

July 21, 2004

MEMORANDUM TO: Roy P. Zimmerman, Director  
Office of Nuclear Security and Incident Response

FROM: Cynthia G. Jones **/RA/**  
Senior Technical Advisor for Nuclear Security  
Office of Nuclear Security and Incident Response

SUBJECT: FOREIGN TRAVEL TRIP REPORT

Attached is a summary trip report for my travel to Vienna, Austria, from May 4-7, 2004, to attend a Consultant's meeting at IAEA Headquarters to revise and issue additional guidance for the rating of radiation source and transport of radioactive material events as a supplement to the 2001 International Nuclear Event Scale (INES) Users' Manual. Other consultants included members of the IAEA staff and representatives from Spain, United Kingdom, France, Japan and South Africa.

This provides a follow-up to my Quick-Look Trip report submitted to you on May 13, 2004. The delay of this full trip report is due to the late mailing in June 2004 of the final revised INES Draft Additional Guidance for the Rating of Transport of Radioactive Material and Radiation Source Events (ADAMS Accession number ML0419102400) and due to other NSIR emergent work items. This revision provides more detailed information and an expanded approach for the rating based on actual exposure of workers and members of the public. It has been revised to be used as a self-standing document with limited need for reference to the INES Users' Manual. The IAEA issued this revised guidance to its INES National Officers for trial use over the next 18-month period. During this time, pilot use and feedback will be collected by the IAEA staff, with the intention of preparation of final guidance for approval by the Technical Meeting of INES National Officers in early 2006.

Given the nature of the activities in reporting and rating of transport and radiation source events to the IAEA, the content of this report will be of interest to the Commission. It is therefore recommended that this trip report be forwarded to the Commission.

Attachment: As stated

cc: J. Dunn Lee, OIP  
J. Strosnider, NMSS  
W. Dean, OEDO

## FOREIGN TRAVEL TRIP REPORT

**OFFICIAL TRAVELER:** Cynthia G. Jones  
**OFFICE:** NSIR

**TRAVEL TO:** IAEA, Vienna, Austria  
**DATES:** May 4-7, 2004

### SENSITIVITY:

Not Sensitive - The INES Additional Guidance for the Rating of Transport of Radioactive Material and Radiation Source Events is publically available at <http://www-news.iaea.org/news/inesmanual/default.asp>.

### SUMMARY OF MEETING RESULTS:

From May 4-7, 2004, I attended a Consultant's meeting at IAEA Headquarters in Vienna to revise the guidance for the rating of radiation source and transport of radioactive material events as a supplement to the 2001 International Nuclear Event Scale (INES) Users' Manual. Other consultants included members of the IAEA staff and representatives from Spain, United Kingdom, France, Japan and South Africa.

The principal focus of the meeting was to incorporate comments from various countries, IAEA advisory committees (such as RASSC and TRANSSC), and to finalize the INES Additional Guidance for pilot use and feedback for the rating of transport and radiation source events broadly consistent with the INES Users' Manual. This revision provides more detailed information and an expanded approach for the rating based on actual exposure of workers and members of the public. It has been revised to be used as a self-standing document with limited need for reference to the INES Users' Manual.

As a result of this Consultant's meeting, the current revised guidance does not include previous recommendations from the revised French proposal (extracted from their Proposed Classification Scale for Radiological Incidents and Accidents, April 2003) for rating exposure events, due to overwhelming concern regarding potential overrating of future radiation source and transport events. In addition, the proposed guidance has also incorporated, for the first time in one document, guidance for the INES rating of both transportation and radiation sources or devices so that there is a similar technical basis (use of the "D" values in IAEA TECDOC-1344, "IAEA Categorization of Radioactive Sources") to support the INES rating.

For radiation source/device events, this Additional Guidance identifies Level 1 as the minimum level for events that result in: (a) exposure of a member of the public in excess of statutory annual limits; or (b) exposure of a worker in excess of dose constraints (if applicable). Level 2 is the minimum level for events that result in: (a) exposure of a member of the public in excess of 10 mSv; or (b) exposure of a worker in excess of statutory annual limits. Level 3 is the minimum level for events that result in an acute health effect or an exposure of the order of a few hundred mSv. Level 4 is the minimum level for events that result in the occurrence or likely occurrence of an early death or an exposure of the order of a few Sv/Gy. Previous changes from the March version of this guidance included taking into account stochastic versus deterministic effects, member of the public versus worker dose overexposures, and allowing for an increase in rating factor if multiple number of individuals (e.g., >10 or >100) were involved in a radiation or transport event.

For transportation events where the radioisotope is not listed in IAEA TECDOC-1344, the A2 values in the transport document (TS-R-1) should be used. For the purpose of rating these

transportation events, the maximum INES rating for quantities are as follows: quantities less than A2 should be rated the same as Category 4 sources; quantities between A2 and 100xA2 should be rated the same as Category 3 or 2 sources; and quantities greater than 100xA2 should be rated the same as Category 1 sources.

During the pilot period of use, comments and feedback will be collected by the IAEA staff, with the intention of preparation of final guidance for approval by the Technical Meeting of INES National Officers in 2006. To facilitate feedback on the pilot use of the Additional Guidance, the IAEA has set up a special mailbox to gather information. This mailbox address, at [INESGuidance@iaea.org](mailto:INESGuidance@iaea.org), is currently active to assist countries with questions, comments, or suggestions they may have on this Additional Guidance. NRC staff plans on continuing to work with the IAEA by providing feedback on its use and draft implementation during this pilot period.

The planned schedule for pilot use and revision of the Additional Guidance is as follows:

<u>1 July 2004 - 1 July 2005</u>	IAEA will gather feedback of experience; comments, suggestions at its INES mailbox, <a href="mailto:INESGuidance@iaea.org">INESGuidance@iaea.org</a> .
<u>October - December 2005</u>	Revision of the Additional Guidance and preparation of the final proposal. Scheduled meeting of the INES Advisory Committee; Send revised guidance to INES National Officers for comments.
<u>March 2006</u>	Submission for approval of the Final Guidance at the Technical Meeting of the INES National Officers

#### **RECENT ACTIONS & PLANNED NEXT STEPS FOR NRC:**

NRC has been using the revised Additional Guidance since July 1, 2004, and summarized these actions in a D-note July 22, 2004. Staff will be gathering feedback from both the NRC staff and the States on the usefulness of this Additional Guidance through the pilot period ending December 31, 2005, and will share lessons learned on this pilot program with the Commission, designated national representatives from the Radiation Safety Standards Committee (RASSC), the Transport Safety Standard Committee (TRANSSC), and the IAEA Secretariat. It is anticipated that at that time, the staff will provide its lessons learned to the Commission for its review and approval before sending final NRC comments to the IAEA.