



INSC Project MC3.01/13

EC Contract N° NSI/2014/343-969

“Training and Tutoring for experts of the NRAs and their TSOs for developing or strengthening their regulatory and technical capabilities”

Requirements & safety evaluation for NPP SAR

organized by ITER-Consult

Ljubljana - July 6 – 11, 2015

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resources & energy

Course Objective

The course will present and discuss the objective, scope and structure of the SAR of a NPP in different stages. The content of the safety analyses (justification) to be elaborated for licensing and their characteristics in terms of completeness, adequacy and auditability will be discussed. The organization and conduct of the regulatory evaluation of the SAR will be presented with identification of main priorities with respect to different phases of licensing process from siting to construction, commissioning and operation will be discussed. Use of TSO external support for regulatory review will be addressed.

The effective management of regulatory review of SAR will be part of the training program with presentation and discussion of issues related to preparation of the regulatory evaluation report and its use in the decision making process.

Findings from regulatory SAR review will be presented and discussed. Links with regulatory PSA review and use of PSA results in the licensing review of a SAR will be emphasized.

Information about the EU framework for nuclear safety and safety objectives for new NPP (WENRA) will be provided and clarified. Reference standards and guidelines for NPP SAR review will be addressed. Practical elaboration and evaluation will be included in the training program. A technical visit to Krško NPP is scheduled.

Course Daily Program

Monday, 6 th July 2015	
08.30 – 08.45	<i>S. Bobič (JSI)</i> - Registration
08.45 – 12.30	<i>A. Madonna (ITER), A. Prošek (JSI)</i> - Welcome, Organizational Aspects, Training Objectives, Training Program
	<i>A. Madonna (ITER)</i> - EU Infrastructures for Nuclear & Radiation Safety
	<i>A. Madonna, M. Gasparini (ITER)</i> - Regulatory Approach to Define Safety Objectives and Requirements for NPP <i>A. Prošek (JSI) – M. Gasparini (IAEA)</i> – IAEA Design Safety Requirements for NPP
12.30 – 13.30	Lunch
13.30 – 17.30	<i>I. Tiselj (JSI)</i> - Safety Design Concepts for a Nuclear Power Plant: Deterministic and Probabilistic Safety
	<i>I. Tiselj (JSI)</i> - Objectives, Structure and Contents of SAR
	<i>I. Tiselj (JSI)</i> - Different Safety Analyses Reports for Different Steps of the NPP Licensing Process

Tuesday, 7 th July 2015	
08.45 – 12.30	<i>R. Istenič (JSI)</i> - NPP Safety Principles
	<i>R. Istenič (JSI)</i> - Defence in Depth
	<i>A. Prošek (JSI)</i> - NPP Safety Functions
	<i>A. Prošek (JSI)</i> - Safety Systems (Frontline and Support Systems)
12.30 – 13.30	Lunch
13.30 – 17.30	<i>A. Prošek (JSI)</i> - Safety Criteria and Requirements
	<i>I. Tiselj (JSI)</i> - Redundancy, Independence, Diversity: Criteria and Requirements
	<i>I. Tiselj (JSI)</i> - Safety Classifications of SSC
	<i>A. Prošek (JSI)</i> - Protection from Internal Events (Fire, Flood, Jet Impingement, ...)

Wednesday, 8 th July 2015	
08.45 – 12.30	<i>M. Uršič (JSI)</i> - Seismic Classification of SSC
	<i>M. Uršič (JSI)</i> - Environmental and Seismic Qualification
	<i>A. Prošek (JSI)</i> - Identification of List of Safety Related "Parts" of a NPP
	<i>H. Janžekovič (SNSA)</i> - Regulatory Inspection on a NPP
12.30 – 13.30	Lunch
13.30 – 17.30	Practical Application on the Subject of the "SAR Review" (A. Prošek)

Thursday, 9 th July 2015	
8:45 - 12:30	<i>I. Kljenak (JSI)</i> - Containment System
	<i>A. Prošek (JSI)</i> – Protection from External Events (Natural and Non-Natural)
	<i>I. Kljenak (JSI)</i> - Protection from Beyond Design Basis Events (BDBE)
	<i>I. Kljenak (JSI)</i> - Consideration of Severe Accidents (SA) in the Design
12.30 – 13.30	Lunch
13.30 – 17.30	<i>A. Prošek, M. Koželj (JSI)</i> - Design Basis Accident (DBA) Analysis and Analysis or Radiological Consequences
	<i>I. Kljenak, M. Koželj (JSI)</i> – Beyond Design Basis Accident (BDBA) Analysis and Analysis of Radiological Consequences
	<i>S. Cimeša (SNSA)</i> - Use of PSA During SAR Regulatory Review
	<i>A. Stritar (SNSA)</i> - EU Stress Tress and Results

Friday, 10 th July 2015	
08.45 – 12.30	<i>T. Nemeč (SNSA)</i> - Key Aspects of NRA Review of SAR for New NPP and Use of PSA
	<i>D. Lovinčič (SNSA)</i> - Regulatory Interface with the Licensee During SAR Evaluation for Licensing
	<i>D. Lovinčič (SNSA)</i> - An Example of Outcomes of Regulatory Review of Periodic Safety Review in EU
	<i>L. Cizelj (JSI) - A. Madonna (ITER)</i> - Use of Technical Support Organisations
12.30 – 13.30	Lunch
13.30 – 17.30	<i>A. Madonna (ITER), A. Prošek (JSI)</i> - Course Summary
	Course Questionnaire
	Opinion from Trainees
	Training Minutes

Saturday, 11 th July 2015	
07.00	Departure from Ljubljana to Krško NPP
08.30 - 10.30	Krško NPP Guided Tour
10.30 – 12.30	Presentation of Krško NPP and Post Fukushima Action Plan- Discussion
12.30 – 14.00	Lunch
14.30	Departure to Ljubljana