J. Knox

UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D. C. 20555

JUL 1 9 1984

Meeting held 7/26/84
1) Power lockout of valves assigned to RSB - Burrows writing memo to Sinnil
2) Level problem defined and E.K. contacting Sheron for RSB evaluation of analysis provided by BV to support not meeting our position
F.R.

Docket No.: 50-412

MEMORANDUM FOR: Faust Rosa, Chief
Instrumentation and Control System Branch
Division of System Integration

FROM: George W. Knighton, Chief
Licensing Branch No. 3
Division of Licensing

SUBJECT: Beaver Valley-2 Backfit Items

Two of the open items in the Beaver Valley-2 draft SER have been identified by the applicant as backfit requirements. The issues concerning the addition of a fourth steam generator level channel and the addition of an accumulator isolation valve position indicator are discussed by Duquesne Light in appeal letters dated May 30, 1984 and June 15, 1984 respectively (Attachments 1 and 2).

Before continuing with appeal procedures, I would appreciate meeting with you to discuss your branch position on these issues. Marilyn Ley, the BVPS-2 Project Manager, will be contacting you to arrange a convenient meeting time.

Sincerely,

GWKnighton

George W. Knighton, Chief
Licensing Branch No. 3
Division of Licensing

cc w/o attachments: Robert W. Houston

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Attachment 1

Duquesne Light

Nuclear Construction Division
Robinson Plaza, Building 2, Suite 210
Pittsburgh, PA 15205

2NRC-4-068
(412) 787-5141
(412) 923-1960
Telecopy (412) 787-2629

May 30, 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 9

Gentlemen:

In Draft SER Section 7.3.3.12 (attached), the NRC identified the concern that the steam generator level control design did not meet the requirements of Paragraph 4.7 of IEEE 279. Duquesne Light Company (DLC) responded to this concern in letter 2NRC-4-032 to G. W. Knighton dated March 28, 1984. In the response, DLC explained that compliance with IEEE 279 is not required in this case because core protection is maintained even if the very specific failures postulated by the NRC were to occur. The NRC responded to this in a letter from Mr. G. W. Knighton to Mr. E. J. Woolever dated May 8, 1984, indicating that DLC would either need to modify the steam generator level control design to comply with IEEE-279 or need to provide an analysis showing that the consequenses of feedwater addition are not safety significant.

The BVPS-2 PSAR describes the standard Westinghouse three channel design. This document provides the basis for the issuance of the BVPS-2 construction permit. Additionally, despite the existence of IEEE 279 since 1971, numerous operating Westinghouse PWR's have steam generator level systems similar to that provided for BVPS-2. Therefore, it appears that Mr. Knighton's May 8, 1984, letter transmits a new requirement without full implementation of NRR procedures based on 10CFR50.109; Generic Letter 84-08; and NRC Manual, Chapter 0514.

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

KAT/wjs
Attachment

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

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7.3.3.12 Steam Generator Level Control and Protection

Three steam generator level channels are used in a two-out-of-three logic for isolation of feedwater on high steam generator level. One of the three level channels is used for control. This design for actuation of feedwater isolation does not meet the requirements of Paragraph 4.7 of IEEE 279, "Control and Protection System Interaction," in that the failure of the level channel used for control could require protective action and the remainder of the protective system channels would not satisfy the single-failure criterion. The applicant has not responded to this concern. This is an open item.

7.3.3.13 IE Bulletin 80-06 Concerns

IE Bulletin 80-06 requests a review of all systems serving safety-related functions to ensure that no device will change position solely because of the reset of a ESF actuation signal. The applicant was requested to respond to IE Bulletin 80-06.

The staff has reviewed the applicant's response in FSAR Amendment 4 and finds that the applicant has reviewed only the specific potential problems listed in IE Bulletin 80-06. The intent of IE Bulletin 80-06 and NRC question 420.3 was to require all safety-related systems to be reviewed. This item is open until a complete response is provided by the applicant.

7.3.3.14 Independence Between Manual and Automatic Actions

The applicant's response to IE Bulletin 80-06 states: "All circuitry for components actuated by an ESF actuation signal have been designed such that the ESF signal cannot be overridden manually or automatically with an ESF actuation signal present. A component may be reset by first resetting the ESF actuation signal and then manually resetting the component." The staff's review of the transfer from the control room to the ESP revealed that safety injection pumps cannot be stopped manually if SI is initiated after the transfer.

The staff is concerned that, under accident conditions, as well as in the case of inadvertent initiation of safety actions, the inability of the operator to

Attachment 2

Duquesne Light

Nuclear Construction Division
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2NRC-4-082
(412) 787-5141
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Telecopy (412) 787-2629

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 5

Gentlemen:

In Draft SER Section 7.3.3.15 (attached), the NRC identified the concern that certain motor-operated valves, such as those for cold-leg accumulator isolation, could have circuitry which could have a nondetectable failure. Duquesne Light Company responded to this concern in letter 2NRC-4-032 of March 28, 1984, by proposing a circuit modification. The NRC responded to this in a letter from Mr. G. W. Knighton to Mr. E. J. Woolever dated May 8, 1984, describing even more circuit modifications which would be necessary to satisfy the staff's understanding of IEEE-279. DLC has re-evaluated the design as described in letter 2NRC-4-076, dated June 8, 1984, to the NRC and concluded that the existing design complies with IEEE-279 in that the valves are administratively controlled and monitored to insure that no "protective action" is required.

Historically, the design of the valve control for this type of valve has included provisions to administratively remove the power to the valve operators in order that the valves were not inadvertently shut when accumulator avaiability was required. In addition to administrative control of power removal, the Beaver Valley Power Station Unit 2 design includes provision to continuously monitor the valve position. The staff position that the circuit should be designed against a nondetectable failure appears to constitute a new interpretation of IEEE-279. 10CFR 50.109, GNLR 84-08, and NRC Manual Chapter 0514 identify such a requirement as a backfit.

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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

KAT/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)

exercise control could lead to consequential damage of safety-related equipment or prevent initiation of protection systems. The staff favors independence between manual and automatic safety-related actions and believes that a safety-significant issue may be introduced if the operator is prevented from exercising manual control. This is an open item.

7.3.3.15 Power Lockout for Motor-Operated Valves

Certain motor-operated valves, such as those for cold-leg accumulator isolation, require power lockout (removal) to meet the single-failure criterion. The power lockout scheme used by the applicant uses an additional, manually controlled (via removable banana plugs) contactor. The staff has concluded that a short or relay failure in this circuitry could constitute a nondetectable failure and thus violate the single-failure criterion. The staff has expressed this concern to the applicant and considers this item open subject to its review of the applicant's pending response.

7.3.4 Conclusion

Later.

7.4 Systems Required for Safe Shutdown

7.4.1 Description

This section describes the equipment and associated controls and instrumentation of systems required for safe shutdown. It also describes controls and instrumentation outside the main control room that enable safe shutdown of the plant in case the main control room must be evacuated.

7.4.1.1 Safe Shutdown Systems

Securing and maintaining the plant in a safe shutdown condition can be done by appropriate alignment of selected systems that normally serve a variety of operational functions. The functions that the systems required for safe shutdown must provide are

(1) prevent the reactor from achieving criticality

(2) provide an adequate heat sink so that the design and safety limits of the reactor coolant system temperature and pressure are not exceeded

To perform the above functions, the systems required for safe shutdown must provide the following:

(1) boration

(2) adequate supply of auxiliary feedwater

(3) residual heat removal

In addition to the operation of systems required to provide these functions to achieve and maintain safe shutdown, the following conditions are applicable:

(1) The turbine is tripped (in addition to automatic trip this can be accomplished manually at the turbine as well as from the control room).

(2) The reactor is tripped (in addition to automatic trip this can also be accomplished manually at the reactor trip switchgear as well as from the control room).

(3) All automatic protection and control systems are functioning (see Sections 7.2 and 7.3).

The monitoring indicators for maintaining hot standby are as follows:

(1) water level for each steam generator

(2) pressure for each steam generator

(3) pressurizer water level

(4) pressurizer pressure