

## **INTERNATIONAL TRIP REPORT**

### **Subject**

Staff attended the Eighth Meeting of the Program Review Group and Management Board of the OECD-NEA ROSA Project.

### **Dates of Travel, Countries and Organizations Visited**

November 3 through November 7, 2008  
Paris, France  
OECD Headquarters

### **Travelers, Titles, and Affiliations**

William Krotiuk, Senior Reactor Systems Engineer  
Reactor Systems and Analysis Branch  
Division of Systems Analysis  
Office of Nuclear Regulatory Research

### **Sensitivity**

Not applicable.

### **Purpose/Summary**

The purpose of this trip was to participate in the Eighth Meeting of the Program Review Group and Management Board of the OECD-NEA ROSA Project. The objective of the meeting was to review the progress on the current ROSA test series and to discuss the proposal for the follow-on ROSA-2 Project. The following summarizes the meeting discussions.

### **Current ROSA Activities**

The current ROSA-1 activities are scheduled to be completed by spring 2009. The final four tests of the 6.3 series are planned to be performed in the December 2009 to February 2009 timeframe. The first draft of the ROSA-1 final report is planned to be distributed in October 2009. If possible, the final report and test data will be assembled on one DVD for distribution. During the process of assessing and analyzing the results of the ROSA-1 testing RES staff will provide input into the final report.

- Several ROSA post-test calculations were presented using TRACE 5.0 and FLUENT. The TRACE predictions were performed by staff from the Universidad Politecnica de Madrid and the Universidad Politecnica de Valencia. Predictions were made for ROSA tests 6.1, 3.1 and 3.2. The TRACE predictions showed good agreement with test results. The presenters also extended their analysis to existing PWRs in Spain. These TRACE plant models provided reasonable results which were in agreement with the behavior observed in the ROSA tests.
- A workshop whose objective would be to address the ROSA-1 project results and applications to existing nuclear power plants may be organized for 2010.

## **Proposed ROSA-2 Activities**

- The proposed follow-on ROSA-2 test activities were discussed. It was announced that the ROSA-2 activities would concentrate on Large Scale Test Facility (LSTF) thermal-hydraulic testing, and that testing at the ARTIST/RFLX facility has been abandoned. ROSA-2 activities are scheduled to begin April 1, 2009.
- The ROSA members were requested to confirm their intention to participate in the ROSA-2 program before December 5<sup>th</sup> 2008. The ROSA-2 agreement was distributed by email after the meeting. The text was previously reviewed by NRC staff and their comments have been included in the distributed agreement. The ROSA-2 agreement will be sent out for signature in mid December 2008.

Copies of the vugraphs presented and discussed at the meeting will be available in a CD which will be sent to the meeting participants including the NRC.

The next meeting of the ROSA Program Review Group and Management Board was scheduled for May 14-15, 2009 at the OECD headquarters.

## **Meeting Observations/Comments**

1. During discussions it was decided that pretest predictions for the ROSA-2 tests would be limited probably to about three intermediate break tests because blind testing was too complex.
2. Attempts would be made to perform SGTR or MSLB tests that would complement counterpart testing at PKL.
3. During discussions, the JAEA representative commented that they have analyzed PWR post-LOCA conditions with core inlet blockage due to debris accumulation after start of recirculation. Their analysis shows that sufficient core cooling would be present for blockage areas up to 99% of the core inlet. This is consistent with similar analyses performed at the NRC.

## **Pending Actions/Planned Next Steps for NRC**

1. RES staff will brief management regarding the current and planned ROSA testing, and provide recommendations.
2. The NRC is requested to confirm its intention to participate in the ROSA-2 program before December 5<sup>th</sup> 2008. The NRC may need an extension to the requested date.
3. The ROSA-2 agreement will be sent out for signature in mid December 2008.

## **Points for Commission Consideration or Items of Interest**

The content of this trip report is not likely to be of interest to the Commission.

## **Agenda**

The agendas for the Program Review Group and Management Board Meetings are provided as enclosures.

## **Attendees**

### **BELGIUM**

Mr. Anis BOUSBIA SALAH  
Nuclear Safety and Radioprotection Assessment, BEL V

Mr. Steren KEYERS  
Tractebel Energy Engineering

### **CZECH REPUBLIC**

Dr. Jiri MACEK  
Nuclear Research Institute Rez plc (NRI)

### **FINLAND**

Mr. Ismo KARPPINEN  
Technical Research Center of Finland (VTT)

Mr. Eero VIRTANEN  
Radiation and Nuclear Safety Authority (STUK)

### **FRANCE**

Mr. Pascal BAZIN  
C.E.A

Dr. Nicolas TREGOURES  
CEA cadarache

Mr. Jean-Luc VACHER  
Electricite de France

### **GERMANY**

Dr. Horst GLAESER  
Gesellschaft für Anlagen-und Reaktorsicherheit (GRS) mbH

Mr. Klaus UMMINGER  
AREVA NP GmbH

Dr. Axel BREEST  
Gesellschaft für Anlagen und Reaktorsicherheit (GRS) mbH

### **HUNGARY**

Mr. Ivan TÓTH  
KFKI, Atomic Energy Research Institute

### **JAPAN**

Mr. Yasuhiro MASUHARA  
Japan Nuclear Energy Safety Organization (JNES)

Dr. Hideo NAKAMURA  
Japan Atomic Energy Agency (JAEA)

Takeshi TAKEDA  
Japan Atomic Energy Agency (JAEA)

Dr. Yu MARUYAMA  
Japan Atomic Energy Agency (JAEA)

**KOREA**

Mr. K. Y. CHOI  
Korea Atomic Energy Research Institute (KAERI)

**NETHERLANDS**

Mr. Eric DE GEUS  
NRG Arnhem

**SPAIN**

Mr. Fernando PELAYO  
Consejo de Seguridad Nuclear

Mr. Julio PEREZ  
Consejo de Seguridad Nuclear

Prof. Cesar QUERAL SALAZAR  
Universidad Politecnica de Madrid

Mr. Sergio GALLARDO BERMELL  
Univ. Politecnica de Valencia

**SWEDEN**

Mr. Oddbjörn SANDERVAG  
Swedish Radiation Safety Authority, Strålsäkerhetsmyndigheten

**SWITZERLAND**

Dr. Jörg DREIER  
Paul Scherrer Institute

**UNITED KINGDOM**

Dr. Chris RICHARDS  
SERCO Technical Assurance Services, Winfrith Technology Centre

**UNITED STATES OF AMERICA**

Mr. William KROTIUK  
U.S. Nuclear Regulatory Commission

**International Organization**

Mr. Carlo VITANZA  
OECD/NEA