

Curriculum of Tsuruga Summer Institute on Nuclear Energy 2007

Day 1st: September 10 (Mon) at the Wakasa Wan Energy Research Center: WERC

As of September 5, 2007

Items	Outline	Remarks
AM 9:00~9:20: 20min. ◆ Opening Ceremony	➤ Opening address *	* Organizer address: Departmental Dean of Engineering Study, University of Fukui * Honor address: Nobuaki ASAHI, Deputy Governor of Fukui pref.
9:20~9:40: 20min. ◆ Orientation		
9:40~10:20: 40min. ◆ Comprehension Test	Confirm the knowledge through comprehension test from broad spectrum in each category, such as global environmental issues, energy issues, or nuclear energy beforehand.	
10:30~11:50: 80min. ◆ Lecture- I “ History and Progress of Light Water Reactor Development ”	Learn about the history of LWR development which sustains nuclear energy in our country, and development for the advanced LWR which enhanced safety and economic or scheduled introduction.	Lecturer: Shiro SAITO, Japan Atomic Power Co (JAPCO)
PM 13:10~13:40: 30min. ◆ Preparation for English Discussion (Grouping /Self-introduction in the group)	➤ Grouping around 5 people (making 6 or 7 groups) ➤ Prospective participant: overseas representative, international researcher, and trainee from abroad ➤ An observer in each group *	* Observer: University of Fukui & Fukui University of Technology
13:40~14:00: 20min. ◆ Preparation for English Discussion (Discussion Point)	➤ Whole explanation for the English debate	
14:00~14:10: 10min. ◆ Preparation for English Discussion (Division of roles)	➤ Division of roles: leader, clerical assistant, presenter (Preparation for discussion)	* Self-introduction in English
14:10~15:30 : 80min. ◆ Discussion among Trainees (Discussion on Energy Issues)		✓ Social acceptability of nuclear energy ✓ Global Warming Issue

	15:40~16:00: 20min ◆ Summarization of the Discussion ➤ Summarization of the discussion result & preparation for the presentation material	➤ Report for the discussion results (Excel) ➤ Presentation (Power Point)	
	16:10~17:20: 70min ◆ Releasing the Discussion Result ➤ Oral presentation and Q & A	➤ Oral presentation in English ➤ 10 minutes for the presentation (8 minutes for oral presentation, and 2 minutes for Q & A)	
	17:20~17:30: 10min. ◆ Questionnaire Survey	➤ Conduct the questionnaire survey every day *	* Analyzing and reporting the questionnaire results on the final day
	17:30~ ➤ Traveling	➤ Move from the WERC to Kushikawa guest house, JAEA	
	18:00~ ◆ Reception	➤ Welcome Party *	* At Kushikawa guest House * Address: SHINGU, WERC

Day 2nd: September 11 (Tue) at WERC, Fugen NPP, Exhibition Hall & Tsuruga Unit 3/4 (under construction)

	Items	Outline	Remarks
AM	9:00~10:30: 90min. ◆ Lecture - II “Nuclear Fuel Cycle - FBR Cycle -”	Learn about FBR cycle aiming at semi-permanently securing of energy resources from “plutonium thermal” (LWR cycle), planning to introduce for the effective use of spent fuel and loading reduction for the environment	Lecturer: Takashi NAMEKAWA, JAEA
	10:50~12:00: 70min. ◆ Lecture – III (Topics Session) “Earthquake Occurred in Chuetsu Area and Earthquake Safety of Nuclear Power Station”	Learn about earthquake safety in the nuclear power station through the comment from specialists concerning the effect on the Kashiwazaki Kariwa NPS which Chuetsu earthquake occurred in July, 2007.	Lecturer: Yuzuru YASUI, Fukui University of Technology
PM	13:00~14:00: 60min. ◆ Lecture - IV “GEN-IV Reactor System Development in Japan“	Learn the current status of next generation reactor system development project, and the concept of sodium cooled fast reactor, which was adopted as progress of the next generation reactor system development project in Japan	Lecturer: Masaki MORISHITA, JAEA * Return: Via in plant of “Fugen”

	14:50~16:50: 120min. ◆ Site Tour- I Tsuruga Unit 3/4 & Exhibition Hall	Learn about existing and improved PWR through visiting to the Tsuruga No.3 & 4 NPS (under construction) and Exhibition Hall of JAPCO	Site tour to the Tsuruga Unit 3 & 4 and Exhibition Hall is carried out in 2 groups
	17:00~17:10: 10min. ➤ Questionnaire Survey	Questionnaire Survey	* At Exhibition Hall
	17:10~ ➤ Traveling	Move from Fugen to accommodation hotel	By bus

Day 3rd: September 12 (Wed) at the WERC, International Nuclear Information and Training Center (INITC), Monju NPP & Mihama NPS

	Items	Outline	Remarks
AM	9:00~9:50: 50min. ◆ Lecture – IV (1) ”Accident and Safety Measures of Light Water Reactor”	Classify the represent case studies by each category (reactor core, main equipment of cooling system, etc.) that occurred at LWR and FR, and learn by comparing the accident cause, and safety measures for the recurrence prevention with the International Nuclear Event Scale (INES)	* Lecture: Institute of Nuclear Safety System Incorporated (INSS)
	10:00~10:50: 50min. ◆ Lecture – IV (2) ”Accident and Safety Measures of Fast Reactor”	Learn about represent case studies by each category that occurred at FR.	* Lecturer: Mamoru KONOMURA, JAEA
	11:00~12:00: 60min. ◆ Lecture and Site Tour (WERC) ”Radiation Utilization”	Learn the radiation utilization technology such as cancer treatment through seeing an accelerator in the WERC.	Site tour to the WERC is carried out in 3 groups
PM	13:00~13:40: 40min. ➤ Traveling	➤ Move from WERC to Monju	
	13:40~15:50: 70min. ◆ Site Tour- III Fast Breeder Reactor ”Monju”	Learn the development of FBR plant which assume the nuclear fuel cycle, promoted as national policy through visiting to the FBR ”Monju”	<ul style="list-style-type: none"> ➤ Inside of containment vessel (controlled area) ➤ Main control room (controlled area) ➤ “Monju” Exhibition Hall ➤ Sodium handling training building

	15:50~16:00: 10min. ➤ Traveling	➤ Move from “Monju” to Mihama NPS *	
	16:00~17:00: 60min. ◆ Site Tour- IV Exhibition Hall, Mihama NPS, Kansai Electric Power Co., Inc.	Learn the outline of fatal and injury accident caused by Secondary SG tube rupture at Mihama NPS No.3 in August 2004, and its safety measures	
	17:10~17:50: 40min. ➤ Traveling	➤ Move from Mihama NPS to Kushikawa guest house	
	17:50~18:00: 10min. ◆ Questionnaire Survey	➤ Questionnaire survey *	* At Kushikawa guest house
	18:10~ ◆ Collaboration Event	➤ Wine party	* At Kushikawa guest house

Day 4th: September 13 (Thu) at Simulator Device & FBR Training Building, JAEA

		Items	Outline	Remarks
A Gr	AM	9:00~12:00: 180min. ◆ Practical Training- I “Operation Training Simulator”	Practically learn the reactor operation using simulator devices which is necessary for the educational training for operators in charge of FBR “Monju” safety operation.	
	PM	13:10~14:30: 80min. ◆ Practical Training- II “Sodium Handling”	Practically learn “sodium handling technology” which is one of particular technology of FBR (sodium extinguishing, burning, chemical reactions, etc.)	
		14:50~16:00: 70min. ◆ Practical Training- III “Nondestructive Inspection”	Practically learn “Liquid Penetrant Test (PT)” which is the simplest and high versatility of nondestructive inspection technology, and other nondestructive inspection devices are to introduce in parallel.	
		16:20~16:50: 30min. ◆ Site Tour “In-Service Inspection (ISI)”	Tour the actual devices of ISI which is necessary for the safety operation of FBR “Monju”.	
B Gr	AM	09:00~09:30: 30min. ◆ Site Tour “In-Service Inspection (ISI)”	Tour the actual devices of ISI which is necessary for the safety operation of FBR “Monju”.	

	09:40~11:00: 80min. ◆ Practical Training- II “Sodium Handling”	Practically learn “sodium handling technology” which is one of particular technology of FBR (sodium extinguishing, burning, chemical reactions, etc.)	
	11:10~12:20: 80min. ◆ Practical Training- III “Nondestructive Inspection”	Practically learn “Liquid Penetrant Test (PT)” which is the simplest and high versatility of nondestructive inspection technology, and other nondestructive inspection devices are to introduce in parallel.	
PM	13:30~16:30: 180min. ◆ Practical Training- I “Operation Training Simulator”	Practically learn the reactor operation using simulator devices which is necessary for the educational training for operators in charge of FBR “Monju” safety operation.	
	16:40~17:00: 20min. ◆ Questionnaire Survey	➤ Questionnaire survey *	* At INITC
	17:30~ ◆ Collaboration Event	➤ BBQ party *	* In front of Sodium Training Building

Day 5th: September 14 (Fri) at WERC

	Items	Outline	Remarks
	09:00~09:30 Lecture for Opening to the Public	➤ Address *1 ➤ Address *2	*1 Associate Chancellor, University of Fukui *2 Tsuruga City Mayor Tsutomu YANAGISAWA, JAEA
AM	9:20~10:20: 80min. ◆ Special Lecture - I “Nuclear Energy Contribution toward Future Society”	Learn the indispensability of nuclear energy for the countermeasures against issues of global warming as well as corresponding the energy consumption increasing globally.	Lecturer: Toshihisa YAMAMOTO, Graduate School, Osaka University
	10:30~12:00: 90min. ◆ Special Lecture- II “Nuclear Energy Development in USA”	Learn the status of nuclear energy development in USA, focused on Global Nuclear Energy Development Partnership (GNEP) by global framework which USA has promoted.	Lecturer: Dr. GEHIN, Oak Ridge National Laboratory * Consecutive interpreter

PM	13:00~14:30: 90min. ◆ Special Lecture- III “Efforts for the Next Generation Reactor System Development in the World”	Learn the global trend about next generation reactor system development through the summary of GEN-IV project which has been promoted by the global cooperation framework of 11 participation countries.	Lecture: Dr. CARRE, CEA * Consecutive interpreter
	14:30~14:50: 20min. ◆ Questionnaire Survey	➤ Final questionnaire survey *	
	14:50~15:30: 40min. ◆ Comprehension Test	➤ Conduct the same comprehension test afterward	
	15:30~16:00: 30min. ◆ Comprehension Test Rating	➤ Answer the questions with explanation ➤ Comparison and evaluation of the progress in each category *	* Self-evaluation
	16:00~16:30: 30min. ◆ Training Evaluation	Analysis report for the questionnaire survey on each training items (subject) ➤ Best training items - Entirely - By category: lecture, practical training, site tour ➤ Improvement Items	
	16:30~17:00: 30min. ◆ Completion Ceremony	➤ Closing address * ➤ Presentation of certificate ➤ Take a ceremonial photograph	* Mr. KURUBA, WERC Move to Tsuruga station by bus after the ceremony