SPEAKER / PRESENTATION INFORMATION

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Biography	1972: Graduated from the Industrial Chemistry High School in Lyon 1977: PHD in Physical chemistry of Materials: Institut National Polytechnique of Lorraine 1972-1979:Teacher: High School of Mines in Nancy - (Chemical processes and Thermo chemistry) 1979-1982: COGEMA engineer: in charge of criticality studies for the UP3 and UP2-800 reprocessing plants design 1982-1988: Head of health physics measurements in the La Hague plant 1988-1990: IPSN Engineer: Criticality Studies department 1990-1993: IPSN: Head of Criticality Safety review office 1993-2003: IPSN: Head of Criticality Studies department 2003: IRSN: assistant of the Director of *Plants, Laboratories, Transports and Waste Safety Division*, in charge of research activities and criticality safety issues.		
Title	***Toward Optimized Criticality Safety Limits***		
Abstract	As part of the demonstration of the criticality safety of the industrial operations concerning the nuclear fuel cycle and the fuels for future reactors, several open questions can be legitimately asked. The answer to these questions is likely to have a very important impact on the design of the apparatuses and on the research of the optimal solutions with respect to safety and the industrial and economic requirements. The nuclear criticality control remains founded on the a priori limitation of one or more operational parameters such as the mass of fissile material, the geometrical form and dimensions and the quantity of moderating materials; this stage of the choice of the criticality control modes is determining. Moreover, to fix the acceptable limits of the control parameters, it is necessary to seek, among all the fissile mediums present in the normal and possible abnormal operating situations, leading to the most constraining limits; this stage leads to the definition of a “bounding” fissile medium called “reference” medium, which is used to carry out dimensioning calculations. In the past, the choice of “simplified” reference fissile mediums was generally made in order to facilitate the demonstration of their “bounding” character and because of the lack of validated basic nuclear data for some minor isotopes or sufficiently precise physico-chemical knowledge. Thus it would be of a great interest that the clinicians and the specialists in the physico-		

	chemical processes implemented in the factories of the fuel cycle join in a step of global optimization and undertake required researches in order to justify the safety margins associated with optimized dimensioning. Moreover, it is probable that such an optimization would go in the same direction as the fight against the proliferation, which constitutes one of the issues to be taken into account in the choice of the processes and the designs of the factories of the future civil fuel cycle. From some examples, this paper aims at proposing tracks of research to answer these questions.