

November 13, 2008

LICENSEE: FirstEnergy Nuclear Operating Company

FACILITY: Beaver Valley Power Station, Units 1 and 2

SUBJECT: SUMMARY OF TELEPHONE CONFERENCE CALL HELD ON AUGUST 28, 2008, BETWEEN THE U.S. NUCLEAR REGULATORY COMMISSION AND FIRSTENERGY NUCLEAR OPERATING COMPANY, CONCERNING REQUESTS FOR ADDITIONAL INFORMATION PERTAINING TO THE BEAVER VALLEY POWER STATION, UNITS 1 AND 2, LICENSE RENEWAL APPLICATION

The U.S. Nuclear Regulatory Commission (NRC or the staff) and representatives of FirstEnergy Nuclear Operating Company, held a telephone conference call on August 28, 2008, to discuss and clarify the staff's requests for additional information (RAIs) concerning the Beaver Valley Power Station, Units 1 and 2, license renewal application. The telephone conference call was useful in clarifying the intent of the staff's RAIs.

Enclosure 1 provides a listing of the participants and Enclosure 2 contains a listing of the RAIs discussed with the applicant, including a brief description on the status of the items.

The applicant had an opportunity to comment on this summary.

**IRAI**

Kent L. Howard, Sr., Project Manager  
Projects Branch 2  
Division of License Renewal  
Office of Nuclear Reactor Regulation

Docket Nos. 50-334 and 50-412

Enclosures:  
As stated

cc w/encls: See next page

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ADAMS Accession No.: **ML083020290**

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DATE	10/29/08	10/29/08	11/13/08

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**TELEPHONE CONFERENCE CALL  
BEAVER VALLEY POWER STATION, UNITS 1 AND 2  
LICENSE RENEWAL APPLICATION**

**LIST OF PARTICIPANTS  
AUGUST 28, 2008**

**PARTICIPANTS**

**AFFILIATIONS**

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U.S. Nuclear Regulatory Commission (NRC)

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NRC

Larry Hinkle

FirstEnergy Nuclear Operating Company  
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**REQUESTS FOR ADDITIONAL INFORMATION  
BEAVER VALLEY POWER STATION, UNITS 1 AND 2  
LICENSE RENEWAL APPLICATION**

AUGUST 28, 2008

The U.S. Nuclear Regulatory Commission (NRC or the staff) and representatives of FirstEnergy Nuclear Operating Company, held a telephone conference call on August 28, 2008, to discuss and clarify the following requests for additional information (RAIs) concerning the Beaver Valley Power Station (BVPS), Units 1 and 2, license renewal application (LRA).

**RAI B.2.27-2**

Please provide the alert value (or triggering point) for transient cycle monitored of each component under the "Metal Fatigue of Reactor Coolant Pressure Boundary Program," and describe the follow-up actions or corrective actions when a triggering point is approached. Please explain how the process is incorporated into the current plant procedure.

**Discussion:** The staff asked the applicant to clarify the response to this RAI, dated July 11, 2008. The staff asked does the response include the supplemental transients when critical transients are referred to throughout the response. The applicant stated that the supplemental transients are included and referring to them as critical transients is only used to keep the language in line with the updated final safety analysis report. The staff agreed with the response. No further questions.

**RAI B.2.27-5**

Provide a comparison of the design transients in the LRA Table 4.3-2 with the basis document (ADM 2115) and the transients in the latest associated piping design specification for BVPS, Unit 2. Please justify any discrepancy between the LRA table and plant documents (ADM 2115 and design specification).

**Discussion:** The staff asked the applicant to clarify whether or not the design specifications are included as part of the plant documents in the response to this RAI, dated July 11, 2008. The applicant stated the plant documents and the piping design specifications are the same and that there is not a discrepancy between the LRA table and the plant documents. The staff agreed with the response. No further questions.

**RAI B.2.27-7**

LRA B.2.27 states, "Supplemental transients were also identified by the program for monitoring" (Unit 2 only).

Enclosure 2

- a. Specify the major components affected by these transients. Confirm that the fatigue analysis of these components has been updated to include these transients.
- b. Please justify the consistency between those supplemental transients and design transients specified in the design specification.
- c. Explain how these supplemental transients will be monitored for the period of extended operation. Please provide the number of design cycles for the supplemental transients and indicate whether these design cycles will remain valid for the period of extended operation.

**Discussion:** The staff asked the applicant to clarify their response to part (a) of this RAI, dated July 11, 2008. The staff stated that the response does not appear to include a discussion of the charging and volume control system transients. The applicant stated that the discussion of the transients was discussed on page 12 of the response. The staff agreed with the response. No further questions.

#### **RAI B.2.27-9**

During the audit, the staff noted that the Fatigue Monitoring Program Basis Document (ADM2115) indicates the design transient, residual heat removal actuation of Unit 1, is not required to be monitored. For the period of extended operation, please provide the basis considering the American Society of Mechanical Engineers (ASME) Section III analysis and the environmentally assisted fatigue (EAF) analysis for nozzle are affected by this transient.

**Discussion:** The staff asked the applicant to clarify their response to this RAI, dated July 11, 2008. The staff asked does the response include Unit 1 OR Unit 2 or Unit 1 AND Unit 2. The applicant stated that the response includes Unit 1 AND Unit 2. The staff agreed with the response. No further questions.

#### **RAI 4.3-1**

In responses to NRC Bulletin 88-08 (Letter to NRC, Beaver Valley Power Station, Unit No. 1, BV-1 Docket No. 50-334, License No. DPR-66, NRC Bulletin 88-08, February 17, 1990 and Letter to NRC, Beaver Valley Power Station, Unit No. 2, BV-2 Docket No. 50-412, License No. NPF-73, NRC Bulletin 88-08, July 17, 1989), the applicant stated "temperature monitoring will be continued until a long term solution is implemented" to address the thermal stress in piping connected to reactor coolant system. Please explain the follow-up actions in the above response letters to the NRC Bulletin 88-08 and indicate whether the temperature monitoring program will be maintained to address the thermal stratification issue for the period of extended operation.

**Discussion:** The staff asked the applicant to clarify paragraph #2 of their response to this RAI, dated July 11, 2008. The response states, "renewed thermocouple monitoring may be required..." The staff stated that "may be required" was too vague. The applicant stated that the requirement for monitoring was tracked independently of license renewal. The staff indicated that a commitment added to Appendix A stating that "monitoring will be done in accordance with MRP-146" would suffice. The applicant agreed. No further questions.

The staff also asked the applicant to clarify dates that seemed to conflict with statements regarding monitoring start dates that appear in referenced letters. The referenced letters state that data collection began before the dates cited in the RAI response. The applicant stated that data collection did start before the dates listed in the response, but that the data collected was for the establishment of a baseline. The staff indicated that the applicant should provide additional documentation to support the clarification. The applicant agreed. No further questions.

### **RAI 4.3-3**

LRA Section 4.3.3.3 discusses the effects of primary coolant environment on fatigue life. During the audit, the applicant indicated that it will refine the analysis for NUREG/CR-6260 components in the near future. To assist the staff in its review:

- a. Please provide the schedule for refining the analysis for the EAF of the NUREG/CR-6260 locations in which the cumulative usage factor (CUF), including the environmental effects (Uenv), exceed the design code allowable value of 1.0.
- b. Please explain how the calculations for the fatigue life correction factor ( $F_{en}$ ), used to express the effects of the reactor coolant environment, will be performed. Specifically, how the transient pairs will be considered in the calculations.
- c. Please describe the criteria and methodology that will be performed for the additional analyses in calculating the CUF, including environmental effects, for the components where the CUF exceeds the design code allowable value of 1.0.

**Discussion:** The staff asked the applicant to clarify part b of the response to this RAI, dated July 11, 2008. The staff wanted to know if the response was applicable to other locations. The applicant stated that in other locations, they took the total usage factor and multiplied by the generic (bounding) environmental fatigue factor. No further questions.

### **RAIs 4.3-13 and 4.3-15 (Combined Discussion)**

#### **4.3-13**

During the audit, it was found that U60 value, as well as, the environmental CUF value in Table 4.3-1 of the LRA, for the Unit 2 safety injection system, are not correct. These values in the LRA do not represent the result for injection nozzle to the cold leg. Please provide the U60 and EAF results for this location.

#### **4.3-15**

LRA Section 4.3.3.3.2 states that three of the NUREG/CR-6260 locations of BVPS Unit 1, were re-evaluated in accordance with ASME Section III, 1989 Edition with 1989 addenda to determine the U60. Please provide the design basis transients and the associated cycles used to calculate the U60 in LRA Table 4.3-1.

**Discussion:** The staff asked the applicant to clarify the response to this RAI, dated July 11, 2008. The applicants response to RAI 4.3-13 states that the Unit 2 Safety Injection System nozzle used an incorrect location. The response to RAI 4.3-15 states that, for the Unit 1 Safety Injection System nozzle the applicable design transients from the corresponding Unit 2 analysis was used. That staff wanted to know if the Unit 2 analysis was incorrect, and is the Unit 1 analysis incorrect also? The applicant stated that the Unit 1 Safety Injection nozzle is in a different location than Unit 2 and design of the units is different. Therefore, the corresponding analysis referred to in RAI 4.3-15 does not refer to the corresponding analysis for environmental fatigue in Unit 2, it refers to the corresponding analysis for the general piping location. No further questions.

#### **RAI 4.3-16**

LRA Section 4.3.4 states that histograms were developed based on the last ten years in order to perform an extrapolation for the number of transients that will be accumulated in 60 years of operation for plant heatup and cooldown, and pressurizer cooldown. Please provide the histograms that were developed and describe the method used to extrapolate these cycles to 60 years of operation.

**Discussion:** The staff asked the applicant to clarify the response to this RAI, dated July 11, 2008. The staff asked the applicant why the requested pressurizer cooldown histogram was not provided. The applicant stated that there is not an independent transient that is tracked for pressurizer cooldown, and the term "pressurizer cooldown" should not have been incorporated in the LRA. The applicant stated that the LRA will be amended to incorporate the correction. No further questions.

#### **RAI 4.7.4-2**

Please clarify whether there are any Class I high energy piping locations with a CUF less than 0.1 by the current design basis where the CUF may exceed 0.1 during the period of extended operation.

**Discussion:** The staff asked the applicant to clarify the response to this RAI, dated July 11, 2008. The response stated that, "In summary, there is currently no Class 1 high energy piping location where the design CUF has been increased. By extension, there are no locations where the CUF has been less than 0.1 and are now greater than 0.1. Therefore, no new pipe rupture locations are required to be postulated." The staff wanted the applicant to define "now." The applicant stated that "now" means "based on the analysis we have today, which represents 60 years." No further questions.



Letter to FirstEnergy from K. Howard, dated November 13, 2008

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