

## LECTURER'S VITAE

### IAEA/ANL TRAINING COURSE

**Name:** Madalina Tronea

**Present Position:** nuclear safety adviser

**Affiliation:** National Commission for Nuclear Activities Control (CNCAN), the nuclear regulatory authority of Romania

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#### Scope of Present Duties:

My main areas of work are the review and assessment of safety documentation for the licensing of nuclear installations and the development of nuclear safety regulations. Examples of my activities are provided below:

- Development of national regulations on the design of safety systems for nuclear power plants, periodic safety review and probabilistic safety assessment; development of national regulations on siting, design, construction and commissioning of new power reactors (the research I have conducted in preparation of the revision of the Romanian regulations on siting, design and construction on nuclear power reactors consisted of reviewing regulatory requirements in the Canada, UK and US, as well as international standards and requirements for new reactors, with the aim of identifying requirements that are applicable to all reactors, independently of the technology employed; in addition, I have compared the quantitative safety goals in order to find the best formula for setting numerical targets to guide the design of new reactors);
- Review and assessment of licensing submissions (including safety analysis reports) for Cernavoda NPP units in operation (Units 1&2 – CANDU 6 design) and of the design documentation submitted in the pre-licensing phase for Cernavoda NPP Units 3 & 4 (deferred projects, currently preparing for resuming construction);
- Review and assessment of periodic safety submissions covering operating policies and principles for the plant (including nuclear safety policy, operational limits and conditions, management of the

configuration of the plant systems important to safety, etc.), integrated management manual, procedures referring to the control of documents, procedures referring to shift operation, studies and information reports supporting the proposed changes to the management system, organisational structure and programmes, procedures developed for the Periodic Safety Review programme (scope and programme of the PSR, Nuclear Safety Assessment Principles for the PSR, evaluation guides, etc).

- Participation in periodic licensing meetings and in the integrated inspections held for major licensing milestones during the commissioning and operation of Cernavoda NPP units;
- Participation in the examination board for the licensing of control room operators and shift supervisors for Cernavoda NPP (responsible for grading the exam papers and the operators' performance in the technical interviews / oral exams, as well as for assessing the operators' performance during the examinations on the full-scope simulator);
- Development of guidelines and training materials to support the regulatory assessment of safety culture in licensees' organisations.

### **Most Relevant Past Experience:**

- Development of CNCAN Management System Manual and benchmarking against IAEA GS-R-3 Requirements;
- Development of Safety Culture Oversight Guidelines to be used in regulatory oversight of safety culture in licensees' organisations and implementation of these guidelines in a pilot project for an organization operation a research reactor; development of training materials to support regulatory oversight of safety culture; contribution to the development of an IAEA TECDOC on regulatory oversight of safety culture;
- Assessment of Management System manuals and procedures for Cernavoda Nuclear Power Plant; regulatory inspections of licensees' implementation of management systems.

### **Educational Background:**

Education and Qualifications:

2006 – 2010 University of Bucharest, Faculty of Physics

Doctoral Studies in Nuclear Physics and Application of Nuclear Technology

(the subject of the thesis was the technology-neutral approach to the regulation of power reactors, with focus on design requirements for new reactors)

Degree: Doctor /Ph.D

2004 - 2010 Participation to several training courses and workshops organised in the framework of the IAEA technical cooperation projects (on various subjects related to regulatory review and assessment activities – examples below)

2003 – 2005 University of Bucharest, Faculty of Physics

Master of Science Courses in Environmental Physics

Degree: M.Sc; Subject of thesis: "Safety Features of CANDU NPPs"

1998 – 2003 University of Bucharest, Faculty of Physics

Degree: Engineering Physicist

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