U.S. NUCLEAR REGULATORY COMMISSION
REGION I

Report Nos. 50-317/91-25
50-318/91-25

Docket Nos. 50-317
50-318

Licensee: Baltimore Gas and Electric Company
MD Rts 2 and 4, P.O. Box 1535
Lusby, Maryland 20657

Facility Name: Calvert Cliffs

Inspection At: Lusby, Maryland

Inspection Conducted: October 21-25, 1991

Inspectors: _____ 11-29-91
J. E. Carrasco, Reactor Engineer, date
Materials Section, EB, DRS

_____ 11/29/91
A. Lohmeier, Sr. Reactor Engineer, date
Materials Section, EB, DRS

Approved by: _____ 11/29/91
E. Harold Gray, Chief, Materials date
Section, Engineering Branch, DRS

Areas Inspected: A special inspection by region-based inspectors was conducted to determine the status of the Independent Spent Fuel Storage Installation (ISFSI), and the containment tendon sheathing filler leak.

In addition, the inspection included the review of the engineering and technical support activity at CCNPP to ascertain that the reorganized engineering efforts discussed in inspection report 50-317/91-02 and 50-318/91-02 are providing for more effective engineering toward proper plant operation within its design basis and in compliance with Technical Specifications, Final Safety Analysis Report and Code of Federal Regulations 10CFR 50. Of special emphasis in this inspection has been examinatic · f the documented results of the engineering reorganization on improvement of engineerir performance.

Results: No violations or deviations were identified. The inspector noted that the ISFSI project in progress has effective project management, quality assurance and quality control. Engineering department organizational changes, involving extensive and complex system reviews, have been successfully implemented together with an effective performance indicator system which has revealed areas where improvement is appropriate.

1.0 Calvert Cliffs Independent Spent Fuel Storage Installation (37700)

1.1 Background

The licensee began commercial operation of Calvert Cliffs Nuclear Power Plants, Units 1 and 2 on May 8, 1975 and April 1, 1977, respectively. Since then, these two, 2700 MWT units have stored spent fuel assemblies in the common storage spent fuel pool.

As spent fuel accumulated in the licensee's pool, its storage capacity had to be increased. In 1978, the south half of the pool was reracked with higher density storage racks, increasing their capacity to 728 poisoned fuel racks. This expansion allowed the licensee to store 1358 fuel assemblies in the pool. By 1983, the entire pool had been fitted with these poisoned racks, yielding their current capacity of 1830 fuel assemblies. This capacity is sufficient to allow the licensee to maintain full core off load capability (Full Core Reserve-FCR) until the 1992 refueling of unit one.

1.2 Nutech Horizontal Modular Storage System

The licensee has requested permission from the NRC to build and operate an Independent Spent Fuel Storage Installation (ISFSI) in compliance with 10CFR 72. The licensee has selected the Nutech Horizontal Modular Storage system (NUHOMS-24). In this storage system, fuel assemblies are stored (in units of 24) in metal containers called Dry Shielded Canisters (DSC) which are then placed in concrete storage modules.

The licensee explained the operational principles of the system to the inspector through a video tape, and for the purpose of this report it is important to list the main operational components. The main components of NUHOMS-24 are the following: the on-site Transfer Cask, the Dry Shielded Canister (DSC), the Horizontal Storage Module (HSM), the Cask Lifting Yoke, the Vacuum Drying System (VDS), the Skid, the Skid Positioning System (SPS), the transfer trailer, the Hydraulic Ram System (HRS),and the Cask/HSM Restraint.

1.3 Findings

1.3.1 Licensee Requirements

The inspector was informed that the License Application, Safety Analysis Report (SAR), Environmental Report, and a security plan were completed and submitted to the NRC for review and approval. The existence of a topical report of the NUHOMS-24P system simplified the licensing process by application of an already-approved generic design.

The inspector reviewed the licensee's correspondence and determined that all the NRC questions were answered promptly. The NRC approved the licensee's Environmental Report on March of 1991. Almost immediately the licensee began the construction of the ISFSI on April 1 of 1991. The final Safety Evaluation Report is to be issued by the NRC. No licensing problems are anticipated since all the NRC questions were resolved.

1.3.2 Project Management

Based on the present project status, the inspector has identified several positive factors as follows:

The licensee's management has recognized the necessity to provide additional capacity to store spent fuel in order to maintain their full core reserve. To accomplish this objective, the licensee's management evaluated several alternatives and decided to build an ISFSI using the NUHOMS-24 system. The licensee's management initiated the planning of the project and the construction with a staff composed of qualified and motivated individuals.

The licensee's project management reviewed the pre-engineered design of the NUHOMS-24 system in order to oversee the progress of the project during all the phases of its development. They were also responsible for the selection of the lead contractor and their subcontractors.

The inspector noticed that the licensee's first line supervisors for the ISFSI project are in touch with the progress of the project. They are located in trailers next to the construction site and perform walkdowns and witness the activities already in progress (e.g., the in-situ testing and placing of the concrete).

1.3.3 Quality Assurance

The quality assurance program for Calvert Cliffs ISFSI covers the design, fabrication, construction, testing, operation, modification, and decommissioning of the structures, systems,and components of the ISFSI important to safety.

Based on the present project status, the ISFSI project has adequate and efficient quality assurance coverage of the project. The Senior Auditor assigned to the project is independent of the project organization and has direct access to the Calvert Cliffs site Quality Assurance Manager who in-turn reports to the Nuclear Energy Division Vice-president of Calvert Cliffs.

During a QA Commercial Grade Survey performed by the licensee's Senior Auditor on their project contractor on May 28 through July 3, 1991 at their field office located at the ISFSI, several discrepancies were noted on the soil testing work performed by a sub-contractor. Some of these discrepancies were: a) the equipment used for testing was out of contract specifications b) certifications of calibrations were not per contract specifications c) the wrong proctor and maximum densities were used in determining the results of the licensee's embankment compactions. This makes in-place density compaction reports inaccurate and field conditions unknown. As a result of this QA audit, the subcontractor was asked to cease site work and was replaced by another subcontractor. The work was resumed after pertinent corrections were made. The inspector found that this is evidence of good quality assurance practices and a demonstration of good management controls over the project.

1.3.4 Quality Control (QC)

At this point, the status of the project is the following: excavation and soil testing were completed, followed by the placing of foundations for phases 1 and 2 of the project. The reinforcing steel bars (rebar) in foundation 2B and walls are already in place and the concrete is being placed to complete the walls. The inspector reviewed some aspects of the quality control mechanisms used during the placement of the rebar and the pouring of the concrete.

During this process, the inspector witnessed some concrete placement activities and reviewed a sample of the Field Work Request/Order (FWR). The FWR is the QC document that is generated by the licensee's QC engineer, who is assigned full time to the project. The disposition of the FWR was performed by the cognizant contractor and, in some cases, the FWR is forwarded to Pacific Nuclear Fuel Services, Inc., holders of the patent for NUHOMS-2.4, for their engineering disposition.

Based on the review of FWRs KE-63 and KE-66, the inspector found the QC for the project to be adequate and acceptable.

1.3.5 Conclusion

Based on the inspector's review of the project management, the quality assurance and the quality control, the inspector concluded that, for those activities inspected, the ISFSI project at Calvert Cliffs is conducted in an acceptable manner and in accordance with industry standards and regulations.

2.0 Tendon Sheathing Filler Leak

Background

During the course of inspection Nos. 50-317/91-20 and 50-318/91-20, conducted on September 9-13, 1991, the inspector noticed that the containment structure of Unit 1 had a substantial leak of what appeared to be filler grease. The inspector notified the licensee's management of this condition. At the exit meeting, the inspector was informed that the licensee would assess the situation.

Finding

During the course of this inspection, the inspector was informed that the licensee discussed the issue with Bechtel's Calvert Cliffs Civil Group supervisor and the Civil Staff supervisor in September. The Bechtel Civil Staff supervisor said that this issue was raised by NRC inspectors on a number of projects. Based on Bechtel's knowledge of this design, there is no cause for concern of the effect of lubrication on the shear strength of the concrete. The tendon sheathing filler material has no significant effect on shear strength.

In October, the licensee again discussed the issue with Bechtel, who informed the licensee that they have no safety concern with the leaking tendon sheathing filler material. They added the fact that it is common on prestressed containments and is not a structural problem. The licensee has determined that this leak may be coming from what, at one dime, was a construction opening.

The grease has no structural function as it is strictly for corrosion protection. At this point, the inspector reaffirmed his concern erms of tendon's corrosion protection. The licensee stated that since the filler grease "Visconorust" has a coating agent, as well as rust-inhibitor, a film of lubricant forms on the tendon wires for long-term protection. The coating is assured by pumping from the bottom to avoid the formation of air pockets. Thus, even in the unlikely event of reducing the grease level from the top of a vertical tendon, the tendon will remain protected by the formed film. Therefore, there is no reason to postulate failure of the tendon as a result of corrosion.

The licensee added that even in the unlikely event that a tendon would sever, the effects to the containment structure would be negligible because, the containment analysis addresses the possibility of multiple tendon failures. In terms of long-term assessment, the licensee stated that an in-depth analysis will be performed by their contractor to give the licensee further assurance in regard to the integrity of the tendons.

Conclusion

The inspector concluded that the tendon sheathing filler leak is not an issue of immediate safety concern.

3.0 Charging Pump Suction Stabilizer Analysis

3.1 Background

During the inspection 50-317/91-20 and 50-318/91-20, conducted in September 9-13, 1991, the inspector inquired about the seismic qualification of the charging pump suction stabilizers. The licensee stated that an analysis would be performed to determine the adequacy of the as-built and as-designed configurations. This analysis would assure the operability of the 5 gallon suction stabilizer during normal operating and accident condition. This operability evaluation has been followed by an analysis to assure the structural integrity of the individual components of the stabilizer when subjected to a maximum combination of design load caused by the pipe reaction affects, seismic acceleration, internal pressure and mechanical loads.

On subsequent inspection followup communications, the licensee indicated that there is a report by Anamet Laboratories, Inc. (No.79.106), which was prepared for Greer Hydraulics, Inc. This report describes stress calculations to demonstrate the seismic adequacy of 5 gallon suction stabilizers for charging pumps supplied to Prairie Island by Greer Hydraulics. The inspector questioned the applicability of this seismic calculation for the suction stabilizer on Calvert Cliffs. The inspector noted that some of the dimensions used in the calculations of this report do not agree with the as-built dimensions at Calvert Cliffs. The licensee acknowledged this concern and indicated that an analysis will be conducted to determine the suitability of Anamet's report to the Calvert Cliffs uniqueness.

3.2 Findings

The inspector reviewed the licensee's records related to this safety concern. In a memorandum, dated September 27, 1991, the licensee described their evaluation. In order to verify the actual dimensions of the suction stabilizer outlet, two engineers from the Engineering Mechanics Division (EMD) walked down the #13 charging pump. Since the first flanged connection on the outlet of the stabilizer is at the charging pump, at the first glance it looks as if the nozzle runs from the stabilizer to the charging pump (approximately 37"). However, there is a buttweld within 5" of the outlet nozzle separating the nozzle from the piping (data point 190 as shown on BG&E drawing 91-238, Sheet 4, Revision 4). This length of the nozzle is less than the corresponding dimension, X6 on Page 5 of the design report 79.106 by Anamet Laboratories, Inc. This is conservative and maintains the applicability of the Design Report to Calvert Cliffs Nuclear Power Plant (CCNPP) charging pumps. According to BG&E drawing 12840-04, Sheet 1, Revision H, the licensee ordered the flange loose (not welded to the nozzle) and, apparently, opted to directly buttweld the pipe to the nozzle instead of using the flange. A buttweld joint between the nozzle and the pipe is equivalent to the flange connection.

Although, the pipe reaction loads assumed in the Anamet Report are less than the pipe reaction loads given in the BG&E's purchasing specification No. 298, Revision 3, for the stabilizer, there is no safety concern since the pipe reaction loads assumed in the Anamet Report are much greater than the actual pipe reaction loads. The inspector verified that communication between BG&E's consultant, Bechtel and BG&E are documented. The existence of the pipe spool piece welded to the outlet of the suction stabilizer (data point 190) and flange connected to the charging pump as shown on BG&E drawing No. 91-238, Sheet 4 of 5, Revision 4, was confirmed by Bechtel. This spool piece was analyzed on pipe stress problem No. 86. The reaction loads due to this spool piece on the suction stabilizer outlet nozzle are very small compared with the reaction loads shown on the Anamet report.

In addition, the licensee compared the design loads and temperature used in the Anamet Report to the specifications. The Anamet Report used the same design temperature of 250°F as the BG&E specification, Attachment No. 2. The design pressure used in the Anamet Report was 150 psig, which is almost twice as much as maximum inlet pressure to the charging pump (Attachment No. 2, BG&E specification). The Anamet Report analysis also assumed the stabilizer is rigid and used maximum combined seismic acceleration of 2.88g for 0.005 damping (Page 5), which is far greater than 0.25 vertical, 0.19 and 0.23 specified in BG&E specification, Attachment No. 3 for a rigid component during a design bases earthquake (DBE).

Furthermore, to increase the level of confidence, the licensee performed a hand calculation for nozzle stresses using the full length of pipe from the stabilizer outlet to the charging pump inlet. The resulting stresses were less than the code allowables.

3.3 Conclusion

The licensee found that the operability evaluation has resolved any immediate concerns with the charging pump suction stabilizers. The licensee's responsible engineer assigned to this task stated that there is a specific Calvert Cliffs analysis being developed by Bechtel. This analysis will give further assurance on the reliability of the seismic analysis. The inspector had no further questions regarding this matter.

4.0 Findings - Engineering and Technical Support

4.1 Performance Goals

The establishment of goals is important in providing for direction in both individual and collective efforts toward effective engineering operation. CCNPP engineering has used five corporate goals as a guide by which to measure engineering performance. These goals are as follows:

- Improve safety and quality
- Generate 10 million MWH
- Improve INPO and NRC ratings
- Set realistic commitments and meet them
- Manage expenses

These corporate goals are realistic expressions of the problems addressed by an operating nuclear power plant and present realistic targets by which engineering effectiveness may be measured.

4.2 Performance Indicators

Effective management of engineering departments is enhanced by having a graphic portrayal of engineering performance breakdown which separates the many parts of the engineering efforts and the state of completion toward the goals set for each part. Both the Nuclear Engineering Department and the Plant Engineering Department of CCNPP have provided for monthly performance indicators for the many piece parts of the total engineering effort. These performance indication reports have provided an effective means for management to target performance deficiencies and trends for corrective action as well as providing a means of presentation for regulatory review of the CCNPP engineering organization.

4.3 CCNPP Plant Engineering Performance

Review of plant engineering performance indicators indicates a generally positive trend in overall engineering performance.

At the time of the inspection, CCNPP established a record high in worker consecutive hours without time loss injury. This performance was a reflection of the success of a universal training and action effort to improve safety awareness and accident prevention skills. Personnel radiation doses received by plant engineering personnel were at 50% of targeted levels and avoidable skin and clothing contamination incidents were non-existent.

Rate of routine review of vendor manuals was maintained at the goal of a 25 manual backlog. Temporary modifications installed for more than 90 days have shown a steady decline from 100 to 60 since October 1990. Outstanding NRC action items have been steadily reduced from 70 in January to 54 in September.

Outstanding commitments have been reduced from 429 to 297 since January 1991. Outstanding action items have been reduced from 63 to 40 and outstanding NRC nonconformance items have been reduced from 221 to 156 over the same period. Response to engineering assistance requests was within goals since January 1991, and the total backlog was reduced from 127 to 115.

Although the number of maintenance orders (MOs) delayed pending engineering assistance fell steadily from 546 to 381 since January 1991, it was noted that the numbers of new delayed MOs has increased slightly.

During 1991, plant engineering staffing held at 75% of budgeted vacant positions, Baltimore Gas & Electric personnel overtime fell steadily to below the < 15% level goal, and the number of contractors fell from 50 to 23.

The foregoing plant engineering performance indicators indicate an overall improvement in most factors. These indicators provide for the appropriate direction of resource expenditure by management to optimize the rate of improvement of plant engineering efforts.

4.4 CCNPP Nuclear Engineering Department Performance

The CCNPP nuclear engineering department (NED) performance indicators show mixed performance since January 1991. During this time, there was a continued high level of mechanical and instrumentation and control support activity for the plant.

NED met their goal of completing 100% of commitments by due date.

The NED goal of reducing onsite staff augmentation contractors to 95 at year end was behind target in September with 109 contractors measured against the targeted 105 for that time. Overtime was slightly above forecast levels due to a continued high workload.

Positive results were indicated for fuel reliability and nuclear fuel expenses.

Problem reports resulting in an LER, NRC violation, availability reduction, personnel injury or an expenditure of > $15,000 have not occurred since May of 1990.

The increase in facility change requests (FCR's) received over the FCR's initiated is resulting in a growing increase in backlog. The influx in FCR related facility equipment changes (FEC's) is such as to result in a decreasing backlog. The ability of NED to issue FCR's on schedule is improving although still below a goal of 100%.

The Design Engineering Section's (DES) ability to issue engineering products without engineering rework is well below the goal of elimination of engineering rework. Nineteen percent of DES product changes are due to rework and 81% of DES product changes were result of field problems or scope changes. Development and trending of causes of engineering rework appears appropriate.

The plant design support unit output goal of 920 packages is projected to be met during 1991. At present, however, the output of 665 packages versus an input of 795 packages is below expectations. The plant design support unit backlog has increased from 156 in January to 298 in September. Revisions to plant design unit packages due to error show an increasing trend.

Review of the foregoing performance indicators indicate a mixed set of improvement and areas where goals have not been met. It is significant to note, however, that the performance indicators utilized by NED provide for an indication as to where the problems exist, such that management may provide for redirection of resources or strategic changes toward solution of the particular problems indicated.

4.5 Drawing Improvement Program

The licensee discussed with the inspector a program to provide for drawing improvements, establish CCI-700 procedures, and provide for resolution of drawing issues. The original project was initiated in October 1990. Since then, a need to focus on the process was evident and the project plan has since been revised.

It is through the emphasis on performance indication that the drawing issue has been highlighted for revision.

4.6 Engineering Action Item Tracking and Nonconformance Report Trends

The inspector reviewed charts of action item tracking. There has been a downward trend in design engineering action item backlog from as high as 909 items to as low as 515 items. However, during the recent months, the backlog has increased to 731 due to the introduction of many new items in October. The trend for completing items has increased, but there remains a continuing backlog of over 500 items.

Open nonconformance report (NCR) items has fallen slightly from over 2000 items, but has not fallen below 1800. Action appears appropriate to reduce the large number of open items base loading this system.

4.7 Engineering Participation in Procurement

The inspector discussed with procurement department personnel the participation of engineers in the procurement process. It was indicated by the licensee that the personnel in the procurement department held graduate engineering or science degrees and were, therefore, well qualified to provide for engineering decisions and communicate with the engineering departments. There is little problem with involvement of engineering in the procurement process.

4.8 Design Implementation Guide and Life Cycle Management

The licensee reviewed with the inspector the development of "Design Implementation Guides," in which a systematic review of all elements of the design and licensing requirements, design analysis, design output, design maintenance, and design validation process are tabulated for easy review. An example reviewed was that for the diesel system fuel oil subsystem parameters for No. 10 & 11 fuel oil storage tank capacity. This engineering initiative should provide for effective review of design implementation issues.

Life cycle management is being implemented for many areas of plant life degradation issues. Corrosion of salt water system components is one of such issues. Another example is the Reactor Vessel Surveillance Program Plan which provides input for low temperature overpressurization, pressurized thermal stress, operating curves, and license renewal programs. These activities are indicative of a mature engineering involvement in state of the art technological issues and is being supported by a management with a longer range perspective.

4.9 Engineering Training

The inspector reviewed student handouts for the CC1 700 series program. The program includes change control process overview, initiation of a design change, modification and equivalency modification, design change and modification implementation, equivalency evaluation, design change and modification package closeout, and drawing and technical data base change control. This training is indicative of an engineering department providing training for procedural implementation.

4.10 Review of Selected Modifications

Responsible licensee personnel reviewed with the inspector the participation of engineering in resolution of several modification and engineering issues. The reviews consisted of definition of the technical aspects of the problems, selection of appropriate means for resolution of the problems, implementation of the resolution, and results of the action taken. Included were review of planning, peer review of programs, technical description of equipment used in problem resolution, and regulatory submittals. The inspector considered the effectiveness of the engineering organization in providing for problem resolution. The following modifications were considered:

1) In response to Generic Letter 89-13, CCNPP engineering continues its involvement in a program to resolve the cooling water problem. Considered in this ongoing activity are the effects of biofouling on system performance, corrosion as a form of age related degradation, thermal hydraulic system review and programmatic review which includes upgrading procedures, evaluation of lessons learned and implementation of training. The effect of biological growth within the salt water system has been diminished by means of thorough and regular cleaning of the walls of the salt water inlet chambers which have provided for a bed of growing organisms. Coating the walls of the inlet sumps is being considered as a means of inhibiting organism growth. This activity is well managed by a project engineer with a team of participants including both design and plant engineers together with performance, licensing and operations personnel. Engineering appears to be addressing this general problem in a technically systematic manner.

2) Review of the program to evaluate the low pressure safety injection system check valves by licensee engineering has resulted in a decision to purchase replacement valves of a different design. This design has been used successfully in power plant applications throughout Europe. The new valves are being manufactured in Germany and will be tested in Delft, Holland. The progress in this design change project has shown CCNPP nuclear engineering to have carefully and effectively evaluated a significant engineering problem and provided for a sound resolution through evaluation of a new valve design concept. It was noted that the 10CFR 50.59 documentation for this problem had not been prepared at the time of this inspection, but the licensee assured it would be completed prior to installation and operation of the system.

3) The inspector reviewed with licensee engineers a project to replace the intake structure salt water air coolers and piping system with fresh air supply electric driven fans. The safety significance has been examined by the licensee in 10CFR 50.59 log 90-B-009-095-R1 of the FCR 85-0099. The pre-operational testing of the first delivery of the fans indicated a vibration problem in the fans. It was indicated that, although the fans were tested at the manufacturers' facility, the test structure was designed for the fan to be operated horizontally and was vertical. As a result, the vibration problem did not occur at that time. There was no BG&E witness to the test at the manufacturers facility since pre-operational testing was to be conducted at the CCNPP site. The fan manufacturer provided for reinforcement of the fan structure such that the vibration problem was eliminated. It would appear that closer examination and evaluation of the test program would have revealed differences between the test and installed support system.

4) While walking through the turbine building, the inspector noted turbine vibration measurement equipment on the floor. The licensee explained that the Unit 2 turbine had experienced heavy vibration of an exciter bearing as a consequence of an electrical storm disturbance of the generator. As a result of the forces of this disturbance, the shaft became misaligned. The realignment of the shaft was in progress at the time of the inspection.

From review of the foregoing modification and engineering issue resolutions, it appears that the CCNPP engineering department has demonstrated its ability to provide for effective resolution of engineering problems over a wide range of issues. The quality of the engineering process and its management was good in that appropriately thorough considerations were given the technical issues and the course of problem solution was effectively controlled by management. Although a problem did occur in this issue requiring replacement of purchased cooling system fans, there was adequate preoperational testing which uncovered the problem such that an appropriate resolution could be made.

4.11 Summary of Engineering and Technical Support Inspection

The inspector reviewed the wide range of engineering and technical support issues identified through performance indicators and discussion with personnel in the plant and nuclear engineering departments. As a result of this inspection, the following were noted:

1) The division of the engineering department into plant engineering and nuclear engineering functions appears to have been successfully implemented.

2) The performance indicator system is providing an effective management tool for identifying and evaluating areas in which resource adjustments are appropriate. The computerization of the performance graphic displays provides for clear identification of the problem areas.

3) Relating performance to established performance goals based on realistic issues of plant operation has been successfully carried out and provides a guideline for meaningful direction of engineering resources.

4) Implementation of modifications and resolution of engineering issues has demonstrated effective engineering procedures and technological input.

5) Performance indicators have identified areas of plant and nuclear engineering performance where focus or changes in resources might be appropriate.

6) Backlog reduction trends appear to generally show a downward (improving) trend, but the magnitude of the base load of backlogged items remains high. Drawing improvement efforts appear to be essential as well as NCR backlog reduction efforts.

7) Engineering efforts in development of design guidelines and life cycle management are indicative of a mature engineering organization having a far reaching focus on future issues expected in an operating plant.

The organizational changes involving extensive and complex system revisions have been successfully implemented together with an effective performance indicator system which has revealed areas where improvement of engineering performance may be appropriate.

No violations or deviations were identified.

5.0 Management Meetings

Licensee management was informed of the scope and purpose of the inspection at the beginning of the inspection. The findings of the inspection were discussed with the licensee representatives during the course of the inspection and presented to licensee management at the October 25, 1991 exit meeting. Attendees are identified in Attachment A.

ATTACHMENT A

Persons Contacted

Baltimore Gas and Electric Company

*L. Noll	Project Manager
T. Hoppe	Civil/Structure
C. Ludlow	Principal Engineer
*D. Graf	Manager Projects
*M. Milbradt	Nuclear Regulation
*B. Rudell	G.S. Project Management
*R. Denton	Plant Gen. Manager
*C. Ludlow	Principal Engineer
*C. Crusc	Manager NED
*S. Collins	Principal Project Engineer EEU
*D. Ward	Principal Engineer, CEU
*G. Detter	Director NRM
*R. Waskey, Jr.	G.S. - DES
*P. Katz,	Supervisor, Tech. Support
*M. Gahan, III	Principal Engineer
*L. Tucker	G.S. Plant Engineering

U.S. Nuclear Regulatory Commission

*A. Howe	Sr. Resident Inspector

*Identifies those attending the exit meeting