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October 10, 1989

U. S. Nuclear Regulatory Commission
Washington, DC 20555

ATTENTION: Document Control Desk

SUBJECT: Calvert Cliffs Nuclear Power Plant
Unit Nos. 1 & 2; Docket Nos. 50-317 & 50-318
Reply to Inspection Report No. 50-317/89-80; 50-318/89-80

REFERENCE: (a) Letter from Mr. R. M. Gallo (NRC) to Mr. G. C. Creel (BG&E), dated August 2, 1989, Inspection Report Nos. 50-317/89-80; 50-318/89-80

Gentlemen:

Enclosed is our response to the weaknesses identified in Attachment (4) of Inspection Report 50-317/89-80; 50-318/89-80 (Reference a).

Should you have any further questions regarding this matter, we will be pleased to discuss them with you.

Very truly yours,

GCC/MDM/dlm

Enclosure

cc: D. A. Brune, Esquire
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ENCLOSURE (1)

REPLY TO INSPECTION REPORT NO. 50-317/89-80; 50-318/89-80

We have reviewed the concerns identified within Attachment 4 of the Inspection Report. Our corrective actions or responses to each item are described below.

1. **REPORT ITEM NUMBER**

50-317/89-80-01

NRC Concern

Policy that the EOPs were to be used as guidance vice verbatim compliance.

BG&E Response

The response for this concern was provided in a letter from Mr. G. C. Creel (BG&E) to the NRC Document Control Desk, dated September 7, 1989.

2. **REPORT ITEM NUMBER**

50-317/89-80-02

NRC Concern

The CC EOPs were not consistent with the CEOG guidance of recommended procedures; specifically, there was not a procedure for loss of forced circulation.

BG&E Response

A loss of forced circulation procedure does exist at Calvert Cliffs. AOP-3E addresses natural circulation and can be entered from the diagnostic event flow chart in EOP-0. AOP-3E has been revised to include a step that has the operator perform the same Safety Function Status Check found in EOP-2. This status check will be continuously monitored when the AOP is entered unless directed otherwise by the AOP.

3. REPORT ITEM NUMBER

50-317/89-80-03

NRC Concern

Resolution of technical concerns identified in Attachment 2 of the report.

Generic Concern #1

When entry conditions for a procedure list an indication that will also annunciate an alarm, the alarm window title and location should be listed vice a subjective statement. Example: "Loss of Condensate . . . (c15) vice loss of condensate storage tank inventory.

BG&E Response

The Writer's Guide is being revised to require quoting any alarm window associated with a particular entry condition.

Generic Concern #2

Some meters that have high/low alarms associated with them also have markers on them that indicate what the alarm setpoint is, other meters do not. The facility should be consistent.

BG&E Response

The meters in Calvert Cliffs' Control Room are Versatile/Sigma 9220 series indicators. All indicators with setpoints associated with them are ordered with built-in alarms. The alarm arm appears as a red marker on the face of the indicator at the alarm setpoint. The design of these indicators requires an alarm arm to be present for the alarm function to work; therefore, any indicators without markers on them do not have alarm setpoints associated with them.

Generic Concern #3

When verifying a parameter as less than or greater than a setpoint, it should be clarified as to whether all indications must meet the criteria, only one indication, or an average of them all.

BG&E Response

The Writer's Guide is being revised to require specific instructions on how to address multiple indications (i.e., to use the high, low, or average).

Generic Concern #4

The latitude allowed to the ROs needs to be clarified with respect to the alternate actions within the EOPs. Some crews allow the ROs to take the alternate actions and then inform the CRS, other crews require the ROs to request permission from the CRS before performing the alternate action.

BG&E Response

Calvert Cliffs Instruction (CCi) - 300 is being revised to clarify this concern. The revision will allow all ROs to take the alternate actions before informing the Control Room Supervisor.

Generic Concern #5

It is recommended that at the top of each page within the EOPs, the steps be identified with the complete designator; i.e., III.E.1.b.

BG&E Response

The section within the Writer's Guide describing step numbering is being revised. It will now require the boxed function step number be placed at the top of all pages that contain sub-steps of the function.

Generic Concern #6

If it is not readily apparent to the operator where an action must be performed, then list within the procedural step the location; i.e., panel number, switchgear room, outside at the condensate tanks, etc.

BG&E Response

The Writer's Guide (Section VII.B.6.e) currently addresses the subject of providing locations for equipment that is seldom used or difficult to locate. An example of this can be found in EOP-2, page 19, Step III.W.1.a., "Shut . . . 1-CC-284, located in 5-foot East Penetration Room."

Additionally, the EOPs are written and validated by Calvert Cliffs operators who can determine from experience which locations should be listed.

Generic Concern #7

It needs to be proceduralized as to how the Placekeepers are to be used in the Control Room. Is the CRS supposed to initial the blocks, note the time started/stopped, etc.?

BG&E Response

CCI-300 will be revised to include detailed instructions on how to use and control the Placekeepers. The CRS will be directed to record the starting and completion times of the steps listed in the placekeeper.

EOP-0: POST-TRIP IMMEDIATE ACTIONS

1. Step E.1.1 and E.1.2, pg 7:
There are no calculation results available to support the technical adequacy of the setpoint for CIS of 2.8 psig and CSAS of 4.25 psig. Since the setpoints are less than the Technical Specification values, the lack of calculations does not represent a safety problem. However, to comply with the NUREG-0899 requirements, it is necessary to prepare the calculations and include the results in the setpoint documents.

BG&E Response

A dedicated project team has been assembled to prepare and review all RPS and ESFAS setpoint calculations. This effort was initiated to verify the original calculations prepared by Combustion Engineering. The final calculations, performed in accordance with ISA 67.04 and 67.15 (draft), will be incorporated into the setpoint documents. The project is scheduled to be completed by mid-1990.

EOP-2: LOSS OF OFFSITE POWER

1. Note preceding step III.M.7, pg 10:

Should add to the step that overfill could cause the "degasifier" inlet pressure high level alarm.

BG&E Response

This note alerts the operator of the potential for overfilling the degasifier when letdown is diverted from the VCT. The note has been changed from "may" to "will" overfill the degasifier. Operators expect the inlet high pressure alarm to come in, so there is no current need to include it in the note.

EOP-3: TOTAL LOSS OF ALL FEEDWATER

1. Step I.F, pg 3:
Precaution warns not to add water to a " . . . dry S/G . . . " The procedure needs to define what is meant by a dry S/G; i.e., below the indicating range.

BG&E Response

The precaution will be changed to add a definition of a "dry S/G."

2. Step III.F.1, pg 5:

This step requires the operator to shut the VCT Makeup Valve; there is not SHUT position on the panel, only OPEN and AUTO.

BG&E Response

The VCT Makeup valve handswitch positions are currently labeled OPEN/AUTO/CLOSE. This label will be changed to "SHUT" as part of the label upgrade project (see response to 89-80-06).

3. Step III.F.5, pg 6:

This step requires a calculation of shutdown margin using NEOG-11. There are four different graphs in NEOG-11; additionally, there are actual procedures to calculate the SDM in NEOG-10. (This comment is specific to Unit 2, but is applicable to Unit 1.)

BG&E Response

EOP-3, Step F.III.5 states:
"Continue boration until a total 65-inch decrease in BAST level(s) is achieved, or shutdown margin requirement of NEOG-11 is achieved."

The shutdown margin requirement of NEOG-11 is depicted as a figure of RCS boron concentration versus core average burnup. The figure represents a calculation of the required boron concentration that is equal to the shutdown margin. Borating the RCS to the boron requirement of the NEOG ensures the shutdown margin is achieved. Thus, the operator does not need to perform a calculation of shutdown margin using NEOG-10.

This item notes there are four different graphs for shutdown boron in the Technical Data Book. This is true; a figure for MODEs 3, 4, and 5, a figure for MODEs 3, 4, and 5 with the most reactive CEA stuck out. These figures exist for specific situations. If the figures were combined in any way, the result would be a difficult to read figure and would increase the probability that the wrong curve within the figure would be used. The figures are maintained in the Technical Data Book (NEOG-11), because they are referenced by many procedures. Incorporating the figures into every procedure would increase the probability that the figures would not be controlled properly.

Citing the Technical Data Book directly or SDM, rather than NEOG-10, allows for immediate determination of the required RCS boron level. This is required by the urgency level assumed to exist during performance of an EOP. The Technical Data Book figures are clearly labeled to allow selection of the appropriate figure.

4. Step III.G.1.a, pg 6:

Unit 2 has moved the annunciators for the "SGIS A(B) BLOCK PERMITTED" to above the controls and indications for the steam generator. Unit 1 still has the window at the opposite end of the control boards (i.e., above the controls for the safety injection pumps).

BG&E Response

Unit 1 "SGIS BLOCK PERMITTED" and "SGIS BLOCKED" alarms are scheduled to be moved above the Unit 1 controls during the scheduled mini-outage in spring 1990 as a result of our Detailed Control Room Design Review.

5. Step III.G.1.b, pg 7:

Same comment as above for the "PSRS PRESS BLOCK A(B) PERMITTED" annunciator.

BG&E Response

The "PSRS BLOCK PERMITTED" and "PSRS PRESS BLOCKED" alarms are located on the Engineered Safety Features Control Panel as are the keyswitches for initiating the "BLOCK" for both Units.

6. Step III.G.6, pg 8:

This step should be changed to a NOTE that is ongoing through-out the rest of the procedure.

BG&E Response

This step directs the operator to the steps used for once through core cooling if a steam generator becomes unavailable due to a low level. Because it contains a directive for an operator it cannot be a NOTE [the Writer's Guide states, "a) The contents of a note shall: 'contain no action steps or directives']." It is treated as a continuous step.

7. Step III.H.1, pg 9:

A CAUTION should be added before this step that warns the operators that potential exists for removal of all auxiliary feedwater sources for both Units.

BG&E Response

In this step the operator ensures No. 12 Condensate Storage Tank (CST) is operable and then opens the affected Unit's suction valve from the tank. Although a fault may cause the loss of No. 12 CST to both Units, the No. 11 and No. 21 CSTs would still be available for their respective Units. A CAUTION already exists, warning the operator of potential problems.

8. Step III.H.4, pg 11:

An additional step should be added to address the possibility of using the fire main as a source of water for the AFW pumps; similar to the option provided in EOP-8, pg 26.

BG&E Response

A NOTE was added to refer to EOP-8, for additional sources of AFW.

9. Step III.K.7, pg 17:

Add to the end of the step: " . . . and open the 8-inch outlet valves."

BG&E Response

This step is used to start all available Containment Air Coolers in High with Maximum SRW flow. The step says, "with Maximum SRW flow." Maximum SRW flow is with the 8" outlet valves . A step specifically directing the operator to open the valves will be incorporated in the next EOP-3 revision.

10. Step III.K.13, pg 17:

This step should be changed to a NOTE as ongoing information.

BG&E Response

The step directs the operator to continue once through Core Cooling until other conditions are established. Because it directs the operator, it cannot be a NOTE. It is considered a continuous step.

11. Step M, pg 19:

Add as an alternate action: "If not, then go to Step N."

BG&E Response

The steps have the operator verify the RWT recirculation actuation signal is generated if the RWT decreases to a certain level. Operator training stresses that if the IF conditions are not met the step is not performed, at that time, and the next step is addressed.

12. Step M.9, pg 20:

The second part of the IF statement is confusing, delete.

BG&E Response

This step will place the charging pumps in PULL-TO-LOCK if the pumps are aligned to the RWT and the HPSI pumps are maintaining RCS inventory. The second part of the IF statement cannot be deleted. The charging pumps will be used for makeup, if the HPSI pumps are not being used to maintain RCS inventory.

13. Step IV, pg 39:

Clarify which containment temperature is being checked under the SFAC for Normal Containment Environment parameters. (Cavity or dome temperature?)

BG&E Response

At least two independent indications should be used to verify and corroborate specific plant conditions (General Precaution in all EOPs). Therefore, both temperature indicators should be checked.

14. Step IV, pg 40:

Under the SFAC for Normal Radiation Levels External to Containment, there is no consistency with respect to listing of the radiation monitor by number.

BG&E Response

Numbers were only used for the Main Vent monitors because there are two of them. The Safety Function Status Check has been changed to include numbers for all RMS channels.

EOP-4: EXCESS STEAM DEMAND

1. Steps III.K.5, pg 12, O and P, pg 15, &, Y pg 15:
The above steps need to be such that the procedure will be consistent with CEN-152, steps 14 and 15, 33 and 34, and 24, respectively.

BG&E Response

These steps describe the conditions needed to throttle HPSI flow. All of the listed steps are consistent with CEN-152, Rev. 2, with one exception. It is not written in the procedure to reinitiate full HPSI flow, if HPSI throttling criteria cannot be maintained. However, this requirement is how the operators are trained on HPSI throttling criteria.

2. Step III.G.4, pg 8:

No specification is given in the procedure for which indication should be used to confirm the containment spray flow, should be 1-FI-4148/4149.

BG&E Response

There is only one indicator for each containment spray header. For the benefit of verification, the indicator number will be added to the procedure.

3. Step III.I,pg 9:

The step only identifies the parameters to be used to determine which S/G is the affected one. Should add how the given parameters will trend.

BG&E Response

This step identifies a faulted steam generator. This step was revised to add clarification to indicate the expected condition of the parameters, in addition to the list of parameters.

4. Step III.P.C, pg 16:

Detailed instructions should be given in this step as to how the HPSI flow should be raised.

BG&E Response

This step directs the operator to raise HPSI flow in attempt to reduce or eliminate voiding in the core. The only way to increase HPSI flow is by opening any throttled HPSI header isolation valve. A step directing the operator to open the HPSI isolation valves will be incorporated in the next EOP-4 revision.

5. Step III.Y.2, pg 21:

The instruction "consider meggaring RCP motor" should be reworded to clearly state who is to do what.

BG&E Response

Operators are familiar with the work practices and maintenance activities at Calvert Cliffs and understand that, to meggar the RCPs, the E&C Section would be contacted. The Writer's Guide specifically states, "Instructions shall not be directed to a specific job title. Unless adding the job title is necessary to reduce confusion."

EOP-5; LOSS OF COOLANT ACCIDENT

1. Step II.G.1, pg 9:

The HPSI flow referred to in this step is the total flow to the four loops. The operator must add the flow indication from four flow meters; however, this is not indicated in the step nor on the referenced chart. The licensee indicated that a combined flow indication from all four flow meters is to be installed.

BG&E Response

This step has been changed to say "total" HPSI flow.

2. Step III.Z.1.x, pg 33:

The step directs the operator to obtain a $12^{o}F/m$ heatup rate by adjusting the shutdown cooling temperature controller. It should direct the operator to control the heatup rate at less than $12^{o}F/m$.

BG&E Response

This step has been changed to say "less than $12^{o}F/m$ heatup rate . . . "

EOP-6: STEAM GENERATOR TUBE RUPTURE

1. Step 23 of CEN-152:

   This step is not included in the EOP. The licensee has agreed to evaluate the HPSI throttling and termination criteria and include this step if appropriate.

   BG&E Response

   The procedure does contain a step to direct HPSI throttling. This step does not, however, address overfilling of the SG. Filling of the SG is a function of the RCS-SG Delta P, which is controlled by maintaining sub-cooled margin (as low as possible). Since HPSI is throttled to maintain Pressurizer level, the Pressurizer bubble will maintain RCS pressure and HPSI flow will have no influence. Thus, the addition of this step would only add confusion to the throttling criteria.

EOP-7: STATION BLACKOUT

1. Page 3:

   Add a precaution similar to that in EOP-3 with respect to the 400°F differential temperature with auxiliary spray.

   BG&E Response

   The precaution in EOP-3 refers to minimizing the number of cycles of pressurizer auxiliary spray when the temperature differential is greater than 400°F. This precaution has been added to EOP-7.

2. Step II.B, pg 4:

   Add note that only the telephone and the sound-powered phone systems will be working.

   BG&E Response

   Step III.E.1 is the first step in EOP-7 that directs the operator to establish communications. The normal page and telephone system has a backup battery in case of Station Blackout. Additionally, operators carry portable radios, so no special instructions would apply.

3. Step III.E.2.c and preceding note, pg 6:

Reword the note to show the recovery action of aligning the liquid nitrogen system to the AFW flow control valves; and show the aligning of the turbine building nitrogen system to the AFW control valves as an alternate action. Include in the alternate action the procedure that should be referenced for the turbine building supply.

BG&E Response

This note is being reworded to show the recovery action of aligning the liquid nitrogen system to the AFW flow control valves, the aligning of the turbine building nitrogen system to AFW control valves as an alternate action, and the procedure that should be referenced for the turbine building supply.

4. Step III.U.1-3, pg 15:

The steps listed in the recovery action column should be in the alternate action column. The recovery action should be to attempt to open the SRW valves (1600, 1637, 8, 9), and if successful then start at least one instrument air compressor.

BG&E Response

This step has been revised to direct the operator to the section in OI-19 that deals with instrument air compressor cooling. The operator will first attempt to use service water to cool the compressors. If service water is not available, the operator will attempt to use the fire main.

5. Step Y, pg 19:

The steps listed are really indications of voiding. The recovery action should be "IF indication of voiding exist, THEN proceed to Step Z." The alternate action would be "IF indications of voiding do not exist, THEN continue to monitor for voiding and proceed to Step AA."

BG&E Response

The step will be changed in the next procedure revision to incorporate the comments.

6. Step III.AA.3, pg 21:

Identify which [illegible] temperature is being monitored. Per the operators, it should be the Neutron Detector Holder(s) on recorders 1(2)-TR-13/14.

BG&E Response

This step has been changed to identify the monitored temperature as the NI detector temperatures.

7. Step III.AF.11, pg 29:

Reword: WHEN RCPs restarted, THEN complete Administrative Post-Trip Actions (step AH) of this procedure and implement OP-3/4.

BG&E Response

In this step the Administrative Post-Trip Actions and appropriate operating procedure are performed concurrently. The appropriate operating procedure is based on the current plant situation and management's decision concerning recovery.

EOP-8: FUNCTIONAL RECOVERY PROCEDURE

1. The format for this procedure is different from the format used for the other EOPs. Consideration should be given to revising EOP-8, as appropriate.

BG&E Response

There are no plans, at the present time, to revise the format. This procedure contains many alternate means of meeting a particular Safety Function Acceptance Criteria, thus, the two column format is not effective.

EOP ATTACHMENTS

1. Attachments 2, Panel 2C24A, pg 4:

   The caution following steps a, b, and c needs to be added after steps e and f also.

   BG&E Response

   The caution in this step tells the operator the handswitch position will not match the valve position. This caution is not necessary in parts e and f because these valves will return to "AUTO" when a RAS signal is received, even if the handswitch position is matched.

AOP-3B: LOSS OF SHUTDOWN COOLING

1. Step I.12.d, pg 9:

   The conduct of this step could take up to four hours (per the operators during walkdown). Per the discussion on page 4 of the procedure, the time for the fuel to become uncovered could vary from 46 minutes to slightly over 2 hours.

   BG&E Response

   The step directs the operator to close all containment penetrations if during the loss of shutdown cooling, RCS temperature cannot be controlled. The chart on page 4 of this procedure uses conservative assumptions to determine the times. An engineering analysis has been performed and a family of curves were developed, and placed in the Cold Shutdown Operating Procedure (OP), to determine time to boiling and time to core uncovery. These curves take into account the time after shutdown and initial RCS level.

   Also during reduced inventory operation, the OP requires maintaining Containment closure, except for deviations authorized by the Shift Supervisor. These deviations require a pre-planned method for closing the open penetration, should a loss of Shutdown Cooling occur.

   This AOP has been changed to move the step that directs setting Containment closure to after taking the immediate actions to restore cooling (i.e., starting standby pumps).

This AOP will also be revised, to account for RCS level, temperature, and conditions when the RCS is partially drained (currently addressed in OP-5). The AOP revision project is scheduled to be completed by November 1990.

2. Steps II.D.2.d, Attachment 2, pg 4:

The valve listed in the step for No. 12 LPSI Pump is incorrect. The correct number is 1-SI-525.

BG&E Response

The valve number has been corrected.

AOP-3E: LOSS OF FLOW/NATURAL CIRCULATION

1. Before Step E, pg 4:

To be consistent with the EOPs, the steps for void identification and elimination should be added.

BG&E Response

The steps have been added.

2. Steps III.I pg 6, and III.J.1, pg 7:

The values for BAST level and RCP seal temperature should be consistent with those values listed in the EOPs.

BG&E Response

The values have been changed.

AOP-3F; NATURAL CIRCULATION COOLDOWN

1. Step B, pg 3:

   The step should be revised to be consistent with the EOP; i.e., remove the reference to a 60" decrease in BAST level.

   BG&E Response

   The step in this AOP has been revised to be consistent with the EOP.

AOP-6B; ACCIDENTAL LIQUID WASTE RELEASE

1. Note on pg 7:

   This should be a step vice a note.

   BG&E Response

   This note, directing the operator to declare as a minimum a radiological event if the liquid waste radiation monitor alarms, has been changed to a step.

AOP-6D; FUEL HANDLING INCIDENT

1. Step II.C.2, pg 1:

   The number for the particulate main vent radiation monitor is incorrect; should be 1(2)-RE-5414.

   BG&E Response

   The number has been corrected.

AOP-6E; LOSS OF REFUELING POOL LEVEL

1. Step II.A.5.a, pg 6:

   The monitor number provided is incorrect, the monitor is local.

BG&E Response

This step describes the refueling machine service platform area monitor. The monitor listed has been corrected.

2. Step II.B.13, pg 8:

The appropriate section of OI-24 to be implemented is difficult to determine.

BG&E Response

This step directs the operator to refill the spent fuel pool per OI-24. The step has been reworded to clarify which sections of OI-24 can be used. The operator still has flexibility in choosing which section to use.

3. Appendix 1, Step I.B.2, pgs 1 and 2:

Most of the valves in this step are inside contaminated areas:

BG&E Response

These steps are followed to fill the refueling pool from the RWT. Some of the valves are in contaminated areas, but there are procedures to allow access to these areas.

4. Appendix 2, Step 7, pg 2:

This step should be placed before Step 6, and a note provided to ensure that the valve is 5% open before starting the LPSI pump.

BG&E Response

This step directs the operator to throttle the LPSI control valve after the LPSI pump is started in Step 6. The steps have been revised to incorporate the comments.

ENCLOSURE (1)

REPLY TO INSPECTION REPORT NO. 50-317/89-80; 50-318/89-80

AOP-7A; LOSS OF SALTWATER COOLING

1. Attachment 3, Step 6c, pg 2:

   Valve number 2-SW-5156-CV should be 2-SW-5178-CV in the procedure, and the label on the control panels is also incorrect.

   BG&E Response

   The valve number has been corrected.

AOP-7D; LOSS OF INSTRUMENT AIR - UNIT 1 & 2

1. Indication c, pg 4:

   Although the valve is still installed in the plant, there is no longer an indication of the valve position in the Control Room.

   BG&E Response

   The plant air header automatic isolation valve will close at 85 psig. This valve is described in the discussion section of the procedure and is not applicable for the indication section, because the valve position has never existed in the Control Room.

2. Indication d, pg 4:

   Reword: "The standby Plant Air Compressor . . . "

   BG&E Response

   The step is correctly worded as it stands in the discussion section. Operators understand the "other unit's plant air compressor" is the same as "the standby plant air compressor."

3. Step I.C.1, pg 7:

The NOTE after this step should include the alarm setpoint since action is required if the alarm setpoint is approached.

BG&E Response

The information contained in the note is found in the steps following the note, therefore, the note will be removed.

AOP-7F: LOSS OF LOAD

1. Indications B & C, pg 3:

This procedure is common to both Units; however, the terminology is different for the two Units due to different turbine-generator controls being installed. The procedure needs to be clarified.

BG&E Response

The discussion in this procedure has been reworded to provide operators with terminology applicable to both Units. The turbine-generator valves on both Units are now described as "turbine valves."

AOP-7I: LOSS OF POWER TO CLASS 1-E AND NON-CLASS 1-E BUSES

1. This procedure was not walked down. However, this document is not useable as a procedure; it is only a listing of loads on the buses. Additionally, there is no index or priority to the listings.

BG&E Response

This procedure is being revised to make it more useable. The AOP revision project is scheduled to be completed by November 1990.

AOP-9: ALTERNATE SAFE SHUTDOWN PROCEDURE/CONTROL ROOM EVACUATION

1. Steps I.C.7.a and I.C.8.d:

   These steps incorrectly use the verb "effects" rather than "affects." Licensee has agreed to correct these steps.

2. Steps I.C.11.a(1) and I.C.11.a(5):

   These steps direct the operator to maintain subcooling between $30^{\circ}F$ and $200^{\circ}F$; this is in conflict with EOP-6 and EOP-7, which require subcooling between $30^{\circ}F$ and $140^{\circ}F$.

3. Step I.C.14.c(2):

   This step directs the removal of three check valves and their reinstallation upside down. This task would be performed by a mechanic, not a plant operator. The related procedure needs to be subject to the same requirements as the operating procedures intended for use during an emergency. The licensee has agreed to investigate whether a procedure exists for this task and to ensure that adequate procedural guidance is provided.

4. Step II.C.14.a:

   The diagram of the RCP breaker is very hard to read. The licensee has agreed to correct this problem.

5. Steps II.C.16 and III.C.13 (Unit 2 copies):

   Steps 16 a, b, and c on the Unit 1 procedure were replaced by CR-86-328 to direct initiation of SGIA at the ESFAS panel. The same change has been made on Unit 2; however, the procedure text has not been modified.

6. Steps II.C.53 and II.C.55.a (Unit 1) and II.C.49.e and II.C.51.a (Unit 2):

   Reference to Attachment 1 in the first step (listed for each Unit) should match the reference to Attachment 1 in the second step (listed for each Unit).

7. Step II.C.55.a (Unit 1 and II.C.51.a (Unit 2):

These steps state that pressure should not be allowed to exceed normal operating pressure. The steps should indicate that pressure should not be allowed to exceed 2250 psia.

8. Steps II.C.57 and III.C.57 (Unit 2):

The procedure suggests that these steps can only be performed in the Control Room; while the entry conditions for the procedure might entail an inaccessible Control Room. Because these steps can be performed from outside of the Control Room, the procedure should clearly indicate such.

9 Step II.C.59.a (Unit 2):

This step lists Unit 1 valve numbers.

BG&E Response

As part of an internal upgrade, AOP-9 is undergoing a major revision. All of the deficiencies noted in the inspection report will be addressed and corrected in the new revision. The only exception is Item #3.

The step directing removal of the check valves will be addressed in a mechanical maintenance procedure. The projected completion date for the mechanical maintenance procedure is November 30, 1989.

The completion of the AOP-9A (Control Room Evacuation and Safe Shutdown due to a Severe Control Room Fire) is contingent upon completing plant modifications needed to support the revision. The estimated completion date for the plant modifications is December 23, 1989.

AOP-10: ABNORMAL CHEMISTRY CONDITIONS

1. Title:

The procedure title should be clarified to indicate that this procedure applies only to steam generator and condensate chemistry.

BG&E Response

The title will be revised to reflect SG and condensate chemistry, along with CCI-300 (list of procedure names) by December 1, 1989.

2. Steps 4 and 5, pg 8:

Action is required in this procedure for immediate action if conductivity exceeds certain values. Chemistry procedures RCP-1-211 and CP-217 do not require the chemistry technicians to report these values to operations.

BG&E Response

RCP-1-211 requires informing the Shift Supervisor of values exceeding the Action Level I limits and informing the General Supervisor - Nuclear Operations of values exceeding the Action Level II values. CP-217 requires informing the Shift Supervisor of values exceeding the Action Level I and Action Level II values.

OI-27E: SMECO OFFSITE POWER STATION

1. Step V, pg 8 and 7 other locations within procedure:

Add a caution to ensure that BOTH diesel generators that can supply the 4KV vital bus have their respective breaker controllers in PULL-TO-LOCK such that a diesel generator and SMECO cannot be paralleled unintentionally.

BG&E Response

Placing the Emergency Diesel Generator Output Breakers in PULL-TO-LOCK, when supplying the 4KV buses from SMECO is not necessary. This condition would be no different than when the buses are supplied from the BG&E grid.

4. **REPORT ITEM NUMBER**

50-317/89-80-04

NRC Concern

EOP-0 diagnostic aid was not consistent with CEOG guidance; i.e., the current aid was event based vice symptom based.

BG&E Response

See response for 89-80-01.

5. **REPORT ITEM NUMBER**

50-317/89-80-05

NRC Concern

EOP-8 does not include a section for recovery or restoration of vital auxiliaries.

BG&E Response

Although EOP-8 does not include a section for recovery or restoration of vital auxiliaries, the safety function status check used with the procedure does. EOP-8 will be changed to add a reference to the appropriate procedure for each Vital Auxiliary.

6. **REPORT ITEM NUMBER**

50-317/89-80-06

NRC Concern

Labeling in the Control Room and in the plant is

(1) not consistent with the procedures or

(2) missing.

BG&E Response

All of the Control Room label discrepancies called out in the EOP audit have been corrected.

The Human Factors Design Engineering work group completed the review of all Control Room Labels on August 15, 1989. All changes to the control labels were issued to the Operations Procedure group for a second review by September 1, 1989.

Our review consisted of:

a. verifying all labels agreed with their instruments description as called out in the EOPs

b. verifying all abbreviations were consistent and met CCI-308

c. verifying all labels met the format as described in CCI-308 and BG&E's human factors practices.

Approximately 98% of the Control Room labels are being replaced. The Operations Procedure group is performing a second review of the label changes against the EOPs. They have completed reviewing 20% of the panels and will complete reviewing the remaining panels by November 10, 1989.

It will take approximately three months to fabricate the labels. All of the label changes will be installed by February 28, 1990.

7. **REPORT ITEM NUMBER**

50-317/89-80-07

NRC Concern

Inconsistencies exist between the simulator and the Control Room.

BG&E Response

1. The simulator lighting is different from the lighting in the Control Room. A Simulator Maintenance Request was generated to review the emergency lighting in the simulator with respect to the Control Room and to make any changes required in the simulator. A completion date of April 4, 1990 has been established to complete any simulator changes required to make its emergency lighting system mimic the Control Room.

2. The noise levels in the simulator can be high due to adjacent HVAC equipment in the simulator. The Facilities Management Department is currently conducting a simulator HVAC system design review to determine the best way to reduce the simulator room noise level to an acceptable level. The simulator HVAC system noise level will be reduced to an acceptable level by June 1, 1990.

3. The binding methods of the EOPs should be consistent between the Control Room and simulator. The Control Room has gone to a nineteen hole spiral-bound method of binding their EOPs. The simulator uses the exact same process for binding their EOPs. This improved method of procedure binding has proved to be very functional

8. **REPORT ITEM NUMBER**

50-317/89-80-08

NRC Concern

The writers' guide contains deficiencies.

BG&E Response

1. The Calvert Cliffs' Writer's Guide defines the terms "per" and "implement" to indicate referencing and branching to other procedures. The reference and branching section is being revised to say "shall" use the words "per" for referencing other procedures and "implement" for branching to other procedures.

2. The Writer's Guide defines the word "or" as a combination logic term and placekeeping aid. The section describing the use of "or" is being revised to delete the reference to use as a placekeeping aid and state that the format for the use of "or" shall be the same as the outline level it is being using in (as shown in Attachment 18 of Writer's Guide).

3. The EOPs include a diagnostic flowchart for use after the performance of the immediate actions. A section is being added to the Writer's Guide to give specific instructions for the development of flowcharts.

4. The Writer's Guide verb list includes a number of verbs with similar or identical meanings. The verb lists are being revised, to ensure consistency among all procedure groups and to make clear, distinctive definitions for each word.

5. All materials used by operators during an emergency should be considered part of the EOP system and should be subject to the same stringent format and development requirements as the EOPs. A project is underway to upgrade all the AOPs. A phase of this upgrade is to identify the best format for the AOPs, to work in conjunction with other procedures. Another phase of the project is to implement a validation process, in the same manner as the EOI validation. The new revision of the Writer's Guide requires validation of the OIs and OPs, although not as extensively as the EOPs. Consideration will be given to the OI format during the procedure upgrade project.

6. The step numbering system described in the Writer's Guide should clearly address step numbering for the alternate actions column. The section describing step numbering is being revised to address that items of a list should not be numbered as sub-steps, but should use bullets to denote they are part of a list. This should correct the problems with step numbering in the alternate actions column. In addition, it will state that the boxed function step number shall be at the top of all pages that contain sub-steps of that function.

7. The structure of sub-steps is clearly defined within the Writer's Guide. The Writer's Guide states that sub-steps will contain "specific guidance" on how to complete boxed steps. As stated in our response to No. 6 above, sub-steps will not be used in lists, only as steps needed to complete boxed steps.

8. The Writer's Guide should define the standards for print size, typestyle, and procedure attachments. Particular formatting requirements are contained in the Clerical Support "Format Book". The applicable sections will be incorporated into the Writer's Guide.

9. **REPORT ITEM NUMBER**

50-317/89-80-09

NRC Concern

There is inadequate verification and validation associated with the EOP process.

BG&E Response

1. The deficiencies identified appeared because the Writer's Guide did not provide strict or clear guidance for every part of the EOPs. The Writer's Guide is being revised to ensure consistency.

2. Procedures used during emergency situations like AOPs, OPs, and OIs should meet the requirements of the Writer's Guide. The Revision Checklist is used to ensure the requirements of the Writer's Guide are met. The Calvert Cliffs' Procedure Upgrade project requires that all OIs, OPs, and AOPs be validated (walkdown, actually performed, or group review with writer and user), and a validation checklist has been developed to ensure consistent performance of validations.

10. REPORT ITEM NUMBER

50-317/89-80-10

NRC Concern

The procedures are lacking an adequate independent quality review.

BG&E Response

In addition to the review of a second person and the Supervisor-Procedure Development & Modifications Acceptance Unit (PD&MAU), a review by Human Factors personnel is being incorporated into all revisions, as well as a human factors checklist (adopted from the INPO Human Performance Evaluation System Coordinators Manual) to ensure consistent reviews.

11. REPORT ITEM NUMBER

50-317/89-80-11

NRC Concern

The method of controlling copies of procedures is inadequate.

BG&E Response

All "Controlled" Calvert Cliffs' procedures are now, effective September 11, 1989, stamped "CONTROLLED COPY" in red to ensure only controlled copies are used in the field. A sign-off has been added to the EOP Maintenance Checklist (Attachment to the EOP Writer's Guide, for ensuring EOP changes/revisions are properly entered into the procedures) to verify the Control Board Plaques whenever a change is made to EOP-0.

12. REPORT ITEM NUMBER

50-317/89-80-12

NRC Concern

There are several disconnected organizations responsible for maintenance of the EOPs.

BG&E Response

Although several organizations are involved with different parts of the EOPs the PD&MAU is responsible for keeping the EOPs up to current standards. PD&MAU has a task in progress to ensure all "official" acronym and word lists are consistent and correct. PD&MAU is also part of the approval process for all process labels, from Design Engineering. In the future, all EOP support elements, including NEOGs, will be written in accordance with the site Writer's Guide. This should remove any confusion regarding labels and terminology.

SCHEDULE FOR COMPLETION

All items are scheduled to be completed by November 1, 1989, unless otherwise noted within the response. The changes to CCI-300 are scheduled to be completed by December 1, 1989. The changes made to the Writer's Guide will be incorporated in the EOPs during the next EOP revision.