



**UNITED STATES
NUCLEAR REGULATORY COMMISSION**
WASHINGTON, D.C. 20555-0001

(FSME-14-046, May, Training, H-315)

May 14, 2014

ALL AGREEMENT STATES

ACCEPTANCE TO THE IRRADIATOR TECHNOLOGY COURSE (H-315)
(FSME-14-046)

PURPOSE: To provide the list of students selected for the Irradiator Technology Course (H-315).

BACKGROUND: The U.S. Nuclear Regulatory Commission (NRC) provides the list of students and instructions to the States to help ensure that States with candidates on waiting lists will have an opportunity to fill vacated slots that may open up after this notification letter has been sent.

DISCUSSION: Enclosure 1 is the list of students from the Agreement States selected to attend the July 14-18, 2014, Irradiator Technology Course (H-315). Please provide the list of students and the instructions (Enclosure 2) to each individual from your program that is on the list. Enclosed for your information is a tentative schedule for the course (Enclosure 3). Students attending this course will be paid lodging and per diem by the NRC. Students should immediately make their travel arrangements through Carlson Wagonlit Travel at 1-800-453-8396 and then download the Travel Application Form at <http://nrc-stp.ornl.gov/training.html>. The completed form should be sent to ASTrainingandtravel.Resource@nrc.gov. Information should not be sent directly to Ms. Brenda Usilton. In addition, we are requesting that you do not send any training applications, travel forms and vouchers by fax. Processing of your requests sent by fax could result in significant delays.

We ask that you inform us of any cancellations 30 days prior to the course starting date or as soon as you are aware that the student cannot attend the course.

If you have any questions regarding this correspondence, please contact me at 301-415-3340 or the individual named below:

POINT OF CONTACT: Ms. Brenda G. Usilton
TELEPHONE: (301) 415-2348

INTERNET: Brenda.Usilton@nrc.gov

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Laura A. Dudes, Director
Materials Safety and State Agreements
Office of Federal and State Materials
and Environmental Management Programs

Enclosures:

1. List of students
2. Instructions
3. Tentative schedule

IRRADIATOR TECHNOLOGY COURSE (H-315)
JULY 14-18, 2014
LAVAL, CANADA

STATE	STUDENT(S)
MARYLAND Dept. of the Environment 1800 Washington Blvd. Suite 750 Baltimore, MD 21230	Kenneth Brenneman
PENNSYLVANIA Bureau of Radiation Protection Rachel Carson State Office Bldg P.O. Box 8469 Harrisburg, PA 17105-8469	Elaine Crescenzi Stephan Brown
TEXAS Commission on Environmental Quality (TCEQ) P.O. Box 13087 Austin, TX 78711	Lorrie Council

INSTRUCTIONS TO STUDENTS

ACCEPTANCE: This is to advise you that those individuals in Enclosure 1 have been accepted for participation in the training course (H-315), Irradiator Technology. This course is scheduled to be presented by Nordion on July 14-18, 2014, at the Gamma Centre of Excellence,(GCE) 535 Boulevard Cartier, Laval, Quebec, Canada, H7V 3S8, Contact: Mr. Carlo Coppola, 1-450-687-5165. Mr. Coppola is the Director of the GCE. Maps of the area can be found at www.nordion.com/gce.

COURSE: This course will be conducted beginning on July 14, 2014, at 9:00 a.m. and end at 5:00 p.m. each day except for Friday, July 18, 2014, when the class is scheduled to end between 1:30-2:30 p.m. You will be expected to remain until the course is completed. If you have any significant medical or family issues that might preclude you from remaining until the course is completed please notify Ms. Usilton prior to the start date of the course. Travelers will need a passport to enter into Canada.

LODGING & TRAVEL: You should plan to arrive on Sunday, July 13, 2014, and depart on Friday, July 18, 2014. Participants must make their own lodging and travel arrangements. Individuals should request a government rate at the hotels. Below are a number of hotels in the area. The per diem for the area is \$150 for lodging, \$112 for meals and incidents, not to exceed \$262. Effective January 1, 2014, the mileage rate increased to 56 cents per mile. If traveling by air, you need to contact Carlson Travel at 1-800-453-8396 for airline reservations. Please complete the Travel Application Form which is located at <http://nrc-stp.ornl.gov/training.html>. You can also go to the same website to receive a copy of the travel instructions and voucher for reimbursement. Please return the travel form to ASTrainingandtravel.Resource@nrc.gov and if you have any questions regarding the form contact Ms. Brenda Usilton at Brenda.Usilton@nrc.gov or call 301-415-2348. No rental cars will be authorized for travel. Cellular phones and similar devices with audible capability should be disabled while classes are in session. Normal office/business attire is appropriate for students attending training. Individuals should make a reservation at one of the following hotels. The cost of a taxi from the airport is around \$35.00-\$50.00 Canada. It takes approximately 30 minutes to travel from the GCE to Dorval Airport.

Room reservations can be made at the Sheraton Laval Hotel, 2440, Autoroute des Laurentides, Laval, Tel. 800-667-2440 or 450-687-2440. This is normally the preferred place to stay and overall best value. The hotel is located across from a shopping mall. Please make sure to ask for the Nordion special rate when you call. Other local hotels are:

Hilton Laval****
2225, Autoroute des Laurentides
Laval
Tel. 800-363-7948
www.hilton-laval.com

Comfort Inn
2055 Autoroute des Laurentides
Laval
Tel. 800-267-3837
www.choicehotels.ca/cn331

Le St. Martin Hotel and Suites
1400 Maurice-Gauvin Rd.
Laval, Quebec
H7S 2P1 Canada
Tel: 1.866.904.6835
<http://lestmartin.com/laval/>

Irradiator Technology Course Schedule

DAY 1

Session 1
9:00-10:15

Introduction
-Welcome
-Preliminary tour of IR-147
10:15-10:30
COFFEE BREAK

Session 2
10:30-11:30

Industrial Irradiators
-Types
-Components
-Design principles
-Touchtime
-PLC

Session 3
11:30-12:00

Research Irradiators
-Types
-Design
12:00-1:00
LUNCH

Session 3
1:00-1:30

Research Irradiators (continued)
-Use
-Inspections (hands-on)

Session 4
1:30-2:30

Cobalt-60
-Cobalt-59
-Product of Co-60
-Transportation of Co-60
-Handling of Co-60

Session 5
2:30-3:15

Source Loading
-What every operator should know
-Handling tools
-Typical loading
-Source loading procedure
3:15-3:30
COFFEE BREAK

Session 6
3:30-5:00

Operation of Industrial Irradiators (Hands-on)
-Operating modes
-Sequence diagram
-PLC

DAY 2

Session 7

9:00 - 10:00

10:00-10:15

10:15-11:00

Safety Systems & Features

-Fault indicators

COFFEE BREAK

Safety Systems & Features (continued)

-Caution indicators

-Safety features

-Hands-on review of safety systems

Session 8

11:00-12:00

12:00-1:00

1:00-2:00

Walk-through Inspection (hands-on)

-A complete safety inspection is performed

LUNCH

-Walk-through Inspection (hands-on) (continued)

-A complete safety inspection is performed

Session 9

2:00-3:15

Irradiator Maintenance

-Control room organization

-Equipment maintenance

-Electrical/Mechanical -

Safety checks

3:15-3:30

COFFEE BREAK

Session 10

3:30-5:00

Good Manufacturing Practices

-Standard Operating Procedures

-Following product from receiving to shipping

DAY 3

8:00

Leave Laval for Kanata

Session 11

All day

Tour of a cobalt-60 product facility

-Storage pool

-Hot cells

-Encapsulation

-Leak testing

-F-168 container

-Transportation

12:00-1:30

LUNCH

Session 12

1:30-3:00

3:00-6:00

Tour of a Molybdenum 90 Product Facility

-Guided tour of the MDS Nordion Molybdenum 90 product facility

-Return to Laval

DAY 4

Session 13

9:00-10:00

10:00-10:15

Emergency Procedures

-Procedures as required by 10 CFR36

COFFEE BREAK

Session 14 10:15-10:45	Wipe test (Hands-on) -A source rack wipe test is performed
Session 15 10:45-11:15	Radiation Safety Officer and Operator responsibilities -Maintenance records -Irradiation log book -Visitor records
Session 16 11:15-12:15 12:15-1:15	Radiation Survey (hands-on) -A radiation survey of biological shield is performed LUNCH
Session 17 1:15-2:00	Incidents -Incidents at irradiation facilities
Session 18 2:00-3:15 3:15-3:30	Dosimetry (hands-on) -Types of dosimeters -Characteristics -Reading equipment COFFEE BREAK
Session 19 3:30-5:00	Regulations -USNRC regulations 10 CFR36
DAY 5	
Session 19 8:15-9:15	Regulations (continued) -Regulatory Guide 8-13 -Regulatory Guide 8-29 -IAEA guidelines -ANSI standards
Session 20 9:15-9:45 9:45-10:00	Licensing -USNRC Guide NUREG 1556 Vol. 6 -Security Update COFFEE BREAK
Session 21 10:00-11:15	Audi -Audit of radiation safety procedures, operational procedures and safety systems
Session 22 11:15-11:30	Review -Discussion
Session 23 11:30-1:30	Examination -Written test

Note: All hands-on exercises are carried out using a full scale commercial irradiator and two research irradiators.