

August 13, 2008

ALL AGREEMENT STATES, MICHIGAN, NEW JERSEY, VIRGINIA

**ACCEPTANCE TO THE IRRADIATOR TECHNOLOGY COURSE (H-315) (FSME-08-064)**

Enclosure 1 is the list of students from the Agreement States selected to attend the September 29-October 3, 2008, 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 for by the U.S. Nuclear Regulatory Commission (NRC). Students should make their travel arrangements through Carlson Wagonlit Travel at 301-415-5006 immediately and then submit their travel information needed for NRC to issue their travel authorization (Appendix A) to Traci Kime (Fax 301-415-3502). (See invitational travel information in AD-500 at: <http://nrc-stp.ornl.gov/procedures/ad500.pdf>) to get to the Appendix A form.

To assist us and other States, and to help ensure that States with candidates on waiting lists will have an opportunity to fill vacated slots that may open up after our course acceptance letters have been sent to you, 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 you cannot attend.

If you have any questions regarding this correspondence, please contact me or the individual named below.

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

INTERNET: Brenda.Usilton@NRC.GOV  
FAX: (301)415-3502

**/RA/**

Robert J. Lewis, Director  
Division of Materials Safety  
and State Agreements  
Office of Federal and State Materials  
and Environmental Management Programs

**FSME-08-064**

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(SP03)

**ML082270683**

<b>OFC</b>	FSME/DMSSA	FSME/DMSSA	
<b>NAME</b>	BUsilton:	RLewis	
<b>DATE</b>	08/13/08	08/13/08	/ /08

**OFFICIAL RECORD COPY**

IRRADIATOR TECHNOLOGY COURSE (H-315)  
September 29-October 3, 2008  
MONTREAL, CANADA

STATE	STUDENT(S)
<b>ILLINOIS</b> IL Emergency Management Agency Division of Nuclear Safety 1035 Outer Park Drive Springfield, IL 62704	Mary Burkhart Joanne Kark
<b>MARYLAND</b> MD Dept. of the Environment 1800 Washington Blvd., Suite 750 Baltimore, MD 21230-1724	Danny Adams
<b>NEW JERSEY</b> Dept. of Environmental Protection P.O. Box 415 Trenton, NJ 08625-0415	Catherine Biel
<b>NEW YORK STATE HEALTH</b> Division of Environmental Health Investigations 547 River Street Troy, NY 12180-2216	Mohammad Chaudhry
<b>TEXAS</b> Dept. of State Health Services 1100 West 49 <sup>th</sup> Street, MC 2828 Austin, TX 78756-3189	Raymond Fleming

ENCLOSURE 1

## 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 MDS Nordion on September 29-October 3, 2008, at the Canadian Irradiation Centre (CIC), 535 Boulevard Cartier, Laval, Quebec, Canada, H7V 3S8, Contact: Mr. Yves Doyle, MDS Nordion, work - 450-687-5165, cell phone – 613-697-9837.

**COURSE:** This course will be conducted beginning on September 29, 2008, at 9:00 a.m. and end at 5:00 p.m. each day except for Friday, October 3, 2008, when the class is scheduled to end between 1:30-2:30 p.m. Travelers will need a passport to enter into Canada.

**LODGING & TRAVEL:** You should plan to arrive on Sunday, September 28, 2008, and depart on Friday, October 3, 2008. 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. If traveling by air, you need to contact Carlson Travel at 301-415-5006 for airline reservations. The per diem for the area is \$223 for lodging, \$115 for meals and incidents, not to exceed \$338. No rental cars will be issued. Please complete the invitational travel authorization (Appendix A) request as described in FSME Procedure AD-500, "Invitational Travel Authorization and Voucher" and return it to Traci Kime at [TSK@nrc.gov](mailto:TSK@nrc.gov) or fax it to 301-415-3502. If you have any questions regarding the travel form please contact Traci on 301-415-8140. Traci will mail your travel voucher packet to your office after the course ends.

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. A map indicating the locations relative to the CIC is also enclosed (Enclosure 3). The cost of a taxi from the airport is around \$60.00 Canada. Enclosed for your information is a course schedule (Enclosure 4).

Room reservations can be made at the Sheraton Laval Hotel, 2440, Autoroute des Laurentides, Laval, Tel. 800-667-2440 or 450-687-2440. This hotel offers a special rate for MDS Nordion's guests: \$135.00 CNS (approx. \$136.00 US) /night including all-you-can-eat continental breakfast buffet. The hotel is located across from a shopping mall. This is normally the preferred place to stay and overall best value. Please make sure to ask for the MDS Nordion special rate when you call.

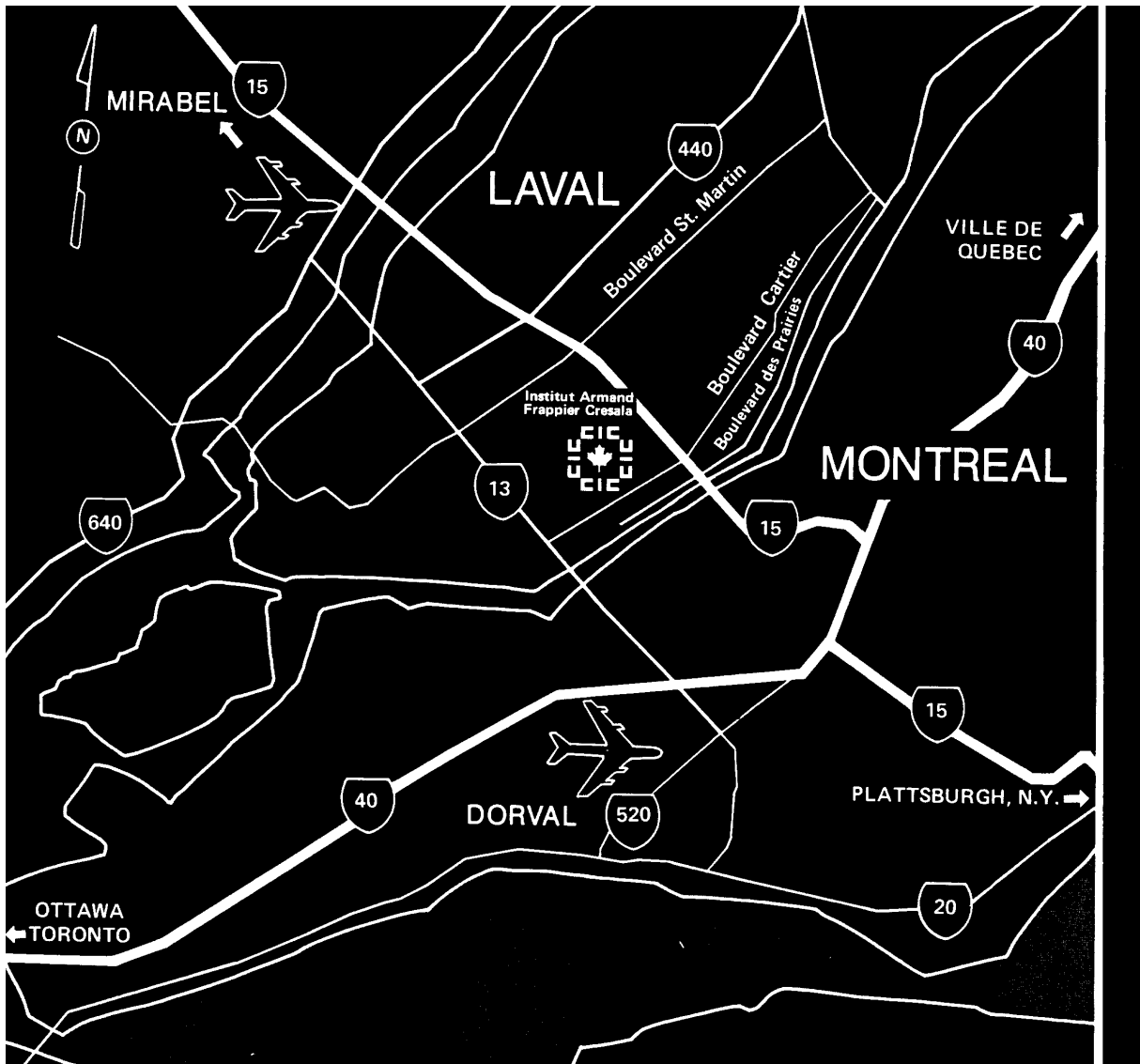
Hilton Laval  
2225, Autoroute des Laurentides  
Laval  
Tel. 800-363-7948

Comfort Inn  
2055, Autoroute des Laurentides  
Laval  
Tel. 450-686-0600

Radisson Hotel Laval  
2900 boul. Le Carrefour  
Laval  
Tel. 800-333-3333

Quality Suites  
2035 Autoroute des Laurentides  
Laval  
Tel. 800-267-3837

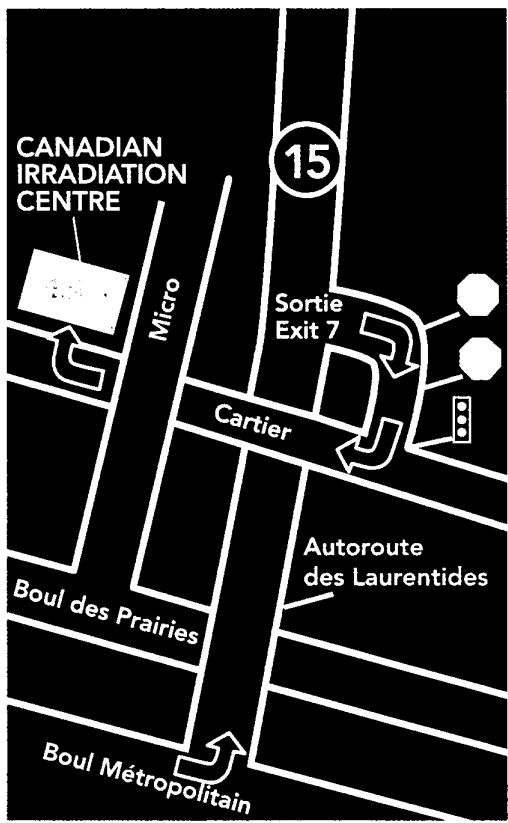
**ENCLOSURE 2**



From Dorval airport take Route 520 East (Est) to Route 40 East (Est), to Route 15 North (Nord).

**DIRECTIONS**

Canadian Irradiation Centre  
535 Cartier Boulevard, Laval, Québec  
Tel: (514) 687-5165 Fax: (514) 687-5792  
Take Route 15 North to Exit 7.  
At the first light, turn right (Cartier Blvd.)  
Turn right at 535 Boulevard Cartier.



**ENCLOSURE 4**

**Irradiator Technology for Inspectors  
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



<b>Session 9</b> 2:00-3:15	<b>Irradiator Maintenance</b> -Control room organization -Equipment maintenance -Electrical/Mechanical -Safety checks COFFEE BREAK
3:15-3:30 <b>Session 10</b> 3:30-5:00	<b>Good Manufacturing Practices</b> -Standard Operating Procedures -Following product from receiving to shipping
<b>DAY 3</b> 8:00	Leave Laval for Kanata
<b>Session 11</b> All day	<b>Tour of a cobalt-60 product facility</b> Storage pool -Hot cells -Encapsulation -Leak testing -F-168 container -Transportation LUNCH
12:00-1:30 <b>Session 12</b> 1:30-3:00 3:00-6:00	<b>Tour of a Molybdenum 90 Product Facility</b> -Guided tour of the MDS Nordion Molybdenum 90 product facility -Return to Laval
<b>DAY 4</b> <b>Session 13</b> 9:00-10:00 10:00-10:15	<b>Emergency Procedures</b> -Procedures as required by 10 CFR36 COFFEE BREAK
<b>Session 14</b> 10:15-10:45	<b>Wipe test (Hands-on)</b> -A source rack wipe test is performed
<b>Session 15</b> 10:45-11:15	<b>Radiation Safety Officer and Operator responsibilities</b> -Maintenance records -Irradiation log book -Visitor records
<b>Session 16</b> 11:15-12:15 12:15-1:15	<b>Radiation Survey (hands-on)</b> -A radiation survey of biological shield is performed LUNCH
<b>Session 17</b> 1:15-2:00	<b>Incidents</b> -Incidents at irradiation facilities
<b>Session 18</b> 2:00-3:15	<b>Dosimetry (hands-on)</b> -Types of dosimeters -Characteristics -Reading equipment COFFEE BREAK
3:15-3:30 <b>Session 19</b> 3:30-5:00	<b>Regulations</b> -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

**Licensing**

- USNRC Guide NUREG 1556 Vol. 6
- Security Update

9:45-10:00

COFFEE BREAK

**Session 21**

10:00-11:15

**Audit**

- 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.

Dosimetry exercises are possible in our dosimetry laboratory which currently handles 7 (seven) of the most used dosimetry systems in the world.