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Use

CAROLINA POWER & LIGHT COMPANY
H. B. ROBINSON STEAM ELECTRIC PLANT, UNIT NO. 2

PLANT OPERATING MANUAL

VOLUME 2
PART 5

EMERGENCY PROCEDURE

EPCLA-02

EMERGENCY ACTION LEVEL USER'S GUIDE

REVISION 9

SUMMARY OF CHANGES

Step/Section	Description of change
Step 8.2.3.9	Added guidance on use of R-11/R-12 for indication of fuel fission product barrier breach and re-numbered subsequent steps.
Step 8.2.3.12	Changed EAL threshold level value for R-15 from 80, 000 cpm to 8, 000 cpm and added guidance on the use of R-15 for indication of reactor coolant fission product barrier breach.
Step 8.2.3.14	Added guidance on use of R-31 to indicate primary to secondary leak.
Step 8.2.3.34(a) Step 8.2.3.34(d)	Added chemicals to list of toxic and flammable gases; deleted CP&L MSDS ID number for listed chemicals
Entire Procedure	Revised page numbering to reflect AP-007 format.

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8.2.1 PURPOSE

1. To provide instructions for the use of the Emergency Action Levels (EALs) and to describe the transition from the EAL flowpaths to this procedure.

8.2.2 RESPONSIBILITIES

N/A

8.2.3 INSTRUCTIONS

1. Declarations

   a. General Emergency: IF at any time during progression through the EAL flowpath, a General Emergency declaration is warranted, THEN the Site Emergency Coordinator/Superintendent Shift Operations (SEC/SSO) is to immediately declare a General Emergency AND carry out the actions specified by the procedure.

   b. IF an event (other than a General Emergency) is warranted, THEN the SEC/SSO is to continue through the flowpath, after noting it on the "EAL STATUS Board."

   c. The highest indicated level will be declared upon completion of the flowpath.

2. Entering the Flowpath

   a. The flowpath can be entered at the discretion of the SEC/SSO.

   b. It is appropriate for the Superintendent Shift Operations (SSO) to defer entry into the flowpath early in an event in order to direct his attention and expertise to ensuring proper diagnosis by the operating shift and that proper actions are being taken to combat the casualty. However, because timely event classification is essential to protecting the public, once the SSO is satisfied the response is adequate for the situation, he should immediately enter the flowpath to classify the event and initiate any required augmentation.

8.2.3.2 (Continued)

c. It is the expectation that the time between exceeding an EAL and declaration of the event will not exceed 15 minutes unless extraordinary conditions prevail. (CR 97-02306) For EAL steps with time requirements, the 15 minute expectation for declaration begins after the stated time. For example, the loss of E-1 and E-2 for greater than 15 minutes. The Site Area Emergency EAL would not be satisfied until the 15 minutes expires. (CR 13050)

3. Entry Point into the Flowpath

a. The EAL flowpath should be entered at the first step of EAL-1. Re-evaluation of conditions may require entry into EAL-2 at entry point X, but only when directed by steps within EAL-2 or the final step of EAL-1.

b. Once entered, the flowpath should be completed unless a General Emergency is identified during the progression through the flowpath.

- For a General Emergency immediately implement EPCLA-01, Emergency Control.

- The Unusual Event Matrix should be reviewed if no event above Alert is identified.

4. Progression through the Flowpath

a. Once the flowpath is entered, progression should continue swiftly until directed to declare an event. This will ensure:

- Timely classification of the event

- Timely notification of necessary personnel and agencies

- Timely completion of any necessary protective actions

b. During the progression through the flowpath, the latest available information should be used in answering the questions if current information is not available.

8.2.3.4 (Continued)

c. The single exception to this method of classification and notification is the declaration of a General Emergency. If, at any time, including during the development of the notification or the progression through an emergency procedure, the SEC/SSO becomes aware of information which would clearly result in a General Emergency declaration, he should revisit the EAL flowpath to confirm that a declaration of a General Emergency is warranted.

d. IF the declaration of a General Emergency is warranted, THEN the SEC/SSO should declare/proceed as directed by the EAL flowpath. Any notifications in progress or in preparation should be amended to the extent practical and the development of protective action recommendations should begin immediately. IF the declaration is NOT warranted, THEN the SEC/SSO should return to the point at which he left the classification/notification process.

e. Early in EAL-1, the SEC/SSO is instructed to "Monitor Critical Safety Function Status Trees (CSFSTs) for Information Only." This is done to ensure the SEC/SSO is aware of changing critical parameters which may affect the EALs. In no case should SPDS be reset unless directed by the EOP network. The question "Integrity CSF-4 RED or ORANGE" will be answered yes whenever it is so indicated by SPDS or by manual determination. The Shift Technical Advisor may be consulted if CSFST status is unclear.

5. Verifying Validity of Information

a. Only valid indications should be used for determination of EALs.

b. IF the validity of instrumentation is suspect, THEN attempts should be made to ensure the information used is accurate.

8.2.3 (Continued)

6. Bypassing of Individual Event Groups

   a. Throughout EAL-1 and 2, several questions are asked for the purpose of determining the need to address specific events (Confirmed Fire (YES/NO), ATWS (YES/NO)).

   b. These blocks enable the user to bypass sections of the flowpath which do not pertain to the event which has occurred or is occurring.

   c. IF, for the examples given, an ATWS or Fire has occurred, THEN the block should be answered YES the first time if it is encountered during the progression through the flowpath.

   d. On subsequent re-evaluations, the ATWS decision block should be answered YES until control rods have been fully inserted or the reactor has been shut down. The decision block should also be answered YES if another ATWS occurs.

   e. On subsequent re-evaluations, the Fire Confirmed decision block should be answered YES until the fire has been extinguished and a thorough damage assessment has been completed which concludes that the potential for damage to safety-related equipment has been eliminated.

7. Fission Product Barrier Analysis (Overview)

   a. The first steps of EAL-1 are conducting an analysis of the principal barriers to radiation and radiological releases.

      - fuel cladding
      - reactor coolant system (RCS)
      - containment

8.2.3.7 (Continued)

b. The criteria for establishing an emergency are the level of challenge (potential or actual damage) to these barriers and the number of barriers concurrently under challenge.

c. A challenge to one or more barriers generally is identified through instrument readings, periodic sampling, and monitoring of CSFSTs.

d. Deterioration of a single barrier usually indicates an "Alert" condition, two barriers under challenge a "Site Area Emergency", and three barriers a "General Emergency".

e. As the SEC/SSO moves through the barrier analysis steps, he is making the following assessments:

- First, a determination of whether the Fuel Fission Product Barrier (FPB) has been breached, is jeopardized, or is intact. The SEC/SSO then indicates the status of the Fuel FPB on the "FPB Status Board", which is located at the top of the EAL-1 flowpath. He will put an **X** or check mark next to the appropriate term (Intact, Jeopardized or Breached) in the Fuel FPB column.

- Second, a determination of whether the RCS FPB has been breached, is jeopardized, or is intact. The SEC/SSO then indicates the status of the RCS FPB on the "FPB Status Board". He will put an **X** or check mark next to the appropriate term (Intact, Jeopardized or Breached) in the RCS FPB column.

8.2.3.7.e (Continued)

- Third, a determination of whether the Containment FPB has been breached, is jeopardized, or is intact. The SEC/SSO then indicates the status of the Containment FPB on the "FPB Status Board". He will put an **X** or check mark next to the appropriate term (Intact, Jeopardized or Breached) in the Containment FPB column.

- IF three FPBs were indicated as Breached/Jeopardized, THEN a General Emergency is declared and the SEC/SSO is directed to EPCLA-01, Emergency Control.

- IF two FPBs were indicated as Breached/Jeopardized, THEN the SEC/SSO will put an **X** or check mark to "Site Area Emergency" on the EAL Status Board located in the upper right corner of the EAL-2 AND then continue on in EAL-1.

- IF one FPB is indicated as Breached/Jeopardized, THEN the SEC/SSO will put an **X** or check mark next to "Alert" on the EAL Status Board located in the upper right corner of EAL-2 AND then continue on in EAL-1.

8.2.3 (Continued)

8. EAL-1 Grid A-4: R-9 Rad Monitor

   a. It may be prudent to isolate letdown prior to either of the listed criteria being exceeded as a precautionary measure to reduce exposure to personnel working in the Auxiliary Building.

   b. IF letdown is isolated, THEN R-9 will not be monitoring actual RCS conditions.

   c. Because R-9 is the only real time indicator of mechanical fuel damage, the SEC should consider trending R-9 response to determine if R-9 is projected to exceed either of the listed criteria prior to discretionary isolation.

9. EAL-1 Grid A-5: R-11 and R-12 Rad Monitors Aligned to CV

   Rad Monitors R-11 and R-12 are not valid indicators of fuel condition if they are not aligned to the CV. Rad Monitors R-11 and R-12 are not valid indicators of fuel breach if RCS leakage into containment is not present.

   a. R-11 Rad Monitor Greater Than 1M CPM

      IF the response is Yes, then a determination must be made as to whether or not R-12 has exceeded its maximum value prior to declaring a fuel fission product barrier breach.

      An increase of this magnitude indicates that an RCS leak and a potential Fuel Breach has occurred. This action level is based upon a breach of a fission product barrier(s), such as RCS or a combination of RCS and small fuel clad breach.

      Based on the sensitivity studies performed in EC49849, Rad monitor R-11 reached EAL threshold value of 1M cpm based on a reactor coolant system leak of 1 gpm and 0.1% failed fuel. Fuel pins with known degraded clad producing a steady-state RCS concentration below Technical Specifications, could result in spikes in the RCS with respect to isotopic inventories indicative of 0.1% failed fuel.

Rad monitor R-11 indication is very sensitive to RCS leakage and should be used primarily as an indicator of RCS breach into containment. It is possible that RCS leakage on its own will produce an indication of 1M cpm on R-11. It may also be used as an indicator of RCS leakage in combination with very small amounts of fuel damage. Other indicators should be used in conjunction with R-11 to indicate fuel breach.

b. R-12 Rad Monitor Greater Than 40K CPM

An increase of this magnitude indicates that an RCS leak and a potential Fuel Breach has occurred. This action level is based upon a breach of a fission product barrier, such as RCS or a combination of RCS and small fuel clad breach.

Based on the sensitivity studies performed for EC49489, Rad monitor R-12 reached EAL threshold value of 40K cpm based on a reactor coolant system leak of 10 gpm and 0.1% failed fuel. Fuel pins with known degraded clad producing a steady state RCS concentration below Technical Specifications could result in spikes in the RCS with respect to isotopic inventories indicative of 0.1% failed fuel. R-12 readings should be used primarily as an indicator of RCS breach into containment and providing overlapping indication for R-11. It may also be used as an indicator of potential fuel damage in combination with RCS leakage.

10. EAL-1 Grid A-9: RCS leakage Greater Than Charging Capability

a. RCS leakage is defined in EPCLA-00, Attachment 10.1, Definitions. The charging capability of 3 charging pumps for evaluation purposes is 225 gpm.

b. <u>IF</u> only 2 charging pumps are available, <u>THEN</u> this decision block should be answered YES for leakage > 150 gpm.

c. <u>IF</u> only 1 charging pump is available, <u>THEN</u> this decision block should be answered YES for leakage > 75 gpm.

d. A charging pump may be technically inoperable <u>AND</u> still considered as a part of charging capability if it is available to provide flow.

8.2.3 (Continued)

11. EAL-1 Grid A-10: CV Pressure Less Than 2 psig

    a. CV Pressure is considered normal when less than 2 psig.

12. EAL-1 Grid A-11, R-15 Rad Monitor Greater Than 8K CPM

    An increase in magnitude indicates that an RCS leak into the secondary side is occurring (steam generator tube leak). This action level is based upon a breach of a fission product barrier(s), such as RCS.

    Based on the sensitivity studies performed for EC 49849, R-15 will trigger this action level based on a primary to secondary leak of 50 gpm with no fuel and 415 cfm air ejector flow.

13. EAL-1 Grid D-4: Phase A or CV Ventilation Isolation Initiated or Required.

    a. The purpose of this decision block is to determine if events are in progress, or have occurred, of such significance that a Phase A or CV Ventilation Isolation signal is appropriate to mitigate the consequences of the event(s).

    b. IF an automatic or manual CV Ventilation Isolation signal has been initiated, THEN this decision block should be answered YES.

    c. IF an automatic or manual Phase A Isolation signal has been initiated, THEN this decision block should be answered YES.

    d. IF conditions are known to exist which should have resulted in the initiation of an automatic CV Ventilation or Phase A isolation actuation, but did not, THEN the decision block should also be answered YES.

    e. IF a spurious signal is initiated, THEN the block should be answered YES.

8.2.3 (Continued)

14. EAL-1 Grid A-12, R-31A, B, or C Rad Monitors Greater Than 1 mRem/hr

An increase of this magnitude indicates that an RCS leak into the secondary side is occurring (steam generator tube leak) and some potential fuel damage has occurred. This action level is based upon a breach of a fission product barrier(s), such as RCS or RCS and fuel breach.

Based on the sensitivity studies performed in EC 49849, R-31A, B, or C will trigger this action level based on a 10 gpm primary to secondary leak and 1% fuel clad damage.

R-19s are not used since they isolate on an SI signal and their alarm setpoint reflects a lower amount of leakage. R-15 and R-31s do not isolate and therefore will be available to the evaluator to determine release rates.

15. EAL-1 Grid E-5: Pathway Exists from CV Atmosphere to Environment

a. This decision block can only be reached if an event requiring a Phase A OR CV Ventilation Isolation signal has occurred OR if one of the other fission product barriers (fuel or RCS) has been breached or jeopardized.

b. This decision block determines whether or not there is an open, uncontrollable pathway for fission products within the air space or that may be contained within the liquid in the CV sump to find their way to the outside atmosphere, to the lake, or to an open system outside the CV.

8.2.3.15 (Continued)

c. For a ruptured steam generator, the decision block should be answered NO. During tube rupture events the EOP Network provides direction for isolation of the steam generator and will ultimately facilitate closure of the steam and feed lines. Unless attempts to close valves in these lines as directed by the EOP Network are unsuccessful, the CV should be considered intact and controllable even though a release may be occurring.

d. For a faulted steam generator, the decision block should be answered NO. Although the rapid depressurization from a faulted steam generator may result in a safety injection signal, there is no pathway for communication of the CV atmosphere with the outside atmosphere.

e. For a ruptured, faulted steam generator, OR a situation in which one steam generator is faulted AND another is ruptured, this decision block should be answered NO. The combination of grid locations D-5 and E-6 will provide a decision path for determining the status of CV in this situation.

f. For failure of a CV Ventilation Isolation valve to close:

- The decision block should be answered NO if the redundant CV Ventilation Isolation valve in the flow path does close and isolate the flow path;

- The decision block should be answered YES if both redundant valves in a flow path fail to close OR if the one which closes is not capable of isolating the flow path.

8.2.3.15 (Continued)

g. For failure of a Phase A isolation valve to close:

- The decision block should be answered NO if the redundant valve closes and isolates the pathway OR if the pathway goes into a closed system outside CV which is intact.

- Examples of closed pathways includes RMS-1,2,3, and 4 and the CVCS hold-up tanks, unless they are known to be faulted.

- The decision block should be answered YES in the event that both Phase A isolation valves fail to close on a system that is open outside the CV.

- Examples of open systems include WD-1723 and 1728, the CV sump valves to the Waste Hold-up Tank which is vented to the Auxiliary Building ventilation system

- The decision block should be answered YES in the event that both valves fail to close and a normally closed system is known to be faulted both inside and outside CV.

h. For an unisolable service water leak inside CV, the decision block should be answered YES.

i. In determining if a pathway exists the SSO/SEC should consider plant conditions and indications. Normally closed systems inside or outside CV should not be assumed to be faulted unless there are indications that they are faulted or they are known to be faulted.

j. In determining the status of isolation valves, ERFIS indication and local panel indication are often available.

8.2.3.15 (Continued)

k. Area and process radiation monitors, such as R-4, R-14 C, D, or E, provide indication when fission products from the CV atmosphere find their way to the outside environment. IF these monitors are unavailable, THEN dose rate surveys taken locally can provide the basis for a determination that fission products have found a pathway from the CV atmosphere.

l. In general, a YES determination at this decision block requires:

- Knowledge OR evidence of an open system inside the CV.
- CV isolation valves which fail to close.
- Knowledge OR evidence of an open system outside CV such that the pathway for the gases or sump water inside the CV to reach the outside environment exists.
- Knowledge or evidence can be provided by plant conditions, local or remote indications, and process or area radiation monitors.

16. EAL-1 Grid D-5: Nonisolable Steamline or Feedline Leak Outside CV

a. Any leakage outside CV should prompt a YES answer at this decision block no matter how small the leak may be.

- pinhole, weep, valve leakage

8.2.3.16 (Continued)

b. The leak should NOT be considered unisolable until local manual efforts to isolate the leak have been initiated AND have proven unsuccessful OR been deemed impractical due to the hazardous environment, a lack of needed tools or equipment, or inaccessibility of the leak for repair.

c. Attempts at manual isolation should be initiated promptly and expedited consistent with radiological considerations and should be given a high priority when a release is in progress through the leak.

17. EAL-1 Grid D-10: ATWS

a. The first time the EAL flowchart is reviewed, any previous ATWS should be considered in this decision block.

b. For subsequent progressions through the EAL flowchart, this decision block should be answered YES until the reactor is in Mode 3 or lower. (AR # 43473)

18. EAL-1 Grid D-12: Fire Confirmed

a. Indication of the existence of a fire may be received in the Control Room by fire alarm or by telephone, PA, or radio notification from any individual on the plant site.

b. The SEC/SSO must confirm the existence of an actual fire prior to answering decision block D-12. This may involve questioning an individual in the case of a verbal notification or dispatching a qualified individual to the scene in the case of a fire alarm.

8.2.3.18 (Continued)

c. FP-001, Fire Emergency, prescribes actions to be taken upon notification of a fire by any means and provides for the timely response to ensure proper confirmation of the fire. IF no flame is present OR reported but smoke is reported from cable trays or conduits, THEN this should be considered adequate confirmation.

d. WHEN adequate information has been received from the scene, THEN decision block D-12 may be answered.

19. EAL-1 Grid D-13: Fire Has Potential to Affect Safety Related Equipment

a. This decision block should be answered based on information received from the scene of the fire. The Emergency Diesel Generators are included for this decision.

b. WHEN a fire is confirmed to exist in a fire zone which contains safety related equipment, THEN the SEC/SSO must ascertain whether the magnitude and location of the fire is such that it could potentially render the safety related equipment inoperable.

c. A small fire on an Emergency Diesel Generator (EDG) exhaust manifold that does not have the potential to affect EDG operability AND that could be easily put out using a fire extinguisher would NOT be considered a fire that has potential to affect safety related equipment.

8.2.3.19 (Continued)

d. IF the fire has potential to render safety related equipment inoperable, THEN this decision block should be answered "yes" unless all of the following conditions are met:

- The nature and location of the fire are known, including what component(s) are involved in the fire and what is burning;
- The component(s) involved in the fire are not safety-related;
- The fire is confined to those components or that location by the existence of ample space or a barrier; and
- No safety-related power, control, or communications cables OR their power sources are involved in the fire.

e. The fire can be quickly extinguished by the individual at the scene using fire extinguishers available at the scene OR has already been extinguished;

f. No indications of spurious or abnormal equipment operation are observed at the scene or in the Control Room;

g. The SEC/SSO is expected to utilize the collective knowledge and judgment of watch-standers in assessing the safety-related status of equipment involved in the fire.

8.2.3 (Continued)

20. EAL-1 Grid D-13: Complete Loss of Any ESF Function in Table 2 Due to Fire

    a. Complete loss means loss of manual and automatic capability to provide the function.

    b. IF control power is lost but pumps can be manually started and flow delivered despite the fire, THEN the function is NOT completely lost.

    c. When evaluating the effects of a fire on the Plant, the intent is for the SEC/SSO to consider equipment which is rendered inoperable by the fire and determine if all capability for any particular ESF function is lost. The following examples are provided:

       - A fire which damaged all three Safety Injection (SI) pumps would result in declaration of a Site Area Emergency. Also, if only one pump was damaged by fire, but neither of the other two pumps were available for some other reason, the same condition would exist (all SI capability lost).

       - A fire which removed the ability supply fuel oil to the EDG Day tanks should be viewed as an alert due to the fire affecting safety related equipment without a total loss of capability.

21. EAL-1 Grid D-14: Unplanned Loss of **Greater Than or Equal to** 7 Annunciator Panels for >15 Minutes

    a. RTGB annunciator panels include those on the RTGB and does not include the panels whose response is dictated by APP-036, or APP-044.

    b. IF only the audible annunciation function is lost, THEN the decision block should be answered NO.

8.2.3 (Continued)

22. EAL-1 Grid D-14: Plant Transient in Progress

    a. Trips, runbacks, SI actuations and losses of electric power are all considered plant transients.

    b. IF these events have occurred either manually or automatically, THEN the transient is considered in progress until the RCS AND secondary have been stabilized.

    c. Normal power changes of >10% are considered to be transients and are considered in progress until the power change can be curtailed AND primary and secondary status has been stabilized.

23. EAL-1 Grid E-14, D-15: ERFIS Data Available

    a. The trending AND alarm function of ERFIS should be considered when determining the impact on plant operations of a loss of annunciators.

    b. If the ERFIS system is out of service, the block should be answered "NO".

8.2.3 (Continued)

24. EAL-1 Grid G-4: E-1 and E-2 De-Energized for Greater than 15 Minutes

    a. IF E-1 AND E-2 have been de-energized for greater than 15 minutes, THEN this block should be answered YES.

    b. IF E-1 AND E-2 are both de-energized, but have NOT yet been de-energized for greater than 15 minutes, THEN the decision block should be answered "NO".

    c. IF E-1 AND E-2 have remained de-energized for greater than 15 minutes, but are currently energized, THEN the decision block should be answered "YES" unless a Site Area Emergency has already been declared due to the loss of E-1 and E-2. However, in the case where the buses are currently energized, it is appropriate to declare and downgrade in the same notification.

25. EAL-1 Grid G-5: MCC-A and MCC-B De-Energized for Greater Than 15 Minutes

    a. MCC-A and MCC-B are considered to be de-energized when the voltage has decreased to the level that the instrument bus inverter on each MCC has tripped off due to low input voltage.

    b. This decision block should be answered in a similar manner to E-1 and E-2 in step 8.2.3.21.

26. EAL-1 Grid G-7: Complete Loss of Any Function Listed in Table 3

    a. A "Complete Loss" of any of these functions is defined as a total loss of the function needed in an effort to stabilize the plant in hot shutdown, cold shutdown, OR both.

8.2.3.26 (Continued)

b. Example:
A complete loss of Service Water (SW) capability might result from a failure of all four SW pumps, a catastrophic piping failure which depressurized both the North and South SW headers, or a sabotage event which isolated all four SW pumps and could not be immediately reversed. The key issue here is whether or not the loss of capability being considered will cause an inability to achieve Hot or Cold S/D and maintain that condition safely.

c. In the case of a complete loss of Emergency Buses E-1 and E-2, several of the functions in Table 3 will be lost until power is restored. Therefore, this step is redundant to prior steps in the flowpath which address a loss of power. As such, the criteria established for a loss of these busses greater than 15 minutes should be applied here also and the function should not be considered completely lost (due to loss of power) until power has been lost for greater than 15 minutes.

d. The short-term loss of these functions during the time the emergency diesels are sequencing loads following a blackout should NOT be considered a complete loss of the function.

8.2.3.26 (Continued)

e. Specifically, the following list describes the components, the loss of which, constitutes complete loss of selected functions:

- Charging Capability - Complete loss requires all three (3) charging pumps or all flow paths for make-up to the RCS.

- Boration Capability - Complete loss requires all automatic flow paths AND the manual boration path.

- RCS Pressure Control Capability - Loss of all pressurizer heaters or loss of all pressurizer spray flow paths and PORV's constitutes a complete loss of RCS pressure control capability:

f. Loss of all heaters due to a low pressurizer level or a level instrument failure does not constitute a complete loss unless the heaters remain unavailable after level is re-established or the level instrument failure repair efforts have been completed.

g. Loss of all heaters due to a loss of offsite power does not constitute a complete loss unless EPP-21, Energizing Pressurizer Heaters from Emergency Busses, is not effective in re-energizing the heaters or heaters cannot be re-energized when normal power is restored.

h. Because the plant was not designed with enough pressurizer heaters to maintain RCS pressure in a LOCA event, the inability to maintain RCS pressure in a LOCA event does not constitute a complete loss of RCS pressure control.

i. IF a Pressurizer PORV has been isolated due to leakage but can be made available by opening its associated block valve, THEN a complete loss of RCS pressure control does not exist.

8.2.3.26 (Continued)

j. Table 3 has been provided so the SEC/SSO can quickly determine which functions are required for a shutdown. The table provides a list of the required functions and indicates whether they are required for hot shutdown or cold shutdown. The SEC/SSO should mark the function(s) that have been completely lost and continue on in the flowpath.

k. IF the function has an "X" marked in both columns, THEN it is required for hot shutdown AND cold shutdown.

l. IF a function has an "X" in only the hot shutdown column, THEN it is required only for hot shutdown.

m. IF a function has an "X" in only the cold shutdown column, THEN it is required only for cold shutdown.

n. IF the function(s) is required for hot shutdown, and RHR is not providing shutdown cooling THEN the SEC/SSO indicates a "Site Area Emergency" on the EAL Status Board and continues on the flowpath.

o. With RCS temperature being controlled by the Residual Heat Removal System, the functions required for hot shutdown column do not apply. IF the function(s) is required for cold shutdown only, THEN the SEC/SSO indicates an "Alert" on the EAL Status Board and continues on in the flowpath.

27. EAL-1 Grid G-8: Security Event

a. WHEN the Control Room is made aware of any security threat, THEN the Security force will be mobilized to investigate and validate the situation. This process will result in an event declaration, if appropriate, and this event declaration will establish the level of emergency class.

8.2.3.27 (Continued)

b. The Superintendent Shift Operations (SSO) or his designee must determine if physical control of the plant is lost OR its loss is imminent.

c. Imminent loss of physical control would NOT merit declaration of a General Emergency.

28. EAL-1 Grid G-11: Release in Progress

a. This decision block refers to a release of radioactive material from the New or Spent Fuel Building.

b. It does not include normal liquid and gaseous releases, CV purges, OR CV pressure reliefs. These are addressed elsewhere.

NOTE:	The following guidance is for EAL-2.

29. EAL-2 Grid B-3: Any Rad Monitor in Table 4 in Alarm

a. This decision block asks if any of the RAD monitors in Table 4 are in alarm. Table 4 consists of the radiation monitors used for dose projections. They are listed by their radiation monitor numbers so the SEC/SSO can easily determine which monitors to assess at this point in the flowpath.

b. IF any of the Rad Monitors are in alarm, THEN the SEC/SSO should mark that Rad Monitor on the Table AND continue on in the flowpath.

- IF the current reading for any of the Rad Monitors listed in Table 5 is greater than value listed in Column 6 of Table 5, THEN an "Alert" is indicated on the EAL Status Board and the SEC/SSO continues on in the flowpath.

8.2.3.29 (Continued)

c. The multipliers used in the calculation are based on the normal setpoints for these monitors. IF the setpoints have been reduced below the normal values, as described in OMM-014, Radiation Monitor Setpoints, THEN the basis for the Alert call is no longer valid. In this event, an Alert call should NOT be made.

d. Table 5 is referred to again when evaluating the Unusual Event Matrix. In this case, if any monitor is greater than the value specified in Column 4, an Unusual Event is declared.

30. EAL-2 Grid F-6: Lake Level Normal

a. Normal lake level is from 220.7 ft. to 221.5 ft. above mean seal level (MSL).

31. Grid F-10 (F-11): Sustained Lower Wind Speeds Greater than 90 (100) MPH.

a. Sustained winds are those which are reported as sustained from the National Weather Service or meteorological center OR are observed on plant meteorological tower data for greater than 5 minutes continuously.

- The plant meteorological tower reports wind speed as a 15 minute average. By virtue of this, if the speed is reported in excess of the limit on ERFIS/EDS the condition is satisfied.

b. In the event that information specifically for the Robinson Plant is not available, information reported for the nearest reliable location in the Hartsville - Florence vicinity from any of the sources listed in EPRAD-00, Radiological Assessments and Consequences should be used in answering this decision block.

8.2.3.31 (Continued)

c. In the absence of any data from these sources the block should be answered NO.

32. EAL-2 Grid F-12: Any Explosion Affecting Plant Operation

a. An explosion is a rapid and violent chemical reaction releasing large quantities of energy.

b. This decision block should be answered YES if an explosion has occurred AND any of the following have occurred as a result of the explosion:

- Access is lost to equipment which must be operated to maintain stable plant conditions.
- Damage to safety-related equipment which impairs its performance.
- Personnel injury has resulted in the shift complement not being maintained.

c. An explosion does NOT include catastrophic failures of electrical breakers or compressed gas bottles.

33. EAL-2 Grid F-14: Safety-Related Equipment or Structure Affected

a. This decision block should be answered YES if any function listed in Table 2 OR Table 3 of EAL-1 is completely lost as a consequence of the explosion/aircraft crash/missile impact.

8.2.3 (Continued)

34. EAL-2 Grid H-2: Uncontrolled or Unplanned Release of Toxic or Flammable Gas into Vital Area

a. The following is a list of toxic and flammable gases and asphyxiants that are normally stored in bulk quantities within the Protected and Vital areas. While this list is not all-inclusive, it is provided to aid in classification; the MSDS identifier is provided for information.

Name of Toxic or Flammable Gas

ACETYLENE (1, 2)

OXYGEN (1)

PROPANE (1, 2)

HYDROGEN (1)

AMMONIA (1, 2)

P-10 GAS, used in portal monitors (1)

ETHANOLAMINE (1, 2)

METHOXYPROLAMINE (1, 2)

DIMETHYLAMINE (1, 2)

* Oxygen itself is not flammable, but is treated as a flammable gas because its presence increases the flammability of materials.

1 - Flammable

2 - Toxic

b. When evaluating the effects of a release of toxic or flammable gas, this decision block should be answered YES if the gases listed are released in an uncontrolled or unplanned manner.

c. For evolutions such as surveillance testing, freeze-sealing and leak-checking, it is expected that small quantities may be released; these small anticipated releases should NOT result in a YES answer.

8.2.3.34 (Continued)

d. Asphyxiants such as those listed below displace oxygen and, as such, can become toxic in large enough quantities.

Asphyxiant Gas

NITROGEN

ARGON

CARBON DIOXIDE

HELIUM

FREON - GENETRON DICHLORODIFLUOROMETHANE

FREON - R-22, CHLORODIFLUOROMETHANE

e. When evaluating the "loss of access" decision block, the SEC/SSO must consider the type and quantity of gas released, the volume into which it is released, AND the flow path of the ventilation system in service.

- For flammable gases, where any spark could conceivably trigger a fire or explosion which could damage vital equipment, a YES answer is warranted for potentially flammable concentrations.

- For toxic gases and asphyxiants, the concern is a loss of access for personnel to manipulate vital equipment in support of normal or EOP procedures. Positive indications, by sample, or Superintendent Shift Operations (SSO) judgment should be used to verify atmosphere is oxygen deficient prior to answering Yes. IF access to any vital area is lost, THEN the decision block should be answered YES. Vital areas are listed in Attachment 8.2.5.1, Vital Areas.

8.2.3 (Continued)

35. EAL-2 Grid H-3: Lack of Access Causes Complete Loss of any Function in Table 2 or 3

    a. IF access to a vital area(s) is lost such that manual actions required to support any function cannot be performed, THEN this decision block should be answered YES.

36. UE Matrix Item E3:

    a. Loss of both EDGs means that the diesels are not capable of providing AC power to the Emergency Busses. Events caused by fires should be evaluated for its potential to affect safety related equipment.

37. UE Matrix Item A1:

    a. IF the setpoints have been reduced below the normal values, as described in OMM-014, Radiation Monitor Setpoints, THEN the basis for the Unusual Event call is no longer valid. In this event, a UE call should NOT be made.

38. UE Matrix Item B4

    a. While R-9 can detect changes in RCS activity, it can not always determine the origin of the radioactive material in the RCS. If conditions exist that could give false indication of fuel failure, a sample should be used for verification. The instruction in UE matrix B1, B2, or B3 should be used once sample results are obtained. If previous plant conditions exist such as confirmed fuel clad leakage, declaration should occur without delaying for sample.

39. UE Matrix Item G3

    a. Credibility must be established when notification of a threat is received.

    b. If time permits, Security should be contacted to verify the credibility of the threat by contacting the appropriate local, state, or federal agency.

8.2.3.39 (Continued)

c. If time does not permit, the Superintendent-Shift Operations or Site Emergency Coordinator must determine credibility using the best available information.

d. Credible threats include the following:

- Events that are in progress are considered to be credible.

- Validated notifications reported by State or Federal agencies. These notifications are considered valid following verification that the notification was made by the agency specified.

e. For potentially credible threats from calls that do not originate from State or Federal agencies, the determination is not as straightforward. In these cases, judgment must be used. The caller should be questioned using the technique similar to that used for a bomb threat. The following information should be obtained for evaluating credibility:
   - Ask the caller's name.

   - Ask the caller the reason for the call.

   - Is the caller rational/sober?

   - Does the caller know when the event will occur?

   - Does the caller know specific information concerning the plant?

8.2.3 (Continued)

40. Downgrading an Emergency

a. Downgrading of an emergency can be accomplished by declaring the lower emergency class whenever the plant conditions improve to satisfy the affected emergency action levels.

b. The following guidelines apply when downgrading an Emergency:

- IF the Position of Emergency Response Manager is activated, THEN he should be consulted before downgrading occurs, although the final decision rests with the Site Emergency Coordinator.

- IF the NRC Director of Site Operations position is activated, THEN he should be consulted before downgrading occurs, although the final decision rests with the Site Emergency Coordinator.

- IF offsite protective action recommendations have been made, THEN the Site Emergency Coordinator shall consult with the Emergency Response Manager, if the position is activated, AND consult with state and county authorities, prior to downgrading. It is recommended that any offsite protective action recommendations be completed prior to downgrading of a General Emergency.

- For Alert or higher classifications, unless the conditions causing emergency action levels are very quickly resolved (less than approximately 30 minutes), downgrading should not occur until after the Technical Support Center is activated.

- IF the process of activating the TSC is in progress, THEN downgrading should NOT occur until after TSC activation.

41. Recovery actions should follow guidance provided within PLP-007, Robinson Emergency Plan, Section on Recovery.

8.2.4 RECORDS

N/A

8.2.5 ATTACHMENTS

8.2.5.1 Vital Areas

VITAL AREAS

PAP WEST

CAS - Central Alarm Station
Access Control
Mechanical/Electrical Room
PAP (TSC/EOF) Diesel

PAP EAST

SAS - Secondary Alarm Station

RADIATION CONTROL AREAS

RHR Pump Room
BIT Room
Auxiliary Building
Containment Building
Fuel Handling Building - Gas Decay Tank Room
Spent Fuel Pit
New Fuel Building
SFP Heat Exchanger and Pump Area

OTHER AREAS

AFW Pump Room
E1/E2, Battery Room, Safeguards and Relay Rack Rooms
HVAC Equipment Room for the Unit 2 Control Room
Old Unit #1 Cable Spread Room
Unit #2 Control Room
CCW Surge Tank Room
Service Water Intake Building

CP&L

R
Reference Use

CAROLINA POWER & LIGHT COMPANY
H. B. ROBINSON STEAM ELECTRIC PLANT, UNIT NO. 2

PLANT OPERATING MANUAL

VOLUME 2
PART 5

EMERGENCY PROCEDURE

EPPRO-01

PROGRAM AND RESPONSIBILITIES

REVISION 13

SUMMARY OF CHANGES

STEP #	REVISION COMMENTS
Entire Procedure	Page numbering format revised to reflect AP-007 guidelines.
Step 8.1.2.1(b)	Deleted the requirement to conduct the annual PASS drill as part of the semi-annual Health Physics drill.
Step 8.1.3.2	Revised step to indicate that procedure improvements may be recommended by initiating a procedure revision request (PRR).
Step 8.1.3.3	Revised step to indicate that procedures will be revised in accordance AP-044, Procedure Review and Approval Process, and PRO-NGGC-0204.
Step 8.1.2.3.c	Changed term "deficiency" to "issue" and "improvement item" to "item for management consideration" for consistency with the terminology defined in CAP-NGGC-0201.
Attachment 8.1.14.4	Reworded Objective 22 to delete the phrases "obtain samples" and "the PASS and other". Also added reference to NRC Amendment No. 192, Elimination of the Requirements for the Post Accident Sampling System.
Attachment 8.1.14.5	Revised the acceptance criteria for Objective 22 to state "This objective is met when core damage assessment has been performed in accordance with applicable procedures."

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8.1 PROGRAM AND RESPONSIBILITIES

8.1.1 DRILL AND EXERCISE PARTICIPATION

1. ERO personnel are expected to drill/exercise with their designated team.

    a. If they will be unavailable for the drill it is their responsibility to ensure some one from another team will fill their position.

    b. Relief team personnel will participate in at least one team Drill, Exercise, or Tabletop each year.

    c. Non-Team designated ERO personnel are expected to coordinate with the other persons qualified for their position to ensure the position is staffed for each drill/exercise and that each ERO member participates in at least one Drill per calendar year.

2. ERO personnel filling critical positions shall be observed at least once in a calendar year performing their ERO duties.

3. Unless otherwise directed by Emergency Preparedness (EP), ERO personnel should respond during augmentation for their facility.

    a. Those personnel available to respond should establish 24 hour coverage for the position.

    b. Personnel on night shift may be exempted from augmentation, but should be used to establish 24 hour coverage.

    c. After the rotation is established, personnel may be simulated to be sent home and return to their place of work.

    d. Personnel are required to keep the manager responsible for their accountability informed of their location should an evacuation be conducted at a later time.

8.1.2 DRILLS AND EXERCISES

1. Emergency Response Organization (ERO) personnel will participate in periodic drills at least once each calendar year. Additionally one team, on a rotational basis, will participate in the Graded Exercise. The purpose of conducting drills is to ensure that each team has the skills to successfully deal with a real emergency. The following are the types of drills conducted:

   a. Medical Emergency Drills: Medical emergency drills will be conducted annually. They will involve a simulated contaminated and injured individual. Off-site portions of these drills may be conducted as part of an exercise.

   b. Health Physics Drills: Health Physics drills, including response to and analysis of simulated elevated airborne and liquid samples and direct radiation measurements, will be conducted semi-annually. **{NRC Amendment No. 192}**

      – Participation in the Medical Services (MS-1) drill may also be included.

   c. Combined Functional Drills: Combined Functional Drills may include any of the required drills and serve as the primary method of practical training for new ERO members and continuing training for existing members.

2. An Exercise will be conducted as required by 10 CFR, Part 50, Appendix E.

   a. The scenario which will ultimately escalate to at least a Site Area Emergency.

   b. The scenario will be varied from year to year such that major elements of the Plant, County, and State Plans and emergency organizations are tested within a six (6)-year period. Major elements to be demonstrated are outlined as drill/exercise objectives in Attachment 8.1.14.4. Deletion of any of the elements outlined in Attachment 8.1.14.4 require PNSC approval. (AR #44128/PNSC Meeting #1999)

8.1.2.2 **DRILLS AND EXERCISES** (Continued)

c. Consideration should be given to vary the scenarios during the six year cycle to include accidents identified in Chapter 15, Accident Analysis, of the UFSAR. (CR 44132)

d. Combined Functional Drills: Combined Functional Drills may include any of the required drills and serve as the primary method of practical training for new ERO members and continuing training for existing members.

   - An integrated drill involving the fire brigade, Dedicated Shutdown procedures (DSP) and the ERO should be practiced once during a two year cycle.

e. Each Exercise scenario will include a list of performance objectives and a description of the expected responses. Specific tasks that should be evaluated are listed in Attachment 8.1.14.4 and 8.1.14.5, "Drill Objectives" and "Acceptance Criteria" respectively.

   - Attachments identify the Emergency Response facility where the activity is most likely to occur, however, the objective may be judged acceptable if performed in an alternate location.

   - Credit may be taken for objectives that are satisfactorily completed during actual events.

f. An off-hours exercise which starts between 6:00 p.m. and 4:00 a.m. will be conducted once every six (6) years.

g. Advance knowledge of the scenario content and the times of the exercises will be kept to a minimum to ensure a realistic participation by those involved.

8.1.2.3 **DRILLS AND EXERCISES** (Continued)

3. The EP Staff is responsible for planning and conducting drills and exercises not addressed elsewhere (e.g., Fire Drills are addressed in the Fire Plan). They shall provide:

   a. The scenario including objectives for the drill/exercise.

      - From time to time "specific objectives" which are in addition to required performance objectives will be added to the Training Exercise Objectives. These may be in response to previous deficiencies, EP TPC items or require that normally simulated items be actually performed. A prompt to consider these items is contained in the pre-drill checklist.

      - An extent of play describing the degree of simulation for drill/exercise activities.

      - Qualified Controller/Evaluators to evaluate the drill/exercise.

      - As a minimum, Controller/Evaluators should be available to evaluate the following:

        - each facility activating,
        - Environmental Monitoring Teams,
        - Mechanical Damage Control Missions (as applicable),
        - Electrical Damage Control Missions (as applicable),
        - Chemistry/Health Physics Missions,
        - Offsite functions to be simulated,
        - any special functions (e.g. fire, injury)

   b. A yearly plan for ERO exercises.

   c. A critique report noting strengths, issues, weaknesses, and items for management consideration. Critiques will be conducted after each drill/exercise in accordance with Attachment 8.1.14.6 (AR #44128,CAPR). Critique observations should be categorized during the lead evaluator critique roll-up as noted below:

NOTE:	Critique reports for small scale drills may be documented in memo format.

8.1.2.3.c **DRILLS AND EXERCISES** (Continued)

- **Strength**: an action or activity performed in an above average manner, or in a creative manner to resolve a problem without the violation of a requirement. These are items which all teams should consider adopting.

- **Issue**: an activity or action that results in failure to comply with the Emergency Plan/procedures, or failure to meet the acceptance criteria resulting in inadequate demonstration of a drill/exercise objective; an activity or action which interferes with the ability of the ERO to mitigate the consequences of an accident and protect the health and safety of the public.

- **Weakness**: an action or activity that interferes with the operation of the Emergency Response Organization to a degree that is correctable, however, if not corrected could to a reduction in the ability of the ERO to protect the health and safety of the public.

- **Item for Management Consideration**: an action or activity that meets current minimum response requirements and is within procedural requirements, but improvement would increase the efficiency and effectiveness of the response effort.

- **Comments**: items not meeting the criteria for a strength, issue, weakness, or improvement item. Comments identified on EP Improvement Forms will be screened and entered into Action Tracking as a Nuclear Task Management (NTM) item as applicable.

- Draft critique reports should be issued for comment to the participating ERO team members within seven working days following the post drill controller/evaluator meeting.

  1. Published drill comments will be limited to those that do not compromise the confidentiality of the scenario.
  2. If multiple drills are conducted during consecutive weeks, then the seven working day criteria will begin at the end of the final post drill controller/evaluator meeting.

8.1.2.3.c **DRILLS AND EXERCISES** (Continued)

- The draft critique report will normally consist of the following:

  1. Cover Letter and Summary, signed by the Supervisor of Emergency Preparedness, with a brief statement containing the date the drill(s) was conducted; team(s) that participated; and a summary statement of overall drill performance.

  2. Objectives and Objective Status

     - The objectives should be listed for each facility.
     - The status of each objective (met or not met) will be listed for each facility based on the acceptance/evaluation criteria.
     - Satisfactory completion of an objective by any team will satisfy that requirement for the Site.
     - Any team failure to demonstrate an objective is a deficiency and will be handled as such. At the discretion of EP Supervision failure to demonstrate an objective(s) may require re-demonstration by the team.

  3. The final critique report will be documented as a self assessment per CAP-NGGC-0201, Self-Assessment Program.

d. A pre-drill and post-drill review of items needed to prepare for the drill/exercise or return to normal following the drill/exercise (i.e., reset simulator telephones).

8.1.3 **EP PROCEDURE MAINTENANCE AND PROGRAM IMPROVEMENTS**

1. The Emergency Plan and Implementing Procedures Review will be documented as a mandatory self assessment per CAP-NGGC-0201 and should be a cross-functional.

2. Procedure improvements may be recommended by initiating a procedure revision request (PRR) in Action Tracking.

8.1.3 (Continued)

3. Procedure changes to the Robinson Emergency Plan and/or Emergency Procedures will be accomplished as required by AP-044, Procedure Review and Approval Process, and PRO-NGGC-0204.

   a. Emergency Preparedness will be responsible to maintain the Emergency Action Levels (EAL) and supporting basis documents, as well as the Emergency Procedures.

   b. Documents will be developed and maintained to comply with applicable regulations.

   c. The EAL basis document will be revised to reflect NUREG-0654, "Criteria for Preparation and Evaluation of Radiological Emergency Response Plans and Preparedness in Support of Nuclear Power Plants," or other management directives and policies.

   d. All Emergency Procedures, EALs, and the Emergency Plan shall be reviewed per REG-NGGC-0010, 10 CFR 50.59 Reviews.

4. For each drill or real event, EP improvement forms will be made available.

5. Items reported on EP improvement forms will be screened for entry into Action Tracking as a CR or NTM, as applicable.

6. Feedback regarding disposition of items will be provided to the individual who initiated the comment, normally within ten working days.

8.1.4 **INADVERTENT SIREN ACTIVATION**

1. Upon receiving a report of an inadvertent siren activation:

   a. If a real emergency or drill/exercise is in progress that involves sounding of the sirens, then direct the callers to tune to an Emergency Alerting System Station listed in the emergency public information distributed by CP&L.

   b. If no event is in progress obtain information requested on attachment 8.1.14.2, Siren System Inadvertent Activation Report and ask the caller if a call back is desired once more information is known.

8.1.4 **INADVERTENT SIREN ACTIVATION** (Continued)

2. If an inadvertent siren activation has been confirmed, then notify the following:

   a. All County Emergency Operations Center or Warning Points concerning the plant status. This can be accomplished via Selective Signaling or the Bell lines.

      Sirens are located as follows:

      - Chesterfield County - 13 Siren Locations
        Siren #'s - 01, 02, 03, 04, 05, 06, 09, 10, 11, 15, 16, 17, and 45

      - Darlington County - 28 Siren Locations
        Siren #'s - 07, 08, 12, 13, 14, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 30, 31, 32, 33, 34, 36, 37, 38, 39, 41, 42, 43, and 44

      - Lee County - 4 Siren Locations
        Siren #'s - 28, 29, 35, and 40

      Total Sirens - 45 Siren Locations (All Counties)

   b. Notify the Telecommunication Help Desk (8-1-800-800-6200) that an inadvertent siren activation has occurred and request that repair personnel be dispatched to correct the problem. Request a work order Number and a return call when the sirens have been silenced.

   c. Notify Emergency Preparedness by phone or pager. The ERO Phone Book has the necessary information.

   d. Notify Robinson Communications of the inadvertent siren activation and request immediate notification if a press release is to be issued. A press release relating to this event is reportable to the NRC. Consult AP-030, NRC Reporting Requirements.

8.1.4 **INADVERTENT SIREN ACTIVATION** (Continued)

3. When the Unit 2 Control Room is notified that the siren(s) have been silenced ensure that:

   a. Evaluate AP-030, NRC Reporting Requirements, for potential NRC reporting.

   b. Notify the State and County Warning Points concerning the status of the sirens.

   c. Notify Robinson Communications.

4. Forward information gathered and any completed Attachment 8.1.14.2 forms to Emergency Preparedness for retention as appropriate.

8.1.5 **EMERGENCY RESPONSE ORGANIZATION BEEPER DISTRIBUTION**

1. After qualifying as an ERO member, EP will arrange an ERO beeper for the positions identified in Attachment 8.1.14.3, ERO Beeper Distribution.

2. Beepers are to ensure that the plant has the ability to meet the 30-45 minute response staffing requirements.

3. Plant Public Address, Non-Responding Emergency Communicators, dialogic and/or beepers are used to contact the 60-75 minute staff, and other positions not required by NUREGs.

8.1.6 **HURRICANE PREPARATION GUIDANCE (CR 16553)**

OMM-021 "Operation During Adverse Weather Conditions", provides direction for hurricane/adverse weather preparations. Additional tasks for the EP staff to consider are:

- Establish the response teams.
- Designate and post sleeping areas.
- Set up and test the satellite telephone.

8.1.7 **INTENTIONALLY BLANK**

8.1.8 **INTENTIONALLY BLANK**

8.1.9 **INTENTIONALLY BLANK**

8.1.10 **SCENARIO DEVELOPMENT**

Guidelines for the development, conduct, and assessment of drill/exercise scenarios are contained in EPPRO-05, Scenario Development and Drill Control Guidelines.

8.1.11 **DRILL/EXERCISE SELF EVALUATION (AR #44128)**

1. Evaluate the effectiveness of each of the following drill/exercise cycle phases at least once during the biennial exercise cycle:
   a. Analysis
   b. Design
   c. Development
   d. Implementation
2. Select one or more of the following self-evaluation programs to determine the effectiveness of a specific phase:
   a. Corrective action
   b. Operating experience
   c. Self-assessment
   d. Benchmarking
3. Probe to identify the following:
   a. Flawed defenses
   b. Error precursors
   c. Weak organizational processes

8.1.11 (Continued)

4. Consider the following elements:
   a. Results
   b. Behaviors
   c. Task demands
   d. Work environment
   e. Individual capabilities

8.1.12 **PUBLIC EDUCATION AND INFORMATION**

1. Emergency Preparedness and Site Communications shall perform the following actions:

   a. In cooperation with the State of South Carolina, local governments and with corporate CP&L efforts, ensure that public education and information efforts are consistent and complementary.

   b. Ensure that a public information program for persons living in the possible plume exposure Emergency Planning Zone includes the following elements:

      – Brochures or other media containing educational information on emergency preparedness, nuclear power and radiation, and how to contact CP&L for more information.

      – Coordination of speakers to address emergency preparedness when requested.

      – Supplying news material for the media.

8.1.12.1 (Continued)

c. Ensure that the public education program includes the following information:

- The potential for occurrence of a radiological emergency.
- How to recognize a radiological emergency notification.
- What proper, immediate actions (e.g., return to home, close windows and turn on radio) should be taken upon notification.
- Protective actions to be taken if shelter is prescribed.
- General procedure to follow if an evacuation is required.
- General education on radiation.
- A contact for how to learn more about emergency preparedness.

8.1.13 **RECORDS**

1. Attachment 8.1.14.2 is to be maintained in the EP Unit files for a period of two years unless otherwise specified.

2. The following documents are to be submitted for retention as vital records in the plant vault per RDC-NGGC-0001:
   - Recurring drills/exercise maintenance and testing records documented per EPPRO-02.
   - NRC Biennial Graded Exercise scenario narrative/timeline, scope and objectives, and final critique report.

3. For Full Scale Drills/Exercises, copies of the scenario timeline, draft critique reports, attendance records, and final critique reports should be maintained by the EP Staff for a period of six (6) years.

4. For Small Scale Drills, copies of the covered topics, attendance records, and critique reports should be maintained by the EP Staff for a period of six (6) years.

8.1.14 **ATTACHMENTS**

8.1.14.1 EP Improvement Form

8.1.14.2 Siren System Inadvertent Activation Report

8.1.14.3 ERO Beeper Distribution

8.1.14.4 EP Drill and Exercise Objectives

8.1.14.5 Acceptance Criteria

8.1.14.6 Guidelines for Emergency Response Organization (ERO) Critiques

ATTACHMENT 8.1.14.1
Page 1 of 1

EP IMPROVEMENT FORM

DATE:_____ ERO POSITION: _____

NAME: _____

RECOMMENDED CHANGE IS IN REFERENCE TO:

_____ EMERGENCY PLAN _____ EMERGENCY FACILITY

_____ EP-_____ (Give Number) _____ EP TRAINING

_____ EQUIPMENT _____ OTHER (List) _____

I RECOMMEND THE FOLLOWING CHANGE, ADDITION OR IMPROVEMENT:

(Be specific - list all information)_____

_____

_____

_____

_____

For Emergency Preparedness Use

NTM #: _____

Date Received:_____ Date Originator Notified: _____

This form is for information only. No record retention requirements apply.

ATTACHMENT 8.1.14.2
Page 1 of 1

SIREN SYSTEM INADVERTENT ACTIVATION REPORT

Date:__/__/__ Time:_____

Fill out as much of the following information as possible:

1. Incident Date:__/__/__ Incident Time:_____

2. Caller's Name:_____ Caller's Phone No.:_____

3. Location of siren(s) (include County and Community of caller):

The siren number is the preferred information. The siren number is located on the siren pole. If the caller cannot provide the siren number, obtain any information which may aid in identifying the siren. For example, request a description of the siren location, a road number, or of the location of the person who is making the report and the direction from which the sound is coming.

Siren Number(s) or Location _____

_____

_____

4. Additional questions: (circle one)

- What noise did the siren make (steady tone, wavering tone, etc.)?
- Is the siren still sounding? (Yes / No)
- For what length of time did the siren sound?
  (1 min / 2 min / 3 min / Continuous / Unknown)
- Is more than one siren sounding? (Yes / No)

5. Name of Person Receiving Report | Location | Telephone Number

Completed documents to be maintained in EP Files for a period of two years.

ERO BEEPER DISTRIBUTION

All Team Members in the following positions.

SEC	OSC Leader	AERM
POD	ERM	NRC
TAD	A&LM	EP
ERD	TAM	JIC Director
RCD/RCM	POA	Reactor Engineer
ESTL	EC	Computer Support
Superintendent Shift Operations Desk	DPTL	Company Spokesperson
State/County Communicator		RC Tech-Damage Control
RC Tech Facilities (45 min)		En Mon Team (45 min)
JIC Technical Spokesperson		

Rotational Beeper positions

NRC Communicator	Environmental/Chemistry Tech
PI Communicator	Electrical Engineer
Security Lieutenant	Mechanical Engineer
Damage Control Leaders	RC Tech-Facilities (75 min)
(1) Mechanics	En Mon Team Leader
(1) I&C/Electricians	En Mon Team (75 min)

(1) Normally on shift, beepers available

This information is for resource allocation only. No record retention requirements apply.

EP DRILL AND EXERCISE OBJECTIVES

	NUREG 0654	OBJECTIVE	CR	TSC	OSC	JIC	EOF	FREQ
1	A.1.e F.1.a	Provide 24 hour per day on shift emergency response personnel as required by the Emergency Plan including the capability of 24 hour per day manning of communications.	X					6 yr
2	A.4	Demonstrate ability to staff Emergency Response Facilities (ERF) 24 hours per day.		X	X	X	X	6 yr
3	B.5 H.4 B.7 [1]b.2	Demonstrate the ability to augment shift staff and activate ERFs with Emergency Plan Table 5.3.2-1, "Capability for Additions" column for 30-45 min and 60-75 min.		X	X		X	2 yr
4	B.7.a B.7.b B.7.c B.7.d	Demonstrate the ability to augment shift staff with: -Logistics support personnel -Technical support for reentry/recovery operations -Management interface with governmental authorities -Corporate interface with news media		X		X	X X X	2 yr

NOTE: Deletion of EP Drill and Exercise Objectives from this attachment requires PNSC approval. (AR #44128/PNSC Meeting1999)

[1]10CFR50.47

EP DRILL AND EXERCISE OBJECTIVES

	NUREG 0654	OBJECTIVE	CR	TSC	OSC	JIC	EOF	FREQ
5	B.8	Demonstrate the ability to contact Contractors and private organizations for technical assistance.					X	Ann
6	B.9 L.4 [1]b.12	Demonstrate the ability to obtain assistance from law enforcement, medical, and fire-fighting organizations including assistance for contaminated personnel.	X					Ann
7	C.2.b	Demonstrate the ability to provide a representative to the SEOC (when activated) and County EOCs.					X	2 yr
8	C.3 [1]b.9	Demonstrate the ability to coordinate radiological monitoring and analysis.					X	Ann
9	D.1 I.1 [1]b.4	Demonstrate the ability to identify and properly classify events using appropriate procedures, plant system parameter values, and the EALs.	X	X				Ann
10	E.2 F.1.e [1]b.2	Demonstrate the ability to alert, notify, and mobilize ERO personnel	X	X	X	X	X	Ann
11	E.3 [1]b.5	Demonstrate the ability to make initial emergency notification to State and Chesterfield, Darlington, and Lee County Warning Points or EOCs within 15 minutes following declaration of each emergency classification.	X				X	Ann

NOTE: Deletion of EP Drill and Exercise Objectives from this attachment requires PNSC approval. (AR #44128/PNSC Meeting1999)

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EP DRILL AND EXERCISE OBJECTIVES

	NUREG 0654	OBJECTIVE	CR	TSC	OSC	JIC	EOF	FREQ
12	E.4 [1]b.5	Demonstrate the ability to make follow-up notifications to State and Chesterfield, Darlington, and Lee County Warning Points or EOCs within 60 minutes following initial and change of classification notifications.	X				X	Ann
13	E.7 J.7 [1]b.10	Demonstrate the ability to formulate protective action recommendations and transmit to State and County personnel.					X	Ann
14	F.1 F.1.a F.1.b	Demonstrate the ability to communicate with State and County personnel using primary and backup communication systems.	X				X	Ann
15	F.1.c	Demonstrate the provisions to communicate with Federal emergency response organizations.	X	X				Ann
16	F.1.d [1]b.6	Demonstrate the ability to communicate between the CR, TSC, EOF, OSC, and Enmon teams.	X	X	X		X	Ann
17	F.1.f	Demonstrate the ability to communicate with the NRC within 60 minutes following each emergency classification declaration.	X	X				Ann
18	G.3.a G.3.b	Demonstrate timely activation of the Joint Information Center.				X		2 yr

NOTE: Deletion of EP Drill and Exercise Objectives from this attachment requires PNSC approval. (AR #44128/PNSC Meeting1999)

[1]10CFR50.47

EP DRILL AND EXERCISE OBJECTIVES

	NUREG 0654	OBJECTIVE	CR	TSC	OSC	JIC	EOF	FREQ
19	G.4.a [1]b.7	Demonstrate the ability to obtain emergency related information.				X		2 yr
20	G.4.b G.4.c	Demonstrate the ability to disseminate timely, accurate, and appropriate emergency information including provisions for rumor control.				X		2 yr
21	H.6.a H.6.b I.5	Demonstrate the ability to obtain data from meteorological, hydrologic, seismic, radiological monitors, and sampling devices.	X				X	Ann
22	I.2 [1]b.9	Demonstrate the ability to analyze data from post accident monitoring equipment. **{NRC Amendment No. 192}**			X			Ann
23	I.3.a I.3.b	Demonstrate the ability to determine the source term and magnitude of releases.	X				X	Ann
24	I.8 I.9 J.7	Demonstrate the ability to project dosage to the public based on plant and field data.					X	Ann
25	J.1 [1]b.2	Demonstrate the ability to alert and advise individuals who are visitors, contractors, and members of the public onsite.	X					Ann

NOTE: Deletion of EP Drill and Exercise Objectives from this attachment requires PNSC approval. (AR #44128/PNSC Meeting1999)

[1]10CFR50.47

EP DRILL AND EXERCISE OBJECTIVES

	NUREG 0654	OBJECTIVE	CR	TSC	OSC	JIC	EOF	FREQ
26	J.3 K.7	Demonstrate the ability to evacuate non-essential personnel from site to be monitored and decontaminated at an offsite location.			X		X	6 yr
27	J.4	Demonstrate the ability to monitor, decontaminate and evacuate non-essential personnel from site.			X		X	6 yr
28	J.5	Demonstrate the ability to account for individuals in the protected area and identify the names of those unaccounted for within 30 minutes.		X				6 yr
29	J.6 K.3.a K.3.b	Demonstrate the ability to provide ERO personnel protective clothing, respiratory protection, dosimetry, and radioprotective drugs. This also includes determination of doses received and maintenance of dose records 24 hours per day.	X	X	X		X	2 yr
30	K.1 [1]b.11	Demonstrate the ability to establish onsite exposure guidelines consistent with EPA emergency worker and lifesaving activities.		X				Ann
31	L.2	Demonstrate the ability to provide onsite first aid capability.			X			Ann

NOTE: Deletion of EP Drill and Exercise Objectives from this attachment requires PNSC approval. (AR #44128/PNSC Meeting1999)

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EP DRILL AND EXERCISE OBJECTIVES

	NUREG 0654	OBJECTIVE	CR	TSC	OSC	JIC	EOF	FREQ
32	M.1 M.2 M.3 M.4	Demonstrate the ability to reassess plant conditions and evaluate recovery/reentry considerations.					X	6 yr
33	N.1.b	Demonstrate the ability to augment the ERO, during an Exercise, between 6:00 p.m. and 4:00 a.m. or any weekend hours.	X					6 yr
34	N.2.d	Perform Radiological Monitoring Drills which involve collection and analysis of all sample media (e.g., water, vegetation, soil and air), and provisions for communications and record keeping.					X	Ann
35	N.2.b	Perform fire drills which demonstrate the ability of the fire brigade to respond to a fire and interface with offsite fire assistance.	X					6 yr
36	N.2.c	Perform medical emergency drills which demonstrate the ability to deal with a medical emergency involving a simulated contaminated individual including participation of offsite medical treatment agencies.	X		X			Ann

NOTE: Deletion of EP Drill and Exercise Objectives from this attachmentrequires PNSC approval. (AR #44128/PNSC Meeting1999)

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EP DRILL AND EXERCISE OBJECTIVES

	NUREG 0654	OBJECTIVE	CR	TSC	OSC	JIC	EOF	FREQ
37	N.2.e (1) [1]b.9	Perform Health Physics Drills which involve response to, and analysis of, simulated elevated airborne and liquid samples and direct radiation measurements in the environment.			X			6 mo
38	ACR 94-01156 CA .1	Perform an offsite hazards drill which will involve response to, and analysis of simulated offsite hazards (examples: chlorine, propane, hydrogen, gasoline or some other offsite hazard either natural man made). Samples and measurements as well as protective measures should be taken.	X	X	X		X	Ann
39	N.4	Perform a critique at the conclusion of an exercise to evaluate the ability of organizations to respond as required.	X	X	X	X	X	Ann
40		Demonstrate that NRC identified open items resulting from previous exercises are corrected.						
41	CR 98-02026	Demonstrate actual use of SCBA's including field change out of spare cylinder.			X			Ann

NOTE: Deletion of EP Drill and Exercise Objectives from this attachment requires PNSC approval. (AR #44128/PNSC Meeting1999)

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ACCEPTANCE CRITERIA

	OBJECTIVE	ACCEPTANCE CRITERIA
1	Provide 24 hour per day on shift emergency response personnel as required by the Emergency Plan including the capability of 24 hour per day manning of communications.	This objective is met as long as the staffing requirements of Technical Specifications, Emergency Plan Table 5.3.2-1 "Minimum Shift Size" column are satisfied.
2	Demonstrate ability to staff ERFs 24 hours per day.	This objective is met when the ERFs are staffed and a shift turnover is complete.
3	Demonstrate the ability to augment shift staff and activate ERFs with Emergency Plan Table 5.3.2-1, "Capability for Additions" column for 30-45 min and 60-75 min.	This objective is met when the staffing requirements of the Emergency Plan Table 5.3.2-1, "Capability for Additions" column is satisfied.
4	Demonstrate the ability to augment shift staff with: -Logistics support personnel -Technical support for reentry/recovery operations -Management interface with governmental authorities -Corporate interface with news media	This objective is met when facilities are capable of being activated.
5	Demonstrate the ability to contact Contractors and private organizations for technical assistance.	This objective is met when the ability to contact has been demonstrated. The ability to contact should include a verification of the appropriate phone number.
6	Demonstrate the ability to obtain assistance from law enforcement, medical, and fire-fighting organizations including assistance for contaminated personnel.	This objective is met when the ability to contact has been demonstrated. The ability to contact should include a verification of the appropriate phone number.

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ACCEPTANCE CRITERIA

	OBJECTIVE	ACCEPTANCE CRITERIA
7	Demonstrate the ability to provide a representative to the SEOC (when activated) and County EOCs.	This objective is met when the facilities are activated and an ERO representative is present.
8	Demonstrate the ability to coordinate radiological monitoring and analysis.	This objective is met when appropriate monitoring and analysis data are received. (Portions may be simulated as a control cell.)
9	Demonstrate the ability to identify and properly classify events using appropriate procedures, plant system parameter values, and the EALs.	This objective is met when events are correctly classified in a timely manner.
10	Demonstrate the ability to alert, notify, and mobilize ERO personnel.	This objective is met when the ERFs are activated.
11	Demonstrate the ability to make initial emergency notification to State and Chesterfield, Darlington, and Lee County Warning Points or EOCs within 15 minutes following declaration of each emergency classification.	This objective is met when initial notifications are accomplished within the required 15 minutes. Time starts at emergency declaration and ends at first contact.
12	Demonstrate the ability to make follow-up notifications to State and Chesterfield, Darlington, and Lee County Warning Points or EOCs within 60 minutes following initial and change of classification notifications.	This objective is met when follow-up notifications are accomplished within the required 60 minutes. Time starts at completion of the previous notification and ends at first contact.

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ACCEPTANCE CRITERIA

	OBJECTIVE	ACCEPTANCE CRITERIA
13	Demonstrate the ability to formulate protective action recommendations and transmit to State and County personnel.	This objective is met when protective action recommendations are transmitted to the State and Counties within 15 minutes following the declaration of a General Emergency.
14	Demonstrate the ability to communicate with State and County personnel using primary and backup communication systems.	This objective is met when communications have been established using the Selective Signaling system and one of the backup systems.
15	Demonstrate the provisions to communicate with Federal emergency response organizations.	This objective is met by agreement letters.
16	Demonstrate the ability to communicate between the CR, TSC, EOF, OSC, and Enmon teams.	This objective is met when none of the other Objectives fail due to communications.
17	Demonstrate the ability to communicate with the NRC within 60 minutes following each emergency classification declaration.	This objective is met when communications are established within the required time. Time starts at emergency declaration and ends at first contact.
18	Demonstrate timely activation of the Joint Information Center.	This objective is met when the Company Spokesperson has declared the Joint Information Center activated and the information has been entered into the log.

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ACCEPTANCE CRITERIA

	OBJECTIVE	ACCEPTANCE CRITERIA
19	Demonstrate the ability to obtain emergency related information.	This objective is met when facility briefings between the EOF and JIC have been conducted as appropriate.
20	Demonstrate the ability to disseminate timely, accurate, and appropriate emergency information, including provisions for rumor control.	This objective is met when a press conference has been conducted by a Company Spokesperson and false information has been corrected by responsible personnel.
21	Demonstrate the ability to obtain data from meteorological, hydrologic, seismic, radiological monitors, and sampling devices.	This objective is met when data has been obtained and provided to appropriate personnel.
22	Demonstrate the ability to analyze data from post accident monitoring equipment. **{NRC Amendment No. 192}**	This objective is met when core damage assessment has been performed in accordance with applicable procedures.
23	Demonstrate the ability to determine the source term and magnitude of releases.	This objective is met when source term and release magnitude/dose protection have been accurately determined.
24	Demonstrate the ability to project dosage to the public based on plant and field data.	This objective is met when Dose Projection information is included in the General Emergency declaration notification or as a follow-up to the General Emergency notification.

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ACCEPTANCE CRITERIA

	OBJECTIVE	ACCEPTANCE CRITERIA
25	Demonstrate the ability to alert and advise individuals who are visitors, contractors, and members of the public onsite.	This objective is met when individuals receive, understand, and respond as required to notifications provided by alarms and PA.
26	Demonstrate the ability to evacuate non-essential personnel from site to be monitored and decontaminated at an offsite location.	This objective is met when personnel are sent to an offsite location for decontamination. (Actual transport may be simulated.)
27	Demonstrate the ability to monitor, decontaminate and evacuate non-essential personnel from site.	This objective is met when personnel are able to discuss decontamination procedures.
28	Demonstrate the ability to account for individuals in the protected area and identify the names of those unaccounted for within 30 minutes.	This objective is met when accountability is completed within 30 minutes.
29	Demonstrate the ability to provide ERO personnel protective clothing, respiratory protection, dosimetry, and radioprotective drugs. This also includes determination of doses received and maintenance of dose records 24 hours per day.	This objective is met when adequate supplies are available and dose records are maintained during the drill.

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ACCEPTANCE CRITERIA

	OBJECTIVE	ACCEPTANCE CRITERIA
30	Demonstrate the ability to establish onsite exposure guidelines consistent with EPA emergency worker and lifesaving activities.	This objective is met when emergency worker and lifesaving exposure guidelines are implemented.
31	Demonstrate the ability to provide onsite first aid capability.	This objective is met when First Responders have provided initial treatment and the victim(s) have been delivered to the rescue squad. (Portions may be simulated as a control cell.)
32	Demonstrate the ability to reassess plant conditions and evaluate recovery/reentry considerations.	This objective is met when a recovery plan and an organization is formulated.
33	Demonstrate the ability to augment the ERO, during an Exercise, between 6:00 p.m. and 4:00 a.m. or any weekend hours.	This objective is met when augmentation is successfully completed between the hours of 6:00 p.m. and 4:00 a.m. or any weekend hours.
34	Perform Radiological Monitoring Drills which involve collection and analysis of all sample media (e.g., water, vegetation, soil and air), and provisions for communications and record keeping.	This objective is met when environmental measurement through analysis of water, vegetation, soil, and air sample media have been completed, recorded and communicated.
35	Perform fire drills which demonstrate the ability of the fire brigade to respond to a fire and interface with offsite fire assistance.	This objective is met when the fire brigade arrives at the scene with appropriate equipment and offsite fire assistance is coordinated. (Portions may be simulated as a control cell.)

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ACCEPTANCE CRITERIA

	OBJECTIVE	ACCEPTANCE CRITERIA
36	Perform medical emergency drills which demonstrate the ability to deal with a medical emergency involving a simulated contaminated individual including participation of off site medical treatment agencies.	This objective is met when First Responders arrive at the scene and offsite assistance is coordinated. (Actual transport may be simulated. Off-site medical treatment may be demonstrated in conjunction with the medical services (MS-1) drill.)
37	Perform Health Physics Drills which involve response to, and analysis of, simulated elevated airborne and liquid samples and direct radiation measurements in the environment.	This objective is met when response and analysis is made to simulated elevated airborne and liquid samples and direct radiation measurements in the environment. Credit may be taken for participation in the medical services (MS-1) drill.
38	Perform an offsite hazards drill which will involve response to and analysis of simulated offsite hazards (example chlorine, propane, hydrogen, gasoline or some other offsite hazard either natural or man made). Samples, measurements as well as protective measures should be taken.	This objective is met when an offsite hazard is included in a drill or exercise and protective measures are taken and the hazard is measured for the protective measures.
39	Perform a critique at the conclusion of an exercise to evaluate the ability of organizations to respond as required.	This objective is met when facility critiques have been conducted.
40	Demonstrate that NRC identified open items resulting from previous exercises are corrected.	This objective is met by successful demonstration of the task in the area(s) of concern.
41	Demonstrate use of SCBAs including field change out of spare cylinder.	This objective is meet when actual use of SCBAs and change out of cylinder are demonstrated.

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Guidelines for Emergency Response Organization (ERO) Critiques

Critiques are an important part of the process of self-identifying problems and improvements for the Emergency Response Organization. The following are guidelines for conducting a facilitated critique of the Emergency Response Organization.

Critique Process

The facility leader should conduct a facilitated critique as follows: INIT.

1. Assign someone to record the critique notes. ____
2. Ask for input on each objective and the acceptance criteria on the facility listing. ____
3. Probe to identify ____
   - Flawed defenses
   - Error precursors
   - Weak organizational processes.
4. Consider the following elements: ____
   - Results
   - Behaviors
   - Task demands
   - Work environment
   - Individual capabilities
5. If problems are identified, prior to continuing, determine whether the problem should be: ____
   a) identified in a Condition Report (CR),
   b) identified on an EP Improvement Form (EPIF), or
   c) included in the critique as a general comment.

   If a Condition Report or EP Improvement Form is warranted, ensure critique participants identify who is responsible to initiate and evaluate the CR or EPIF , and document this in the critique notes.

6. Identify any remediation due to less than acceptable performance and document the recommended remediation in the critique notes. ____
7. After all of the objectives have been addressed, ask for any general comments from all participants. ____
8. After all participants have completed their input, ask for comments from controllers and evaluators. ____
9. After all controllers/evaluators complete their input, ask for comments from NAS. ____
10. After all NAS comments are complete, ask for comments from the NRC. ____
11. Instruct the note taker to electronically transmit the critique notes to EP prior to the Lead Evaluator /Controller Critique (roll-up). ____

CP&L

R
Reference
Use

CAROLINA POWER & LIGHT COMPANY
H. B. ROBINSON STEAM ELECTRIC PLANT, UNIT NO. 2

PLANT OPERATING MANUAL

VOLUME 2
PART 5

EMERGENCY PROCEDURE

EPPRO-02

MAINTENANCE AND TESTING

REVISION 17

SUMMARY OF CHANGES

Step #	Description of change
Table of Contents Section 8.2.12 Section 8.2.15	 Added Remote Facility to inventory locations. Deleted PASS Drills from section title
Step 8.2.2.1(i)	Deleted PASS Drill and frequency
Section 8.2.12	Added Remote Facility to Quarterly Inventory
Section 8.2.15	Deleted PASS Drills from section title
Step 8.2.15.2	Deleted step 2 and re-numbered subsequent steps.
Step 8.2.15.3	Re-numbered step and deleted PASS drill from step.
Step 8.2.25	Add a prompt to revise the list of letters in the E-plan if necessary
Attachment 8.2.32.6	Added Remote Facility to Quarterly Inventory
Entire Procedure	Revised page numbering to reflect AP-007 format. Corrected typographical errors throughout the procedure.

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8.2 MAINTENANCE AND TESTING

8.2.1 PURPOSE

1. To ensure periodic testing commitments of the Emergency Plan and 10 CFR 50 Appendix E are being met and properly documented.

8.2.2 RESPONSIBILITIES

1. The EP Staff is responsible for performance of the following periodic tests in this procedure as follows:

   a. Monthly Selective Signaling System Communications Drill - Once per 28 days + 10 days

   b. Monthly Local Government Radio Test - Once per 28 days + 10 days

   c. Monthly NRC ETS/ESSX/SSS Phone Tests - Once per 28 days + 10 days

   d. Monthly Siren Testing - Once per 31 days + 7 days and Quarterly Growl Testing - Once per 92 days + 23 days

   e. Quarterly IPZ State Communications Drill - Once per 92 days + 23 days

   f. Quarterly ERO Phone Book Review - Once per 92 days + 23 days

   g. Quarterly Beeper Drill - Once per 92 days + 23 days

   h. Quarterly TSC/EOF/OSC/JIC/Remote Facility Inventories - Once per 92 days + 23 days and after each drill

   i. Semi-Annual Health Physics Drill - Once per 184 days + 46 days

8.2.2.1 (Continued)

j. Quarterly ERO Status Report - Once per 92 days +23 days

k. Quarterly Offsite Selective Signaling Phone Check - Once per 92 days + 23 days

l. Contributions to Emergency Support Organizations -Once per 364 days + 91 days, and each Quarter as required

m. Annual Siren Full Volume Test - Once per 364 days + 91 days

n. Annual Siren Adequacy Review - Once per 364 days + 91 days

o. Annual EAL Review - Once per 364 days + 91 days

p. Annual PNSC review of Emergency Plan - Once per 364 days + 91 days

q. Annual Medical Emergency Drill - Once per 364 days + 91 days

r. Annual Radiological Monitoring/Environmental Team Communications Drill - Once per 364 days + 91 days

s. Annual Lake Sign Verification - Once per 364 days + 91 days

t. Annual Audit Required by 10CFR50.54T - Once per 364 days + 91 days

u. Annual Letters of Agreement Update - Once per 364 days + 91 days

v. Annual Public Alert Siren Maintenance - Once per 364 days + 91 days

w. Hospital and Rescue Squad Training - Once per 364 days + 91 days

8.2.2.1 (Continued)

k. NRC Evaluated Exercise - Per 10 CFR, Part 50, Appendix E

l. Augmentation Drill - Once per 24 months + 182 days

m. Public Safety and Media Information - Once per 364 days + 91 days and Once per 92 days + 23 days

8.2.3 **GENERAL**

1. Periodic test scheduling will be as follows:

   a. When a periodic test is completed prior to the scheduled date the next scheduled date will be the early completion date plus the frequency.

   b. When a periodic test is completed on or after the scheduled date but before the overdue date the next scheduled date will be the last scheduled date plus the frequency.

2. Emergency Preparedness (EP) personnel or Emergency Communicators may be used for communications drills.

3. A drill or exercise that uses the Selective Signaling System (SSS) to contact the State and Counties may be used to fulfill the requirements of the monthly communications test.

   a. The Superintendent - Shift Operations (SSO) is responsible for providing an emergency communicator for the off hours monthly communications drill.

4. If while performing a test or drill an offsite agency is involved in an actual emergency perform the following:

   a. If the agency is a State or County Warning Point or EOC, excuse the agency from the remainder of the test or drill, and annotate the situation in the test or drill documentation.

   b. If the agency is the NRC, perform that part of the test at a later time.

5. A drill or exercise that begins between 6 p.m. and 4 a.m. or a weekend, that includes in the objectives, the conduct of an off hours augmentation of the ERO, may be used to satisfy the requirements of the Augmentation Drill.

8.2.3 (Continued)

6. Attachment 8.2.32.1, Certification and Review Form, may be used to document completion of any test or other periodic Emergency Preparedness (EP) requirement unless other documentation is specified in the procedure. If test results are unsatisfactory determination should be included for follow up actions, for example increased test frequency, AR, WR, etc.

7. When contacting the Control Room in the following procedure steps, it is desirable to contact the SSO, but not required.

8. Integrated site wide drills will be scheduled in accordance with PLP-007, "Robinson Emergency Plan."

9. The Early Warning Notification System is a computer system used and maintained by the EP Staff for monitoring and control of the Emergency Notification Sirens. The software owner will be the Supervisor - Emergency Preparedness. Changes to the software will be controlled per CSP-NGGC-2505 with a software quality level of "C". A users guide is available for instruction on the use of this system. Revision to the manual are controlled through the Document Management System. (CR 11959)

10. The Dialogic computer system is used and maintained by the EP staff for the notification of ERO members of off normal conditions. The software owner will be the Supervisor - Emergency Preparedness. Changes to the software will be controlled per CSP-NGGC-2505 with a software quality level of "D". A users guide is available for instruction on the use of this system. Revision to the manual are controlled through the Document Management System. (CR 11959)

8.2.4 **EMERGENCY FACILITY/EQUIPMENT CHECKS (CR 11968)**

1. On a daily (normal working week) basis, a walk down of the TSC and EOF facilities should be performed to verify the equipment and facilities are in a condition to support activation of the Emergency Response organization. Attachment 8.2.32.7 provides guidance on the minimum areas of review. The JIC operation area is normally locked after use and inventory. Periodic checks of the JIC are accomplished during routine procedure updates and drill critiques.

8.2.5 MONTHLY SELECTIVE SIGNALING SYSTEM COMMUNICATIONS DRILL

1. The monthly communications will normally be performed by Operations personnel. Every third monthly drill should be performed off hours.

   - During off hour drills it is acceptable to hold the test open until the following work day to complete the phone test portion of this drill. This will allow the County EOCs to be manned.

2. If not performed by Operations personnel, contact the Control Room and inform them that a Selective Signaling System (SSS) Communications Drill will be performed.

3. Provide information to the Emergency Communicator of sufficient detail to allow a Emergency Notification Form to be completed.

   a. Use "This is a communication and equipment test, no further action is required," in the emergency description section of the Emergency Notification Form.

4. The Emergency Communicator uses the scenario information provided to fill out a notification form (EPNOT-01, CR/EOF Communicator).

5. Review the completed notification form to ensure that "THIS IS A DRILL" is checked, and that all required elements of the form are completed per EPNOT-00 Notification and Emergency Communications.

8.2.5 (Continued)

6. The CRSS or SSO shall approve the notification form and instruct the Emergency Communicator to begin the notification.

7. The Emergency Communicator implements EPNOT-01 to notify Warning Points and EOCs. Instructions for using the RNP Selective Signaling System is contained in Attachment 8.1.5.6 (EPNOT-01).

8. If all parties responded to the communications drill skip to Step 8.2.5.13.

9. If any Warning Points **or** Emergency Operations Centers fail to respond verify that the nonresponding agencies can be contacted by commercial telephone using the phone number from the ERO Phone Book. During this call, attempt to determine why they did not answer the Selective Signaling System telephone.

10. Contact the nonresponding agency again using a Selective Signaling Telephone by dialing the specific dialing code for that agency. See Attachment 8.2.32.2, Selective Signaling System Dialing Codes.

11. If the agency called picks up, and communications can be established, consider the test successful.

12. If no agency can be contacted using the Selective Signaling System from any site location, via any method (including ESSX, Bell, etc.), **Immediately** inform the SSO **and** consult AP-030, NRC Reporting Requirements. Assist the SSO in making any necessary notification.

13. Notify the CRSS or SSO that the Selective Signaling System Communications Drill is concluded. State that the Selective Signaling System is returned to operational status.

14. Arrange for repair of any Selective Signaling System problems by calling the Telecommunications Help Desk. Notify Site Telecommunications of the problem for information purposes.

15. Contact IT and inform them of using ERFIS to generate the Emergency Notification Form. This allows them to reset ERFIS for future notification form use. (CR 16476)

8.2.5 (Continued)

NOTE: Chesterfield, Darlington, and Lee Counties have locations named, "Warning Point" and "Emergency Operating Center". The State does not station personnel in their EOC. Therefore, they have a Warning Point, and a Backup Warning Point. A repeat extension from the EOC is located in the State Warning Point.

16. Acceptance Criteria:

    The monthly Selective Signaling System Communications drill is acceptable when:

    a. Contact has been made with the Warning Point **and** EOC for each of the Counties and the State Warning Points.

       – By decision of the State of South Carolina the Backup Warning Point phone is left with the ringer off since the Warning Point is manned 24 hours per day. The Backup Warning Point phone would be tested prior to use.

    b. The message has been read to at least one of the locations for each of the agencies.

17. Documentation of the drill will consist of the notification form used with the agencies notified forms, and a completed Attachment 8.2.32.1 (EPPRO-02), Certification and Review Form.

18. Transmit the completed forms, to Records Storage in accordance with RDC-NGGC-0001. A copy of the record may be maintained in the EP files for the convenience of auditors.

8.2.6 MONTHLY LOCAL GOVERNMENT RADIO TEST

1. The State of South Carolina tests radio communications with various agencies and nuclear plants every Thursday starting at about 0900. Therefore, at approximately 0900 on the scheduled Thursday, or other prearranged day during the grace period, listen to the Local Government Radio (LGR) set in the EP office.

2. The LGR Instruction Manual lists "10" codes on Page 33. The only "10" codes necessary for the radio test are "10-1" (signal weak), "10-2" (signal good), and "10-97" (radio test).

3. Listen for the call from the State of South Carolina stating, "H.B. ROBINSON THIS IS SOUTH CAROLINA STATE WARNING POINT."

4. Pick up the handset, press the button on the handset, and acknowledge the transmission by saying:

   "THIS IS H.B. ROBINSON, I READ YOU 10-2", if the transmission is clear, *OR* "I READ YOU 10-1" if the transmission is weak, and inform the operator that two more radio sets need to be tested.

5. After your transmission is acknowledged, state:

   " THIS IS H.B. ROBINSON, SIGNING OFF."

6. After radio traffic on the channel has stopped, test the radio set in Rooms 425 TSC and 434 EOF as follows:
   " SOUTH CAROLINA STATE WARNING POINT. THIS IS H.B. ROBINSON FOR A 10-97 ON THE BACKUP RADIO", after the State operator responds answer with "THIS IS H.B. ROBINSON, I READ YOU 10-1 or 10-2" as appropriate.

7. After your transmission is acknowledged, state:

   " THIS IS H.B. ROBINSON SIGNING OFF."

8. Complete the third radio set per steps 8.2.6.6 and 8.2.6.7 above and inform the State operator that testing is complete.

8.2.6 (Continued)

9. If the radio communication is weak or not working, notify the Telecommunications Help Desk, Site Telecommunications, and the South Carolina Emergency Preparedness Division. Following repairs retest the radio sets.

10. Acceptance Criteria:

    The monthly LGR test is acceptable when satisfactory communication has been completed with the State of South Carolina using the handsets at the TSC, EOF, and EP office.

11. Document the monthly test on Attachment 8.2.32.1, Certification and Review Form.

12. Transmit the completed form to Records Storage in accordance with RDC-NGGC-0001. A copy of the record may be maintained in the EP files for the convenience of auditors.

8.2.7 MONTHLY NRC ETS/ESSX/SELECTIVE SIGNALING SYSTEM PHONE TESTS

1. Contact the Control Room and inform them that a test of the NRC ETS/ESSX/Selective Signaling System will be performed. Request that the Control Room not answer the ETS telephone until notified again at the conclusion of this test.

2. From an available ETS telephone in the TSC, EOF or NRC Office, dial one of the 10 digit telephone numbers listed in the ERO telephone book to contact the NRC Operations Center.

3. When the NRC Duty officer answers, inform him of your name, state that you are calling from Robinson Plant, and that this is the monthly test of the Emergency Notification System (ENS). Request that the Duty Officer call back at the extension in use.

8.2.7 (Continued)

4. When the ENS telephone rings, answer the telephone by identifying "ROBINSON NUCLEAR PLANT."

   a. Record the name of the Duty Officer contacted.

      – No other calls to the NRC Operations Center are required.

5. Use each of the ENS telephones listed on Attachment 8.2.32.3, NRC ETS/ESSX/SSS Monthly Telephone Test, to receive and originate a call.

   a. This will verify that a dial tone is present and that each ringer, handset, and dial keypad is operational.

   b. The Control Room ETS phone is tested daily and will not be included in this test.

6. When testing the Simulator SSS phone:

   a. Plug "FOR EP DRILL USE ONLY" red-tagged cable into SSS phone.

   b. Perform phone test.

   c. Unplug "FOR EP DRILL USE ONLY" red-tagged cable from SSS phone. Plug "FOR SIMULATOR USE ONLY" green -tagged cable into SSS phone.

   d. Notify Simulator Support upon completion of Simulator phone test.

      Person notified _____

7. To test the ERDS Link to the NRC take a telephone to Room 426 and open the first louvered door on the back of the ERFIS panel.

   a. Locate and disconnect the ERDS jack and connect the telephone in its place.

8.2.7.7 (Continued)

b. Ensure the telephone has a dial tone.

c. Disconnect the telephone and reconnect the ERDS jack previously disconnected.

8. If any problems are noted during the test:

a. Contact the NRC Operations Center by ETS, if available, or bell telephone at one of the numbers listed in the ERO telephone book.

b. If no means of contacting the NRC Operations Center is available, contact the SSO and inform him that a 1 hour reportable event to the NRC has occurred.

- Consult AP-030.

- Assist the SSO in making the notification.

9. Use each of the ESSX telephones listed on Attachment 8.2.32.3, NRC ETS/ESSX/SSS Monthly Telephone Test, to receive and originate a call.

a. This will verify that a dial tone is present and that each ringer, handset, and dial keypad is operational.

10. If any problems are identified with the ESSX telephones notify the Telecommunications Help Desk and onsite personnel to have the telephones repaired.

11. Notify the Control Room of the "Out of Service" condition. When the telephones are repaired and tested notify the Control Room that the telephones are returned to service.

a. This condition above is not reportable to the NRC.

8.2.7 (Continued)

12. Use each of the SSS telephones listed on Attachment 8.2.32.3, NRC ETS/ESSX/SSS Monthly Telephone Test, to receive and originate a call.

    a. This will verify that each ringer, handset, and dial keypad is operational.

        – There is no dial tone on the SSS telephones.

13. If any problems are identified with the SSS telephones notify the Telecommunications Help Desk and onsite personnel to have the telephones repaired.

14. Notify the Control Room of the "Out of Service" condition.

    a. When the telephones are repaired the tested, notify the Control Room that the telephones are returned to service.

        – This condition is not reportable to the NRC provided a backup communications system (Site PBX, ESSX, etc.) is available.

15. Notify the Control Room that the phone test is complete.

16. Acceptance Criteria:

    The ETS, ESSX, and SSS phone tests are satisfactory when:

    a. It has been verified that the dial tone (except SSS), ringer, handset, and keypad function for each ETS, ESSX, and SSS telephones.

    b. A dial tone was obtained on the ERDS jack.

8.2.7 (Continued)

17. Documentation of the phone test will consist of Completed Attachment 8.2.32.3, NRC ETS/ESSX/SSS Monthly Telephone Test, and Attachment 8.2.32.1, Certification and Review Form.

18. Transmit the completed forms to Records Storage in accordance with RDC-NGGC-0001. A copy of the record may be maintained in the EP files for the convenience of auditors.

8.2.8 **MONTHLY SIREN TESTING AND QUARTERLY GROWL TEST**

NOTE: Sirens are rotated each week, typically this is automatically initiated early Monday morning. Once each quarter each siren is growl tested.

1. Obtain system records documenting the weekly rotation tests.

   a. On a weekly basis, if the automatic report has not been generated, perform a manual rotation. `Guidance is available in the system technical manual.

NOTE: The siren feedback system provides real time information on siren status. This data is reviewed as needed by a member of the EP staff.

2. If failures are noted which have not previously been reported:

   a. Enter the required information on Attachment 8.2.32.4, Siren Out of Service Notification.

      – Siren power supplies are listed as page 2 of the attachment to aid in determining the impact of power outages.

NOTE: The references to the Help Desk provides the point of contact for service requests. The phone number is provided in the ERO phone book and is also available through E-Mail -TelCom HelpDesk.

8.2.8.2 (Continued)

b. Notify the Control Room that the siren is out of service.

c. Inform the County Emergency Management Director about the siren(s) out of service using the telephone number in the ERO Phone Book.

d. Notify the Telecommunications help desk to make repairs.

3. Consult AP-030 NRC Reporting requirements, assist the SSO in making any notifications if desired.

4. When notified by Transmission Maintenance or Telecommunications Help Desk that the siren has returned to service, perform the following:

a. Log the notification on Attachment 8.2.32.4, Siren Out of Service Notification.

b. Notify the Control Room that the siren is back in service.

c. Inform the County Emergency Management Director about the siren(s) back in service.

3. Review siren test records to compare rotation and alarm data against the notifications logged on Attachment 8.2.32.4, Siren Out of Service Notification.

a. If the records do not compare with the notification log, contact Telecommunications or Transmission Maintenance to resolve the differences.

8.2.8 (Continued)

3. On a monthly test basis, verify that there has been 1 rotation test each week since the last monthly verification.

   a. Telecommunications Service request or equivalent has been received for each failed test or that a siren is listed as out of service for each failed test. This may be done via the Siren Out Of Service log or the Help Desk.

7. On a quarterly basis, Growl Test the sirens, note any failures on the notification logs and document any Service requests, Telecommunications or Transmission Department.

   a. Emergency Preparedness will establish a schedule for growl and full volume siren testing.

   b. The testing schedule will be entered into the site surveillance tracking system, or similar system, to provide prompts to interested parties such as Site Communications.

8. Include the computer generated summary sheet or equivalent as attachments to the test documentation.

9. Acceptance Criteria

   This test is satisfactory when:

   a. Each of the sirens has been rotated weekly or any sirens that failed to rotate have been repaired and successfully retested or listed as out of service. In all cases, sirens out of service must be less than criteria for an NRC report.

   b. On a quarterly basis, each siren Growl tested satisfactorily or any sirens that failed to growl have been repaired and successfully retested or listed as out of service. In all cases sirens out of service must be less than criteria for an NRC report.

   c. Decisions on pass / fail have been documented on the computer generated summary sheet or equivalent. This should include problem resolutions and post maintenance testing results. (CR 99-01366)

8.2.8 (Continued)

10. Complete Attachment 8.2.32.1, Certification and Review Form, and attach completed forms or Service Reports.

11. Transmit the completed forms to Records Storage in accordance with RDC-NGGC-0001.

    a. A copy of the record may be maintained in the EP files for the convenience of auditors.

8.2.9 **QUARTERLY IPZ STATE COMMUNICATIONS DRILL**

1. Prepare two Emergency Notification Forms using EPNOT-00, Notification and Emergency Communications.

    a. One form will be the initial notification and one form will be the termination notification.

2. Review the completed notification form to ensure that "THIS IS A DRILL" is checked, and that all required elements of the form are completed per EPNOT-00, Notification and Emergency Communications.

3. Implement EPNOT-00, Notification and Emergency Communications to notify the NC Warning Point via commercial telephone at the number listed in the ERO Phone Book.

4. Verify the authentication code words if requested.

5. If the NC warning point fails to respond, perform the following:

    a. Contact N. C. Emergency Management at the number listed in the ERO telephone book and attempt to determine why the warning point did not answer the telephone.

    b. Attempt to contact the N. C. Warning Point again via commercial telephone.

8.2.9 (Continued)

6. If contact can be made with the N. C. Warning Point and communications are established, consider the test successful.

7. If the N. C. Agencies identified above cannot be contacted the test is unsuccessful.

   a. Notify the Telecommunications Help Desk and Site Telecommunications.

8. Acceptance Criteria:

   The IPZ Communications Drill is satisfactory when contact has been made with the N. C. Warning Point for an initial Drill Notification and a termination Notification.

9. The Emergency Notification Forms used and an Attachment 8.2.32.1, Certification and Review Form, will provide documentation of the drill.

10. Transmit the completed forms to Records Storage in accordance with RDC-NGGC-0001. A copy of the record may be maintained in the EP files for the convenience of auditors.

8.2.10 **QUARTERLY ERO PHONE BOOK REVIEW**

NOTE: The EP Staff maintains a copy of the ERO Phone Book in the EP Office as a markup copy. When changes to the ERO are processed in accordance with EPPRO-00, Program and Responsibilities, the markup copy is annotated with the change.

1. Arrange to have each person on the ERO called to confirm both their work number and their home telephone number.

   Copies of the phone book (on site directory portion) are routed to each work group onsite to verify their information. Corrections are then routed back to EP for revision.

8.2.10 (Continued)

2. Arrange to have each office telephone number in the "Other Contacts (Offsite)" section of the ERO Phone Book called and confirm home and car telephone numbers. This is typically accomplished by the EP staff calling the persons involved.

3. Review the ERO Phone Book and update any changes.

4. Update and publish the new ERO Phone Book revision.

5. Change out the new ERO Phone Book revision in each copy on distribution. Copies for the Unit 2 Control Room, and the Outside Auxiliary Operator desk (Work Control Center) and other primary users are typically routed.

6. Acceptance Criteria:

   The ERO phone book review is satisfactory when the book has been reviewed, revised and distributed, if required.

7. Document completion of the quarterly review of the ERO Phone Book by completion of Attachment 8.2.32.1, Certification and Test Review.

8. Transmit the completed records to Records Storage in accordance with RDC-NGGC-0001. A copy of the form may be maintained in the EP office for the convenience of auditors.

8.2.11 **QUARTERLY BEEPER DRILL**

1. The Beeper Drill may be conducted by using the Beeper Drill scenario contained in the Dialogic database, with code 0*0*1, or manual beeper activation, defined in EPNOT-00, Notification and Emergency Communication, using code 0*0*4. The drill will be initiated by Emergency Preparedness (EP) personnel and scheduled with a different team On Call for each quarter. If an actual callout occurs within the quarter, credit may be taken for satisfying the quarterly test criteria.

8.2.11 (Continued)

2. Notify the Control Room when a Beeper Drill is to be conducted.

3. When the Dialogic scenario is used, Beeper holders will be required to call Dialogic and respond to the qualification questions.

   a. Dialogic will provide printouts that will identify the ERO positions filled and provide names of those people who called the system during the drill but did not qualify.

4. If the Dialogic Beeper Drill scenario was not used, Beeper holders may be required to complete Attachment 8.2.32.5, ERO Beeper Test Results or respond to EP staff by e-mail or other communications.

5. On the day following the quarterly test, a site-wide e-mail should be sent out instructing ERO members not receiving a page during the test to contact EP.

6. Acceptance Criteria:

   Greater than 80% of personnel issued a pager and expected to respond received the appropriate code and responded accordingly.

   Those expected to respond are the team On Call. If an On Call member does not respond, but another qualified person demonstrates the ability to fill the position, credit will be given. Non responses will be investigated.

   Appropriate management will be notified of failures to respond which are not due to extraordinary circumstances.

7. Additional Criteria: (not necessary to be satisfactory)

   Determine if personnel in the positions identified on the on-call roster have confirmed that their beeper functioned and they could have reported to the appropriate on-site facility in 60 minutes or less. JIC responders have 120 minutes.

   a. 60 minutes is based on the standard Dialogic qualification question.

8.2.11 (Continued)

8. Document the completion of the Beeper Test on Attachment 8.2.32.1, Certification and Test Review, and attach other supporting documentation.

9. Transmit the completed records to Records Storage in accordance with RDC-NGGC-0001. A copy of the form may be maintained in the EP files for the convenience of auditors.

8.2.12 **QUARTERLY EOF/TSC/OSC/JIC/REMOTE FACILITY INVENTORIES**

1. Perform an inventory using Attachment 8.2.32.6, EOF/TSC/OSC/JIC/REMOTE FACILITY Inventory, once per quarter and after each facility activation. Facility inventories will be completed as soon as possible not to exceed 3 working days following an activation. Quarterly inventories will be completed within the established grace period. After each activation, ERO personnel should ensure that their facility is in neat order and contains sufficient supplies for future activations, report deficiencies to Emergency Preparedness (EP).

2. Acceptance Criteria:

   The EOF/TSC/OSC/JIC/REMOTE FACILITY inventory is acceptable when the requirements of Attachment 8.2.32.6, EOF/TSC/OSC/JIC/REMOTE FACILITY Inventory, have been met.

3. Documentation will consist of completed Attachment 8.2.32.6, EOF/TSC/OSC/JIC/REMOTE FACILITY Inventory and Attachment 8.2.32.1, Certification and Review Form.

4. Transmit the completed records to Records Storage in accordance with RDC-NGGC-0001. A copy of the form may be maintained in the EP Files for the convenience of auditors.

8.2.13 **QUARTERLY ERO STATUS REPORT** (CR 99-01860)

1. This report lists the personnel on the ERO by position and team designation. The report includes:

   - Requalification data for position and respirator.
   - ERO on call schedule.
   - Performance charts.

8.2.14 **QUARTERLY OFFSITE SELECTIVE SIGNALING PHONE CHECK (CR 19521)**

1. On a quarterly basis all offsite Selective Signaling phones will be checked for proper operation. Arrange with State and County personnel to perform this test.

2. Acceptance Criteria:

   All phone circuits listed on attachment 8.2.32.8 have received and generated a phone call.

3. Transmit completed records to Records Storage per RDC-NGGC-0001, NGG Standard Records Management Program.

8.2.15 SEMI-ANNUAL HEALTH PHYSICS DRILLS {NRC Amendment No. 192}

1. Health Physics drills shall be conducted semi-annually. These drills will involve response to, and analysis of, simulated elevated airborne and liquid samples and direct radiation measurements in the environment.

2. Acceptance Criteria:

   The acceptance criteria shall be as established in Emergency Preparedness Objectives.

3. The completion of the Health Physics drills will be documented by memorandum and an Attachment 8.2.32.1, Certification and Review Form.

4. Transmit completed records to Records Storage per RDC-NGGC-0001, NGG Standard Records Management Program.

8.2.16 CONTRIBUTIONS TO EMERGENCY SUPPORT ORGANIZATIONS

1. Annual Contributions

   a. During January of each year a check request will be submitted for each of the listed organizations below in the amounts specified in the approved budget.

      - Hartsville Rescue Squad
      - Lake Robinson Rescue Squad
      - Hartsville Fire Department

   b. Deliver the contribution checks to each receiving organization. Complete an Attachment 8.2.32.1, Certification and Test Review, to document the contribution.

2. Quarterly Contributions

   a. Following the end of each quarter, contact the Lake Robinson Rescue Squad, and Hartsville Rescue Squad to determine the number of call-outs that were responded to by each organization. The amount of reimbursement will be based on the number of call-outs and the amount per call-out as specified in the approved budget.

   b. Develop check requests in the appropriate amounts. Deliver the contributions checks to each receiving organization.

   c. Complete an Attachment 8.2.32.1, Certification and Test Review, to document the reimbursement.

8.2.16 (Continued)

3. Acceptance Criteria:

   This task will be considered satisfactory when contributions and reimbursement checks (if required) have been delivered in a reasonable time.

4. Transmit copies of completed records to Records Storage per RDC-NGGC-0001, NGG Standard Records Management Program. An additional copy of the form may be maintained in the EP Files for the convenience of auditors.

8.2.17 **ANNUAL FULL VOLUME SIREN TEST**

1. In January of each year, schedule a Full Volume Siren Test with the State, Counties, Transmission Maintenance, Telecommunications Maintenance, Site Communications and Corporate Communications.

2. As a minimum the Public Information Postcard should contain the time, date, number of siren activations expected, and sufficient time span to allow for maintenance testing and test print outs. (example: 1300 to 1600)

3. A pretest briefing should be held to discuss the sequence of events and lessons learned from previous tests. This should include as a minimum the following items:

   - If local siren de-activation is necessary prior to the three minute time out, ensure sufficient time is allowed for the siren feed back sensors to register a good activation (30-45 seconds).

   - Once the sirens are activated, allow the full three minutes to pass prior to any manipulation of command screens. This can lead to a premature siren shut down.

   - Allow 15 minutes between siren activation to allow printing of data in a consistent manner.

8.2.17 (Continued)

4. Approximately six weeks before the scheduled Full Volume Test, perform the following:

NOTE: Site Communications will be notified of the Full Volume Test via a site surveillance system to prompt a public information plan to publicize the test.

a. Arrange to have a volunteer siren watcher stationed at every siren for the test or monitor testing via feedback system.

b. If volunteers are used, send each a map, test form, and a set of watcher instructions.

c. If volunteers are used, schedule personnel as telephone operators to take telephone calls from the watchers after the test is concluded.

d. Coordinate with South Carolina Emergency Preparedness Division to determine if the EAS system will be activated.

e. If the EAS system will be activated during the annual siren test, inform Site Communications to ensure that this information is included in the public information plan.

5. If siren watchers are used schedule a briefing on the day of the test, to ensure coverage and a full understanding of what is required of the watchers.

6. The full volume test will be conducted from the County Activation points and/or site activation as appropriate.

7. If siren watchers are used they will call into the plant to inform the telephone operators of the results of the siren activations.

8. If the siren feedback system is used collect system activation reports for documentation.

9. If any siren fails to activate or rotate, perform notification steps in the monthly siren test section of this procedure.

10. Consult AP-030, NRC Reporting Requirements, assist the SSO in making any notifications if desired.

8.2.17 (Continued)

11. Acceptance Criteria:

    For the purpose of this procedure the Full Volume siren test will be considered acceptable when sirens have been activated from the site or county activation points, failed sirens identified for repair, NRC notified if required, and any observation and/or feedback system test records collected. Corrective actions required will include schedule and completion dates as appropriate. Decisions on pass/fail have been documented on the computer generated summary sheet or equivalent. This should include problem resolutions and post maintenance testing results. (CR 99-01366)

12. Compile all test records and attach to a completed Attachment 8.2.32.1, Certification and Test Review.

13. Transmit the completed records to Records Storage in accordance with RDC-NGGC-0001. A copy of the record may be maintained in the EP files for the convenience of auditors.

8.2.18 **ANNUAL SIREN ADEQUACY REVIEW**

1. Perform a survey of areas within the 10 mile EPZ that have the lowest siren coverage, per attachment 8.2.32.9, to determine if a significant change in demographics has occurred.

2. Contact the Emergency Response Directors from Darlington, Chesterfield, and Lee counties to review the survey results and determine additional demographic change information. Have the Directors sign the survey form.

3. Compare the current survey results to the previous test results and initial study. If an area appears to need additional siren coverage, schedule a noise level measurement for the area of interest during the next Annual Full Volume Test.

4. Compile all test records for a yearly interval to determine the simple arithmetic average of total test successes divided by total tests performed.

    a. The arithmetic average should equal 90% or greater.

    b. All regularly scheduled silent, growl and the full volume test for each siren is considered a test.

8.2.18 (Continued)

5. Submit letters to the Federal Emergency Management Agency (FEMA) and the State of South Carolina informing them of the Test Results.

   a. Route the letters to the vault.

6. Acceptance Criteria:

   For the purpose of this procedure the Annual Siren Adequacy Review will be considered acceptable when:

   a. The survey required above is complete.

   b. The report has been developed and issued. If the arithmetic average is less than 90%, resulting corrective actions will include schedules and completion dates.

8.2.19 **ANNUAL EAL REVIEW**

1. On an annual basis, arrangements shall be made to review the EALs with the State and County Emergency Preparedness representatives.

2. A memorandum will be generated by the EP staff documenting the review.

3. Acceptance Criteria:

   The EAL review will be considered satisfactory when the review is complete and the memorandum above is signed.

4. Complete Attachment 8.2.32.1, Certification and Review Form, and attach to the memorandum from above to document the review.

5. Transmit completed records to Records Storage per RDC-NGGC-0001, NGG Standard Records Management Program.

8.2.20 ANNUAL PNSC REVIEW OF EMERGENCY PLAN

1. The Emergency Preparedness staff will review the Robinson Emergency Plan annually.

   a. The purpose of this review is to determine if any revisions are required due to regulatory revisions, experiences of drills and exercises, or other requirements.

2. Following review, the Robinson Emergency Plan will be presented to the PNSC for review.

3. Revision to the Robinson Emergency Plan will be completed following PNSC review.

4. Acceptance Criteria:

   The Emergency Plan review will be considered acceptable following review and acceptance by the PNSC.

5. The PNSC Minutes shall provide documentation of satisfactory completion of this activity.

8.2.21 ANNUAL MEDICAL EMERGENCY DRILL

1. A Medical Emergency Drill, involving a simulated contaminated and injured individual and participation of the local offsite medical services agencies, shall be conducted annually.

2. Acceptance Criteria:

   The acceptance criteria shall be as established in Emergency Preparedness Objectives.

3. Records of the drill shall consist of the Scenario, Critique, and an Attachment 8.2.32.1, Certification and Review Form.

4. Transmit completed records to Records Storage per RDC-NGGC-0001, NGG Standard Records Management Program. A copy of the record may be maintained in the EP Files for the convenience of auditors.

8.2.22 ANNUAL ENVIRONMENTAL TEAM DRILLS

1. On an annual basis, the Environmental Team shall demonstrate the collection and analysis of all sample media, (water, vegetation, soil, and air) and provisions for communications and record keeping. Communications shall be monitored to ensure that communications equipment is adequate and that the ability to communicate effectively is demonstrated.

2. The completion of the Environmental Team Drills shall be documented in the Drill critique. The drill critique shall address the sample collection, record keeping and communications. The critique shall also address the communication equipment and the effectiveness of communications.

3. Acceptance Criteria:

   The acceptance criteria shall be as established in Emergency Preparedness Objectives.

4. Complete an Attachment 8.2.32.1, Certification and Review Form, and attach a memo stating the date and time for the completion of this task. The memo shall also include a summary of the applicable drill objectives and the drill critique results.

5. Transmit completed records to Records Storage per RDC-NGGC-0001, NGG Standard Records Management Program. A copy of the record may be maintained in the EP Files for the convenience of auditors.

8.2.23 ANNUAL LAKE SIGN VERIFICATION

1. Perform an inspection of the Evacuation Warning signs posted at each public access to Lake Robinson and Lake Prestwood on a Annual basis.

2. The signs are typically lettered with the following information:

   IN THE EVENT OF AN IDENTIFIED EMERGENCY REQUIRING EVACUATION OF THE LAKE AREA YOU WILL BE NOTIFIED BY SIRENS. IF THIS SIGNAL IS OBSERVED PLEASE:

   a. LEAVE THE LAKE AREA IMMEDIATELY.

   b. TURN ON THE RADIO OR TELEVISION FOR INFORMATION AND INSTRUCTIONS.

3. Lake signs are located at the following locations:

   a. Lake Robinson — Easterling Landing
Johnson Landing
Chesterfield County (Morrisons Bridge) Landing

   b. Lake Prestwood — Sonovista Park Landing

4. Acceptance Criteria:

   The Evacuation Warning Sign inspection is considered satisfactory when they are found to be appropriately posted and readily readable.

5. Complete Attachment 8.2.32.1, Certification and Review Form, to document the inspection and any corrective actions taken.

6. Transmit completed record to Records Storage per RDC-NGGC-0001, NGG Standard Records Management Program.

8.2.24 ANNUAL AUDIT REQUIRED BY 10 CFR 50.54(t)

1. A review of the Emergency Preparedness Program shall be conducted at the frequency specified in the Code of Federal Regulations. This review shall be accomplished by individuals who do not have any responsibility for implementation of the program.

2. This review shall include an evaluation of the adequacy of interfaces with State and County Emergency Preparedness organizations as well as Drills, Exercises, program capabilities, and procedure effectiveness.

3. The results of the review and evaluation, including recommendations for improvement, shall be documented in an appropriate report.

4. The report shall be distributed to Plant and Corporate Management. Those portions of the report that concern the State and County Emergency Preparedness organizations shall be made available to them.

5. Acceptance Criteria:

   For the purpose of this procedure the Audit shall be considered acceptable when it is complete. Any resulting corrective actions shall include schedules and completion dates.

6. Copies of the report shall be distributed and filed as required by the reviewing organization.

8.2.25 ANNUAL LETTERS OF AGREEMENT UPDATE

1. On a annual basis, a memorandum will be sent to each agreement organization requesting that they sign and return the document. This will indicate concurrence with the content of the respective Agreement Letter.

2. If necessary new Agreement Letters will be negotiated. Changes to Letters of Agreement will be controlled by AP-021, Attachment 7.1 Licensing Document Change Request.

3. After changes are made review the list of Letters in the E-Plan, update as necessary.

8.2.25 (Continued)

4. Acceptance Criteria:

   The Agreement Letters shall be considered acceptable when the signed memorandum have been returned or new agreements negotiated.

5. Complete an Attachment 8.2.32.1, Certification and Review Form, and attach to the signed memorandum.

6. Transmit completed records to Records Storage per RDC-NGGC-0001, NGG Standard Records Management Program.

8.2.26 **ANNUAL PUBLIC ALERT SIREN MAINTENANCE**

1. On an annual basis preventative maintenance will be performed by Transmission Maintenance or equivalent maintenance organization. The inspection should consist of the following: (CR 99-01257)

   a. General area

      Clear weeds and brush from around the pole and controls. Clean area and spot paint as necessary.

   b. Blower assembly

      Check all hardware for tightness, check belts and seal for condition and tension. Lubricate according to manufacturers published specifications. Clean and lubricate the relief valve.

   c. Rotator and Chopper Assembly

      Check condition of blower pipe, fittings, mounting hardware, and conduit. Check turning gear for proper mesh, excessive wear, and lubricate according to manufacturers published specifications. Check Allen screws in pulleys for tightness.

   d. Control Box

      Check cleanliness of control box. Check all hardware for tightness.

8.2.26 (Continued)

2. Return to service

   a. Check for proper operation of blower, rotator, and chopper.

3. Acceptance Criteria:

   This maintenance shall be acceptable when the maintenance is complete, discrepancies corrected and the growl test performed. The growl test may be performed locally or by the Emergency Preparedness Staff.

4. Emergency Preparedness shall be provided with documentation of satisfactory performance.

5. Complete an Attachment 8.2.32.1, Certification and Review Form, and attach the maintenance documentation. Transmit completed records to Records Storage per RDC-NGGC-0001, NGG Standard Records Management Program.

8.2.27 **HOSPITAL AND RESCUE SQUAD TRAINING**

1. On an annual basis a package of self directed training material will be prepared and sent to the Darlington County Rescue Squad, Carolina Pines Regional Medical Center, and Chesterfield General Hospital. At the same time actual training will also be offered.

2. Acceptance Criteria:

   The training shall be considered acceptable when the packages have been sent and training has been provided or refusal documented.

3. Complete an Attachment 8.2.32.1, Certification and Review Form, and attach to the memorandums, training material (if used), and documentation of training refusal if applicable.

4. Transmit completed records to Records Storage per RDC-NGGC-0001, NGG Standard Records Management Program.

8.2.28 NRC EVALUATED EXERCISE

1. A graded exercise shall be conducted as required by 10 CFR, Part 50, Appendix E. The date of the exercise will be coordinated with the NRC, FEMA, State of South Carolina, Harris and Brunswick plants, and Chesterfield, Darlington, and Lee Counties.

2. The exercise scenario will be planned and developed to demonstrate the applicable Objectives from EPPRO-01, Program and Responsibilities.

3. The exercise is an event that tests the integrated capability of major response organizations and will include the attributes identified in PLP-007, Robinson Emergency Plan.

4. Acceptance Criteria:

   For the purpose of this procedure the exercise shall be considered acceptable when the exercise and critique are complete.

   a. Any resulting corrective actions or re-demonstrations shall include schedules and completion dates.

5. Records of the exercise shall consist of the Scenario, and Critique. Documentation such as NRC and other regulatory reports may also be included.

6. Transmit completed records to Records Storage per RDC-NGGC-0001, NGG Standard Records Management Program. A copy of the record may be maintained in the EP Files for the convenience of auditors.

8.2.29 AUGMENTATION DRILL

NOTE: The conduct of Augmentation Drills is one of the Objectives that is normally satisfied during a drill or exercise. However, an augmentation drill may be conducted separate from a regular scheduled drill as follows.

1. Arrange with a member of senior management to conduct an unannounced off hours augmentation drill.

2. Access Dialogic to ensure individuals that should be listed from the ERO are entered in the database.

3. Station controllers in the TSC, OSC, and EOF to supervise the completion of augmentation forms.

4. Access the Dialogic computer and select an appropriate scenario. Conduct the augmentation drill using an appropriate code, manual beeper activation, or other call-out methods as necessary.

5. Contact the Control Room and request that they perform a site-wide announcement over the plant PA (with VLC switch in the "EMERGENCY" position):

   "ATTENTION ALL PERSONNEL. THIS IS A DRILL. EMERGENCY RESPONSE ORGANIZATION PERSONNEL REPORT TO YOUR DESIGNATED FACILITY".

   a. Repeat The Announcement.

6. ERO Members will respond to the site, comply with fitness for duty requirement, and respond to their designated emergency facility.

7. The controllers will ensure that Attachment 8.1.5.10 of EPOSC -01, Attachment 8.3.5.1, and Attachment 8.3.5.5 of EPEOF-03, in their respective facilities, are completed as each member of the ERO arrives.

8. ERO members may be dismissed once they have signed in on the attachments.

8.2.29 (Continued)

9. Document the completion of the augmentation drill using Attachment 8.2.32.1, Certification and Review Form. Include whether or not the requirements of Table 5.3.2-1, PLP-007, Robinson Emergency Plan, were met.

10. Review augmentation results and/or call lists to ensure that the staff required to be contacted by Dialogic are entered into the system.

11. Acceptance Criteria:

    This drill is satisfactory when the positions identified in PLP-007, Robinson Emergency Plan, Table 5.3.2-1 have been filled within the time specified in the Table.

    Transmit the completed records to Records Storage per RDC-NGGC-0001. A copy of test records may be maintained in EP files for the convenience of auditors.

8.2.30 **PUBLIC SAFETY AND MEDIA INFORMATION**

1. Safety Information

    a. During the preparation and review process for the annual distribution of the Safety Information, the EP staff will ensure that an updated list of area schools is provided.

        - This will normally be accomplished by contacting County Emergency Preparedness Directors.

    b. Acceptance Criteria:

    This action will be considered acceptable when the list of area schools has been updated and provided to personnel who are responsible for production of the safety information.

8.2.30 (Continued)

2. Safety Information Quarterly Distribution

a. During the last month of each calendar quarter Emergency Preparedness personnel will survey the local hotels/motels to ensure they have adequate supplies of literature for transient personnel.

b. By agreement, inventories should be as follows:

- Landmark - approximately 150
- Lakeview Motel - approximately 25
- Hartsville Motel - approximately 50
- Missouri Inn - approximately 50
- Comfort Inn - approximately 75
- Fairfield Inn - approximately 100

These numbers are to provide a reasonable inventory based on occupancy rates, maintaining an exact number is not required.

c. Acceptance Criteria:

This item will be considered complete and acceptable when the results are documented via memorandum to Emergency Preparedness Management.

3. Media Information (CR 44135)

a. On an annual basis, the media handbooks used at the Joint Information Center should be reviewed for accuracy and updated.

b. Acceptance Criteria

This item will be considered complete and acceptable when the results are documented via memorandum to Emergency Preparedness Management.

8.2.31 **RECORDS**

N/A

8.2.32 **ATTACHMENTS**

8.2.32.1 Certification and Review Form

8.2.32.2 Selective Signaling System Dialing Codes

8.2.32.3 NRC ETS/ESSX/SSS Monthly Telephone Test

8.2.32.4 Siren Out of Service Notifications/Siren Power Supplies

8.2.32.5 ERO Beeper Test Results

8.2.32.6 EOF/TSC/OSC/JIC/REMOTE FACILITY INVENTORY

8.2.32.7 Emergency Facility/Equipment Check Guidance

8.2.32.8 Quarterly Offsite Selective Signaling Phone Check

8.2.32.9 Siren Adequacy Review

ATTACHMENT 8.2.32.1
Page 1 of 1

CERTIFICATION AND REVIEW FORM

Test Performed: _____ Work Order No. _____

_____

_____

Scheduled/Unscheduled (Circle one)

(If unscheduled, state reason for test _____

_____

_____

	Initials	Name (Print)	Date
Test Performed by	_____	_____	_____
	_____	_____	_____
	_____	_____	_____
	_____	_____	_____

Test Complete: Date _____ Time _____

Test Satisfactory: Yes / No (Circle one)

Comments: (Required if results were unsatisfactory, including determination of follow up actions necessary for example increased test frequency, AR, WR)_____

_____

_____

_____

_____

Approved by: _____ Date _____
Supervisor - Emergency Preparedness

ATTACHMENT 8.2.32.2
Page 1 of 1

SELECTIVE SIGNALING SYSTEM DIALING CODES

Location	Individual Phone Code	Group Dialing Code			
		A1	A2	A3	A4
Control Room	42				X
Work Control Center	43				X
TSC	44				X
EOF State/County Communicator	45				X
Simulator	46				X
EOF Emergency Response Manager	47				
State Backup Warning Point	32	X	X		
Lee County Warning Point	34	X	X		
Darlington County Warning Point	36	X	X		
Chesterfield County Warning Point	38	X	X		
State Warning Point	50	X		X	
State EOC #1	51	X		X	
State EOC #2	51	X		X	
Lee County EOC #1	54	X		X	
Lee County EOC #2	55	X		X	
Darlington County EOC #1	56	X		X	
Darlington County EOC #2	57	X		X	
Chesterfield County EOC #1	58	X		X	
Chesterfield County EOC #2	59	X		X	

NRC ETS/ESSX/SSS MONTHLY PHONE TEST

NOTE: A single line instrument is required to test OCL and ERDS.

Location/Circuit	Time/Date	Person Contacted	***Results
EOF, Rm 434			
ETS (857-5066) (ENS)			
ETS (857-5069) (HPN))			
ETS (857-5066) (ENS)			
ETS (857-5063) (RSCL)			
ESSX (383-3680)			
ESSX (383-3681)			
SSS (45)			
SSS (47)			
EOF, Rm 435			
ETS (857-5068) (PMCL)			
ADMIN Building, NRC Office			
ETS (857-5066) (ENS)			
EOF, Rm 412			
ETS (857-5069) (HPN)			
ETS (857-5064) (MCL)			
ETS (857-5067) (OCL)**			
TSC, Rm 421			
ETS (857-5069) (HPN)			
ETS (857-5064) (MCL)			
TSC, Rm 422			
ETS (857-5063) (RSCL)			
:C, Rm 424			
ETS (857-5068) (PMCL)			
TSC, Rm 425			
ETS (857-5066) (ENS)			
ETS (857-5069) (HPN)			
ETS (857-5066) ENS)			
ESSX (383-3682)			
ESSX (383-3683)			
SSS (44)			
ERFIS COMPUTER Rm 426			
ERDS (857-5065)*			
CONTROL ROOM			
ESSX (383-3684)			
ESSX (383-3685)			
SSS (42)			
SIMULATOR			
SSS (46)			
OSC			
ESSX (383-3686)			
ESSX (383-3687)			
WORK CONTROL CENTER			
SSS (43)			

* Plug into jack in the back of computer cabinet and listen for dial tone.
**Plug another ETS phone into the OCL jack (bottom jack near door by other ETS phones, labeled "OCL") and test similar to other phone circuits.
*** Satisfactory results are defined in step 8.2.7.5

ATTACHMENT 8.2.32.4
Page 1 of 2

SIREN OUT OF SERVICE NOTIFICATIONS

Date	Notification	Name	Time	Siren(s)	County	IN/OUT Service	Initial
	Noted By Telecom County Control Rm	_____ _____ _____ _____	_____ _____ _____ _____			IN/OUT (Circle)	
	Noted By Telecom County Control Rm	_____ _____ _____ _____	_____ _____ _____ _____			IN/OUT (Circle)	
	Noted By Telecom County Control Rm	_____ _____ _____ _____	_____ _____ _____ _____			IN/OUT (Circle)	
	Noted By Telecom County Control Rm	_____ _____ _____ _____	_____ _____ _____ _____			IN/OUT (Circle)	
	Noted By Telecom County Control Rm	_____ _____ _____ _____	_____ _____ _____ _____			IN/OUT (Circle)	
	Noted By Telecom County Control Rm	_____ _____ _____ _____	_____ _____ _____ _____			IN/OUT (Circle)	

SIREN POWER SUPPLIES

Darlington County

Site	Feeder	Substation	Site	Feeder	Substation
7	Pee Dee Coop	Hartsville	30	Kellytown	Segars
8	Pee Dee Coop	Hartsville	31	West Carolina	Segars
12	Pee Dee Coop	Sandhills	32	Tenth Street	Hartsville
13	Pee Dee Coop	Hartsville	33	Prestwood	Hartsville
14	Club Colony	Segars	34	Byrdtown	Hartsville
18	Pee Dee Coop	Beaver Dam	36	West Carolina	Segars
19	Club Colony	Segars	37	West Carolina	Segars
20	Pee Dee Coop	Hartsville	38	Lydia	Hartsville (115KV)
21	Pee Dee Coop	Hartsville	39	Pee Dee Coop	Pee Dee Coop
22	Pee Dee Coop	Beaver Dam	41	West Carolina	Segars
23	Kellytown	Segars	42	West Carolina	Segars
24	Pee Dee Coop	Beaver Dam	43	West Carolina	Segars
25	Pee Dee Coop	Seagers	44	Lydia	Hartsville (115KV)
26	Club Colony	Segars			
27	Club Colony	Segars			

Chesterfield County

Site	Feeder	Substation	Site	Feeder	Substation
1	McBee (12KV)	Bethune	10	Pineridge	Segars
2	Pee Dee Coop	Sandhills	11	Pineridge	Segars
3	Pee Dee Coop	Sandhills	15	Pee Dee Coop	Beaver Dam
4	Pee Dee Coop	Teal	16	Pee Dee Coop	Beaver Dam
5	McBee (12KV)	Bethune	17	Pineridge	Segars
6	Pee Dee Coop	Sandhills	45	McBee (12KV)	Bethune
9	McBee (12KV)	Bethune			

Lee County

Site	Feeder	Substation
28	Kellytown	Segars
29	Kellytown	Segars
35	Church Street	Bishopville
40	Church Street	Bishopville

ERO BEEPER TEST RESULTS

NOTE: Report any beeper malfunctions to Emergency Preparedness for repair and/or replacement.

DATE OF DRILL: _____

RESPONDER'S NAME	ERO POSITION	TIME RECEIVED	DUPLICATE YES/NO	ETA FACILITY	REMARKS

Reviewed by: _____

ROUTE TO EMERGENCY PREPAREDNESS WITHIN TWO (2) WORKING DAYS OF TEST

EOF/TSC/OSC/JIC/REMOTE FACILITY INVENTORY

	EOF	TSC	OSC	JIC	TSC Rm 422	TSC Rm 420	Remote
Clerical supplies - Pens, Markers, Paper, etc. (Ensure adequate supply is available, there is no suggested quantity.)	( )	( )	( )	( )	( )	( )	( )
First Aid Kit (1)	( )	( )		( )			( )
Radar Lights (3)	( )	( )					( )
Facility - Emergency Procedures: EOF = 10 TSC = 7 OSC = 3 JIC = 4	( )	( )	( )	( )			( )
Full Set - Emergency Procedures (1 full set per facility, for TSC/EOF/Remote include SAMG procedures)	( ) ( )	( ) ( )	( )	( )			( )
Set - State Emergency Procedures (SCORERP) (only 1 set located in the EOF)	( )						( )
Telephones: Rm 422 = 8; Rm 420 = 2; Remote					( )	( )	( )
Cleanliness = Check facilities for trash, wall charts clean, and general overview of neatness.	( )	( )	( )	( )	( )	( )	( )
Copier, fax, and printer ink/toner cartridges				( )			( )

Satisfactory (√) / Comment(*)
Comments: _____

NOTE: Less than the suggested quantity does not make the EOF/TSC/OSC/JICREMOTE FACILITY Inventory unsatisfactory provided replacements are being obtained.

Completed by _____ _____
Signature Date

EMERGENCY FACILITY / EQUIPMENT CHECK GUIDANCE

TSC tour

Check general cleanliness and order.
Boards/panels clean.
Computer terminals operational.
Clocks operational
Verify radio station license current (Local Government Radio) (CR 25282)

EOF tour

Check general cleanliness and order.
Boards/panels clean.
Computer terminals operational.
Clocks operational.
Siren computer alarms clear. Log on computer and verify correct time between terminal and RTUs.
Verify radio station licenses current (Local Government Radio, Enmon) (CR 25282)

Equipment Room check (AB-1 key)

Check general cleanliness and order.
R-38 operating, (The HPs own the equipment. This is for information only.)
Check ventilation dampers closed. (Normal position)
Building exhaust fan running. (courtesy check)
ENMON Boxes (2) and HP cabinet (1) seals intact.

PBX room tour

Check general cleanliness and order.
Check operation of Dialogic Computer. (Check 1777 phone line pick up and transfer. Also check 1003 pick up)
Check for room integrity.

General building walkdown

Check for work that would affect the integrity of the building.

ATTACHMENT 8.2.32.8
Page 1 of 1

QUARTERLY OFFSITE SELECTIVE SIGNALING PHONE CHECK

Location/Circuit	Time/Date	Person Contacted	*Results
STATE SSS			
State Back Up Warning Point (32)			
State Warning Point (50)			
State EOC 1 (51)			
State EOC 2 (51)			
LEE COUNTY SSS			
Warning Point (34)			
Directors Office (54)			
Lee County EOC (55)			
CHESTERFIELD COUNTY SSS			
Warning Point (38)			
Office area (58)			
Chesterfield County EOC (59)			
DARLINGTON COUNTY SSS			
Warning Point (36)			
Darlington County EOC (56)			
Darlington County EOC Office (57)			

* Satisfactory results are defined in step 8.2.7.5

SIREN ADEQUACY REVIEW
Northeast Quadrant

Each zone should be inspected for population density increases; industrial additions, permanent large noise sources which could increase ambient sound levels. Back ground noise sources should be compared to previous reports for comparison.

REGION	INT	BACKGROUND NOISE SOURCE
R3		
R4		
R5		
R6		
R7		
R8		
R9		
R10		
R11		
R12		
R13		
R14		
R15		
R16		
R17		
R18		
R19		
R20		
R21		
R22		

SIREN ADEQUACY REVIEW
Southeast Quadrant

Each zone should be inspected for population density increases, industrial additions, permanent large noise sources which could increase ambient sound levels. Back ground noise sources should be compared to previous reports for comparison.

REGION	INT	BACKGROUND NOISE SOURCE
R1		
R2		
R23		
R24		
R25		
R26		
R27		
R28		
R29		
R30		
R31		
R44		
R45		
R46		
R47		
R48		
R49		
R50		
R51		
R52		
R63		

SIREN ADEQUACY REVIEW
Southwest Quadrant

Each zone should be inspected for population density increases; industrial additions, permanent large noise sources which could increase ambient sound levels. Back ground noise sources should be compared to previous reports for comparison.

REGION	INT	BACKGROUND NOISE SOURCE
R32		
R33		
R34		
R35		
R36		
R37		
R38		
R39		
R40		
R41		
R42		
R43		
R56		
R57		
R58		

SIREN ADEQUACY REVIEW
Northwest Quadrant

Each zone should be inspected for population density increases, industrial additions, permanent large noise sources which could increase ambient sound levels. Back ground noise sources should be compared to previous reports for comparison.

REGION	INT	BACKGROUND NOISE SOURCE
R53		
R54		
R55		
R59		
R60		
R61		
R62		
R64		
R65		

SIREN ADEQUACY REVIEW

I have reviewed the survey data and discussed population changes with the H.B. Robinson Emergency Preparedness staff. I have also reviewed applicable county records or discussed with the appropriated individuals concerning population changes and industrial changes within my county.

I have / do not have siren coverage areas that warrant further study.

_____/_____
County EP Director Chesterfield County

I have / do not have siren coverage areas that warrant further study.

_____/_____
County EP Director Darlington County

I have / do not have siren coverage areas that warrant further study.

_____/_____
County EP Director Lee County

CP&L

R
Reference
Use

CAROLINA POWER & LIGHT COMPANY
H. B. ROBINSON STEAM ELECTRIC PLANT, UNIT NO. 2

PLANT OPERATING MANUAL

VOLUME 2
PART 5

EMERGENCY PROCEDURE

EPRAD-01

ENVIRONMENTAL MONITORING

REVISION 11

SUMMARY OF CHANGES

STEP	REVISION COMMENTS
Step 8.1.3.1.1(a)	Clarified step to allow mustering of teams in areas other than Room 420.
Step 8.1.3.1.11(f) Note	Revised step and corresponding note to add reference to RNP RA/01-0164 and NRC Amendment No. 192 for PASS Elimination.
Entire Procedure	Revised page numbering format to reflect AP-007 format.

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8.1.1 PURPOSE

1. This procedure provides instructions for Radiological Assessment and Consequences. This procedure addresses in-plant/on-site monitoring and emergency off-site environmental monitoring.

8.1.2 RESPONSIBILITIES

1. The Environmental Monitoring Team Leader (EMTL) is responsible for the direction and completion of the applicable requirements of this procedure by the Environmental Monitoring Teams.

2. The Radiological Control Director (RCD) and the assigned Environmental & Radiation Control (E&RC) Supervisor or Lead Technician are responsible for the direction and completion of the applicable requirements of this procedure by the Radiation Monitoring Teams.

8.1.3 INSTRUCTIONS

8.1.3.1 Environmental Monitoring

1. The Emergency Environmental Monitoring teams shall report to the Emergency Operations Facility at the declaration of an Alert or higher emergency classification.

   a. Report to Room 420, the Training Building Library. Other areas may be used for mustering, as necessary, to expedite team dispatch.

2. Immediate dispatch of the Emergency Environmental Monitoring Teams should be performed as soon as the need arises.

   a. Activation of any facility need not be a precursor for team dispatch.

NOTE: Emergency Exposure limits are outlined in EPOSC-04, Emergency Work Control.

3. Obtain a briefing from the Site Emergency Coordinator (SEC) **OR** Radiological Control Manager (RCM) **OR**, RCD **OR** EMTL regarding the following:

   a. Required monitoring data (plume tracking, dose projection confirmation, expanded environmental monitoring, etc.)

   b. Anticipated levels of radiation

8.1.3.1 **Environmental Monitoring** (Continued)

c. Suggested routes/sample points,

d. Required protective gear

e. Required dosimetry, TLD, and

f. Exposure limits allowed.

4. Obtain necessary calibrated monitoring and support equipment from designated areas:

   a. Environmental Monitoring emergency monitoring kits are located in the mechanical equipment room in the EOF/TSC.

      – The Environmental Monitoring team will ensure that R-38 ventilation has been switched from "Auto" to "Hand".

   b. The portable emergency generators are located in the old equipment shop (building 440 east of the GET Bldg.)

5. Emergency Environmental Monitoring off site should proceed as follows:

   a. Obtain survey vehicles and emergency kits as needed.

   b. Verify gas is available for survey vehicles and emergency generators.

   c. Make quick visual check of the Emergency kit inventory.

      – Verify calibration dates on survey instruments and air samplers.

      – Battery check instruments

8.1.3.1 **Environmental Monitoring** (Continued)

6. Verify radio communications with Environmental Monitoring Team Leader (EMTL) via channel 1-A. Range of the Environmental radios is approximately 20 miles.

   a. Turn radio on using the "Vol-Off" knob.

   b. "SLF-t S t" for self test will appear, when finished a beep will be heard.

   c. Verify channel 1-A is indicated. IF not, THEN press the up or down arrows until the 1-A appears.

   d. To talk, key the radio, wait for the tone, then speak.

7. Issue dosimetry to each team member. Record TLD and SRPD numbers in the Personnel Dose Data on Attachment 8.1.5.2, Personnel Dose Data/Dose Rate Data.

8. Test start emergency generators to ensure proper operation.

   – Start outside building to avoid carbon monoxide hazard.

9. Load air samplers with Iodine Cartridge(Silver Zeolite) and a particulate filter. The rough surface of the filter paper should face the open side of the filter.

   – Charcoal iodine cartridge may be used in drills/exercises.

8.1.3.1 **Environmental Monitoring** (Continued)

10. Load emergency kits and generators into survey vehicle(s).

11. Locate the plume or confirm offsite doses as follows.

    a. Obtain current information from the Environmental Monitoring Team Leader (EMTL).

       - Wind direction
       - Initial survey location
       - Expected radiation levels
       - Protective equipment required

    b. Travel downwind to initial survey location.

    c. Maintain contact with EMTL at least every 30 minutes via radio or phone.

       - Attachment 8.1.5.8, Communications Log may be used to document communications.
       - If desired, the EMTL may maintain all communications records.

    d. At designated locations, travel at a right angle to the reported wind direction via most convenient roadway.

       - From designated locations, travel into the plume, record odometer readings coincident with entrance, maximum, and exit radiation levels as indicated by survey meter.

- Maintain survey instruments on and near a window or windshield.
- Report readings greater than or equal to 0.2 mRem/hr to the EMTL.
- Drive slowly to ensure accurate readings and locations.

e. Repeat survey traveling in the opposite direction.

f. Proceed to the location of the maximum dose rate and collect, as a minimum, a 20 ft^3 air sample. **{RNP RA/01-0164; NRC Amendment No. 192: PASS Elimination}.**

> **NOTE:** The sample period is based based on collecting sufficient volume to attain the sensitivity necessary to detect the radioactive concentration. A ten (10) minute air sample at 2 scfm flow rate provides sufficient volume to meet the requirement to measure/detect 1.0E-07 μCi/cc for radioiodines when using the appropriate curve. **{RNP RA/01-0164; NRC Amendment No. 192: PASS Elimination}**

g. Place the air sampler so that the exhaust does not stir up loose contamination which would interfere with obtaining a representative sample.

h. Record sample start and stop times to the nearest whole minute on Attachment 8.1.5.1, Environmental Data.

- If no suitable timing device is available, contact the EMTL for "marks" on start and stop times.

i. While the air sample is being drawn, perform the following:

- Closed window radiation level at approximately waist level (1 meter from ground).
- Open window radiation level at approximately waist level (1 meter from ground).

8.1.3.1 **Environmental Monitoring** (Continued)

- Open window radiation level at approximately six inches above ground.

- Record levels in the Dose Rate Data section on Attachment 8.1.5.2, Personal Dose/Dose Rate Data.

j. Periodically read dosimeters **AND** report any off scale readings to the EMTL immediately.

k. Proceed to a location outside the plume.

l. Remove the particulate filter and iodine cartridge from the air sampler and place in separate, clean plastic bags.

- Use tweezers or gloves to prevent cross contamination.

- Leave the bags open to allow the samples to off-gas.

- Mark the bags with sample start/stop times, sample flow rate, activity in ccpm, ambient radiation levels, date, location, volume, and initials of team member.

m. Conduct a field estimate of the airborne iodine activity **AND** the airborne particulate activity using a frisker type instrument with pancake probe (such as LM-177/44-9 combination) as follows:

- Move to a relatively low background area then measure **AND** record the background radiation levels.

- Measure the initial activity of the iodine cartridge by placing the probe on contact with each side of the bag **AND** record the highest reading.

- Determine the corrected counts per minute (ccpm) of the iodine cartridge by subtracting the background reading from the initial sample reading **AND** record the data.

> **NOTE:** If the activity of the second measurement is within 25% of the initial measurement for the iodine cartridge, then it should be presumed that radioiodines are present, pending isotopic analysis.

- Obtain a second set of measurements of the iodine cartridge after five minutes have elapsed.
- Repeat the measurement process for the particulate filter.

n. Report field estimates in ccpm from Attachment 8.1.5.1 to the EMTL for entry into the dose projections program.

> **NOTE:** Attachment 8.1.5.5, Thyroid Dose From Inhalation, and Attachment 8.1.5.6, Internal Dose From Inhalation, may be used to estimate internal and thyroid doses based on field readings.

o. Determine the airborne concentration of radioiodines by plotting the highest calculated sample activity (ccpm) against the calculated sample volume using Attachment 8.1.5.3, Iodine Activity with a Frisker **AND** record the results in µCi/cc on Attachment 8.1.5.1.

p. Determine the airborne concentration of particulates by plotting the highest calculated sample activity (ccpm) against the calculated sample volume using Attachment 8.1.5.4, Particulate Activity With a Frisker **AND** record the results in µCi/cc on Attachment 8.1.5.1.

8.1.3.1 **Environmental Monitoring** (Continued)

q. Report field estimates of the airborne iodine and particulate concentrations in µCi/cc from Attachment 8.1.5.1 to the EMTL to aid in evaluation of field protective action considerations for team members.

r. After appropriate samples are collected, return the samples to the site or other designated location for further analysis as directed by the EMTL.

s. Perform expanded environmental monitoring as assigned by the EMTL.

- Place additional environmental TLDs as directed by the EMTL. Environmental Monitoring Procedures contain locations for TLDs and routine monitoring. . Attachment 8.1.5.9 contains the log sheet for TLD locations.

12. Collect Environmental samples as directed by the EMTL.

a. Attachment 8.1.5.7, Collection of Environmental Samples establishes the method for collecting various liquid, soil, and vegetation samples.

b. Environmental samples will be collected as conditions permit.

c. Additional sampling instructions, where required, should be requested from the EMTL.

d. All samples collected should be labeled as follows:

- sample type,
- location,
- date and time,
- activity upon collection,
- initials and team designation of sample collector.

8.1.3.1 **Environmental Monitoring** (Continued)

e. Deliver samples to the designated location as directed by the EMTL.

- Ensure samples are properly labeled and the sample container is not externally contaminated. Sample may be placed in another "clean" bag/container.

- Brief the sample recipient/courier on the radiological conditions of the samples.

8.1.3.2 **In-Plant/On-site Radiological Monitoring**

1. Obtain necessary calibrated monitoring and support equipment from designated areas.

   a. Radiation monitoring equipment for on site monitoring is located in the OSC storage location.

   b. Radiological monitoring teams use radio channel 1 or 2 as a default.

2. For Damage Control Teams entries, observe the following:

   a. Use surveying and sampling practices as per the normal health physic practices.

      - Normal plant maps may be used for documentation of all surveys and air samples.

   b. Under emergency conditions, monitor radiation levels continuously while proceeding to the requested locations.

      - Document any unanticipated high radiation levels incurred while in route.

   c. Report any unanticipated high radiation levels incurred, while in route, to the E&RC Supervisor or Lead Technician.

8.1.3.2**In-Plant/On-site Radiological Monitoring** (Continued)

d. Samples are to be counted in the E&RC facility if available.

- Assure adequate integrity of sample containers and strict handling to avoid contamination of the facilities.
- All samples of greater than 2 Rem/hr will be handled as Very High Level Radioactive Samples (EPRAD-02, Processing Very High Level Radioactive Samples).
- If Robinson facilities are not available consider:
  - The use of other CP&L sites, or
  - Request State/Federal assistance through the State of South Carolina.

3. Habitability will meet the following criteria unless other wise directed by the RCD.

   a. Less than 5 mRem/hr direct radiation,

   b. Less than 1000 dpm/100cm^2 contamination,

   c. Less than .25 DAC airborne.

4. Perform surveys as per normal health physics practices in all areas which must remain habitable. Attachment 8.1.5.9 contains the log sheet for TLD locations. Consideration should be given to placing TLDS in the following areas:

   a. OSC

   b. TSC

   c. EOF

   d. Assembly Areas

   e. Machine Shops

   f. Counting Room

   g. Administrative Building

8.1.3.2 **In-Plant/On-site Radiological Monitoring** (Continued)

5. As emergency facilities become inhabited, provisions for personnel monitoring at ingress/egress points must be set up in concert with Security Access Control.

   a. See EPSPA-00, Site Protective Actions, for details on Access Control.

8.1.4 **RECORDS**

1. Forward documentation generated during an emergency or drill/exercise to the Emergency Preparedness Staff.

   – Attachments/documentation generated during an emergency will be maintained in the plant vault as vital records.

   – Attachments/documentation generated during a drill/exercise will be maintained in the EP files.

8.1.5 **ATTACHMENTS**

8.1.5.1 Environmental Data

8.1.5.2 Personal Dose/Dose Rate Data

8.1.5.3 Iodine Activity With a Frisker

8.1.5.4 Particulate Activity With a Frisker

8.1.5.5 Thyroid Dose From Inhalation

8.1.5.6 Internal Dose From Inhalation

8.1.5.7 Collection of Environmental Samples

8.1.5.8 Communications Log

8.1.5.9 Area Dosimetry Log Sheet

ENVIRONMENTAL DATA

SAMPLE LOCATION						
AIR SAMPLE START/STOP	/	/	/	/	/	/
AIR SAMPLE FLOWRATE (cfm)						
AIR SAMPLE VOLUME (ft^3)						
PART. FILTER READING (ccpm)*						
PART. FILTER READING (µCi/cc)**						
IODINE CARTRIDGE READING (ccpm) *						
IODINE CARTRIDGE READING (µCi/cc) **						
5 MIN. PART. FILTER READING (ccpm)						
5 MIN. PART. FILTER READING (µCi/cc)						
5 MIN. IODINE CART. READING (ccpm)						
5 MIN. IODINE CART. READING (µCi/cc)						
INSTRUMENT MODEL/SERIAL						
TECHNICIAN						

VOLUME (ft^3) = FLOWRATE (CFM) X TIME (MIN.)

*Report field activity results in **ccpm** to the EMTL for entry into the Dose Projections program.

Report airborne concentration in **µCi/cc to the EMTL to aid in evaluation of field protective action considerations for team members.

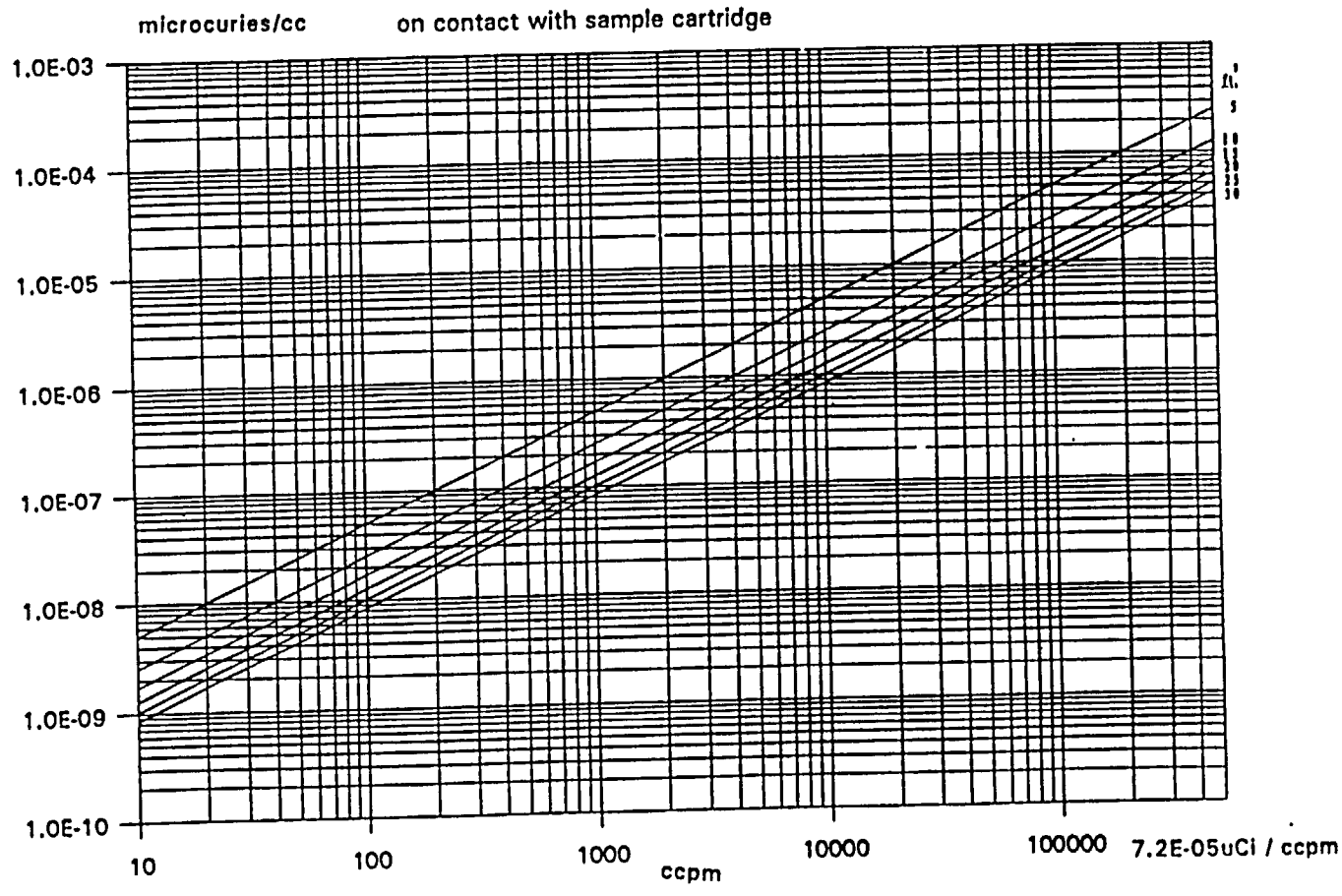
PERSONAL DOSE DATA

NAME	EMT#	TLD #	DOSIMETER#	INITIALDOSIMETER READING (mRem)	FINALDOSIMETER READING (mRem)	NET DEEP DOSE EQUIVALENT(mRem)

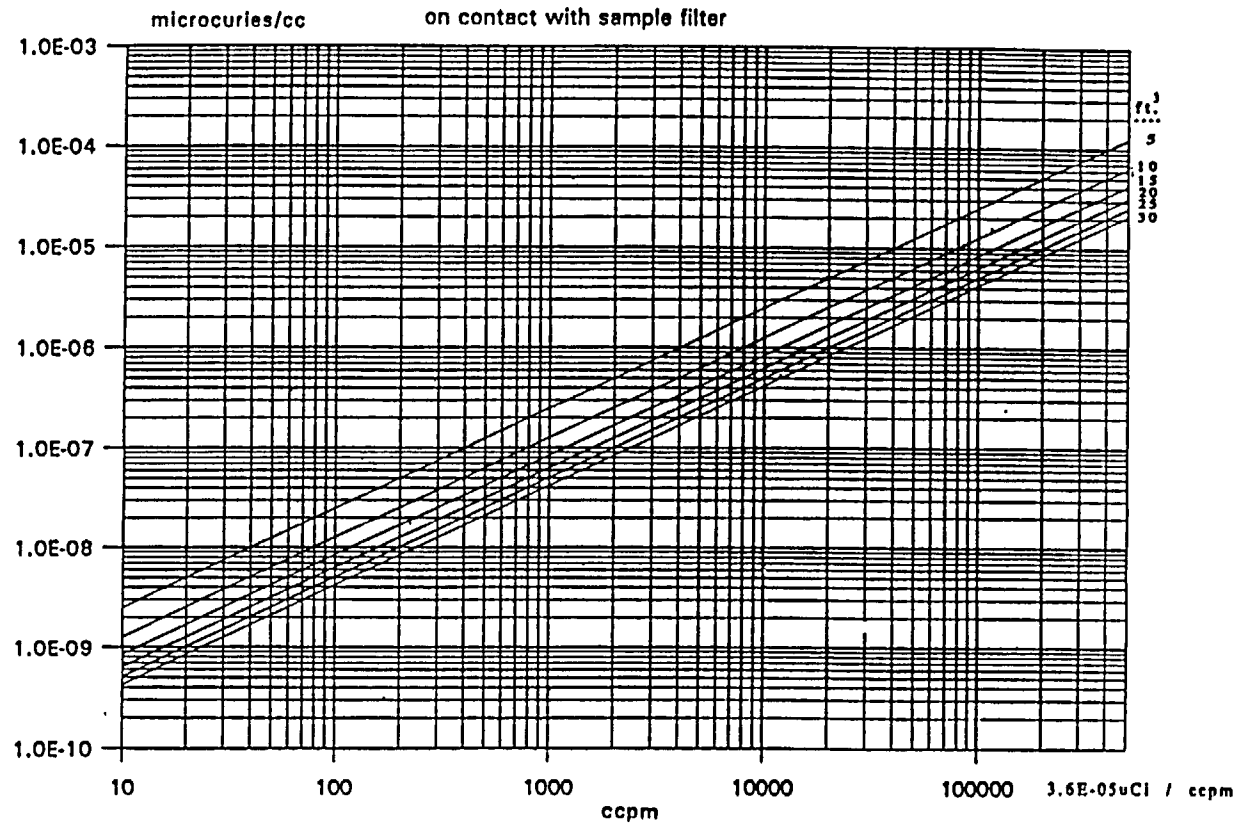
DOSE RATE DATA

LOCATION					
1 METER CLOSED WINDOW RADIATION LEVEL (mRem/hr)					
1 METER OPEN WINDOW RADIATION LEVEL (mRem/hr)					
6 INCH OPEN WINDOW RADIATION LEVEL (mRem/hr)					
INSTRUMENT MODEL/SERIAL NUMBER	/	/	/	/	/
DATE / TIME	/	/	/	/	/
TECHNICIAN					

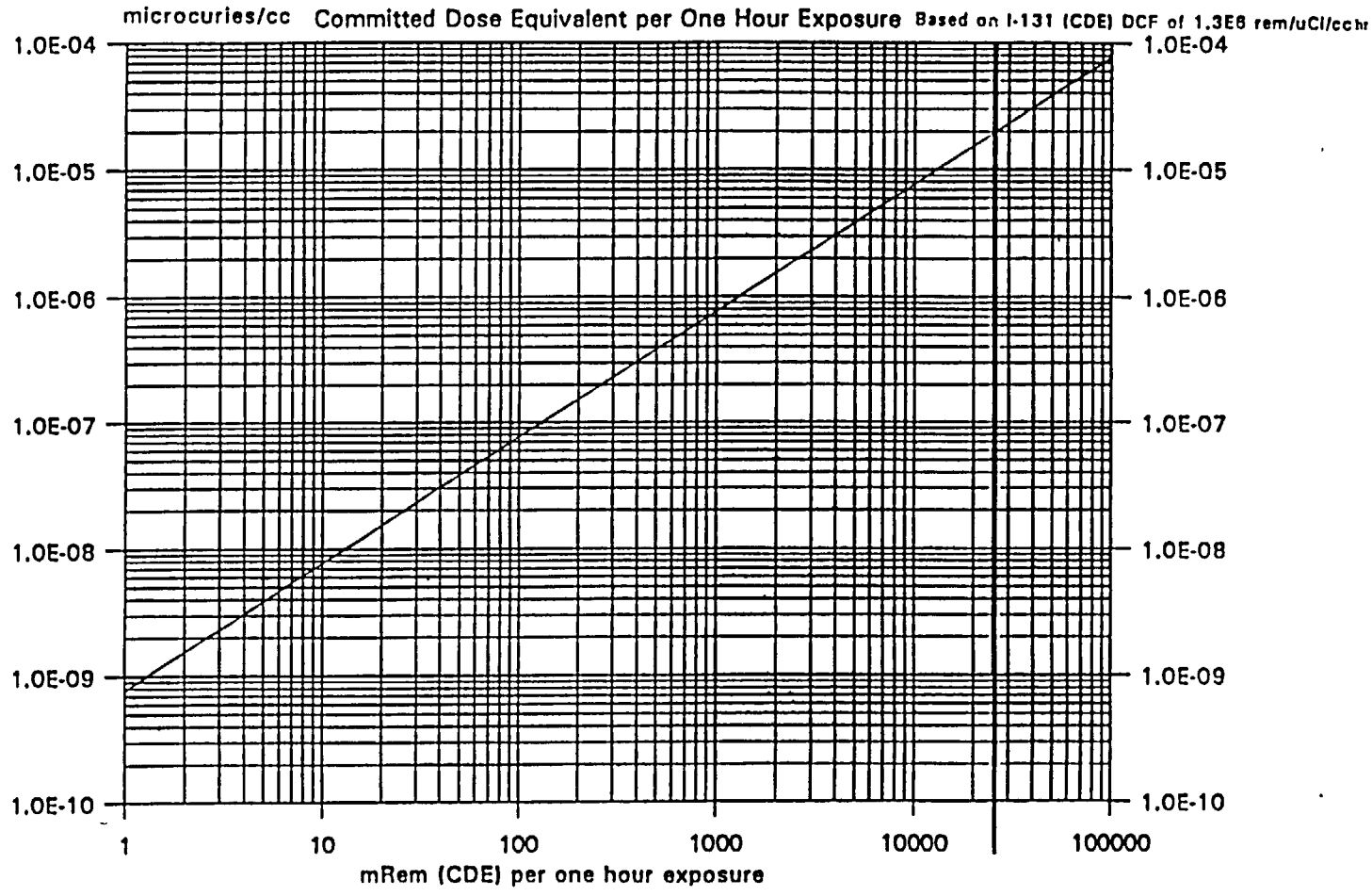
IODINE ACTIVITY WITH A FRISKER



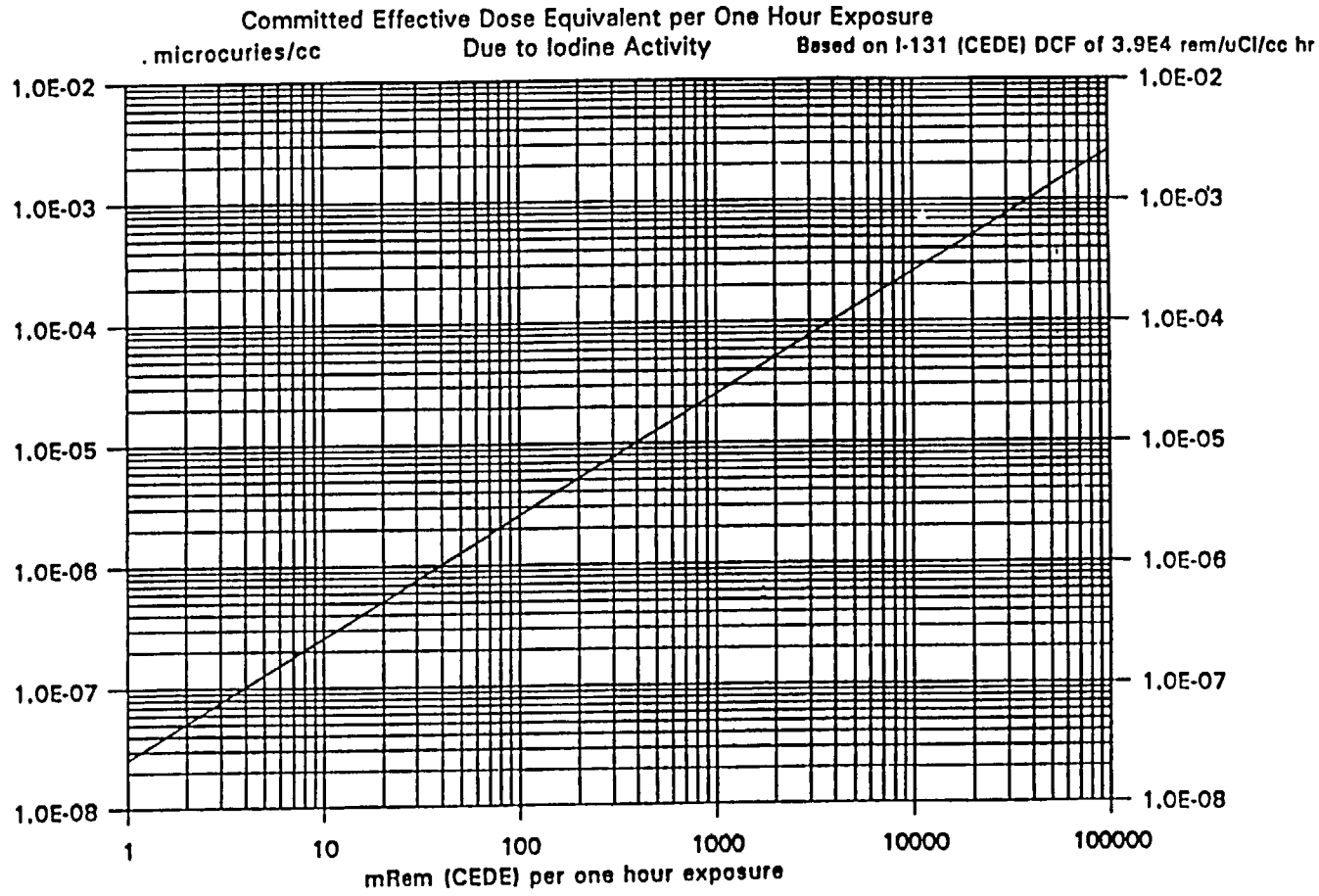
PARTICULATE ACTIVITY WITH A FRISKER



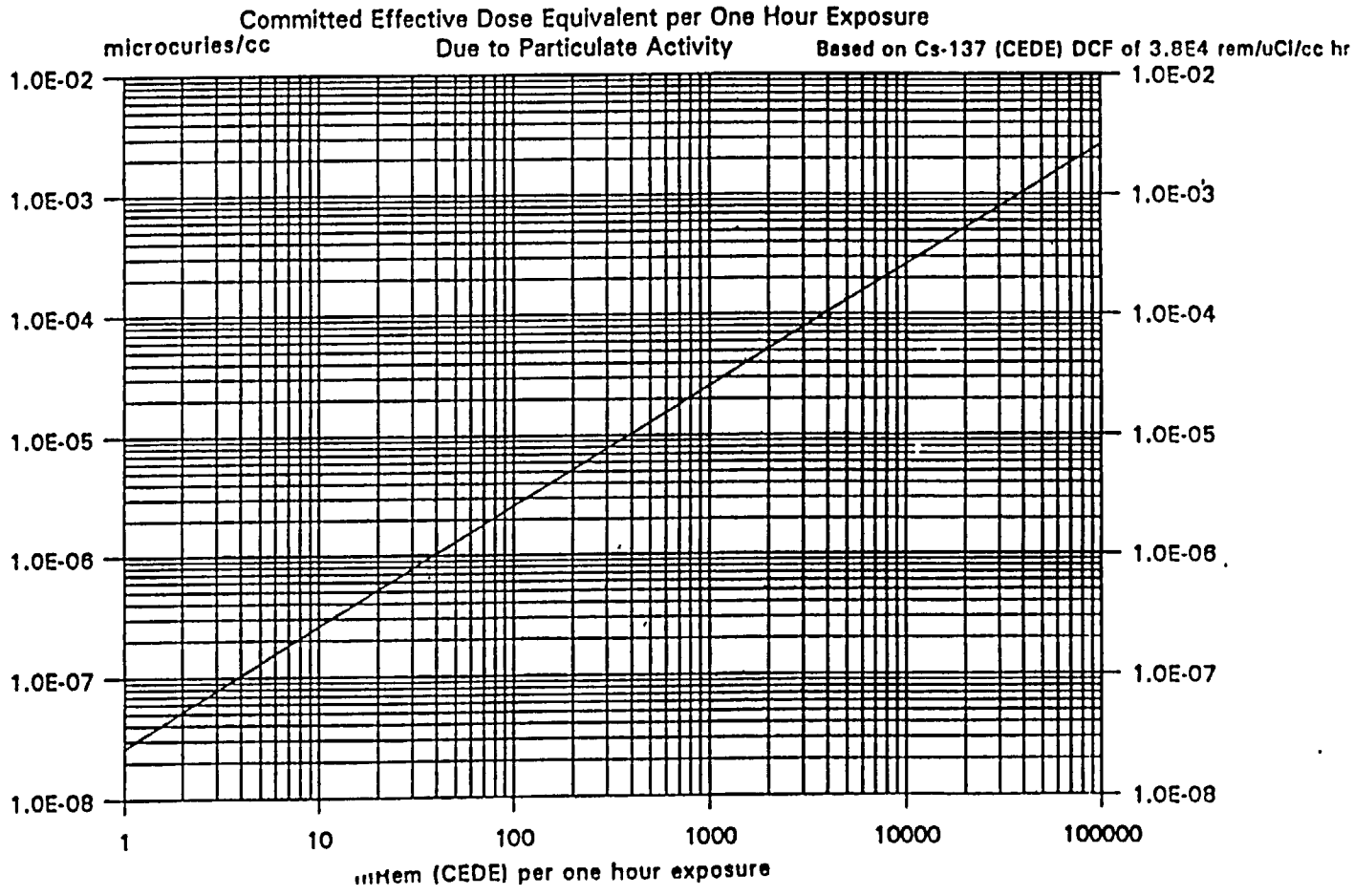
THYROID DOSE FROM INHALATION



INTERNAL DOSE FROM INHALATION



INTERNAL DOSE FROM INHALATION



COLLECTION OF ENVIRONMENTAL SAMPLES

SAMPLE TYPE	PRECAUTIONS	METHODS AND GUIDELINES
SOIL	1. Assume **ALL** samples are contaminated and handle using techniques to prevent cross-contamination. 2. Do not seal the container of soil **UNTIL** the sample is delivered to the sample control point for transport/analysis. This will permit radon gases to off-gas.	1. **When possible, select an open, level area for sampling**. Avoid areas that are shielded by buildings, trees, bushes, or dense vegetation. Avoid areas that show evidence of erosion water runoff or poor drainage. 2. Clear an area 5" x 5" of rocks, litter, and non-soil items. 3. Using a scoop or trowel, evenly dig out enough soil (including any vegetation) from the 5" x 5" area to a depth of 1" (~5 cm). This should yield a sample of ~400 ml. 4. Place soil in container. 5. Label sample container.
POTABLE WATER	1. Assume **ALL** samples are contaminated and handle using techniques to prevent cross-contamination.	1. Collect at least 1-gallon sample of drinking water. 2. Flush sample lines and rinse sample container before filling. 3. Cap and label sample container.
SURFACE WATER	1. Assume **ALL** samples are contaminated and handle using techniques to prevent cross-contamination.	1. Surface water samples from the plant cooling water and discharge structures may be collected from the automatic samples (SW 40 & 41, refer to EMP-001, Attachment 11.1, for sample location.) 2. If samplers are out-of-service, obtain a grab sample from boat, bridge, or shore. **Note:** More specific sampling instructions will be provided by the EMT Leader. 3. If possible collect 1-gallon sample and secure tightly. 4. Label sample container.

COLLECTION OF ENVIRONMENTAL SAMPLES

SAMPLE TYPE	PRECAUTIONS	METHODS AND GUIDELINES
SNOW & ICE	1. Assume **ALL** samples are contaminated and handle using techniques to prevent cross-contamination.	1. Obtain the equivalent of 500 ml liquid of snow or ice samples for analysis. This may require collection in 4-liter sample containers. 2. Label the sample container.
VEGETATION & CROPS	1. Assume **ALL** samples are contaminated and handle using techniques to prevent cross-contamination.	1. Obtain small bag (~12"x12") samples of broad leaf vegetables and/or other vegetation as directed by the EMT Leader. 2. **IF** milk is to be collected, **THEN** collect 1000 gram samples of pasture grass as close to the roots as possible without including dirt in the sample. 3. If possible, tree leaves should be sampled from topmost part of tree. 4. Large, leafy vegetation is better than small. 5. Ground covers should be selected from open areas. 6. Label the sample container.
MILK	1. Assume **ALL** samples are contaminated and handle using techniques to prevent cross-contamination.	1. Sampling should begin the day after an atmospheric release of radioactive material and every 2 days thereafter until levels of I-131 return to normal. Note: Peak Iodine(I-131) activity is expected on Day 3 following the release. 2. If available, collect at minimum a 1-gallon sample from a thoroughly mixed tank **OR** from a single milk cow. 3. Collect approximately 1000 grams of pasture grass and/or feed whenever milk samples are collected. 4. Label the sample containers.

COMMUNICATIONS LOG

Location: _____ Device: _____
Include Telephone # or Radio Call Sign

Date: _____

Time	Call From	Call To	Remarks (include data transmitted and decisions or recommendations made)

This log is to be routed to the Radiological Control Manager.

AREA DOSIMETRY LOG SHEET

Location	Dosimeter #	Time/Date of Placement	Time/Date of Retrieval	Comments