



IAEA

Atoms for Peace

الوكالة الدولية للطاقة الذرية

国际原子能机构

International Atomic Energy Agency

Agence Internationale de l'énergie atomique

Международное агентство по атомной энергии

Organismo Internacional de Energía Atómica

National Liaison Officer

Vienna International Centre, PO Box 100, 1400 Vienna, Austria

Phone: (+43 1) 2600 • Fax: (+43 1) 26007

Email: Official.Mail@iaea.org • Internet: <http://www.iaea.org>

In reply please refer to: CI-INT/9/175/9012/01

Dial directly to extension: (+431) 2600-26368

2014-06-23

Subject: Invitation to an Interregional Workshop on Use of Engineered Barriers in Environmental Remediation Works, Vienna, Austria, 6-10 October 2014

Dear National Liaison Officer,

I am pleased to invite you to send nominations of suitable candidates to participate in the above-mentioned workshop under the framework of TC Project INT/9/175 – Promoting safe and efficient clean-up of radioactively contaminated facilities and sites. The purpose of the workshop and related information are outlined in the attached Prospectus.

For candidates who are selected by the IAEA, the Agency will cover the cost of return international travel from the home country to Vienna, Austria, and provide Daily Subsistence Allowance (DSA) for the duration of the workshop in line with Agency rules and procedures.

Please submit duly completed Nomination Form for Meetings/Workshops by the latest **11 July 2014**. Please note that nominations received after the closing date will not be considered.

The completed nomination forms should be submitted to the IAEA online through the Technical Cooperation Department's InTouch system (<http://intouch.iaea.org>). Should this not be possible, forms may be sent to the Programme Management Officer for this project, Mr Pavel Yurkin, through IAEA Official Fax (+43-1-26007) or E-Mail (Official.Mail@iaea.org).

Yours sincerely,

Manase Peter Salema

Director

Division for Europe

Department of Technical Cooperation

Enclosures: Prospectus
Nomination Form

International Atomic Energy Agency

Interregional Workshop on Use of Engineered Barriers in Environmental Remediation Works

PROSPECTUS

Project Number & Title:	INT/9/175 - Promoting safe and efficient clean-up of radioactively contaminated facilities and sites
Place (City, Country):	Vienna, Austria
Dates:	6-10 October 2014
Deadline for Nominations:	11 July 2014
Organizers:	The International Atomic Energy Agency (IAEA)
Host Country Organizer:	IAEA Department of Technical Cooperation Division for Europe
Language:	English
Purpose:	The purpose of the workshop is to present and discuss technical information pertaining to the use of engineered barriers for containment and management of uranium mill tailings, naturally occurring radioactive material (NORM) wastes and waste resulting from the remediation of contaminated sites. The workshop will also address the use of vertical treatment zones (permeable reactive barriers) to manage contaminated groundwater at existing sites.
Expected Output(s):	The workshop will enable the participants to understand the basic concepts and technical basis for design and use of engineered barriers and consequently to select the appropriate technologies for containment and remediation. Additionally, the workshop will allow for common understanding of the application of these technologies and their limitations.
Scope and Nature:	<p>The workshop extends over 5 days and will deal with the design and application of the following four types of engineered barriers:</p> <ol style="list-style-type: none">1. <i>Covers</i> – used in the minimisation of infiltration of precipitation; control of the release of radon and reduction of the diffusion of oxygen into acid generating wastes e.g. sulphidic waste-rock piles and tailings,2. <i>Liners</i> - used to minimise the release of contaminants from beneath impounded waste at new waste disposal facilities.3. <i>Vertical barriers</i> – relevant in the mitigation and/or control of the extent of contaminated groundwater at contaminated sites. They may also be used as secondary (redundant) containment systems at new waste containment facilities.4. <i>Vertical treatment zones</i> (also known as permeable reactive barriers) applied in the treatment of contaminated groundwater. <p>The workshop will discuss these technologies individually and in terms of integrated systems.</p>

The content of the course is designed to enhance the knowledge and understanding of applications of these types of barriers for managing environmental remediation and containment programmes. The workshop will provide an understanding of engineering concepts, methods of design, construction and monitoring of these systems for minimizing risk to human health and environment.

The workshop will include a thorough discussion of background information on basic concepts and theories of the principles of geotechnical engineering and hydrology upon which the technologies are based. It will further discuss methodologies for material selection, property testing, construction specification and quality assurance/quality control, performance evaluation, and monitoring. Examples and case studies will demonstrate the use of engineered barriers as components in effective containment and remediation systems.

The format is lectures, followed by questions and answers and topical discussions in the context of various national situations. Table exercises will also be administered during the course.

The agenda will be distributed approximately one month prior to the workshop.

Background Information:

Engineered barriers can be defined as any material or structure that prevents or substantially delays movement of water or radionuclides toward the accessible environment. Engineered barriers are widely used in environmental remediation projects and play different roles as, for example, physically contain a waste material, avoid diffusion of radon to the atmosphere, or inversely avoid the diffusion of oxygen into the waste material that may be rich in sulphide minerals, serve as a shield to gamma radiation and also reduce the infiltration of water. Engineered barriers can also be used as a passive in situ treatment zone of reactive material that treats contaminants as groundwater flows through the zone. In these cases, the barriers can be installed as permanent or replaceable units across the path of a contaminant plume.

Experience has shown that due to a lack of good design, these barriers tend to have their long-term performance compromised, requiring repair or, in more severe situations, the overall reconfiguration of the barrier. Such poor performance can lead to undue releases of contaminants to the environment and expenditure of financial resources to rebuild the overall structure.

Therefore, this workshop will disseminate the relevant aspects regarding the design and construction of engineered barriers so that remediation project designers and implementers as well as regulators can be better prepared to make decisions about the use of these structures in remediation projects.

Participation:

The workshop is open to up to 30 participants from the IAEA Member States participating in the technical cooperation project INT/9/175, in particular: Algeria, Argentina, Armenia, Azerbaijan, Bangladesh, Belarus, Brazil, Bulgaria, Chile, Croatia, Cuba, Czech Republic, Egypt, Estonia, Georgia, Greece, Hungary, Indonesia, Iraq, Jamaica, Jordan, Kazakhstan, Kyrgyzstan, Kuwait, Latvia, Libya, Lithuania, the Former Yugoslav Republic of Macedonia, Malawi, Malaysia, Mexico, Moldova, Mongolia, Morocco, Mozambique, Namibia, Niger, Pakistan, People's Republic of China, Peru, Philippines, Poland, Romania, Russian Federation, Saudi Arabia, Serbia, Slovakia, Slovenia, South Africa, Tajikistan, Uganda, Ukraine, United Arab Emirates, United Republic of Tanzania, Uzbekistan, Vietnam and Zambia.

Participants will be selected based upon their qualifications and using a competitive selection basis. Participants must be involved with or expected to

be involved in a group engaged in decommissioning projects in nuclear facilities.

Participants' Qualifications:

The participants should be regulators, project managers, planners and/or other staff involved in planning and managing decision-making in organizations working on, or eventually to be designated as responsible for, remediation projects (e.g., state or national resource management agencies, operators of facilities or sites needing or undergoing large scale clean-up actions, regulatory bodies and national research organizations). Participants should have the appropriate scientific and/or technical background that will allow them to understand and appreciate the various elements that compose the workshop.

Participants shall be nominated by the competent national authority of the Member State and, most specifically, by the Member States' official counterpart for the project.

Nomination Procedure:

Nominations for the workshop should be submitted to the IAEA online through the Technical Cooperation Department's In Touch system (<http://intouch.iaea.org>). If on-line nominations are not possible, nominations should be submitted on the standard IAEA Application Form for Workshop/Workshop and National Consultant (available on the IAEA website: <http://www.iaea.org>). Completed forms should be endorsed by relevant national authorities and returned to the Agency through the official channels, i.e. the designated National Liaison Office for IAEA matters.

The completed nomination forms should be sent to the Programme Management Officer for this project, Mr. Pavel Yurkin, through IAEA Official Fax (+43-1-26007) or E-Mail (Official.Mail@iaea.org), not later than **11 July 2014**. Nominations received after this date or which have not been routed through the established official channels cannot be considered.

Administrative and Financial Arrangements:

Nominating Governments will be informed in due course of the names of the candidates who have been selected 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 Vienna, Austria and a Daily Subsistence Allowance (DSA) at the prevailing UN rate. Shipment of accumulated workshop materials to the participants' home countries is not the responsibility of the IAEA.

The organizers of the workshop 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 workshop, 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.