

EC-RAPHAEL-PUMA Course on coated particle fuel supported by IAEA
4-7 December 2007
Petten, The Netherlands

Day 1: Tuesday, 4 December, 2007			
09:00-9:10	Welcome address and organisation by the Host	A. van Heek	NRG
09:10-9:40	Opening speech by IAEA	H. Forsström	IAEA
09:40- 10:00	Address by the European Commission	P. Manolatos	EC
10:00-10:25	Introduction to HTR	A. van Heek	NRG
10:25-10:45	Coffee Break		
10:45-11:05	The RAPHAEL Integrated Project	E. Bogusch	AREVA NP
11:05-11:20	The PUMA Project	J. Kuijper	NRG
11:20-11:45	Why HTR?	D. Hittner	AREVA NP
11:45-13:00	Fuel Design Kernels/ coated particles/ spheres/compacts/ blocks	P. Guillermier	AREVA NP
13:00-14:00	Lunch		
14:00-14:45	Nuclear Fuels/ Damage and Radionuclide Release Mechanisms Applicable to Fuel Constituent Materials / Fuel Structural Materials /	H. Nabelek	FZJ
14:45-15:15	Historical Evolution on Fuel Manufacturing (kernels, coating, fuel elements)	U. Colak	Hacettepe Univ., Turkey
15:15-15:55	Kernel making: standard UO ₂	F. Venter	NECSA, South Africa
15:55-16:15	Break		
16:15-16:45	Kernel making and control: alternatives with Th, Pu, MA	J. Somers	JRC-ITU
16:45-17:30	CVD Coating in fluidized-bed furnace and control: PyC, SiC,	F. Charollais	CEA
Day 2: Wednesday, 5 December, 2007			
09:00-09:30	Fuel bodies: rods/ sticks/ blocks compacts/ pin-in-block	M.P. Vitali	Cerca
09:30-10:00	Processes and major equipment for the production of Spherical HTR fuel elements	G. Brähler	Nukem
10:00-10:40	Fuel production of future HTRs	C. Tang	INET, China
10:40-11:00	Break		

11:00-11:45	Fuel QC/QA: methods, statistical results and comparisons Kernels coated particles spheres/compacts	Saurwein	General Atomics
11:45-12:15	Coating micro structural characterisation – correlation with thermo mechanical properties	O. Dugne V. Basini	CEA
11:45-12:15	Irradiation testing in MTRs, practice and procedures	K. Bakker	NRG
12:15-13:00	Qualification of spherical fuel elements	Constantin Koschcheyev	INM, Zarechny, Russia
13:00-14:00	Lunch		
14:00-14:45	HTR fuel irradiation experiments	M. Fütterer	JRC-IE
14:45-15:25	HTR fuel PIE methods and results	S. De Groot	NRG
15:25-15:45	Break		
15:45-16:30	Historical Development of HTR Fuel modeling	M. Kissane	IRSN
16:30-17:15	HTR Fuel Modeling of Mechanical Behaviour	F. Michel	CEA
Day 3: Thursday, 6 December, 2007			
9:00-9:45	Advanced Methods for Fission Product release predictions	Hanno van der Merwe	PBMR, South Africa
9:45-10:25	Accident behavior evaluation and predictions <ul style="list-style-type: none"> o 1600°C limits o 1700-2600°C performance o water ingress o air ingress o reactivity accidents 	K. Verfondern	FZJ
10:25-10:45	Break		
10:45-11:30	Accident condition testing: technology/ results and analysis/evaluation including research by FZJ)	E. Toscano	JRC-ITU
11:30-12:15	Advanced coated particle fuel <ul style="list-style-type: none"> o SiC TRISO o ZrC TRISO 	Sawa	JAEA
12:15-13:00	IAEA HTR fuel and materials fact book	Colak	H. Univ., Turkey
13:00-14:00	Lunch		
14:00-14:30	Non-proliferation aspects of HTRs	K. Hesketh	Nexia Solutions
14:30-15:00	HTR Fuel Cycle Dynamics	L. van den Durpel	LISTO
15:00-15:15	Break		
15:15-16:00	Long term disposal of HTR fuel leaching mechanism and experiments	Fachinger	FZJ

	corrosion of graphite and coating layer		
16:00-17:00	Waste processing/ HTR fuel re-fabrication	W. von Lensa	FZJ
Day 4: Friday December 7, 2007			
9:00-10:00	Derive performance limits: Manufacture. Normal operations. Accident conditions	Nabielek	FZJ
10:00-10:55	Derive tentative fuel development and qualification program; Manufacture. Normal operations. Accident conditions	P. Guillermier	AREVA NP
10:55-11:15	Break		
11:15-13:00	Discussion and conclusions	A. van Heek	NRG
13:00-14:00	Lunch		
14:00-17:00	Optional: HFR and HCL visits		NRG