

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
Justification for Continued Operation

Gentlemen:

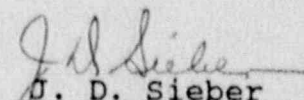
It has been determined that the recirculation spray heat exchanger river water radiation monitor sample lines do not have a containment isolation valve that is automatic, remote manual or locked shut. This configuration does not meet General Design Criteria 57, and no exception has been taken in the UFSAR.

The attached Justification for Continued Operation documents that continued operation of the plant in this configuration does not involve any undue risk to public health and safety.

Both the NRC Senior Project Manager and Senior Resident Inspector for Beaver Valley Power Station have been made aware of the above condition.

An application for exemption from GDC-57 has also been initiated.

Very truly yours,


J. D. Sieber
Vice President
Nuclear Group

cc: Mr. J. Beall, Sr. Resident Inspector
Mr. W. T. Russell, NRC Region I Administrator
Mr. P. Tam, Sr. Project Manager
Mr. R. Saunders (VEPCO)

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I. SYSTEMS INVOLVED

Three systems are involved: the recirculation spray subsystems, the river water system and the radiation monitoring system.

The recirculation spray subsystems are designed to provide the necessary cooling and depressurization of the containment after any LOCA. In the event of a DBA, the river water system is designed to supply sufficient cooling water to at least two of the four recirculation spray heat exchangers.

During accident conditions, recirculation spray heat exchanger river water monitors (one for each heat exchanger) analyze a continuous sample obtained from each heat exchanger river water outlet.

II. ADVERSE EFFECTS

The existing plant configuration presents no adverse effects as a result of postulated accidents since flow of contaminated fluid through the sample line would require that a passive failure be assumed (recirculation spray heat exchanger tube leak) in the short term following the initiating accident. Assumption of this type of failure is not within the BVPS-1 licensing basis.

Assumption of the tube failure presents no adverse effects in the long term since existing operating procedures contain provisions for shutdown of the recirculation spray pump. This removes the driving force for the tube leak since the containment is subatmospheric and provides time for operators to complete manual isolation of the sample line as well.

III. COMPENSATORY MEASURES

Operating procedures are available to ensure isolation of the affected heat exchanger and monitoring path in the event of a tube failure during a postulated accident.

Assurance of heat exchanger integrity is provided by periodic inspections and tests. Tests include a freon test at each refueling outage which is preceded by a pressure test along the requirements of Section XI of the ASME code. This test is expected to produce leaks that are about to occur and then be detected by the freon test. Currently, eddy current examinations are conducted on a selected sample of tubes each refueling outage to detect degradation.

IV. LENGTH OF TIME TO CORRECT CONDITION

The existing procedures and plant configuration are adequate to address the technical aspects of this issue. A request for exemption to GDC 57 is being submitted to resolve licensing concerns related to this issue. NRR will establish the schedule for review of the exemption request.

V. IMPACT ON TECHNICAL SPECIFICATIONS

Technical Specification 3/4.6.1.1 regarding primary containment integrity ensures that the release of radioactive materials from the containment atmosphere will be restricted to those leakage paths and associated leak rates assumed in the accident analyses. This restriction, in conjunction with the leakage rate limitation, will limit the site boundary radiation doses to within the limits of 10 CFR 100 during accident conditions.

The condition in question will only result in a release of radioactive materials if an event outside the licensing basis of the plant occurs, as described above. Therefore, there is no impact on Technical Specifications.

VI. INTERNAL REVIEWS

Final Safety Analysis Report design basis data was reviewed against the existing plant configuration by the Manager, Nuclear safety and the General Manager, Nuclear Operations.

VII. REPORTABILITY REQUIREMENTS

Updated Final Safety Analysis Report Section 5.3.3 does not describe this deviation from General Design Criteria 57. Since it could be interpreted that plant configuration presents a condition that is outside the design basis of the plant as described in the UFSAR, this condition was reported to the NRC under the provisions of 10 CFR 50.72.

VIII. TECHNICAL SUPPORT MATERIALS

- A. UFSAR Section 1.3.1, Single Failure Criterion
- B. UFSAR Section 5.3, Containment Isolation System
- C. UFSAR Section 9.9, River Water System
- D. UFSAR Figure 9.9-1A River Water System
- E. Operating Manual Procedure 1.30.4.P, Recirculation Spray Heat Exchanger River Water High Activity

- F. 10 CFR 50 Appendix A, Criterion 57, Closed System Isolation Valves
- G. Request for exemption to GDC57
- H. NRC to DLC letter regarding ECCS Decay Heat Exchanger Integrity for Beaver Valley Unit No. 1 (Dated May 2, 1980)
- I. NRC to DLC letter regarding Leak Testing of Recirculation Spray Heat Exchangers (Dated March 12, 1981)

P. CORRECTING SAFETY-RELATED ALARM CONDITIONS (continued)

RECIRC SPRAY HEAT EXCHANGER RIVER WATER HIGH ACTIVITY

SETPOINT: Locally Posted

ALARM DESIGNATION RSH-1RW-100A

1. Verify the alarm by pushing and releasing the reset pushbutton on its Radiation Monitor [RM-1RW-100A] on the Radiation Monitor Panel, Rack 3.
 - a. Observe that the alarm is re-energized.
2. Notify RADCON.
3. Mark applicable recorders at time of alarm.

NOTE: The heat exchanger inlet valve should not be closed until containment pressure is less than or equal to 20 PSIG, or the radiation monitor and heat exchanger are isolated. This will prevent increased tube leakage of containment sump water into the river water system.

4. If this alarm occurs during a loss of coolant accident, proceed as follows:
 - a. Complete the following steps, provided at least two recirculation spray heat exchangers and their associated pumps are operating, excluding [1RS-P-1A] and [1RS-E-1A].
 - b. Shutdown [1RS-P-1A] and isolate [1RS-E-1A] outlet by closing [MOV-RW-105A] BB-SECT. "A".
 - c. At the radiation monitor rack shutdown the sample pump for [RM-1RW-100A].

CAUTION: Operator access to the radiation monitor isolation valves during a post LOCA condition should be made via the cable vault with a radiation technician as an escort.

- d. Dispatch an operator to close [RM-1RW-100A] return isolation valve [RW-619], located in VS-AC-9 equipment room.
 - e. Then complete the isolation of [RS-E-1A] by closing the inlet isolation valve [MOV-1RW-104A].
5. If ~~at least~~ one other recirculation spray heat exchanger and its pump are operating and they are sufficient to maintain the containment at subatmospheric pressure, isolate [1RS-E-1A] by completing steps 4b through e.
6. If this alarm occurs during a system test, isolate the heat exchanger.

P. CORRECTING SAFETY-RELATED ALARM CONDITIONS (continued)

7. Have a sample of the recirculation spray heat exchanger river water taken to verify the high activity.

References

NOTE: All references use prior to 04/07/88 are located in Section 5.

1. OMDR 88-0558; 1985 INPO Evaluation Finding OP.5-1a,b Appendix I (Rev 23).