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June 15, 1984

United States Nuclear Regulatory Commission
Washington, DC 20555

ATTENTION: Mr. Darrell G. Eisenhut, Director
Division of Licensing
Office of Nuclear Reactor Regulation

SUBJECT: Beaver Valley Power Station - Unit No. 2
Docket No. 50-412
Identification of Backfit Requirement Number 22

Gentlemen:

In a letter to Duquesne Light Company (DLC), dated May 14, 1984, the NRC transmitted the Auxiliary Systems Branch sections of the Beaver Valley Power Station Unit 2 (BVPS-2) draft SER. Enclosure 1 to the referenced letter identified the fuel pool maximum heat loads as Open Item No. 134.

The BVPS-2 fuel pool cooling system has been designed and evaluated in accordance with NUREG 0800, Rev. 1, Section 9.1.3 and BTP ASB 9-2. The attached pages from the draft SER note that the BVPS-2 FSAR included evaluation of the fuel pool cooling system for a defined normal and a defined abnormal heat load. The defined normal and abnormal heat loads are precisely those specified in SRP Section 9.1.3. However, the draft SER states that the NRC considers the normal and abnormal heat loads to be different from those in the SRP. Further, the draft SER states that the NRC will require DLC to demonstrate that the fuel pool cooling systems meet the temperature criteria of SRP Section 9.1.3 but with these newly defined heat loads which have no basis in the SRP.

Since there appears to be no regulatory basis for this new requirement, the controls of 10CFR50.109, GNLR 84-08, and NRC Manual Chapter 0514 identify the requirement as a backfit.

DLC requests that the proposed requirement be submitted to NRC management for approval, in accordance with the Office of Nuclear Reactor Regulation (NRR) procedure for management of plant specific backfitting, prior to transmittal as a licensing requirement.

DUQUESNE LIGHT COMPANY

By E. J. Woolever
E. J. Woolever
Vice President

RW/wjs
Attachment
cc: Mr. H. R. Denton (w/a)
Mr. G. W. Knighton, Chief (w/a)
Ms. M. Ley, Project Manager (w/a)
Mr. M. Licitra, Project Manager (w/a)
Mr. G. Walton, NRC Resident Inspector (w/a)

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Group C and seismic Category I requirements, as is the reactor plant component cooling water system. The cleanup system piping, valves, and filters comply with Quality Group D and nonseismic requirements. Its failure will not affect safety related equipment. Thus, the requirements of General Design Criterion 2, "Design Bases for Protection Against Natural Phenomena," and the guidelines of Regulatory Guide 1.13 Positions C.1 and C.2, "Spent Fuel Storage Facility Design Bases," 1.26 Position C.2, "Quality Group Classifications and Standards for Water-, Steam-, and Radioactive-Waste-Containing Components of Nuclear Power Plants," and 1.29 Positions C.1 and C.2, "Seismic Design Classification" are satisfied.

The BVPS-2 spent fuel pool cooling and cleanup system is not shared with BVPS-1, thus, the requirements of General Design Criterion 5, "Sharing of Structures, Systems and Components," are not applicable.

Provisions have been made for routine visual inspection of the fuel pool cooling system components and instruments. The cooling pumps are normally operating and thus periodic testing is not required. Thus, the requirements of General Design Criteria 45, "Inspection of Cocling Water System," and 46, "Testing of Cooling water System," are satisfied.

[The applicant stated that the fuel pool heat loads have been calculated in accordance with Branch Technical Position ASB 9-2. The applicant states that under the normal heat-load (defined below), the pool temperature would be maintained below 140°F assuming the failure of one cooling train. This heat load is been defined as one-third core after 150 hours of decay, one-third core with one year of decay plus one-third core with 400 days decay. We consider the maximum normal heat load to be that which would exist when the pool is completely filled with successive normal refueling batch discharges. We will require the applicant to demonstrate that the spent fuel pool cooling system is capable of maintaining the pool water temperature at or below 140°F when the storage pool is completely filled with normal discharges assuming that one cooling train has failed.]

[The maximum abnormal heat load is defined by the applicant as one full core discharge with 150 hours of decay plus one third core discharge with 36 days decay and one third core with 400 days decay. With this heat load, the applicant stated that the pool temperature is maintained at or below 165°F. We consider the maximum abnormal heat load as one full core discharge plus all other fuel storage cells in the storage pool filled with successive normal refueling batch discharges. We will require the applicant to demonstrate that the spent fuel pool cooling system is capable of maintaining the pool water temperature below boiling when the pool contains a full core discharge and all other storage spaces are filled with normal discharges. We therefore cannot conclude that the requirements of General Design Criterion 44 "Cooling Water" are satisfied.]

No connections are provided to the spent fuel pool that may cause the pool water to be lowered below 10 feet above the top of the stored fuel thereby assuring adequate shielding for the fuel. The design does not allow any piping to terminate below this elevation, and therefore, the water level in the pool cannot be decreased below the top of the fuel stored in the spent fuel storage racks. Normal makeup to the fuel pool is provided from the primary grade water system (see SER Section 9.2.8) or as a backup from the seismic Category I service water system. An additional emergency source of makeup water is available from the fire protection system. In order to prevent contamination of the pool water during normal operation, a spool piece must be installed when utilizing the service water line. Blind flanges are normally installed at the connections to the service water system. Thus, the requirements of General Design Criterion 61, "Fuel Storage and Handling and Radioactivity Control," and the guidelines of Regulatory Guide 1.13, concerning fuel pool design are satisified.

The system incorporates control room alarmed pool water high and low level, pool water high temperature, cooling pump low discharge pressure, fuel pool cooling pump auto trip, refueling cavity water low level, and building radiation level monitoring systems, thus satisfying the requirements of General Design Criterion 63, "Monitoring Fuel and Waste Storage."

[Based on our review, ~~aside from the items~~ except as noted above, we conclude that the spent fuel pool cooling and cleanup system is in conformance with the require-

ments of General Design Criteria 2, 4, 44, 45, 46, 61, and 63, and the guidelines of Regulatory Guides 1.26, 1.29 and BTP ASB 9-2 with respect to protection against natural phenomena, missiles, inservice inspection, functional testing, radiation protection, performance monitoring, system design, quality group, seismic classification. The spent fuel pool cooling system does not meet the acceptance criteria of SRP Section 9.1.3. We will report resolution of our concerns in a supplement to this SER.]