



UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555-0001

May 7, 2010

Mr. George H. Gellrich, Vice President
Calvert Cliffs Nuclear Power Plant, LLC
Calvert Cliffs Nuclear Power Plant
1650 Calvert Cliffs Parkway
Lusby, MD 20657-4702

SUBJECT: REQUEST FOR ADDITIONAL INFORMATION RE: PRESSURIZER SAFETY
VALVE TECHNICAL SPECIFICATION REVISION - CALVERT CLIFFS
NUCLEAR POWER PLANT, UNIT NOS. 1 AND 2 - (TAC NOS. ME3348 AND
ME3349)

Dear Mr. Gellrich:

By letter dated January 29, 2010, Calvert Cliffs Nuclear Power Plant, LLC, the licensee, submitted a proposed change to Technical Specification (TS) 3.4.10, "Pressurizer Safety Valves," that would modify the existing Note within the TS. The Note allows the pressurizer safety valve lift settings to be outside the Limiting Condition for Operation limit as a result of temperature related lift setting drift, while the Unit is in applicable portions of Mode 3.

Based upon the Nuclear Regulatory Commission staff review, additional information will be necessary for the staff to complete its review. Enclosed is the staff's request for additional information (RAI). Based on discussions with your staff, we understand that you plan to respond to the enclosed RAI within 60 days of the date of this letter.

Please contact me at 301-415-1364 if you have any questions.

Sincerely,

A handwritten signature in cursive script that reads "Douglas V. Pickett".

Douglas V. Pickett, Senior Project Manager
Plant Licensing Branch I-1
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation

Docket Nos. 50-317 and 50-318

Enclosure:
Request for Additional Information

cc w/encl: Distribution via Listserv

REQUEST FOR ADDITIONAL INFORMATION

PRESSURIZER SAFETY VALVE TECHNICAL SPECIFICATION REVISION

CALVERT CLIFFS NUCLEAR POWER PLANT, UNIT NOS. 1 AND 2

DOCKET NOS. 50-317 AND 50-318

1. Updated Final Safety Analysis Report (UFSAR) Over-Pressure Transient Analysis

Chapter 14 of the Calvert Cliffs UFSAR (Revision 41) documents the results of the analyses of transients and accidents. The following three events initiating from hot-full power (HFP) relied on operation of the pressurizer safety valves (PSVs) to prevent the reactor coolant system (RCS) pressure from exceeding the reactor coolant pressure boundary (RCPB) limits:

1. Loss-of-Load at HFP (UFSAR Figure 14.5-3)
2. Loss-of-Normal Feedwater (LNFW) at HFP (UFSAR Figure 14.6-3)
3. Feedwater Line Break (FLB) at HFP (UFSAR Figure 14.26-1)

For operations other than MODE 1, Case 1, Loss-of-Load, listed above, is not a credible event because the turbine is off-line and the transient resulting from a turbine related fault cannot occur.

Discuss whether Cases 2 and 3, LNFW and FLB, are credible events in MODE 3. If the events are credible, provide a qualitative and/or quantitative discussion to show that for Cases 2 and 3 above, an increase of the RCS pressure during transients will not reach the PSV set points specified in Surveillance Requirement (SR) 3.4.10.1 for conditions within the applicable portions of MODE 3. If the PSV set points are exceeded, provide the results of analysis using Nuclear Regulatory Commission approved methods and PSV set points with maximum projected values of set point drift due to the temperature effects to show that the acceptable limits of the RCPB are met.

2. Control Element Assembly (CEA) Ejection Analysis

As stated on page 3 of Attachment 1 to the January 29, 2010, license amendment application, the licensee stated there would be no challenge to PSV operation during a CEA ejection event while in the applicable portions of MODE 3. The licensee used the following statement in support of its position:

...the increase in RCS pressure during the event scenario is not addressed in any detail as the loss of RCS pressure barrier due to the CEA ejection prevents any significant RCS pressure buildup.

Enclosure

Provide a discussion to show that the leakage in the reactor vessel head due to a CEA ejection is sufficiently large to remove the energy generated during a CEA ejection event such that the peak pressure does not reach the PSV set points specified in SR 3.4.10.1 for applicable portions of MODE 3.

3. CEA Withdrawal Event and Excess Load Event

As stated on page 3 of Attachment 1 to the license amendment request dated January 29, 2010, the analyses presented in the UFSAR for the CEA withdrawal event and the excess load event assume hot zero power (Mode 2) conditions which are more bounding than Mode 3 conditions.

A CEA withdrawal event adds positive reactivity to the core, causing power to increase. As discussed in Section 14.2.2.1 of the UFSAR, the CEA withdrawal event initiating from Mode 2 conditions is terminated by a reactor trip from the variable high power trip (VHPT) signal. An excess load event decreases RCS temperature. In the presence of a negative moderator temperature coefficient, the decreased RCS temperature results in a positive reactivity addition, which in turn causes power to increase. As discussed in UFSAR Section 14.4.2.1, the excess load event initiating from Mode 2 conditions is also terminated by the VHPT signal.

The severity of the results of the analyses for these events in terms of maximum peak power and RCS pressure depends on the values assumed for the plant parameters such as: initial RCS temperature and pressure, reactivity insertion rate due to rod motion, excess steam release rate due to excess load, moderator and fuel temperature coefficients, pressure safety valves for overpressure protection, and available reactor trips for termination of the transient. It should be noted that the reactor trips for Mode 2 specified in the plant specific Technical Specifications may not be available for Mode 3.

Discuss the plant conditions and reactor protection system in Mode 3 to show that they are bounded by the Mode 2 conditions assumed in the UFSAR analyses for the CEA withdrawal event and the excess load event.

May 7, 2010

Mr. George H. Gellrich, Vice President
Calvert Cliffs Nuclear Power Plant, LLC
Calvert Cliffs Nuclear Power Plant
1650 Calvert Cliffs Parkway
Lusby, MD 20657-4702

SUBJECT: REQUEST FOR ADDITIONAL INFORMATION RE: PRESSURIZER SAFETY VALVE TECHNICAL SPECIFICATION REVISION - CALVERT CLIFFS NUCLEAR POWER PLANT, UNIT NOS. 1 AND 2 - (TAC NOS. ME3348 AND ME3349)

Dear Mr. Gellrich:

By letter dated January 29, 2010, Calvert Cliffs Nuclear Power Plant, LLC, the licensee, submitted a proposed change to Technical Specification (TS) 3.4.10, "Pressurizer Safety Valves," that would modify the existing Note within the TS. The Note allows the pressurizer safety valve lift settings to be outside the Limiting Condition for Operation limit as a result of temperature related lift setting drift, while the Unit is in applicable portions of Mode 3.

Based upon the Nuclear Regulatory Commission staff review, additional information will be necessary for the staff to complete its review. Enclosed is the staff's request for additional information (RAI). Based on discussions with your staff, we understand that you plan to respond to the enclosed RAI within 60 days of the date of this letter.

Please contact me at 301-415-1364 if you have any questions.

Sincerely,
/RA/
Douglas V. Pickett, Senior Project Manager
Plant Licensing Branch I-1
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation

Docket Nos. 50-317 and 50-318

Enclosure:
Request for Additional Information

cc w/encl: Distribution via Listserv

Distribution:

PUBLIC LPL1-1 r/f RidsOgcRp RidsAcrsAcnwMailCenter
RidsNrrDssSrxb RidsNrrDorlLp1-1 RidsNrrPMCalvertCliffs RidsNrrLASLittle
SSun, SRXB GDentel, R1

ADAMS Accession No. ML101110032

OFFICE	PM/LPL1-1	LA:LPL1-1	BC/SRXB	BC/LPL1-1
NAME	DPickett	SLittle	AUises	NSalgado
DATE	04 /30/10	04 /28/ 10	04 /29/ 10	05 /07/ 10

OFFICIAL RECORD COPY