February 25, 2003

Mr. Peter E. Katz
Vice President - Calvert Cliffs Nuclear Power Plant
Constellation Generation Group, LLC
1650 Calvert Cliffs Parkway
Lusby, Maryland 20657-4702

SUBJECT: CALVERT CLIFFS NUCLEAR POWER PLANT - NRC INSPECTION REPORT 50-317/03-004, 50-318/03-004

Dear Mr. Katz:

On January 27-30, 2003, the U.S. Nuclear Regulatory Commission (NRC) conducted an emergency preparedness (EP) supplemental inspection at your Calvert Cliff Nuclear Power Plant (CCNPP), Units 1 & 2. The inspection was conducted to assess the evaluation and corrective actions associated with the Calvert County public alert and notification system (PANS), which was not capable of being activated in a timely manner for a period of 84 days. This issue resulted in a violation with White significance and documented in Inspection Report No. 50-317/02-010 and 50-318/02-010. The enclosed report documents the supplemental inspection findings which were discussed on January 30, 2003, with Mr. Ron LeGrand and other members of your staff.

The supplemental inspection was conducted to determine if the root and contributing causes of the White finding were understood, to assess the extent of the condition review, and to determine if the corrective actions for risk significant performance issues were sufficient to address causes and to prevent recurrence. To accomplish these objectives, the inspector reviewed your root cause analysis and evaluation of extent of condition and conducted an independent inspection to assess your conclusions. Based on the root cause analysis, the NRC concluded that a sufficiently broad evaluation of the PANS issue was conducted and the planned/taken corrective actions were adequate to address the underlying causes of the violation.

Given your acceptable performance in addressing the PANS issue, the White finding associated with this issue will only be considered in assessing plant performance for a total of four quarters in accordance with the guidance in IMC 0305, “Operating Reactor Assessment Program.”

In accordance with 10 CFR 2.790 of the NRC's "Rules of Practice," a copy of this letter and its enclosure will be available electronically for public inspection in the NRC Public Document Room for from the Publically Available Records (PARS) component of the NRC's document system (ADAMS). ADAMS is accessible from the NRC Web site at http://www.nrc.gov/reading-rm/adams.html (The Public Electronic Reading Room).

Sincerely,

/RA/

Wayne D. Lanning, Director
Division of Reactor Safety

Docket Nos: 50-317, 50-318
License Nos: DRP-53, DRP-69

Enclosures: Inspection Report 50-317/03-004, 50-318/03-004

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U.S. NUCLEAR REGULATORY COMMISSION

REGION I

Docket Nos:	50-317, 50-318
License Nos:	DRP-53, DRP-69
Report Nos:	50-317/03-004, 50-318/03-004
Licensee:	Constellation Generation Group
Facility:	Calvert Cliffs Nuclear Power Plant Units 1 and 2
Location:	1650 Calvert Cliffs Parkway Lusby, MD 20657-4702
Dates:	January 28-30, 2003
Inspector:	N. McNamara, Emergency Preparedness Inspector, DRS, RI
Approved by:	Richard J. Conte, Chief Operational Safety Branch Division of Reactor Safety

SUMMARY OF FINDINGS

IR 05000317/03-004, IR 05000318/03-004; on 02/28-30/2003; Calvert Cliffs Nuclear Power Plant, Units 1&2. Supplemental Inspection Report - Violation - White significance.

The emergency preparedness (EP) supplemental inspection was performed onsite by a region-based inspector. No findings were identified. The NRC's program for overseeing the safe operation of commercial nuclear power reactors is described in NUREG-1649, "Reactor Oversight Process," Revision 3, dated July 2000.

Cornerstone: Emergency Preparedness

The NRC performed this supplemental inspection to assess the licensee's evaluation and corrective actions regarding 49 of 49 sirens located in Calvert County, Maryland, which are part of the CCNPP public alert and notification system (PANS), which was incapable of being activated in a timely manner for 84 days. During this supplemental inspection, performed in accordance with Inspection Procedure 95001, the inspector determined that Constellation Generation Group performed a comprehensive evaluation of the PANS issue. Constellation Generation Group's evaluation identified the primary root cause of the PANS issue to be insufficient ownership by CCNPP of the PANS transmission system maintained by Calvert County which resulted in a County contractor inadvertently removing a computer icon for activating the PANS and rendering it inoperable.

Given the licensee's acceptable performance in addressing the siren issue, the white finding associated with this issue will only be considered in assessing plant performance for a total of four quarters in accordance with the guidance in IMC 0305, "Operating Reactor Assessment Program." Implementation of the licensee's remaining corrective actions may be reviewed during future inspections.

Report Details

01. INSPECTION SCOPE

The NRC performed this supplemental inspection to assess Constellation Generation Group's evaluation associated with the Calvert County PANS not being capable of activating in a timely manner for 84 days. The inspection scope included a review of the associated Root Cause Analysis Report (IR200100847), Incident Reports, program procedures and the adequacy of the completed corrective actions. In addition, interviews were conducted with the PANS engineer, EP PANS representative, and selected Root Cause Analysis Team members involved in the generation of the Root Cause Report and its associated corrective actions. In addition, during the last program inspection conducted in July 2002, the inspector visited the Calvert County 911 Center to verify: (1) that the correct icon was back in place for activating the PANS; (2) that the short term corrective actions were adequate; and (3) that 911 Center dispatchers and supervisors who routinely operate and test the system were trained properly on the new activation procedures. A list of documents reviewed is attached.

02. EVALUATION OF INSPECTION REQUIREMENTS

02.01 Problem Identification

a. Determination of who (i.e., licensee, self-revealing, or NRC) identified the issue and under what conditions.

While performing the 2001 annual full cycle PANS test, Constellation Generation Group and personnel from the Calvert County 911 Center discovered that all 49 sirens located within Calvert County had not actuated. Calvert County personnel determined what caused the activation problem and had corrected the problem within 30 minutes of the failed test.

b. Determination of how long the issue existed, and prior opportunities for identification.

Constellation Generation Group determined that the PANS was not capable of being activated for 84 days in a timely manner prior to the full cycle test. An investigation by Constellation Generation Group determined that in May 2001, Calvert County notified the Emergency Planning Group that work would be performed on the computer icons which took place in July 2001. The licensee did not test the sirens following the work that was performed on the computer icons which may have identified the problem prior to the annual test.

c. Determination of the plant-specific risk consequences (as applicable) and compliance concerns associated with the issue.

Due to the nature of this issue, this is not measurable in risk assessment terms. The means to alert and notify the public in a timely manner is a Risk Significant Planning Standard (RSPS), and according to the EP Significant Determination Process (SDP), failure to meet this RSPS is considered of moderate to high safety significance (Yellow). However, Manual Chapter 0609, Appendix B, Section 1, "Failure to Meet a RSPS," and

the EP SDP recognizes that a finding placed in context through the SDP can potentially result in a color (e.g. Green, White, Yellow, Red) that exceeds the actual impact on public health and safety. In this case, the NRC considered that (1) the system was capable of sounding and notifying the public within 30 minutes if the system was needed to be activated during the 84-day period (this was based on the time the County identified and fixed the icon problem); (2) prior to the activation of the sirens, 55 emergency vehicles would be placed in the field to begin automatic route alerting simultaneously with initial siren activation (this activity supplements coverage provided by siren activation); and (3) there were no significant equipment problems found to prevent the actual sounding of the sirens as demonstrated on November 15, 2001, during a retest in which 100% of the sirens sounded. Accordingly, the NRC determined that the capability of meeting the function of alerting the public was met, but not in a timely manner. The significance of the problem was the length of time the problem was undetected. Therefore, the NRC concluded that the siren activation problem did not have a substantial safety impact on the EP Cornerstone Objective and was considered to be of low to moderate safety significance (White).

02.02 Root Cause and Extent of Condition Evaluation

a. Evaluation of methods used to identify the root causes and contributing causes.

A cross-disciplinary Significant Incident Finding Team (SIFT) used formal assessment techniques to determine the root and contributing causes. The team first developed a sequence of events timeline and used a Causal Factor Charting and Barrier Analysis to determine the cause. The analysis was based on the Causal Analysis Handbook and the "Causal Analysis" procedural requirements of QL2-101.

b. Level of detail of the root cause evaluation.

The licensee's root cause evaluation was thorough and identified several contributing causes. Some of which included: (1) inadequate communication of the changes in the siren activation system between the County and CCNPP personnel which may have led to post maintenance testing; (2) weak configuration control; (3) insufficient training and lack of experience of the 911 Center dispatchers; (4) inadequate detail in the activation procedures; and (5) insufficient ownership of the transmission system and insufficient sponsorship of good practices used at CCNPP.

c. Consideration of prior occurrences of the problem and knowledge of prior operating experience.

The County computer system had two icons that appeared to be available for activating the PANS. Apparently, one of the two icons was inoperable. During a November 2000 test, the inoperable icon was inadvertently selected which resulted in a failed test. County personnel immediately activated the other icon which actuated the sirens. (Instead of removing the inoperable icon, it was the operable icon that was removed by mistake in July 2001). CCNPP Engineering Section personnel questioned Calvert 911 Center personnel after the 2000 test but the county response was that the test passed. No incident report was written to document the wrong icon being used. The SIFT determined that the 2000 test may have been a precursor to the 2001 event in that it

was “an opportunity to recognize that there was confusion about icon functionality and that an icon was not working. If either issue had been pursued, the likelihood of deleting the wrong icon in 2001 would have been decreased or eliminated.” There was insufficient critical observation and second checking of county actions affecting siren activation. In addition, in July 2001 Constellation Generation Group missed an opportunity to perform post maintenance testing of the icons following work performed by a county contractor in July 2001.

d. Consideration of potential common causes and extent of condition of the problem.

The SIFT considered a broad range of potentially related equipment and human performance issues in assuring that the extent of condition and generic implications were corrected. Constellation Generation Group immediately verified that a similar condition did not exist with the PANS activation system in the other two counties and reviewed activation procedures at all three counties and made appropriate changes. The SIFT also considered if sabotage was one of the possible causes of this event and concluded that there was no evidence to support any allegation of sabotage. The SIFT found that a similar problem occurred outside of the EP program where issues of ownership were a root cause. They reviewed the actions associated with that issue and found the PANS was not included in the extent of condition review. Constellation Generation Group issued Report No. IR4-012-477 to perform a broader plant-wide assessment of the interfaces between site organizations and non-CCNPP organizations to ensure that appropriate oversight and management controls were in place when work responsibilities are delegated to off-site groups. The assessment was still ongoing at the time of the inspection.

02.03 Corrective Actions

a. Determination that appropriate corrective actions are specified for each root/contributing cause.

Upon discovering the cause of the siren actuation problem, the missing icon was restored and a system test of the Calvert County PANS was conducted on November 6, 2001 which verified that all equipment was functioning properly without an actual activation. On November 15, 2001 the PANS was actually activated and was declared operable. Some of the long term corrective actions included: (1) review appropriate County Siren Activation procedures for all three affected counties; (2) train Emergency Planning and Plant Engineering personnel on the need to document conditions adverse to quality on Issue Reports; (3) define and implement standard and expectations which include roles and responsibilities for Constellation Generation Group and county personnel, configuration management, communications, training, procedure usage and post maintenance testing; and (4) emergency planning assigned one individual to be the point of contact or subject matter expert for sirens. In addition, the licensee has purchased a new siren system which is planned to be fully operational and tested by August 2003. The new system allows Constellation Generation Group to have complete ownership of the system. Although the counties will be responsible for activating the system during an actual event, Constellation Generation Group will maintain control of

the maintenance and routine testing of the system. The inspector determined that the corrective actions were specific to each root/contributing cause.

b. Determination that the corrective actions have been prioritized with consideration of the risk significance and regulatory compliance.

Immediate corrective actions were taken to appropriately mitigate the risk of the discovered condition. Long term corrective actions were given appropriate high priority and schedule emphasis.

c. Determination that a schedule has been established for implementing and completing the corrective actions.

The inspector determined that the licensee's schedule for implementing and completing the corrective actions was adequate.

d. Determination that quantitative or qualitative measures of success have been developed for determining the effectiveness of the corrective actions to prevent recurrence.

The following quantitative and qualitative measures were put in place for determining success for preventing recurrence: (1) the SIFT issued IR200100847 for tracking completion of all corrective and compensatory actions; (2) Constellation Generation Group utilizes the ANS performance indicator data for tracking siren performance; (3) incident reports will be generated if any siren test produces multiple failures; (4) any work performed on the PANS by a county contractor will be observed by the EP group; and (5) routine unannounced visits will be made to the County 911Center to observe siren tests.

03. MANAGEMENT MEETINGS

Exit Meeting Summary

The inspector presented the inspection results to Mr. LeGrand and other licensee personnel, at the conclusion of the inspection on January 30, 2003.

Attachment 1

SUPPLEMENTAL INFORMATION

KEY POINTS OF CONTACT

Calvert Cliffs Nuclear Power

G. Detter, Business Services Manager, Security and EP
E. Roach, Director, Emergency Preparedness
R. R. Woods, Sr. Emergency Planning Analyst
P. Pieringer, SIFT Team Leader
M. Yox, Regulatory Matters

Nuclear Regulatory Commission

F. Bowers, Sr. Resident Inspector
J. O'Hara, Resident Inspector

LIST OF ITEMS OPENED, CLOSED, AND DISCUSSED

Opened:	None	
Closed:	VIO 05000317;318/02-010-01	ANS was not capable of activating for 84 days in a timely manner
Discussed:	None	

LIST OF DOCUMENTS REVIEWED*

Calvert Cliffs Nuclear Response Emergency Plan
Calvert Cliffs Nuclear Response Implementing Procedures
Memo dated 5/30/01 Regarding CCNPP Siren Process
Priority 1 Causal Analysis - IR200100847
Priority 2 Causal Analysis, PANS Failure, PD 200200015
Integrated Risk Management, NO-1-117, Rev. 9
Calvert County Siren Activation/Testing Procedure 19-23
Additional Information Regulatory Safety Significant of Calvert County Siren Failures, March 2002
Sponsorship and Control Non-CCNPP Personnel, MN-1-113, Rev. 8
IR3-053-295, 49 of 49 sirens failed on 11/05/2002, dated 11/20/02
EP-1-106, Management and Configuration of the PANS, Rev. 0
ROP Cornerstone Health Report, 3rd Quarter, 2002
AI No. 1H200100188, Develop Comprehensive Troubleshooting Plan for determining cause of intermittent siren failures, Milestone No. 11.

LIST OF ACRONYMS

CCNPP	Calvert Cliffs Nuclear Power Plant
CFR	Code of Federal Regulations
CRs	Condition Report
EP	Emergency Preparedness
NRC	Nuclear Regulatory Commission
PANS	Public Alert Notification System
SDP	Significance Determination Process
SIFT	Significant Incident Finding Team