SPEAKER / PRESENTATION INFORMATION

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Biography	For the past 11 years, Mr. Venard has been working on the development and experimental validation of the French criticality CRISTAL package at CEA. From 1988 to–1998, he worked on the fuel management and core design of the Superphenix Fast Breeder Reactor at AREVA.		
Title	***Methodology Used by the CEA to Determine the Computational Bias and Associated Uncertainty Due to Nuclear Data***		
Abstract	French companies mainly use the CRISTAL package to perform their studies. CEA and IRSN developed CRISTAL in collaboration with AREVA NC Company. The CRISTAL experimental validation database contains more than 2000 experiments from the ICSBEP handbook and French experimental programs. The validation procedures exploit comparisons between the calculated results and the experimental measurements. Sometimes, the similarities between the design system and the experiments are not obvious, despite the large number of experiments. In this case, it is difficult to choose experiments for the validation and transposition of experimental validation results to the design system calculations. To respond to this need, CEA is developing a tool to decide and validate which experiments will be integrated into the future major version of CRISTAL: R.I.B. (*Représensativité, Incertitudes, Biais*) by CEA. The R.I.B. tool linked with the CRISTAL experimental validation database allows: • Definition of the experimental validation area corresponding to the design system • Assessment of k_{eff} computational bias and its uncertainty because of the nuclear data uncertainties for the design system. The first part of this presentation shows the CEA's methodology for assessing errors and uncertainties in nuclear data. With this methodology, the information from the criticality safety experiments is taken into account in the assessment of these parameters. The R.I.B. method is based on the results of experiments with respect to the studied application and on the statistical adjustment theory of the nuclear data. The second part describes the main features of the R.I.B. tool, a Java software.		