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May 27, 2004

U. S. Nuclear Regulatory Commission
Washington, DC 20555

ATTENTION: Document Control Desk

SUBJECT: Calvert Cliffs Nuclear Power Plant
Unit Nos. 1 & 2; Docket Nos. 50-317 & 50-318
Reply to Non-Cited Violation 2004002-03 -- NRC Integrated Inspection Report 50-317(318)/2004002

REFERENCE: (a) Letter from Mr. L. T. Doerflein (NRC) to Mr. G. Vanderheyden (CCNPP), dated March 9, 2004, Calvert Cliffs Nuclear Power Plant – NRC Integrated Inspection Report 05000317/20040002 and 05000318/2004002

Pursuant to 10 CFR 50.4, and in accordance with the guidance in the Nuclear Regulatory Commission's (NRC's) Enforcement Policy, Calvert Cliffs Nuclear Power Plant, Inc. (CCNPP) hereby disputes the violation described as non-cited violation (NCV) 05000317, 318/2004002-03 "Design Basis for ECCS Mini Flow Valve Indication not Translated into Design Specifications," documented in Reference (a). Attachment (1) to this letter sets forth the factual and regulatory basis for our dispute of the subject NCV. The issue was entered in our corrective action program, requiring an evaluation to determine cause. As a result of our evaluation, we have determined that the design of the Emergency Core Cooling System (ECCS) mini-flow valve position indication is consistent with CCNPP's Updated Final Safety Analysis Report, as required by our licensing basis. Therefore, this issue is outside the CCNPP licensing basis and should not be considered a finding or a violation. Our review of Section 1R21.b.3 in Reference (a) indicates that the inspection resulted in an incorrect screening and final characterization of the mini-flow valve position indication issue.

The basis for the subject NCV appears to originate in the application of the requirements in Branch Technical Position EISCB 18 "Application of the Single Failure Criterion to Manually-Controlled Electrically-Operated Valves," attached to an April 24, 1975 NRC letter as guidance for acceptable plant modifications to address effects of single failures on ECCS equipment. The NRC's position as stated in the subject violation, in effect, changes the design and licensing basis for the facility by imposing changes to previous regulatory requirements imposed upon CCNPP.

We choose to dispute this NCV, as a policy matter, to avoid setting a precedent having specific and more global adverse consequences. In particular, an undisputed licensing position introduced in an NRC letter should not be allowed to alter established licensing requirements for the facility, and therefore should not be used as the basis for enforcement action. We believe that this position involves a backfit and that the

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process prescribed by 10 CFR 50.109 is the appropriate means of evaluating such proposed changes to the plant. Furthermore, we have identified inaccuracies in Reference (a) regarding the subject issue that require clarification and correction to ensure the subject issue is dispositioned properly and accurately documented.

While licensees are not required to provide written responses to NCVs, the guidance described in the NRCs Enforcement Policy allows licensees to dispute violations described as NCVs. Our position on the subject issue was discussed with NRC Region I on April 9, 2004, at which time an extension to file our response was granted. Attachment (1) to this letter provides our basis for disputing the subject NCV.

There are no commitments contained in this letter.

Should you have questions regarding this matter, we will be pleased to discuss them with you.

Very truly yours,

Kevin J. Nietmann

for

George Vanderheyden
Vice President – Calvert Cliffs Nuclear Power Plant

GV/ALS/bjd

Attachment: (1) Dispute of Non-Cited Violation 2004002-03 NRC Integrated Inspection Report 05000317/2004002 and 05000318/2004002

cc: J. Petro, Esquire
J. E. Silberg, Esquire
Director, Project Directorate I-1, NRC
G. S. Vissing, NRC
H. J. Miller, NRC
Resident Inspector, NRC
R. I. McLean, DNR

ATTACHMENT (1)

DISPUTE OF NON-CITED VIOLATION 2004002-03

NRC INTEGRATED INSPECTION REPORT 05000317/2004002

AND 05000318/2004002

Calvert Cliffs Nuclear Power Plant, Inc.
May 27, 2004

ATTACHMENT (1)

DISPUTE OF NON-CITED VIOLATION 2004002-03
NRC INTEGRATED INSPECTION REPORT 05000317/2004002 AND 05000318/2004002

Restatement of Non-Cited Violation

On March 9, 2004, the Calvert Cliffs Nuclear Power Plant (CCNPP)-Nuclear Regulatory Commission (NRC) Integrated Inspection Report 05000317/2004002 and 05000318/2004002 was issued. One of the findings (of very low safety significance, "Green"), was determined to involve a violation of an NRC requirement, 10 CFR Part 50 Appendix B, Criterion III, Design Control. However, because of its very low safety significance and because the issue had been entered in CCNPP's corrective action program, the issue was treated as a non-cited violation (NCV) in accordance with Section VI.A.1 of the NRC's Enforcement Policy, issued May 1, 2000. The subject NCV is restated below:

> The team identified an NCV of 10 CFR Part 50, Appendix B, Criterion III, Design Control, for Constellation Energy Group's failure to correctly translate the design specifications into the design of the Emergency Core Cooling System (ECCS) Mini Flow Valve Indication. Specifically, the Control Room valve indications on two normally opened and de-energized mini-flow valves were not redundant and did not meet single failure criteria.

Admission or Denial

Calvert Cliffs Nuclear Power Plant denies the NCV.

Basis for Disputing the Non-Cited Violation

1. The requirement for the Control Room valve position indications for the two normally opened and de-energized mini-flow valves (MOV-659 and 660) to be redundant and to meet single failure criteria was not a design basis function in the original licensing basis as reviewed and accepted by the NRC and is not a design basis function in the historical or current licensing bases.

2. It is our position that during the NRC Safety System Design Performance Capability Inspection (SSDI) the inaccurate application of documents reviewed resulted in the subject issue being screened incorrectly and subsequently erroneously characterized as a finding/violation.

A description of Calvert Cliff's regulatory position and basis for the subject violation denial follows.

Calvert Cliffs Nuclear Power Plant Licensing Basis

Supplement No. 5 to the Safety Evaluation Report (SER) by the Office of Nuclear Reactor Regulation U.S. NRC, issued August 10, 1976, states in part:

> *"The applicant proposed in reference 4 to provide an additional control switch in the control room which would allow isolation of control power to the valve motor starters...To provide redundant valve position indication, the applicant has proposed to install separate valve status annunciators in addition to the original valve status lights. We have reviewed the applicant's proposal regarding the mini-flow bypass system and conclude that it is acceptable."*

The aforementioned reference 4 (Calvert Cliffs Unit Nos. 1 and 2 ECCS, Mini-Flow Recirculation System, Long- Term Cooling and Submerged Electrical Equipment, letter from J. W. Gore to O. D. Parr, March 4, 1976) provided a detailed description of the mini-flow system modification. Specifically, the March 4, 1976 letter stated in part:

> *"The attached schematic diagram shows our proposed modification to the controls of MOV-659 and 660 to ensure that no single failure could result in loss of ECCS function during the injection mode, or prevent proper isolation of the refueling water tank during the recirculation mode...To*

ensure that a spurious signal will not cause the closure of MOV-659 and 660 once they have been placed in the open position, a lockout switch will be added which will isolate control power to the MOV [motor-operated valve] motor starters. Redundant contacts from this switch are provided in the control circuit so that opening of either contact will open the control power circuit...An annunciator will be installed to alarm if either MOV-659 or 660 is closed and an RAS [recirculation actuation signal] *signal is not present. This valve status annunciator will be in addition to the valve status lights already installed."*

The March 4, 1976 letter was provided in response to the NRC's letter dated February 5, 1976. In the February 5, 1976 letter, the NRC states in part:

"As previously discussed, 10 CFR 50.46 requires that the mini-flow bypass valve system must be designed such that no single failure could result in loss of the ECCS function during the injection mode, or prevent proper isolation of the refueling water storage tank during the recirculation mode.

In satisfaction of the above design goals, we require that you submit a proposed system modification plan, including a schedule for completion, by March 5, 1976."

The concerns were previously discussed in an NRC letter dated April 24, 1975. That document states in part:

"In performing the evaluation of single failures of ECCS equipment required by Appendix K to 10 CFR 50, Section I.D.1., the effects of a single failure or operator error that causes any manually-controlled, electrically-operated valve to move to a position that could adversely affect the ECCS must be considered... A copy of Branch Technical Position EICSB 18 from the U. S. Nuclear Regulatory Commission's Standard Review Plan is attached to provide you with guidance."

We provided a detailed description of the mini-flow modification to the NRC via the March 4, 1976 letter. The NRC reviewed the design, including the redundant valve position indication, and found it acceptable, as documented in Supplement No. 5 to the SER.

Supplement No. 5 to the SER is part of the CCNPP design and licensing bases.

Inaccuracies in Inspection Report

The detailed description of the subject violation/finding as documented in Section 1R21.b.3 of the referenced inspection report is restated below in its entirety. To facilitate this analysis, areas involving the inaccurate information are identified in bold italic followed by a numbered asterisk [*X] and these inaccuracies are addressed by CCNPP in subsequent paragraphs labeled with the corresponding numbered asterisk.

b.3 ECCS Mini-Flow Valve Indication not Adequately Translated into Design Specifications

Introduction. The team identified a non-cited violation (NCV) of very low safety significance (Green) regarding the licensee's failure to properly translate design specifications into the design of the ECCS Mini-Flow Valve Indication, as required by 10 CFR Part 50, Appendix B, Criterion III, Design Control.

Description. The team identified that a design requirement for the ECCS Mini-Flow Valve Indication was not properly translated into design specifications, in that the single failure criterion was not met. Specifically, the team reviewed a 10 CFR 50.59 screen for proposed changes to surveillance test procedures (STP) 07 A 1/2 and B 1/2, that tested the engineered safety feature actuation system (ESFAS) on a monthly basis. These procedures tested the RAS logic by verifying that MOVs 659 and 660 go closed when the control room operator removed the hand-switch from the lockout position. These MOVs are the isolation valves for the safety injection mini-flow return to the RWT. Failure of either of these valves in the closed direction during operation would cause all of the associated emergency core cooling trains for that unit (i.e., high pressure, low pressure and containment spray) to become inoperable per Technical Specification 3.5.2. In addition, during a small break LOCA, failure of either of these series connected valves in the closed direction could cause failure of the emergency core cooling pumps. To prevent this scenario, the STP was changed to remove the valve closure requirement.

The removal of this requirement from the STP conflicted with the updated final safety evaluation report (UFSAR), section 7.3.7, since these valves were not specifically identified as ESFAS exceptions that could not be completely tested with the reactor at power. ***The NRC responded back with supplement number 5 to the safety evaluation report (SER), which reviewed and concurred that MOVs-659 and 660 should not be closed during operation. However, to compensate for this change, supplement 5 to the SER required: 1) Revision of the technical specifications to allow the removal of power to the motor operators for these valves with the valves in the open position during normal operation; 2) Power to be restorable to the operators of these valves from the control room to allow the required isolation of the RWT following RAS; and, 3) Redundant indication of the valve position. The last item was satisfied by the licensee by installing separate valve status annunciators in addition to the original valve status lights. Finally, supplement 5 to the SER also required that both items 2) and 3) above meet the criteria established in Chapter 7, Appendix 7A of Standard Review Plans, Branch Position EICSB 18, Application of Single Failure criterion to Manually-Controlled Electrically-Operated Valves. [See *1]***

Branch Position EICSB 18 specifically states, when the single failure criterion is satisfied by removal of electrical power from these valves, these valves should have redundant position indication in the main control room and this valve position indication system should, itself, meet single failure criterion. The team found that installed VPIs were not redundant and would not satisfy the Branch Position EICSB 18, requirement in that both indications shared a common limit switch and therefore did not meet single failure criteria.

Analysis. This finding is more than minor since it is associated with the design control attribute of the mitigating systems cornerstone objective of ensuring the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences (i.e., core damage). The finding was evaluated using Manual Chapter 0609, Appendix A, "Significance Determination of Reactor Inspection Findings for At-Power Situations" phase one screening worksheet. The issue was a design or qualification deficiency, and was determined to be of very low safety significance (Green) because it did not result in an actual loss of safety function of a single train for internal or external event initiated core damage sequences. Additionally, the control room operators verify the position of the valves twice each shift.

Enforcement. 10 CFR Part 50, Appendix B, Criterion III, Design Control, requires that applicable design basis for structures, systems, and components be translated into design

specifications. Contrary to the above, *the regulatory requirement [See *2]* was not adequately translated into design specifications. Specifically, the configuration of the valve position indication for 1(2)-MOV-659 and 1(2)-MOV-660 is such that they share a common limit switch. ***This configuration does not constitute redundant and single failure proof as required by the regulatory requirement.*** [See *2] However, because of the very low safety significance, and because the issue was entered into the corrective action program (IR4-008-997), it is being treated as a NCV consistent with Section VI.A.1 of the NRC Enforcement Policy. NCV 05000317, 318/2004002-03, Design Basis for ECCS Mini-Flow Valve Indication not Translated into Design Specifications.

Reference Inspection Report Inaccuracy [*1]

The referenced change to the Surveillance Test Procedures (STPs) was performed in September, 1992. Supplement No. 5 to the Safety Evaluation Report was issued August 10, 1976. The two documents have no relationship to each other. It appears confusion exists concerning the recognition of these valves as exceptions that cannot be completely tested with the reactor at power. This is addressed in the Pump and Valve Inservice Test Program. The NRC addressed the issue in their September 20, 1990 letter "Second Ten-Year Interval Inservice Testing Program-Calvert Cliffs Nuclear Power Plant, Units 1 and 2, TAC Nos. 64976 (Unit 1) and 64977 (Unit 2)," in response to CCNPP's July 5, 1988 letter "Proposed Pump and Valve Inservice Test (IST) Program."

The referenced Inspection Report does not accurately document how Supplement No. 5 to the SER relates the mini-flow issue. Supplement No. 5 was not a response to CCNPP's STP change. Our mini-flow modification provides an acceptable level of safety, and, as previously stated, Supplement No. 5 to the SER documents the NRC's review and acceptance of the mini-flow modification that was proposed in our March 4, 1976 letter (Reference 4 of Supplement No. 5 to the SER). This issue is outside the CCNPP licensing bases and should not be considered a finding or a violation.

Reference Inspection Report Inaccuracy [*2]

The inspection report states, *"Contrary to the above, the regulatory requirement was not adequately translated into design specifications."* Providing redundant, single failure proof position indication for MOV-659 and 660 is not a regulatory requirement. We did not commit to follow all the requirements of Branch Technical Position (BTP) EICSB 18. As documented in the NRCs April 24, 1975 correspondence, BTP EICSB 18 from the NRC's Standard Review Plan, was provided as guidance. Standard Review Plans are not substitutes for the Commission's regulations. We provided an alternative method for satisfying the requirements of 10 CFR Part 50, Appendix K regarding ECCS performance. Supplement No. 5 to the SER found CCNPP's alternative method acceptable. Supplement No. 5 to the SER states,

> *"To provide redundant valve position indication, the applicant has proposed to install separate valve status annunciators in addition to the original valve status lights. We have reviewed the applicant's proposal regarding the mini-flow bypass system and conclude that it is acceptable."*

Supplement No. 5 further states:

> *"In addition, we will require that power be restorable to the operators of these valves from the control room (per Branch Position EICSB, 18, reference 15) to allow the required isolation of the refueling water storage tank during recirculation. Redundant indication of the valve position is*

also required... We have reviewed the applicant's proposal regarding the mini-flow bypass system and conclude that it is acceptable."

Our design allows power to be restorable from the Control Room per BTP EICSB 18. Our control power design meets the single failure criterion. Therefore, our overall design meets the intent of the requirements to address single failure concerns as documented in Supplement No. 5 to the SER.

It appears that the inaccuracies in the inspection report as identified above, contributed to an incorrect characterization of the issue as a performance deficiency and subsequent erroneous screening and final characterization of the issue as a finding/NCV.

Technical Evaluation of CCNPP's Design

The design of CCNPP's mini-flow system meets the technical requirements required by Appendix K to 10 CFR Part 50, Section I.D.1 in that the effects of a single failure or operator error that causes any manually-controlled, electrically-operated valve to move to a position that could adversely affect the ECCS has been considered and incorporated in the design. Control power to MOV-659 and 660 is 1E safety-related and meets the single failure criterion (one valve is powered from diesel backed safety-related electrical Facility ZA and the other is powered from diesel backed safety-related electrical Facility ZB). Our Technical Specifications require verification of valve position with power to the valve operator removed on a twelve hour frequency to ensure that the valves are locked out and in the appropriate (open) position.

The valves are tested per the Inservice Test Program. Inservice testing includes quarterly pump tests that ensure minimum flow is passed through the mini-flow lines, verifying that the MOVs are indeed open. Position Indication Tests are performed on a cold shutdown frequency to verify that remote and local position indications agree. Engineered Safety Feature Actuation System testing verifies the valves receive the correct signal.

Risk Evaluation

Motor-operated valves 659 and 660 do not have to change position in the probabilistic risk assessment. If the valves remain open, there is no core damage frequency (CDF) impact. The closing of these MOVs on a RAS is not significant for CDF or large early release frequency (LERF). The failure mode of concern is that the MOVs transfer to the closed position. The consequences are significant if either of the MOVs were to transfer to the closed position without indication. However, the probability that one of the valves would either fail to open or transfer closed (when de-energized) and not be indicated by the existing indication is extremely small. Thus, the overall CDF risk impact would be well below 1E-06 and the LERF impact would be well below 1E-07.

Conclusion

Although recommended in the BTP, redundant and single failure proof position indication is not a regulatory requirement. We did not commit to all the requirements in the BTP. We provided a detailed design of the mini-flow system to the NRC. This design was reviewed and accepted by the NRC as documented in Supplement No. 5 to the SER. The approved design is part of CCNPP's licensing basis. To provide redundant and single failure proof indication would require a modification to the mini-flow MOVs and/or the system. Performing the proposed modification to the mini-flow system constitutes an economic hardship without a commensurate increase in the level of safety. We believe the process prescribed by 10 CFR 50.109 is the appropriate means of evaluating such proposed changes to the plant.

Inaccuracies in the referenced inspection report indicate that the issue was not screened correctly. This issue is outside the CCNPP licensing bases and should not be considered a finding or a violation.

Corrective Steps Taken and Results Achieved

As explained above, no corrective actions were required regarding the NCV issue.

Corrective Steps That will be Taken to Avoid Further Violation

As explained above, no future corrective actions are planned regarding the NCV issue.

Date of Full Compliance

Calvert Cliffs Nuclear Power Plant remains in full compliance.