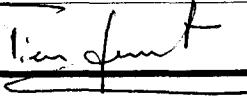


NRC FORM 699 (9-2003)		U.S. NUCLEAR REGULATORY COMMISSION		DATE 02/16/2010
CONVERSATION RECORD				TIME 8:00am
NAME OF PERSON(S) CONTACTED OR IN CONTACT WITH YOU Michel Doucet, G. Romanet, F. Marvaud, Charlie Sanders		TELEPHONE NO. 017-230-0201		TYPE OF CONVERSATION <input type="checkbox"/> VISIT <input type="checkbox"/> CONFERENCE <input checked="" type="checkbox"/> TELEPHONE <input type="checkbox"/> INCOMING <input checked="" type="checkbox"/> OUTGOING
ORGANIZATION AREVA NP				
SUBJECT Cristal Modular Criticality Code and its Validation				
SUMMARY (Continue on Page 2)				
NRC Attendees: Zhian Li, Pierre Saverot				
<p>In 2009, staff held two pre-application meetings with AREVA on the FCC-NG package and questions were raised by staff during each of those meetings on the benchmarking of the Cristal Criticality Code. This conference call was set up to clarify some concerns on the validation of the Cristal Code.</p> <p>AREVA explained the functional architecture of the Cristal modular code criticality package, as used in the FCC-NG safety analysis report, which consists of the APOLLO-2 code and the MORET 4 computer code. APOLLO is a spectral code with generates macroscopic cross-sections. Those cross-sections are directly linked with the 3D Monte-Carlo MORET-4 code which provides the capability to model simple or complex geometries. AREVA said that there is no energy condensation between the cross section processing and the Monte Carlo modules, and that there is a cell homogeneization.</p> <p>AREVA explained the validation of Cristal and the use of USLSTAT to determine uncertainties and upper safety limits, following the guidance in NUREG/CR-6361.</p> <p>Staff asked clarifications on (i) the cross sections library used on Monte-Carlo, (ii) microscopic inputs and macroscopic outputs for APOLLO-2, (iii) supercell cross sections generated code to get flux distributions, etc... In particular, AREVA explained that the fuel assembly is simulated by a single fuel rod with the exact moderation ratio of the fuel assembly. AREVA also clarified the code benchmarking issue: there are not 2 codes but 2 modules of the same criticality package.</p> <p>Staff stated that it was satisfied with those clarifications, pending the submittal of an application for the FCC-NG package.</p>				
Continue on Page 2				
ACTION REQUIRED None				
NAME OF PERSON DOCUMENTING CONVERSATION Pierre Saverot		SIGNATURE 		DATE 02/17/2010
ACTION TAKEN				
TITLE OF PERSON TAKING ACTION		SIGNATURE OF PERSON TAKING ACTION		DATE