



**IAEA**

International Atomic Energy Agency

# Training Course on Small Field Dosimetry

**Argonne, Illinois, United States of America**

**10–14 December 2015**

**Ref. No: E2-TR-51583**

## Prospectus

<b>Course Title:</b>	Training Course on Small Field Dosimetry
<b>Place (Venue, City, Country):</b>	Argonne National Laboratory, Argonne, Illinois, United States of America
<b>Dates:</b>	10–14 December 2015
<b>Deadline for Nominations:</b>	<b>7 August 2015</b>
<b>Organizers:</b>	The International Atomic Energy Agency (IAEA) and the Argonne National Laboratory (ANL), USA
<b>Host Country Organizer:</b>	<b>Ms Sunaree Hamilton</b> Senior Program Leader and Manager of International Programs Section Argonne National Laboratory 9700 South Cass Avenue ARGONNE, IL 60439 UNITED STATES OF AMERICA Tel.: +1 630 252-2000 Email: <a href="mailto:shamilton@anl.gov">shamilton@anl.gov</a>
<b>Language of Instruction:</b>	English
<b>Purpose:</b>	The purpose of the course is to train clinical medical physicists in Member States on how to implement the new IAEA/American Association of Physicists in Medicine (AAPM) code of practice on small field dosimetry.

**Expected Output(s):** The course is an opportunity for medical physicists from Member States to obtain first-hand information on the dosimetry of small fields in radiotherapy. It will be beneficial to clinical medical physicists working in radiotherapy modalities using small fields such as stereotactic radiotherapy (SRT), stereotactic body radiotherapy (SBRT), stereotactic radiosurgery (SRS) and intensity modulated radiation therapy (IMRT).

**Scope and Nature:** This five-day course will consist of lectures, presentations, discussions and at the weekend the participants will perform practical sessions in the local radiotherapy centre.

The topics to be covered include the following:

- physics and challenges of small field megavolt photon beams;
- description of the new IAEA/AAPM code of practice for the dosimetry of static small photon fields;
- discussion of small field detectors;
- absorbed dose to water standards for small fields;
- machine-specific reference dosimetry;
- output factors: definition, measurement and correction; and
- relative dose measurements in small fields.

**Background Information:** Modern radiotherapy has substantially increased the use of small radiation fields like those used in various forms of SRT, SBRT, SRS and IMRT. These treatments are not only performed with specialized, dedicated machines such as TomoTherapy, CyberKnife or GammaKnife, but also with conventional, non-dedicated accelerators equipped with high-resolution multi-leaf collimators.

In radiotherapy it is essential that the dose to be delivered to the patient be known accurately so that the correct amount of radiation is delivered that kills the cancer cells while sparing healthy tissue. Therefore, a key requirement in radiotherapy is consistent reference dosimetry traceable to metrological primary standards and for common procedures within a country to be followed for reference dosimetry. For conventional radiotherapy this has been achieved by internationally adopted Codes of Practice such as *Absorbed Dose Determination in External Beam Radiotherapy: An International Code of Practice for Dosimetry Based on Standards of Absorbed Dose to Water* (Technical Reports Series No. 398, IAEA, Vienna, 2000). However the standard codes of practice are based on the use of a 10 cm x 10 cm reference field that may not be achievable using some modern specialized machines.

A joint working group between the IAEA and AAPM has written a new small field code of practice. The aim of this course is to teach participants how to implement the new Code of Practice in the clinic.

**Participation:** The course is open to up to 15 participants from Member States of the IAEA.

The participants will be requested to submit a short summary of their experience with small photon fields and its relevance to their clinical department.

**Participants' Qualifications:** Candidates should be clinically qualified medical physicists and should hold a university degree preferably in medical physics. The candidates should also have at least three years of working experience in a hospital and must participate in small field clinical techniques.

As the training course will be conducted in English, participants should have sufficient proficiency to follow lectures and express themselves in English without difficulty.

**Nomination Procedure:** Member States are invited to nominate one or more participants for this course. Member States are strongly encouraged to identify suitable women participants.

Nominations should be submitted through the established official channels using the attached Nomination Form not later than **7 August 2015** for the attention of the responsible officer of the course, Ms Karen Christaki, Division of Human Health, Department of Nuclear Sciences and Applications, IAEA, Vienna International Centre, PO Box 100, 1400 Vienna, Austria (Tel.: +43 1 2600 21655; Fax: +43 1 26007; Email: [K.Christaki@iaea.org](mailto:K.Christaki@iaea.org)). Nominations should also be copied to the Administrative Secretary for the course, Ms Nargis Hakimy (Email: [SmallFieldTR@iaea.org](mailto:SmallFieldTR@iaea.org)). The full names and complete contact details (including postal address, telephone/fax numbers, and email address) of nominated participants should be provided.

**Security Training:** It is recommended that all nominations be accompanied by separate certificates of the candidate's satisfactory completion of the United Nations (UN) 'Basic Security in the Field' (BSITF II) and 'Advanced Security in the Field' (ASITF) courses. The courses are available at: <https://training.dss.un.org>

Once the candidate has completed the courses and passed the accompanying exams, certificates will be generated automatically and should be printed for submission to the IAEA. A copy of the certificates should be kept by the candidate for his/her records, as they are valid for any UN-related travel for three years.

**Administrative and Financial Arrangements:** Nominating Governments will be informed in due course of the names of the selected candidates and will at that time be given full details of the procedures to be followed with regard to administrative and financial matters.

Selected participants from countries eligible to receive technical assistance will be provided with a round trip economy class air ticket from their home countries to Chicago (close to Argonne), in Illinois, USA, and a stipend sufficient to cover the cost of their accommodation, food, and minor

incidentals. Shipment of accumulated training course materials to the participants' home countries is not the responsibility of the IAEA.

The organizers of the course do not accept liability for the payment of any cost or compensation that may arise from damage to or loss of personal property, or from illness, injury, disability or death of a participant while he/she is travelling to and from or attending the course, and it is clearly understood that each Government, in nominating participants, undertakes responsibility for such coverage. Governments would be well advised to take out insurance against these risks. A copy of the insurance policy will be will be requested for the issuance of visa.



## NOMINATION FORM

### Training Course on Small Field Dosimetry Argonne, Illinois, United States of America 10–14 December 2015 Ref. No.: E2-TR-51583

**The Government of**

nominates the following candidate for the Training Course on Small Field Dosimetry (E2-TR-51583):

<input type="checkbox"/> Female <input type="checkbox"/> Male	
Family name: (as in passport)	
First name:	
<b>Complete mailing address (home):</b>	
Street:	
PO Box:	Post Code:
Town/City:	
Region/District:	
Country:	
<b>Airport/town nearest to residence:</b>	

Date of birth:	.....
Place of birth:	.....
Nationality:	.....
Passport No.:	.....
Date of issue:	.....
Place of issue:	.....
Valid until:	.....
Telephone (office):	.....
Telephone (home):	.....
Fax:	.....
Email:	.....

**Education (postgraduate or equivalent)**

Years attended		Name and place of institution	Field of study	Diploma or degree
from	to			

**Recent employment record**

Years of service		Name and place of employer/organization	Title of position	Type of work
from	to			

**Description of work performed in the clinic during the last two years, together with publications if applicable.**

\*Preference will be given to candidates who participate in small field clinical techniques

Is the candidate covered under a radiation surveillance programme in his/her home country?       Yes       No

Has the candidate completed a residency or specialized clinical training programme?       Yes       No

Does the candidate have a minimum of three years experience as a clinical medical radiation physicist (working in a radiotherapy hospital/clinic)?       Yes       No

- Please submit a short summary of your experience in working with small field clinical techniques such as IMRT, SBRT, etc. (one or two paragraphs), including the type of equipment and treatment modalities you have been associated with if applicable:

### Relevance of the training

How is the Government going to make use of the training received by the candidate at the course?

### Language certificate

Mother tongue of the candidate:

Language of the course:

English

Proficiency in the language of the course:  Good  Average  Poor

Date

Name (printed) and signature of examiner

### Medical certificate

I, as a qualified medical doctor, hereby certify that I have examined the above candidate and found him/her in good health, free from infectious diseases and able physically and mentally to carry out any relevant duties away from his/her home.

Date

Name (printed) and signature of examining physician

### Government statement

The nominating Government gives the following assurances:

- All information supplied in this form is complete and correct;
- Should the candidate's language qualification prove to be insufficient or should the candidate's state of health not correspond to the examining physician's statement, the nominating Government will accept the responsibility for the consequences and any costs arising therefrom;
- It is noted that the sponsoring organization(s), host country(ies) and host institution(s) do not accept liability for the payment of any costs or compensation arising from damage to or loss of personal property, or from illness, injury, disability or death of a participant while he/she is travelling to and from or attending the course, and it, the nominating Government, undertakes the responsibility for such coverage;
- The position of the candidate will be retained for him/her and he/she will continue to receive during the course a salary and related emoluments to enable him/her to meet his/her financial commitments in his/her home country;
- If selected, the nominee will conduct himself/herself in a manner compatible with his/her status as a participant and will refrain from engaging in any political and commercial activities;
- No facts are known to the Government regarding the reliability and character of the applicant which would obstruct giving him/her access to nuclear installations or institutions where ionizing radiation is used.

Date

Name and title (printed) and signature of certifying Government official