A. Background

The containment and isolation of the radioactive waste disposed of in geological disposal facilities relies on a series of natural and engineered barriers. The importance of the contribution of site investigations and characterization to the scientific basis for the safe disposal of radioactive waste is emphasized in the International Atomic Energy Agency (IAEA) Specific Safety Requirements publication *Disposal of Radioactive Waste* (IAEA Safety Standards Series No. SSR-5). Understanding the site properties provides essential input data to the iterative process of site evaluation, design of the repository layout and the engineered barriers, development of the safety case, and, ultimately, construction, operation and closure of a disposal facility. In this context, site investigation should be carried out to develop an adequate understanding of all site properties as needed to inform the siting process, repository design, safety case, construction, operation and closure of the disposal facility.

As a result of national programmes to develop disposal facilities, substantial experience has already been gained with regard to the site characterization approaches and technologies used to acquire data on site properties. Several national programmes have published their experiences in comprehensive reports, in particular as pertaining to geological disposal.

Previous IAEA documents and publications have addressed the issue of site investigations and provided information about the methods and techniques available at the time of issue. The most recent IAEA report that focuses on the technologies and practical implementation of a site investigation...
programme, however, dates back to 1999 and since then there have been significant developments in the science and technology associated with site investigations.

A new IAEA report on site investigations and characterization for radioactive waste disposal facilities is therefore under development. A first draft version of the report was developed through a combination of a consultancy service and a consultants’ meeting held in April 2016. The first draft consists of two parts: Part A on strategic management and Part B on technologies and techniques. Subsequently, a Technical Meeting held in November 2016 provided an opportunity to discuss and update the first draft report. The contents and scope of the first draft report were confirmed. The participants presented not only various challenges and issues in site investigations and characterization but also feedback and comments on specific areas, including the impact of site investigations on the integrity of host rock, the structure to present techniques and technologies, how to present technical information, and data acquisition and processing.

With a view to updating the draft report based on the feedback and comments provided at the Technical Meeting, a consultants’ meeting will take place in February 2017. The second draft of the report will be circulated to the meeting participants prior to this Technical Meeting.

B. Purpose

The purpose of the meeting is to provide an opportunity for the participants to share and discuss their experiences related to site investigation and characterization approaches, such as are needed for the management of site investigation for disposal facilities, and to allow them to comment on and enhance the content of an associated draft report.

A primary objective of the Technical Meeting is to review the contents and structure of the updated draft report and to ensure that the report comprehensively describes all information relevant to site investigations and characterization for radioactive waste disposal facilities. A secondary objective is to collect additional detailed information on site investigations from the representatives of Member States. The Technical Meeting also provides an opportunity to exchange information and experiences on site investigations. Finally, in the interest of providing a platform to present the entire breadth of relevant and more detailed information on site investigation approaches, the use of an emerging IAEA wiki site focused on disposal is proposed to capture relevant information on site investigation in a suite of short articles. Delegates nominated to participate in this meeting will be provided with a proposed article template.

C. Expected Output

A fine-tuned draft report is expected to be developed based on the technical inputs and suggestions provided during the Technical Meeting. To enhance discussion, an updated draft report will be prepared and distributed to the meeting participants prior to the meeting.

Meeting participants are expected to present their practical experiences relevant to Part A of the report — the strategic management and iterative updating of the site investigation programme — and to Part B of the report — an overview of which technologies and techniques may be usefully implemented at the various stages of site investigations. Lessons learned in national siting programmes would be incorporated in the report as best practices. To the extent this is available to them, the meeting participants are also expected to provide concise information on specific technologies and/or techniques used that are considered of particular interest — either because they represent the current
state of the art, or because they include recent innovation that could potentially improve the conduct of site investigations. This would also include methods of data analysis and interpretation.

Some of the information obtained through presentations and discussions will be incorporated into the updated report — either as part of the general information and guidance provided, or as a brief, national case study illustrating this more general information. More detailed information will be captured in a suite of wiki articles on national approaches, or specific technologies relevant to site investigation. By way of preparation, in addition to an oral presentation, the meeting participants are asked to draft such brief articles describing the topic they wish to contribute, and information they wish to provide to the international community.

D. Working Language

The working language of the meeting will be English with no interpretation provided. All communications, abstracts and papers must be submitted in this language.

E. Venue

The meeting will commence on Monday, 15 May 2017, at the facilities of the host organization DBE Technology GmbH in Peine, Germany.

F. Visas

Participants who need a visa for entering Germany should submit the necessary application to the nearest diplomatic or consular representative of Germany as early as possible.

G. Organization

Official correspondence with regard to the technical aspects of the meeting should be addressed to the Scientific Secretary:

Mr Haeryong Jung  
Waste Technology Section  
Division of Nuclear Fuel Cycle and Waste Technology  
Department of Nuclear Energy  
International Atomic Energy Agency  
Vienna International Centre  
PO Box 100  
1400 VIENNA  
AUSTRIA

Tel.: +43 1 2600 26368  
Fax: +43 1 26007  
Email: H.Jung@iaea.org
Official correspondence with regard to administrative issues should be addressed to the Administrative Secretary:

**Shelby Thomas Elamkunnam**  
Waste Technology Section  
Division of Nuclear Fuel Cycle and Waste Technology  
Department of Nuclear Energy  
Vienna International Centre  
PO Box 100  
1400 VIENNA  
AUSTRIA

Tel.: +43 1 2600 26492  
Fax: +43 1 26007  
Email: S.T.Elamkunnam@iaea.org