

COE-INES Business Trip Report

Meeting attended : 14th International Conference on Nuclear Engineering
Location : InterContinental Hotel, Miami, Florida, USA
Person Attending : 原子核工学専攻博士後期課程 2 年 NOVITRIAN (Takahashi Lab.)
Dates : July, 17 – 22, 2006

14th **International Conference on Nuclear Engineering** (ICONE14) was held in InterContinental Hotel, Miami, Florida, USA. The American Society of Mechanical Engineers (ASME) organized this conference. This conference is the premier global conference for addressing the needs of the nuclear industry. Many researchers from University, Research Center and Nuclear Industry and also graduate student attended this conference to share their ideas on the leading edge of nuclear science and engineering.

Topics covered at ICONE 14 include:

- Plant Operations
- Installations, Maintenance and Life Cycle
- Component Reliability and Materials Issues
- Near Term Deployment and Promotion Of Nuclear Energy
- Next Generation Systems
- Safety and Security
- Nuclear Engineering Advances
- Codes, Standards, Licensing and Regulatory Issues
- Fuel Cycle and High Level Waste Management
- Low Level Waste Management, Decontamination and Decommissioning
- Structural Integrity
- Thermal Hydraulics
- Computational Fluid Dynamics (CFD), Neutronics Methods And Coupled Codes
- The Hydrogen Economy and Other Non-Power Applications of Nuclear Technology
- Medical Applications of Nuclear Technology

In addition to hundreds of technical presentations, ICONE 14 hosted a **Nuclear Industry Forum**. The Forum addressed key technical challenges and business issues facing the nuclear industry, through panel discussions with leaders from utilities, vendors and government.



My paper belongs to Technical 10-25 Thermal-Hydraulics of Liquid Metals-2 and I presented it in July 18th. The title is “*Analytical Study of Lead-bismuth-Water Direct Contact Boiling Two-Phase Flow*” (ICONE14- 89436). The profitable discussions were obtained, e.g. one Professor asked me a question about how to estimate the path distance of sub-cooled water droplet become a vapor in the chimney, and I explained that as my experience, because the large temperatures different between Pb-Bi and sub-cooled water, at the high pressure the water droplet directly become a vapor, but at the lower system pressure in our experience, water droplet can not directly become a vapor, some water boiling in upper tank, above the Pb-Bi free surface, it is detected during experiment as a vibration and noise at upper tank. And also in our apparatus we have three thermocouples at the chimney to measure the temperature of Pb-Bi-water mixed.

In July 20th, the conference committee organized the student technical visit to St. Lucie Nuclear Plant belongs to Florida Power and Light Company, which located on Hutchinson Island, Florida. The head engineers of St. Lucie Nuclear Plant explained their activities and their current project; they start to construct the private fuel storage (Dry Storage Project, Independent Spent Fuel Storage Installation (ISFSI)). And also we visited the simulation control room of nuclear reactor and made one accident scenario and tried to handle that situation.



Finally, I really appreciate having a good opportunity to join the conference from COE-INES. This kind of support is very important for cultivating the future excellent engineer. I got great experience for improving my technical background and widened my vision after attending ICONE14.