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CALVERT CLIFFS
NUCLEAR POWER PLANT

December 15, 2010

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 – Submittal of Snubber Program
Relief Request (RR-SNUB-1) (TAC Nos. ME4892 and ME4893)

REFERENCES:

- (a) Letter from Mr. J. J. Stanley (CCNPP) to Document Control Desk (NRC), dated October 11, 2010, Submittal of Snubber Program Relief Request (RR-SNUB-1)
- (b) Letter from Mr. D. V. Pickett (NRC) to Mr. G. H. Gellrich (CCNPP), dated November 17, 2010, Request for Additional Information Re: Relief Request No. RR-SNUB-1, Snubber Inspection and Testing for Fourth 10-Year Interval - Calvert Cliffs Nuclear Power Plant, Unit Nos. 1 and 2 (TAC Nos. ME4892 and ME4893)

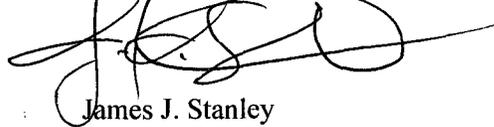
In Reference (a), Calvert Cliffs Nuclear Power Plant, LLC submitted a relief request (RR-SNUB-1), for Calvert Cliffs Units 1 and 2, requesting use of an alternative methodology within Calvert Cliffs Snubber Program that does not completely conform to the American Society of Mechanical Engineers Code of Record requirements. In Reference (b), the Nuclear Regulatory Commission requested additional information be submitted to support their review of Reference (a). Attachment (1) provides Calvert Cliffs' responses to the Nuclear Regulatory Commission's request for additional information contained in Reference (b).

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Should you have questions regarding this matter, please contact Mr. Douglas E. Lauver at (410) 495-5219.

Very truly yours,

A handwritten signature in black ink, appearing to be "James J. Stanley", written over the typed name below.

James J. Stanley
Manager-Engineering Services

JJS/KLG/bjd

Attachment: (1) Response to Request for Additional Information – Relief Request (RR-SNUB-1)

cc: D. V. Pickett, NRC
W. M. Dean, NRC

Resident Inspector, NRC
S. Gray, DNR

ATTACHMENT (1)

**RESPONSE TO REQUEST FOR ADDITIONAL INFORMATION –
RELIEF REQUEST (RR-SNUB-1)**

ATTACHMENT (1)
RESPONSE TO REQUEST FOR ADDITIONAL INFORMATION –
RELIEF REQUEST (RR-SNUB-1)

NRC RAI 1(a):

In the letter dated October 11, 2010, third paragraph, in part, states that “to correct this noncompliance, Calvert Cliffs submits a relief request for an alternative to the American Society of Mechanical Engineers (ASME) Code requirements for snubber inspection and testing”. The applicable ASME Code for the ISI Program at Calvert Cliffs is the ASME Section XI, 2004 Edition. Article IWF-5000 of the ASME Section XI Code, contains inservice examination and testing requirements of snubbers. The licensee proposed to use Calvert Cliffs Technical Requirement Manual (TRM) Section 15.7.2 in lieu of the ASME Code requirements. The submitted Relief Request RR-SNUB-1 is only related to inservice snubber visual inspection examination, without mentioning inservice testing of snubbers. Article IWF-5000 contains IWF-5200, “Preservice Examinations and Tests,” IWF-5300, “Inservice Examination and Tests,” and IWF-5400, “Repair and Replacement,” requirements for snubbers.

- (a) Please explain whether and how the requirements of IWF-5200(a), and (b), will be met. Confirm that the VT-3 examination method described in IWA-2213 is being used for preservice examinations.*

CCNPP RAI Response 1(a):

In response to this question, it should be noted that the installation of new snubbers at new locations is not being conducted at Calvert Cliffs. However, from time to time, new snubbers are introduced, as replacements, into the population of existing snubbers. This is usually due to either no longer being able to overhaul an existing snubber or that rotation from stock is no longer practical. Such installations or replacements would take place during snubber preventive maintenance activities.

To meet the requirements of IWF-5200(a), a Repair/Replacement (R&R) Plan is developed, in accordance with a Calvert Cliffs maintenance procedure, for each new snubber requiring a pre-service examination. The implementation of the R&R Plan ensures a VT-3 examination is performed as directed by IWF-5200(a). Snubber VT-3 examinations are conducted in accordance with Calvert Cliffs non-destructive examination procedure, which includes all of the requirements of IWA-2213. Aside from the examination of all of the mechanical and structural components, as cited in ASME/ANSI (American National Standards Institute) OM, Part 4, issues such as adequate swing clearance have already been assured based on the original snubber installation.

For snubbers that are rotated in from stock, snubber preservice examinations are performed in accordance with IWA-2213. Site procedures provide direction on performing these snubber preservice examinations in accordance with VT-3 methods. These visual inspections address snubber specific criteria which include the general mechanical and structural condition of a snubber as well as the applicable snubber specific aspects discussed in IWA-2213.

The requirements of IWF-5200(b), for both new snubbers and snubbers rotated in from stock, are satisfied through the implementation of Calvert Cliffs technical procedures, which provide direction on preservice operability testing of snubbers. The testing performed per those procedures meets the requirements of ASME/ANSI OM, Part 4 Section 3.1.

NRC RAI 1(b):

- (b) IWF-5300(b) states that “Inservice tests shall be performed in accordance with ASME/ANSI OM, Part 4.” Please confirm that existing Calvert Cliffs TRM Section 15.7.2 meets the IWF-5300(b) requirement.*

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CCNPP RAI Response 1(b):

Inservice testing of snubbers is referred to as functional testing. With regard to functional testing, Calvert Cliffs TRM Section 15.7.2 states the following:

Functional Tests

At least once per 24 months, a representative sample of 10% of each type of snubbers in use in the plant shall be functionally tested either in-place or in a bench test. For each snubber that does not meet the functional test acceptance criteria of the Hydraulic Snubbers Functional Test Acceptance Criteria, an additional 5% of that type snubber shall be functionally tested until no more failures are found or until all snubbers of that type have been functionally tested.

Snubbers identified as "Especially Difficult to Remove" or in "High Exposure Zones" shall also be included in the representative sample (permanent or other exemptions from functional testing for individual snubbers in these categories may be granted by the Nuclear Regulatory Commission only if a justifiable basis for exemption is presented and/or snubber life destructive testing was performed to qualify snubber operability for all design conditions at either the completion of their fabrication or at a subsequent date).

In addition to the regular sample, snubbers that failed the previous functional test shall be retested during the next test period. If a spare snubber has been installed in place of a failed snubber, then both the failed snubber (if it is repaired and installed in another position) and the spare snubber shall be retested during the next test period. Failure of these snubbers shall not entail functional testing of additional snubbers.

If any snubber selected for functional testing either fails to lock up or fails to move, i.e., frozen in place, the cause will be evaluated and if caused by manufacturer or design deficiency all generically susceptible snubbers of the same design subject to the same defect shall be functionally tested. This testing requirement shall be independent of the requirements stated above for snubbers not meeting the functional test acceptance criteria.

For the snubber(s) found inoperable, an engineering evaluation shall be performed on the component(s) that are supported by the snubber(s). The scope of this engineering evaluation shall be consistent with the licensee's engineering judgment and may be limited to a visual inspection of the supported component(s). The purpose of this engineering evaluation shall be to determine if the component(s) supported by the snubber(s) were adversely affected by the inoperability of the snubber(s) in order to ensure that the supported component remains capable of meeting the designed service.

Hydraulic Snubbers Functional Test Acceptance Criteria

The hydraulic snubber functional test shall verify that:

1. Activation (restraining action) is achieved within the specified range of velocity or acceleration in both tension and compression.
2. Snubber bleed, or release rate, where required, is within the specified range in compression or tension. For snubbers specifically required to not displace under continuous load, the ability of the snubber to withstand load without displacement shall be verified.

Functional Testing performed per Calvert Cliffs TRM Section 15.7.2 and surveillance test procedures meets the requirements of IWF-5300(b) and ASME/ANSI OM, Part 4 Section 3.2.

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Note that the entire Calvert Cliffs snubber population consists of hydraulic snubbers. Therefore, verification of breakaway and drag forces, as discussed in ASME/ANSI OM, Part 4 Section 3.2.1.1(a) is not applicable.

NRC RAI 1(c):

(c) IWF-5400 requires that "Repair or replacement of snubbers shall be in accordance with IWA-4000. Repaired or replacement snubbers shall be examined and tested in accordance with the applicable requirements of Subarticle IWF-5200 prior to return to service." Please explain how TRM 15.7.2 meets these requirements of IWF-5400.

CCNPP RAI Response 1(c):

Technical Requirements Manual Section 15.7.2 is not written or intended to specifically address these requirements. IWF-5400 requirements are satisfied by other Calvert Cliffs site procedures and processes and are unchanged by our relief request.

Calvert Cliffs technical procedures, which provide direction on preservice operability testing of snubbers, satisfy the examination, and preservice testing requirements of IWF-5400, IWA-4000, and IWF-5200. The testing performed per these procedures meets the requirements of ASME/ANSI OM, Part 4 Section 3.1.

If a new snubber is to be introduced into the existing population, it is tested and inspected in accordance with IWF-5200, including VT-3 examination methods.

If a rebuilt snubber is rotated in from stock, it is subject to the requirements of IWA-4132 and IWA-4530(b), which lead back to IWF-5200.

NRC RAI 1(d):

(d) Please explain how TRM Section 15.7.2 meets the requirements of IWF-5200(c), and IWF-5300(c) requirements.

CCNPP RAI Response 1(d):

Technical Requirements Manual Section 15.7.2 is not written or intended to specifically address these requirements. IWF-5200(c) and IWF-5300(c) requirements are instead satisfied by other Calvert Cliffs site procedures and processes.

With regard to IWF-5200(c), new or overhauled snubbers are subject to preservice examinations by applicable Calvert Cliffs technical procedures. The examination conducted per these technical procedures addresses all of the items mentioned in IWF-5200(c).

With regard to IWF-5300(c), installed snubbers are subject to inservice examinations by applicable Calvert Cliffs surveillance test procedures. The examination addresses all of the items mentioned in IWF-5300(c).

NRC RAI 2:

ASME Section XI, IWF-5300(a) requires that inservice examinations shall be performed in accordance with ASME/ANSI OM, Part 4, using the VT-3 examination method described in IWA-2213. Please confirm that the VT-3 method is being used at Calvert Cliffs for the inservice examinations.

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CCNPP RAI Response 2:

The performance of snubber inservice visual examinations at Calvert Cliffs is in accordance with IWA-2213. Site procedures provide direction on performing snubber inservice examinations. Visual inspections address snubber specific criteria including the general mechanical and structural condition of a snubber. The following are specifically inspected:

- fluid reservoir levels
- piston rod for evidence of scratches, corrosion, paint or abrasions, or other deposits; any of which could possibly impair operation
- piston rod tightness against the rod eye
- loss of integrity at bolted or welded connections, loose or missing parts, debris, corrosion, or wear
- hydraulic fluid leaks in and around seals, connections, and valve block components
- any loose or externally damaged components which could affect snubber operation
- extension pieces, if installed
- any visual indication of detachment from foundation or supporting structures including clamps, welds, anchor bolts, and general condition of concrete
- pipe clamp/rod eye bracket for condition and proper snubber alignment

This VT-3 examination is intended to identify any condition that could affect the operability or functional adequacy of an installed snubber.

NRC RAI 3:

TRM Section 15.7.2 contains only requirements related to “Hydraulic Snubbers Functional Test Acceptance Criteria.” Please confirm that there are no mechanical snubbers installed at Calvert Cliffs 1 or 2.

CCNPP RAI Response 3:

The entire Calvert Cliffs snubber population consists of hydraulic snubbers. No mechanical snubbers are installed at Calvert Cliffs. There are 280 safety-related and 18 non-safety-related snubbers associated with Unit 1. There are 269 safety-related and 28 non-safety-related snubbers associated with Unit 2.

NRC RAI 4:

The requested alternative and TRM Section 15.7.2 do not address the requirements of OM-4, Section 2.3.4.3, “Examination Failure Mode Groups,” and Section 3.2.4.2, “Test Failure Mode Groups,” related to inservice examination and functional testing of snubbers. Please explain how the TRM meets these requirements.

CCNPP RAI Response 4:

Technical Requirements Manual Section 15.7.2 does not specifically address these requirements.

With regard to visual examination failures, TRM Section 15.7.2 is mute on the issue. Since the entire Calvert Cliffs snubber population consists of only hydraulic snubbers, it is treated as one group, subject to the requested alternative and TRM Section 15.7.2 visual inspection criteria and intervals.

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Therefore, visual examination failures based on one grouping would lead to a reduction of the inspection interval for the entire snubber population. This is conservative when compared to applying an interval reduction to only selected subgroups.

With regard to functional test failures, the snubber population is divided into two groups, e.g., small bore (<8" diameter cylinder) and large bore (>8" diameter cylinder).

The first grouping includes snubbers with cylinder sizes ranging from 1 ½" to 6" diameter, which are all associated with piping supports/restraints and the reactor coolant pumps. The second grouping includes snubbers with 10" diameter cylinders, which are those providing lateral restraint for our steam generators.

This grouping methodology is mentioned in Calvert Cliffs Updated Final Safety Analysis Report Section 5.3.2 "Snubbers" under the discussion on functional testing.

NRC RAI 5:

The applicable Code for the Calvert Cliffs ISI program is ASME Section XI, 2004 Edition. Please confirm that Calvert Cliffs meets the requirements of IWA-6230, "Summary Report Preparation," for snubber visual examination and testing.

CCNPP RAI Response 5:

In lieu of IWA-6230 reporting, Calvert Cliffs develops and issues an Owners Activity Report as allowed under ASME Code Case N-532. With regard to snubber visual examination and testing, this report includes information on snubbers for which an NIS-1 or an NIS-2 report has been completed.

Calvert Cliffs does not submit the results of snubber inservice visual examinations or functional testing, which are conducted in accordance with TRM Section 15.7.2, in the Owners Activity Report. The results of inservice visual examinations and functional testing are retained in the Calvert Cliffs document retrieval system as completed surveillance test procedures.