

April, 19, 1995

MEMORANDUM TO: Ashok Thadani
Associate Director for Inspection
and Technical Assessment
Office of Nuclear Reactor Regulation

FROM: Farouk Eltawila, Chief S⁻ FE
Reactor and Plant Systems Branch
Division of Systems Research
Office of Nuclear Regulatory Research

SUBJECT: OECD SPECIALIST MEETING ON TRANSIENT BEHAVIOR OF HIGH BURNUP FUEL

In December, I sent you an announcement from the OECD Nuclear Energy Agency of a forthcoming Specialist Meeting on Transient Behavior of High Burnup Fuel. Paper selection has now been completed and an agenda for the meeting is enclosed.

Also enclosed is an additional copy of the registration form, which should now be sent directly to Mr. Javier Reig, for those wanting to attend. Meeting facilities at Cadarache will accommodate about 100 participants, and it is expected that 12 to 15 requests for registration will be accepted from the U.S.

Additional information on transportation and accommodations will be provided by OECD to meeting participants.

cc: L. Phillips

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Specialist Meeting on Transient Behaviour of High Burnup Fuel

12-14 September 1995

Preliminary Programme

08:30		SESSION III	
09:00			
09:30	Opening Remarks CEA/IPSN & NEA	(5 papers)	SESSION IV (4 papers)
10:00	SESSION I		
10:30	(4 papers)	Coffee Break	Coffee Break
11:00			
11:30	Coffee Break	SESSION III (5 papers)	SESSION IV (4 papers)
12:00	SESSION II (2 papers)		
12:30			Invited paper CEA/IPSN
13:00	Lunch	Lunch	
13:30			Lunch
14:00	SESSION II		
14:30			
15:00	(4 papers)		SESSION V
15:30			
16:00	Coffee Break	Technical Visit CABRI Reactor	Closing Remarks CEA/CSNI
16:30	SESSION II		
17:00	(3 papers)		
17:30			

CSNI Specialist Meeting on Transient Behaviour of High Burnup Fuel

General Meeting Chairman: Dr. Franz Schmitz (CEA/IPSN, France)

Session I : Regulatory Background

Co-Chair: R. Meyer (NRC, U.S.A.) & C. Maeder (HSK, Switzerland)

No.	Title	Author(s)	Organisation	Country
I.1	USNRC Review of High Burnup Fuel Regulatory Requirements	L. E. Phillips	USNRC	United States
I.2	Regulatory Status and Licensing Issues Related to High Burnup Fuel in France	J. Lewi D. Lagarde	IPSN DSIN	France
I.3	Regulatory Status on Transient Behaviour of High Burnup Fuel and Related Research Activities in Japan	T. Sato T. Fujishiro	STA JAERI	Japan
I.4	German Licensing Approach and Consequences for High Burnup Fuel	S. Langenbuch Ch. Faber	GRS TÜV	Germany

Session II: Integral Tests and Analysis
Co-Chair: T. Fujishiro (JAERI, Japan) & M. Haessler (IPSN, France)

No.	Title	Author(s)	Organisation	Country
II.1	Behaviour of High Burnup PWR Fuel Under a Simulated RIA Condition in the NSRR	Toyoshi Fuketa Yukihide Mori Hideo Sasajima Kiyomi Ishijima	JAERI	Japan
II.2	Postulated Mechanisms on the Failure of 50MWd/kgU PWR Fuel in the NSRR Experiment and the Related Research Programs in JAERI	Kiyomi Ishijima Yukihide Mori Hideo Sasajima Toyoshi Fuketa	JAERI	Japan
II.3	The Experimental Test Programme for the Study of High-Burnup PWR Rods Under RIA Conditions in the CABRI Core	M. C. Anselmet-Vitiello F. Arreghini M. Haessler	IPSN	France
II.4	Cladding and Fuel Modifications of a 60 GWd/t Irradiated Pin During a Power Transient Performed in the CABRI Reactor	Patrick Menut Didier Lespiaux M. Troabas	CEA/DRN	France
II.5	The Behaviour of Irradiated Fuel Under RIA Transients: Interpretation of the CABRI experiments	J. Papin H. Rigat J.P. Breton	CEA/IPSN Cadarache	France
II.6	Development and Realization of Research Programme for High Burnup Fuel Rods Behaviour Analysis under RIA Condition at IGR Pulse Reactor	V. Asmolov L. Yegorova	Kurchatov Institute	Russia
II.7	Primary Factors Causing the Failure of High-Burnup LWR Fuel Rods During Simulated Reactivity Initiated Accidents	R.K. McCardell	INEL	United States

II.8	Unexpected Transient on Experimental Instrumented Fuel Rod in BR2	S. Bodart B. Coupé B. Ponsard M. Lippens	SCK/MOL Belgonucleaire	Belgium
II.9	Studsvik's Experience Related to LWR Fuel Behaviour at High Burnup	H. Mogard M. Grounes K. Malen F. B. Jonsson M. Carlsson	Studsvik	Sweden

Session III : Plant Calculations
Co-Chair: S. Langenbuch (GRS, Germany) & K. Valtonen (STUK, Finland)

No.	Title	Author(s)	Organisation	Country
III.1	A Best Estimate Assessment of Rod Ejection Fuel Duty in PWRs	B. J. Johansen M. J. Hone D. H. Risher S. Ray	Westinghouse	United States
III.2	Study of the Rod Ejection Transient on a PWR Related to High Burnup Fuel Rupture Risk	Mr. Stelletta	EDF	France
III.3	On the Role of Burnup Effects of Fuel Properties in RIA Analysis	R. Kyrki-Rajamaki	VTT Energy	Finland
III.4	Analysis of the Fuel Behaviour under Rod Ejection Accident in the Pressurized Water Reactor	Chang Bock Lee Byung Oh Cho Oh Hwan Kim Young Baik Kim Keum Seok Seo	KAERI	Korea
III.5	Realistic Scoping Study of Reactivity Insertion Accidents for a Typical PWR and BWR Core	A.F. Dias L.D. Eisenhart L.J. Agee	Levy Inc. EPRI	United States
III.6	Methodology and Results of RIA Studies at Siemens	H. Finnnemann D. Bender R. Eberle H. Bauer F. Wehle	Siemens (KWU)	Germany
III.7	Analyzing the BWR Rod Drop Accident in High-Burnup Cores	D.J. Diamond L. Neymotin P. Kohut	Brookhaven National Laboratory	United States

III.8	Investigations Related to Increased Safety Requirements for Reactivity Initiated Accidents	F. Holzgrewe J.M. Kallfelz M.A. Zimmermann C. Maeder U. Schmocker	PSI HSK	Switzerland
III.9	Analyses of Rod Drop Accidents Using a Three-Dimensional Transient Code for Reactivity-Initiated Events of Boiling Water Reactors	Akira Omoto Takeshi Ota Mamoru Nagano Sadayuki Izutsu	TEPCO Toshiba Corp. Hitachi Eng.	Japan
III.10	Realistic Evaluation of RIA in a BWR	J.G.M. Andersen G.A. Potts J.F. Klapproth	General Electric	United States

Session IV: Separate-Effect Tests and Analysis
Co-Chair: V. Langman (Ontario Hydro, Canada) & A. Delbrassine (SCK/MOL, Belgium)

No.	Title	Author(s)	Organisation	Country
IV.1	High Burnup Phenomena-Results from Experiments in the Halden Reactor	W. Wiesenack	IFA Halden	Norway
IV.2	Tensile Properties of Irradiated Zircaloy 4 Cladding submitted to Fast Transient Loading	M. Balourdet C. Bernaudat	CEA/IPSN EDF/SEPTEN	France
IV.3	Influence of Locally Concentrated Hydrides on Ductility of Zircaloy-4	Fumihisa Nagase Kiyomi Ishijima Teruo Furuta	JAERI	Japan
IV.4	A 2D-3D Finite-Element Approach of Fuel Rod Thermomechanical Behaviour During an RIA	C. Bernaudat J.P. Berton P. Permezel	EDF-SEPTEN	France
IV.5	Evaluation of RIA Experiments and their Impact on High Burnup Fuel Performance	O. Ozer, R. Yang, S. Yagnik, L. Agee Y. Rahid, R. Montgomery	EPRI ANATECH	United States
IV.6	Impact of Fission Gas Behaviour on Irradiated Fuel Behaviour at Extended Burnup under RIA Conditions	F. Lemoine F. Schmitz et al.	IPSN/CEN Cadarache	France
IV.7	Modelling of Phenomena Associated With High Burnup Fuel Behaviour During Overpower Transients	H.E. Sills V.J. Langman F.C. Iglesias	Ontario Hydro	Canada
IV.8	High-Burnup Modeling Improvements and Calculations of Fuel Rod Behaviour during Reactivity Initiated Accidents	C.E. Beyer D.D. Lanning L. J. Siefken	USNRC INEL	United States

Invited paper from host organisation

The Project to implement into CABRI a Pressurized Water Loop. Motivations and objective of the future test program.

J. Furlan, M. Haessler, F. Schmitz, J. Papin, A. Tattegrain

CEA/IPSN/DRS, Cadarache, France.

Session V: Summary, Issues and Conclusions

Chairmen: F. Schmitz (IPSN, France) & M. Recio (CSN, Spain)

CSNI Specialist Meeting on Transient Behaviour of High Burnup Fuel

CEN Cadarache, France

12th-14th September 1995

SPEAKER INTRODUCTION FORM

Session _____ Paper No. _____ (Prof., Dr., Mr., Mrs., Miss, Ms.)

Name _____ First Name _____

Organisation/Company _____

Current title/position _____

Professional Experience _____

OECD NUCLEAR ENERGY AGENCY
COMMITTEE ON THE SAFETY OF NUCLEAR INSTALLATIONS

OECD SPECIALIST MEETING ON
TRANSIENT BEHAVIOUR OF HIGH BURNUP FUEL

Hosted by CEA-IPSN/DRS
Centre d'Etudes Nucléaires de Cadarache
12th-14th September 1995

PARTICIPANT REGISTRATION FORM 1

to be sent, as soon as possible, and in any case before 30th June 1995, to:

Mr. Javier Reig
Nuclear Safety Division
OECD Nuclear Energy Agency
Le Seine Saint-Germain
12 Boulevard des Iles
F-92130 Issy-les-Moulineaux
France

Telefax: 33 (1) 4524-1110

Surname (Family Name):

Given Name(s) :
(please indicate whether Prof., Dr., Mr., Mrs., Miss, Ms.)

Title or Function :

Institution, Organisation or Company (full address):

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Telephone No.: Telefax No.:

E-mail:.....

Title of the paper you will present (if any):

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OECD NUCLEAR ENERGY AGENCY
COMMITTEE ON THE SAFETY OF NUCLEAR INSTALLATIONS

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TRANSIENT BEHAVIOUR OF HIGH BURNUP FUEL

Hosted by CEA-IPSN/DRS
Centre d'Etudes Nucléaires de Cadarache
12th-14th September 1995

PARTICIPANT REGISTRATION FORM 2

to be sent, as soon as possible, and in any case before 30th June 1995, to:

Dr. Franz Schmitz
Attn./ Mrs. Monique Magoni
IPSN/DRS/SEMAR
CEN Cadarache Bat. 702
F-13109 ST. PAUL-LEZ-DURANCE CEDEX
FRANCE

Fax. +33-42252971

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to the meeting room and the technical visits:

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Nationality :

Passport Number :

Private Address :

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Yes () () No