

February 10, 2006

APPLICANT: Framatome ANP

PROJECT: EPR PRE-APPLICATION REVIEW

SUBJECT: SUMMARY OF NOVEMBER 2, 2005, MEETING WITH FRAMATOME ANP
REGARDING EPR PRE-APPLICATION REVIEW TOPICS

On November 2, 2005, a public meeting was held between the U.S. Nuclear Regulatory Commission (NRC) staff and representatives of Framatome ANP (FANP). The purpose of this meeting was to provide an overview of safety analysis methods and to discuss severe accident mitigation features and analyses in design of the Evolutionary Power Reactor (EPR). A list of meeting attendees is included as Attachment 1. Attachment 2 contains handouts FANP provided at the meeting (ADAMS Accession Number ML053620211). A summary of the meeting is provided below.

After providing a short review of EPR activities around the world, FANP personnel provided an overview of the methods it plans to use for the EPR fuel and accident analyses. The EPR was described as a conventional pressurized water reactor design. While it has a higher power output than current pressurized water reactors, the reactor coolant system (RCS) and steam generators are larger, as well, so that there is proportionally more water available within these systems, leading to less rapid accident response in many cases.

Most of the computer codes FANP plans to use for analysis of the EPR have already been reviewed by the NRC for application to currently operating plants. FANP plans to submit a topical report to demonstrate that these codes cover a range of conditions which bound the EPR design. Similarly, the methodologies FANP plans to apply are generally similar to currently approved methods. However, there are some differences in the EPR design (e.g., setpoints) which will require new methods. FANP stated that its work to date has not identified the need for any computer code modifications, and that the EPR does not introduce any new phenomena.

A topical report addressing computer codes and methods to be used for EPR design basis analyses will be submitted to NRC in the summer of 2006.

FANP then provided an overview of the EPR's severe accident (i.e., accidents resulting in extensive core damage) design features and the methods it plans to use for evaluation of such accidents. FANP stated that its severe accident mitigation philosophy is intended to maintain containment integrity. The EPR has several features intended to mitigate severe accidents, including a large dry containment, a core melt retention system, passive combustible gas control, and RCS depressurization valves dedicated to severe accidents to prevent high pressure vessel melt-through events. The design also includes a severe accident heat removal system to cool core debris held within the core melt retention area and the containment. This system combines passive flooding of the core debris with active components for long term cooling. Additional information regarding these features are provided in the FANP handouts.

FANP plans to evaluate severe accidents using computer codes and methods it says are familiar to the NRC. Computer code modifications necessary to address specific EPR design features will be validated against experimental data.

A topical report describing the EPR severe accident analysis will be submitted in late 2006.

Following FANP's presentation, a public stakeholder stated that in Europe, specific requirements for protection against aircraft crashes are imposed, and asked whether the US version of the EPR would have similar capability. FANP said that the US EPR will have the same capability as plants to be built in Europe.

The stakeholder also asked whether some features, such as the severe accident features described above, might be eliminated or downgraded by US customers to reduce the cost of the EPR. FANP said that the design marketed in the US has the same major features as the design being marketed around the world. NRC staff noted that the Commission has stated an expectation that future reactors be safer than the current generation, so it is likely that the EPR's severe accident features will be part of the design certification.

Please direct any inquiries regarding this meeting to Joseph Williams at 301-415-1470, or jfw1@nrc.gov.

/RA J. Kim for:/

Joseph F. Williams, Senior Project Manager
New Reactor Licensing Branch
Division of New Reactor Licensing
Office of Nuclear Reactor Regulation

Project No. 733

cc w/atts: See next page

FANP plans to evaluate severe accidents using computer codes and methods it says are familiar to the NRC. Computer code modifications necessary to address specific EPR design features will be validated against experimental data.

A topical report describing the EPR severe accident analysis will be submitted in late 2006.

Following FANP's presentation, a public stakeholder stated that in Europe, specific requirements for protection against aircraft crashes are imposed, and asked whether the US version of the EPR would have similar capability. FANP said that the US EPR will have the same capability as plants to be built in Europe.

The stakeholder also asked whether some features, such as the severe accident features described above, might be eliminated or downgraded by US customers to reduce the cost of the EPR. FANP said that the design marketed in the US has the same major features as the design being marketed around the world. NRC staff noted that the Commission has stated an expectation that future reactors be safer than the current generation, so it is likely that the EPR's severe accident features will be part of the design certification.

Please direct any inquiries regarding this meeting to Joseph Williams at 301-415-1470, or jfw1@nrc.gov.

/RA/ J. Kim for:/

Joseph F. Williams, Senior Project Manager
New Reactor Licensing Branch
Division of New Reactor Licensing
Office of Nuclear Reactor Regulation

Project No. 733

cc w/atts: See next page

ADAMS ACCESSION NO. ML060200391

OFFICE	PM:NRBA	BC:NRBA
NAME	JFWilliams-JKim /c/ on 2/10/2006	LDudes
DATE	02/06/2006	02/10/2006

OFFICIAL RECORD COPY

Distribution: Meeting Summary Re: EPR Pre-Application Review, Dated February 10, 2006

ML060200391

Hard Copy

NRBA R/F

PUBLIC

WBeckner

LDudes

JWilliams

E-Mail:

PUBLIC

D. Matthews/WBeckner/JCalvo

E. Throm

H. Scott

Y. Hsii

S. Bajorek

G. Bagchi

E. Sullivan

C. Abbott

J. Danna

R. Denning

J. Flack

F. Eltawila

T. Mensah

N. Mamish

bhupinder.singh@hq.doe.gov

tom.miller@hq.doe.gov

bill.ascroft-hutton@hse.gsi.gov.uk

rzentkowskig@cnscccsn.gc.ca

kcrogers@aol.com

mod@inel.gov

jerald.holm@framatome-anp.com

Attendees

EPR Pre-application Meeting

November 2, 2005

<u>Name</u>	<u>Affiliation</u>
Joe Cudlin	Areva
Martin Parece	Areva
Joe Savage	Areva
Carey Fleming	Constellation
Mark Geckle	Constellation
Shawn Hughes	Constellation
Mark Hunter	Constellation
Joe Mihalcik	Constellation
Mike Milbradt	Constellation
Tom Roberts	Constellation
Joe Turnage	Constellation
Ray Ganthner	FANP
Ronnie Gardner	FANP
Jerry Holm	FANP
Alan Levin	FANP
Robert Martin	FANP
Toney Matthews	FANP
Stephen Mazurkiewicz	FANP
Sandra Sloan	FANP
Roger Stoudt	FANP
Eric Williams	FANP
Louis Quintana	General Electric
Sud Basu	NRC
David Bessette	NRC
Jose Calvo	NRC

<u>Name</u>	<u>Affiliation</u>
Andrzej Drozd	NRC
Y. Gene Hsii	NRC
Walton Jenson	NRC
Paul Lewis	NRC
Erasmia Lois	NRC
Mark Melnicoff	NRC
Bruce Musico	NRC
Jack Rosenthal	NRC
Edward Throm	NRC
Kent Welter	NRC
Jared Wermiel	NRC
Joe Williams	NRC
Ed Lyman	Union of Concerned Scientists

EPR

cc:

Mr. David Lochbaum, Nuclear Safety
Engineer
Union of Concerned Scientists
1707 H Street, NW., Suite 600
Washington, DC 20006-3919

Mr. Paul Gunter
Nuclear Information & Resource Service
1424 16th Street, NW, Suite 404
Washington, DC 20036

Mr. James Riccio
Greenpeace
702 H Street, Suite 300
Washington, DC 20001

Mr. Adrian Heymer
Nuclear Energy Institute
Suite 400
1776 I Street, NW
Washington, DC 20006-3708

Mr. Paul Leventhal
Nuclear Control Institute
1000 Connecticut Avenue, NW
Suite 410
Washington, DC 20036

Dr. Jack W. Roe
Nuclear Energy Institute
1776 I Street, NW
Washington, DC 20006-3708

Mr. Brendan Hoffman
Research Associate on Nuclear Energy
and Environmental Program
215 Pennsylvania Avenue, SE
Washington, DC 20003

Mr. Jerald S. Holm
Framatome ANP, Inc.
3315 Old Forest Road
P.O. Box 10935
Lynchburg, VA 24506-0935

Mr. Tom Clements
6703 Gude Avenue
Takoma Park, MD 20912

Ms. Patricia Campbell
Morgan, Lewis & Bockius, LLP
1111 Pennsylvania Avenue, NW
Washington, DC 20004

Mr. Charles Brinkman, Director
Washington Operations
Westinghouse Electric Company
12300 Twinbrook Parkway, Suite 330
Rockville, MD 20852

Mr. Glenn H. Archinoff
AECL Technologies
481 North Frederick Avenue
Suite 405
Gaithersburg, MD. 20877

Mr. Gary Wright, Manager
Office of Nuclear Facility Safety
Illinois Department of Nuclear Safety
1035 Outer Park Drive
Springfield, IL 62704

Mr. Ronald P. Vijuk
Manager of Passive Plant Engineering
AP1000 Project
Westinghouse Electric Company
P. O. Box 355
Pittsburgh, PA 15230-0355

Mr. Ed Wallace, General Manager
Projects
PBMR Pty LTD
PO Box 9396
Centurion 0046
Republic of South Africa

Mr. Russell Bell
Nuclear Energy Institute
Suite 400
1776 I Street, NW
Washington, DC 20006-3708

Ms. Kathryn Sutton, Esq.
Morgan, Lewis & Bocklus, LLP
1111 Pennsylvania Avenue, NW
Washington, DC 20004

Mr. Robert E. Sweeney
IBEX ESI
4641 Montgomery Avenue
Suite 350
Bethesda, MD 20814

E-Mail:

tom.miller@hq.doe.gov or
tom.miller@ nuclear.energy.gov
jerald.holm@framatome-anp.com
mwetterhahn@winston.com
gcesare@enercon.com
eddie.grant@exeloncorp.com
whorin@winston.com
steven.hucik@ge.com
david.hinds@ge.com
chris.maslak@ge.com
james1beard@ge.com
louis.quintana@ge.com