPT PRODUCTS FILE APPLICATIONS WITH:</b><br><br>DIVISION OF INDUSTRIAL AND MEDICAL NUCLEAR SAFETY<br>OFFICE OF NUCLEAR MATERIALS SAFETY AND SAFEGUARDS<br>U.S. NUCLEAR REGULATORY COMMISSION<br>WASHINGTON, DC 20555-0001<br><br><b>ALL OTHER PERSONS FILE APPLICATIONS AS FOLLOWS:</b><br><br><b>IF YOU ARE LOCATED IN:</b><br><br>ALABAMA, CONNECTICUT, DELAWARE, DISTRICT OF COLUMBIA, FLORIDA, GEORGIA, KENTUCKY, MAINE, MARYLAND, MASSACHUSETTS, NEW HAMPSHIRE, NEW JERSEY, NEW YORK, NORTH CAROLINA, PENNSYLVANIA, PUERTO RICO, RHODE ISLAND, SOUTH CAROLINA, TENNESSEE, VERMONT, VIRGINIA, VIRGIN ISLANDS, OR WEST VIRGINIA, SEND APPLICATIONS TO:<br><br>LICENSING ASSISTANCE TEAM<br>DIVISION OF NUCLEAR MATERIALS SAFETY<br>U.S. NUCLEAR REGULATORY COMMISSION, REGION I<br>475 ALLENDALE ROAD<br>KING OF PRUSSIA, PA 19406-1415 | <b>IF YOU ARE LOCATED IN:</b><br><br><b>ILLINOIS, INDIANA, IOWA, MICHIGAN, MINNESOTA, MISSOURI, OHIO, OR WISCONSIN, SEND APPLICATIONS TO:</b><br><br>MATERIALS LICENSING BRANCH<br>U.S. NUCLEAR REGULATORY COMMISSION, REGION III<br>2443 WARRENVILLE ROAD, SUITE 210<br>LISLE, IL 60532-4352<br><br><b>ALASKA, ARIZONA, ARKANSAS, CALIFORNIA, COLORADO, HAWAII, IDAHO, KANSAS, LOUISIANA, MISSISSIPPI, MONTANA, NEBRASKA, NEVADA, NEW MEXICO, NORTH DAKOTA, OKLAHOMA, OREGON, PACIFIC TRUST TERRITORIES, SOUTH DAKOTA, TEXAS, UTAH, WASHINGTON, OR WYOMING, SEND APPLICATIONS TO:</b><br><br>NUCLEAR MATERIALS LICENSING BRANCH<br>U.S. NUCLEAR REGULATORY COMMISSION, REGION IV<br>611 RYAN PLAZA DRIVE, SUITE 400<br>ARLINGTON, TX 76011-4005 |
|--|--|

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

|   |  |              |                 |    |
|---|--|--------------|-----------------|----|
| 1. THIS IS AN APPLICATION FOR (Check appropriate item)<br><input type="checkbox"/> A. NEW LICENSE<br><input checked="" type="checkbox"/> B. AMENDMENT TO LICENSE NUMBER <u>31-30936-01</u><br><input type="checkbox"/> C. RENEWAL OF LICENSE NUMBER _____   | 2. NAME AND MAILING ADDRESS OF APPLICANT (Include ZIP code)<br><br><b>Cornell University, Env Health &amp; Safety</b><br><b>395 Pine Tree Road, Suite 210</b><br><b>Ithaca, NY 14850</b>   |              |                 |    |
| 3. ADDRESS WHERE LICENSED MATERIAL WILL BE USED OR POSSESSED<br><br><b>Cornell University Arcicibo Observatory</b><br><b>Route 625</b><br><b>Arecibo, Puerto Rico 00612 Attn: Dr. C. Tepley</b>   | 4. NAME OF PERSON TO BE CONTACTED ABOUT THIS APPLICATION<br><br><b>Jeffrey Leavey</b><br><br>TELEPHONE NUMBER<br><b>(607) 255-7397</b>   |              |                 |    |
| SUBMIT ITEMS 5 THROUGH 11 ON 8-1/2 X 11" PAPER. THE TYPE AND SCOPE OF INFORMATION TO BE PROVIDED IS DESCRIBED IN THE LICENSE APPLICATION GUIDE.   |  |              |                 |    |
| 5. RADIOACTIVE MATERIAL<br>a. Element and mass number; b. chemical and/or physical form; and c. maximum amount which will be possessed at any one time.   | 6. PURPOSE(S) FOR WHICH LICENSED MATERIAL WILL BE USED.  |              |                 |    |
| 7. INDIVIDUAL(S) RESPONSIBLE FOR RADIATION SAFETY PROGRAM AND THEIR TRAINING EXPERIENCE.  | 8. TRAINING FOR INDIVIDUALS WORKING IN OR FREQUENTING RESTRICTED AREAS.  |              |                 |    |
| 9. FACILITIES AND EQUIPMENT.  | 10. RADIATION SAFETY PROGRAM.  |              |                 |    |
| 11. WASTE MANAGEMENT.   | 12. LICENSE FEES (See 10 CFR 170 and Section 170.31)<br><table style="width:100%; border: none;"> <tr> <td style="border: none;">FEE CATEGORY</td> <td style="border: none;">AMOUNT ENCLOSED</td> <td style="border: none;">\$</td> </tr> </table> | FEE CATEGORY | AMOUNT ENCLOSED | \$ |
| FEE CATEGORY  | AMOUNT ENCLOSED  | \$           |                 |    |
| 13. CERTIFICATION. (Must be completed by applicant) THE APPLICANT UNDERSTANDS THAT ALL STATEMENTS AND REPRESENTATIONS MADE IN THIS APPLICATION ARE BINDING UPON THE APPLICANT.<br><br>THE APPLICANT AND ANY OFFICIAL EXECUTING THIS CERTIFICATION ON BEHALF OF THE APPLICANT, NAMED IN ITEM 2, CERTIFY THAT THIS APPLICATION IS PREPARED IN CONFORMITY WITH TITLE 10, CODE OF FEDERAL REGULATIONS, PARTS 30, 32, 33, 34, 35, 36, 39, AND 40, AND THAT ALL INFORMATION CONTAINED HEREIN IS TRUE AND CORRECT TO THE BEST OF THEIR KNOWLEDGE AND BELIEF.<br><br>WARNING: 18 U.S.C. SECTION 1001 ACT OF JUNE 25, 1948 62 STAT. 749 MAKES IT A CRIMINAL OFFENSE TO MAKE A WILLFULLY FALSE STATEMENT OR REPRESENTATION TO ANY DEPARTMENT OR AGENCY OF THE UNITED STATES AS TO ANY MATTER WITHIN ITS JURISDICTION. |  |              |                 |    |
| CERTIFYING OFFICER -- TYPED/PRINTED NAME AND TITLE<br><b>Thomas McGiff, Radiation Safety Officer</b>  | SIGNATURE<br><br>DATE<br><b>1/3/08</b>   |              |                 |    |

| FOR NRC USE ONLY |         |              |                 |              |          |
|------------------|---------|--------------|-----------------|--------------|----------|
| TYPE OF FEE      | FEE LOG | FEE CATEGORY | AMOUNT RECEIVED | CHECK NUMBER | COMMENTS |
|                  |         |              | \$              |              |          |
| APPROVED BY      |         |              |                 | DATE         |          |

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**FORM 313 Items 2 and 5 through 11**

Re: Amendment Request for License 31-30936-01

2. Note that the mailing address for Cornell Environmental Health and Safety has changed. Item 2 shows the current address.

5. No change

6. No change

7. Request that the position of RSO be changed from Thomas McGiff to Jeffrey Leavey. Mr. Leavey has 27 years of health physics experience, including 7 years as RSO for a broad scope license and 1.5 years as Assistant Radiation Safety Officer at Cornell University. Mr. Leavey's resume is summarized here and provided in Attachment 1.

Jeffrey Leavey, CHP  
Certified Health Physicist – 1988 to present  
Masters degree in Nuclear Engineering from Rensselaer Polytechnic Institute

2006 to present – Cornell University, Assistant Radiation Safety Officer. Manages daily radiation safety program operations for a broad scope license issued by the New York State department of Health. Responsible for reviewing and approving the use of sealed and unsealed radioactive materials, including C-14 sources; inspecting radioactive material use laboratories; and providing guidance and training for the safe use of radiation sources.

1991 to 2006 – IBM Corp., Advisory Engineer. Provided radiation safety training for radioactive material and radiation producing equipment sources. Radiation safety engineer for a high energy synchrotron facility which included handling activated components.

1984 to 1991 – IBM Watson Research Center, Radiation Safety Officer. RSO for a broad scope license at an industrial research facility using sealed and unsealed radioactive materials, including alpha, gamma and beta emitters. Responsible for laboratory inspections, training, consulting, and waste disposal.

8. No change

9. No change

10. No change

11. No waste is generated from the sealed source

Attachment 1

Resume of Jeffrey Leavey, CHP

# Jeffrey A. Leavey, CHP

## ***ABHP Professional Certification***

Comprehensive Certification - American Board of Health Physics, 1988 to present.

## ***Professional Experience - CV***

### **Assistant Radiation Safety Officer – Cornell University**

***May 2006 to present*** – Environmental Health and Safety, Ithaca, NY, 14853. Responsible for the management of the University's ionizing and non-ionizing radiation safety programs. The University maintains a broad scope radioactive materials license for 120 research laboratories involved in bio, cellular, plant, animal and physical science research. Cornell is the home of the Cornell High Energy Electron Synchrotron (CHESS) performing elementary particle research. Other radiation sources include veterinary use of CAT, MRI, LINAC and x-ray diagnostic and therapeutic use equipment.

Responsible for managing a team of five professional and technician staff in day-to-day operations as well as strategic planning. Interfaced with University faculty and staff to facilitate successful short term goals and long term missions. Short term goals includes issuing radioisotope use permits, performing inspections, solving protocol implementation problems, and ensuring proper waste disposal practices are followed. Long term missions includes team participation in obtaining a new 1,000 Ci Cs-137 irradiator and strategic planning to integrate other aspects of environmental health and safety management principles and practices into radiation safety.

Currently managing two professionals, three technicians and one administrative assistant. Responsible for performance assessment and development of a highly dedicated team supporting radiation safety at the University.

Also, HP consultant and author/instructor for ionizing radiation equipment and laser safety (class 1 to 4) for Philips Semiconductors and NXP Semiconductors, East Fishkill, NY.

### **Advisory Engineer – IBM Corp.**

***January 2002 to May 2006*** - IBM 300mm Semiconductor Manufacturing Facility, East Fishkill, NY, 12533. Lithography process engineer responsible for the design, start-up, and implementation of integrated macro lithography defect detection and inspection tools and x-ray fluorescence thin film measurement tools. Also responsible for leading an overall program for litho defect reduction. Acted as technical lead for the 300mm semiconductor development engineering team supporting all process sectors.

Author and instructor for the Fishkill site in ionizing radiation and laser safety covering radioactive materials, radiation equipment and class 1 to 4 lasers. Health physics consultant to Fishkill and other IBM location Occupational Health and Safety departments since November 1991.

Also, HP consultant and author/instructor for ionizing radiation equipment and laser safety (class 1 to 4) for Philips Semiconductors and NXP Semiconductors, East Fishkill, NY.

***January 1999 to January 2002*** - IBM Advanced Semiconductor Technology Center, East Fishkill, NY, 12533. Lead engineer for lithography defect control. Responsible for creating and leading a defect inspection and control team of engineers and technicians for both micro- and macro-defects. Obtained

inspection and review tools needed to fulfill the team's mission. Significant improvements in chip defect levels have been demonstrated.

**November 1991 to January 1999** - IBM Advanced X-ray Lithography Facility (ALF), East Fishkill, NY, 12533. Lead engineer for advanced contamination control and X-ray mask and wafer inspection and cleaning development. Created advanced excimer laser cleaning techniques and tooling for proximity X-ray membrane mask cleaning. Patent awarded for novel clean transport container. Responsible for contractual demonstrations of defect free lithography and overlay control of ALF's SVG X-ray stepper. Performed process development needed to complete multi-thousand wafer demonstrations.

Also responsible (since 1987) for managing all safety aspects (radiation, cryogenic, laser, RF and general safety) of ALF housing a 700 MeV superconducting electron synchrotron for X-ray lithography. Performed shielding analysis, dose assessments, safety program development and auditing, radiation and cryogenic safety education program development and teaching, and procedures development and implementation. Provided technical direction to the contractor retained to assist in radiation safety reviews.

Developed and implemented a reliability/availability assessment program for tracking synchrotron and overall facility performance.

### **Radiation and Laser Safety Officer / Staff Industrial Hygienist - IBM**

**July 1984 to November 1991** - IBM Thomas J. Watson Research Center, Yorktown Heights, NY. Responsible for providing comprehensive radiological safety services to a large, broad-scope license research laboratory generating radiation from isotopes, accelerators, ion implanters, X-ray machines, and electron beam equipment and microscopes. Developed and managed safety programs for all aspects of radiation use including isotope handling and disposal, X-ray equipment upgrades, and interfacing with NY regulators. Also responsible for developing and managing comprehensive safety programs for non-ionizing radiation sources: lasers (Class 1 - 4), radio-frequency (RF), and magnetic fields. Designed, implemented and managed a major laser safety upgrade for approximately 60 advanced Class 4 laser laboratories.

Performed safety reviews for new construction and laboratory modifications, shielding analysis and design, internal and external radiation dose assessments, specified and implemented radiation monitoring programs (personnel, equipment, and area). Developed, authored and taught radiation, laser and RF/magnetic safety education courses.

Provided health physics consulting (ionizing and non-ionizing radiation) to other IBM locations and corporate headquarters. Performed audits, safety reviews, shielding design, dose assessments, monitoring services, and provided overall radiation safety program direction.

Health physics consultant for the 700 MeV electron synchrotron Advanced Lithography Facility located at the IBM East Fishkill site. Responsible for radiation safety since the program's inception in 1987. Reviewed and designed shielding, designed facility radiation safety systems, developed safety procedures, and responsible for reviewing non-radiation safety issues (e.g. cryogenic, electrical, general safety).

Industrial Hygiene (IH): member of the Research Emergency Response Team (ERT) responsible for responding to and mitigating fire, chemical, and general emergencies. Wrote and taught radiation safety classes to the ERT and Research Medical staffs. Responsible for IH at two off-site research buildings which included: exhaust requirements, IH sampling, indoor air quality, safety/chemical auditing, and ergonomics. Produced a video for use in new employee orientation as a comprehensive introduction to industrial hygiene and safety at IBM Research.

**Managerial experience:** approximately one year total as acting technical manager of the Industrial Hygiene and Safety Department. Responsible for all department operations (other than personnel issues) as well as interfacing with Research management on employee safety issues and concerns.

### **Health Physics Research Assistant - RPI**

**May 1983 to July 1984** - Rensselaer Polytechnic Institute, Troy, NY. Developed and implemented a health physics program for the RPI Materials Irradiation Program. This program established material handling and radioactive material release criteria for commercial and research irradiation of materials using the RPI 100 MeV accelerator. Additional responsibilities included providing health physics support to the RPI campus where isotopes and X-ray machines are used in a research environment. Managed the RPI personnel TLD dosimetry system. Obtained experience in isotope handling under a broad scope license, in operational health physics for high energy accelerators and X-ray generators, and zero power reactor operations and health physics.

### **Nuclear Engineer - CE**

**June 1981 to May 1983** - Combustion Engineering, Inc., Windsor, CT. Conceptual designer and lead programmer for a computerized health physics information processing system for nuclear power plants. The system computerized and correlated the information flows of the dosimetry and radiation work permit functions with outage planning information. Radiation exposure trends could be generated for various jobs performed during a plant outage. The system was developed as part of a federal DOE contract to reduce radiation exposures at nuclear power plants.

### **Radiological Engineer - EB**

**June 1980 to June 1981** - General Dynamics Corp., Electric Boat Division, Groton, Ct. Responsible for providing health physics and radiological engineering support to a nuclear submarine shipyard. Performed shipyard and environmental monitoring. Supervised the training of Electric Boat's Radiological Emergency Technical Team. Experience obtained in isotope handling, emergency response, ALARA engineering, and reactor health physics.

### **Education**

#### ***Master of Business Administration (Concentration in Finance)***

Marist College, Poughkeepsie, NY (May 2000)

#### ***Master of Engineering in Nuclear Engineering***

Rensselaer Polytechnic Institute, Troy, NY (May 1983 - May 1984)

#### ***Bachelor of Science in Nuclear Engineering***

Rensselaer Polytechnic Institute, Troy, NY (September 1976 - May 1980)

### **Patents**

Patent 5843196 Ultra-clean Transport Carrier, December 1, 1998.

### **Professional Activities**

American Board of Health Physics Panel of Examiners Part II - Membership term 1993 - 1997

Chair of ANSI N43-1 Subcommittee *Radiation Safety for X-ray Diffraction and Fluorescence Equipment - ANSI N43.2-2001*, since 1991

Health Physics Society - Plenary member since 1980

## **Publications**

Leavey, J.A., J. Boyle and A. Skumanich, *Advanced Process Control Based on Lithographic Defect Inspection and Reduction*, IEEE/SEMI Advanced Semiconductor Manufacturing Conference, pp. 33-40, 2000.

Leavey, J.A., J. Boyle and A. Skumanich, *Lithography Process Control and Optimization Based on Defect Capture and Reduction*, Proc. Of SPIE Vol. 3998, Metrology, Inspection, and Process Control for Microlithography XIV, pp. 294-299 (Mar. 2000).

Leavey, J.A. *Overview and Current Mask Status of X-ray Mask Usage at IBM*, Poster presentation at XEL Conference, Yokohama, Japan, November 1998.

Leavey, J.A. and Lesoine, L.G. *IBM Advanced Lithography Facility: The First Five Years*, Solid State Technology, July 1998, pp.101-115.

Leavey, J.A. and P.J.S. Mangat, *Mask and Wafer Inspection and Cleaning for Proximity X-ray Lithography*, Proc. of SPIE 23<sup>rd</sup> Annual International Symposium on Microlithography, February 22-27, 1998.

Leavey, J.A., C. Capasso, A. Pomerene, W. Chu, A. Lamberti, S. Hector, J. Oberschmidt, and V. Pol *X-ray induced mask contamination and particulate monitoring in x-ray steppers*, Journal of Vacuum Science Technology B, Vol. 14 No. 6, 1996, pp. 4336-4340.

Leavey, J.A. and Lesoine, L.G. *Design Considerations for the IBM X-ray Lithography Facility*, IBM Journal of Research and Development, Vol. 37 No. 3, May 1993, pp.385-393.

Archie, C., J. Granlund, R. Hill, K. Kukkonen, J. Leavey, G. Lesoine, J. Oberschmidt, A. Palumbo, C. Wasik *Installation and Early Operating Experience with the HELIOS compact Synchrotron X-ray Source*, Journal of Vacuum Science Technology, Vol. 10 No. 6, 1992, pp. 3224-3228.

Leavey, J.A., L.G. Lesoine and K.W. Kukkonen *ALF: A Facility for X-ray Lithography II - A Progress Report*, Electron-Beam, X-ray, and Ion-Beam Submicrometer Lithographies for Manufacturing II, Proceedings of the Society of Photo Optical Instrumentation Engineers, Vol. 1671, 1992.

Leavey, J.A., L.G. Lesoine and K.W. Kukkonen *ALF: A Facility for X-ray Lithography* Electron-Beam, X-ray, and Ion-Beam Submicrometer Lithographies IX, Proceedings of the Society of Photo Optical Instrumentation Engineers, Vol. 1263, 1990.

Leavey, J.A. and Rooney, F.P. *Safety and Health Considerations of an X-ray Lithography Source*, Hazard Assessment and Control Technology in Semiconductor Manufacturing, Lewis Publishers (ACGIH Industrial Hygiene Science Series), 1989.

## **Contact Information**

Jeffrey Leavey, CHP  
36 Mandalay Drive  
Poughkeepsie, NY 12603  
845-235-3836  
[certhp@optonline.net](mailto:certhp@optonline.net)

Alternate Address:  
2016 Alpha Circle  
Cortland, NY 13045



This is to acknowledge the receipt of your letter/application dated 12/2008 / 1/3/2008, and to inform you that the initial processing which includes an administrative review has been performed.

AMEND. 31-30936-01  
There were no administrative omissions. Your application was 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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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** 141569.  
When calling to inquire about this action, please refer to this control number.  
You may call us on (610) 337-5398, or 337-5260.