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January 25, 2008

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
Response to Request for Additional Information for the Fourth Ten-Year Inservice Test Program for Safety-Related Pumps and Valves – Calvert Cliffs Nuclear Power Plant, Unit Nos. 1 and 2 – (TAC Nos. MD5998 through MD6011)

REFERENCES:

(a) Letter from Mr. J. A. Spina (CCNPP) to Document Control Desk (NRC), dated July 2, 2007, Fourth Ten-Year Inservice Test Program for Safety-Related Pumps and Valves

(b) Letter from Mr. D. V. Pickett (NRC) to Mr. J. A. Spina (CCNPP), dated November 20, 2007, Request for Additional Information Re: Fourth Ten-Year Inservice Test Program for Safety-Related Pumps and Valves – Calvert Cliffs Nuclear Power Plant, Unit Nos. 1 and 2 – (TAC Nos. MD5998 through MD6011)

In Reference (a), Calvert Cliffs Nuclear Power Plant (CCNPP) submitted the Fourth Ten-Year Inservice Test Program for Safety-Related Pumps and Valves, in accordance with 10 CFR 50.55a(f)(5)(i). The Nuclear Regulatory Commission staff requested additional information that was needed to support their review of the submittal (Reference b). Our response to Reference (b) is attached.

Should you have questions regarding this matter, please contact Mr. Jay S. Gaines at (410) 495-5219.

Very truly yours,

JAS/MJY/bjd

Attachment: (1) Response to Request for Additional Information -- Fourth 10-Year Interval Inservice Testing (IST) Program

cc: D. V. Pickett, NRC
S. J. Collins, NRC
Resident Inspector, NRC
R. I. McLean, DNR

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NRR

ATTACHMENT (1)

RESPONSE TO REQUEST FOR ADDITIONAL INFORMATION – FOURTH 10-YEAR INTERVAL INSERVICE TESTING (IST) PROGRAM

Calvert Cliffs Nuclear Power Plant, Inc.
January 25, 2008

ATTACHMENT (1)

RESPONSE TO REQUEST FOR ADDITIONAL INFORMATION -- FOURTH 10-YEAR INTERVAL INSERVICE TESTING (IST) PROGRAM

Question 1:

Relief Request GA-RR-01

RAI GA-RR-01-01

Please confirm that the modifications and limitations in 10 CFR 50.55a(b)(3)(i), (ii), (v), and (vi) will be applied to the Fourth 10-Year Interval.

CCNPP Response GA-RR-01:

Calvert Cliffs Nuclear Power Plant (CCNPP) will apply the following modifications and limitations in 10 CFR 50.55a(b)(3) to the Fourth 10-Year Interval:

10 CFR 50.55a(b)(3)(i) - *Quality Assurance*
(Note: The applicable paragraph reference for OM-Code-2004 Edition is ISTA-1400)
10 CFR 50.55a(b)(3)(ii) - *Motor-Operated Valve testing*
(Note: See IST Program Plan section 5.1.1 and GV-RR-02 for implementation of Code Case OMN-1)
10 CFR 50.55a(b)(3)(iv) - *Appendix II*
(See IST Program Plan section 5.3.5. Note: Calvert Cliffs Nuclear Power Plant believes the Nuclear Regulatory Commission (NRC) meant to reference modification and limitation (iv) pertaining to Appendix II Condition Monitoring instead of (v) which applies to Snubbers.)
10 CFR 50.55a(b)(3)(vi) - *Exercise interval for manual valves.*
(See IST Program Plan section 5.4)

Question 2:

Relief Request GV-RR-01

RAI GV-RR-01-01

Please verify that water at ambient temperature is the test medium that will be used to setpoint test the relief valves in the scope of this relief request. Describe the test medium and how the test medium is maintained at ambient temperature if a test medium other that water is used to setpoint test the valves in the scope of this relief request.

CCNPP Response GV-RR-01-01:

In accordance with I-8110(a), I-8120(a), and I-8130(a), the test medium used will be the same as the normal system operating fluid. For liquid service this will be water. For compressible fluid services other than steam this will be nitrogen. In either case, the test stand and surrounding environment ambient temperature conditions are relatively fixed with negligible changes occurring over the set pressure and seat tightness test determinations. There is negligible affect on valve setpoint due to minor temperature deviations that might occur at these conditions.

Question 3:

Relief Request CVC-RR-01

Question RAI CVC-RR-01-01

The NRC has learned that, due to technology advancement and research work performed in the field of instrumentation, vibration-measuring transducers meeting the Code provisions can be easily procured from various suppliers at a reasonably low cost. The NRC also presented a paper on "Pump's Vibration Measuring Instruments (Transducers) Issue" during the Ninth NRC/ASME Symposium on Valve and

Pump Testing in July 2006. [NUREG/CP-0151, Vol. 6, July 2006, "Proceeding of the Ninth NRC/ASME Symposium on Valve and Pump Testing" (ML072700042).] Please provide and discuss reasons for not meeting the Code requirement.

CCNPP Response CVC-RR-01-01:

Calvert Cliffs will procure and begin the use of instrumentation compliant with American Society of Mechanical Engineers (ASME) OM Code-2004 ISTB for the specified vibration frequency response range prior to the start of the next interval of the CCNPP IST Program. Therefore, we withdraw code relief request CVC-RR-01 from further review.

Question RAI CVC-RR-01-02

In the section entitled Basis, the licensee did not mention any hardship and/or reason for not using or installing the Code-required vibration-measuring transducers with specified ranges from one-third minimum pump shaft rotational speed to at least 1000 Hz.

The licensee did not provide sufficient information on the basis for the hardship or unusual difficulty associated with complying with the Code. Please provide this information.

CCNPP Response CVC-RR-01-02:

See response to CVC-RR-01-01.

Question 4:

Relief Request SI-RR-01

General Comment (NRC)

This relief request consists of two parts: (1) Relief from paragraph ISTB-1400(b); and (2) Relief from the vibration requirements of paragraph ISTB-5121(e), and Table STB-5121-1.

In section entitled Alternative Testing, the licensee states that LPSI pumps will be tested as stand-by pumps (Group B) during Modes 1-4 and continuously operating pumps (Group A) during Modes 5-6. In Modes 5-6, the comprehensive pump test may be substituted for a quarterly Group A test that comes due during a mid-cycle cold shutdown period.

Please note that the OM Code paragraph ISTB-1400(b) states that "a pump that meets both Group A and Group B pump definitions shall be categorized as a Group A pump." Therefore, the NRC staff is not in a position to authorize the same pump (LPSI pump) to be classified as Group A and Group B during different modes of operation. Based on the licensee's description, the LPSI pumps should be considered as a Group A pump.

CCNPP Response SI-RR-01:

Calvert Cliffs is requesting relief based on the proposed alternative providing an acceptable level of quality and safety. As previously stated in Reference 1, we propose that the LPSI pumps be tested as stand-by pumps (Group B) during Modes 1-4 and continuously operating pumps (Group A) in Modes 5-6. In Modes 5-6, the comprehensive pump test may be substituted for a quarterly Group A test that comes due during a mid-cycle cold shutdown period as provided by the OM Code, Subsection ISTB. The Code states that when a Group A test is required, a comprehensive test may be substituted.

Please note that Calvert Cliffs is currently operating with this relief request approved for the third ten-year IST interval. Calvert Cliffs previously made this same classification request for these pumps in Reference 2 and the NRC staff approved the request in Reference 3. The information provided in those references remains valid for the LPSI pumps during the fourth ten-year interval. Since the NRC has previously approved this request and the information in the approval remains the same, we anticipate that this approval would carry forward into the fourth ten-year interval. A short discussion of the previous approval is provided below.

The LPSI pumps clearly meet the definition for Group B pumps during normal operation in Modes 1-4. In Modes 5-6, the LPSI pumps are used for shutdown cooling and meet the definition of Group A pumps. Since ISTB states that a pump that meets both Group A and Group B definitions be categorized as a Group A pump, this would cause the LPSI pumps to be classified as Group A. However, the LPSI pumps cannot be tested as Group A pumps by a comprehensive pump test during Modes 1-4 because they are standby pumps. Rather, these pumps can only be tested during plant operation utilizing the minimum-flow recirculation line as Group B pumps. Low pressure safety injection pumps are standby pumps and little degradation is expected with respect to hydraulic performance during the operational period when the pumps are idle.

In Generic Letter 89-04, Position 9, the NRC determined that, in cases where the pump flow can only be established through a non-instrumented, minimum-flow path during quarterly pump testing, and a path exists at cold shutdown or refueling outages to perform a test of the pump under full or substantial flow conditions, the increased interval is an acceptable alternative to the Code requirements. Therefore, the proposed alternative testing of LPSI pumps as Group B during Modes 1-4 and as Group A during Modes 5-6 is consistent with Generic Letter 89-04, Position 9 and provides reasonable assurance of operational readiness of the LPSI pumps.

Question RAI SI-RR-01-01

In the section entitled Alternative Testing, under LPSI Pump Bearing Acceptance Criteria During Low-Flow Testing, the licensee states that vibration acceptance criteria shall be used for any low-flow LPSI pump post-maintenance (Group A) testing done during cold shutdown periods. Whereas, second paragraph on page 2 of 9 states that the LPSI pumps are also tested at a substantial flow rate (3500 gpm) during every refueling outage, as well as during planned and unplanned cold shutdown periods when plant conditions and circumstances permit.

Based on the general comment above, the licensee needs to revise the relief request to categorize these LPSI pumps as Group A pumps, and to perform vibration measurements (1) during Group A test (at low-flow or full flow); and (2) during the comprehensive test (at full flow or large flow).

CCNPP Response SI-RR-01-01:

See response to General Comment above. We do not propose a revision to SI-RR-01 at this time.

Question RAI SI-RR-01-02

In the section entitled Basis, under Minimum Pump Run-Time (page 2 of 9), the licensee states that as Group B pumps, the two-minute minimum pump run-time for quarterly tests is also eliminated. The licensee is requested to update this information, when LPSI pumps are categorized as Group A pump as specified in the general comments above.

CCNPP Response SI-RR-01-02:

See response to General Comment above. We do not propose a revision to SI-RR-01 at this time.

Question RAI SI-RR-01-03

In the section entitled Alternative Testing, under Item 2, LPSI Pump Bearing Acceptance Criteria During Low-Flow Testing (page 7 of 9), the licensee states that vibration acceptance criteria shall be used for any low-flow LPSI pump post-maintenance (Group A) testing done during cold shutdown periods. Please explain how post-maintenance testing at low-flow provides confidence for operational readiness of LPSI pump at full flow.

CCNPP Response SI-RR-01-03:

The alternative vibration acceptance criteria were included in the relief request to address minor maintenance that may be performed during a short duration cold shutdown where plant conditions may restrict the ability to perform a comprehensive test. Calvert Cliffs does not perform any maintenance on-line that could affect IST parameters such that a comprehensive test would be required as a post-maintenance test. Also, CCNPP does not perform any maintenance during a short duration cold shutdown that could affect IST parameters unless a comprehensive test can be performed for a post-maintenance testing.

Question RAI SI-RR-01-04

In the section entitled Alternative Testing, under Item 2, LPSI Pump Bearing Acceptance Criteria During Low-Flow Testing (page 7 & 8 of 9), the licensee provides the maximum acceptable range of vibration V $\leq$0.63; however the typical value/range values contained in Table-1 and Table-2, are lower than 0.49 ips. Please explain and clarify the use of (higher) acceptable vibration value of 0.63 ips as an alternative. Note: By categorizing LPSI pump as Group A pump as suggested in the general comment, the measured vibration values during Group A and comprehensive tests and their acceptance values may be different.

CCNPP Response SI-RR-01-04:

See response to RAI SI-RR-01-03.

REFERENCES:

1. Letter from Mr. J. A. Spina (CCNPP) to Document Control Desk (NRC), dated July 2, 2007, Fourth Ten-Year Inservice Test Program for Safety-Related Pumps and Valves
2. Letter from Mr. C. H. Cruse (CCNPP) to Document Control Desk (NRC), dated January 4, 2002, Request for Relief from ASME Code Requirements for ECCS and AFW Pump Testing Requirements; PR-12
3. Letter from Mr. R. J. Laufer (NRC) to Mr. C. H. Cruse (CCNPP), dated May 16, 2002, Request for Relief No. PR-12 Associated with the Third 10-Year Interval Inservice Testing Program Calvert Cliffs Nuclear Power Plant, Unit Nos. 1 and 2 (TAC Nos. MB3782 and MB3783)