IAEA
International Atomic Energy Agency

Technical Meeting on Integrated Approaches to the Back End of the Fuel Cycle

IAEA Headquarters
Vienna, Austria

17–19 July 2018

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Information Sheet

A. Introduction

The nuclear fuel cycle comprises a series of steps, including uranium mining and milling, fresh fuel fabrication, fuel irradiation to produce electricity, and the disposal or reprocessing of spent fuel. Every step has its own acceptance criteria for the input material, which is the output of the previous step of the fuel cycle. As well as a product from one step having to meet the acceptance criteria of the following step, there are challenges that need to be addressed before implementing the next step. For the back end of the fuel cycle, that is particularly important for an open fuel cycle as there are no operational deep geological disposal facilities for commercial fuels.

Addressing these challenges and introducing efficiencies into the different steps of the fuel cycle in isolation can create additional challenges in subsequent steps, especially in the back end. A worst case scenario would be that a decision taken today in one part of the fuel cycle forecloses a transition to another part in the future. In most cases a technical solution can be found, but this is likely to come at a price (cost, resource utilization, etc.). Therefore one of the main challenges is maintaining flexibility to accommodate the range of potential future spent fuel disposition options as well as defining and addressing the relevant issues in storage and transportation given the uncertainties regarding the storage duration, the availability of future technologies and also of future financial, regulatory and political conditions.

It is for these reasons that the International Atomic Energy Agency (IAEA) considers it important for practitioners to take an integrated approach to the fuel cycle and remain aware of impacts and issues outside of their particular speciality. The 2015 International Conference on Management of Spent Fuel from

Nuclear Power Reactors helped raise awareness of this need and adopted “An Integrated Approach to the Back End of the Fuel Cycle” as its underlying theme.

In the words of the President of the conference, “Nuclear will play an important role in the world’s energy mix, and with increases in nuclear power there will be similar increases in used fuel generated. As such we need to effectively manage our used fuel through recycling, direct disposal and the associated storage options. For many, there is little integration in the fuel cycle in terms of analysing how potential decisions made in one part of the fuel cycle may impact on another part. In fact many decisions are made independently of the holistic fuel cycle and this highlights the need to look at the fuel cycle in a holistic, fully integrated manner combining impacts on processing, storage, transport and disposal”.

Previous IAEA efforts on interface issues include a Technical Meeting on Potential Interface Issues in Spent Fuel Management, held in Vienna, Austria, in November 2009, which led to the development of a methodology for establishing and assessing the interfaces at the various points in the fuel cycle. This methodology was published as *Potential Interface Issues in Spent Fuel Management* (IAEA-TECDOC-1774, Vienna, October 2015).

The current event is aimed at discussing and analysing how decisions made in one part of the nuclear fuel cycle may affect its back end, identifying processes and best practices for the integration of fuel cycle steps, with an emphasis on all potential impacts on spent fuel (re)processing, storage, transport and disposal.

B. Objectives

The purpose of the event is to collect, share and discuss information on processes and best practices for systematically identifying and evaluating potential impacts of decisions taken in one step on subsequent steps within the nuclear fuel cycle.

The event will also present examples of effective management approaches based on the experience of Member States in order to minimize such impacts in the nuclear fuel cycle, with an emphasis on the back end of the fuel cycle.

The event will also serve to inform practitioners about recent developments in the back end of the fuel cycle.

The outputs from the event will be used as the basis for developing an updated and complementary version of *Potential Interface Issues in Spent Fuel Management* (IAEA-TECDOC-1774).

C. Target Audience

The event is aimed at practitioners, policymakers, managers, scientists, designers, operators and others who either make decisions which can influence what happens in the fuel cycle or have experience in managing interfaces in the back end of the fuel cycle.

The event will also be of educational value to representatives of newcomer countries and new participants in the fuel cycle.

D. Working Language

English

E. Application Procedure

Designations should be submitted using the attached **Participation Form (Form A)**. Completed requests should be endorsed by the competent national authority (e.g. Ministry of Foreign Affairs, Permanent Mission to the IAEA, or National Atomic Energy Authority), or by an organization invited to participate, and returned through the established official channels. They must be received by the IAEA not later than **18 May 2018**. Designations received after that date or applications sent directly by individuals or by private institutions cannot be considered. Designating Governments and invited organizations will be informed in due course of the names of the selected candidates and at that time full details will be given on the procedures to be followed with regard to administrative and financial matters.

F. Papers and Presentations

The IAEA encourages participants to give presentations on the work of their respective institutions that would meet the objectives of the event outlined in Section B above.

Registered participants who wish to give presentations are requested to submit to the Scientific Secretary of the event, Ms Amparo González Espartero (see contact details in Section J below), not later than **25 May 2018,** the completed **Form for Submission of a Paper (Form B)**, through the competent national authority (e.g. Ministry of Foreign Affairs or Permanent Mission to the IAEA).

G. Expenditures and Grants

No registration fee is charged to participants. The IAEA is generally not in a position to bear the travel and other costs of participants in the event. The IAEA has, however, limited funds at its disposal to help meet the cost of attendance of certain participants. Such assistance may be offered upon specific request to normally one participant per country provided that, in the IAEA's view, the participant on whose behalf assistance is requested will make an important contribution to the event. The application for financial support should be made at the time of designating the participant. If Governments wish to apply for a grant on behalf of one of their experts, they should address specific requests to the IAEA to this effect. Governments should ensure that applications for grants are submitted by **18 May 2018** using a signed **Grant Application Form (Form C)**. Approved grants will be issued in the form of a lump sum payment that usually covers **only part of the cost of attendance**.

H. Venue

The event will be held at the IAEA's Headquarters in Vienna, Austria, and will start at 09:30 on **Tuesday, 17 July 2018**. Participants are advised to arrive one hour prior to the convening time of the event to allow for timely registration. Participants will need to present an official photo identification document in order to be admitted to the Vienna International Centre (VIC) premises.

The following IAEA web page can be accessed for more detailed information on Vienna and the VIC: http://www-pub.iaea.org/iaeameetings/GeneralInfo/Guide/VIC

I. Visas

Participants who require a visa to enter Austria should submit the necessary application to the nearest diplomatic or consular representative of Austria at least four weeks before they travel to Austria. Since Austria is a Schengen State, persons requiring a visa will have to apply for a Schengen visa. 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.

J. Organization

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Subsequent correspondence on scientific matters should be sent to the Scientific Secretary and correspondence on other matters related to the event to the Administrative Secretary.