

SPEAKER / PRESENTATION INFORMATION

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Biography	<p><i>M. Doucet – Senior Expert – AREVA NP Fuel Sector</i></p> <p>Michel DOUCET joined FRAMATOME (former AREVA NP) in 1989 after 14 years with Belgonucleaire in Belgium where he was busy with Neutronic codes and methodology as well as criticality analysis for the MOX fuel fabrication plant. During his time with FRAMATOME (1989–1995), he worked for the development of the SCIENCE Neutronic code package. Since 1995, he has been with the Fuel Sector Design and Sales Business Unit where he handles the criticality safety analysis to support the AREVA NP fuel factories (FBFC – CERCA) and the fresh fuel shipping cask for UO₂ and MTR materials. He managed the training and mentoring of young individuals for 10 years.</p>		
Title	<i>Nuclear Renaissance: New Challenges for Criticality Safety Concerns</i>		
Abstract	<p>Nuclear energy has made a comeback and is clearly one of the most efficient ways to fight the greenhouse effect.</p> <p>With the nuclear renaissance we observe:</p> <ul style="list-style-type: none"> • New Nuclear Power Plant (NPP) buildings • Fuel manufacturing plants, opportunities, and production capabilities • New fuel development • New need of shipping casks. <p>Generation III reactors fuel management will lead to better use of nuclear fuel; nevertheless, enrichment is still limited today to 5% ²³⁵U. Improvements and optimization of burnable poisons management is one of the major tasks for the fuel vendors. However, for criticality purposes (fabrication, transport), these burnable poisons are excluded for criticality safety assessments and analyses.</p> <p>AREVA NP is to be ready to deliver a large number of fuel assemblies for the next generation nuclear power plant by 2010 (i.e., the EPR). Improved production means some renewal of existing tools. Criticality safety is a main concern to be accountable for in the global redesign of the different processes.</p> <p>Fuel assembly transport is also a major item—there are 241 fuel assemblies in EPR reactor cores, and turnover time will not be sufficient to make several transports knowing that overseas travel takes a long time. A new fleet of fresh fuel shipping casks has to be developed and operational by 2011.</p> <p>Today's criticality specialists face a heavy workload and important issues with manpower and skills. For a decade, the AREVA NP Fuel Sector has made efforts to challenge this situation. Training and mentoring young individuals has been key to this issue's resolution and success.</p>		

This presentation will develop three specific items:

- Higher efficiency of fuel fabrication plants to meet new demand
- Need for a global AREVA shipping cask fleet
- Training and mentoring young individuals.