December 5, 2000

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

SUBJECT: UPDATED TECHNICAL SPECIFICATIONS (TS) BASES PAGES - BEAVER VALLEY POWER STATION, UNIT NO. 1 (TAC NO. MA8299)

Dear Mr. Myers:

By letter dated February 22, 2000, as supplemented by letter dated June 29, 2000, FirstEnergy Nuclear Operating Company (FENOC) submitted changes to the Bases for Technical Specification (TS) Sections 3/4.4.9.3, "Overpressure Protection Systems," and 3/4.1.2, "Boration System," for Beaver Valley Power Station, Unit 1 (BVPS-1). The change modifies the Bases for TS 3/4.4.9.3 and TS 3/4.1.2 to allow the reactor coolant system (RCS) vent requirement associated with these TSs to be met by venting to the pressurizer relief tank (PRT) or to the containment atmosphere. This change will allow the required RCS vent to be established more quickly, which reduces personnel radiation exposure and expedites compliance with TS Actions. The staff has no objection to the wording. A brief discussion of the change follows and the enclosed revised TS Bases pages B 3/4 1-2 and B 3/4 4-10c for BVPS-1 are being issued to assure distribution of the revised Bases pages to all holders of the TSs.

Background

TS 3/4.4.9.3 requires two power operated relief valves (PORVs) with a lift setting less than or equal to 432 pounds-per-square-inch gauge (psig) or the RCS depressurized and an RCS vent of greater than or equal to 2.07 square inches. The required RCS vent size is based on the port diameter of a single PORV. The RCS vent is required to assure that the integrity of the reactor coolant pressure boundary is maintained during low temperature operating conditions while PORVs are not operable. The current TS Bases applicable to this section only describes that the RCS vent be a "vent exposed to the containment atmosphere." The requirement for the RCS vent is also discussed in the Bases for TS 3/4.1.2. In this case, the RCS vent is required when a low head safety injection (LHSI) pump is used to meet boration requirements when in Modes 5 and 6. When describing the RCS vent, the Bases for TS 3/4.1.2 only specify "...a minimum open RCS vent of 2.07 square inches."

The PRT is a closed tank inside containment. There is a rupture disk with a setpoint of 90 psig at the PRT. When the RCS is vented into the PRT, the back pressures of the vent are higher than the containment atmosphere which could affect the performances for overpressure protection and the flow rate for boration using an LHSI pump.

Overpressure Protection System

With respect to the Overpressure Protection System (OPPS), the licensee stated that a calculation was performed to evaluate the effect of elevated PRT back pressure on the operation of the OPPS. Based on the results of the calculation, the licensee concluded that the effect on the OPPS response to a design-basis RCS overpressure transient when the RCS is vented to the PRT is negligible. The most limiting mass injection case for OPPS actuation is a high head safety injection (HHSI) pump flow of less than 400 gallons-per-minute (gpm). The PORV discharge flow, with a single open PORV being equivalent to a 2.07 square-inch vent, is approximately 900 gpm. The discharge capacity of the vent to the PRT exceeds the mass input of the HHSI. Consequently, the licensee found the vent to the PRT acceptable with regard to the effect on OPPS.

Boration Flow

By letter dated June 29, 2000, the licensee indicated that flow analyses were performed at elevated RCS pressure to assess at which pressure the LHSI flow would decrease below the minimum needed for boration requirements. These analyses simulate an open PORV with its port diameter equivalent to the vent size of 2.07 square inches and a full pressurizer with discharge into a sealed PRT. The results of the analyses show that one LHSI pump is capable of providing the required flow at RCS pressure of 135 psig or less. The RCS pressure would not reach 135 psig while the PORV is discharging into the PRT with the rupture disk setting at 90 psig. Therefore, the licensee assessed that a single LHSI pump will provide the required minimum boration flow with sufficient margin while the RCS is vented to the PRT.

Sincerely,

/RA/

Lawrence J Burkhart, Project Manager, Section 1
Project Directorate I
Division of Licensing Project Management
Office of Nuclear Reactor Regulation

Docket No. 50-334

Enclosure: BVPS-1 TS pages B 3/4 1-2
and B 3/4 4-10c

cc w/encl: see next page

Overpressure Protection System

With respect to the Overpressure Protection System (OPPS), the licensee stated that a calculation was performed to evaluate the effect of elevated PRT back pressure on the operation of the OPPS. Based on the results of the calculation, the licensee concluded that the effect on the OPPS response to a design-basis RCS overpressure transient when the RCS is vented to the PRT is negligible. The most limiting mass injection case for OPPS actuation is a high head safety injection (HHSI) pump flow of less than 400 gallons-per-minute (gpm). The PORV discharge flow, with a single open PORV being equivalent to a 2.07 square-inch vent, is approximately 900 gpm. The discharge capacity of the vent to the PRT exceeds the mass input of the HHSI. Consequently, the licensee found the vent to the PRT acceptable with regard to the effect on OPPS.

BORATION FLOW

By letter dated June 29, 2000, the licensee indicated that flow analyses were performed at elevated RCS pressure to assess at which pressure the LHSI flow would decrease below the minimum needed for boration requirements. These analyses simulate an open PORV with its port diameter equivalent to the vent size of 2.07 square inches and a full pressurizer with discharge into a sealed PRT. The results of the analyses show that one LHSI pump is capable of providing the required flow at RCS pressure of 135 psig or less. The RCS pressure would not reach 135 psig while the PORV is discharging into the PRT with the rupture disk setting at 90 psig. Therefore, the licensee assessed that a single LHSI pump will provide the required minimum boration flow with sufficient margin while the RCS is vented to the PRT.

Sincerely,

/RA/

Lawrence J Burkhart, Project Manager, Section 1
Project Directorate I
Division of Licensing Project Management
Office of Nuclear Reactor Regulation

Docket No. 50-334

Enclosure: BVPS-1 TS pages B 3/4 1-2
and B 3/4 4-10c

cc w/encl: see next page

DISTRIBUTION:

PUBLIC	ACRS	JAnderson	OGC
PDI-1 Reading	MO'Brien	JRogge, RGN-I	EJSullivan
EAdensam	LBurkhart	WBeckner	MGamberoni
FAkstulewicz	GHill (2)		

Accessison Number: ML003772267 * See previous concurrence

OFC	PD1-I/PM	PD1-I/LA	EMCB*	PDI-1/SC
NAME	LBurkhart	MOBrien	FAkstulewicz	MGamberoni
DATE	12/4/00	12/4/00	SE dated 7/26/00	12/4/00

OFFICIAL RECORD COPY

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
Licensing Section
Thomas S. Cosgrove, Manager (2 Copies)
Beaver Valley Power Station
Post Office Box, BV-A
Shippingport, PA 15077

Commissioner Roy M. Smith
West Virginia Department of Labor
Building 3, Room 319
Capitol Complex
Charleston, WV 25305

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

Director, Pennsylvania Emergency
Management Agency
Post Office Box 3321
Harrisburg, PA 17105-3321

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

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

FirstEnergy Nuclear Operating Company
Beaver Valley Power Station
ATTN: L. W. Pearce, Plant Manager
(BV-SOSB-7)
Post Office Box 4
Shippingport, PA 15077

Bureau of Radiation Protection
Pennsylvania Department of
Environmental Protection
ATTN: Larry Ryan
Post Office Box 2063
Harrisburg, PA 17120

Mayor of the Borough of
Shippingport
Post Office 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 Plant
Services (BV-NCD-3)
Post Office Box 4
Shippingport, PA 15077

Mr. J. A. Hultz, Manager
Projects & Support Services
FirstEnergy
76 South Main Street
Akron, OH 44308