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U. S. NUCLEAR REGULATORY COMMISSION
Region I

Report No. 50-317/82-23
50-318/82-19

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, Units 1 & 2

Inspection At: Lusby, Maryland

Inspection Conducted: August 10 - September 14, 1982

Inspectors: D. N. Johnson for
R. E. Architzel, Senior Resident Reactor Inspector — 9/27/82 date signed

D. N. Johnson for
D. C. Trimble, Resident Reactor Inspector — 9/27/82 date signed

Approved by: Elo C. McCabe, Jr.
E. C. McCabe, Jr., Chief, Reactor Projects Section 2B — 9/27/82 date signed

Inspection Summary

Inspection on 8/10-9/14/82 Combined Report Nos. 50-317/82-23 and 50-318/82-19

Areas Inspected: Routine, onsite regular and backshift inspection by the resident inspector (148 hours). Areas inspected included the control room and the accessible portions of the auxiliary, turbine, service, and intake buildings; radiation protection; physical security; fire protection; plant operating records; maintenance; surveillance; plant operations; radioactive waste releases; open items; and reports to the NRC.

Violations: Two: Radiological Event not declared nor appropriate response taken, detail 6; and procedures not properly implemented, detail 4.b.

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DETAILS

1. Persons Contacted

The following technical and supervisory personnel were contacted:

G. E. Brobst, General Supervisor, Chemistry
J. T. Carroll, General Supervisor, Operations
S. E. Cherry, Principal Chemistry Technician
P. T. Crinigan, Senior Engineer
J. A. Crunkleton, Supervisor, Electrical Maintenance
C. L. Dunkerly, Shift Supervisor
W. S. Gibson, General Supervisor, Electrical & Controls
J. E. Gilbert, Shift Supervisor
R. P. Heibel, Principal Engineer, Technical Support
D. W. Latham, Principal Engineer, Operational, Licensing and Safety Unit
J. F. Lohr, Shift Supervisor
N L. Millis, General Supervisor, Radiation Safety
G. S. Pavis, Engineer, Operations
J. E. Rivera, Shift Supervisor
P. G. Rizzo, Engineering Analyst
L. B. Russell, Plant Superintendent
R. P. Sheranko, General Foreman, Production Maintenance
J. A. Snyder, Supervisor, Instrument Maintenance Unit 2
R. W. Talley, Jr., Assistant General Foreman, PMD
R. L. Wenderlich, Engineer, Operations
D. Zyriek, Shift Supervisor

Other licensee employees were also contacted.

2. Licensee Action on Previous Inspection Findings

(Closed) Violation (317/82-16-01) Inoperability of AFAS upon Entry into Mode 3. The licensee responded to this item in a letter dated 8/12/82. The inspector verified the corrective action which included revisions to STP O-62, Monthly Valve Verification, dated 8/18/82, to require verification that the turbine handswitches are not in Pull to Lock in Modes 1-3. OP-6, Plant Startup Checklist, requires that the STP O-62 lineup be performed prior to entering the respective mode.

(Closed) Unresolved Item (317/82-18-02) Type 2E Electrical Penetration Status. The inspector observed that the licensee had removed the cautions about not charging the four recently replaced CONAX electrical penetrations and that these penetrations were properly charged.

(Open) Performance Appraisal Team Potential Enforcement Item. In Inspection Report 50-317/82-01, 50-318/82-01, dated 4/14/82, the NRC Performance Appraisal Section (PAS) noted, in section 9.a.(1)(b), that once the initial training for non-licensed operators was completed for each watch station, there was no retraining conducted for those

personnel. In section 9.a (1)(e), the PAS noted that there was no retraining for the I&C and Electrical personnel.

Technical Specification 6.4.1 requires that a retraining and replacement training program be maintained under the direction of the General Supervisor-Training and Technical Services for the Nuclear Power Department which meets or exceeds the requirements and recommendations of Section 5.5 of ANSI N18.1-1971. Section 5.5 of ANSI N18.1-1971, entitled "Retraining and Replacement Training", states that "a training program shall be established which maintains the proficiency of the operating organization through periodic training exercises, instruction periods, and reviews covering those items and equipment which relate to safe operation of the facility...." On 9/9/82, the inspector discussed this item with the Supervisor of Operator Training who said that prior to the PAS inspection a retraining program for the Nuclear Power Department non-licensed operators had not been maintained. He also stated that an improved training program was under development for non-licensed operators. This program would provide both a supplement to initial training for replacement personnel and retraining to existing personnel. The Training Supervisor stated that currently an initial training program existed for replacement personnel and a retraining program for non-licensed personnel had been maintained since the PAS inspection which consisted of the attendance of non-licensed operators in selected licensed operator requalification training sessions. He noted that non-licensed operators were also kept informed of procedure changes by means of a required reading system. On 9/8/82 and 9/9/82, the inspector discussed the I&C and Electrical personnel retraining programs with the Unit 1 Instrument Maintenance Supervisor and the Electrical Maintenance Supervisor and reviewed Calvert Cliffs Instructions (CCI) 606, Maintenance Personnel Training, and 613, Qualification of Test and Inspection Personnel. CCI 606C, dated August 19, 1981, does establish a retraining program for maintenance personnel which requires that personnel be updated on changes to procedures, instructions, and that this be documented and that personnel receive additional periodic training as deemed necessary by the General Supervisor, Electrical Controls or the General Foreman. Both supervisors stated that the training on procedural changes was being accomplished. Only the Instrument Supervisor had been documenting that training. The inspector pointed out the need for documenting procedural change training to the Electrical Maintenance Supervisor. CCI 613B, dated April 13, 1982, requires initial certification and periodic certification reevaluation for personnel conducting and reviewing technical support, functional, or surveillance tests. Both supervisors produced documentation showing that personnel were receiving proper certification and reevaluation. Both stated that prior to certification their personnel received on-the-job training on the various tests. The licensee has assigned an individual to a supervisory position in the Training and Technical Services Group who will be tasked with improving the I&C and Electrical training programs. This PAS item is unresolved pending further inspector review of the adequacy of the licensee's retraining programs for non-licensed operators and Electrical and I&C personnel(317/82-01-65).

(Closed) Violation (317/81-11-02) Inoperability of Unit 1 Safety Valve Accoustic Monitor. This item concerned the operation of the plant while a Technical Specification Limiting Condition for Operation was being exceeded because Operations personnel were unaware of the inoperability of a safety valve acoustic monitor. The licensee's response dated August 31, 1982 stated that (1) a change to CCI 200, Maintenance Requests, would be issued making it mandatory to use deficiency tags to identify inoperable equipment, (2) a status system listing all inoperable equipment would be made available to the Shift Supervisor, and (3) a procedure would be formalized to ensure appropriate implementation of Technical Specification changes. On 9/9/82 the inspector reviewed CCI 200F, through change 1 dated April 27, 1982, and verified that it requires the use of deficiency tags. He verified that a CCI (125B dated 1/20/82) had been issued which adequately ensured implementation of Technical Specification changes. Additionally, he verified that the Shift Supervisor now received a maintenance request status printout listing all inoperable plant equipment.

(Closed) Violation (317/81-11-01) Failure to Make a Report to the NRC within Required Timeframe. This item concerned a failure to report, within one hour, as required by 10 CFR 50.72, an event necessitating the initiation of a plant shutdown. The licensee's response to this violation, dated 8/31/81, stated that the report to NRC was delayed due to personnel error and that existing administrative controls had been reviewed and determined to be adequate. On 9/10/82 the inspector reviewed CCI 118F, through change 4 dated July 1, 1982, and verified that it does require the reporting to the NRC of the above 50.72 item.

(Open) Inspector Follow Item (317/82-18-03) Resin Spill in Railroad Cask Pit. The inspector was notified on 8/12/82 that the Hittman HN 200 Cask which had been contaminated during the subject resin spill at the Calvert Cliffs Nuclear Power Plant had been received at Surry (a VEPCO plant) with removable contamination above that allowed by the Department of Transportation. (Reported to be up to 24,000 dpm/100cm2 on the cask (limit 22,000) and 3000 dpm/100cm2 on the truck bed (limit 2200)). The inspector reviewed the shipping papers for the HN 200 cask shipped to Hittman under permit 82-043 on 8/8/82. The survey performed on the cask on 8/7/82 was also reviewed. All smears were less than 1000 dpm/100cm2, within the licensee's limits for shipping. The cask had passed through a rainstorm enroute to Surry and radioactive material may have leached out of the cask. This item remains open and will be reviewed by NRC:RI.

(Closed) Unresolved Item (318/82-16-01) Nomenclature Error for Unit 2 Temperature Recorder, 2-TR-23/24. The licensee has initiated a Facility Change Request on 8/25/82 to change the nomenclature for the temperature points in question. The points will now be called the Reactor Cavity Shield Temperature, previously Containment Liner Temperature.

3. Containment Purging and Venting Survey

The inspector performed a survey of the current status of the licensee's containment purging and venting practices. Technical Specification amendments 65 and 47 issued on 2/1/82, now require that the containment purge supply and exhaust valves be closed in Modes 1-4. For calendar year 1981, the licensee recollected that only the Unit 2 containment had been vented for short periods of time in Modes 3 &4. Additional paths available for venting the containment include the hydrogen purge valves and the containment normal sump valves, both four inch lines. The Technical Specifications require that the hydrogen purge valves be closed in Modes 1-4. The normal sump drain line is the current path the licensee uses to vent the containments. Valves in question are four inch gate valves and have motor operators.They close on safety injection, hence containment pressure and low pressurizer pressure signals. The valve suctions are protected from debris, etc. by the containment sump screens. The containments are normally only vented to maintain containment pressure within Technical Specification limits.

No unacceptable conditions were identified.

4. Review of Plant Operations

a. Daily Inspection

The inspector toured the facility to verify proper manning and access control, and observed adherence to approved procedures and LCOs. Instrumentation and recorder traces were reviewed. Nuclear instrument panels and other reactor protective systems were examined. Control rod insertion limits were verified. Containment temperature and pressure indications were checked against Technical Specifications. Status of control room annunciators was reviewed. Stack monitor recorder traces were reviewed for indications of releases. Panel indications for onsite/offsite emergency power sources were examined for automatic operability. Control room, shift supervisor, tagout log books, and operating orders were reviewed for operating trends and activities. During egress from the protected area, the inspector verified operability of radiological monitoring equipment and that radioactivity monitoring was done before release of equipment and materials to unrestricted use.

These checks were performed on the following dates: August 11, 12, 13, 15, 16, 17, 24, 26, 27, 30, September 1, 2, 8,9, and 10, 1982.

On 8/10/82, the inspector noted that the Shift Supervisor was working 7:00 a.m. to 7:00 p.m. for the second straight day. A review of the schedule revealed that the Shift Supervisor was scheduled for 76 hours in seven consecutive days, including the next five, an amount greater than the amount specified in the NRC

policy on overtime. The Shift Supervisor acknowledged the inspector's comments and stated that an overtime authorization would be initiated, in accordance with CCI 140, Shift Staffing, to properly authorize the deviation. The inspector discussed adherence with the requirements of CCI 140 with the General Supervisor Operations (GSO). A GSO Notes and Instructions Book entry was made on 8/16/82 cautioning operators that they had individual responsibility to implement the administrative shift staffing requirements. The GSO also stated that the Shift Supervisors and scheduler would assist in identifying instances of deviations requiring approval. This inspector will follow a proper implementation of CCI 140. (317/82-23-06)

On 8/12/82, the inspector noted that the wind direction indicator for the 125 foot elevation was inoperable and a Maintenance Request (MR) had not been initiated. He informed the Reactor Operator and Shift Supervisor of the inoperable instrument, and a MR (0-82-4070) was initiated.

No unacceptable conditions were identified.

b. Weekly System Alignment Inspection

Operating confirmation was made of selected piping system trains. Accessible valve positions in the flow path were verified correct. Proper power supply and breaker alignment was verified. Visual inspections of major components were performed. Operability of instruments essential to system performance was verified. The following systems were checked:

-- Spent Fuel Pool Cooling System on 8/13/82.

-- Unit 1 Reactor Protection System on 8/17/82.

-- Unit 1 Containment Purge System on 9/2 and 9/3/82.

-- Miscellaneous Waste Processing System on 9/3/82.

-- Unit 2 High and Low Pressure Safety Injection Systems (22 ECCS Pump Room) on 9/10/82.

During the lineup check of the Spent Fuel Pool Cooling System, the inspector noted that numerous valves were not in the position specified by the latest revision of OI-24, Spent Fuel Pool Cooling System, revised 6/18/82. One of the valves in question, SFP-162, the Unit 2 Spent Fuel Pool Suction Siphon Breaker Valve, was closed. This valve was required to be locked open by the system operating instruction and was not noted as being out of position in the Locked Valve Deviation Log. The licensee immediately restored the valve to the locked open configuration. Twenty-eight valves were found out of their normal position or not in the position required by the

Operating Instruction. Discrepancies included valves out of position, valves with green and red tags and chains attached indicating locked valves which were not required to be locked by the Operating Instruction, valves locked in positions not specified by the Operating Instruction , etc. The inspector determined that the reason for the large number of locking devices on the valves was the recent change to the system operating instruction which deleted a large number of locked valves. The latest system lineup had been performed on 10/20/76. The inspector noted that for common systems such as the Spent Fuel Pool Cooling System, alignment checks are not required upon restarting of either unit following a refueling outage. The inspector noted that the system was aligned, as specified for major flow path valves, on a controlled copy of P&ID-OM-58, Spent Fuel Pool Cooling Systems, attached on the back wall of the Control Room. The inspector stated that failure to implement the requirements of OI-24 with respect to the alignment of the Spent Fuel Pool Cooling System was a violation (317/82-23-01).

c. Biweekly Inspection

Verification of the following tagouts indicated the action was properly conducted.

-- Tagout 34001, Unit 1 Charging Pump #12 seal cartridge repair, verified on 8/16/82.

-- Tagout 34975, Unit 1 Purge Supply and Exhaust Valves, dated 8/15/82, and related lifted wire posting 1-82-88, dated 8/15/82.

-- Tagout 2208, Unit 2 Safety Injection Tanks Motor Operated Valve Breakers (T.S. 4.5.1.c), verified on 9/10/82.

Boric acid tank samples were compared to the Technical Specifications. Tank levels were also confirmed.

d. Other Checks

During plant tours, the inspector observed shift turnovers, security practices at vital area barriers, completion and use of radiation work permits, protective clothing and respirators. The use and operational status of personnel monitoring practices, and area radiation and air monitors were reviewed. Equipment tagouts were sampled for conformance with TS LCOs. Plant housekeeping and cleanliness were evaluated. Other TS LCOs, including RCS - Chemistry and Activity, Secondary Chemistry and Activity, watertight doors, and remote instrumentation were checked.

On 8/13/82, the inspector observed a portion of the licensee's new fuel receipt inspections and reviewed the controlling procedure, "Fuel Handling", FH-1, Rev. 17.

On 8/27/82, the inspector noted that two piping penetrations in the Unit 1 Turbine Building to Service Water Pump Room wall were sealed only with kaowool. The penetrations were located immediately adjacent to the Service Water Pump Room south watertight doors at about the 19 foot elevation. Table 19-17A of the facility Updated Final Safety Analysis Report (FSAR) indicates that a single failure analysis had been performed for a Circulating Water Pump Expansion Joint, failure of which would result in turbine building flooding. The updated FSAR does not clearly state the watertight integrity requirements of the Service Water Pump Room. The text implies that no credit was taken for room watertight integrity above the 18 foot elevation. The inspector discussed this item with the Principal Engineer, Plant Engineering, who stated that a further review would be conducted of the Service Water Pump Room design requirements for watertight integrity. On 9/1/82, the licensee informed the inspector that the subject penetrations had been sealed. This item is unresolved pending licensee action to determine the pump room design requirements and subsequent NRC review (317/82-23-02).

On 9/3/82, the inspector noted that four of the eight "dogging" devices for the west watertight door to Emergency Core Cooling System (ECCS) Pump room 11 were inoperable in the open position. A Maintenance Request (O-82-1891) had been initiated to correct the problem on 5/8/82. The inspector discussed this with the Assistant General Foreman of Unit 1 Plant Maintenance and learned that completion of the door repair was scheduled for 9/8/82. On 9/10/82, the inspector verified that the door had been repaired.

On 9/7/82, the inspector verified through personal interview and training record review that a contractor employee working on the Auxiliary Feedwater System upgrade had received the training required by the licensee's procedure (CCI 602 E, through CHG 1, dated 12/18/81) for unescorted access to protected and vital areas.

During a partial walkdown of the Unit 1 Chemical and Volume Control System (CVCS), the inspector noted that four pressure transmitters are used as inputs to the CVCS isolation system (CVCIS), which is a part of the Engineered Safety Features Actuation System (ESFAS). Two of the transmitters are located in the West Piping Penetration Room area (27 and 10 foot elevations) and two are located in an adjoining Letdown Heat Exchanger Room on the 27 foot level.

Technical Specification 3.3.2.1, Table 3.3-3, requires CVCIS operability in Modes 1 through 4 and a minimum of three sensor channels to be operable in an implied two-out-of-four actuation logic. Table 3.3-4 specifies a CVCIS trip value of less than or equal to 0.5 psig. The inspector was concerned that the system may not properly actuate in the event of a single pressure transmitter failure because the rooms housing the transmitter (two transmitters per room) are physically separated with only small air passages (clearances through limited number of piping penetrations) between

the rooms causing delays in sensing pressure changes between transmitters. Furthermore, one room, the Letdown Heat Exchanger Room, is open to the remainder of the 27 foot elevation passageways and ventilation area (the rooms has only a wire cage door). The inspector, therefore, questioned whether pressure could ever rise sufficiently in the room to cause actuation. The inspector discussed his concern with the licensee's Principal Engineer, Operational Licensing and Safety. This item is unresolved pending licensee review of the adequacy of CVCIS design and further inspector review (317/82-23-03).

5. Review of Events Requiring One Hour Notification to the NRC

The circumstances surrounding the following events requiring prompt NRC (one hour) notification (per 10 CFR 50.72) via the dedicated telephone (ENS-line) were reviewed.

A BG&E employee was taken to Calvert Memorial Hospital at 11:30 a.m. on 8/15 by ambulance after suffering heat exhaustion in the Unit 1 Containment. Radioactive materials were not involved.

Unit 1 returned to Mode 1, at 4:15 a.m. on 8/7, following a three day outage to identify and correct Reactor Coolant System leakage. Pressurizer level deviated > ±5% and such deviations require NRC Operations Center Notification (4:05 a.m. and 12:15 p.m.). The licensee is pursuing a Technical Specification change for the Pressurizer Limiting Condition for Operation.

At 5:10 a.m. on 8/12/82, Unit 1 calculated unidentified Reactor Coolant System (RCS) leakage (1.3 gpm) was greater than the 1 gallon per minute (gpm) limit allowed by Technical Specification 3.4.6.2. The licensee informed the inspector of the problem about 8 a.m. and the NRC Emergency Operations Center at 9:49 a.m. A controlled unit shutdown was undertaken. About 11:10 a.m. a small amount of packing leakage was found on Charging Pump 12 and the pump was isolated. RCS unidentified leakage was recalculated and found to be less than 1 gpm (0.97 gpm), satisfying the T.S. requirements for continued operation. The licensee returned to full power and notified the NRC Emergency Operations Center at 11:28 a.m. The inspector confirmed the licensee's leakage rate calculation through an independent calculation using the hand calculation formula specified in STP O-27-1. On 8/13/82, the licensee shutdown Unit 1 to find and repair additional RCS leakage. The additional leakage was traced to a packing leak on a pressurizer instrument root valve. The leak was repaired and the unit returned to power operation on 8/17/82.

About 6:45 a.m. on 8/21, the licensee discovered a 1.8 gpm leak on Unit 1 Reactor Coolant Pump (RCP), 12B upper seal pressure instrument sensing line. The unit was shutdown and the leak repaired. During unit restart on 8/22, the Reactor tripped on low steam generator level due to operator error in attempting to pick up turbine load too rapidly. The NRC Emergency Operations Center was notified of the plant trip at 11:07 p.m.

on 8/22. A second unit restart was successful, and the unit returned to power on 8/23/82. The inspector discussed the instrument sensing line repair and the subsequent reactor trip with operations personnel. He had no further questions on these events. During the attempted plant startup on 8/22 and the successful startup on 8/23, pressurizer level deviated from its programmed band by more than the Technical Specification limit of 5%. The NRC was notified of the level deviations and the 8/23 level restoration by ENS calls.

At 2.47 p.m. on 8/25/82, a technician's error caused a partial Unit 1 Engineered Safety Features Actuation resulting in the starting of #11 HPSI pump, #11 LPSI pump, and #12 Diesel Generator. No water was actually injected into the Reactor Coolant System. The unit was operating at 100% power at the time. The technician was working in the wrong cabinet (logic cabinet AL vice sensor cabinet ZD) while conducting Surveillance Test Procedure (STP) M-220-1. He was attempting to simulate a high containment pressure on the ZD channel to partially test the Safety Injection Actuation circuitry; instead, the test signals were inserted at slide links into the portion of the logic system used for manual ESF actuation. The inspector discussed the event with operations personnel, reviewed STP M-220-1 (Rev. 4, approved 3/30/82), inspected the exterior of the cabinets to verify test leads had been disconnected, verified through the Shift Supervisor that the slide links had been returned to their normal position, and discussed the event with the technicians involved. The inspector had no further questions.

The Unit 2 Reactor tripped on low steam generator water level at 1:42 p.m. on 8/23/82 following the loss of #22 Main Feedwater Pump (MFP). The unit had been operating at 83% power. Following the trip, the inspector verified by means of the CEA mimic panel and reed switch position indication that all Control Element Assemblies (CEA's) had fully inserted. The inspector and the Reactor Operator assisting the inspector in verifying rod position noted that CEA bottom lights for CEA's 29, 40, 43, 47, 62, and 64 were inoperable on the mimic panel. Maintenance Request O-82-4251 was initiated to correct the problem. The inspector also verified that the Auxiliary Feedwater System was operating properly and maintaining adequate steam generator levels, that sufficient Condensate Storage Tank inventory existed, and that Reactor Coolant System temperature, flow, pressure, and pressurizer level were being maintained at proper values. Additionally, he reviewed the computer Sequence of Events alarm printout to verify the suspected cause of the reactor trip. The unit remained shutdown until 8/25 to conduct repairs on #22 MFP and a leaking hot leg sample valve (2-CV-5467). The cause of the MFP trip was a failed flex hose in the control oil system. During unit restart on 8/25 and 8/26, pressurizer level deviated by more than 5% from its program and the NRC was notified of the level deviation by means of an ENS call.

On 9/10/82 both Plant Hydrogen Analyzers were inoperable for about 40 minutes exceeding Technical Specification 3.6.5.1 Limiting Condition for Operation action statement requirements. One analyzer was undergoing

modification when the second analyzer was rendered inoperable due to misoperation resulting from an operating procedure error. This event will be reviewed during a future inspection (LER #317/82-53, 318/82-43).

6. Radioactive Waste Releases

Records and sample results of the following liquid and/or gaseous radioactive waste releases were reviewed to verify conformance with regulatory requirements prior to release.

Gaseous Waste Permit G-097-82, Modified Purge of Unit 1 Containment, released on 8/15/82. Group I release rate 2.08 E 5 m3/sec.; Group II release rate 5.82 E 1 m3/sec.

Gaseous Waste Permit G-098-82, Unplanned Release of #11 Waste Gas Decay Tank on 8/14/82. Group I release rate 5.96 E 4 m3/sec.

Liquid Permit M-133-82, Release of Miscellaneous Waste Monitor Tank 11 on 9/1/82; total released 1.07 E-4 curies, excluding tritium and noble gases.

Liquid Permit R-082-82, Pre-release Calculation for Reactor Coolant Waste Monitor Tank 12; total to be released 1.13 E-1 curies, excluding tritium and noble gases.

At 3:10 p.m. on 8/21/82, radiogas was detected in the Unit 1 East ECCS Pump Room. A "Radiological Event" was declared in accordance with the licensee's Emergency Plan. Investigation determined the source to be a left open sample valve (SI-363) on the #11 shutdown cooling heat exchanger. The leak was isolated. Licensee release calculations showed that the instantaneous release rate of gross activity was less than one percent of the Technical Specification limit. The radiological event was terminated at 5:30 p.m. On 8/23 the inspector discussed the event with operations personnel. He reviewed main vent radiogas, particulate, and iodine sample data taken during the event, and, through independent calculation, verified that Appendix B Technical Specification limits 2.3.B.1 and 2.3.B.2, regarding instantaneous release rates of gross activity, iodine, and particulates with half lives greater than eight days, had not been exceeded. The inspector had no further questions.

About 1:45 p.m. on 8/25/82, a small amount of radioactive airborne activity was released from the plant main vent during a sampling of the Unit 1 Volume Control Tank (VCT) gas space. The gas escaped from a leaking rubber surgical hose inside the sample hood area. Calculations showed that the resulting gaseous effluent release was approximately 5.5% of the Technical Specification limit for instantaneous release rate of gross activity. The inspector discussed the event with operations personnel and witnessed portions of the licensee's calculation of the effluent release. He also inspected the sample sink/hood area with Radiation-Chemistry Department personnel and verified that the hose was

in poor condition and was the probable cause of the event. The hose was immediately replaced by the licensee. The inspector inquired about how often the hose was replaced. The licensee stated that the hose has been replaced monthly and that, in the future, it would be inspected weekly. The licensee Chemistry General Supervisor stated on 9/14/82 that use of the hose has been discontinued and that a more substantially constructed septum assembly is now being used. Sample system alteration to the sample septum assembly will be reviewed during a future inspection (317/82-23-04).

During a log review on 8/15/82, the inspector noted that an unplanned release of radioactivity occurred at 3:16 p.m. on 8/14 when #11 Waste Gas Decay Tank (WGDT) was inadvertantly released versus #12 WGDT which was authorized and had decayed longer. The inspector interviewed operators and technicians and reviewed the associated release permits. The Auxiliary Building Operator had been directed to release the proper tank, however, several hours had lapsed since the direction was given and he chose the tank with the highest pressure to lineup. (Both #11 and #12 WGDTs were isolated with #13 WGDT on line.) Upon initiation of the release, the Control Room Operator noted that #12 WGDT pressure was not declining but that #11 WGDT high pressure alarm had cleared at 3:15 p.m.. The Unit 2 Main Vent Gaseous monitor alarmed. Peak counts recorded on the Unit 2 alarm typewriter was 1,540 counts per minute (cpm), and the alarm was cleared at 3:25 p.m. following termination of the release by the operators. The inspector questioned the Shift Supervisor (SS) concerning the event. A Radiological Event had not been declared as required by the Site Emergency Plan (SEP). Emergency Response Plan Implementing Procedure 3.6, Immediate Action-Radiological Event, revised October 2, 1981 requires that a Radiological Event Condition be declared, and appropriate response taken, if an Emergency Action Level has not been met or exceeded but conditions detailed on procedure Exhibit 3.6-B have been met. Exhibit 3.6-B lists any unplanned or uncontrolled Radiation Monitor Alarm ,including ventilation monitor alarms, as an event to assess the condition. The Unit 2 Main Vent Gaseous Alarm was an unplanned and uncontrolled alarm. The SS stated that no purpose would have been served in declaring a Radiological Event Condition in that the release had been terminated immediately upon discovery.

The inspector noted that the SEP directs the evaluation of unplanned releases to ensure that 10CFR50.72 reporting requirements are met. A Unit 1 Containment Purge was in progress on 8/15. The inspector noted that the calculated release rate was 54% of the instantaneous release limit yet the MV Gaseous Monitor had only reached a maximum of 400 cpm (background = 100 cpm) and questioned whether or not the licensee administrative limits had, in fact, been reached for making a 10CFR50.72 prompt notification of the NRC Operations Center. (10CFR50.72 requires reporting any unplanned release of radioactive material within one hour. The licensee reports any gaseous release exceeding 25% of the TS instantaneous limit pursuant to this section.) The inspector reviewed permit G-098-82 completed during the evening of 8/14 and noted that the

release was 25.3% of the TS limit. The SS (on 8/15) reviewed the SEP and noted that the peak reading only corresponded to 11% of the TS value. The technician performing the abnormal release calculation was not aware of the 25% threshold for 10CFR 50.72 reporting, but was ensuring that the release had not been over limits. Subsequent checks on 8/16 by licensee Chemistry personnel indicated that an improper configuration had been selected by the technician in calculating the release rate and that, in fact, the maximum was only 15% of the TS, therefore, no one hour report had been required. The inspector stated that failure to implement the Site Emergency Plan for this radiological event was a violation (318/82-19-01) which contributed to the mishandling of the analysis of the magnitude and reportability of the release. Correlation of the MV Gaseous monitor to actual radionuclides present in the effluent streams is a previously identified unresolved item (317/81-18-03).

7. Observation of Physical Security

The resident inspector checked, during regular and offshift hours on whether selected aspects of security met regulatory requirements, physical security plans, and approved procedures.

a. Security Staffing

-- Observations and personnel interviews indicated that a full time member of the security organization with authority to direct physical security actions was present, as required.

-- Manning of all three shifts on various days was observed to be as required.

b. Physical Barriers

Selected barriers in the protected area and the vital areas were observed. Random monitoring of isolation zones was performed. Observations of truck and car searches were made.

c. Access Control

Observation of the following were made:

-- Identification, authorization, and badging;

-- Access control searches;

-- Escorting;

-- Communications; and

-- Compensatory measures when required.

8. Review of Licensee Event Reports (LERs)

a. LERs submitted to NRC:RI were reviewed to verify that the details were clearly reported, including accuracy of the description of cause and adequacy of corrective action. The inspector determined whether further information was required from the licensee, whether generic implications were indicated, and whether the event warranted onsite followup. The following LERs were reviewed.

LER No.	Event Date	Report Date	Subject
Unit 1			
82-41	7/13/82	8/12/82	Channal A hi-power, thermal margin/low pressure & axial shape index units bypassed for preventive maintenance.
82-42	7/22/82	8/20/82	#12 Charging Pump operating at reduced capacity with #13 Charging Pump out of service.
82-43	8/02/82	9/01/82	#12 ECCS Pump Room Fan inoperable.
82-44	7/29/82	8/20/82	RPS Channel A axial shape index setpoint out of specification.
82-45	8/05/82	9/03/82	CEA 33 dropped to core bottom.
82-46	7/29/82	8/26/82	Channel A RPS Axial Shape Index indication out of calibration.
82-47	7/30/82	8/27/82	Channel C RPS low flow trip setpoint was nonconservative.
82-50	8/05/82	9/02/82	Pressurizer level deviated from program level by more than 5% several times.
Unit 2			
82-36	7/19/82	8/19/82	CTMT particulate radiation monitor inoperable.
82-37	7/30/82	8/26/82	Outer personnel air lock door opening mechanism inoperable.
82-38	8/07/82	9/03/82	Hot leg sample valve inoperable.
82-39*	8/24/82	9/07/82	Outer door of air lock door not secured.

b. For the LER's selected for onsite review (denoted by asterisks above), the inspector verified that appropriate corrective action was taken or responsibility assigned and that continued operation of the facility was conducted in accordance with Technical Specifications and did not constitute an unreviewed safety question as defined in 10CFR 50.59. Report accuracy, compliance with current reporting requirements and applicability to other site systems and components were also reviewed.

(Unit 2 LER 82-39) Containment Air Lock Door. About 10:30 a.m. on 8/24/82, both emergency air lock doors for the Unit 2 Containment building were opened simultaneously for a period of about two minutes. Containment pressure at the time of occurrence was 0 psig. A rush of air was heard through the doors resulting in a small, unplanned radioactive airborne release directly to the environment. Post release calculations showed that the resulting effluent release was 2.69 E-3% of the Technical Specification limit for instantaneous release rate of gross activity and 1.53 E-3% of the Technical Specification limit for release rate of I-131 and particulates with half-lives greater than eight days. The unit was in Mode 3 (hot standby) at the time and Containment building airborne activity was sufficiently low to allow personnel access without respirator protection in the area adjacent to the air lock. The inspector confirmed, through independent calculation, the licensee's estimate of radioactive airborne effluent release. Additionally, he reviewed the design of the air lock doors and interlocks preventing simultaneous door opening with personnel in the Production Maintenance Department. The door and interlock design appeared to be adequate. The licensee examined the door operating mechanism and reported that the interlock was functioning properly. The probable cause of the event was personnel error in door operation. The licensee believed that one of the doors was closed too rapidly causing the door to bounce off its seating surface preventing proper door latch engagement. Latch movement, though, was sufficient to satisfy the interlock to permit opening of the second door.

The inspector was concerned that the individual performing the release rate calculations delayed informing the Shift Supervisor of the results until the day following the incident. The inspector was also concerned that the Shift Supervisor, after not receiving the results within a reasonable time, did not ask for the information. The inspector discussed the delay in reporting the results with the Shift Supervisor, the individual performing the calculations and the General Supervisor of Operations. (317/82-23-07)

(Unit 2 LER 81-10/3L) Power Operated Relief Valve (PORV) Leakage. This LER involved the leakage of valve ERV-402 during plant heatup on 3/1/81. Valve leakage stopped after Reactor Coolant System (RCS) pressure reached 150 psig. The licensee believed that the valve

required increased system pressure in the main valve pressure chamber to force the valve disc closed. The inspector had two concerns about this event. First, he was concerned that the potential may exist for the PORV to open without operator action following a decrease in RCS pressure. Second, a statement in the valve vendor technical manual indicated that, during plant startup below 500 psig, the valve should be kept isolated. The inspector was concerned that the use of the valve for low temperature overpressure protection (about 400 psig) was, therefore, inappropriate. The inspector discussed the valve design with an Assistant General Foreman of the Plant Maintenance Department and a vendor technical representative. He also reviewed portions of the technical manual for a Type 31533VX-30 Electromatic Relief Valve (with bellows) made by Dresser Industries. The vendor technical representative stated that the valve will not open without operator action upon a decrease in system pressure. He further stated that sometimes leakage is experienced on plant heatups. Clearances between valves are small and additional system pressure may be required to force the valve closed. Once closed, however, the valve will not reopen or tend to leak when pressure is reduced. The technical manual supported the representative's statement in that it shows that the valve is held shut by a closure spring in addition to system pressure. The representative also stated that the valve will perform adequately as a relief valve at pressures below 500 psig provided that no more than ten feet of the pilot valve vent line has a diameter of one-half inch. The inspector reviewed BG&E isometric drawings FSK-MP-1102 and FSK-MP-3676 and verified that the vent piping had no more than ten feet of one-half inch diameter piping. The inspector had no further questions.

9. Plant Maintenance

The inspector observed and reviewed maintenance and problem investigation activities to verify compliance with regulations administrative and maintenance procedures, codes and standards, proper QA/QC involvement, safety tag use, equipment alignment, jumper use, personnel qualifications, radiological controls for worker protection, fire protection, retest requirements, and reportability per Technical Specifications. The following activities were included.

M-82-815, Observed portion of seal cartridge repair for Unit 1 Charging Pump #12 on 8/16/82.

M-82-6454, Observed a portion of the installation of a new faceplate on Unit 2 Control Room Panel 2C04 on 9/4/82. The work was being accomplished under Control Work Package (CWP) 79-1062 E.22-11 and is part of Facility Change Request (FCR) 79-1062 which upgrades the Emergency Feedwater System.

I-82-2138, Replace #21 Diesel Generator Jacket Cooling Water Pressure Switch, observed on 9/07/82. The replacement switch was of a different

range than the original switch (10 to 160 psig versus .5 to 25 psig) and was not capable of being set at the required trip point of 10 psig. Because the problem with the switch was an out of tolerance reset, and not trip value, the original switch was replaced and #21 Diesel Generator returned to operable status. Action was initiated to procure a replacement switch of the proper range.

No unacceptable conditions were identified.

10. Surveillance Testing

The inspector observed parts of tests to verify: Performance in accordance with approved procedures, LCOs were satisfied, test results (if completed) were satisfactory, removal and restoration of equipment were properly accomplished, and that deficiencies were properly reviewed and resolved. The following tests were reviewed.

STP 211-1, Unit 1 Secondary Control Element Assembly (CEA) position monitoring system out of sequence alarm verification, observed on 9/3/82.

STP M-213-2 (Rev. 7), Calibration of Power Range Instruments to Incore Instruments, observed on 9/8/82.

Testing of #12 Diesel Generator for operability while #21 Diesel Generator was out of service, observed on 9/7/82.

Observed Neutron Blackness Testing of the North Spent Fuel Racks, observed on 8/18/82.

No unacceptable conditions were identified.

11. Emergency Response Plan Exercise

On 8/10/82, the inspector observed portions of an Emergency drill simulating a Loss of Offsite Power and ruptured Unit 1 Refueling Water Tank (RWT). The inspector observed activities at the RWT, in the Control Room, and in the Emergency Control Center and attended the licensee's drill critique on 8/11/82. Licensee personnel were thorough in their evaluation of the drill and in identification of weak areas.

On 8/24/82, the inspector observed portions of an Emergency drill simulating an uncontrolled offsite release of radioactivity. The inspector observed activities in the Control Room and at the Alternate Emergency Control Center and attended the licensee's drill critique. As in the 8/10/82 drill, licensee personnel were thorough in their evaluation of weak areas. Senior licensee management personnel participated in the exercise and critique. The drills were conducted as part of the licensee's overall preparations for a larger September exercise.

12. Plant Operations and Safety Review Committee(PORSC)

The inspector attended POSRC meeting 82-117 held on 9/8/82 as an observer. The meeting was two and a half hours in duration. The meeting was conducted in accordance with the requirements of Technical Specification 6.5.1.6, including the provisions for quorum, membership, and frequency. Items reviewed were thoroughly addressed and included changes to (Fuel Handling, Radiation Protection, Administrative, Technical Support, Cask Handling, Radiation Chemistry and Chemistry) procedures, Technical Specification Change requests, safety analysis for selected changes, completed surveillance tests, Facility Changes pursuant to 50.59, QA Audit reports, Shop Lab Memos, and lifted leads and jumpers. No unacceptable conditions were identified. The inspector will review (317/82-23-05) the meeting minutes when issued to verify accuracy and confirm that committee recommendations are completed.

13. Review of Periodic and Special Reports

Upon receipt, periodic and special reports submitted pursuant to Technical Specification 6.9.1 and 6.9.2 were reviewed. That review included the following: Inclusion of information required by the NRC, test results and/or supporting information consistency with design predictions and performance specifications, planned corrective action adequacy for resolution of problems, determination whether any information should be classified as an abnormal occurrence, and validity of reported information. The following periodic report was reviewed:

July, 1982 Operations Status Reports for Calvert Cliffs No. 1 Unit and Calvert Cliffs No. 2 Unit, dated August 17, 1982.

No unacceptable conditions were identified.

14. Unresolved Items

Unresolved items are matters about which more information is required to determine whether they are acceptable. Unresolved items are discussed in paragraphs 4, 6, and 12 of this report.

15. Exit Interview

Meetings were held with senior facility management periodically during the course of this inspection to discuss the inspection scope and findings. A summary of findings was also provided to the licensee at the conclusion of the report period.