

January 20, 2004

Mr. George Vanderheyden, Vice President  
Calvert Cliffs Nuclear Power Plant, Inc.  
Calvert Cliffs Nuclear Power Plant  
1650 Calvert Cliffs Parkway  
Lusby, MD 20657-4702

SUBJECT: SAFETY EVALUATION REGARDING EFFECT OF MODIFICATION OF  
LIQUEFIED NATURAL GAS FACILITY ON SAFETY OF CALVERT CLIFFS  
NUCLEAR POWER PLANT, UNIT NOS. 1 AND 2 (TAC NOS. MC0188 AND  
MC0189)

Dear Mr. Vanderheyden:

By letter dated July 10, 2003, Calvert Cliffs Nuclear Power Plant, Inc. (CCNPPI), informed the Nuclear Regulatory Commission (NRC) that Dominion Cove Point LNG, LP, current owner and operator of the Cove Point terminal, would resume importation of liquefied natural gas (LNG) at their facility in July 2003. The July 10, 2003, letter also stated that Dominion planned to construct an 850,000 barrel LNG storage tank and put it in service in the fall of 2004. CCNPPI stated that it performed a bounding evaluation and determined that its 1993 hazards analysis which was approved by the NRC in August 1995 bounded the planned operation of the Cove Point Facility.

In its November 10, 2003, response to a September 11, 2003, NRC request for additional information, CCNPPI clarified that the proposed 850,000 barrel storage tank is in lieu of and not in addition to the two 600,000 barrel storage tanks proposed earlier and included in the 1993 study. As discussed in the enclosed safety evaluation, the NRC staff concludes that CCNPPI has demonstrated that the modification of the LNG facility will not invalidate the conclusions of the 1993 analysis.

Sincerely,

*/RA/*

Guy S. Vissing, Senior Project Manager, Section 1  
Project Directorate I  
Division of Licensing Project Management  
Office of Nuclear Reactor Regulation

Docket Nos. 50-317 and 50-318

Enclosure: As stated

cc w/encl: See next page

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ACCESSION NUMBER: ML033500123

\*Safety evaluation provided, no major changes made

OFFICE	PDI-1/PM	PDI-1/LA	EMCB	PDI-1/SC
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SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION  
REGARDING THE EFFECT OF MODIFICATION OF THE LIQUEFIED NATURAL GAS  
FACILITY ON SAFETY AT CALVERT CLIFFS NUCLEAR POWER PLANT, UNIT NOS. 1 AND 2

1.0 INTRODUCTION

By letters dated July 10, 2003, and November 10, 2003, Calvert Cliffs Nuclear Power Plant, Inc. (CCNPPI) informed the Nuclear Regulatory Commission (NRC) that Dominion Cove Point LNG, LP, current owner and operator of the Cove Point terminal, will resume importation of liquefied natural gas (LNG) at their facility. Since the facility is in relatively close proximity to the Calvert Cliffs plants, any accidental release of LNG will have some impact on the safety of the plant. The licensee was, therefore, requested to perform a safety evaluation and implement suitable safety measures. By letters dated June 7, 1993, and May 31, 1995, CCNPPI submitted to the NRC hazard analyses for accident scenarios which could occur in the LNG facility. By a letter dated August 31, 1995, the NRC approved these analyses. Since that time only one change was introduced into the design of the LNG facility. Most of the NRC approved analyses are, therefore, applicable to the current LNG facility. The only difference in design consists of constructing a single 850,000-barrel storage tank instead of two 600,000-barrel storage tanks. Since this tank stores significantly more LNG, the licensee was required to update its hazard analyses.

2.0 EVALUATION

Because of the similarity in design of the 600,000 and 850,00-barrel tanks, the probability of failure for each individual tank be considered to be the same. Therefore, modification of the LNG facility would result in reducing the total number of tanks, decreasing the probability of tank failure by about 17 percent. However, a larger volume of LNG released from the 850,000-barrel tank will increase the maximum hazard distance based on the 3 psi overpressure criterion. The increase of this distance is proportional to one-third power of the quantity of LNG involved in the explosion. The maximum hazard distance for the 600,000-barrel tank was reported to be 0.2 miles in the previous submittal, so the maximum hazard distance for the 850,000-barrel tank will be 0.22 miles. Since the tank is located 3.6 miles from the Calvert Cliffs plant, the hazard distance will not stretch closer than 3.38 miles from the plant. At this distance, an LNG explosion would cause no damage to the plant.

The NRC concluded, in its August 31, 1995, safety evaluation, that safety measures must be established such as Coast Guard restrictions on traffic and contingency plans in order to meet the risk acceptance criteria of the Standard Review Plan, Section 2.2.3. Because there were no plans for importing LNG by ship when the NRC issued its safety evaluation in August 1995, the use of Coast Guard restrictions on traffic or contingency plans was not necessary. However, the staff required that the licensee inform the NRC if shipping LNG was resumed and to identify the additional actions that would be taken, such as Coast Guard restrictions or other contingencies. In its letter dated July 10, 2003, Constellation Energy stated that the Coast Guard committed to establish approach and docking procedures that keep vessels outside the

3.4-mile range from CCNPP. The 3.4-mile exclusionary zone is the basis for the 1993 hazards analysis. Other actions include the installation of an automatic ring-down phone and radio communication between the CCNPP control room and the Cove Point Monitor House, and a Letter of Agreement between Dominion Cove Point LNG, LP and CCNPP addressing communications protocol.

### 3.0 CONCLUSION

The NRC staff reviewed the modification to CCNPPI's 1993 safety analysis which was required in order to allow replacement of two 600,000-barrel LNG storage tanks by a single 850,000-barrel storage tank at the LNG facility. Based on the results of its review, the staff concludes that CCNPPI has demonstrated that modification of the LNG facility will not invalidate the conclusions of the 1993 analysis and will ensure safe operation of the Calvert Cliffs plants.

In addition, the staff finds that appropriate safety measures have been established in the form of the Coast Guard restrictions and restoration of the LNG Contingency Plan.

Principal Contributor: K. Parczewski

Date: January 20, 2004