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**ORNL
FOREIGN TRIP REPORT
TA 354514**

DATE: January 29, 2014

SUBJECT: Report of Foreign Travel to Geel, Belgium – Michael E. Dunn, Reactor and Nuclear Systems Division

TO: Jerry N. McKamy, Director, Office of Environment, Safety, and Health, National Nuclear Security Administration / NA-00-10/GTN, 1000 Independence Ave., SW, Washington, DC 20585-1290

FROM: Michael E. Dunn

PURPOSE: The primary purpose of the travel is to participate in the 7th Workshop on Nuclear Measurements, Evaluations and Applications (NEMEA-7), and the main objective of the NEMEA-7 workshop is to launch the international pilot project of the Collaborative International Evaluated Library Organization (CIELO). Participation in the meeting also provided the opportunity to meet with staff from the Institute for Reference Materials and Measurements (IRMM) to discuss continued use of the IRMM accelerator facility for performing nuclear data measurements for the US Nuclear Criticality Safety Program (NCSP).

SITES VISITED: Institute for Reference Materials and Measurements

ABSTRACT: Michael Dunn's participation in the NEMEA-7 workshop provided the opportunity to review and discuss NCSP nuclear data measurement and evaluation work tasks that align with the objectives of the CIELO project. As a result, there is an opportunity to leverage work with international partners to facilitate the completion of NCSP Five Year Plan measurement and evaluation work tasks as efficiently and as accurately as possible. In addition, Dunn's participation in the meeting provided an opportunity to meet with IRMM staff and discuss continued access to the accelerator facility to complete nuclear data measurements for the NCSP. As a result of the discussions, ORNL and the NCSP will continue to have access to the IRMM facility and perform nuclear cross-section measurements in collaboration with IRMM.

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REPORT OF FOREIGN TRAVEL

**Michael E. Dunn
Geel, Belgium
December 3–8, 2013**

PURPOSE OF TRAVEL

The primary purpose of the travel is to participate in the 7th Workshop on Nuclear Measurements, Evaluations and Applications (NEMEA-7), and the main objective of the NEMEA-7 workshop is to launch the international pilot project of the Collaborative International Evaluated Library Organization (CIELO). Participation in the meeting also provided the opportunity to meet with staff from the Institute for Reference Materials and Measurements (IRMM) to discuss continued use of the IRMM accelerator facility for performing nuclear data measurements for the US Nuclear Criticality Safety Program (NCSP).

Report

The NEMEA-7 Workshop and CIELO discussions focused on a status review of the CIELO nuclear data evaluations for the following isotopes: ^1H , ^{16}O , ^{56}Fe , ^{235}U , ^{238}U , and ^{239}Pu . In addition, the workshop participants discussed measurement and evaluation work plans for the CIELO isotopes. It is important to note that each of these nuclear data evaluations represent key isotopes for the NCSP, and ORNL is leading the international resonance evaluation effort for ^{56}Fe , ^{235}U , ^{238}U , and ^{239}Pu . Also, ORNL has a key role in the ^{16}O resonance evaluation effort. Furthermore, the NCSP defines specific work tasks for each of these nuclear data evaluations in the NCSP Five Year Plan. Because the CIELO project is an international collaboration focused on improving the performance of each of these key NCSP evaluations, there is an opportunity to leverage nuclear data measurement, evaluation, and testing expertise to improve the overall performance of these nuclear data evaluations. Therefore, ORNL participation in the CIELO project has direct benefit to the NCSP. During the meeting, in-depth discussions were conducted for each of the key NCSP isotopes, and the lead ORNL nuclear data evaluator presented results for each of the NCSP resonance evaluations.

Michael Dunn's participation in the NEMEA-7 workshop provided the opportunity to discuss NCSP nuclear data measurement and evaluation work tasks that align with the objectives of the CIELO project. As a result, there is an opportunity to leverage work with international partners to facilitate the completion of NCSP Five Year Plan measurement and evaluation work tasks as efficiently and as accurately as possible.

In addition, Dunn's participation in the meeting provided an opportunity to meet with IRMM staff and discuss continued access to the accelerator facility to complete nuclear data measurements for the NCSP. As a result of the discussions, ORNL and the NCSP will continue to have access to the IRMM facility and perform nuclear cross-section measurements in collaboration with IRMM.

Overall, the foreign travel provided an opportunity to secure continued access to a much needed nuclear data measurement facility for the NCSP while also cultivating international collaborations to complete work on key isotopes of interest for the NCSP as defined in the Five Year Plan.

Itinerary

11/3/2013 - 11/4/2013	Travel from Knoxville, TN, USA to Geel, Belgium
11/5/2013 – 11/7/2013	NEMEA-7 Workshop and Meetings with IRMM
11/8/2013	Travel from Geel, Belgium to Knoxville, TN, USA

DISTRIBUTION

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