



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

(FSME-07-039, April, Training, H-315)

April 26, 2007

ALL AGREEMENT STATES, NEW JERSEY, PENNSYLVANIA, VIRGINIA

**ACCEPTANCE TO THE IRRADIATOR TECHNOLOGY COURSE (H-315) (FSME-07-039)**

Enclosure 1 is the list of students from the Agreement States selected to attend the June 4-8, 2007 Irradiator Technology course (H-315). Please provide the list of students and the travel instructions (Enclosure 2) to each individual from your program that is on the list. States with students attending this course have agreed to pay travel expenses, and where designed, the tuition. To cover the tuition expense, each State should submit a purchase order or equivalent document, to the U.S. Nuclear Regulatory Commission (NRC), to the following address:

U.S. Nuclear Regulatory Commission  
Attn: Gina Jones  
Office of the Chief Financial Officer  
Mail Stop T-9E10  
Washington, DC 20555

The NRC will, in turn, issue you a bill (invoice). If for any reason your attendee is unable to attend, please submit to us a written purchase order, or equivalent, to cancel, prior to the starting date of the course. Course attendees should be encouraged to make travel and lodging arrangements as soon as possible.

We ask that you inform us of any cancellations 30 days prior to the course starting date. This will assist us in ensuring that States with candidates on waiting lists have an opportunity to fill vacated slots that may open up after our course acceptance letters have been sent to you.

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: [BGU@NRC.GOV](mailto:BGU@NRC.GOV)  
FAX: (301) 415-3502

***/RA Scott W. Moore Acting for/***  
Janet R. Schlueter, Director  
Division of Materials Safety and State Agreements  
Office of Federal and State Materials  
and Environmental Management Programs

Enclosures:  
As stated

IRRADIATOR TECHNOLOGY COURSE (H-315)  
June 4-8, 2007  
MONTREAL, CANADA

STATE	STUDENT(S)	PAYING TUITION/ SPACE AVAILABLE
<b>VIRGINIA</b>  Bureau of Radiological Health Department of Health James Madison Bldg. Main Street Station 109 Governor Street, Room 730 Richmond, VA 23219	Kimberly Gilliam Michael Welling	Paying Tuition Paying Tuition
<b>WASHINGTON</b>  Office of Radiation Protection Washington Department of Health P.O. Box 47827 Olympia, WA 98504-7827	Anine Grumbles	Paying Tuition

## 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 June 4-8, 2007, at the Canadian Irradiation Centre (CIC), 535 Boulevard Cartier, Laval, Quebec, Canada, H7N 4Z9, Contact Mr. Yves Doyle, MDS Nordion, work - 450-687-5165, cell phone - 514-235-1735. Students should bring an engineering or scientific calculator with them. Normal office/business attire is appropriate for students attending NRC courses.

**COURSE:** This course will be conducted beginning on June 4, 2007, at 9:00 a.m. and end at 5:00 p.m. each day except for Friday, June 8, 2007 when the class is scheduled to end between 1:30-2:30 pm. Travelers will need a passport to enter into Canada.

**LODGING & TRAVEL:** You should plan to arrive on Sunday, June 3, 2007, and depart on Friday, June 8, 2007. Participants must make their own lodging and travel arrangements. 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 between \$37.00-\$45.00 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: \$129.00 CNS (approx. \$95.00 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.

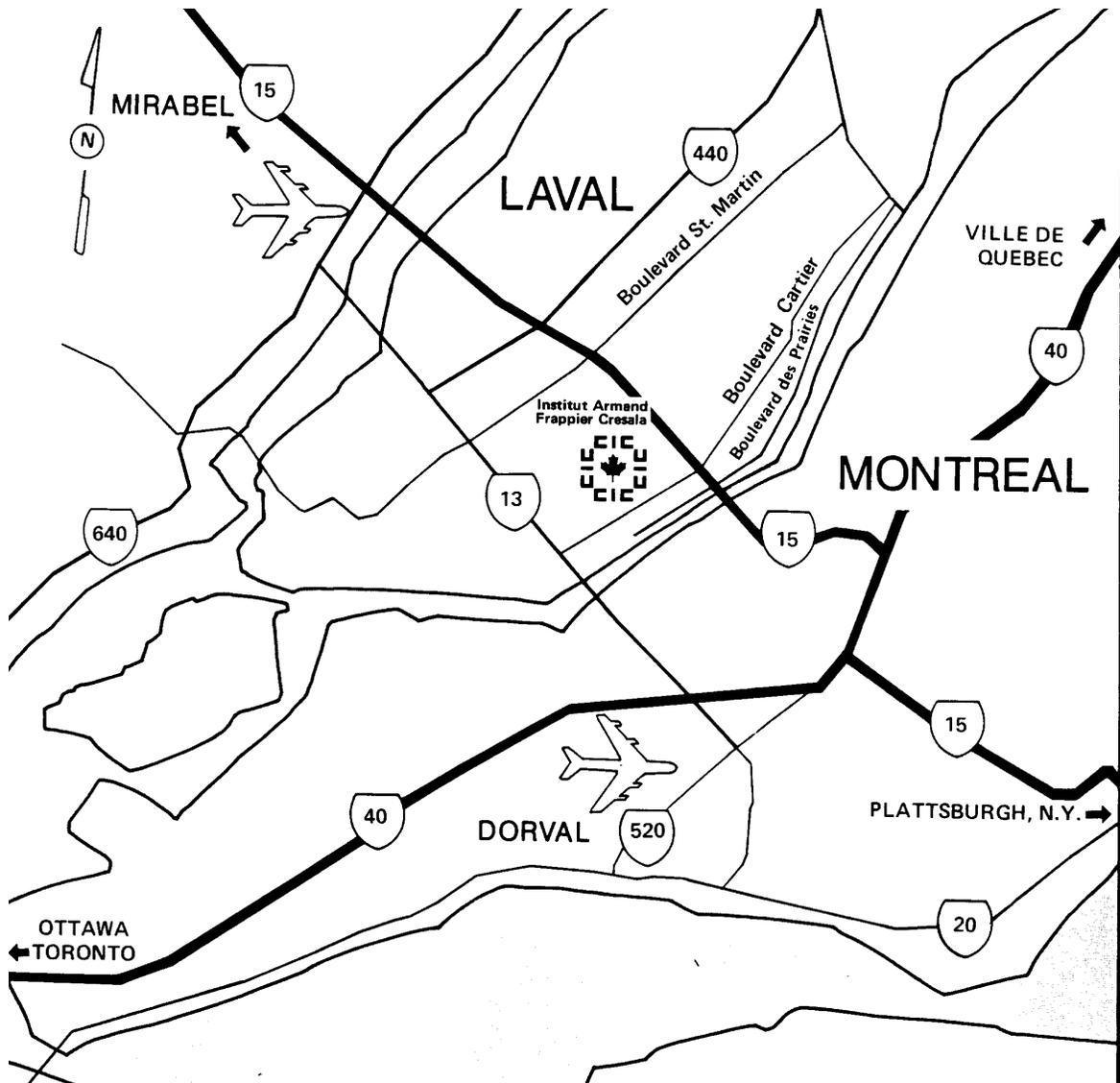
Hilton Laval  
2225, Autoroute des Laurentides  
Laval  
Tel. 800-363-7948

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

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

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

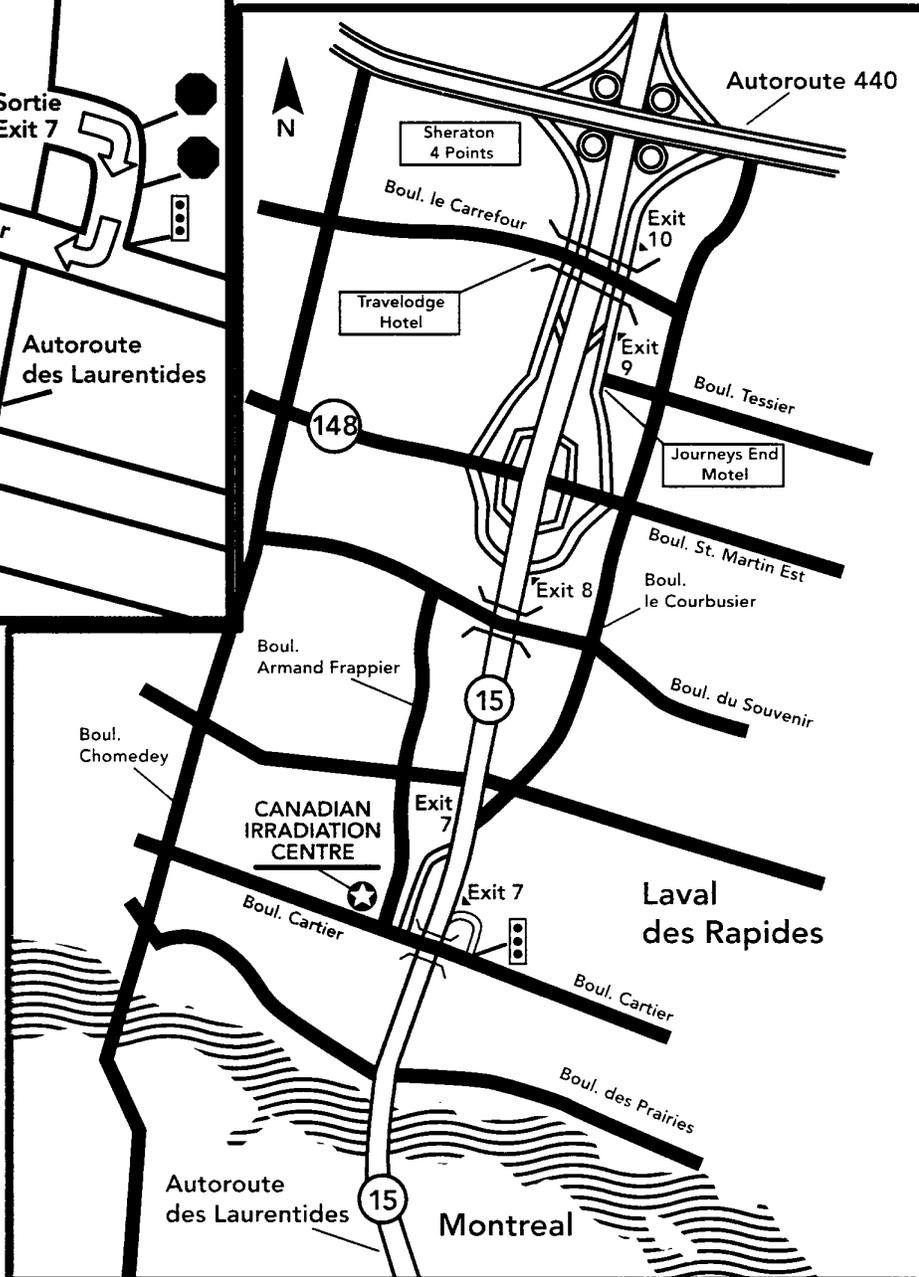
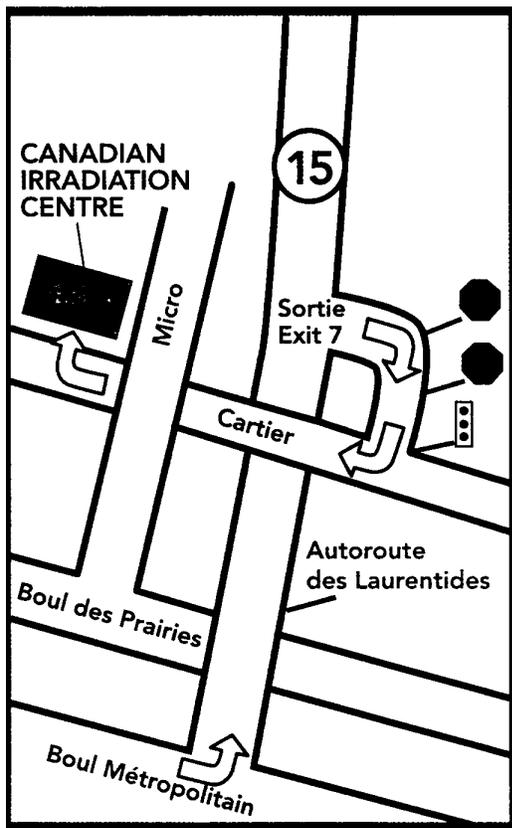
ENCLOSURE 2



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.



**Irradiator Technology for Inspectors  
Course Schedule  
DAY 1**

<b>Session 1</b>	<b>Introduction</b>
9:00-10:15	-Welcome -Preliminary tour of IR-147
10:15-10:30	COFFEE BREAK
<b>Session 2</b>	<b>Industrial Irradiators</b>
10:30-11:30	-Types -Components -Design principles -Touchtime -PLC
<b>Session 3</b>	<b>Research Irradiators</b>
11:30-12:00	-Types -Design
12:00-1:00	LUNCH
<b>Session 3</b>	<b>Research Irradiators (continued)</b>
1:00-1:30	-Use -Inspections (hands-on)
<b>Session 4</b>	<b>Cobalt-60</b>
1:30-2:30	-Cobalt-59 -Product of Co-60 -Transportation of Co-60 -Handling of Co-60
<b>Session 5</b>	<b>Source Loading</b>
2:30-3:15	-What every operator should know -Handling tools -Typical loading -Source loading procedure
3:15-3:30	COFFEE BREAK
<b>Session 6</b>	<b>Operation of Industrial Irradiators (Hands-on)</b>
3:30-5:00	-Operating modes -Sequence diagram -PLC

## DAY 2

<b>Session 7</b>	<b>Safety Systems &amp; Features</b>
9:00 - 10:00	-Fault indicators
10:00-10:15	COFFEE BREAK
10:15-11:00	<b>Safety Systems &amp; Features (continued)</b>
	-Caution indicators
	-Safety features
	-Hands-on review of safety systems
<b>Session 8</b>	<b>Walk-through Inspection (hands-on)</b>
11:00-12:00	-A complete safety inspection is performed
12:00-1:00	LUNCH
1:00-2:00	Walk-through Inspection (hands-on) (continued)
	-A complete safety inspection is performed
<b>Session 9</b>	<b>Irradiator Maintenance</b>
2:00-3:15	-Control room organization
	-Equipment maintenance
	-Electrical/Mechanical
	-Safety checks
3:15-3:30	COFFEE BREAK
<b>Session 10</b>	<b>Good Manufacturing Practices</b>
3:30-5:00	-Standard Operating Procedures
	-Following product from receiving to shipping

### DAY 3

8:00 Leave Laval for Kanata

**Session 11 Tour of a cobalt-60 product facility**

All day -Storage pool  
-Hot cells  
-Encapsulation  
-Leak testing  
-F-168 container  
-Transportation

12:00-1:30 LUNCH

**Session 12 Tour of a Molybdenum 90 Product Facility**

1:30-3:00 -Guided tour of the MDS Nordion Molybdenum 90 product facility

3:00-6:00 -Return to Laval

### DAY 4

**Session 13 Emergency Procedures**

9:00-10:00 -Procedures as required by 10 CFR36

10:00-10:15 COFFEE BREAK

**Session 14 Wipe test (Hands-on)**

10:15-10:45 -A source rack wipe test is performed

**Session 15 Radiation Safety Officer and Operator responsibilities**

10:45-11:15 -Maintenance records  
-Irradiation log book  
-Visitor records

**Session 16 Radiation Survey (hands-on)**

11:15-12:15 -A radiation survey of biological shield is performed

12:15-1:15 LUNCH

**Session 17 Incidents**

1:15-2:00 -Incidents at irradiation facilities

<b>Session 18</b>	<b>Dosimetry (hands-on)</b>
2:00-3:15	-Types of dosimeters -Characteristics -Reading equipment
3:15-3:30	COFFEE BREAK
<b>Session 19</b>	<b>Regulations</b>
3:30-5:00	-USNRC regulations 10 CFR36

#### **DAY 5**

<b>Session 19</b>	<b>Regulations (continued)</b>
8:15-9:15	-Regulatory Guide 8-13 -Regulatory Guide 8-29 -IAEA guidelines -ANSI standards
<b>Session 20</b>	<b>Licensing</b>
9:15-9:45	-USNRC Guide NUREG 1556 Vol. 6 -Security Update
9:45-10:00	COFFEE BREAK
<b>Session 21</b>	<b>Audit</b>
10:00-11:15	-Audit of radiation safety procedures, operational procedures and safety systems
<b>Session 22</b>	<b>Review</b>
11:15-11:30	-Discussion
<b>Session 23</b>	<b>Examination</b>
11:30-1:30	-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.