

March 12, 2007

CAL No. NRR-07-014

Mr. J. A. Spina, Vice President
Calvert Cliffs Nuclear Power Plant, Inc.
Constellation Generation Group, LLC
1650 Calvert Cliffs Parkway
Lusby, MD 20657

SUBJECT: CONFIRMATORY ACTION LETTER, CALVERT CLIFFS NUCLEAR POWER
PLANT, UNIT NO. 2 (TAC NO. MD4140)

Dear Mr. Spina:

This letter confirms commitments by Calvert Cliffs Nuclear Power Plant, Inc. in regard to Alloy 82/182 butt welds in the pressurizer at Calvert Cliffs Nuclear Power Plant (CCNPP) Unit No. 2.

The discovery, in October 2006, of five circumferential indications in three dissimilar metal (DM) welds on the pressurizer at the Wolf Creek Generating Station (Wolf Creek) raised safety concerns based on the size and location of the indications. At Wolf Creek, three indications were in the pressurizer surge nozzle-to-safe end weld, and two separate indications were in the safety and relief nozzle-to-safe end welds. These findings also indicated that significant concerns might exist with the inspection schedules for addressing the pressurizer weld concerns issued by the industry-sponsored Materials Reliability Program (MRP), in "Primary System Piping Butt Weld Inspection and Evaluation Guideline (MRP-139)."

The Nuclear Regulatory Commission (NRC) is concerned about the pressurizer surge nozzle-to-safe end weld indications, as this is the first time that multiple circumferential primary water stress-corrosion cracking (PWSCC) indications have been identified in a weld. This condition calls into question the degree of safety margin present in past structural integrity evaluations for flawed DM welds susceptible to PWSCC, since multiple stress-corrosion cracking flaws may grow independently and ultimately grow together, significantly reducing the time from flaw initiation to leakage or rupture. The size of the relief nozzle-to-safe end flaw is also of concern, as this flaw has a much larger aspect ratio than those assumed in the estimates used to establish the basis for completing the baseline inspections required by the industry-sponsored MRP. Larger aspect ratios could result in achieving a critical flaw size and rupture before the onset of detectable leakage.

The long-term resolution of this issue is expected to involve changes to the American Society of Mechanical Engineers Boiler and Pressure Vessel Code (ASME Code), and will involve changes to the NRC regulations in Title 10 of the *Code of Federal Regulations* (10 CFR), Part 50, Section 50.55a, "Codes and standards." The development of the NRC regulations, whether the rule adopts the ASME Code standards or defines separate requirements, will likely benefit from additional operating experience, continuing assessments, and analysis being conducted by the NRC and the MRP.

Until NRC regulations are revised, it is necessary to establish a minimum set of enhanced reactor coolant system (RCS) DM butt weld inspection expectations for nickel-based Alloy 82/182 pressurizer surge, spray, safety, and relief nozzle butt welds, including safe end welds, to supplement existing inspection and other requirements of the ASME Code and NRC regulations. In addition, enhanced monitoring of RCS leakage is needed to promptly identify any through-wall flaws in the pressurizer surge, spray, safety, or relief nozzle DM butt welds or safe end DM butt welds to prevent additional degradation from occurring. The above actions provide reasonable assurance that there is no undue risk to the health and safety of the public while the NRC regulations are revised.

The NRC communicated the need for near-term enhancements to the industry through public meetings held on November 30, 2006, December 20, 2006, and February 2, 2007. Licensees submitted letters voluntarily committing to the enhanced inspection and leakage monitoring requirements. After teleconferences with specific licensees held between February 12 through February 23, 2007, the licensees submitted supplemental commitment letters addressing the NRC staff's concerns regarding inspection, compensatory actions, and reporting.

In your letter dated January 30, 2007 (Agencywide Documents Access & Management System (ADAMS) ML070320127), you described actions you will take at CCNPP Unit No. 2 for the pressurizer dissimilar metal butt welds containing Alloy 82/182 material. These commitments address: 1) completion schedules for inspection/mitigation of the welds and 2) reporting requirements.

The NRC staff has reviewed these actions and commitments and agrees the actions and commitments are appropriate to address the potential of PWSCC of the applicable pressurizer DM butt welds containing Alloy 82/182 material. Enhanced RCS leakage monitoring is not necessary for CCNPP Unit No. 2, as your January 30, 2007, letter states you intend to mitigate these welds during the spring 2007 outage, which you entered on February 25, 2007.

Pursuant to Section 182 of the Atomic Energy Act, 42 U.S.C. 2232, you are required to:

- 1) Notify me immediately if your understanding differs from that set forth above;
- 2) Notify me if for any reason you cannot complete the actions and commitments within the specified schedule and advise me in writing of your modified schedule in advance of the change; and
- 3) Notify me in writing when you have completed the actions and commitments addressed in this Confirmatory Action Letter.

Issuance of this Confirmatory Action Letter does not preclude issuance of an order formalizing the above commitments or requiring other actions on the part of the licensee; nor does it preclude the NRC from taking enforcement action for violations of NRC requirements that may have prompted the issuance of this letter. In addition, failure to take the actions addressed in this Confirmatory Action Letter may result in enforcement action.

In accordance with 10 CFR 2.390 of the NRC's "Rules of Practice," a copy of this letter and your response will be made available electronically for public inspection in the NRC Public

Document Room or from the NRC's ADAMS, accessible from the NRC Web site at <http://www.nrc.gov/reading-rm/adams.html>. To the extent possible, your response should not include any personal privacy, proprietary, or safeguards information so that it can be made available to the Public without redaction. If personal privacy or proprietary information is necessary to provide an acceptable response, then please provide a bracketed copy of your response that identifies the information that should be protected and a redacted copy of your response that deletes such information. If you request withholding of such material, you must specifically identify the portions of your response that you seek to have withheld and provide in detail the bases for your claim of withholding (e.g., explain why the disclosure of information will create an unwarranted invasion of personal privacy or provide the information required by 10 CFR 2.390(b) to support a request for withholding confidential commercial or financial information). If safeguards information is necessary to provide an acceptable response, please provide the level of protection described in 10 CFR 73.21.

Sincerely,

/RA/

J. E. Dyer, Director
Office of Nuclear Reactor Regulation

Docket No. 50-318
License No. DPR-69

cc: See next page

Document Room or from the NRC's ADAMS, accessible from the NRC Web site at <http://www.nrc.gov/reading-rm/adams.html>. To the extent possible, your response should not include any personal privacy, proprietary, or safeguards information so that it can be made available to the Public without redaction. If personal privacy or proprietary information is necessary to provide an acceptable response, then please provide a bracketed copy of your response that identifies the information that should be protected and a redacted copy of your response that deletes such information. If you request withholding of such material, you must specifically identify the portions of your response that you seek to have withheld and provide in detail the bases for your claim of withholding (e.g., explain why the disclosure of information will create an unwarranted invasion of personal privacy or provide the information required by 10 CFR 2.390(b) to support a request for withholding confidential commercial or financial information). If safeguards information is necessary to provide an acceptable response, please provide the level of protection described in 10 CFR 73.21.

Sincerely,

/RA/

J. E. Dyer, Director
Office of Nuclear Reactor Regulation

Docket No. 50-318
License No. DPR-69

cc: See next page

Distribution:

PUBLICLPL1-1 R/F	RidsNrrLASLittle	RidsNrrDorlLp1-1
RidsRgn1MailCenter	RidsNrrOd	RidsNrrDorlOd
RidsNrrDci	RidsNrrDircs	RidsOEMailCenter
RidsEdoMailCenter	JLamb, EDO Region 1	DScrenci, OPA, Region 1
MMcLaughlin, Region 1	RidsNrrAdes	RidsNrrDciCpnb
TLupold, NRR	ESullivan, NRR	RPascarelli, NRR
RidsNrrPmDPickett	RidsAcrcAcnwMailCenter	RidsOgcRp

ADAMS Accession No. ML070660040

OFFICE	CPNB	DCI	LPL1-1/PM	LPL1-1/LA	LPL1-1/BC(A)	TECH ED	DIRS/TA
NAME	TLupold	ESullivan	DPickett	SLittle	JBoska	HChang	RPascarelli
DATE	3/09/07	3/09/07	3/09/07	3 / 09 /07	3/ 09 /07	2/ 28 /07	3/ 07 /07

OFFICE	CPNB/BC	DRP/D RGN 1	DORL/D	DCI/D	AD:DES	NRR/D
NAME	JTsao for TChan	DLew	JLubinski for CHaney	MEvans	JGrobe	JDyer
DATE	3 / 07 /07	3/09/07	3 / 09 /07	3/09/07	3/09/07	3/12/07

OFFICIAL RECORD COPY

Calvert Cliffs Nuclear Power Plant, Unit No. 2

cc:

President
Calvert County Board of
Commissioners
175 Main Street
Prince Frederick, MD 20678

Ms. Patricia T. Birnie, Esquire
Co-Director
Maryland Safe Energy Coalition
P.O. Box 33111
Baltimore, MD 21218

Mr. Carey Fleming, Esquire
Sr. Counsel - Nuclear Generation
Constellation Generation Group, LLC
750 East Pratt Street, 17th floor
Baltimore, MD 21202

Mr. Roy Hickok
NRC Technical Training Center
5700 Brainerd Road
Chattanooga, TN 37411-4017

Mr. Jay S. Gaines
Director, Licensing
Calvert Cliffs Nuclear Power Plant
1650 Calvert Cliffs Parkway
Lusby, MD 20657-4702

Resident Inspector
U.S. Nuclear Regulatory Commission
P.O. Box 287
St. Leonard, MD 20685

Mr. R. I. McLean, Manager
Nuclear Programs
Power Plant Research Program
Maryland Department of Natural Resources
580 Taylor Avenue (B wing, 3rd floor)
Tawes State Office Building
Annapolis, MD 21401

Regional Administrator, Region I
U.S. Nuclear Regulatory Commission
475 Allendale Road
King of Prussia, PA 19406

Ms. Kristen A. Burger, Esquire
Maryland People's Counsel
6 St. Paul Centre
Suite 2102
Baltimore, MD 21202-1631