



# **International Symposium on Uranium Production and Raw Materials for the Nuclear Fuel Cycle—Supply and Demand, Economics, the Environment, and Energy Security**

Vienna, Austria, 20-24 June 2005

organized by the  
International Atomic Energy Agency (IAEA)

in co-operation with the  
OECD/Nuclear Energy Agency (NEA)  
Nuclear Energy Institute (NEI)  
World Nuclear Association (WNA)  
United Nations – Economic Commission for Europe (UN-ECE)

## ***ANNOUNCEMENT AND CALL FOR PAPERS***

### **1. INTRODUCTION**

#### **Purpose**

The long-term viability of nuclear power will depend on an adequate supply of uranium resources that can be delivered to the marketplace at competitive prices by environmentally sound mining and milling technology. New exploration technology and a better understanding of ore deposit genesis will be required to explore for and develop increasingly obscure uranium deposits. Similarly, uranium mining, processing and site decommissioning technology will be required to keep pace with expanding environmental regulations.

The purpose of the Symposium is to analyze uranium supply-demand relationships and to present and discuss new developments in uranium geology and exploration, mining and processing, and environmental requirements for uranium operations and site decommissioning. These discussions will:

- Lead to a better understanding of the adequacy of uranium resources (both primary and secondary sources) to meet future demand,

- Provide information on new exploration concepts, knowledge, and technologies that will potentially lead to discovery and development of new uranium resources,
- Describe new production technology that has the potential to more efficiently and economically exploit new uranium resources,
- Document the environmental compatibility of uranium production and the overall effectiveness of final remediation and decommissioning of production facilities.

## **Background**

In 2000, the IAEA held the symposium "Uranium Production Cycle and the Environment", in Vienna, Austria, to examine the environmental and safety impacts of uranium production and to verify that uranium is a long-term environmentally acceptable energy source for nuclear power programmes. The international conference "Uranium Geochemistry 2003", held in Nancy, France, addressed recent developments in research in uranium geochemistry relating to ore deposit genesis, mine remediation, the use of uranium deposits as natural analogues for the conditioning of nuclear waste and prediction for the long-term behaviour of actinides in nuclear waste disposal. The forthcoming Symposium is intended to bring together scientists, exploration and mining geologists, engineers, operators, regulators, and fuel cycle specialists to exchange information and discuss updated research and current issues in uranium geology, geochemistry, exploration, mining and processing, and production economics and environmental sciences.

Adequate supply of resources, services and expertise, and modern technologies will be needed to ensure a sustainable nuclear power industry. Increased uranium production capacity will be needed to offset decreasing availability of secondary supply. Sound environmental management and public education will be required to minimize the impact of uranium mining and production and thus ensure public acceptance of nuclear energy.

## **2. LIST OF TOPICS**

Each session will be opened with an invited survey paper. Contributed papers will be accepted on the following topics:

### **1. Uranium Supply & Demand**

#### **Sub Topic: Uranium Resources**

Exploration Incentives, Costs and Expertise  
Secondary Supply – Availability and Impact on Market Price  
Reactor Uranium Requirements & Fuel Cycle Options  
Market Price Evolution and Production Economics

### **2. Uranium Geology (2 days)**

#### **Sub Topic: Exploration Techniques**

Aerial photo-interpretation  
Geophysics  
Geochemistry

#### **Geochemistry**

Uranium solubility and speciation  
Uranium adsorption  
Uranium-organic matter relations  
Thermodynamic modeling

#### **Ore Deposits**

Unconformity-related deposits  
Hematite-breccia complex deposits  
Sandstone deposits  
Volcanogenic deposits  
Other deposit types  
Natural-analogues-of-waste deposits

**Mineralogy**

New uranium mineral species  
Stability of uranium minerals  
Complex U minerals (U-P-Si, U-Ti, U-Zr ...)

**3. Uranium Production**

Sub Topics: Uranium Mining Technologies and Methodologies  
By-Product Recovery & Economics  
Milling  
ISL Technology  
Heap & Stope Leaching

**4. Mining and Milling Waste Management**

Sub Topics: Decommissioning  
Remediation & Long Term Monitoring  
Tailings and Waste Rock Management  
Water treatment

**5. Environment & Regulation**

Sub Topics: Radiation Protection and standards  
Permitting and Regulatory Affairs  
Environmental Assessment  
Environmental Monitoring & Management  
Socio-Economic Impacts

**3. PARTICIPATION**

All persons wishing to participate in the meeting are requested to complete a Participation Form (see attached Form A) and send it as soon as possible to the competent official authority (Ministry of Foreign Affairs or national atomic energy authority) for subsequent transmission to the IAEA. See Section 13 for contact information as to the competent official authority in the respective countries. A participant will be accepted only if the Participation Form is transmitted through the government authority of a Member State of the International Atomic Energy Agency or by an organisation invited to participate.

Participants whose designations have been received by the IAEA will be notified directly two to three months before the meeting.

**4. EXPENDITURES**

No registration fee is charged to participants. As a general rule, the IAEA does not pay the cost of attendance, i.e. travel and living expenses, of participants. However, limited funds are available to help meet the cost of attendance of selected specialists from **developing countries with low economic resources**. Generally, not more than one grant will be awarded to any one country.

If governments wish to apply for a grant on behalf of one of their specialists, they should address specific requests to the International Atomic Energy Agency to this effect. Governments should ensure that applications for grants:

- (a) be submitted by **17 December, 2004**
- (b) be accompanied by a duly completed and signed Grant Application Form (see attached Form C).

Applications that do not comply with the conditions mentioned under (a) and (b) cannot be considered.

The grants awarded will be in the form of lump sums usually covering only part of the cost of attendance.

## **5. PAPERS/POSTERS**

Concise papers on issues falling within the topics outlined in Section 2 above may be submitted as contributions to the symposium. All papers and posters - apart from invited review papers - must present **original** work; they should **not** have been published elsewhere. Preference is given to materials describing recent progress in uranium exploration, mining techniques, environmental assessment and compliance.

### Deadline for submission

- (a) A completed **Form for Submission of a Paper/Poster** (see attached Form B), together with the Participation Form (Form A) and two copies of an **extended synopsis** of maximum 1600 words (i.e. two to four A4 format pages of single spaced typing or the equivalent, including any tables or diagrams and a few pertinent references), written in English, must be sent to the competent official authority for transmission to the IAEA by **17 December, 2004**. Simultaneously, copies should be sent electronically to the Symposium Scientific Secretary (See Section 12). The symposium email address is: Uranium2005@iaea.org.

Authors are urged to make use of the Synopsis Template in Word 2000 on the Symposium web page. The specifications and instructions for preparing the synopsis and how to use the synopsis template are given in the attached "Instructions on how to prepare the synopsis and how to submit it electronically". Attached to this announcement is a sample synopsis.

The synopsis should give enough information on the contents of the proposed paper to enable the selection committee to evaluate it. Introductory and general matters should not be included. The synopsis - if accepted - will be reproduced in unedited form in the Book of Extended Synopses. The general style and presentation should be as in the attached sample.

- (b) If changes or corrections to an extended synopsis become necessary, a revised version may be sent to the IAEA by **30 March 2005** for inclusion in the book of extended synopses.

**Authors are urged to strictly observe the above deadlines, as otherwise publication of their paper/poster cannot be guaranteed.**

#### Paper/poster acceptance

In order to provide ample time for discussion, the number of papers that can be accepted for oral presentation is limited. If the number of relevant and high quality papers submitted for selection exceeds the acceptable number, poster sessions may be arranged.

Authors will be informed whether their papers/posters have been accepted for presentation at a regular session or as a poster on the basis of the extended synopsis. The IAEA, however, reserves the right to refuse the presentation or publication of any paper/poster that does not meet the expectations based on the information given in the extended synopsis.

**Further details concerning the written and oral presentation at the meeting will be sent to all authors in due course.**

## **6. EXHIBITS**

A limited amount of space will be available for commercial vendors' displays/exhibits during the symposium. Interested parties should contact the Scientific Secretary.

## **7. PROCEEDINGS**

The proceedings of the meeting will be published by the IAEA as soon as possible after the meeting.

## **8. DISTRIBUTION OF DOCUMENTS**

A preliminary programme of the Symposium will be sent to the participants before the meeting. The final programme and the book of extended synopses will be distributed on registration.

## 9. WORKING LANGUAGE

The working language of the meeting will be English. All communications, synopses, abstracts and papers must be sent to the Agency in **English**.

## 10. ACCOMMODATION

Detailed information on accommodation and other items will be sent to all designated participants well in advance of the meeting. Information on accommodation in Vienna can be obtained on the symposium website:

(<http://www-pub.iaea.org/MTCD/Meetings/Meetings.asp>)

## 11. VISA

Designated participants who require a visa to enter Austria should submit the necessary application to the nearest diplomatic or consular representative of Austria as soon as possible. Please note that Austria is a Schengen State and therefore persons who require a visa will have to apply for a "Schengen Visa" at least 14 days before entry into Austria. In States where Austria has no diplomatic mission visas can be obtained from the consular authority of a Schengen Partner State representing Austria in the country in question." *[At present, the Schengen States are Austria, Belgium, Denmark, Finland, France, Germany, Greece, Iceland, Italy, Luxemburg, Netherlands, Norway, Portugal, Sweden and Spain.]*

## 12. SECRETARIAT

The address of the Secretariat is:

International Atomic Energy Agency  
IAEA-CN-128  
Vienna International Centre  
P.O. Box 100, Wagramer Strasse 5  
A-1400 Vienna, Austria  
Telephone No.: (+43) - 1 - 2600 (0) plus extension  
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The Scientific Secretary of the Symposium is Mr. C. Ganguly, Division of Nuclear Fuel Cycle and Waste Technology (telephone extensions: 22766 and 22755, e-mail address: [C.Ganguly@iaea.org](mailto:C.Ganguly@iaea.org)). Meeting organization is provided by Ms. M. Solarik-Leahy, Conference Services Section, Division of Conference and Document Services (telephone extension: 21321; e-mail address: [M.Solarik-Leahy@iaea.org](mailto:M.Solarik-Leahy@iaea.org)).

### **13. CHANNELS OF COMMUNICATION**

The Participation Form and the Form for the Submission of a Paper/Poster, together with two copies of each synopsis, and, if applicable, the Grant Application Form, should be sent to the competent official authority (Ministry of Foreign Affairs, national atomic energy authority) for transmission to International Atomic Energy Agency.

Subsequent correspondence on scientific matters should be sent to one of the Scientific Secretary and correspondence on administrative matters to the IAEA Conference Services Section.

### **14. SYMPOSIUM WEBPAGE AND EMAIL ADDRESS**

Please visit the IAEA symposium website regularly for new information regarding the symposium under: <http://www-pub.iaea.org/MTCDD/Meetings/Meetings.asp>. The symposium email address is Uranium2005@iaea.org.