ENCLOSURE 2

U.S. NUCLEAR REGULATORY COMMISSION
REGION I

Report No. 85-72

Docket No. 50-317 50-318

License No. DPR- 53 DPR-69 Priority ----- Category C

Licensee: Baltimore Gas and Electric Company
P. O. Box 1475
Baltimore, Maryland 21203

Facility Name: Calvert Cliffs Nuclear Power Plant

Meeting At: NRC Region I, King of Prussia, Pennsylvania

Meeting Conducted: July 11, 1985

NRC Personnel: _____ 7/31/85
J. R. White, Senior Radiation Specialist date

Approved by: _____ 8/2/85
M. M. Shanbaky, Chief date
PWR Radiation Safety Section

Meeting Summary: Management meeting to discuss the licensee's actions, planned and completed, relative to numerous deficiencies identified in the implementation of NUREG-0737 items pertaining to post accident sampling and monitoring. Licensee representatives provided specific information relative to NRC concerns raised in NRC Inspection 50-317/85-16; 50-318/85-14, conducted June 24-28, 1985, as specified in a letter to J. A. Tiernan, Manager, Nuclear Power, from R. R. Bellamy, Chief, EFRPB, dated July 8, 1985.

DETAILS

1. Participants

Baltimore Gas and Electric Company (BG&E)

Mr. J. A. Tiernan, Manager, Nuclear Operations
Mr. L. B. Russell, Plant Superintendent, Calvert Cliffs
Mr. P. Crinigan, General Supervisor, Chemistry, Calvert Cliffs

Nuclear Regulatory Commission (NRC)

J. Allen, Deputy Regional Administrator
Thomas T. Martin, Director, Division of Radiation Safety and Safeguards, DRSS
Richard W. Starostecki, Director, Division of Reactor Projects
R. R. Bellamy, Chief, Emergency Preparedness & Radiological Protection Branch, DRSS
J. White, Senior Radiation Specialist, DRSS
Edward C. Wenzinger, Chief, Projects Branch No. 3, DRP
T. Elsasser, Chief, Reactor Projects Section 3C, DRP

2. Purpose

A special inspection, conducted June 24-28, 1985, to review the licensee's implementation of NUREG-0737, Items II.B.3, II.F.1-1,2,3 and III. D.3.3 (which are in reference to post accident sampling and monitoring capabilities) revealed several deficiencies in the licensee's program as noted in the attachment. A management meeting was held on July 11, 1985, to review the licensee's actions taken and planned relative to these findings and to determine the licensee's current status relative to certain applicable requirements for post accident sampling and monitoring.

License Presentation

The licensee representatives acknowledged the findings as generally accurate and representative of actual conditions during the NRC inspection, however it was indicated that their evaluation of these deficiencies so far revealed that the findings were limited to post accident sampling and monitoring efforts and did not have generic implications.

The licensee presented a status report for each of the items specified, which indicated that corrective action was completed, in progress or planned for each of the major deficiencies.

The following statements were specifically noted:

1. Valve 2-CV-5105 which failed to operate on June 26, 1985, preventing sample acquisition in the Combustion Engineering Post Accident Sampling System (CE-PASS), had been repaired; and that a sample could have been obtained the following day;

2. Several items remained to be resolved to reestablish the primary post-accident sampling capability, CE-PASS. However, the alternate sampling method using the Nuclear Steam Supply System (NSSS) sample sink and the Post Accident Sampling Apparatus (PASA), had been verified to be capable of post-accident sampling, with reference to personnel exposure considerations, procedure adequacy, and system operability;

3. A Facility Change Request detailing actions to resolve design problems with the CE-PASS has been submitted and approved within BG&E.

4. All post-accident sampling procedures have been incorporated into Emergency Response Plan Implementing Procedures;

5. RAYCHEM sleeving of the containment penetration connectors for the Containment High Range Radiation Monitoring System was an engineering recommendation but not essential or required to assure environmental qualification.

Other information specific to the findings of the inspection were also presented, including the preliminary results of a time and motion study conducted to determine if post accident sampling using the NSSS sink and associated PASA equipment could be done with the personnel dose limitations of GDC-19. The preliminary results indicated that while whole body exposures may be within the limits, extremity exposures exceeded the design criteria.

The licensee indicated that the management oversight for items pertaining to post-accident sampling and monitoring had been less than adequate, but that direct management involvement and oversight had now been established to assure successful resolution of findings. A management oversight plan which assigned implementation responsibility to the General Supervisor-Chemistry, and oversight responsibility to the Plant Superintendent and General Manager-Nuclear was outlined.

3. Conclusion

NRC representatives acknowledged the licensee's actions, but indicated that a special inspection would be conducted to verify the actions and results; determine if the findings were indicative of generic or programatic breakdown, and determine if causal factors had been adequately identified and addressed.

UNITED STATES
NUCLEAR REGULATORY COMMISSION
REGION I
631 PARK AVENUE
KING OF PRUSSIA, PENNSYLVANIA 19406

Enclosure 2
Attachment

JUL 08 1985

Docket Nos. 50-317
50-318

Baltimore Gas and Electric Company
ATTN: J. A. Tiernan, Manager
Nuclear Power
P.O. Box 1475
Baltimore, Maryland 21203

Gentlemen:

This is to confirm our telephone conversation of June 28, 1985 and a management meeting that will be held on July 11, 1985 at 1:00 p.m. at NRC Region I. The purpose of this meeting is to discuss the findings of the recent NRC special inspection effort performed June 24-28, 1985, pertaining to the post accident sampling and monitoring requirements of NUREG-0737. Attached is a preliminary listing of the principal findings of the inspection that were brought to your attention in the exit interview conducted by Mr. J. R. White of our office on June 28, 1985.

At this meeting, you should be prepared to discuss actions taken or planned to effect acceptable capabilities in post-accident sampling and effluent monitoring, including design changes, modifications, procedure improvement and implementation schedules. We are particularly interested in your plans to improve management control, including planning, organization and coordinating of efforts in this area to achieve timely and complete resolution of these findings.

Sincerely,

Ronald R. Bellamy

Ronald R. Bellamy, Chief
Emergency Preparedness and
Radiological Protection Branch
Division of Radiation Safety
and Safeguards

Attachment: As Stated

cc w/encl:
A. E. Lundvall, Jr., Vice President, Supply
R. M. Douglass, Manager, Quality Assurance
L. B. Russell, Plant Superintendent
Thomas Magette, Administrator, Nuclear Evaluations
R. C. L. Olson, Principal Engineer
R. E. Denton, General Supervisor, Training and Technical Services
Public Document Room (PDR)
Local Public Document Room (LPDR)
Nuclear Safety Information Center (NSIC)
NRC Resident Inspector
State of Maryland (2)

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bcc w/encl:
Region I Docket Room (with concurrences)
Senior Operations Officer (w/o encl)
DRP Section Chief
T. Martin
E. Wenzinger
T. Elsasser
M. Shanbaky
J. White

ATTACHMENT 1

Review of II.B.3. - Post Accident Sampling Capability

NRC review in this area was directed towards assessing the licensee's capability to promptly obtain reactor coolant and containment atmosphere samples without incurring personnel exposures in excess of GDC 19 values. Based on the following observations, it was concluded the licensee's post accident sampling system (PASS) did not satisfy the requirements of NUREG 0737.

A. Reactor Coolant Sampling and Analysis

On-line System: Primary Sampling Capability

Review of various records and a functional test of the PASS system identified the following problems:

1. A coolant sample was not obtainable during PASS system drill.

2. Maintenance records indicate high system unavailability, with consequent negative impact on training and procedure development.

3. No complete, integrated test, utilizing all of the systems on-line equipment, has been performed.

4. PASS system capability to draw a low pressure RCS sample via LPSI has not been demonstrated.

5. PASS system analytical instrumentation has not been tested utilizing the standard test matrix.

6. No evaluation or verification of the PASS systems dilution capability has been performed.

7. The single test of the PASS system on-line isotopic analysis capability (performed 6/10/85) demonstrated errors of as high as a factor of 80 when compared to a sample taken and counted by normal methods.

8. The emergency procedure controlling operation of the PASS system was not useable. This procedure was out of date and did not reflect current design configurations.

9. The operator responsible for obtaining a sample during the PASS system drill did not appear familiar with the control panel. Time was spent in searching for valves and an incorrect valve was operated during the drill. The operator was also not aware that two separate keys

were needed to operate key control isolation valves on the system and initially responded to the panel with only 1 key. Additionally, the key set used was not able to operate all key controlled valves for both units, as originally intended by the licensee.

10. The time and motion study that evaluated obtaining a PASS sample only identified times for performing certain tasks and did not consider the exposure received in performing the task.

11. No procedure has been established for use of the ion chromatograph for chloride analysis.

B. Grab-Sample Backup Capability:

The licensee's Technical Specifications require a grab sample capability in the event of failure of the primary, on-line system. NRC assessment of this capability included a review of procedures, records, and a functional test of system performance. Based on the following observations, it was concluded the licensee did not demonstrate the ability to obtain a coolant grab-sample without exceeding the exposure limits contained in GDC 19.

1. No personnel were formally trained in the operation of the back-up system.

2. There is no approved procedure for operating the system. An unapproved draft procedure was used by the licensee during the drill.

3. There was no shielding present around the sample rig to reduce personnel exposure.

4. No time and motion study had been performed to demonstrate that a sample could be collected and analyzed within GDC 19 criteria.

5. Primary coolant was forced out of the top of the column when the operator extracted the sample from the sample bomb. This resulted in a loss of the sample and hood contamination.

6. The draft back-up analysis procedure did not contain provisions for performing the following required analyses: hydrogen, pH, and dissolved gas.

7. The chloride analysis procedure does not meet the minimum detection capability required, i.e., .8 ppm as compared to .15 ppm.

C. Containment Air Sampling

The capability to collect a containment air sample was successfully demonstrated by the licensee. The following problems were noted.

1. There is no sample line flow indicator in the system to demonstrate that an acceptable flow of gas is occurring as the sample is drawn.

2. Remote handling tools, lead gloves and a lead-lined apron are specified for use during sample collection. This equipment was not available for use by the operator.

3. The time and motion study analyzing this sampling procedure did not evaluate exposures associated with performing this evolution.

4. The syringe used to extract gas for analysis was not rated to the gas pressure that may occur in containment, and did not have a locking capability to prevent gaseous release during sample acquisition.

Review of II.F.1., Attachment 1 - Noble Gas Effluent Monitor

NRC review in this area was directed to assessing the licensee's capability for noble gas effluent monitoring during accident conditions. The licensee uses a Wide Range Effluent Gas Monitor (WRGM) System to monitor the plant main vent and stack; the Main Steam Effluent Radiation Monitor System will, when operational, monitor noble gas releases from the main steam line.

A. Wide Range Effluent Gas Monitor System

NRC review of this system's design and operational capabilities identified the following problems:

1. No study or evaluation to determine representativeness of the sample being collected has been performed. Consequently, iodine and particulate to line loss due to plateout has not been quantified.

2. A study to determine the adequacy of the present heat tracing system under all ambient temperature conditions has not been performed.

3. The majority of necessary Surveillance Test Procedures and associated Preventive Maintenance Procedures covering this system have not been developed.

4. Emergency procedures do not specifically reference the use of the WRGM system as an input method for obtaining stack release rate. A study evaluating WRGM detector response to varying isotope mixes seen at different time intervals after the accident was not evaluated by Emergency Planning as to its affects on ERPIP 4.4.3, 4.4.5.

B. Main Steam Effluent Radiation Monitoring System

This system is currently in the calibration and testing stage and has not been declared operational by the licensee. Commitments for system operability are:

- End of current outage for Unit 1;
- By 12/31/85 for Unit 2.

NRC assessment in this area identified the following:

1. Procedures and training controlling the use, maintenance and operation of this system have not been developed.

2. Calibration data showing detector response to noble gas activity rather than dose rate was not available during this inspection. This data will be required to relate monitor readout (mr/hr) to main steam activity.

3. Information was not available during the inspection demonstrating that the attenuation of low-energy gammas by the main steam line piping had been considered in determining monitor response.

Review of II.F.1, Attachment 2 - Sampling and Analysis of Plant Effluents

The licensee is currently meeting II.F.1 Attachment 2 requirements for effluent monitoring of radioiodines in the accident condition by using the grab sample capability of the WRGM system. NRC review of this capability identified the following problems:

1. Potential iodine plateout during sampling has not been quantified. (see para. A.1 of previous section)

2. A time and motion study to evaluate if the grab sample could be obtained under accident conditions within the exposure guidelines of GDC 19 has not been done.

3. Chemistry techmicians have not received formal training in the procedure governing filter collection.

4. Procedures controlling the subsequent laboratory handling and analysis of the sample were not in place.

During a walk through of the filter removal procedure (RCP 1-405) the following problems were identified:

5. Removal of the filter cask took two technicians approximately 20 minutes. To expedite removal, one technician had to exit the area to get another wrench. A quick-release method should be evaluated.

6. Remote handling tools were not available in the lab.

Review of II.F.1, Attachment 3 - Containment High Range Monitoring

NRC review of this area was directed to verifying that the installed equipment was calibrated positoned and environmentally qualified to the specifications of NUREG-0737. The following was noted:

1. Physical review of Unit 1 indicated the protection measures to assure environmental qualification, such as the use of RAYCHEM shrink tubing on penetration-to-cable connectors, were not employed.

2. The Rockbestos cable used for the installation still remains to demonstrate environmental qualification.