Duquesne Light Company Beaver Valley Power Station

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U. S. Nuclear Regulatory Commission Attn: Document Control Desk Washington, DC 20555

Reference: Beaver Valley Power Station, Unit No. 1 Docket No. 50-334, License No. DPR-66 Regulatory Guide 1.97, Revision 2, Response to Request for Additional Information

Gentlemen:

By telecon on June 27, 1988 between Mr. P. Tam (NRC) and Mr. K. Grada (DLC) additional information for the BVPS-1 Regulatory Guide 1.97 Report was requested. The requested information is provided below.

 Provide a list of valves in a closed or sealed system and discuss individually.

Response

Our response to the Interim Review Results dated April 22, 1987 discussed the valves in a closed or sealed system as identified in comment notes 10.b.2 and 10.b.3, pages 4 and 5 of 17 of our October 13, 1986 transmittal of the R.G. 1.97 Report. The valves were indicated as having position indication which is not environmentally or seismically qualified. There are nine valves outside containment and two valves inside containment. The identified valves are listed below with discussion.

 Containment Sealed Pressure System (two values inside containment, TV-1LM-101A & B, one in each line, and two globe values outside containment, 1CV-35 & 36, one in each line, which have no Control Room indication).

The two valves outside containment have wire lead seals for administrative control of each of these valves. These two valves are included have to aid in the understanding of the configuration of these lines and are listed under note 10c below in the response to Request 2. The two valves inside containment are air-operated trip valves and have a normal system arrangement (NSA) of closed.

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> This sealed pressure system is part of the containment leakage monitoring system (LMS). The LMS uses the absolute and reference volume methods of determining containment leakage. The absolute volume method uses the system open to containment atmosphere. The reference volume method uses the Sealed Pressure System which is terminated with closed ended tubes inside containment.

> Additional information on the Containment LMS can be found in Section 5.4.2.2 of the UFSAR and the system piping and valve arrangement is provided in Figure 5.4-3 of the UFSAR. (Valve location indicated on reduced copy of UFSAR Figure attached.)

Main Steam Line Trip Valves (three valves outside containment, TV-1MS-101A, B, & C).

Each main steam line has a trip and non-return valve located in the main steam valve area. The trip and non-return valve assembly is designed to isolate steam breaks in either direction.

The trip and non-return values are standard swing check values, except the trip value is installed counter to normal flow. The trip value disc is normally held out of the flow path by two air cylinder operators located on the sides of the value. By venting the air pressure from the cylinders, the disc is allowed to drop into the steam flow which rapidly closes it. The trip value cannot be opened with a differential pressure of more than four psi across the disc.

The non-return values are standard swing disc check values that prevent reverse flow. Each non-return value has a motor operated stem which is used to assure positive seating of the disc. The motor operator is not capable of closing the non-return values against normal steam flow. The motor operated stem has a back seat so that the packing may be replaced with the value in service.

The main steam line trip values are shown on Figure 10.3-1 of the UFSAR. (Value location indicated on reduced UFSAR Figure attached.)

 Main Steam Blowdown (Line Drain) (three valves outside containment, TV-1MS-111A, B, & C).

Because the main steam drain lines penetrate upstream of the main steam trip and non-return valves, they are provided with trip valves. The valves trip shut on steam line isolation along with their respective main steam trip valve. The valves are air to open, vent to close, solenoid actuated. The solenoids must be energized, to apply air, to open the valves.

> Steam Generators 1A, B, and C Blowdown Sample Lines Valves (three valves outside containment, TV-1SS-117A, B, & C, one for each sample line).

These values are shown on Figure 9.6-1 of the UFSAR. (Value location indicated on reduced UFSAR figure attached.) The following discussion of these values is taken from Section 9.6.2 of the UFSAR.

All the sampling lines coming from within the containment contain high temperature samples with the exception of the pressurizer relief tank sample and the lafety injection accumulator samples. Sampling lines coming from within the containment have air-operated or solenoid valves which can be remotely operated from a control panel in the auxiliary building sampling room, so that the desired sampling point can be selected. The primary coolant sampling lines and the safety injection accumulator sampling lines each join into their respective common headers downstream of the selection valve prior to penetrating the containment. The primary coolant samples flow through delay coils prior to penetrating the containment. These delay coils permit sufficient decay of Nitrogen-16 so that these samples can be handled in the sampling room. The pressurizer vapor space sample passes through capillary tubing which limits the flow of the steam.

All sampling lines penetrating the containment, with the exception of the steam generator blowdown sampling lines, have two remotely operated valves located in each line, one just inside and one just outside the containment. The steam generator blowdown sampling lines have just one trip valve each, located outside the containment. All trip valves close on a containment isolation phase A signal. In addition to closing on a containment isolation Phase A signal, the blowdown line trip valves will also close on a signal from Auxiliary Feed Pumps Start. All sampling line trip valves inside and outside the containment can be opened and closed from the main control board. The high temperature samples pass through sample coolers, sample capsules (with the exception of the steam generator blowdown sample line), and valves, in that order, located in the auxiliary building sampling room.

 In the April 22, 1987 the attached comment notes do not include the "following results of our review" under note 10.c.

Response

The remainder of the comment was included in our October 13, 1986 submittal but was omitted from the above because it started a new page for which there were no revisions. The total content of note 10.c is provided below.

c. Containment Isolation Valves Which Have No Control Room Indication

Thirty-three (33) containment isolation values are identified for BVPS-1, which do not have Control Room indication. The main steam code safety values are not included here as they are addressed elsewhere in the table. We believe that no Control Room indication is necessary for these values based on the following results of our review.

Thirty-one (31) of the values are included either in an operation surveillance test or quarterly padlock log review. The normal system arrangement for all thirty-three (33) values is "shut" with twenty-five (25) values being locked shut and two values having lead seals for administrative control. One of the locked shut values may be opened or closed on an intermittent basis under administrative control.

One of the two remaining values is a relief value in the RCS letdown line. This line has remote temperature indication and alarms in the Control Room, which provides backup indication for the status of this value. The other remaining value is inside containment and is associated with the containment air lock. For personnel to exit containment, this value must be closed in order to equalize the airlock pressure.

3. Does the seismic adequacy of the limit switches meet the original plant seismic criteria?

Response

In the April 22, 1987 submittal we identified that the limit switches for the fifty containment isolation valves reported which have not been environmentally qualified are commercial grade switches as per the original plant design. Being commercial grade, we do not believe that we can take credit for their meeting the original plant seismic criteria.

 The NRC has not accepted non-environmentally qualified limit switches inside containment except for manual valves or racked-out (de-energized) valves.

Response

We are currently reviewing the non-environmentally qualified limit switches for the valves inside containment. Notwithstanding, we are taking action to schedule the necessary upgrade work on these limit switches for upgrade during the refueling outage following receipt of the material required.

5. It was indicated that the NRC is reviewing the potential upgrading of the nuclear source range monitors and the accumulator level and pressure instrumentation.

Response

Our position on the above instrumentation has been provided in our previous submittals for R.G. 1.97. We understand that the NRC is evaluating these instruments on a generic basis for resolution.

If you have any questions or comments regarding this submittal, please contact me or members of my staff.

Very truly yours,

Sieber

Vice President Nuclear Group

Attachments

cc: Mr. J. Beall, Sr. Resident Inspector Mr. W. T. Russell, NRC Region I Administrator Mr. P. Tam, Project Manager Director, Safety Evaluation & Control (VEPCO)





