

May 30, 2002

LICENSEE: FirstEnergy Nuclear Operating Company
FACILITY: Beaver Valley Power Station, Unit No. 1
SUBJECT: SUMMARY OF APRIL 23, 2002, MEETING REGARDING AN APPLICATION FOR A LICENSE AMENDMENT TO ALLOW FENOC TO USE THE WESTINGHOUSE MASTER CURVE METHODOLOGY TO ESTABLISH REACTOR VESSEL PRESSURE-TEMPERATURE LIMITS (TAC NO. MB3902)

On April 23, 2002, the U.S. Nuclear Regulatory Commission (NRC) staff held a meeting at NRC headquarters in Rockville, Maryland, with representatives from FirstEnergy Nuclear Operating Company (FENOC), the licensee for the Beaver Valley Power Station, Unit No. 1 (BVPS-1), and their consultants. The list of meeting attendees is included as Enclosure 1. Enclosures 2 and 3 are copies of the slides presented at the meeting by the NRC and the licensee, respectively. The presentations closely followed information presented in the slides.

The NRC staff presented an overview of concerns identified during their preliminary review of FENOC's January 25, 2002, application for an amendment to the BVPS-1 license that would allow use of the Westinghouse "Master Curve" Methodology to establish pressure-temperature limits for the BVPS-1 reactor vessel. The concerns centered on the treatment of unirradiated sample data in the application's technical justification for the amendment. Specifically, when compared to test results of irradiated material samples, the manner in which the application treats unirradiated sample data may not accurately characterize initial material properties of the BVPS-1 reactor pressure vessel, or the changes to those material properties that result from irradiation. When both of these factors are considered, applying the Master Curve Methodology may yield non-conservative results for the end of license reference temperature, RT_{PTS} , and adjusted reference temperatures (ART) necessary for the determination of BVPS-1 pressure-temperature limits. The NRC staff had asked that FENOC reevaluate their submittal and address: (1) what data should be used to establish the unirradiated reference transition temperature ($RT_{TO(U)}$) and the baseline data for measuring shifts in the transition temperature due to irradiation; (2) effects on the margin term applied in the calculation of ART; and, (3) effects on the bias term applied in the calculation of ART.

The licensee, with support from its consultants, presented information to explain why they believe the approach used in the application is technically sound and yields appropriate values for RT_{PTS} and ART both at the end of the current BVPS-1 license (EOL), and at the end of license if the BVPS-1 license were to be extended (EOLE). The licensee presented an argument that the results of their analysis and projections of RT_{PTS} and ART for EOL and EOLE are in agreement with the values obtained from projections using an application of the Master

CONTACT: Daniel S. Collins
301-415-1427

Curve Methodology that “re-zeros” the material properties to measured values from irradiated samples taken at an approximate fluence of 1.6×10^{19} n/cm². By re-zeroing the properties as suggested, the licensee argues, the need to account for data scatter in the unirradiated samples is eliminated because the projections are based on specifically known irradiated material properties that follow well determined behavior.

The NRC staff stated that, although the “general” methodology employed by FENOC in its January 25, 2002, submittal is consistent with the methodology approved for Kewaunee, the specific manner in which the unirradiated sample data was treated in the application is not. The NRC staff noted further that the methodology of “re-zeroing” material properties is not something that the NRC staff has previously reviewed or approved. The NRC staff stated that the review of the January 25, 2002, application has been temporarily discontinued pending receipt of additional technical justification for the proposed approach. The staff stated further that if FENOC wishes for the NRC to review an application of the “Master Curve” Methodology that relies on an implicit or explicit use of a “re-zeroing” approach, the NRC review is likely to require a significant amount of NRC resources and may take up to a full year to complete. The licensee stated they understood that if their request departs from the methodologies that the NRC staff has previously approved, additional review time will be required.

/RA/

Daniel S. Collins, Project Manager, Section 1
Project Directorate I
Division of Licensing Project Management
Office of Nuclear Reactor Regulation

Docket No. 50-334

Enclosures: 1. List of Meeting Attendees
2. NRC Meeting Slides
3. FENOC Meeting Slides

cc w/encls: See next page

Curve Methodology that “re-zeros” the material properties to measured values from irradiated samples taken at an approximate fluence of 1.6×10^{19} n/cm². By re-zeroing the properties as suggested, the licensee argues, the need to account for data scatter in the unirradiated samples is eliminated because the projections are based on specifically known irradiated material properties that follow well determined behavior.

The NRC staff stated that, although the “general” methodology employed by FENOC in its January 25, 2002, submittal is consistent with the methodology approved for Kewaunee, the specific manner in which the unirradiated sample data was treated in the application is not. The NRC staff noted further that the methodology of “re-zeroing” material properties is not something that the NRC staff has previously reviewed or approved. The NRC staff stated that the review of the January 25, 2002, application has been temporarily discontinued pending receipt of additional technical justification for the proposed approach. The staff stated further that if FENOC wishes for the NRC to review an application of the “Master Curve” Methodology that relies on an implicit or explicit use of a “re-zeroing” approach, the NRC review is likely to require a significant amount of NRC resources and may take up to a full year to complete. The licensee stated they understood that if their request departs from the methodologies that the NRC staff has previously approved, additional review time will be required.

/RA/

Daniel S. Collins, Project Manager, Section 1
 Project Directorate I
 Division of Licensing Project Management
 Office of Nuclear Reactor Regulation

Docket No. 50-334

- Enclosures: 1. List of Meeting Attendees
 2. NRC Meeting Slides
 3. FENOC Meeting Slides

cc w/encls: See next page

DISTRIBUTION:

PUBLIC	S. Richards	OGC	T. Bergman, EDO, RI Plants
PDI-1 Reading	R. Laufer	ACRS	J. Rogge, RGN-I
File	S. Coffin	A. Hiser	B. Platchek, RGN-I
J. Zwolinski	M. Mitchell	D. McCain	D. Collins
T. Marsh	M. O'Brien	K. Wichman	L. Lois
W. Bateman	E. Thomas		

Package: ML021560604
 Enclosure 2: ML021550388
 Enclosure 3: ML021550398
 Accession No.: ML021540223

* See previous concurrence

OFFICE	PM:PDI-1	LA:PDI-2	SC:EMCB	SC:PDI-1
NAME	DCollins	MO'Brien	SCoffin*	R. Laufer
DATE	05/20/02	5/30/02	05/28/02	5/30/02

Beaver Valley Power Station, Units 1 and 2

Mary O'Reilly, Attorney
FirstEnergy Nuclear Operating Company
FirstEnergy Corporation
76 South Main Street
Akron, OH 44308

FirstEnergy Nuclear Operating Company
Regulatory Affairs/Corrective Action Section
Larry R. Freeland, Manager
Beaver Valley Power Station
Post Office Box 4, BV-A
Shippingport, PA 15077

Commissioner James R. Lewis
West Virginia Division of Labor
749-B, Building No. 6
Capitol Complex
Charleston, WV 25305

Director, Utilities Department
Public Utilities Commission
180 East Broad Street
Columbus, OH 43266-0573

Director, Pennsylvania Emergency
Management Agency
2605 Interstate Dr.
Harrisburg, PA 17110-9364

Ohio EPA-DERR
ATTN: Zack A. Clayton
Post Office Box 1049
Columbus, OH 43266-0149

Dr. Judith Johnsrud
National Energy Committee
Sierra Club
433 Orlando Avenue
State College, PA 16803

L. W. Pearce, Plant Manager (BV-IPAB)
FirstEnergy Nuclear Operating Company
Beaver Valley Power Station
Post Office Box 4
Shippingport, PA 15077

Bureau of Radiation Protection
ATTN: Larry Ryan
P O Box 2063
Harrisburg, PA 17120

Mayor of the Borough of
Shippingport
P O Box 3
Shippingport, PA 15077

Regional Administrator, Region I
U.S. Nuclear Regulatory Commission
475 Allendale Road
King of Prussia, PA 19406

Resident Inspector
U.S. Nuclear Regulatory Commission
Post Office Box 298
Shippingport, PA 15077

FirstEnergy Nuclear Operating Company
Beaver Valley Power Station
ATTN: M. P. Pearson, Director
Services and Projects (BV-IPAB)
Post Office Box 4
Shippingport, PA 15077

FirstEnergy Nuclear Operating Company
Beaver Valley Power Station
Mr. B. F. Sepelak
Post Office Box 4, BV-A
Shippingport, PA 15077

Mr. L. W. Myers, Senior Vice President
FirstEnergy Nuclear Operating Company
Beaver Valley Power Station
Post Office Box 4
Shippingport, PA 15077

MEETING ATTENDEES

FIRSTENERGY NUCLEAR OPERATING COMPANY

BEAVER VALLEY POWER STATION, UNIT NO. 1

APRIL 23, 2002

Participants:

<u>Name</u>	<u>Organization</u>
D. Collins	NRC/NRR/Division of Licensing Project Management
S. Coffin	NRC/NRR/Division of Engineering
M. Mitchell	NRC/NRR/Division of Engineering
A. Hiser	NRC/NRR/Division of Engineering
L. Lois	NRC/NRR/Division of Systems Safety and Analysis
E. Thomas	NRC/NRR/Division of Licensing Project Management
K. Wichman	NRC Consultant
M. Pearson	FirstEnergy Nuclear Operating Company
W. Kline	FirstEnergy Nuclear Operating Company
D. Weakland	FirstEnergy Nuclear Operating Company
B. Sepelak	FirstEnergy Nuclear Operating Company
S. Sarver	FirstEnergy Nuclear Operating Company
R. Lott	Westinghouse Electric Company
J. DeBlasio	Westinghouse Electric Company
F. Baskerville	Westinghouse Electric Company
C. Kim	Westinghouse Electric Company
B. Server	ATI Consulting

Other Attendees:

R. Hardies	Calvert Cliffs Nuclear Power Plant, Inc.
D. Horner	McGraw-Hill