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CALVERT CLIFFS
NUCLEAR POWER PLANT

December 9, 2010

U. S. Nuclear Regulatory Commission
Washington, DC 20555

ATTENTION: Document Control Desk

SUBJECT: Calvert Cliffs Nuclear Power Plant
Unit No. 2; Docket No. 50-318
Response to Request for Additional Information – License Amendment Request:
One-Time Extension of the Containment Integrated Leak Rate Test Interval

REFERENCES:

(a) Letter from Mr. G. H. Gellrich (CCNPP) to Document Control Desk (NRC) dated October 4, 2010, License Amendment Request: One-Time Extension of the Containment Integrated Leakage Rate Test Interval

(b) Letter from Mr. D. V. Pickett (NRC) to Mr. G. H. Gellrich (CCNPP), dated November 17, 2010, Request for Additional Information Re: One-Time 5-Year Extension to the Containment Integrated Leak Rate Test – Calvert Cliffs Nuclear Power Plant, Unit No. 2 (TAC No. ME4804)

In Reference (a), Calvert Cliffs Nuclear Power Plant, LLC submitted a license amendment request, requesting a one-time extension of Unit 2's Type A Integrated Leak Rate Test interval for no more than five years. In Reference (b), the Nuclear Regulatory Commission requested additional information be submitted to support their review of Reference (a). Attachment (1) provides the responses to the Nuclear Regulatory Commission's request for additional information contained in Reference (b).

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NRR

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

Very truly yours,

George Gellrich

STATE OF MARYLAND :
: **TO WIT:**
COUNTY OF CALVERT :

I, George H. Gellrich, being duly sworn, state that I am Vice President - Calvert Cliffs Nuclear Power Plant, LLC (CCNPP), and that I am duly authorized to execute and file this License Amendment Request on behalf of CCNPP. To the best of my knowledge and belief, the statements contained in this document are true and correct. To the extent that these statements are not based on my personal knowledge, they are based upon information provided by other CCNPP employees and/or consultants. Such information has been reviewed in accordance with company practice and I believe it to be reliable.

G. Gellrich

Subscribed and sworn before me, a Notary Public in and for the State of Maryland and County of St. Mary's, this 9th day of December, 2010.

WITNESS my Hand and Notarial Seal:

Janet L. Sally
Notary Public

My Commission Expires:

March 1, 2011
Date

GHG/KLG/bjd

Attachment: (1) Response to Request for Additional Information – One–Time Extension of Unit 2 Containment Integrated Leak Rate Test Interval

cc: D. V. Pickett, NRC
W. M. Dean, NRC
Resident Inspector, NRC
S. Gray, DNR

ATTACHMENT (1)

RESPONSE TO REQUEST FOR ADDITIONAL INFORMATION – ONE-TIME EXTENSION OF UNIT 2 CONTAINMENT INTEGRATED LEAK RATE TEST INTERVAL

Calvert Cliffs Nuclear Power Plant, LLC
December 9, 2010

ATTACHMENT (1)

RESPONSE TO REQUEST FOR ADDITIONAL INFORMATION – ONE–TIME EXTENSION OF UNIT 2 CONTAINMENT INTEGRATED LEAK RATE TEST INTERVAL

SCVB #1:

Section 3.5, Table 3.5.1 of Attachment 1 to the License Amendment Request provides a summary trend of Type B and C Local Leak Rate Test (LLRT) Combined As-Found/As-Left leakages for four refueling outages between the years 2003 and 2009. Please provide details explaining why the as left (AL) leakages are higher than as found (AF) leakages in the year 2003.

CCNPP Response SCVB #1:

The primary contributors to higher 2003 AL leakage as compared to AF leakage are shown graphically in Figure 1 below:

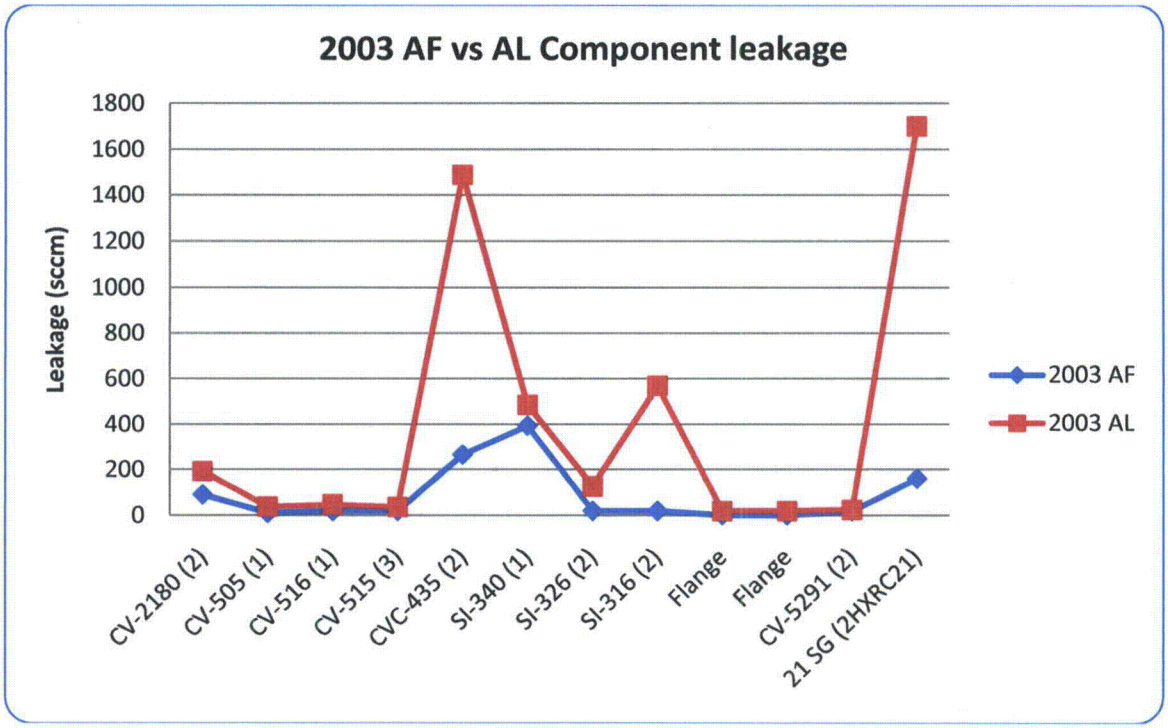

Figure 1

The predominant contributors to this mismatch are seen in two Penetrations (2B and 21SG), with details regarding these as follows:

Penetration 2B (2CVC435) – Unit 2 check valve CVC435 was AF tested within administrative leakage limits during the 2003 Refueling Outage (RFO). Subsequently, the valve was replaced during the 2003 RFO with an equivalent approved Enertech nozzle type check valve under a Calvert Cliffs work order. Subsequent AL testing of the new check valve resulted in a leakage rate of 1488 SCCM. This exceeded the administrative leakage limit of 296 SCCM, but was not in excess of the maximum limit of 10000 SCCM.

A Calvert Cliffs engineering evaluation subsequently removed the 2B penetration from the Appendix J Program Scope and the Updated Final Safety Analysis Report list of containment penetrations (see SCVB#4 below). As a result there are no further records from 2003 forward, in regard to Local Leak Rate Testing for this penetration. The 2003 RFO AF versus AL leak rate differences for this penetration can be directly attributed to wholesale valve replacement with a different leakage rate.

Penetration 21SG (21 SG South Manway) - 21 SG South Manway AF leakage rate was measured at 161.8 SCCM which was below the 2500 SCCM administrative leakage limit. During the 2003 RFO, Calvert Cliffs replaced Unit 2s steam generators. The manway covers were reinstalled on the newly replaced 21 Steam Generator and this manway penetration was AL tested SAT below the administrative leakage limit of 2500 SCCM at 1701 SCCM.

Subsequently, manways have been removed and reinstalled during the 2005, 2007, and 2009 RFOs for eddy current and visual inspections when necessary, and continue to remain within administrative leakage limits. The 2003 RFO AF versus AL leakage rate differences can be directly attributed to removal and reinstallation of the manway on the replacement steam generator.

SCVB #2:

In the same table referenced above, the AF max path leakage in the most recent test (2009) is significantly higher than in any previous tests. Please provide details as to where the higher leakage occurred and if the reasons for higher leakage were fixed.

CCNPP Response SCVB #2:

There were two penetrations which were the primary contributors that led to the higher AF maximum pathway leakage observed during Unit 2s 2009 RFO versus the 2007 RFO results. The penetrations were:

Penetration 44 (Fire Protection Piping) – During the 2009 RFO, fire protection check valve FP-145B AF leakage rate was measured at 7480 SCCM which was above Calvert Cliffs' administrative leakage limit (887 SCCM) but was below the maximum leakage limit of 20000 SCCM. A corrective action within the site's Corrective Action Program was initiated to document this issue. In addition maintenance work orders were performed to disassemble and inspect the valve and to conduct a flush of the valve. When the valve was disassembled, no significant adverse conditions were identified. Probable cause for the increased leakage was considered to be due to debris buildup. The valve was reassembled, flushed, and retested. The AL leakage following maintenance (744 SCCM) was below Calvert Cliffs' administrative leakage limit.

Penetration 61 (Spent Fuel Pool Cooling) – During the 2009 RFO, both penetration 61 Containment Isolation valves were AF tested, resulting in an AF max pathway leakage rate of 5000 SCCM. This was above Calvert Cliffs' administrative leakage limit (1182 SCCM) but was below the maximum leakage limit of 20000 SCCM. A corrective action within the site's Corrective Action Program was initiated to document this issue. In addition, a maintenance work order was performed which involved re-torquing and cycling of the applicable valves. Following this maintenance work, the penetration AL leakage testing was completed satisfactorily with 86 SCCM.

The combined leakage impact of these two penetrations can be quantified by the following:

Subtraction of the difference between the AF and AL maximum pathway leakage rates for these two penetrations alone from the AF maximum pathway leakage for the 2009 RFO results. The resulting AF maximum pathway leakage value would be comparable to the four previous RFO results:

- 26860 -[(7480-744) +(5000-86)] = 15210 SCCM (results with the two subject penetration impacts removed)
- 2001 thru 2007 results ranged from 19709 to 12051 SCCM

SCVB #3:

Section 3.5, Table 3.5.2 of Attachment 1 to the LAR provides a summary of AF LLRTs exceeding administrative limits. The table shows an increasing trend in the number of LLRTs exceeding administrative limits. Please provide details where they occurred and what has been done to fix the locations where the leakages have exceeded the admin limits. The staff would like to be assured that all negative trends are being properly addressed.

CCNPP Response SCVB #3:

The number of AF LLRT results exceeding their administrative leakage limits are plotted below in Figure 2. This demonstrates there is no appreciable long term negative trend in the number of AF LLRT results exceeding their administrative leakage limits.

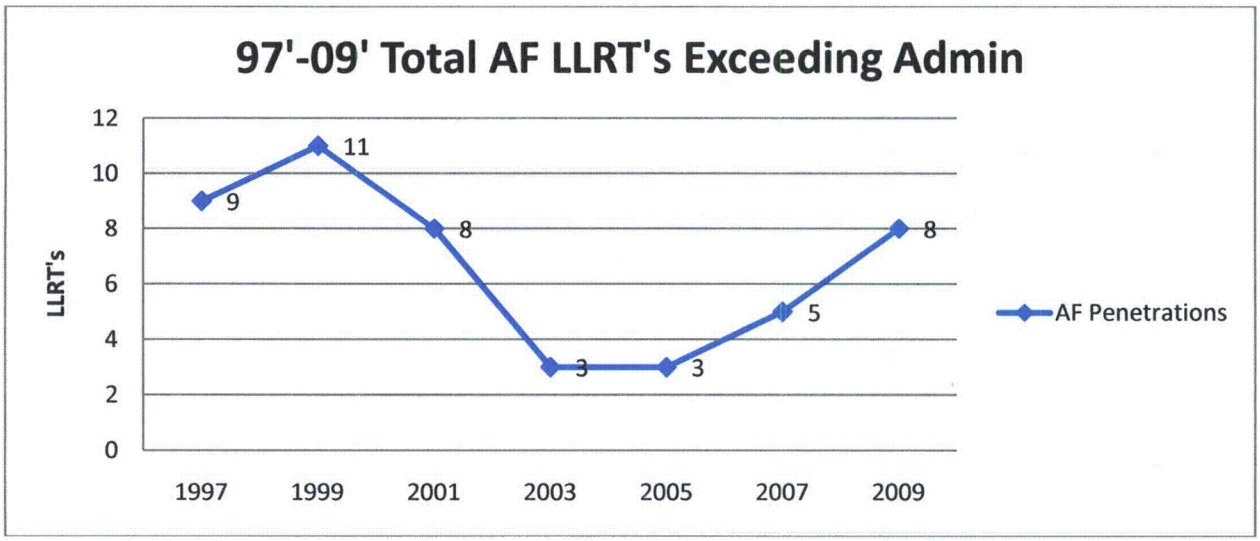

Figure 2

While the number of components exceeding their administrative leakage limits may vary slightly from one outage to another, it is also important to monitor the overall impact of these leakage pathways. Figure 3 below, plots the combined leakage rate for those pathways with components whose leak rates are in excess of their administrative leakage limits. As can be seen, a relatively flat trend profile exists from 2001 going forward. The slight increase in AF LLRT rate seen between 2007 and 2009 RFOs is explained in the response to SCVB #2 above.

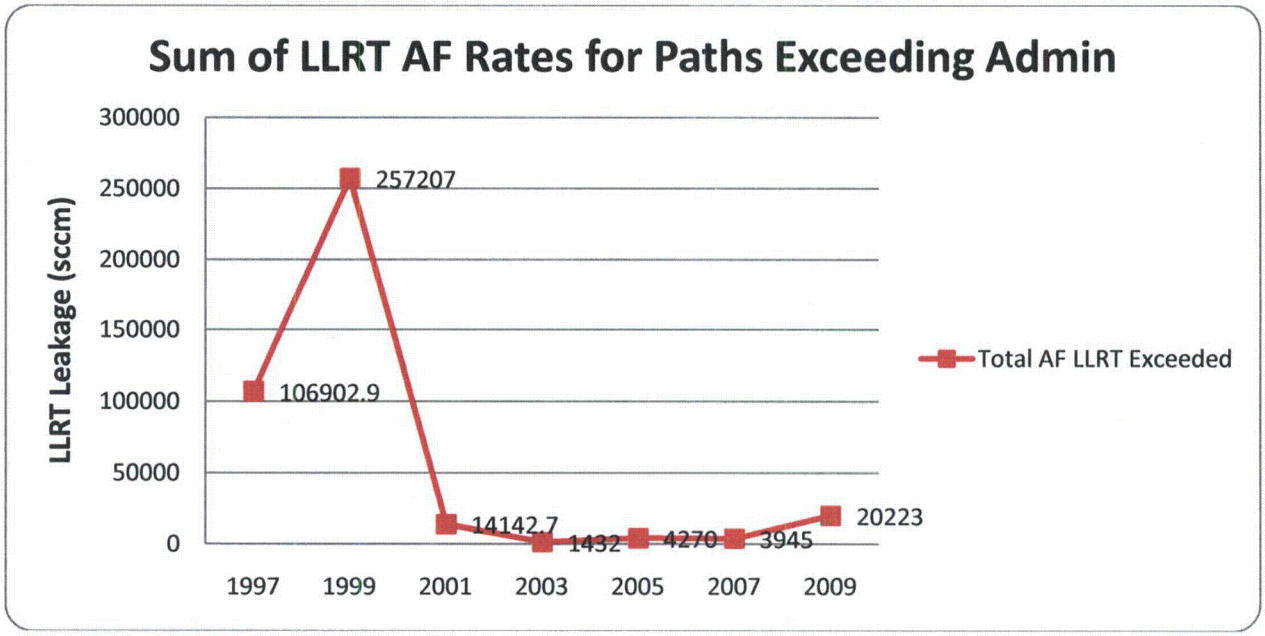

Figure 3

With regard to corrective actions and maintenance activities taken to resolve leakage rate challenges to administrative leakage limits, the particulars regarding the significant contributing pathways are detailed in our responses to SCVB #1, #2, and #5. Further support can be exemplified by the comparison of 2009 AF leakage rate sum for those pathways in excess of administrative leakage limits at 20223 SCCM, versus the 2009 AL sum of 5983 SCCM. This demonstrates that effective corrective maintenance actions are being taken to maintain overall containment integrity.

It is also important to note that Calvert Cliffs' administrative leakage limits are generally more conservative than those used by many in the industry. Based on benchmarking conducted with multiple industry peers, in many cases Calvert Cliffs administrative leakage limits are up to 10 times more conservative than at other sites. This measure of conservatism allows us to identify leaking components earlier, improves condition monitoring effectiveness, and allows us to evaluate issues more extensively prior to challenging maximum limits. These all help contribute to maintain satisfactory containment integrity here at Calvert Cliffs.

The data presented above coupled with the conservatism of Calvert Cliffs administrative leakage limits demonstrates a significantly proactive approach to maintaining containment integrity.

SCVB #4:

Enclosure 1 to Attachment 1 of the LAR provides individual penetration AF/AL LLRT results between years 2001 and 2009. Please explain why Penetrations # 2b and #8 were not tested from the year 2003 onwards.

CCNPP Response SCVB #4:

Following the 2003 RFO, Penetrations 2b and 8 were determined by a Calvert Cliffs engineering evaluation to meet the criteria to be considered "water filled penetrations". These penetrations are therefore not subject to leakage rate testing per 10 CFR Part 50 Appendix J as they are no longer

considered a leakage path to containment atmosphere during a design bases accident. Upon completion of this Calvert Cliffs engineering evaluation, Penetrations 2b and 8 were removed from the Calvert Cliffs Leakage Rate Testing Program and from the "Containment Isolation Penetrations" list contained in Calvert Cliffs Updated Final Safety Analysis Report, Chapter 5.

The actions taken as a result of this engineering evaluation were considered administrative changes taken to correct an error in scope development of our Appendix J program.

SCVB #5:

In Enclosure 1 referenced above, the leakage through Penetration # 48B (hydrogen purge supply) has significantly increased in the most recent tests (2007 and 2009). Please provide the reasons for this increase and the actions taken or being taken to correct this trend.

CCNPP Response SCVB #5:

During the 2007 RFO, Penetration 48B (motor operated valve 2MOV6903) AF leakage rate was measured at 2600 SCCM which was above Calvert Cliffs' administrative leakage limit (591 SCCM) but was below the maximum leakage limit of 10000 SCCM. A corrective action within the site's Corrective Action Program was initiated to document and trend this issue. Since the identified leakage did not challenge the valve's maximum leakage limit and there were no outstanding hardware related corrective actions on the valve, a decision was made to not perform maintenance. Local leak rate testing of the valve during the 2009 RFO indicated the leak rate remained approximately the same (2300 SCCM) and was again not challenging its maximum leakage limit. At that time a decision was made to perform maintenance on the valve during the 2011 RFO. A maintenance work order has been developed to overhaul the valve and this maintenance work order is currently on the 2011 RFO work schedule.