

Curriculum of The Tsuruga Summer Institute on Nuclear Energy

Day 1st: September 11(Mon) at The Wakasa Wan Energy Research Center: WERC

	Items	Outline	Remarks
AM	9:00~9:20: 20min. ● Opening Ceremony	<ul style="list-style-type: none"> ➤ Opening speech *1 ➤ Address by the honorable guests *2 ➤ Address by the honorable guests *3 	*1: Mr. KIMURA (Council for Wide-Range Atomic Cooperation on Research and Education) *2: Mr. YAMAMOTO (Fukui vice governor) *3: Mayor of Tsuruga
	9:30~10:30: 60min. ● Special Speech* “Nuclear Energy Development toward the Future Society” ~ Global Trend ~	Make a presentation on the present situation of global review for the nuclear energy policy and worldwide trend for the innovative reactor development for future energy	*Lecturer: Dr. J. BOUCHARD (Special advisor to the Chairman and CEO of the CEA)
	10:40~11:40: 60min. ● Special Speech* “Nuclear Energy Policy and Strategy in Japan”	Make a lecture on the “nuclear energy positioning for the development as a nuclear energy policy in Japan” and “strategy to create the nuclear safety culture in Japan”	* Lecturer: Dr. MACHI (Commissioner of the Nuclear Energy Council, Cabinet office)
	11:50~12:30: 40min. ● Special Speech* “History of Nuclear Public Administration in Fukui Prefecture” ~Efforts toward Safety and Reliability~	Make an introduction on the history relating to the struggles on nuclear public administration aimed at realization of symbiosis with local community	* Lecturer: Mr. KURUBA (Director, Energy R & D Centralization Office, WERC)
PM	13:30~14:15: 45min. ● Site Tour The Wakasa Wan Energy Research Center (WERC)	<ul style="list-style-type: none"> ➤ Multipurpose synchrotron accelerator ➤ Various scientific instruments, devices utilizing accelerator 	
	14:20~15:00: 40min. ● Orientation ➤ Orientation ➤ Grouping and self-introduction	<ul style="list-style-type: none"> ➤ Introduction of seminar curriculum ➤ Debating by groups (English, 4person /group) ➤ More than 1 foreign engineer or lecturer will join each group ➤ Facilitator will join each group 	* Participants have each role (leader, clerical assistant, documentation, presentation)

	15:00~16:00: 60min. ● Discussion among Trainees “ Social Acceptance of Nuclear Energy ” ~ Do You Accept the Risk of Nuclear Energy? ~	➤ Questionnaire survey will be conducted beforehand* ➤ Each trainee summarizes their opinion in English (homework) ➤ Summarize opinions of each trainee and present the result of the debate	* The survey will be conducted in the beginning of August (the result will be collected on the 3 rd week of August)
	16:10~16:50: 40min. ➤ Summarization of the presented material and documentation	➤ Papers should be made basically in English*	* Electronic dictionary will be prepared by JAEA
	16:50~18:20: 90min. ● Presentation and Q & A	➤ Presentation is made in English	
	Reception	➤ Welcome party*	* At Kushikawa guest house

Day 2nd: September 12 (Tue) at the International Nuclear Information and Training Center, JAEA & Unit 3/4, Mihama NPS, Kansai EPC

	Items	Outline	Remarks
AM	9:00~10:10: 70min. ● Lecture* “Energy Compendium”	Learn about the energy status in Japan and in the world as well as the global environmental problem, new energy resources (solar energy/wind power generation) development and nuclear energy status	*Lecturer: Mr. YAMAMOTO (Vice Professor, Osaka University)
	10:20~12:20: 120min. ● Monju Tour	➤ Inside of containment vessel, main control room, secondary piping system, diesel room ➤ Monju exhibition hall	Tour for the FBR plant
PM	13:00~14:10: 70min. ● Lecture* “Aiming at the Effective Use of Uranium Resources” ~Nuclear Fuel Cycle~	Learn about the nuclear energy started as new physical study for the nuclear weapon development in the 20 th century and measures for the peaceful utilization and nuclear fuel cycle development for the effective use of uranium resources	* Lecturer: Mr. KAWATA (Executive officer, JAEA)
	14:20~14:30: 10min. ● Traveling*	Move from Sodium training facility, JAEA Kansai EPC	* Traveling by JAEA bus
	14:30~15:30: 60min. * Site Tour Mihama NPS, Kansai EPC	Learn about the PWR’s accident and safety measurement through visiting the SG exhibition hall, which exhibits the 1 st time accident ECCS activated in Japan	
	15:30~16:00: 30min. ● Traveling*	Move from the Mihama NPS to the Tsuruga No.3 and 4 NPS (under construction) of JPAC	* Traveling by JAEA bus
	16:00~18:00: 120min. ● Tsuruga No. 3 & 4 NPS of JPAC (Under Construction)	Learn about efforts in Japan for the NPS construction through the visit to No.3 & 4 NPS of JPAC*	*Tour is carried out in two groups; tour for the exhibition hall and for the construction site
	18:30~ ● Collaboration Event Beginners’ French Language Class	➤ French language class through wine tasting*	*CEA representative at Monju will be the lecturer *At Kushikawa guest house

Day 3rd: September 13 (Wed) at the International Nuclear Information and Training Center, JAEA

		Items	Outline	Remarks
AM	Gr.A	9:00~11:20: 140min. ● Preliminary Lecture for Exercise “FBR Plant System Configuration and Feature”	Learn about FBR plant system and its feature taking Monju as an example	The lecture & exercise is carried out in two groups for the effective training (Simulator operation training is carried out for Group A)
		11:30~12:00: 30min. ● Exercise “Operation of Fast Reactor”	Pre-study of operation manual of Monju operation simulator	
	Gr.B	9:00~10:30: 90min. ● Preliminary Lecture “Basic ISI Technology During In-Service Inspection”	Learn about the outline of ISI devices as background information before the ISI handling exercise	The lecture & exercise is carried out in two groups for the effective training (ISI handling training is carried out for group B)
		10:40~12:00: 80min. ● Exercise Experience of ISI Devices Handling of Monju	Experience of ISI device handling of eddy current testing for SG (SG-ECT)	
PM	Gr.A	13:10~17:00: 230min. ● Exercise “Experience of Operation of the Fast Reactor”	Learn about the Monju operation manual ➤ Operation of normal start-up (operation at criticality, increase of the output) ➤ Operation during the abnormal situation (Pomp trip, sodium leak, etc.)	Simulator operation training is carried out for group A
	Gr.B	13:10~17:00: 230min. ● Exercise “Experience of ISI Devices Handling for Monju”	➤ Experience of ISI device handling of eddy current testing for SG (SG-ECT)(continued from the AM) ➤ Experience of inspection device handling around reactor vessel	ISI device handling is carried out for group B

Day 4th: September 14 (Thurs) at the International Nuclear Information and Training Center, JAEA

		Items	Outline	Remarks
AM	Gr.A	9:00~10:30: 90min. ● Preliminary Lecture “Basic ISI Technology During In-Service Inspection”	Learn about the outline of ISI devices as background information before the ISI handling exercise	ISI device handling is carried out for group A
		10:40~12:00: 80min. ● Exercise “Experience of ISI Device Handling for Monju”	Experience of ISI device handling of eddy current testing for SG (SG-ECT)	
	Gr.B	9:00~11:20: 140min. ● Preliminary Lecture “FBR Plant System Configuration and Feature”	Learn about FBR plant system and its feature taking Monju as an example	Simulator operation training is carried out for group B
		11:30~12:00: 30min. ● Exercise “Operation of Fast Reactor”	Pre-study of operation manual of Monju operation simulator	
PM	Gr.A	13:10~17:00: 230min. ● Exercise “Experience of ISI Devices Handling for Monju”	<ul style="list-style-type: none"> ➤ Experience of ISI device handling of eddy current testing for SG (SG-ECT)(continued from the AM) ➤ Experience of inspection device handling around reactor vessel 	ISI device handling is carried out for group A
	Gr.B	13:10~17:00: 230min. ● Exercise “Experience of Operation of the Fast Reactor”	Learn about the Monju operation manual <ul style="list-style-type: none"> ➤ Operation of normal start-up (operation at criticality, increase of the output) ➤ Operation during the abnormal situation (Pomp trip, sodium leak, etc.) ➤ Confirmation of the reactor protection operation 	Simulator operation training is carried out for group B
	After 5 pm	17:00~ ● Collaboration Event BBQ	<ul style="list-style-type: none"> ➤ BBQ party 	* In front of sodium training facility

Day 5th: September 15 (Fri) at Institute of Nuclear Safety System Incorporated (INSS) & WERC

	Items	Outline	Remarks
AM	9:00~10:00: 60min. ● Lecture* “ Innovative Nuclear Energy R & D ”	Introduce 2 topics concerning innovative R & D which are appealing to the students	*Lecturer: Official from INSS
	10:00~11:00:60min. ● Site Tour Institute of Nuclear Safety System Incorporated (INSS)	➤ Institute of social research ➤ Institute of Nuclear Technology	
	11:00~11:20: 20min. ● Traveling*	Move from INSS to the WERC	*Traveling by JAEA bus
	11:30~12:30: 60min. ● Special Lecture* “ Personnel Development of Nuclear Engineers in France ”	Learn about the system, structure and contents of nuclear engineers’ education in France and think about the educational system in Japan for the nuclear engineers who sustain the nuclear development	* Lecturer: Mrs. P. Romanetti, International Contact Person of INSTN
PM	13:30~15:10: 100min. ● Special Lecture* “ Development Project of Innovative Reactors (GEN-4) ” ~Latest Trend~	Learn about the latest trend of future reactor coolant technology development through learning the outline & feature of next generation reactor and GEN-IV project Technological developments related to coolant for : ➤ New concept SFR ➤ Innovative gas cooled FR ➤ Lead-bismuth-cooled FR ➤ Molten salt reactor	*Lecturer: Dr. C. LATGE (Research Director, CEA)
	15:10~15:30: 20min. ● Questionnaire Survey	➤ Fill out the questionnaire form ➤ Q & A	
	15:30~16:00: 30min. ● Completion Ceremony	➤ Closing address ➤ Presentation of certificate ➤ Address from the representative of trainees	*Move to Tsuruga St. or Fukui city by bus after the ceremony