International Atomic Energy Agency Technical Meeting on In-situ Methods for Characterization of Contaminated Sites

(TM38924)

5–9 July 2010

IAEA Headquarters, Vienna, Austria

ANNOUNCEMENT

BACKGROUND

Past and current human activities such as mineral exploration and mining, the production of electrical energy, and accidental or intentional utilization of nuclear material in peaceful or military human driven activities, can result in a legacy of contaminated land or aquatic ecosystems. The legal definition of whether an eco-system is 'contaminated' varies from country to country, but at least such a definition relies on the estimation of the concentration of the contaminant present (being, for example, a metal, metalloid or a specific radionuclide). For a contaminated land for example, the so-called Soil Screening Values (SVs) are used as generic quality standards adopted by many countries to regulate the management of contaminated land. They are usually in the form of concentration thresholds of contaminants above which certain actions are recommended or enforced. Implications of exceeding SVs vary according to national regulatory frameworks. They range from the need for further investigations through to remedial actions or restrictions on land use.

In order to investigate, control and regulate a contaminated site, the direct *in-situ* characterization of contaminated sites (meaning that the analytical instrument is taken to and placed over or in contact with the sampling area) is an important alternative or complement to procedures involving the laboratory analysis of field samples. Direct *in-situ* characterization supports and improves the quality of the analytical data from a contaminated site. It is adopted by many national authorities as a tool in decision making policies through site-specific risk assessment. In this context, the *in-situ* implementation of nuclear spectrometry techniques and of other complementary methods, have reached a high level of analytical performance and offer certain advantages over other more traditional characterization procedures of a contaminated site, including:

- Rapid determination of contaminant concentrations/activities in many spots/areas across the contaminated site without time-consuming sample collection and preparation.
- Fine tuning of the contaminant spatial distribution, with immediate real time identification of areas of interest ('hot-spot' areas), allowing further investigation of these areas with better spatial resolution.
- Cost reduction for the investigation of all the stages of an assessment, decommissioning and remediation process.

This Technical Meeting is planned to highlight, review and discuss issues related to the current status and trends of various applications of *in-situ* techniques for a contaminated site. The advantages and limitations of employing the techniques in various fields of application will be assessed in order to encourage effective support of scientific and technological development.

The Technical Meeting will review the current status, developments, and trends in (i) nuclear *in-situ* techniques for contaminated site characterization, and (ii) both nuclear and non-nuclear *in-situ* techniques used at nuclear-related sites, including nuclear fuel cycle facilities. In particular, applications to be addressed in the Technical Meeting could include those used at sites contaminated due to:

- Mineral exploration and mining (e.g. uranium mining)
- Nuclear power and nuclear processing facilities
- Industrial activities that produce Naturally Occurring Radioactive Materials (NORM)
- Industrial activities that produce metal contaminants (i.e. lead, zinc, copper, etc.)
- Military actions involving the utilization of nuclear material
- Accidents
- Terrorism actions

The following subjects of discussion are expected to be included in the programme:

- Selected *in-situ* applications at different kinds of contaminated sites
- Comparison of different techniques/methodologies for the characterization of contaminated sites
- Sampling approaches (i.e. choice of number and location of measurements)
- Mapping approaches of a contaminated site
- QC/QA of the in-situ analytical technique and interpretation of the results
- State of the art of the portable instrumentation for in-situ characterization. Current trends
- The role of the IAEA in the promotion and effective use of nuclear spectrometry instrumentation and of associated analytical methodologies for *in-situ* applications in developing Member States.

OBJECTIVES

The Technical Meeting will review the current status, developments, and trends in (i) nuclear *in-situ* techniques for contaminated site characterization, and (ii) both nuclear and non-nuclear *in-situ* techniques used at nuclear-related sites, including nuclear fuel cycle facilities.

PARTICIPATION

A person will be eligible to participate only if nominated by the Government of an IAEA Member State (Ministry of Foreign Affairs or National Atomic Energy Authority) or by an Organisation invited to participate. Nomination for participation should be received by the IAEA not later than **28th February 2010.** The participant should be a developer and/or user of portable instrumentation and methods for in-situ characterisation of materials. *A contribution from the participant in the form of a short abstract covering his/her work relevant to the objectives of the meeting will be necessary in order to be considered for participation.*

FINANCIAL SUPPORT

As a general rule, the IAEA does not pay the costs for attendance to the meeting. However, limited funds may be made available to assist the attendance of selected participants and approved in accordance with the current Agency rules and regulations. Generally, not more than one financial grant will be awarded to any one Member State. If Governments wish to apply for financial support on behalf of their nominees, they should address specific requests to the IAEA Scientific Secretaries.

MEETING FORMAT

To facilitate proceedings, participants are invited to contribute an oral presentation on subject relevant to the scope and objectives of this meeting. Participants should submit an abstract of their proposed presentation along with their nomination. The official language of the meeting is English. No interpretation will be provided. It is expected that the meeting will start at 9:00 on Monday 5th July 2010 and conclude by 16:00 on Friday 9th July 2010.

The outputs of discussions will be recorded for possible dissemination to Member States as an IAEA technical publication. Contributors of material to be included in the Agency proceedings are required to assign all copyrights or rights to publish to the Agency. Please complete and sign the Form B and send it to the IAEA Scientific Secretary by post or email. The authors should ensure that material they make available for possible publication by the IAEA does not include copyrighted material or other impediments for reproduction.

LOCAL ARRANGEMENTS

It is the responsibility of all participants to make their own travel arrangements to/from Austria.
Detailed information on accommodation, local transport to/from the meeting venue, and other organisational details, will be sent to all designated participants well in advance of the meeting.

VISA

Designated participants who require a visa to enter Austria should submit the necessary application to the nearest diplomatic or consular representative of Austria well in advance of entry. An official letter of invitation will be issued to all designated participants by the IAEA Scientific Secretary.

DEADLINES

• **28 February 2010**: Submittal of requests to the IAEA for participation and financial support close
• **31 March 2010:** Participants informed of their acceptance of participation and request for financial support.

IAEA SCIENTIFIC SECRETARIES

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