

Coordination Meeting on
"Potential of Th-based Fuel Cycles to Constraint Pu and to Reduce Long-term
Waste Toxicities"
in Taejon, Republic of Korea
4 - 7 October 1999

Summary Report

The Research Coordination Meeting (RCM) on "Potential of Th-based Fuel Cycles to Constrain Pu and to Reduce Long-Term Waste Toxicities" was held from 4 to 7 October 1999 in Taejon, Republic of Korea and hosted by Korea Atomic Energy Research Institute. It was attended by representatives from the IAEA, Germany, India, Japan, Republic of Korea, the Netherlands and the Russian Federation. Representatives of China, Israel and USA were unable to join the meeting. The RCM was opened by Mr. Chang-Kue Park, Senior Vice President, Korea Atomic Energy Research Institute, and by Mr. V. Arkhipov, IAEA, and it was chaired by Mr. Ruetten, Germany.

The purpose of the meeting was:

- 1) to present and review the results obtained by the participating countries during the third stage of the Benchmark;
- 2) to finalise additional calculations agreed at the second RCM;
- 3) to elaborate and agree on the additional calculations in view of finalising the third stage of the CRP;
- 4) to elaborate a workplan and content of the final report of the CRP to be prepared in 2000; and
- 5) to discuss further IAEA activities on the Thorium fuel cycle option.

Mr. Ruetten presented the final analysis of the results of the CRP, stage 2: "Research on Burning Pu in LWR, HTR and MSR" and results of calculation for the part 1 of the stage 3 of CRP "The evaluation of the toxicity of the typical LWR". All participants present at the RCM reported results of their individual calculations for stages 2 and 3 (part1).

The forthcoming activities in the frame of the IAEA Programme on Emerging Nuclear Systems for Energy Generation and Transmutation were discussed and information on the 1999-2000 activities was presented by the Scientific Secretary.

A technical visit to the KAERI research reactor HANARO was organized on 6 October 1999.

During the meeting two additional presentations were made:

- on IAEA activities in the area of emerging nuclear energy systems for actinide utilisation and transmutation (Mr. Arkhipov, IAEA);
- on EU 4-years programme on thorium fuel option (Mr Klippel, NRG, Netherlands).

Results and Conclusions

Generally, the results of the stage 3, part 1 calculations (assessment of waste toxicity) showed a very good agreement for a decay line up to about 10^6 years.

The procedure for the assessment of influence of plutonium burning in the combined system of current reactors (mainly LWRs) and future plutonium burners on the toxicity of the remaining waste which has to be dispersed, was reviewed and it was agreed to use the procedure which was proposed for this purpose at the second RCM in Israel in 1998.

Exchanging views on the third stage of the CRP and on preparation of the final report of the CRP lead to the following conclusions:

- to complete the remaining necessary research and preparation of the draft of the final report by the end of 2000, a prolongation of the CRP for one more year (2000) appears necessary to the participants;
- the first draft of the final report of the CRP should be prepared and distributed to all participants in the form of working material in May 2000. The draft of the final report will be discussed at the next RCM.

It was recommended to conduct the 4th RCM of the CRP in Petten, Netherlands from 20 to 22 September 2000 in conjunction with the 10th International Conference on Emerging Nuclear Energy Systems (ICENES-2000) to be held in Petten on 25-28 September 2000.

Participants recommended to prepare a paper on the CRP results for ICENES-2000.