VIRGIL C. SUMMER NUCLEAR STATION

NUCLEAR OPERATIONS PROCEDURES

EMERGENCY PLAN PROCEDURES

TABLE OF CONTENTS

* Safety Related Procedure

PROCEDURE NUMBER	PROCEDURE TITLE	REVISION	DATE ISSUED
EPP-021	Activation of the Early Warning Siren System (EWSS)	3	9/10/82
EPP-022	Verification of Communications Operability	1	7/27/82

SOUTH CAROLINA ELECTRIC AND GAS COMPANY

VIRGIL C. SUMMER NUCLEAR STATION

NUCLEAR OPERATIONS

NUCLEAR OPERATIONS

COPY NO. 157-C

EMERGENCY PLAN PROCEDURE

EPP-001

ACTIVATION AND IMPLEMENTATION OF EMERGENCY PLAN

REVISION 2

JUNE 15, 1982

NON-SAFETY RELATED

Reviewed by:

Mark Counts — 7/22/82
ORIGINATOR (of this revision) — Date

W. Frank Baum — 7/15/82
QUALIFIED REVIEWER — Date

Approved:

J. G. Connelly — 7/26/82
PLANT MANAGER — Date

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Form AP-101-2, (1/80)

LIST OF EFFECTIVE PAGES

PAGE	REVISION
1	2
ii	2
1	2
2	2
3	2
4	2
5	2
6	2
7	2
8	2
9	2
10	2
11	2

ATTACHMENTS

Attachment I	Pages 1 thru 13	2
Attachment II		2

TABLE OF CONTENTS

1.0 PURPOSE

To define and implement the Emergency Action Levels (EAL's) that will initiate the Emergency Plan and to provide a means of classifying the emergency.

2.0 REFERENCES

2.1 "Virgil C. Summer Nuclear Station Radiation Emergency Plan."

2.2 NUREG-0654, Criteria for Preparation and Evaluation of Radiological Emergency Response Plans and Preparedness in Support of Nuclear Power Plants.

2.3 EPP-021, Activation of the Early Warning Siren System.

2.4 Policy Memorandum No. 25, Issuance, Control, and Usage of Radio Pagers.

3.0 CONDITIONS AND PREREQUISITES

3.1 The Emergency Plan shall be initiated whenever an "Initiating Condition" (as defined in Attachment I) has been reached or exceeded.

NOTE: The implementation of any specific emergency plan procedure (except this procedure) does not necessarily implement the Emergency Plan, but may do so at the discretion of the Emergency Director/Interim Emergency Director. For example; a small chlorine leak would implement the toxic release procedure but not necessitate implementation of the Emergency Plan; whereas a large release with the potential for affecting the level of safety of the plant would implement the toxic release procedure and the Emergency Plan due to the declaration of an Unusual Event.

3.2 The "Initiating Condition" shall be used to determine the applicable Emergency Action Level (EAL) per Attachment I.

3.3 The "Detection Methods" of Attachment I are to be used only as an aid to determine if an "Initiating Condition" has been reached or exceeded. Other detection methods, not listed in Attachment I, may be used to determine if an "Initiating Condition" exists. The existence of one or more of the detection methods could be but is not necessarily an indication that an "Initiating Condition" exists.

4.0 PROCEDURES

4.1 Upon recognition of an abnormal plant or site condition the observer shall notify the Shift Supervisor of the potential emergency plant condition.

4.2 The Shift Supervisor shall:

A. Evaluate the conditions and determine the applicable Emergency Action Level (EAL) per the Emergency Action Level Summary, Attachment I.

B. Declare an EAL and implement the Emergency Plan per the applicable section of this procedure.

Unusual Event	(Section 4.3)
or Alert	(Section 4.4)
or Site Emergency	(Section 4.5)
or General Emergency	(Section 4.6)

4.3 Unusual Event

4.3.1 Immediate Actions: (Immediate Action Summary, See Attachment II)

The Emergency Director (ED) or Interim Emergency Director (IED) shall accomplish or cause to be accomplished the following:

A. Announce the emergency condition to all plant personnel over the plant paging system.

> ATTENTION ALL PERSONNEL:
>
> THE STATION IS IN AN UNUSUAL EVENT CONDITION.
> THE INITIATING EVENT IS _____.

NOTE: [REPEAT ANNOUNCEMENT].

B. Notify the Security Shift Leader to implement appropriate security measures.

C. Ensure that on-shift personnel have responded to their emergency response stations.

D. Ensure that the Initial Notifications are completed per EPP-002.

E. Ensure that the Emergency Log is established and maintained.

F. Request Offsite Emergency Services (Fire, Medical, LLEA, etc.) if required per EPP-002, if necessary.

NOTE: Consideration should be given to access routes taken.

4.3.2 Follow-Up Actions:

The ED/IED shall continually assess the status of the Unusual Event per Attachment I for possible escalation to a higher emergency classification or termination of emergency condition.

4.3.3 Final Actions:

When the emergency condition has cleared, close out the Unusual Event with a verbal summary to offsite authorities within 24 hours and close out of the Emergency Log.

4.4 Alert

4.4.1 Immediate Actions (ED/IED): (Immediate Action Summary, Attachment II)

The Emergency Director (ED) or Interim Emergency Director (IED) shall accomplish or cause to be accomplished the following:

A. Announce the emergency condition to all plant personnel over the plant paging system.

ATTENTION ALL PERSONNEL: THE STATION IS IN AN ALERT CONDITION. THE INITIATING EVENT IS _____. ALL EMERGENCY RESPONSE PERSONNEL REPORT TO THEIR STATIONS.

B. If necessary, sound the Radiation Emergency Alarm.

C. Repeat the announcement.

NOTE: [Repeat steps A, B, and C every two minutes for six minutes.]

D. Notify the Security Shift Leader to implement appropriate security measures.

E. Ensure that on-shift personnel have responded to their emergency response stations.

F. During off-normal hours, call in emergency response personnel by activating the SCE&G Radio Pager System as per Policy Memorandum No. 25.

G. Ensure that the Initial Notifications are completed per EPP-002.

H. Ensure that the Emergency Log is established and maintained.

I. Request Offsite Emergency Services (Fire, Medical, LLEA, etc.) if required per EPP-002.

NOTE: Consideration should be given to access routes taken.

J. Ensure that TSC/OSC are being activated per EPP-016 and/or notification of Emergency Response Personnel is initiated per EPP-002.

K. Determine if the site evacuation is required. (Including Fairfield Pump Storage Facility).

4.4.2 Immediate Actions (All other personnel):

A. Emergency Response Personnel report to their designated stations.

B. Non-essential personnel continue assigned duties and await further instructions.

C. If the radiation emergency alarm is initiated, all Personnel in the Radiation Control Area report to the Radiation Access Control Area on the 412' level of the Control Building.

4.4.3 Follow-up Actions

The ED/IED shall:

A. Notify the Offsite Emergency Coordinator of the emergency and current plant conditions.

B. Verify that the TSC/OSC are manned and activated per EPP-016.

C. Ensure that updated follow-up notifications are made per EPP-002.

D. Continue assessments and corrective actions to mitigate the emergency condition and place the plant into a safe and controlled condition.

E. Make assignments to his staff to mitigate the emergency conditions per established Emergency Plan Procedures (EPP's) or as required for conditions not covered by procedures.

F. Continually assess the status of the Alert condition per Attachment I for possible escalation to a higher emergency classification, down-grading to an Unusual Event, or close out of emergency condition.

4.4.4 Final Actions:

A. When emergency conditions clear to allow for close out or down-grading of the Alert condition, the ED shall ensure that offsite authorities are:

1. Notified verbally by normal emergency communications.

2. Provided with a written summary within 8 hours of the close out of the emergency or down-grade of the emergency classification.

B. Initiate EPP-017, Post-Recovery and Re-Entry as required.

4.5 Site Emergency

4.5.1 Immediate Actions (ED/IED): (Immediate Action Summary, see Attachment II)

The Emergency Director (ED) or Interim Emergency Director (IED) shall accomplish or cause to be accomplished the following:

A. Announce the emergency condition and site evacuation to all plant personnel over the plant paging system.

ATTENTION ALL PERSONNEL: THE STATION IS IN A SITE EMERGENCY CONDITION. THE INITIATING EVENT IS _____. ALL EMERGENCY RESPONSE PERSONNEL REPORT TO THEIR STATIONS. ALL NON-ESSENTIAL PERSONNEL EVACUATE THE SITE PROCEED TO _____.

B. Sound the Radiation Emergency Alarm.

C. Repeat the announcement.

NOTE: [Repeat steps A, B, and C every two minutes for six minutes.]

D. Notify the Security Shift Leader to implement appropriate security measures.

E. Notify the Fairfield Pump Storage Facility of site evacuation.

F. Implement EPP-021.

G. During off-normal hours, call in Emergency Response Personnel by activating the SCE&G Radio Pager System as per Policy Memorandum No. 25.

H. Ensure that on-shift personnel have responded to their emergency response stations.

I. Ensure that the Initial Notifications are completed per EPP-002.

J. Ensure that the Emergency Log is established and maintained.

K. Request Offsite Emergency Services (Fire, Medical, LLEA, etc.) if required per EPP-002.

NOTE: Consideration should be given to access routes taken.

L. Notify the Offsite Emergency Coordinator of the emergency and current plant conditions.

M. Ensure that TSC/OSC/EOF are being activated per EPP-016 and/or notification of Emergency Response Personnel is initiated per EPP-002.

4.5.2 Immediate Actions (All other personnel):

A. Emergency Response Personnel report to their designated stations.

B. Non-essential personnel evacuate the site, proceed to their private residence or offsite holding area as designated by the ED, and await further instructions.

C. Personnel in the Radiation Control Area report to the Radiation Access Control Area on the 412' level of the Control Building, unless otherwise directed.

4.5.3 Follow-Up Actions

A. Verify that the TSC/OSC/EOF are manned and activated per EPP-016.

B. Ensure that updated follow-up notifications are made per EPP-002.

C. Continue assessments and corrective actions to mitigate the emergency condition and place the plant into a safe and controlled condition.

D. Make assignments to his staff to mitigate the emergency conditions per established Emergency Plan Procedures (EPP's) or as required for conditions not covered by procedures.

E. Continually assess the status of the Site Emergency condition per Attachment I for possible escalation to a higher emergency classification, down-grading to an Unusual Event, or Alert, or close out of emergency condition.

F. Verify site evacuation is complete and all personnel are accounted for. (Including Fairfield Pump Storage Personnel).

4.5.4 Final Actions:

A. When emergency conditions clear to allow for close out or down-grading of the Site Emergency condition, the ED shall ensure that offsite authorities are:

1. Notified verbally by normal emergency communications.

and 2. Provided with a written summary within 8 hours of the close out of the emergency or down-grade of the emergency classification.

B. Initiate EPP-017, Post-Recovery and Re-Entry as required.

4.6 General Emergency

4.6.1 Immediate Actions (ED/IED): (Immediate Action Summary, see Attachment II)

- The Emergency Director (ED) or Interim Emergency Director (IED) shall accomplish or cause to be accomplished the following:

A. Announce the emergency condition and site evacuation to all plant personnel over the plant paging system.

ATTENTION ALL PERSONNEL: THE STATION IS IN A GENERAL EMERGENCY CONDITION. THE INTIATING EVENT IS _____. ALL EMERGENCY RESPONSE PERSONNEL REPORT TO THEIR STATIONS. ALL NON-ESSENTIAL PERSONNEL EVACUATE THE SITE. PROCEED TO _____.

B. Sound the Radiation Emergency Alarm.

C. Repeat the announcement.

<u>NOTE</u>: [Repeat steps A, B, and C every two minutes for six minutes].

D. Notify the Security Shift Leader to implement appropriate security measures.

E. Notify the Fairfield Pump Storage Facility of Site Evacuation.

F. Implement EPP-021.

G. During off-normal hours, call in Emergency Response Personnel by activating the SCE&G Radio Pager System as per Policy Memorandum No. 25.

H. Ensure that on-shift personnel have responded to their emergency response stations.

I. Ensure that the Initial Notifications are completed per EPP-002.

J. Ensure that the Emergency Log is established and maintained.

K. Request offsite Emergency Services (Fire, Medical, LLEA, etc.) if required per EPP-002.

NOTE: Consideration should be given to access routes taken.

L. Notify the Offsite Emergency Coordinator of the emergency and current plant condition.

M. Ensure that TSC/OSC/EOF are being activated per EPP-016 and/or notification of Emergency Response Personnel is initiated per EPP-002.

4.6.2 Immediate Actions (All other personnel):

A. Emergency Response Personnel report to their designated stations.

B. Non-essential personnel evacuate the site, proceed to their private residence or offsite holding a as designated by the ED, await further instructions.

C. Personnel in the Radiation Control Area report to the Radiation Access Control Area on the 412' level of the Control Building, unless otherwise directed.

4.6.3 Follow-up Actions

The ED/IED shall:

A. Verify that the TSC/OSC/EOF are manned and activated per EPP-016.

B. Ensure that updated follow-up notifications are made per EPP-002.

C. Continue assessments and corrective actions to mitigate the emergency condition and place the plant into a safe and controlled condition.

D. Make assignments to his staff to mitigate the emergency conditions per established Emergency Plan Procedures (EPP's) or as required for conditions not covered by procedures.

E. Continually assess the status of the General Emergency condition per Attachment I for possible down-grading to an Unusual Event, Alert, or Site Emergency, or close out of emergency condition.

F. Verify site evacuation is complete and all personnel are accounted for. (Including Fairfield Pump Storage Personnel).

4.6.4 Final Actions:

A. When emergency conditions clear to allow for close out or down-grading of the General Emergency condition, the ED shall ensure that offsite authorities are:

1. Notified verbally by normal emergency communications.

2. Provided with a written summary within 8 hours of the close out of the emergency or down-grade of the emergency classification.

B. Initiate EPP-017, Post-Recovery and Re-Entry as required.

SYSTEM INVOLVED	UNUSUAL EVENT	ALERT	SITE EMERGENCY	GENERAL EMERGENCY
REACTOR COOLANT SYSTEM	INITIATING CONDITION EXCEEDING TECHNICAL SPECIFICATION PRIMARY TO SECONDARY OR PRIMARY SYSTEM LEAK RATES Detection Method: Primary to secondary leak rate greater than 1 gpm total for more than 4 hours or greater than 500 gpd per steam generator as identified by daily RCS leakage evaluation; or Primary system leak rate greater than those specified in Technical Specification 3.4.6.2 as identified by daily RCS leakage evaluation. 1) > 0 pressure boundary leakage 2) > 1 gpm unidentified for more than 4 hours 3) > 10 gpm identified RCS leakage for more than 4 hours. 4) > 33 gpm controlled leakage (at 2235 ± 20 psig for more than 4 hrs.) 5) ≥ 1 gpm RCS pressure isolation valve per table 3.4-1 for greater than 4 hours. - INITIATING CONDITION ABNORMAL REACTOR COOLANT TEMP. AND/OR PRESSURE OR ABNORMAL FUEL TEMPERATURE THAT WOULD INDICATE A LOSS OF SUBCOOLING MARGIN OR OVERPRESSURIZATION. Detection Method: 1) Reactor Coolant Tavg greater than 590°F; or 2) RCS pressure greater than 2310 psig; or 3) RCS pressure less than 1765 psig; and core exit temperature greater than 620°F as indicated by a valid incore thermocouple; or 4) Inadequate Core Cooling Alarm.	INITIATING CONDITION RAPID FAILURE OF SEVERAL STEAM GENERATOR TUBES (e.g., SEVERAL HUNDRED GPM PRIMARY-TO-SECONDARY LEAK RATE). Detection Method: Pressurizer low pressure alarm and reactor trip; and Pressurizer low level alarm; and RM-A9, G19A, G19B, or G19C valid high alarm; and Steam Generator water level rapidly increasing in one or more steam generator(s), falling in the others; and RM-L3, or RM-L10 valid high alarm and Possible lifting of steam generator PRV's and/or safety valves. - INITIATING CONDITION REACTOR COOLANT LEAKAGE RATE EXCEEDS 50 GPM. Detection Method: 1) Excessive Reactor Make-up to the Volume Control Tank 2) Operational Leakage Test Procedure STP-114.002/	INITIATING CONDITION KNOWN LOSS-OF-COOLANT ACCIDENT (LOCA) GREATER THAN CHARGING PUMP CAPACITY. Detection Method: Pressurizer low pressure reactor trip; and Pressurizer low pressure safety injection signal, and High Reactor Building pressure, and High Reactor Building sump level and ; High Reactor Building humidity; and RM-A2 high alarm - INITIATING CONDITION RAPID FAILURE OF SEVERAL STEAM GENERATOR TUBES (SEVERAL HUNDRED GPM PRIMARY-TO-SECONDARY LEAK RATE) WITH LOSS OF OFFSITE POWER. Detection Method: Pressurizer low pressure alarm and reactor trip, or pressurizer level rapidly decreasing and Pressurizer low-level alarm; and RM-A9, G19A, G19B, or G19C valid high alarm; and loss of 115KV and 230 KV ESF potential lights, and Steam Generator water level rapidly increasing in one or more steam generators, falling in the others; and RM-L3, or RM-L10 valid high alarm; and Possible lifting of steam generator PRV's and/or safety valves.	INITIATING CONDITION SMALL AND LARGE LOCAs WITH FAILURE OF ECCS TO PERFORM LEADING TO SEVERE CORE DEGRADATION OR MELT. ULTIMATE FAILURE OF REACTOR BUILDING POSSIBLE FOR MELTDOWN SEQUENCES. Detection Method: Safety Injection signal with reactor trip; and 1) Status lamps indicate safety injection and RHR pumps not running: or 2) Flow indicators for Safety Injection System read zero; and RMG-5, RMG-7, RMG-18, high alarm; and RM-A2 high alarm; - INITIATING CONDITION SMALL LOCA AND INITIALLY SUCCESSFUL ECCS. SUBSEQUENT FAILURE OF REACTOR BUILDING HEAT REMOVAL SYSTEMS OVER SEVERAL HOURS COULD LEAD TO CORE MELT AND POSSIBLE FAILURE OF THE REACTOR BUILDING. Detection Method: Pressurizer low pressure reactor trip; and Pressurizer low pressure safety injection signal and 1) RHR flow indicators show zero flow after shift to RHR is attempted and for greater than 2 hr. subsequently and RCS temperature rising, and 2) Reactor Building spray and Reactor Building air handling system fail to function.

SYSTEM INVOLVED	UNUSUAL EVENT	ALERT	SITE EMERGENCY	GENERAL EMERGENCY
STEAM SYSTEM	INITIATING CONDITION RAPID SECONDARY SYSTEM DEPRESSURIZATION. Detection Method: Rapid decrease in S/G pressure; and Reduced RCS temperature and pressure; and Observation of break or steam dump, relief or safety valve inadvertently opened.	INITIATING CONDITION MAJOR STEAM LINE BREAK (e.g., GREATER THAN 6 IN. EQUIVALENT DIAMETER) WITH A SIGNIFICANT PRIMARY-TO-SECONDARY LEAK RATE. Detection Method: Rapidly decreasing reactor coolant T_{avg}, pressurizer pressure, and pressurizer level; and RM-L3, or RM-L10 or RM-A9 high alarms; and 1) Steam line differential pressure, safety injection signal; and High Reactor Building pressure alarm; and RM-A2 high alarm for rupture in Reactor Building -OR- 2) High steam flow and Lo-Lo T_{avg} or low steam pressure safety injection signal for rupture downstream of MSIV's. ---------- INITIATING CONDITION RAPID GROSS FAILURE OF ONE STEAM GENERATOR TUBE WITH LOSS OF OFFSITE POWER. Detection Method: Pressurizer low pressure alarm and reactor trip; and Pressurizer low level alarm; and RM-A9, G19A, G19B, or G19C valid high alarm and Pressurizer low pressure safety injection signal; and loss of 115 KV and 230 KV ESF Potential Lights; and RM-L3, or RM-L10 valid high alarms	INITIATING CONDITION MAJOR STEAM LINE BREAK WITH GREATER THAN 50GPM PRIMARY-TO-SECONDARY LEAKAGE AND INDICATION OF FUEL DAMAGE. Detection Method: Rapidly decreasing reactor Coolant T_{avg}, pressurizer pressure and pressurizer level; and 1) Steam line differential pressure, safety injection signal; and High Reactor Building pressure alarm and valid RM-A2 and RM-L1 high alarm and or 2) High steam flow and Lo-Lo Tavg or low steam pressure safety injection signal and RM-A9, G19A, G19B, or G19C or high alarm and RM-L1 valid high alarm	

SYSTEM INVOLVED	UNUSUAL EVENT	ALERT	SITE EMERGENCY	GENERAL EMERGENCY
RADIOLOGICAL EFFLUENTS	INITIATING CONDITION GASEOUS EFFLUENT INSTANTANEOUS RELEASE RATE TECHNICAL SPECIFICATION LIMITS EXCEEDED FOR HR. (APPENDIX B TABLE II, COLUMN 10CFR20) Detection Method: Any of the following gaseous effluent monitors in * high valid alarm mode for more than 1 hr.: (due to radioactivity releases to the environment) RM-A3 (Iodine) RM-A4 (Iodine) or Any of the following reading 4 times the high alarm setpoint for more than 1 hour. RM-A3 (Gas) RM-A4 (Gas)	SUSTAINED HIGH RADIATION LEVELS OR HIGH AIRBORNE CONTAMINATION WHICH INDICATES A SEVERE DEGRADATION IN THE CONTROL OF RADIOACTIVE MATERIALS (e.g., INCREASE OF FACTOR OF 1000 IN DIRECT RADIATION READINGS). Detection Method: 1) Unexpected valid RMG readings as follows: a) RMG 2-4, 8-13, or 16: greater than 2.5 R/hr b) RMG 7, 17A, 17B, or 18 greater than 100 R/hr c) RMG-1: greater than 1 R/hr 2) Unexpected plant area iodine or particulate airborne concentration greater than 1000 MPC. (as per 10CFR20 Appendix B, Table I)	INITIATING CONDITION RADIATION MONITORS DETECT LEVELS CORRESPONDING TO GREATER THAN 50 MREM/HR WHOLE BODY FOR 0.5 HR. OR GREATER THAN 500 MREM/HR WHOLE BODY FOR 2 MIN. (OR FIVE TIMES THESE LEVELS TO THE THYROID) AT THE EXCLUSION AREA BOUNDARY FOR ADVERSE METEOROLOGY (PASQUILL F STABILITY, 1M/SEC WIND VELOCITY). Detection Method: Any of the following valid gaseous effluent monitor readings: 1) RM-A13 (Gas) > 0.3 Mr/Hr above Bkdg. for 2 min. OR 2) RM-A14 (Gas) > 2.2 mR/hr. above bkgd. For 0.5 hr. or > 22 mR/hr above bkgd. for 2 min. (CONTINUE ON NEXT PAGE)	INITIATING CONDITION EFFLUENT MONITORS DETECT LEVELS CORRESPONDING TO 1-REM/HR WHOLE BODY OR 5-REM/HR THYROID AT THE EXCLUSION AREA BOUNDARY UNDER ACTUAL METEOROLOGICAL CONDITIONS. Detection Method: 1) Radiation Monitor levels exceed those specified for Site Emergency; and 2) Calculation on Dose Assessment Forms indicates levels exceeding 1-rem/hr whole body or 5-rem/hr thyroid at the exclusion area boundary using radiation monitor readings and effluent stream flow rates (measured or assumed) for actual meteorological conditions; or measured in-situ.

* A valid high alarm will include verification of radioactivity concentrations in the sampling media.

SYSTEM INVOLVED	UNUSUAL EVENT	ALERT	SITE EMERGENCY	GENERAL EMERGENCY
RADIOLOGICAL EFFLUENTS (CON'T)	INITIATING CONDITION LIQUID EFFLUENT CONCENTRATIONS TECHNICAL SPECIFICATIONS LIMITS EXCEEDED FOR 15 MIN. (APPENDIX B TABLE II COLUMN 2 10CFR20). Detection Method: Any of the following liquid effluent monitors in * valid High Alarm for longer than 15 min. and isolation valve(s) fail to close RM-L5; or RM-L7; or RM-L9	INITIATING CONDITION RADIOLOGICAL EFFLUENT RELEASE RATE EXCEEDING 10 TIMES TECHNICAL SPECIFICATION INSTANTANEOUS LIMITS. Detection Method: Any of the following * valid radiation monitor readings for longer than 15 minutes a) 10 times High Alarm setpoint for Iodine for RM-A3 RM-A4 b) 40 times High alarm setpoint for Gas for RM-A3 RM-A4 c) RM-L5 or RM-L7 or RM-L9 10 times High Alarm setpoint and isolation valves fail to close.	INITIAL CONDITION DOSE RATES LISTED BELOW ARE PROJECTED BASED ON GAMMA RADIATION MONITOR (RMG) READINGS AND/OR OTHER PLANT PARAMETERS OR ARE MEASURED AT THE EXCLUSION AREA BOUNDARY. Detection Method: 1) Reactor Building leak rate results in calculated dose rate at exclusion area boundary greater than 50 mrem/hr whole body for 0.5 hr; or 500 mrem/hr whole body for 2 min. or 2) Radiation Monitoring Teams measures dose rates greater than 50 mrem/hr for 0.5 hr or greater than 500 mrem/hr for 2 min. (beta + gamma) at the exclusion area boundary; or 3) Radiation Monitoring Teams measure thyroid dose rates (equivalent I-131 concentrations) greater than: a) 250 mrem/hr (1.3×10^{-7} Ci/cc for 0.5 hr; or b) 2500 mrem/hr (1.3×10^{-6} Ci/cc) for 2 min at the exclusion area boundary.	

* A valid high alarm will include verification of radioactivity concentration in the sampling media.

SYSTEM INVOLVED	UNUSUAL EVENT	ALERT	SITE EMERGENCY	GENERAL EMERGENCY
FUEL DAMAGE	INITIATING CONDITION FUEL DAMAGE INDICATION. Detection Method: Dose equivalent I-131 activity concentration greater than limit in Figure 3.4-1 of Technical Specifications; or RM-L1 High alarm; and Laboratory analysis which indicates an increase in failed fuel of 0.1 percent in 30 minutes.	INITIATING CONDITION POSSIBLE FUEL DAMAGE. Detection Method: 1) Primary coolant sample indicates equivalent I-131 concentration greater than 300 UCi/cc; or 2) RM-L1 High alarm and laboratory anaylsis which indicates an increase in failed fuel of 1 percent in 30 min or a total failed fuel of 5 percent. - - - - - - - - - - - - - - - - - INITIATING CONDITION FUEL HANDLING ACCIDENT WITH RELEASE OF RADIOACTIVITY TO REACTOR OR FUEL HANDLING BUILDING. Detection Method: Observation of damage to spent fuel assembly; and 1) RM-A2 high alarm and/or RMG-17A, 17B high alarm after accident in Reactor Building; or 2) RM-A6 high alarm; or RMG-8 high alarm; after accident in Fuel Handling Building.	INITIATING CONDITION DEGRADED CORE WITH POSSIBLE LOSS OF COOLABLE GEOMETRY. Detection Method: Wide Range T_{hot} above 700°F, and T_{hot} and T_{cold} rapidly diverging (ΔT rapidly increasing) or no ΔT across core; and RM-L1 offscale (greater than 10^6 cpm) - - - - - - - - - - - - - - - - - INITIATING CONDITION MAJOR DAMAGE TO MORE THAN ONE SPENT FUEL ASSEMBLY IN REACTOR BUILDING OR FUEL HANDLING BUILDING LEADING TO CLAD RUPTURE (e.g., LARGE OBJECT DAMAGES FUEL OR WATER LOSS BELOW FUEL LEVEL). Detection Method: Observations of major damage to more than one spent fuel assembly or Spent fuel pool water below fuel level and 1) RM-A2 and/or RMG-17A, 17B high alarm for accident in Reactor Building or 2) RM-A6 and/or RMG-8 high alarm for accident in Fuel Handling Building	INITIATING CONDITION LOSS OF TWO OF THREE FISSION PRODUCT BARRIER WITH POTENTIAL LOSS OF THE THIRD BARRIER (e.g., LOSS OF FUEL INTEGRITY AND PRIMARY COOLANT BOUNDARY AND HIGH POTENTIAL FOR RADIOACTIVITY RELEASE FROM CONTAINMENT Detection Method: 1) LOCA and Containment Isolation status lights indicate incomplete isolation: -or- 2) LOCA; and RM-A2 high alarm; and RMG-7 and/or RMG-18 reading greater than 10^4 R/hr; and Reactor Building pressure greater than 30 psig for at least 2 min. or 3) Breach of containment integrity (Reactor Building) and RM-L1 off-scale (> 10^6 cpm)

SYSTEM INVOLVED	UNUSUAL EVENT	ALERT	SITE EMERGENCY	GENERAL EMERGENCY
STATION POWER	INITIATING CONDITION TOTAL LOSS OF OFFSITE POWER OR LOSS OF ONSITE A-C POWER CAPABILITY Detection Method: 1) Loss of 115 KV and 230 KV ESF Potential Lights and 2) A or B Trn Blackout Seq. Int. Alarm or 3) Both Diesel Generators Inoperable for> 1 hour	INITIATING CONDITION LOSS OF OFFSITE POWER AND LOSS OF ALL ONSITE A-C POWER FOR MORE THAN 5 MINUTES Detection Method: 1) Loss of 115 KV and 230 KV ESF. Potential Lights and 2) A or B Trn. Blackout Seq. Int. Alarm and 3) Both Diesel Generator Inoperable - - - - - - - - - - - - - - - - - INITIATING CONDITION LOSS OF ALL ONSITE D-C POWER FOR A PERIOD GREATER THAN 5 MINUTES. Detection Method: 1) D-C bus undervoltage alarms on all buses; and 2) 480 V ESF Channel A or B Loss of DC Alarm and 3) DG A or B Loss of DC Alarm	INITIATING CONDITION LOSS OF OFFSITE POWER AND LOSS OF ONSITE A-C POWER FOR MORE THAN 15 MIN. Detection Method: 1) Loss of 115 KV and 230 KV ESF Potential Lights and 2) A or B Trn. Blackout Seq. Int. Alarm and 3) Both Diesel Generators Inoperable. - - - - - - - - - - - - - - - - - INITIATING CONDITION LOSS OF ALL VITAL ONSITE D-C POWER FOR MORE THAN 15 MIN. Detection Method: 1) D-C bus undervoltage alarms on all buses; and 2) 480V ESF Channel A or B Loss of DC Alarm and 3) DG A or B Loss of DC Alarm - - - - - - - - - - - - - - - - - INITIATING CONDITION LOSS OF FUNCTIONS NEEDED FOR PLANT HOT SHUTDOWN. Detection Method: 1) Inability to establish charging pump injection: and Inability to establish emergency Feedwater Flow. or 2) RHR System not functional	INITIATING CONDITION FAILURE OF OFFSITE AND ONSITE POWER ALONG WITH TOTAL LOSS OF EMERGENCY FEEDWATER MAKEUP CAPABILITY FOR SEVERAL HOURS. COULD LEAD TO EVENTUAL CORE MELT AND POSSIBLE FAILURE OF THE REACTOR BUILDING. Detection Method: 1) Loss of 115 KV and 230 KV ESF. Potential Lights. and 2) A or B Trn. Blackout Seq. Int. Alarm and 3) Both Diesel Generators Inoperable. and 4) Steam driven Emergency Feedwater pump fails to start and is inoperable for several hours.

SYSTEM INVOLVED	UNUSUAL EVENT	ALERT	SITE EMERGENCY	GENERAL EMERGENCY
ENGINEERED SAFEGUARDS	INITIATING CONDITION ECCS INITIATED (COINCIDENT WITH POSITIVE FINDING THAT INITIATION IS NOT SPURIOUS). Detection Method: Valid Safety Injection Signal --- INITIATING CONDITION FAILURE OF A PRESSURIZER OR STEAM GENERATOR SAFETY OR RELIEF VALVE TO RESEAT (EXCEEDING NORMAL WEEPAGE). Detection Method: Pressurizer or steam generator safety or relief valve opens and then fails to reset as indicated by: 1) Valid open indication of Pressurizer relief or safety valve position indication lights or or valid acoustical monitor indication. or 2) Visual and/or audible indication at vent stacks of open steam generator safety or relief valve; or Excess feedwater flow to and steam flow from affected generator.	INITIATING CONDITION ALL ANNUNCIATOR ALARMS LOST. Detection Method: Observation by operator. --- INITIATING CONDITION EVACUATION OF CONTROL ROOM ANTICIPATED OR REQUIRED WITH CONTROL OF SHUTDOWN SYSTEM ESTABLISHED FROM LOCAL STATIONS. Detection Method: Same as initiating condition.	INITIATING CONDITION ALL ANNUNCIATORS AND PLANT COMPUTER LOST FOR MORE THAN 15 MINUTES AND PLANT TRANSIENT INITIATED OR IN PROGRESS. Detection Method: Observation of event. - - - - - - - - - - - - - - - - INITIATING CONDITION EVACUATION OF CONTROL ROOM AND CONTROL OF SHUTDOWN SYSTEMS NOT ESTABLISHED FROM LOCAL STATIONS IN 15 MIN. Detection Method: Same as initiating event.	INITIATING CONDITION TRANSIENT INITIATED BY LOSS OF FEEDWATER AND CONDENSATE SYSTEMS (PRINCIPAL HEAT REMOVAL SYSTEM) FOLLOWED BY FAILURE OF EMERGENCY FEEDWATER SYSTEM FOR EXTENDED PERIOD. CORE MELTING POSSIBLE IN SEVERAL HOURS. ULTIMATE FAILURE OF REACTOR BUILDING POSSIBLE IF CORE MELTS. Detection Method: Reactor trip on steam flow > feedwater flow; and Decreasing wide-range steam generator levels toward off-scale low on all steam generators; and 1) Emergency feedwater flow indicators indicate zero flow 2 min. after required; or 2) Status lamps indicate emergency feedwater pumps not running 2 min. after required; and 3) Emergency Feedwater cannot be restored within 30 min.

SYSTEM INVOLVED	UNUSUAL EVENT	ALERT	SITE EMERGENCY	GENERAL EMERGENCY
ENGINEERED SAFEGUARDS (CON'T)	INITIATING CONDITION LOSS OF ENGINEERED SAFETY FEATURE FUNCTION REQUIRING TECHNICAL SPECIFICATION SHUTDOWN. (TECHNICAL SPECIFICATIONS 3.3.2) Detection Method: 1) Engineered Safety Features Activation System found inoperable - - - - - - - - - - - - - - - - - INITIATING CONDITION INDICATIONS OR ALARMS ON PROCESS OR EFFLUENT PARAMETERS NOT FUNCTIONAL IN THE CONTROL ROOM TO AN EXTENT REQUIRING SHUTDOWN AS PER TECHNICAL SPECIFICATIONS; OR, OTHER SIGNIFICANT LOSS OF ASSESSMENT OR COMMUNICATION CAPABILITY. Detection Method 1) Loss of Radiation Monitoring System; or 2) Loss of all meteorological systems or 3) Significant loss of communication capability offsite; or 4) Loss of the plant computer and the TSC computer	INITIATING CONDITION REACTOR COOLANT PUMP LOCKED ROTOR WITH FUEL DAMAGE. Detection Method: Reactor coolant pump auto trip alarm; and Reactor trip on low coolant flow; and Reactor coolant pump phase over current relay actuation; and valid RML-1 Alarm. - - - - - - - - - - - - - - - - - INITIATING CONDITION LOSS OF ALL FUNCTIONS NEEDED FOR PLANT COLD SHUTDOWN. Detection Method: RHR system not functional and inability to reject heat to the condenser. - - - - - - - - - - - - - - - - - INITIATING CONDITION FAILURE OF THE REACTOR PROTECTION SYSTEM TO INITIATE AND COMPLETE A TRIP WHICH BRINGS THE REACTOR SUBCRITICAL. Detection Method: Reactor remains critical after trip initiation.		INITIATING CONDITION TRANSIENT REQUIRING OPERATION OF SHUTDOWN SYSTEMS WITH FAILURE TO TRIP WHICH RESULTS IN CORE DAMAGE OR ADDITIONAL FAILURE OF CORE COOLING AND MAKEUP SYSTEMS WHICH COULD LEAD TO CORE MELT. Detection Method: Reactor remains critical after attempted trip and 1) RML-1 alarm, or 2) Flow indicators on safety injection system and RHR systems show zero flow with safety injection initiated. or 3) Status lights show safety injection system and RHR pumps not running with safety injection initiated.

SYSTEM INVOLVED	UNUSUAL EVENT	ALERT	SITE EMERGENCY	GENERAL EMERGENCY
FIRE	INITIATING CONDITION FIRE LASTING MORE THAN 15 MINS. Detection Method: Observation or fire detection device alarm with confirming observation indicating a fire lasting more than 15 min.	INITIATING CONDITION FIRE POTENTIALLY AFFECTING SAFETY SYSTEMS. Detection Method: Observation of fire that could affect safety systems.	INITIATING CONDITION FIRE AFFECTING SAFETY TRAINS OR FUNCTIONS. Detection Method: Observation of major fire that defeats safety system trains or functions.	

SYSTEM INVOLVED	UNUSUAL EVENT	ALERT	SITE EMERGENCY	GENERAL EMERGENCY
SECURITY	INITIATING CONDITION SECURITY THREAT OR ATTEMPTED ENTRY OR ATTEMPTED SABOTAGE. Detection Method: 1) Report to the Control Room by observer. or 2) Alarm of Integrated Fire and Security Panel.	INITIATING CONDITION ONGOING SEVERE SECURITY THREAT Detection Method: Security safeguards contingency event which results in adversaries commandeering an area of the plant, but not impacting shutdown capability.	INITIATING CONDITION SECURITY THREAT INVOLVING IMMINENT LOSS OF PHYSICAL CONTROL OF THE PLANT. Detection Method: Physical attack on the Plant involving imminent occupancy of control room and auxiliary shutdown panels.	INITIATING CONDITION SECURITY THREAT RESULTING IN LOSS OF PHYSICAL CONTROL OF THE FACILITY. Detection Method: Physical attack on the Plant has resulted in occupation of the control room and the auxiliary shutdown panels by unauthorized personnel.

SYSTEM INVOLVED	UNUSUAL EVENT	ALERT	SITE EMERGENCY	GENERAL EMERGENCY
NATURAL PHENOMENON	INITIATING CONDITION NATURAL EVENTS a. EARTHQUAKE b. TORNADO ON SITE c. HURRICANE NEAR SITE Detection Method: a. Seismic Recording System Start indication. b. Observation of event. c. Observation of event.	INITIATING CONDITION SEVERE NATURAL EVENT NEAR SITE. a. EARTHQUAKE GREATER THAN THE (OBE) LEVEL b. TORNADO STRIKING FACILITY c. SYSTAINED HURRICANE WINDS GREATER THAN 75 MPH Detection Method: a) Seismic Response Spectrum Trouble Annunciator b) Observation of event c) Meteorological Monitoring System Data or Weather Bureau Report.	INITIATING CONDITION SEVERE NATURAL PHENOMENON BEING EXPERIENCED OR PROJECTED WITH PLANT NOT IN COLD SHUTDOWN. a. EARTHQUAKE GREATER THAN SSE LEVELS. b. SYSTAINED WINDS IN EXCESS OF 100 MPH ON SITE. Detection Method: a. Reactor Building Foundation Seismic Switch (SSE) b. Meteorological Monitoring System Data.	

SYSTEM INVOLVED	UNUSUAL EVENT	ALERT	SITE EMERGENCY	GENERAL EMERGENCY
MANMADE PHENOMENON	INITIATING CONDITION OTHER HAZARDS BEING EXPERIENCED OR PROJECTED WHICH HAVE THE POTENTIAL FOR ENDANGERING THE FACILITY a. ONSITE AIRCRAFT CRASH. b. ONSITE TRAIN DERAILMENT. c. ONSITE EXPLOSION (EXCLUDING PLANNED ACTIVITIES). d. NEAR OR ONSITE TOXIC OR FLAMMABLE GAS RELEASE OF A MAGNITUDE THAT THREATENS PERSONNEL. e. TURBINE GENERATOR ROTATING COMPONENT FAILURE CAUSING RAPID PLANT SHUTDOWN. Detection Method: a. Observation of event. b. Observation of event. c. Observation of explosion or warning from offsite. d. Observation of release or warning from offsite. e. Turbine trip and observation of turbine malfunction or failure.	INITIATING CONDITION OTHER HAZARDS BEING EXPERIENCED OR PROJECTED WHICH HAVE A SIGNIFICANT POTENTIAL FOR AFFECTING PLANT SAFETY. a. AIRCRAFT CRASH ON FACILITY. b. MISSILE IMPACTS ON FACILITY WITH RESULTANT MAJOR DAMAGE. c. KNOWN EXPLOSION AT FACILITY RESULTING IN MAJOR DAMAGE TO PLANT STRUCTURES OR EQUIPMENT. d. ENTRY INTO FACILITY ENVIRONS OF TOXIC OR FLAMMABLE GASES IN CONCENTRATION WHICH EXCEED THE LIMITS OF FLAMMABILITY OR TOXICITY. e. TURBINE GENERATOR FAILURE CAUSING CASING PENETRATION. Detection Method: a) Observation of aircraft crash into Plant structures. b) Observation of missile impacts on Plant structures or components. c) Observation of damage by explosion. d) Observation or warning from outside the Plant; detection of gases (using portable instrumentation) which exist in concentrations which exceed the limits of flammability or toxicity. e) Turbine trip and observation of penetration of casing.	INITIATING CONDITION OTHER HAZARDS BEING EXPERIENCED OR PROJECTED WITH PLANT NOT IN COLD SHUTDOWN: a. AIRCRAFT CRASH INTO VITAL STRUCTURES. b. MISSILE OR EXPLOSION IMPACT ON FACILITY RENDERING SEVERE DAMAGE TO SHUTDOWN EQUIPMENT c. ENTRY OF TOXIC OR FLAMMABLE GASES INTO VITAL AREAS WHICH INVOLVE A SIGNIFICANT DEGRADATION OF PLANT SAFETY. Detection Method: a) Aircraft crash causing damage or fire in: 1) Reactor Building; or 2) Control Room; or 3) Auxiliary Building; or 4) Fuel Handling Building; or 5) DG Building; or 6) Intermediate Building 7) SW Intake Structures b) Loss of functions needed for hot shutdown. (see page 6 of this Attachment) c) Entry of toxic or flammable gases into: 1) Control room; or 2) Cable spreading rooms; or 3) Reactor Building; or 4) Switchgear room: or 5) Safe shutdown panels; or 6) Emergency diesel generator rooms; as detected by portable instrumentation and which renders a train of a safety-related system inoperable.	

SYSTEM INVOLVED	UNUSUAL EVENT	ALERT	SITE EMERGENCY	GENERAL EMERGENCY
OTHER	INITIATING CONDITION LOSS OF CONTAINMENT INTEGRITY REQUIRING TECHNICAL SPECIFICATION SHUTDOWN (TECHNICAL SPECIFICATION 3.6.1.1) Detection Method: 1) Any automatic containment isolation valve found to be inoperable or 2) Reactor Building air lock inoperable or 3) Penetration(s) fail leak test (as specified in Technical Specifications) ---------- INITIATING CONDITION TRANSPORTATION OF OVEREXPOSED AND/OR CONTAMINATED, INJURED INDIVIDUAL FROM SITE TO HOSPITAL. Detection Method: Same as Initiating condition. ---------- INITIATING CONDITION OTHER PLANT CONDITIONS EXIST REQUIRING OTHER THAN NORMAL PLANT SHUTDOWN AND REQUIRING INCREASED AWARENESS ON THE PART OF STATE OFFICIALS. Detection Method: As determined by Emergency Director.	INITIATING CONDITION OTHER PLANT CONDITIONS EXIST THAT WARRANT ACTIVATION OF TECHNICAL SUPPORT CENTER AND PLACING EMERGENCY OPERATIONS FACILITY PERSONNEL ON STAND BY Detection Method: As determined by Emergency Director.	INITIATING CONDITION OTHER PLANT CONDITIONS EXIST THAT WARRANT ACTIVATION OF EMERGENCY FACILITIES AND RADIATION MONITORING TEAMS AND A PRECAUTIONARY PUBLIC WARNING. Detection Method: As determined by Emergency Director.	

IMMEDIATE ACTION SUMMARY

IMMEDIATE ACTIONS	UNUSUAL EVENT	ALERT	SITE	GENERAL
1. ANNOUNCEMENT TO PLANT PERSONNEL				
2. SOUND RADIATION EMERGENCY ALARM	N/A			
3. NOTIFY SECURITY SHIFT LEADER				
4. NOTIFY FAIRFIELD PUMP STORAGE FACILITY	N/A	N/A		
5. ENSURE ON-SHIFT PERSONNEL RESPONSE				
6. NOTIFY LOCAL AUTH OF EARLY WARNING SIREN SYSTEM RECOMMENDATION	N/A	N/A		
7. ACTIVATE EWSS IF REQUIRED	N/A	N/A		
8. INITIAL NOTIFICATIONS PER EPP-002				
9. EMERGENCY LOG ESTABLISHED				
10. OFF SITE EMERGENCY SERVICES, IF REQUIRED				
11. ACTIVATE TSC/OSC OR NOTIFY EMERGENCY RESPONSE PERSONNEL	N/A			
12. NOTIFY OFF-SITE EMERGENCY COORDINATOR	N/A			
13. ENSURE TSC/OSC ARE ACTIVITED OR EMERGENCY RESPONSE PERSONNEL NOTIFIED	N/A			
14. ENSURE EOF IS ACTIVATED OR EMERGENCY RESPONSE PERSONNEL NOTIFIED	N/A	N/A		
15. DETERMINE IF SITE EVACUATION IS REQUIRED (INCLUDING FAIRFIELD PUMP STORAGE FACILITY)	N/A			

SOUTH CAROLINA ELECTRIC AND GAS COMPANY

VIRGIL C. SUMMER NUCLEAR STATION

NUCLEAR OPERATIONS

NUCLEAR OPERATIONS

COPY No. 157 C

EMERGENCY PLAN PROCEDURE

EPP-001

ACTIVATION AND IMPLEMENTATION OF EMERGENCY PLAN

REVISION 3

AUGUST 12, 1982

NON-SAFETY RELATED

Reviewed by:

Mark Counts — 8/27/82
ORIGINATOR (of this revision) — Date

V.R. Alter — 8/31/82
DISCIPLINE SUPERVISOR — Date

Approved:

O.S. Bradham — 9/7/82
PLANT MANAGER — Date

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LIST OF EFFECTIVE PAGES

PAGE	REVISION
1	3
ii	3
1	3
2	3
3	3
4	3
5	3
6	3
7	3
8	3
9	3
10	3
11	3

ATTACHMENTS

Attachment I	Pages 1 thru 13	3
Attachment II		3

TABLE OF CONTENTS

1.0 PURPOSE

To define and implement the Emergency Action Levels (EAL's) that will initiate the Emergency Plan and to provide a means of classifying the emergency.

2.0 REFERENCES

2.1 "Virgil C. Summer Nuclear Station Radiation Emergency Plan."

2.2 NUREG-0654, Criteria for Preparation and Evaluation of Radiological Emergency Response Plans and Preparedness in Support of Nuclear Power Plants.

2.3 EPP-021, Activation of the Early Warning Siren System.

2.4 Policy Memorandum No. 25, Issuance, Control, and Usage of Radio Pagers.

3.0 CONDITIONS AND PREREQUISITES

3.1 The Emergency Plan shall be initiated whenever an "Initiating Condition" (as defined in Attachment I) has been reached or exceeded.

NOTE: The implementation of any specific emergency plan procedure (except this procedure) does not necessarily implement the Emergency Plan, but may do so at the discretion of the Emergency Director/Interim Emergency Director. For example; a small chlorine leak would implement the toxic release procedure but not necessitate implementation of the Emergency Plan; whereas a large release with the potential for affecting the level of safety of the plant would implement the toxic release procedure and the Emergency Plan due to the declaration of an Unusual Event.

3.2 The "Initiating Condition" shall be used to determine the applicable Emergency Action Level (EAL) per Attachment I.

3.3 The "Detection Methods" of Attachment I are to be used only as an aid to determine if an "Initiating Condition" has been reached or exceeded. Other detection methods, not listed in Attachment I, may be used to determine if an "Initiating Condition" exists. The existence of one or more of the detection methods could be but is not necessarily an indication that an "Initiating Condition" exists.

4.0 PROCEDURES

4.1 Upon recognition of an abnormal plant or site condition the observer shall notify the Shift Supervisor of the potential emergency plant condition.

4.2 The Shift Supervisor shall:

A. Evaluate the conditions and determine the applicable Emergency Action Level (EAL) per the Emergency Action Level Summary, Attachment I.

B. Declare an EAL and implement the Emergency Plan per the applicable section of this procedure.

Unusual Event	(Section 4.3)
or Alert	(Section 4.4)
or Site Emergency	(Section 4.5)
or General Emergency	(Section 4.6)

4.3 Unusual Event

4.3.1 Immediate Actions: (Immediate Action Summary, See Attachment II)

The Emergency Director (ED) or Interim Emergency Director (IED) shall accomplish or cause to be accomplished the following:

A. Announce the emergency condition to all plant personnel over the plant paging system.

> ATTENTION ALL PERSONNEL:
>
> THE STATION IS IN AN UNUSUAL EVENT CONDITION.
> THE INITIATING EVENT IS _____.

NOTE: [REPEAT ANNOUNCEMENT].

B. Notify the Security Shift Leader to implement appropriate security measures.

C. Ensure that on-shift personnel have responded to their emergency response stations.

D. Ensure that the Initial Notifications are completed per EPP-002.

E. Ensure that the Emergency Log is established and maintained.

F. Request Offsite Emergency Services (Fire, Medical, LLEA, etc.) if required per EPP-002, if necessary.

NOTE: Consideration should be given to access routes taken.

4.3.2 Follow-Up Actions:

The ED/IED shall continually assess the status of the Unusual Event per Attachment I for possible escalation to a higher emergency classification or termination of emergency condition.

4.3.3 Final Actions:

When the emergency condition has cleared, close out the Unusual Event with a verbal summary to offsite authorities within 24 hours and close out of the Emergency Log.

4.4 Alert

4.4.1 Immediate Actions (ED/IED): (Immediate Action Summary, Attachment II)

The Emergency Director (ED) or Interim Emergency Director (IED) shall accomplish or cause to be accomplished the following:

A. Announce the emergency condition to all plant personnel over the plant paging system.

ATTENTION ALL PERSONNEL: THE STATION IS IN AN ALERT CONDITION. THE INITIATING EVENT IS _____. ALL EMERGENCY RESPONSE PERSONNEL REPORT TO THEIR STATIONS.

B. If necessary, sound the Radiation Emergency Alarm.

C. Repeat the announcement.

NOTE: [Repeat steps A, B, and C every two minutes for six minutes.]

D. Notify the Security Shift Leader to implement appropriate security measures.

E. Ensure that on-shift personnel have responded to their emergency response stations.

F. During off-normal hours, call in emergency response personnel by activating the SCE&G Radio Pager System as per Policy Memorandum No. 25.

G. Ensure that the Initial Notifications are completed per EPP-002.

H. Ensure that the Emergency Log is established and maintained.

I. Request Offsite Emergency Services (Fire, Medical, LLEA, etc.) if required per EPP-002.

NOTE: Consideration should be given to access routes taken.

J. Ensure that TSC/OSC are being activated per EPP-016 and/or notification of Emergency Response Personnel is initiated per EPP-002.

K. Determine if the site evacuation is required. (Including Fairfield Pump Storage Facility).

4.4.2 Immediate Actions (All other personnel):

A. Emergency Response Personnel report to their designated stations.

B. Non-essential personnel continue assigned duties and await further instructions.

C. If the radiation emergency alarm is initiated, all Personnel in the Radiation Control Area report to the Radiation Access Control Area on the 412' level of the Control Building.

4.4.3 Follow-up Actions

The ED/IED shall:

A. Notify the Offsite Emergency Coordinator of the emergency and current plant conditions.

B. Verify that the TSC/OSC are manned and activated per EPP-016.

C. Ensure that updated follow-up notifications are made per EPP-002.

D. Continue assessments and corrective actions to mitigate the emergency condition and place the plant into a safe and controlled condition.

E. Make assignments to his staff to mitigate the emergency conditions per established Emergency Plan Procedures (EPP's) or as required for conditions not covered by procedures.

F. Continually assess the status of the Alert condition per Attachment I for possible escalation to a higher emergency classification, down-grading to an Unusual Event, or close out of emergency condition.

4.4.4 Final Actions:

A. When emergency conditions clear to allow for close out or down-grading of the Alert condition, the ED shall ensure that offsite authorities are:

1. Notified verbally by normal emergency communications.

2. Provided with a written summary within 8 hours of the close out of the emergency or down-grade of the emergency classification.

B. Initiate EPP-017, Post-Recovery and Re-Entry as required.

4.5 Site Emergency

4.5.1 Immediate Actions (ED/IED): (Immediate Action Summary, see Attachment II)

The Emergency Director (ED) or Interim Emergency Director (IED) shall accomplish or cause to be accomplished the following:

A. Announce the emergency condition and site evacuation to all plant personnel over the plant paging system.

ATTENTION ALL PERSONNEL: THE STATION IS IN A SITE EMERGENCY CONDITION. THE INITIATING EVENT IS _____. ALL EMERGENCY RESPONSE PERSONNEL REPORT TO THEIR STATIONS. ALL NON-ESSENTIAL PERSONNEL EVACUATE THE SITE PROCEED TO _____.

B. Sound the Radiation Emergency Alarm.

C. Repeat the announcement.

NOTE: [Repeat steps A, B, and C every two minutes for six minutes.]

D. Notify the Security Shift Leader to implement appropriate security measures.

E. Notify the Fairfield Pump Storage Facility of site evacuation.

F. Implement EPP-021.

G. During off-normal hours, call in Emergency Response Personnel by activating the SCE&G Radio Pager System as per Policy Memorandum No. 25.

H. Ensure that on-shift personnel have responded to their emergency response stations.

I. Ensure that the Initial Notifications are completed per EPP-002.

J. Ensure that the Emergency Log is established and maintained.

K. Request Offsite Emergency Services (Fire, Medical, LLEA, etc.) if required per EPP-002.

NOTE: Consideration should be given to access routes taken.

L. Notify the Offsite Emergency Coordinator of the emergency and current plant conditions.

M. Ensure that TSC/OSC/EOF are being activated per EPP-016 and/or notification of Emergency Response Personnel is initiated per EPP-002.

4.5.2 Immediate Actions (All other personnel):

A. Emergency Response Personnel report to their designated stations.

B. Non-essential personnel evacuate the site, proceed to their private residence or offsite holding area as designated by the ED, and await further instructions.

C. Personnel in the Radiation Control Area report to the Radiation Access Control Area on the 412' level of the Control Building, unless otherwise directed.

4.5.3 Follow-Up Actions

A. Verify that the TSC/OSC/EOF are manned and activated per EPP-016.

B. Ensure that updated follow-up notifications are made per EPP-002.

C. Continue assessments and corrective actions to mitigate the emergency condition and place the plant into a safe and controlled condition.

D. Make assignments to his staff to mitigate the emergency conditions per established Emergency Plan Procedures (EPP's) or as required for conditions not covered by procedures.

E. Continually assess the status of the Site Emergency condition per Attachment I for possible escalation to a higher emergency classification, down-grading to an Unusual Event, or Alert, or close out of emergency condition.

F. Verify site evacuation is complete and all personnel are accounted for. (Including Fairfield Pump Storage Personnel).

4.5.4 Final Actions:

A. When emergency conditions clear to allow for close out or down-grading of the Site Emergency condition, the ED shall ensure that offsite authorities are:

1. Notified verbally by normal emergency communications.

and 2. Provided with a written summary within 8 hours of the close out of the emergency or down-grade of the emergency classification.

B. Initiate EPP-017, Post-Recovery and Re-Entry as required.

4.6 General Emergency

4.6.1 Immediate Actions (ED/IED): (Immediate Action Summary, see Attachment II)

The Emergency Director (ED) or Interim Emergency Director (IED) shall accomplish or cause to be accomplished the following:

A. Announce the emergency condition and site evacuation to all plant personnel over the plant paging system.

ATTENTION ALL PERSONNEL: THE STATION IS IN A GENERAL EMERGENCY CONDITION. THE INTIATING EVENT IS _____. ALL EMERGENCY RESPONSE PERSONNEL REPORT TO THEIR STATIONS. ALL NON-ESSENTIAL PERSONNEL EVACUATE THE SITE. PROCEED TO _____.

B. Sound the Radiation Emergency Alarm.

C. Repeat the announcement.

NOTE: [Repeat steps A, B, and C every two minutes for six minutes].

D. Notify the Security Shift Leader to implement appropriate security measures.

E. Notify the Fairfield Pump Storage Facility of Site Evacuation.

F. Implement EPP-021.

G. During off-normal hours, call in Emergency Response Personnel by activating the SCE&G Radio Pager System as per Policy Memorandum No. 25.

H. Ensure that on-shift personnel have responded to their emergency response stations.

I. Ensure that the Initial Notifications are completed per EPP-002.

J. Ensure that the Emergency Log is established and maintained.

K. Request offsite Emergency Services (Fire, Medical, LLEA, etc.) if required per EPP-002.

NOTE: Consideration should be given to access routes taken.

L. Notify the Offsite Emergency Coordinator of the emergency and current plant condition.

M. Ensure that TSC/OSC/EOF are being activated per EPP-016 and/or notification of Emergency Response Personnel is initiated per EPP-002.

4.6.2 Immediate Actions (All other personnel):

A. Emergency Response Personnel report to their designated stations.

B. Non-essential personnel evacuate the site, proceed to their private residence or offsite holding a as designated by the ED, await further instructions.

C. Personnel in the Radiation Control Area report to the Radiation Access Control Area on the 412' level of the Control Building, unless otherwise directed.

4.6.3 Follow-up Actions

The ED/IED shall:

A. Verify that the TSC/OSC/EOF are manned and activated per EPP-016.

B. Ensure that updated follow-up notifications are made per EPP-002.

C. Continue assessments and corrective actions to mitigate the emergency condition and place the plant into a safe and controlled condition.

D. Make assignments to his staff to mitigate the emergency conditions per established Emergency Plan Procedures (EPP's) or as required for conditions not covered by procedures.

E. Continually assess the status of the General Emergency condition per Attachment I for possible down-grading to an Unusual Event, Alert, or Site Emergency, or close out of emergency condition.

F. Verify site evacuation is complete and all personnel are accounted for. (Including Fairfield Pump Storage Personnel).

4.6.4 Final Actions:

A. When emergency conditions clear to allow for close out or down-grading of the General Emergency condition, the ED shall ensure that offsite authorities are:

1. Notified verbally by normal emergency communications.

2. Provided with a written summary within 8 hours of the close out of the emergency or down-grade of the emergency classification.

B. Initiate EPP-017, Post-Recovery and Re-Entry as required.

SYSTEM INVOLVED	UNUSUAL EVENT	ALERT	SITE EMERGENCY	GENERAL EMERGENCY
REACTOR COOLANT SYSTEM	INITIATING CONDITION EXCEEDING TECHNICAL SPECIFICATION PRIMARY TO SECONDARY OR PRIMARY SYSTEM LEAK RATES Detection Method: Primary to secondary leak rate greater than 1 gpm total for more than 4 hours or greater than 500 gpd per steam generator as identified by daily RCS leakage evaluation; or Primary system leak rate greater than those specified in Technical Specification 3.4.6.2 as identified by daily RCS leakage evaluation. 1) > 0 pressure boundary leakage 2) > 1 gpm unidentified for more than 4 hours 3) > 10 gpm identified RCS leakage for more than 4 hours. 4) > 33 gpm controlled leakage (at 2235 ± 20 psig for more than 4 hrs.) 5) ≥ 1 gpm RCS pressure isolation valve per table 3.4-1 for greater than 4 hours. - - - - - - - - - - - - - - - - - - INITIATING CONDITION ABNORMAL REACTOR COOLANT TEMP. AND/OR PRESSURE OR ABNORMAL FUEL TEMPERATURE THAT WOULD INDICATE A LOSS OF SUBCOOLING MARGIN OR OVERPRESSURIZATION. Detection Method: 1) Reactor Coolant Tavg greater than 590°F; or 2) RCS pressure greater than 2310 psig; or 3) RCS pressure less than 1765 psig; and core exit temperature greater than 620°F as indicated by a valid incore thermocouple; or 4) Inadequate Core Cooling Alarm.	INITIATING CONDITION RAPID FAILURE OF SEVERAL STEAM GENERATOR TUBES (e.g., SEVERAL HUNDRED GPM PRIMARY-TO-SECONDARY LEAK RATE). Detection Method: Pressurizer low pressure alarm and reactor trip; and Pressurizer low level alarm; and RM-A9, G19A, G19B, or G19C valid high alarm; and Steam generator water level rapidly increasing in one or more steam generator(s), falling in the others; and RM-L3, or RM-L10 valid high alarm and Possible lifting of steam generator PRV's and/or safety valves. - - - - - - - - - - - - - - - - - - INITIATING CONDITION REACTOR COOLANT LEAKAGE RATE EXCEEDS 50 GPM. Detection Method: 1) Excessive Reactor Make-up to the Volume Control Tank 2) Operational Leakage Test Procedure STP-114.002/	INITIATING CONDITION KNOWN LOSS-OF-COOLANT ACCIDENT (LOCA) GREATER THAN CHARGING PUMP CAPACITY. Detection Method: Pressurizer low pressure reactor trip; and Pressurizer low pressure safety injection signal, and High Reactor Building pressure, and High Reactor Building sump level and ; High Reactor Building humidity; and RM-A2 high alarm - - - - - - - - - - - - - - - - - - INITIATING CONDITION RAPID FAILURE OF SEVERAL STEAM GENERATOR TUBES (SEVERAL HUNDRED GPM PRIMARY-TO-SECONDARY LEAK RATE) WITH LOSS OF OFFSITE POWER. Detection Method: Pressurizer low pressure alarm and reactor trip, or pressurizer level rapidly decreasing and Pressurizer low-level alarm; and RM-A9, G19A, G19B, or G19C valid high alarm; and loss of 115KV and 230 KV ESF potential lights, and Steam Generator water level rapidly increasing in one or more steam generators, falling in the others; and RM-L3, or RM-L10 valid high alarm; and Possible lifting of steam generator PRV's and/or safety valves.	INITIATING CONDITION SMALL AND LARGE LOCAs WITH FAILURE OF ECCS TO PERFORM LEADING TO SEVERE CORE DEGRADATION OR MELT. ULTIMATE FAILURE OF REACTOR BUILDING POSSIBLE FOR MELTDOWN SEQUENCES. Detection Method: Safety injection signal with reactor trip; and 1) Status lamps indicate safety injection and RHR pumps not running: or 2) Flow indicators for Safety Injection System read zero; and RMG-5, RMG-7, RMG-18, high alarm; and RM-A2 high alarm; - - - - - - - - - - - - - - - - - - INITIATING CONDITION SMALL LOCA AND INITIALLY SUCCESSFUL ECCS. SUBSEQUENT FAILURE OF REACTOR BUILDING HEAT REMOVAL SYSTEMS OVER SEVERAL HOURS COULD LEAD TO CORE MELT AND POSSIBLE FAILURE OF THE REACTOR BUILDING. Detection Method: Pressurizer low pressure reactor trip; and Pressurizer low pressure safety injection signal and 1) RHR flow indicators show zero flow after shift to RHR is attempted and for greater than 2 hr. subsequently and RCS temperature rising, and 2) Reactor Building spray and Reactor Building air handling system fail to function.

SYSTEM INVOLVED	UNUSUAL EVENT	ALERT	SITE EMERGENCY	GENERAL EMERGENCY
STEAM SYSTEM	INITIATING CONDITION RAPID SECONDARY SYSTEM DEPRESSURIZATION. Detection Method: Rapid decrease in S/G pressure; and Reduced RCS temperature and pressure; and Observation of break or steam dump, relief or safety valve inadvertently opened.	INITIATING CONDITION MAJOR STEAM LINE BREAK (e.g., GREATER THAN 6 IN. EQUIVALENT DIAMETER) WITH A SIGNIFICANT PRIMARY-TO-SECONDARY LEAK RATE. Detection Method: Rapidly decreasing reactor coolant T_{avg}, pressurizer pressure, and pressurizer level; and RM-L3, or RM-L10 or RM-A9 high alarms; and 1) Steam line differential pressure, safety injection signal; and High Reactor Building pressure alarm; and RM-A2 high alarm for rupture in Reactor Building -OR- 2) High steam flow and Lo-Lo T_{avg} or low steam pressure safety injection signal for rupture downstream of MSIV's. ---------- INITIATING CONDITION RAPID GROSS FAILURE OF ONE STEAM GENERATOR TUBE WITH LOSS OF OFFSITE POWER. Detection Method: Pressurizer low pressure alarm and reactor trip; and Pressurizer low level alarm; and RM-A9, G19A, G19B, or G19C valid high alarm and Pressurizer low pressure safety injection signal; and loss of 115 KV and 230 KV ESF Potential Lights; and RM-L3, or RM-L10 valid high alarms	INITIATING CONDITION MAJOR STEAM LINE BREAK WITH GREATER THAN 50GPM PRIMARY-TO-SECONDARY LEAKAGE AND INDICATION OF FUEL DAMAGE. Detection Method: Rapidly decreasing reactor Coolant T_{avg}, pressurizer pressure and pressurizer level; and 1) Steam line differential pressure, safety injection signal; and High Reactor Building pressure alarm and valid RM-A2 and RM-L1 high alarm and or 2) High steam flow and Lo-Lo Tavg or low steam pressure safety injection signal and RM-A9, G19A, G19B, or G19C or high alarm and RM-L1 valid high alarm	

SYSTEM INVOLVED	UNUSUAL EVENT	ALERT	SITE EMERGENCY	GENERAL EMERGENCY
RADIOLOGICAL EFFLUENTS	INITIATING CONDITION GASEOUS EFFLUENT INSTANTANEOUS RELEASE RATE TECHNICAL SPECIFICATION LIMITS EXCEEDED FOR 1 HR. (APPENDIX B TABLE II, COLUMN 1 10CFR20) Detection Method: 1) RM-A3 (Gas) increases > 1 X 10^5 cpm above bkgd in any 1 hour. or 2) RM-A3 (Iodine) increases > 8 X 10^4 cpm above bkgd in any 1 hour. or 3) RM-A4 (Gas) exceeds 4 times the high alarm setpoint for more tha 1 hour. or 4) RM-A4 (Iodine) in valid * high alarm for more than 1 hour.	SUSTAINED HIGH RADIATION LEVELS OR HIGH AIRBORNE CONTAMINATION WHICH INDICATES A SEVERE DEGRADATION IN THE CONTROL OF RADIOACTIVE MATERIALS (e.g., INCREASE OF FACTOR OF 1000 IN DIRECT RADIATION READINGS). Detection Method: 1) Unexpected valid RMG readings as follows: a) RMG 2-4, 8-13, or 16: greater than 2.5 R/hr or b) RMG 7, 17A, 17B, or 18 greater than 100 R/hr or c) RMG-1: greater than 1 R/hr or 2) Unexpected plant area iodine or particulate airborne concentration greater than 1000 MPC. (as per 10CFR20 Appendix B, Table I)	INITIATING CONDITION RADIATION MONITORS DETECT LEVELS CORRESPONDING TO GREATER THAN 50 MREM/HR WHOLE BODY FOR 0.5 HR. OR GREATER THAN 500 MREM/HR WHOLE BODY FOR 2 MIN. (OR FIVE TIMES THESE LEVELS TO THE THYROID) AT THE EXCLUSION AREA BOUNDARY FOR ADVERSE METEOROLOGY (PASQUILL F STABILITY, 1M/SEC WIND VELOCITY). Detection Method: Any of the following valid gaseous effluent monitor readings: 1) RM-A13 (Gas) > 0.3 Mr/Hr above Bkdg. for 2 min. OR 2) RM-A14 (Gas) > 2.2 mR/hr. above bkgd. For 0.5 hr. or > 22 mR/hr above bkgd. for 2 min. (CONTINUE ON NEXT PAGE)	INITIATING CONDITION EFFLUENT MONITORS DETECT LEVELS CORRESPONDING TO 1-REM/HR WHOLE BODY OR 5-REM/HR THYROID AT THE EXCLUSION AREA BOUNDARY UNDER ACTUAL METEOROLOGICAL CONDITIONS. Detection Method: 1) Radiation Monitor levels exceed those specified for Site Emergency; and 2) Calculation on Dose Assessment Forms indicates levels exceeding 1-rem/hr whole body or 5-rem/hr thyroid at the exclusion area boundary using radiation monitor readings and effluent stream flow rates (measured or assumed) for actual meteorological conditions; or measured in-situ.

* A valid high alarm will include verification of radioactivity concentrations in the sampling media.

SYSTEM INVOLVED	UNUSUAL EVENT	ALERT	SITE EMERGENCY	GENERAL EMERGENCY
RADIOLOGICAL EFFLUENTS (CON'T)	INITIATING CONDITION LIQUID EFFLUENT CONCENTRATIONS TECHNICAL SPECIFICATIONS LIMITS EXCEEDED FOR 15 MIN. (APPENDIX B TABLE II COLUMN 2 10CFR20). Detection Method: Any of the following liquid effluent monitors in * valid High Alarm for longer than 15 min. and isolation valve(s) fail to close RM-L5; or RM-L7; or RM-L9	INITIATING CONDITION RADIOLOGICAL EFFLUENT RELEASE RATE EXCEEDING 10 TIMES TECHNICAL SPECIFICATION INSTANTANEOUS LIMITS. Detection Method: Any of the following * valid radiation monitor readings for longer than 15 minutes a) RM-A3 (Gas) increases > 1 X 10^6 cpm above bkgd. or b) RM-A3 (Iodine) increases > 2 X 10^5 cpm above bkdg. or c) RM-A4 (Gas) exceeds 40 times high alarm setpoint or d) RM-A4 (Iodine) exceeds 10 times high alarm setpoint. or e) RM-L5, RM-L7, or RM-L9 exceeds 10 times high alarm setpoint and isolation valves fail to close.	INITIAL CONDITION DOSE RATES LISTED BELOW ARE PROJECTED BASED ON GAMMA RADIATION MONITOR (RMG) READINGS AND/OR OTHER PLANT PARAMETERS OR ARE MEASURED AT THE EXCLUSION AREA BOUNDARY. Detection Method: 1) Reactor Building leak rate results in calculated dose rate at exclusion area boundary greater tha 50 mrem/hr whole body for 0.5 hr; or 500 mrem/hr whole body for 2 min. or 2) Radiation Monitoring Teams measures dose rates greater than 50 mrem/hr for 0.5 hr or greater than 500 mrem/hr for 2 min. (beta + gamma) at the exclusion area boundary; or 3) Radiation Monitoring Teams measure thyroid dose rates (equivalent I-131 concentrations) greater than: a) 250 mrem/hr (1.3×10^{-7} Ci/cc for 0.5 hr; or b) 2500 mrem/hr (1.3×10^{-6} Ci/cc) for 2 min at the exclusion area boundary.	

* A valid high alarm will include verification of radioactivity concentration in the sampling media.

SYSTEM INVOLVED	UNUSUAL EVENT	ALERT	SITE EMERGENCY	GENERAL EMERGENCY
FUEL DAMAGE	INITIATING CONDITION FUEL DAMAGE INDICATION. Detection Method: Dose equivalent I-131 activity concentration greater than limit in Figure 3.4-1 of Technical Specifications; or RM-L1 High alarm; and Laboratory analysis which indicates an increase in failed fuel of 0.1 percent in 30 minutes.	INITIATING CONDITION POSSIBLE FUEL DAMAGE. Detection Method: 1) Primary coolant sample indicates equivalent I-131 concentration greater than 300 UCI/cc; or 2) RM-L1 High alarm and laboratory anaylsis which indicates an increase in failed fuel of 1 percent in 30 min or a total failed fuel of 5 percent. - - - - - - - - - - - - - - - - - INITIATING CONDITION FUEL HANDLING ACCIDENT WITH RELEASE OF RADIOACTIVITY TO REACTOR OR FUEL HANDLING BUILDING. Detection Method: Observation of damage to spent fuel assembly; and 1) RM-A2 high alarm and/or RMG-17A, 17B high alarm after accident in Reactor Building; or 2) RM-A6 high alarm; or RMG-8 high alarm; after accident in Fuel Handling Building.	INITIATING CONDITION DEGRADED CORE WITH POSSIBLE LOSS OF COOLABLE GEOMETRY. Detection Method: Wide Range T_{hot} above 700°F, and T_{hot} and T_{cold} rapidly diverging (T rapidly increasing) or no T across core; and RM-L1 offscale (greater than 10^6 cpm) - - - - - - - - - - - - - - - - - INITIATING CONDITION MAJOR DAMAGE TO MORE THAN ONE SPENT FUEL ASSEMBLY IN REACTOR BUILDING OR FUEL HANDLING BUILDING LEADING TO CLAD RUPTURE (e.g., LARGE OBJECT DAMAGES FUEL OR WATER LOSS BELOW FUEL LEVEL). Detection Method: Observations of major damage to more than one spent fuel assembly or Spent fuel pool water below fuel level and 1) RM-A2 and/or RMG-17A, 17B high alarm for accident in Reactor Building or 2) RM-A6 and/or RMG-8 high alarm for accident in Fuel Handling Building	INITIATING CONDITION LOSS OF TWO OF THREE FISSION PRODUCT BARRIER WITH POTENTIAL LOSS OF THE THIRD BARRIER (e.g., LOSS OF FUEL INTEGRITY AND PRIMARY COOLANT BOUNDARY AND HIGH POTENTIAL FOR RADIOACTIVITY RELEASE FROM CONTAINMENT Detection Method: 1) LOCA and Containment Isolation status lights indicate incomplete isolation: -or- 2) LOCA; and RM-A2 high alarm; and RMG-7 and/or RMG-18 reading greater than 10^4 R/hr; and Reactor Building pressure greater than 30 psig for at least 2 min. or 3) Breach of containment integrity (Reactor Building) and RM-L1 off-scale (> 10^6 cpm)

SYSTEM INVOLVED	UNUSUAL EVENT	ALERT	SITE EMERGENCY	GENERAL EMERGENCY
STATION POWER	INITIATING CONDITION TOTAL LOSS OF OFFSITE POWER OR LOSS OF ONSITE A-C POWER CAPABILITY Detection Method: 1) Loss of 115 KV and 230 KV ESF Potential Lights and 2) A or B Trn Blackout Seq. Int. Alarm or 3) Both Diesel Generators Inoperable for> 1 hour	INITIATING CONDITION LOSS OF OFFSITE POWER AND LOSS OF ALL ONSITE A-C POWER FOR MORE THAN 5 MINUTES Detection Method: 1) Loss of 115 KV and 230 KV ESF. Potential Lights and 2) A or B Trn. Blackout Seq. Int. Alarm and 3) Both Diesel Generator Inoperable - - - - - - - - - - - - - - - - - INITIATING CONDITION LOSS OF ALL ONSITE D-C POWER FOR A PERIOD GREATER THAN 5 MINUTES. Detection Method: 1) D-C bus undervoltage alarms on all buses; and 2) 480 V ESF Channel A or B Loss of DC Alarm and 3) DG A or B Loss of DC Alarm	INITIATING CONDITION LOSS OF OFFSITE POWER AND LOSS OF ONSITE A-C POWER FOR MORE THAN 15 MIN. Detection Method: 1) Loss of 115 KV and 230 KV ESF Potential Lights and 2) A or B Trn. Blackout Seq. Int. Alarm and 3) Both Diesel Generators Inoperable. - - - - - - - - - - - - - - - - - INITIATING CONDITION LOSS OF ALL VITAL ONSITE D-C POWER FOR MORE THAN 15 MIN. Detection Method: 1) D-C bus undervoltage alarms on all buses; and 2) 480V ESF Channel A or B Loss of DC Alarm and 3) DG A or B Loss of DC Alarm - - - - - - - - - - - - - - - - - INITIATING CONDITION LOSS OF FUNCTIONS NEEDED FOR PLANT HOT SHUTDOWN. Detection Method: 1) Inability to establish charging pump injection: and Inability to establish emergency Feedwater Flow. or 2) RHR System not functional	INITIATING CONDITION FAILURE OF OFFSITE AND ONSITE POWER ALONG WITH TOTAL LOSS OF EMERGENCY FEEDWATER MAKEUP CAPABILITY FOR SEVERAL HOURS. COULD LEAD TO EVENTUAL CORE MELT AND POSSIBLE FAILURE OF THE REACTOR BUILDING. Detection Method: 1) Loss of 115 KV and 230 KV ESF. Potential Lights. and 2) A or B Trn. Blackout Seq. Int. Alarm and 3) Both Diesel Generators Inoperable. and 4) Steam driven Emergency Feedwater pump fails to start and is inoperable for several hours.

SYSTEM INVOLVED	UNUSUAL EVENT	ALERT	SITE EMERGENCY	GENERAL EMERGENCY
ENGINEERED SAFEGUARDS	INITIATING CONDITION ECCS INITIATED (COINCIDENT WITH POSITIVE FINDING THAT INITIATION IS NOT SPURIOUS). Detection Method: Valid Safety Injection Signal ---------- INITIATING CONDITION FAILURE OF A PRESSURIZER OR STEAM GENERATOR SAFETY OR RELIEF VALVE TO RESEAT (EXCEEDING NORMAL WEEPAGE). Detection Method: Pressurizer or steam generator safety or relief valve opens and then fails to reset as indicated by: 1) Valid open indication of Pressurizer relief or safety valve position indication lights or or valid acoustical monitor indication. or 2) Visual and/or audible indication at vent stacks of open steam generator safety or relief valve; or Excess feedwater flow to and steam flow from affected generator.	INITIATING CONDITION ALL ANNUNCIATOR ALARMS LOST. Detection Method: Observation by operator. ---------- INITIATING CONDITION EVACUATION OF CONTROL ROOM ANTICIPATED OR REQUIRED WITH CONTROL OF SHUTDOWN SYSTEM ESTABLISHED FROM LOCAL STATIONS. Detection Method: Same as Initiating condition.	INITIATING CONDITION ALL ANNUNCIATORS AND PLANT COMPUTER LOST FOR MORE THAN 15 MINUTES AND PLANT TRANSIENT INITIATED OR IN PROGRESS. Detection Method: Observation of event. - - - - - - - - - - - - - - - - INITIATING CONDITION EVACUATION OF CONTROL ROOM AND CONTROL OF SHUTDOWN SYSTEMS NOT ESTABLISHED FROM LOCAL STATIONS IN 15 MIN. Detection Method: Same as Initiating event.	INITIATING CONDITION TRANSIENT INITIATED BY LOSS OF FEEDWATER AND CONDENSATE SYSTEMS (PRINCIPAL HEAT REMOVAL SYSTEM) FOLLOWED BY FAILURE OF EMERGENCY FEEDWATER SYSTEM FOR EXTENDED PERIOD. CORE MELTING POSSIBLE IN SEVERAL HOURS. ULTIMATE FAILURE OF REACTOR BUILDING POSSIBLE IF CORE MELTS. Detection Method: Reactor trip on steam flow > feedwater flow; and Decreasing wide-range steam generator levels toward off-scale low on all steam generators; and 1) Emergency feedwater flow indicators indicate zero flow 2 min. after required; or 2) Status lamps indicate emergency feedwater pumps not running 2 min. after required; and 3) Emergency Feedwater cannot be restored within 30 min.

SYSTEM INVOLVED	UNUSUAL EVENT	ALERT	SITE EMERGENCY	GENERAL EMERGENCY
ENGINEERED SAFEGUARDS (CON'T)	INITIATING CONDITION LOSS OF ENGINEERED SAFETY FEATURE FUNCTION REQUIRING TECHNICAL SPECIFICATION SHUTDOWN. (TECHNICAL SPECIFICATIONS 3.3.2) Detection Method: 1) Engineered Safety Features Activation System found inoperable - - - - - - - - - - - - - - - - - - INITIATING CONDITION INDICATIONS OR ALARMS ON PROCESS OR EFFLUENT PARAMETERS NOT FUNCTIONAL IN THE CONTROL ROOM TO AN EXTENT REQUIRING SHUTDOWN AS PER TECHNICAL SPECIFICATIONS; OR, OTHER SIGNIFICANT LOSS OF ASSESSMENT OR COMMUNICATION CAPABILITY. Detection Method 1) Loss of Radiation Monitoring System; or 2) Loss of all meteorological systems or 3) Significant loss of communication capability offsite; or 4) Loss of the plant computer and the TSC computer	INITIATING CONDITION REACTOR COOLANT PUMP LOCKED ROTOR WITH FUEL DAMAGE. Detection Method: Reactor coolant pump auto trip alarm; and Reactor trip on low coolant flow; and Reactor coolant pump phase over current relay actuation; and valid RML-1 Alarm. - - - - - - - - - - - - - - - - - - INITIATING CONDITION LOSS OF ALL FUNCTIONS NEEDED FOR PLANT COLD SHUTDOWN. Detection Method: RHR system not functional and inability to reject heat to the condenser. - - - - - - - - - - - - - - - - - - INITIATING CONDITION FAILURE OF THE REACTOR PROTECTION SYSTEM TO INITIATE AND COMPLETE A TRIP WHICH BRINGS THE REACTOR SUBCRITICAL. Detection Method: Reactor remains critical after trip initiation.		INITIATING CONDITION TRANSIENT REQUIRING OPERATION OF SHUTDOWN SYSTEMS WITH FAILURE TO TRIP WHICH RESULTS IN CORE DAMAGE OR ADDITIONAL FAILURE OF CORE COOLING AND MAKEUP SYSTEMS WHICH COULD LEAD TO CORE MELT. Detection Method: Reactor remains critical after attempted trip and 1) RML-1 alarm, or 2) Flow indicators on safety injection system and RHR systems show zero flow with safety injection initiated. or 3) Status lights show safety injection system and RHR pumps not running with safety injection initiated.

SYSTEM INVOLVED	UNUSUAL EVENT	ALERT	SITE EMERGENCY	GENERAL EMERGENCY
FIRE	INITIATING CONDITION FIRE LASTING MORE THAN 15 MINS. Detection Method: Observation or fire detection device alarm with confirming observation indicating a fire lasting more than 15 min.	INITIATING CONDITION FIRE POTENTIALLY AFFECTING SAFETY SYSTEMS. Detection Method: Observation of fire that could affect safety systems.	INITIATING CONDITION FIRE AFFECTING SAFETY TRAINS OR FUNCTIONS. Detection Method: Observation of major fire that defeats safety system trains or functions.	

SYSTEM INVOLVED	UNUSUAL EVENT	ALERT	SITE EMERGENCY	GENERAL EMERGENCY
SECURITY	INITIATING CONDITION SECURITY THREAT OR ATTEMPTED ENTRY OR ATTEMPTED SABOTAGE. Detection Method: 1) Report to the Control Room by observer. or 2) Alarm of Integrated Fire and Security Panel.	INITIATING CONDITION ONGOING SEVERE SECURITY THREAT Detection Method: Security safeguards contingency event which results in adversaries commandeering an area of the plant, but not impacting shutdown capability.	INITIATING CONDITION SECURITY THREAT INVOLVING IMMINENT LOSS OF PHYSICAL CONTROL OF THE PLANT. Detection Method: Physical attack on the Plant involving imminent occupancy of control room and auxiliary shutdown panels.	INITIATING CONDITION SECURITY THREAT RESULTING IN LOSS OF PHYSICAL CONTROL OF THE FACILITY. Detection Method: Physical attack on the Plant has resulted in occupation of the control room and the auxiliary shutdown panels by unauthorized personnel.

SYSTEM INVOLVED	UNUSUAL EVENT	ALERT	SITE EMERGENCY	GENERAL EMERGENCY
NATURAL PHENOMENON	INITIATING CONDITION NATURAL EVENTS a. EARTHQUAKE b. TORNADO ON SITE c. HURRICANE NEAR SITE Detection Method: a. Seismic Recording System Start Indication. b. Observation of event. c. Observation of event.	INITIATING CONDITION SEVERE NATURAL EVENT NEAR SITE. a. EARTHQUAKE GREATER THAN THE (OBE) LEVEL b. TORNADO STRIKING FACLIITY c. SYSTAINED HURRICANE WINDS GREATER THAN 75 MPH Detection Method: a) Seismic Response Spectrum Trouble Annunciator b) Observation of event c) Meteorological Monitoring System Data or Weather Bureau Report.	INITIATING CONDITION SEVERE NATURAL PHENOMENON BEING EXPERIENCED OR PROJECTED WITH PLANT NOT IN COLD SHUTDOWN. a. EARTHQUAKE GREATER THAN SSE LEVELS. b. SYSTAINED WINDS IN EXCESS OF 100 MPH ON SITE. Detection Method: a. Reactor Building Foundation Seismic Switch (SSE) b. Meteorological Monitoring System Data.	

SYSTEM INVOLVED	UNUSUAL EVENT	ALERT	SITE EMERGENCY	GENERAL EMERGENCY
MANMADE PHENOMENON	INITIATING CONDITION OTHER HAZARDS BEING EXPERIENCED OR PROJECTED WHICH HAVE THE POTENTIAL FOR ENDANGERING THE FACILITY a. ONSITE AIRCRAFT CRASH. b. ONSITE TRAIN DERAILMENT. c. ONSITE EXPLOSION (EXCLUDING PLANNED ACTIVITIES). d. NEAR OR ONSITE TOXIC OR FLAMMABLE GAS RELEASE OF A MAGNITUDE THAT THREATENS PERSONNEL. e. TURBINE GENERATOR ROTATING COMPONENT FAILURE CAUSING RAPID PLANT SHUTDOWN. Detection Method: a. Observation of event. b. Observation of event. c. Observation of explosion or warning from offsite. d. Observation of release or warning from offsite. e. Turbine trip and observation of turbine malfunction or failure.	INITIATING CONDITION OTHER HAZARDS BEING EXPERIENCED OR PROJECTED WHICH HAVE A SIGNIFICANT POTENTIAL FOR AFFECTING PLANT SAFETY. a. AIRCRAFT CRASH ON FACILITY. b. MISSILE IMPACTS ON FACILITY WITH RESULTANT MAJOR DAMAGE. c. KNOWN EXPLOSION AT FACILITY RESULTING IN MAJOR DAMAGE TO PLANT STRUCTURES OR EQUIPMENT. d. ENTRY INTO FACILITY ENVIRONS OF TOXIC OR FLAMMABLE GASES IN CONCENTRATION WHICH EXCEED THE LIMITS OF FLAMMABILITY OR TOXICITY. e. TURBINE GENERATOR FAILURE CAUSING CASING PENETRATION. Detection Method: a) Observation of aircraft crash into Plant structures. b) Observation of missile impacts on Plant structures or components. c) Observation of damage by explosion. d) Observation or warning from outside the Plant; detection of gases (using portable instrumentation) which exist in concentrations which exceed the limits of flammability or toxicity. e) Turbine trip and observation of penetration of casing.	INITIATING CONDITION OTHER HAZARDS BEING EXPERIENCED OR PROJECTED WITH PLANT NOT IN COLD SHUTDOWN: a. AIRCRAFT CRASH INTO VITAL STRUCTURES. b. MISSILE OR EXPLOSION IMPACT ON FACILITY RENDERING SEVERE DAMAGE TO SHUTDOWN EQUIPMENT c. ENTRY OF TOXIC OR FLAMMABLE GASES INTO VITAL AREAS WHICH INVOLVE A SIGNIFICANT DEGRADATION OF PLANT SAFETY. Detection Method: a) Aircraft crash causing damage or fire in: 1) Reactor Building; or 2) Control Room; or 3) Auxiliary Building; or 4) Fuel Handling Building; or 5) DG Building; or 6) Intermediate Building 7) SW Intake Structures b) Loss of functions needed for hot shutdown. (see page 6 of this Attachment) c) Entry of toxic or flammable gases into: 1) Control room; or 2) Cable spreading rooms; or 3) Reactor Building; or 4) Switchgear room: or 5) Safe shutdown panels; or 6) Emergency diesel generator rooms; as detected by portable instrumentation and which renders a train of a safety-related system inoperable.	

SYSTEM INVOLVED	UNUSUAL EVENT	ALERT	SITE EMERGENCY	GENERAL EMERGENCY
OTHER	INITIATING CONDITION LOSS OF CONTAINMENT INTEGRITY REQUIRING TECHNICAL SPECIFICATION SHUTDOWN (TECHNICAL SPECIFICATION 3.6.1.1) Detection Method: 1) Any automatic containment isolation valve found to be inoperable or 2) Reactor Building air lock inoperable or 3) Penetration(s) fail leak test (as specified in Technical Specifications) ---------- INITIATING CONDITION TRANSPORTATION OF OVEREXPOSED AND/OR CONTAMINATED, INJURED INDIVIDUAL FROM SITE TO HOSPITAL. Detection Method: Same as initiating condition. ---------- INITIATING CONDITION OTHER PLANT CONDITIONS EXIST REQUIRING OTHER THAN NORMAL PLANT SHUTDOWN AND REQUIRING INCREASED AWARENESS ON THE PART OF STATE OFFICIALS. Detection Method: As determined by Emergency Director.	INITIATING CONDITION OTHER PLANT CONDITIONS EXIST THAT WARRANT ACTIVATION OF TECHNICAL SUPPORT CENTER AND PLACING EMERGENCY OPERATIONS FACILITY PERSONNEL ON STAND BY Detection Method: As determined by Emergency Director.	INITIATING CONDITION OTHER PLANT CONDITIONS EXIST THAT WARRANT ACTIVATION OF EMERGENCY FACILITIES AND RADIATION MONITORING TEAMS AND A PRECAUTIONARY PUBLIC WARNING. Detection Method: As determined by Emergency Director.	

IMMEDIATE ACTION SUMMARY

IMMEDIATE ACTIONS	UNUSUAL EVENT	ALERT	SITE	GENERAL
1. ANNOUNCEMENT TO PLANT PERSONNEL				
2. SOUND RADIATION EMERGENCY ALARM	N/A			
3. NOTIFY SECURITY SHIFT LEADER				
4. NOTIFY FAIRFIELD PUMP STORAGE FACILITY	N/A	N/A		
5. ENSURE ON-SHIFT PERSONNEL RESPONSE				
6. NOTIFY LOCAL AUTH OF EARLY WARNING SIREN SYSTEM RECOMMENDATION	N/A	N/A		
7. ACTIVATE EWSS IF REQUIRED	N/A	N/A		
8. INITIAL NOTIFICATIONS PER EPP-002				
9. EMERGENCY LOG ESTABLISHED				
10. OFF SITE EMERGENCY SERVICES, IF REQUIRED				
11. ACTIVATE TSC/OSC OR NOTIFY EMERGENCY RESPONSE PERSONNEL	N/A			
12. NOTIFY OFF-SITE EMERGENCY COORDINATOR	N/A			
13. ENSURE TSC/OSC ARE ACTIVITED OR EMERGENCY RESPONSE PERSONNEL NOTIFIED	N/A			
14. ENSURE EOF IS ACTIVATED OR EMERGENCY RESPONSE PERSONNEL NOTIFIED	N/A	N/A		
15. DETERMINE IF SITE EVACUATION IS REQUIRED (INCLUDING FAIRFIELD PUMP STORAGE FACILITY)	N/A			

SOUTH CAROLINA ELECTRIC AND GAS COMPANY

VIRGIL C. SUMMER NUCLEAR STATION

NUCLEAR OPERATIONS

NUCLEAR OPERATIONS

COPY NO. 152-C

EMERGENCY PLAN PROCEDURE

EPP-002

COMMUNICATION AND NOTIFICATION

REVISION 2

JUNE 17, 1982

NON-SAFETY RELATED

Reviewed by:

Mark Counts — 7/26/82
ORIGINATOR (of this revision) — Date

W. Frank Snow — 7/13/82
QUALIFIED REVIEWER — Date

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PLANT MANAGER — Date

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Form AP-101-2, (1/80)

LIST OF EFFECTIVE PAGES

PAGES	REVISION
1	2
11	2
111	2
1	2
2	2
3	2
4	2
5	2

ATTACHMENTS

Attachment IA, Pages 1 - 3	2
Attachment IB, Pages 1 - 3	2
Attachment IC, Pages 1 - 3	2
Attachment ID, Pages 1 - 4	2
Attachment IIA, Pages 1 - 4	2
Attachment IIB, Pages 1 - 3	2
Attachment III, Pages 1 - 3	2
Attachment IVA, Pages 1 - 5	2
Attachment IVB, Pages 1 - 6	2
Attachment IVC, Pages 1 - 5	2
Attachment V, Pages 1 & 2	2
Attachment VI, Pages 1 - 3	2

TABLE OF CONTENTS

TABLE OF CONTENTS (Continued)

1.0 PURPOSE

1.1 The purpose of this procedure is to delineate the specific notification requirements for each class of emergency and to provide a method for affecting these notifications.

2.0 REFERENCES

2.1 "Virgil C. Summer Nuclear Station Radiological Emergency Plan"

2.2 NUREG-0654, "Criteria for Preparation and Evaluation of Radiological Emergency Response Plans and Preparedness in Support of Nuclear Power Plants"

2.3 EPP-001, "Activiation and Implementation of the Emergency Plan"

2.4 Voluntary Assistance Agreement (by and among Electric Utilities involved in Nuclear Generation) - Article 9 - Transportation of Nuclear Materials; and Emergency Resources Manual, "INPO" Institute of Nuclear Power Operations.

2.5 Policy Memorandum No. 25 Issuance, Control, and Usage of Radio Pagers.

3.0 DEFINITIONS AND ABBREVIATIONS

3.1 Definitions

3.1.1 Initial Notification - The transfer of information to designated organization(s)/person(s) following change of plant status from normal operations directly into any of the four emergency classifications or upon escalation to a higher emergency classification. This transfer of information is required to begin within fifteen minutes after declaration of the applicable emergency classification.

EXCEPTION: (1) The NRC, Bethesda, Maryland office and the Site Resident Inspector are to be notified within 1 hour of declaration of the event in accordance with Attachment IIA. 2) The American Nuclear Insurers (ANI) is to be notified within eight (8) hours of declaration of an Alert, Site Emergency, or General Emergency in accordance with Attachment IIB.

3.1.2 Follow-up Notification - The transfer of information to designated organization(s)/person(s) updating the intitial notification. This transfer of information is required at 15 minute intervals following completion of initial or previous follow-up notifications.

EXCEPTIONS: Following initial notification of the NRC, an open communication line will be established and maintained to provide continuous updating to the NRC. Follow-up notifications are not required for the Unusual Event classification.

3.2 Abbreviations

3.2.1 TSC - Technical Support Center

3.2.2 OSC - Operations Support Center

3.2.3 EOF - Emergency Operations Facility

3.2.4 ED - Emergency Director

3.2.5 IED-Interim Emergency Director

3.2.6 E.O.C-Emergency Operations Center

4.0 PREREQUISITES and CONDITIONS

4.1 Unusual or abnormal plant or site conditions exist which necessitate implementation of the Emergency Plan and the applicable Emergency Classification has been declared.

5.0 PROCEDURE

5.1 Initial Notifications

5.1.1 Upon declaration of the appropriate emergency classification, the ED/IED will direct the communicator to implement the appropriate notifications.

NOTE: Refer to EPP-016 Attachment II for personnel, by title, who should be the designated communicator.

5.1.2 The ED/IED will assure that the required information is available to effect prompt notification.

5.1.3 The communicator will, upon direction from the ED/IED, implement the initial notifications. The information in Attachment I is to be given to the personnel/agencies as listed in Attachments III A, III B, III C, or III D depending upon the classification of emergency.

NOTE: Attachments III, IV and V list alternates for various personnel. These notifications attempts are to be made in numerical sequence as indicated and will be considered complete upon successful notification of one of the listed.

5.2 Notifications for Change in Emergency Classification

NOTE: If classification change is made in the middle of a notifications sequence the communicator will terminate that notification sequence, and initiate the new notification for current status.

5.2.1 Upon escalation to a higher emergency classification, the communicator will, upon direction from the ED, implement notifications per the section of Attachment III which corresponds to the higher emergency classification, and Attachments IVA and IVB.

5.2.2 When the emergency classification is downgraded, the communicator will, upon direction from the ED, implement notifications per the section of Attachment VI which corresponds to the classification which is being changed.

5.3 Off-site Emergency Services

5.3.1 Upon direction from the ED/IED, the communicator will implement the requested notification(s) per Attachment V.

5.3.2 Upon direction from the ED/IED, the communicator will contact other utilities for assistance using the "INPO" Resource Guide, Reference 2.4.

NOTE: The Resource Guide is available in the TSC and EOF.

5.4 Follow-up Notifications

5.4.1 Follow-up notifications are required for all emergency classifications except Unusual Event.

5.4.2 The communicator will implement follow-up notifications. (The information in Attachment I and II is to be given to the personnel/agencies as listed in Attachments VI A, VI B, or VI C depending upon the emergency classification.)

5.4.3 Follow-up notifications will be made by the site communicator(s) until the EOF is activated and assumes all off-site notification responsibilities. Thereafter, the site communicator will transmit applicable updated information to the EOF as it becomes available.

5.4.4 Follow-up notifications to the Emergency Preparedness Division and the counties shall be made by the TSC or EOF Communicator until such time that the S.C. State. Forward EOC is staffed and communications are established. When the S.C. Forward E.O.C. is activiated, all communications, between the plant and state and county agencies will go to the S.C. Forward E.O.C. via the dedicated phone line or established land line.

NOTE: All transfers of notification responsibilities shall be documented.

5.5 Vital Personnel Notification

5.5.1 The communicator will notify vital personnel as directed by the ED/IED per the Vital Personnel Telephone Listing available in the Control Room and the TSC or by radio pager as per Policy Memorandum No. 25.

5.6 TSC/OSC/EOF Communications

5.6.1 TSC-OSC - telephone list are provided in Attachment VII.

5.6.2 EOF - telephone list are provided in Attachment VIII.

WARNING MESSAGE: NUCLEAR FACILITY TO STATE/LOCAL GOVERNMENT

Part I

1. This is the Summer Nuclear Station.

2. My name is _____

3. This message (number _____):
   _____(a) Reports a real emergency.
   _____(b) Is an exercise message.

4. My telephone number/extension is: _____ or _____

5. You may call back at the end of the message for verification.

6. The class of the emergency is:
   ____(a) Notification of Unusual Event
   ____(b) Alert
   ____(c) Site Emergency
   ____(d) General Emergency

7. This classification of emergency was declared at:
   _____(a.m./p.m.) on_____(date).

8. The intiating event causing the emergency classification is: _____
   _____
   _____

9. The emergency condition:
   _____ (a) Does not involve the release of radioactive materials from the plant.
   _____ (b) Involves the potential for a release, but no release is occurring.
   _____ (c) Involves a release of radioactive material.

10. We recommend the following protective action:
    _____(a) No protective action is recommended at this time.
    _____(b) People living in zones _____remain indoors with the doors and windows closed.

_____(c) People living in zones _____ evacuate their homes and businesses.
_____(d) Pregnant women and children in zones _____ remain indoors with the doors and windows closed.
_____(e) Pregnant women and children in zones _____ evacuate to the nearest reception center.
_____(f) Other recommendations: _____
_____

11. There will be:
_____(a) A followup message
_____(b) No further communications

12. I repeat, this message:
_____(a) Reports an actual emergency
_____(b) Is an exercise message

13. Are there any questions?

WARNING MESSAGE: NUCLEAR FACILITY TO STATE/LOCAL GOVERNMENT

Part II

1. The type of actual or projected release is:
   _____(a) Airborne
   _____(b) Waterborne
   _____(c) Surface spill
   _____(d) Other

2. The source and description of the release is:_____
   _____

3. _____(a) Release began/will begin at _____a.m./p.m.; time since reactor trip is _____hours.
   _____(b) The estimated duration of the release is hours.

4. Dose projection base data:

   Radiological release: _____ curies, or _____curies/sec.

   Windspeed: _____mph

   Wind direction: From _____°

   Stability class: _____(A,B,C,D,E,F, or G)

   Release height: _____Ft.

   Dose conversion factor:_____R/hr/Ci/m^3 (whole body)

   _____R/hr/Ci/m^3 (child thyroid)

   Precipitation: _____

   Temperature at the site: _____°F

5. Dose projections:

Dose Commitment

Distance	Whole Body Rem/hour	Child Thyroid Rem/hour of inhalation
Site boundary		
2 miles		
5 miles		
10 miles		

WARNING MESSAGE: NUCLEAR FACILITY TO STATE/LOCAL GOVERNMENT

Part II (cont.)

Projected Integrated Dose in Rem per Unit Time

Distance	Whole Body	Child Thyroid
Site Boundary		
2 miles		
5 miles		
10 miles		

6. Field measurement of dose rate or contamination (if available): _____

7. Emergency actions underway at the facility include: _____

8. Onsite support needed from offsite organizations: _____

9. Plant Status:
   (a) Reactor is: not tripped/tripped
   (b) Plant is at ___% power/hot shutdown/cold shutdown/ cooling down
   (c) Prognosis is: stable/improving/degrading/unknown.

10. I repeat, this message:

    _____(a) Reports an actual emergency.
    _____(b) Is an exercise message.

11. Do you have any questions?

INITIAL NOTIFICATION

UNUSUAL EVENT

AGENCY/PERSONNEL	PAGE NUMBER	NORMAL	EASY ACCESS	SITE	PERSON NOTIFIED	TIME
1. Management Duty Supervisors (per Duty Roster)						
1) Ollie Bradham					_____	_____
2) John Connelly					_____	_____
3) Lou Storz					_____	_____
4) Bob Croley					_____	_____
5) Mike Quinton					_____	_____
6) Vince Albert					_____	_____
2. *S.C. Dept. of Health & Environmental Control, Bureau of Radiological Health					_____	_____
3. *NRC	See Attachment IVA of EPP-002 for NRC Initial Notification					
4. Media Coord. (Mgr., Nuclear Info.)		Home		Office		
1) Becky McSwain					_____	_____
2) 1st Alt. - Buddy Clark					_____	_____
5. Site Services Manager-Bob Stough					_____	_____
6. Institute of Nuclear Power Operations (INPO)					_____	_____
7. American Nuclear Insurers (ANI)	See Attachment IVB of EPP-002 for ANI Notification					

NOTIFICATIONS COMPLETE: _____ _____
CALLER'S SIGNATURE DATE

*Dedicated Line Also Exists.

INITIAL NOTIFICATION

ALERT

AGENCY/PERSONNEL	PAGE NUMBER	NORMAL	EASY ACCESS	SITE	PERSON NOTIFIED	TIME
1. Management Duty Supervisors (per Duty Roster)						
1) Ollie Bradham					_____	_____
2) John Connelly					_____	_____
3) Lou Storz					_____	_____
4) Bob Croley					_____	_____
5) Mike Quinton					_____	_____
6) Vince Albert					_____	_____
NOTE: To contact additional Emergency Response Personnel refer to Policy Memorandum No. 25.						
2. *S.C. Dept. of Health & Environmental Control, Bureau of Radiological Health			020 017	N/A	_____	_____
3. *NRC	See Attachment IVA of EPP-002 for NRC Initial Notification					
4. Media Coord. (Mgr., Nuclear Info.)		Home		Office		
1) Becky McSwain					_____	_____
2) 1st Alt. - Buddy Clark					_____	_____
5. Site Services Manager-Bob Stough					_____	_____
6. Institute of Nuclear Power Operations (INPO)					_____	_____
7. Fairfield Pumped Storage Facility					_____	_____
8. American Nuclear Insurers (ANI)	See Attachment IVB of EPP-002 for ANI Notification					

NOTIFICATIONS COMPLETE: _____ _____
CALLER'S SIGNATURE DATE

*Dedicated Line Also Exists.

INITIAL NOTIFICATION

"SITE EMERGENCY"

AGENCY/PERSONNEL	PAGE NUMBER	NORMAL	EASY ACCESS	SITE	NAME OF PERSON NOTIFIED	TIME
1. Management Duty Supervisors (per Duty Roster)						
1) Ollie Bradham					_____	____
2) John Connelly					_____	____
3) Lou Storz					_____	____
4) Bob Croley					_____	____
5) Mike Quinton					_____	____
6) Vince Albert					_____	____

NOTE: To contact additional Emergency Response Personnel, refer to Policy Memorandum No. 25.

2. *S.C. Dept. of Health & Environmental Control, Bureau of Radiological Health				N/A	_____ ____
3. *NRC	See Attachment IVA of EPP-002 for NRC Initial Notification Requirements				
4. Media Coord. (Mgr., Nuclear Info.)		Home		Office	
1) Becky McSwain 131					_____ ____
2) 1st Alt. - Buddy Clark					_____ ____
5. Site Services Manager - Bob Stough					_____ ____
6. Institute of Nuclear Power Operations (INPO)					_____ ____
7. Fairfield Pumped Storage Facility					_____ ____
8. American Nuclear Insurers	See Attachment IVB of EPP-002 for ANI Notification.				

NOTIFICATIONS COMPLETE: _____ _____
Caller's Signature Date

*Dedicated Line Also Exists.

INITIAL NOTIFICATION

"GENERAL EMERGENCY"

AGENCY/PERSONNEL	PAGE NUMBER	NORMAL	EASY ACCESS	SITE	NAME OF PERSON NOTIFIED	TIME
1. Management Duty Supervisors (per Duty Roster)						
1) Ollie Bradham					_____	____
2) John Connelly					_____	____
3) Lou Storz					_____	____
4) Bob Croley					_____	____
5) Mike Quinton					_____	____
6) Vince Albert					_____	____
NOTE: To contact additional Emergency Response Personnel, refer to Policy Memorandum No. 25.						
2. *S.C. Dept. of Health & Environmental Control, Bureau of Radiological Health				N/A	_____	____
3. *NRC		See Attachment IVA of EPP-002 for NRC Initial Notification Requirements				
4. Media Coord. (Mgr., Nuclear Info.)		Home		Office		
1) Becky McSwain	131					
2) 1st Alt. - Buddy Clark					_____	____
					_____	____
5. Site Services Manager - Bob Stough					_____	____
6. Fairfield Pumped Storage Facility					_____	____
7. *Emergency Preparedness Division- Adjutant General's Office (State EOC)					_____	____

*Dedicated Line Also Exists.

INITIAL NOTIFICATION

"GENERAL EMERGENCY"

AGENCY/PERSONNEL	NORMAL	EASY ACCESS	SITE	NAME OF PERSON NOTIFIED	TIME
8. *Fairfield County			N/A N/A	_____ _____	____ ____
9..*Newberry County			N/A	_____	____
10. *Richland County			N/A	_____	____
11. *Lexington County			N/A	_____	____
12. Institute of Nuclear Power Operations (INPO)			N/A	_____	____
13. American Nuclear Insurers	See Attachment IVB of EPP-002 for ANI Notification.				

NOTIFICATIONS COMPLETE: _____ _____
Caller's Signature Dte

*Dedicated Line Also Exists.

NRC ONE HOUR NOTIFICATION

The NRC shall be notified within 1 hour of Declaration of an Emergency in accordance with Pages 2 through 4 of this attachment.

	NORMAL	EASY ACCESS	PERSON CONTACTED
1. NRC - Bethesda, Md.	Dedicated Phone	N/A	_____

a) Commercial telephone system to NRC Operations Center (Via Bethesda Central Office). _____

b) NRC-Atlanta, Ga. _____

c) Commercial Telephone System to NRC Operations Center (Via Silver Spring Central Office).

NOTE:

d) Health Phys...s Network to NRC Operations Center.

NOTE: (Touch-Tone)
(Rotary Dial)

e) Commercial Telephone System to NRC Operator (Via Bethesda Central Office).

2. NRC - Resident Inspector ____ Yes ____ No

Jack Skolds (N.O. Ext)

Home Phone NO.

or

Beeper No.

_____ _____ _____
CALLERS SIGNATURE DATE TIME

NRC ONE HOUR NOTIFICATION

A. Identification:

This is the Summer Nuclear Plant.

My name is _____.

Our phone number is _

B. Event Classification:

We are now in a(n) _____
EVENT CLASSIFICATION

which was declared at _____ .
TIME

C. DESCRIPTION:

What Happened: _____

Cause: _____

Consequences: _____

Actions: _____

Current Status: _____

D. LICENSEE NOTIFICATIONS: (What notifications have been made.)

STATE(S) _____ LICENSEE MANAGEMENT _____
LOCAL _____ OTHER _____
NRC RESIDENT _____ OTHER _____

E. PRESS RELEASE: Has a press release been made or planned? Yes__ No__

NRC ONE HOUR NOTIFICATION
Part II-Complete for all ALERT, SITE AREA, and GENERAL emergencies

Licensee Actions:

Taken _____
Planned _____
Property Damage _____

Radioactivity Released (or Increased Release):

Liquid/Gas? _____ Location/Source of Release _____ Elevation _____
Release Rate _____ Duration _____ Stopped? _____
Release Monitored? _____ Amount of Release _____
% Tech. Specs. _____

Increased Radiation Levels in a Plant: Location(s) _____
Radiation level(s) _____ Areas Evacuated _____
Maximum site boundary dose rates _____ Location _____
Integrated dose _____ Location _____

Meteorology:
Wind Direction from _____
Wind Speed _____ (Meter/sec or miles/hr)
T _____ (°C or °F) Temperature _____ (°C or °F)
Stability Class A B C D E F G
Raining (Yes/No) _____

Projected Peak:

	Dose Rates	Integrated Dose
2 mi	_____ (WB/I)	_____ (WB/I)
5 mi	_____ (WB/I)	_____ (WB/I)
10 mi	_____ (WB/I)	_____ (WB/I)
Sectors	_____ (WB/I)	_____ (WB/I)

Contamination (Surface): inplant _____ onsite _____ offsite _____
_____

Reactor Operations:
Reactor System Status Power Level _____
Pressure _____ Temp _____ Flow (pumps on) _____
Cooling Mode _____ ECCS Operating/Operable _____

Containment Status
Containment Isolated? _____ Containment Temp _____
Containment Press _____ Containment Radiation ____ R/hr.
Leak Rate _____ R/hr.

Reactivity Control
Control Rods Inserted _____ Status of Emer. Boration System _____

INCIDENT NOTIFICATION INFORMATION
Part II

Steam Plant Status:

S/G Levels _____ Equip. Failures _____
_____

Feedwater Source/Flow _____ S/G Isolated? _____

Electrical Dist. Status:

Normal Offsite Power Available? _____
Major Busses/Loads Lost _____
D/G Running? _____ Loaded? _____

Security/Safeguards:
Bomb Threat: Search Conducted? _____
Search Results _____ Site Evacuated? _____

Extortion: Source (Phone, letter, etc.)?
Location of Letter _____

Intrusion: Insider? _____ Outsider? _____
Furthest Point of intrusion _____
Fire arms related? _____ Stolen/Missing Material? _____

Demonstration: Size of Group _____ Demands _____
Violence? _____ Fire arms related? _____

Sabotage/Vandalism: Radiological? _____ Arson Involved? _____
Stolen/Missing Material? _____

ANI EIGHT HOUR NOTIFICATION

ANI is to be notified within eight (8) hours of the declaration of an Alert, Site Emergency, or General Emgergency in accordance with pages 2 and 3 of this attachment.

American Nuclear Insurers (ANI) Phone No.
Easy Access

Person Contacted _____ Time _____ Date _____

Callers Signature _____

ANI NOTIFICATION

(1) This is _____
(Name) (Title)

(2a) _____ This is a drill

(2b) _____ This is NOT a drill

(3) I am notifying you of an accident at the V. C. Summer Nuclear Station which occurred at: _____
(Date) (Time)

(4) This emergency is classified as a _____.

(5) Description of event: _____
_____

(6) Radiation Release _____ Yes _____ No.
(If yes, complete 6a through 6j)

(6a) Type of Actual Release or Type of Projected Release: _____

(6b) Estimation of Duration of Public Impact: _____

(6c) Release Rate: (6a) Noble Gas _____ (6b) _____
(6c) Release Height _____

(6d) Meteorological Conditions: (6a) Wind Speed (mph) _____
(6b) Wind Direction (blowing to) _____
(6c) Stability Class _____
(6d) Precipitation _____

(6e) Projected Dose At:	Site Boundary	2 Miles	5 Miles	10 Miles
(6f) Dose Rate--Whole Body	(10A)_____	(10B)_____	(10C)____	(10D)____
(6g) Integrate Whole Body Dose (___ hour projection)	(11A)_____	(11B)_____	(11C)____	(11D)____
(6h) Dose Rate--Thyroid	(12A)_____	(12B)_____	(12C)____	(12D)____
(6i) Integrated Infant Thyroid (___ hour projection)	(13A)_____	(13B)_____	(13C)____	(13D)____
(6j) Sectors Affected	(14A)_____	(14B)_____	(14C)____	(14D)____

ANI NOTIFICATION

(7) Injured Personnel _____ Yes _____ No.
(if yes, complete 7a through 7d)

(7a) Number of injured personnel _____

(7b) ____ Is ____ Is Not Radioactively Contaminated

(7c) Injury Description: _____
_____

(7d) Requires Transportation to off-site Medical Facility
_____ Yes ____ No.

(8) Off-Site Emergency Assistance/Actions Requested
____ Yes _____ No.

(If yes, complete 8a through 8c)

Yes/No		Reason
(8a) _____	Law Enforcement	_____
(8b) _____	Fire Departments	_____
(8c) _____	Hospital Facilities	_____

(9) Public evacuation required Yes_____ No_____
_____ Not at this time

(9a) If "Yes" or "Not at this time", affected sectors_____
_____
_____

OFF-SITE EMERGENCY SERVICES

AGENCY/PERSONNEL	PHONE	NAME OF PERSON NOTIFIED	TIME
A. Company Physicians (Pinner Clinic)			
1) Carrol A. Pinner III M.D. - Primary		(24 hrs.)	
2) Carrol A. Pinner Jr. M.D. - 1st Alternate		_____	_____
3) Harriet A. Pinner, M.D. - 2nd Alternate		_____	_____
B. Hospital Facilities			
1) Richland Memorial Hospital		_____	_____
Give the following information:			
This is the Virgil C. Summer Nuclear Station.			
This is a Drill _____ This is not a Drill _____			
We have _____ contaminated/non-contaminated injured person being transported to your facility.			
2) Radiation Emergency Assistance			
Center Training Site (Reacts)		_____	_____
24 hour			
C. Ambulance Service			
1a) Emergency Medical Services of Fairfield County	or	_____	_____
1b) Alert MAST for standby transportation.	or	_____	_____
2) U.S. Army MAST Operations	or	_____	_____

NOTE: Alert Security of Emergency Vehicle arrival as soon as request(s) for Off-Site Emergency Services are completed.

Ext.	_____	_____
or	_____	_____

OFF-SITE EMERGENCY SERVICES

AGENCY/PERSONNEL	PHONE	NAME OF PERSON NOTIFIED	TIME

Give the following information for items 1a and 2 above.

This is a Drill ____ This is not a Drill ____

We have _____ contaminated/non-contaminated injured person(s) requiring transportation to Richland Memorial Hospital. (The ambulance must enter the site via the main gate, using (denote route to be taken) or the helicopter should land at the primary landing pad (denote route to be taken)

D. NSSS Supplier/A.E.

	Title	Name	Office	Home	HHL
1.	Site Service Manager	Bob Stough			

Notes: (1) The area code of the above phone numbers is
(2) The phone beeper number is (

2.	Operating Plant Service Manager	John Miller
	1st Alternate	Tim Sullivan
	2nd Alternate	John Gallik
3.	Service Response Manager	Joe Leblang
	1st Alternate	John Miller
	2nd Alternate	Dave Campbell
4.	Emergency Response Director	Hank Ruppel
5.	Emergency Response Deputy Director	Ron Lehr
6.	Emergency News Communications	Mike Mangan

Note: Unless indicated otherwise, all phone numbers are area code 412. Where an area code other than 412 is shown, it applies to the office, home, and HHL numbers

2) GAI

(Normal Working Hours)

_____ _____

OFF-SITE EMERGENCY SERVICES

AGENCY/PERSONNEL	PHONE	NAME OF PERSON NOTIFIED	TIME
E. Fire Services			
1) Fairfield County Fire Services		_____	____
Give the following information:			
This is the Virgil C. Summer Nuclear Station.			
This is a Drill ____ This is not a Drill _____			
We request fire fighting assistance at the Summer Nuclear Station. The fire truck must enter via the main gate, using (denote route to be taken)			
F. Local Law Enforcement (off-normal hours)	or	_____	____

G. National Weather Service (Backup to Load Dispatcher for weather information).

1) Columbia -

2) Greer -

CALLER'S SIGNATURE _____ DATE _____

FOLLOWUP NOTIFICATION

ALERT

AGENCY/PERSONNEL	NORMAL	EASY ACCESS	NAME OF PERSON NOTIFIED	TIME
1.* S.C. Dept of Health & Environmental Control, Bureau of Radiological Health			_____	____

Notifications complete: _____ _____
Caller's Signature Date

*Dedicated Line Also Exists.

FOLLOWUP NOTIFICATION

SITE EMERGENCY

AGENCY/PERSONNEL	NORMAL		EASY ACCESS	SITE	CALLERS SIGNATURE	NAME OF PERSON NOTIFIED	TIME
1.* S.C. Dept of Health & Environmental Control, Bureau of Radiological Health		or		N/A	_____	_____	____

Notifications complete: _____ _____
Caller's Signature Date

NOTE: When the State Forward EOC is established the State BRH will move their operation to the State Forward EOC and communication will be via the State Forward E.O.C. Dedicated Phone Line.

*Dedicated Line Also Exists.

FOLLOWUP NOTIFICATION

NERAL EMERGENCY

AGENCY/PERSONNEL	NORMAL	EASY ACCESS	NAME OF PERSON NOTIFIED	TIME
1.* S.C. Dept of Health & Environmental Control, Bureau of Radiological Health			_____	____

The following notifications shall be made by the TSC or EOF Communicator until such time that the S.C. State forward EOC is staffed.

2.* Emergency Preparedness Division Adjutant General's Office			_____	____
3.* Fairfield County			_____	____
			_____	____
* Newberry County			_____	____
5.* Richland County			_____	____
6.* Lexington County			_____	____

Notifications complete: _____ _____
Caller's Signature Date

NOTE: When the State Forward EOC is established the State BRH will move their operation to the State Forward EOC and communication will be via the State Forward E.O.C. Dedicated Phone Line.

*Dedicated Line Also Exists.

TSC/OSC EMERGENCY TELEPHONE LIST

Tecnnical Support Center

Nuclear Regulatory Commission

Nuclear Regulatory Commission

Nuclear Regulatory Commission

TSC Display Room

TSC Display Room

TSC Display Room

Dose Assessment Area

Technical Support Engineers

Technical Support Engineers

Technical Support Engineers

Technical Support Center Communicators

Telecopier Phone to EOF

Radiation Monitoring Teams

Assistant Manager, Support Services-Vince Albert

Radiological Assessment Supervisor-L.A. Blue

Assistant Manager, Technical Support-B. Croley

Security Supervisors-J. Sefick/Capt. Tuttle

Assistant Manager, Maintenance Services-M. Quinton

Assistant Manager, Operations-L. Storz

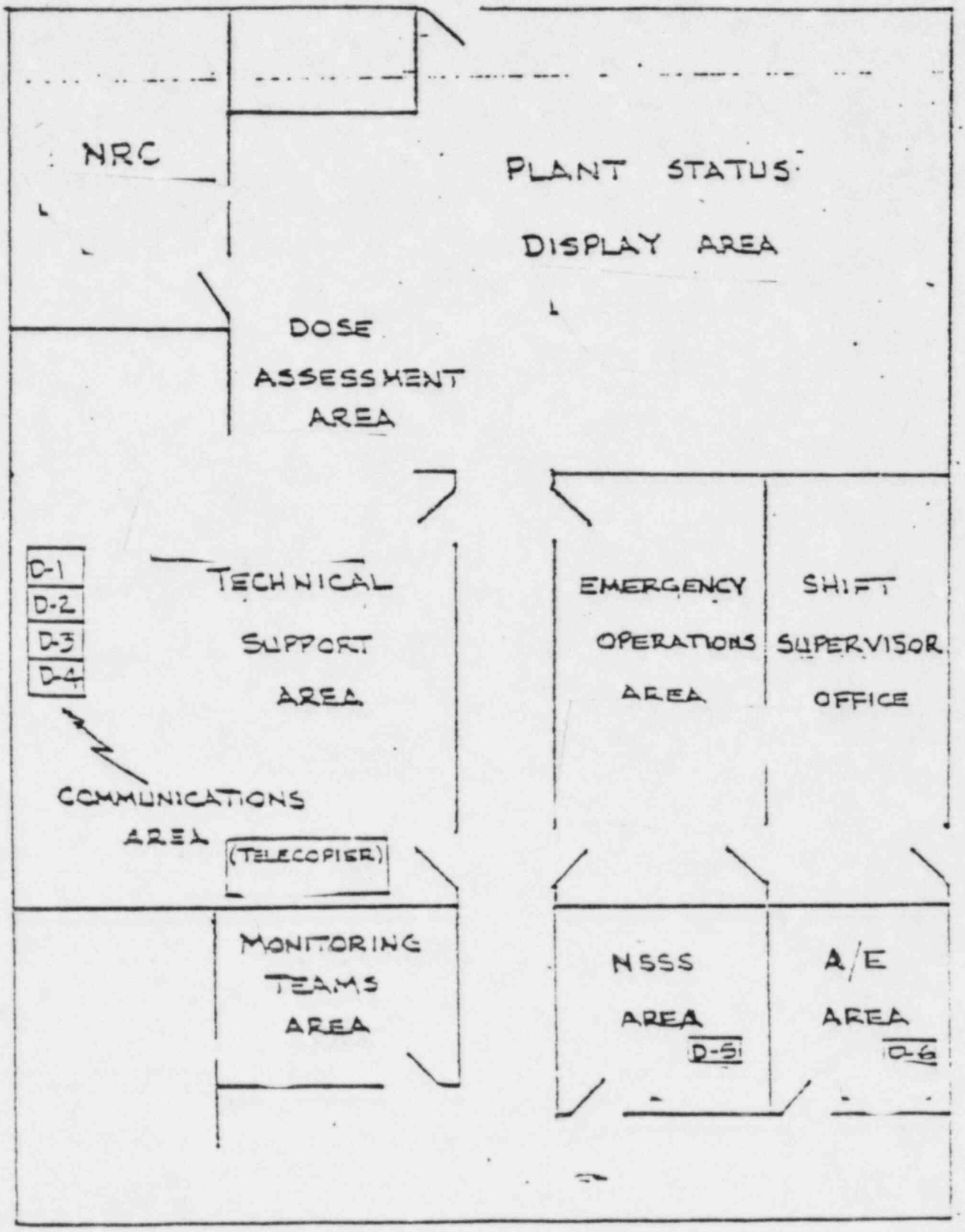
Westinghouse

GAI

OSC

OSC

TECHNICAL SUPPORT CENTER



OFF-SITE EMERGENCY TELEPHONE LIST

Emergency Operations Facility

EOF Communicator Area

EOF-NRC

EOF-NRC

EOF-NRC

EOF-NRC

EOF-Technical Support Coordinator-M.B. Whitaker

EOF-Security Coordinator-J. Harrison

EOF-Media Coordinator-R. McSwain

EOF-General Services Coordinator-J. Bailey

EOF-Construction/Repair Coordinator-J. Woods

EOF-Offsite Radiological Monitoring Coordinator-Bill Baehr

EOF-Technical Support Engineers

EOF-Technical Support Engineers

EOF-Technical Support Engineers

EOF-Technical Support Engineers

OFF-SITE EMERGENCY TELEPHONE LIST

Emergency Operations Facility

EOF-Telecopier between TSC/EOF

EOF-General Services Support Area

EOF-General Services Support Area

EOF-General Services Support Area

EOF-General Services Support Area

EOF-General Services Telecopier

EOF-Security Office

EOF-Security Office

EOF-Construction/Repair Support Areas

EOF-Construction/Repair Support Areas

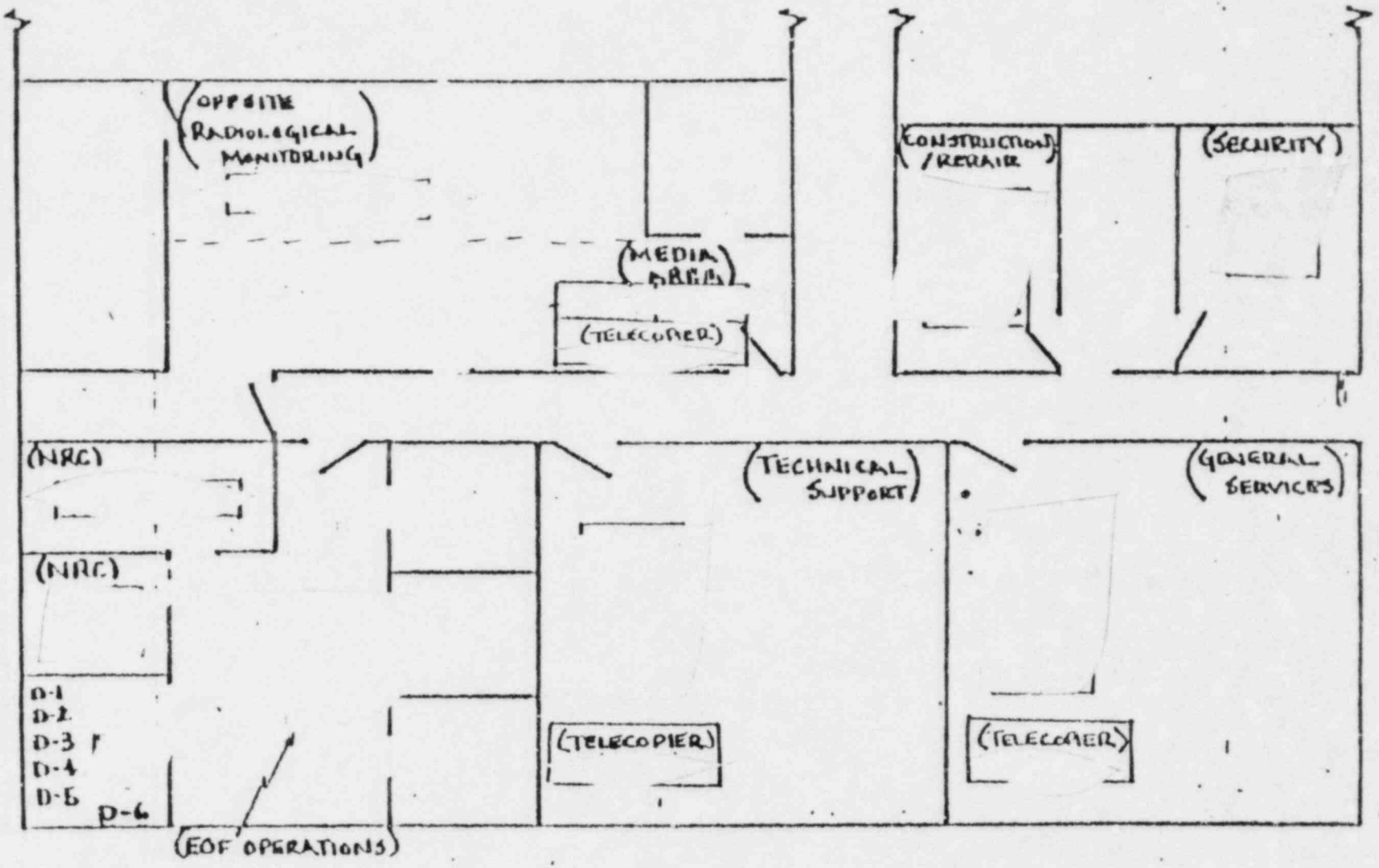
EOF-Construction/Repair Support Areas

EOF-Media Coordination Support Area

EOF-Telecopier for Media Area

EOF-Offsite Radiological Monitoring Area

EOF-Offsite Radiological Monitoring Area



INTERIM EMERGENCY OPERATIONS FACILITY

SOUTH CAROLINA ELECTRIC AND GAS COMPANY

VIRGIL C. SUMMER NUCLEAR STATION

NUCLEAR OPERATIONS

NUCLEAR OPERATIONS

COPY No. 157C

EMERGENCY PLAN PROCEDURE

EPP-002

COMMUNICATION AND NOTIFICATION

REVISION 3

SEPTEMBER 3, 1982

NON-SAFETY RELATED

Reviewed by:

Mark Counts — 9/3/82
ORIGINATOR (of this revision) — Date

V. R. Albert — 9/7/82
DISCIPLINE SUPERVISOR — Date

Approved:

O S Bradham — 9/7/82
PLANT MANAGER — Date

Date Issued: SEP 10 1982

LIST OF EFFECTIVE PAGES

PAGES	REVISION
i	3
ii	3
iii	3
1	3
2	3
3	3
4	3
5	3

ATTACHMENTS

Attachment I, Pages 1 & 2	3
Attachment II, Pages 1 & 2	3
Attachment IIIA	3
Attachment IIIB	3
Attachment IIIC	3
Attachment IIID, Pages 1 & 2	3
Attachment IVA, Pages 1 - 4	3
Attachment IVB, Pages 1 - 3	3
Attachment IVC, Pages 1 - 5	3
Attachment V, Pages 1 - 3	3
Attachment VIA	3
Attachment VIB	3
Attachment VIC	3
Attachment VII, Pages 1 & 2	3
Attachment VIII, Pages 1 - 3	3

TABLE OF CONTENTS

TABLE OF CONTENTS (Continued)

1.0 PURPOSE

1.1 The purpose of this procedure is to delineate the specific notification requirements for each class of emergency and to provide a method for affecting these notifications.

2.0 REFERENCES

2.1 "Virgil C. Summer Nuclear Station Radiological Emergency Plan"

2.2 NUREG-0654, "Criteria for Preparation and Evaluation of Radiological Emergency Response Plans and Preparedness in Support of Nuclear Power Plants"

2.3 EPP-001, "Activiation and Implementation of the Emergency Plan"

2.4 Voluntary Assistance Agreement (by and among Electric Utilities involved in Nuclear Generation) - Article 9 - Transportation of Nuclear Materials; and Emergency Resources Manual, "INPO" Institute of Nuclear Power Operations.

2.5 Policy Memorandum No. 25 Issuance, Control, and Usage of Radio Pagers.

3.0 DEFINITIONS AND ABBREVIATIONS

3.1 Definitions

3.1.1 Initial Notification - The transfer of information to designated organization(s)/person(s) following change of plant status from normal operations directly into any of the four emergency classifications or upon escalation to a higher emergency classification. This transfer of information is required to begin within fifteen minutes after declaration of the applicable emergency classification.

EXCEPTION: (1) The NRC, Bethesda, Maryland office and the Site Resident Inspector are to be notified within 1 hour of declaration of the event in accordance with Attachment IIA. 2) The American Nuclear Insurers (ANI) is to be notified within eight (8) hours of declaration of an Alert, Site Emergency, or General Emergency in accordance with Attachment IIB.

3.1.2 Follow-up Notification - The transfer of information to designated organization(s)/person(s) updating the intitial notification. This transfer of information is required at 15 minute intervals following completion of initial or previous follow-up notifications.

EXCEPTIONS: Following initial notification of the NRC, an open communication line will be established and maintained to provide continuous updating to the NRC. Follow-up notifications are not required for the Unusual Event classification.

3.2 Abbreviations

3.2.1 TSC - Technical Support Center

3.2.2 OSC - Operations Support Center

3.2.3 EOF - Emergency Operations Facility

3.2.4 ED - Emergency Director

3.2.5 IED-Interim Emergency Director

3.2.6 E.O.C-Emergency Operations Center

4.0 PREREQUISITES and CONDITIONS

4.1 Unusual or abnormal plant or site conditions exist which necessitate implementation of the Emergency Plan and the applicable Emergency Classification has been declared.

5.0 PROCEDURE

5.1 Initial Notifications

5.1.1 Upon declaration of the appropriate emergency classification, the ED/IED will direct the communicator to implement the appropriate notifications.

NOTE: Refer to EPP-016 Attachment II for personnel, by title, who should be the designated communicator.

5.1.2 The ED/IED will assure that the required information is available to effect prompt notification.

5.1.3 The communicator will, upon direction from the ED/IED, implement the initial notifications. The information in Attachment I is to be given to the personnel/agencies as listed in Attachments III A, III B, III C, or III D depending upon the classification of emergency.

NOTE: Attachments III, IV and V list alternates for various personnel. These notifications attempts are to be made in numerical sequence as indicated and will be considered complete upon successful notification of one of the listed.

5.2 Notifications for Change in Emergency Classification

NOTE: If classification change is made in the middle of a notifications sequence the communicator will terminate that notification sequence, and initiate the new notification for current status.

5.2.1 Upon escalation to a higher emergency classification, the communicator will, upon direction from the ED, implement notifications per the section of Attachment III which corresponds to the higher emergency classification, and Attachments IVA and IVB.

5.2.2 When the emergency classification is downgraded, the communicator will, upon direction from the ED, implement notifications per the section of Attachment VI which corresponds to the classification which is being changed.

5.3 Off-site Emergency Services

5.3.1 Upon direction from the ED/IED, the communicator will implement the requested notification(s) per Attachment V.

5.3.2 Upon direction from the ED/IED, the communicator will contact other utilities for assistance using the "INPO" Resource Guide, Reference 2.4.

NOTE: The Resource Guide is available in the TSC and EOF.

5.4 Follow-up Notifications

5.4.1 Follow-up notifications are required for all emergency classifications except Unusual Event.

5.4.2 The communicator will implement follow-up notifications. (The information in Attachment I and II is to be given to the personnel/agencies as listed in Attachments VI A, VI B, or VI C depending upon the emergency classification.)

5.4.3 Follow-up notifications will be made by the site communicator(s) until the EOF is activated and assumes all off-site notification responsibilities. Thereafter, the site communicator will transmit applicable updated information to the EOF as it becomes available.

5.4.4 Follow-up notifications to the Emergency Preparedness Division and the counties shall be made by the TSC or EOF Communicator until such time that the S.C. State. Forward EOC is staffed and communications are established. When the S.C. Forward E.O.C. is activiated, all communications, between the plant and state and county agencies will go to the S.C. Forward E.O.C. via the dedicated phone line or established land line.

NOTE: All transfers of notification responsibilities shall be documented.

5.5 Vital Personnel Notification

5.5.1 The communicator will notify vital personnel as directed by the ED/IED per the Vital Personnel Telephone Listing available in the Control Room and the TSC or by radio pager as per Policy Memorandum No. 25.

5.6 TSC/OSC/EOF Communications

5.6.1 TSC-OSC - telephone list are provided in Attachment VII.

5.6.2 EOF - telephone list are provided in Attachment VIII.

WARNING MESSAGE: NUCLEAR FACILITY TO STATE/LOCAL GOVERNMENT

Part I

1. This is the Summer Nuclear Station.

2. My name is _____

3. This message (number _____):
   _____(a) Reports a real emergency.
   _____(b) Is an exercise message.

4. My telephone number/extension is: _____ or _____.

5. You may call back at the end of the message for verification.

6. The class of the emergency is:
   ____(a) Notification of Unusual Event
   ____(b) Alert
   ____(c) Site Emergency
   ____(d) General Emergency

7. This classification of emergency was declared at: _____(a.m./p.m.) on_____(date).

8. The intiating event causing the emergency classification is: _____
   _____
   _____

9. The emergency condition:
   _____ (a) Does not involve the release of radioactive materials from the plant.
   _____ (b) Involves the potential for a release, but no release is occurring.
   _____ (c) Involves a release of radioactive material.

10. We recommend the following protective action:
    _____(a) No protective action is recommended at this time.
    _____(b) People living in zones _____remain indoors with the doors and windows closed.

_____(c) People living in zones _____ evacuate their homes and businesses.
_____(d) Pregnant women and children in zones _____ remain indoors with the doors and windows closed.
_____(e) Pregnant women and children in zones _____ evacuate to the nearest reception center.
_____(f) Other recommendations:_____
_____

11. There will be:
    _____(a) A followup message
    _____(b) No further communications

12. I repeat, this message:
    _____(a) Reports an actual emergency
    _____(b) Is an exercise message

13. Are there any questions?

WARNING MESSAGE: NUCLEAR FACILITY TO STATE/LOCAL GOVERNMENT

Part II

1. The type of actual or projected release is:
   _____(a) Airborne
   _____(b) Waterborne
   _____(c) Surface spill
   _____(d) Other

2. The source and description of the release is:_____
   _____

3. _____(a) Release began/will begin at _____a.m./p.m.;
   time since reactor trip is _____hours.
   _____(b) The estimated duration of the release is hours.

4. Dose projection base data:

   Radiological release: _____ curies, or _____curies/sec.

   Windspeed: _____mph

   Wind direction: From _____°

   Stability class: _____(A,B,C,D,E,F, or G)

   Release height: _____Ft.

   Dose conversion factor:_____R/hr/Ci/m^3 (whole body)

   _____R/hr/Ci/m^3 (child thyroid)

   Precipitation: _____

   Temperature at the site: _____°F

5. Dose projections:

Dose Commitment

Distance	Whole Body Rem/hour	Child Thyroid Rem/hour of inhalation
Site boundary		
2 miles		
5 miles		
10 miles		

WARNING MESSAGE: NUCLEAR FACILITY TO STATE/LOCAL GOVERNMENT

Part II (cont.)

Projected Integrated Dose in Rem per Unit Time

Distance	Whole Body	Child Thyroid
Site Boundary		
2 miles		
5 miles		
10 miles		

6. Field measurement of dose rate or contamination (if available): _____

7. Emergency actions underway at the facility include: _____

8. Onsite support needed from offsite organizations: _____

9. Plant Status:
   (a) Reactor is: not tripped/tripped
   (b) Plant is at ___% power/hot shutdown/cold shutdown/ cooling down
   (c) Prognosis is: stable/improving/degrading/unknown.

10. I repeat, this message:

    _____(a) Reports an actual emergency.
    _____(b) Is an exercise message.

11. Do you have any questions?

INITIAL NOTIFICATION

UNUSUAL EVENT

AGENCY/PERSONNEL	PAGE NUMBER	NORMAL	EASY ACCESS	SITE	PERSON NOTIFIED	TIME
1. Management Duty Supervisors (per Duty Roster)						
1) Ollie Bradham					_____	_____
2) John Connelly					_____	_____
3) Lou Storz					_____	_____
4) Bob Croley					_____	_____
5) Mike Quinton					_____	_____
6) Vince Albert					_____	_____
2. *S.C. Dept. of Health & Environmental Control, Bureau of Radiological Health					_____	_____
3. *NRC	See Attachment IVA of EPP-002 for NRC Initial Notification					
4. Media Coord. (Mgr., Nuclear Info.)						
		Home		Office		
1) Becky McSwain					_____	_____
2) 1st Alt. - Buddy Clark					_____	_____
5. Site Services Manager-Bob Stough					_____	_____
6. Institute of Nuclear Power Operations (INPO)					_____	_____
7. American Nuclear Insurers (ANI)	See Attachment IVB of EPP-002 for ANI Notification					

NOTIFICATIONS COMPLETE: _____ _____
CALLER'S SIGNATURE DATE

*Dedicated Line Also Exists.

INITIAL NOTIFICATION

ALERT

AGENCY/PERSONNEL	PAGE NUMBER	NORMAL	EASY ACCESS	SITE	PERSON NOTIFIED	TIME
1. Management Duty Supervisors (per Duty Roster)						
1) Ollie Bradham					_____	_____
2) John Connelly					_____	_____
3) Lou Storz					_____	_____
4) Bob Croley					_____	_____
5) Mike Quinton					_____	_____
6) Vince Albert					_____	_____

NOTE: To contact additional Emergency Response Personnel refer to Policy Memorandum No. 25.

2. *S.C. Dept. of Health & Environmental Control, Bureau of Radiological Health				N/A	_____	_____
3. *NRC	See Attachment IVA of EPP-002 for NRC Initial Notification					
4. Media Coord. (Mgr., Nuclear Info.)		Home		Office		
1) Becky McSwain					_____	_____
2) 1st Alt. - Buddy Clark					_____	_____
5. Site Services Manager-Bob Stough					_____	_____
6. Institute of Nuclear Power Operations (INPO)				N/A	_____	_____
7. Fairfield Pumped Storage Facility				N/A	_____	_____
8. American Nuclear Insurers (ANI)	See Attachment IVB of EPP-002 for ANI Notification					

NOTIFICATIONS COMPLETE: _____ _____
CALLER'S SIGNATURE DATE

*Dedicated Line Also Exists.

INITIAL NOTIFICATION

"SITE EMERGENCY"

AGENCY/PERSONNEL	PAGE NUMBER	NORMAL	EASY ACCESS	SITE	NAME OF PERSON NOTIFIED	TIME
1. Management Duty Supervisors (per Duty Roster)						
1) Ollie Bradham					_____	____
2) John Connelly					_____	____
3) Lou Storz					_____	____
4) Bob Croley					_____	____
5) Mike Quinton					_____	____
6) Vince Albert					_____	____

NOTE: To contact additional Emergency Response Personnel, refer to Policy Memorandum No. 25.

2. *S.C. Dept. of Health & Environmental Control, Bureau of Radiological Health				N/A	_____	____
3. *NRC	See Attachment IVA of EPP-002 for NRC Initial Notification Requirements					
4. Media Coord. (Mgr., Nuclear Info.)	Home		Office			
1) Becky McSwain	703				_____	____
2) 1st Alt. - Buddy Clark					_____	____
5. Site Services Manager - Bob Stough					_____	____
6. Institute of Nuclear Power Operations (INPO)				N/A	_____	____
7. Fairfield Pumped Storage Facility				N/A	_____	____
8. American Nuclear Insurers	See Attachment IVB of EPP-002 for ANI Notification.					

NOTIFICATIONS COMPLETE: _____ _____
Caller's Signature Date

*Dedicated Line Also Exists.

INITIAL NOTIFICATION

"GENERAL EMERGENCY"

AGENCY/PERSONNEL	PAGE NUMBER	NORMAL	EASY ACCESS	SITE	NAME OF PERSON NOTIFIED	TIME
1. Management Duty Supervisors (per Duty Roster)						
1) Ollie Bradham					_____	____
2) John Connelly					_____	____
3) Lou Storz					_____	____
4) Bob Croley					_____	____
5) Mike Quinton					_____	____
6) Vince Albert					_____	____

NOTE: To contact additional Emergency Response Personnel, refer to Policy Memorandum No. 25.

2. *S.C. Dept. of Health & Environmental Control, Bureau of Radiological Health				N/A	_____	____
3. *NRC	See Attachment IVA of EPP-002 for NRC Initial Notification Requirements					
4. Media Coord. (Mgr., Nuclear Info.)		Home		Office		
1) Becky McSwain					_____	____
2) 1st Alt. - Buddy Clark					_____	____
5. Site Services Manager - Bob Stough					_____	____
6. Fairfield Pumped Storage Facility				N/A	_____	____
7. *Emergency Preparedness Division- Adjutant General's Office (State EOC)				N/A	_____	____

*Dedicated Line Also Exists.

INITIAL NOTIFICATION

"GENERAL EMERGENCY"

AGENCY/PERSONNEL	NORMAL	EASY ACCESS	SITE	NAME OF PERSON NOTIFIED	TIME
8. *Fairfield County			N/A N/A	_____ _____	____ ____
9..*Newberry County			N/A	_____	____
10. *Richland County			N/A	_____	____
11. *Lexington County			N/A	_____	____
12. Institute of Nuclear Power Operations (INPO)			N/A	_____	____
13. American Nuclear Insurers	See Attachment IVB of EPP-002 for ANI Notification.				

NOTIFICATIONS COMPLETE: _____ _____
Caller's Signature Dte

*Dedicated Line Also Exists.

NRC ONE HOUR NOTIFICATION

The NRC shall be notified within 1 hour of Declaration of an Emergency in accordance with Pages 2 through 4 of this attachment.

	NORMAL	EASY ACCESS	PERSON CONTACTED
1. NRC - Bethesda, Md.	Dedicated Phone	N/A	_____
a) Commercial telephone system to NRC Operations Center (Via Bethesda Central Office).			_____
b) NRC-Atlanta, Ga.			_____
c) Commercial026			
6) Vince Albert			_____
2. *S.C. Dept. of Health & Environmental Control, Bureau of Radiological Health		N/A	_____
3. *NRC Central Office).	See Attachment IIA	to NRC Operator	

2. NRC - Resident Inspector ____ Yes ____ No

Jack Skolds (N.O. Ext) Home Phone NO.

or Beeper No.

_____ CALLERS SIGNATURE _____ DATE _____ TIME

NRC ONE HOUR NOTIFICATION

A. Identification:

This is the Summer Nuclear Plant.

My name is _____.

Our phone number is _____.

B. Event Classification:

We are now in a(n) _____
EVENT CLASSIFICATION

which was declared at _____ .
TIME

C. DESCRIPTION:

What Happened: _____

Cause: _____

Consequences: _____

Actions: _____

Current Status: _____

D. LICENSEE NOTIFICATIONS: (What notifications have been made.)

STATE(S) _____ LICENSEE MANAGEMENT _____
LOCAL _____ OTHER _____
NRC RESIDENT _____ OTHER _____

E. PRESS RELEASE: Has a press release been made or planned? Yes__ No__

NRC ONE HOUR NOTIFICATION
Part II-Complete for all ALERT, SITE AREA, and GENERAL emergencies

Licensee Actions:

Taken _____
Planned _____
Property Damage _____

Radioactivity Released (or Increased Release):

Liquid/Gas? _____ Location/Source of Release _____ Elevation _____
Release Rate _____ Duration _____ Stopped? _____
Release Monitored? _____ Amount of Release _____
% Tech. Specs. _____

Increased Radiation Levels in a Plant: Location(s) _____
Radiation level(s) _____ Areas Evacuated _____
Maximum site boundary dose rates _____ Location _____
Integrated dose _____ Location _____

Meteorology:
Wind Direction from _____
Wind Speed _____ (Meter/sec or miles/hr)
T _____ (°C or °F) Temperature _____ (°C or °F)
Stability Class A B C D E F G
Raining (Yes/No) _____

Projected Peak:

	Dose Rates	Integrated Dose
2 mi	_____ (WB/I)	_____ (WB/I)
5 mi	_____ (WB/I)	_____ (WB/I)
10 mi	_____ (WB/I)	_____ (WB/I)
Sectors	_____ (WB/I)	_____ (WB/I)

Contamination (Surface): inplant _____ onsite _____ offsite _____
_____

Reactor Operations:
Reactor System Status Power Level _____
Pressure _____ Temp _____ Flow (pumps on) _____
Cooling Mode _____ ECCS Operating/Operable _____

Containment Status
Containment Isolated? _____ Containment Temp _____
Containment Press _____ Containment Radiation _____ R/hr.
Leak Rate _____ R/hr.

Reactivity Control
Control Rods Inserted _____ Status of Emer. Boration System _____

NUCLEAR OPERATIONS

COPY No. 157C

INCIDENT NOTIFICATION INFORMATION
Part II

Steam Plant Status:

S/G Levels _____ Equip. Failures _____

Feedwater Source/Flow _____ S/G Isolated? _____

Electrical Dist. Status:

Normal Offsite Power Available? _____
Major Busses/Loads Lost _____
D/G Running? _____ Loaded? _____

Security/Safeguards:
Bomb Threat: Search Conducted? _____
Search Results _____ Site Evacuated? _____

Extortion: Source (Phone, letter, etc.)?
Location of Letter _____

Intrusion: Insider? _____ Outsider? _____
Furthest Point of intrusion _____
Fire arms related? _____ Stolen/Missing Material? _____

Demonstration: Size of Group _____ Demands _____
Violence? _____ Fire arms related? _____

Sabotage/Vandalism: Radiological? _____ Arson Involved? _____
Stolen/Missing Material? _____

ANI EIGHT HOUR NOTIFICATION

ANI is to be notified within eight (8) hours of the declaration of an Alert, Site Emergency, or General Emgergency in accordance with pages 2 and 3 of this attachment.

American Nuclear Insurers (ANI) Phone No.
Easy Access

Person Contacted _____ Time _____ Date _____

Callers Signature _____

ANI NOTIFICATION

(1) This is _____
(Name) (Title)

(2a) _____ This is a drill

(2b) _____ This is NOT a drill

(3) I am notifying you of an accident at the V. C. Summer Nuclear Station which occurred at: _____
(Date) (Time)

(4) This emergency is classified as a _____.

(5) Description of event: _____
_____

(6) Radiation Release _____ Yes _____ No.
(If yes, complete 6a through 6j)

(6a) Type of Actual Release or Type of Projected Release: _____

(6b) Estimation of Duration of Public Impact: _____

(6c) Release Rate: (6a) Noble Gas _____ (6b) _____
(6c) Release Height _____

(6d) Meteorological Conditions: (6a) Wind Speed (mph) _____
(6b) Wind Direction (blowing to) _____
(6c) Stability Class _____
(6d) Precipitation _____

		Site Boundary	2 Miles	5 Miles	10 Miles
(6e)	Projected Dose At:				
(6f)	Dose Rate--Whole Body	(10A) _____	(10B) ____	(10C) ____	(10D) ____
(6g)	Integrate Whole Body Dose (___ hour projection)	(11A) _____	(11B) ____	(11C) ____	(11D) ____
(6h)	Dose Rate--Thyroid	(12A) _____	(12B) ____	(12C) ____	(12D) ____
(6i)	Integrated Infant Thyroid (___ hour projection)	(13A) _____	(13B) ____	(13C) ____	(13D) ____
(6j)	Sectors Affected	(14A) _____	(14B) ____	(14C) ____	(14D) ____

ANI NOTIFICATION

(7) Injured Personnel _____ Yes _____ No.
(if yes, complete 7a through 7d)

(7a) Number of injured personnel _____

(7b) ____ Is ____ Is Not Radioactively Contaminated

(7c) Injury Description: _____
_____

(7d) Requires Transportation to off-site Medical Facility
_____ Yes ____ No.

(8) Off-Site Emergency Assistance/Actions Requested
____ Yes _____ No.

(If yes, complete 8a through 8c)

	Yes/No		Reason
(8a)	_____	Law Enforcement	_____
(8b)	_____	Fire Departments	_____
(8c)	_____	Hospital Facilities	_____

(9) Public evacuation required Yes_____ No_____
_____ Not at this time

(9a) If "Yes" or "Not at this time", affected sectors_____
_____
_____

OFF-SITE EMERGENCY SERVICES

AGENCY/PERSONNEL	PHONE	NAME OF PERSON NOTIFIED	TIME
A. Company Physicians (Pinner Clinic)			
1) Carrol A. Pinner III M.D. - Primary		(24 hrs.)	
2) Carrol A. Pinner Jr. M.D. - 1st Alternate		_____	_____
3) Harriet A. Pinner, M.D. - 2nd Alternate		_____	_____
B. Hospital Facilities			
1) Richland Memorial Hospital		_____	_____
Give the following information:			
This is the Virgil C. Summer Nuclear Station.			
This is a Drill _____ This is not a Drill _____			
We have _____ contaminated/non-contaminated injured person being transported to your facility.			
2) Radiation Emergency Assistance			
Center Training Site (Reacts)		_____	_____
24 hour-	-Beeper		
C. Ambulance Service			
1a) Emergency Medical Services of Fairfield County	or	_____	_____
1b) Alert MAST for standby transportation.	or	_____	_____
2) U.S. Army MAST Operations	or	_____	_____

NOTE: Alert Security of Emergency Vehicle arrival as soon as request(s) for Off-Site Emergency Services are completed.

Ext.	_____	_____
or	_____	_____

OFF-SITE EMERGENCY SERVICES

AGENCY/PERSONNEL	PHONE	NAME OF PERSON NOTIFIED	TIME

Give the following info mation for items 1a and 2 above.

This is a Drill ____ This is not a Drill ____

We have _____ contaminated/non-contaminated injured person(s) requiring transportation to Richland Memorial Hospital. (The ambulance must enter the site via the main gate, using (denote route to be taken) or the helicopter should land at the primary landing pad (denote route to be taken)

D. NSSS Supplier/A.E.

	Title	Name	Office	Home	HHL
1.	Site Service Manager	Bob Stough			

Notes: (1) The area code of the above phone numbers is
(2) The phone beeper number is (

2.	Operating Plant Service Manager	John Miller			
	1st Alternate	Tim Sullivan			
	2nd Alternate	John Gallik			
3.	Service Response Manager	Joe Leblang			
	1st Alternate	John Miller			
	2nd Alternate	Dave Campbell			
4.	Emergency Response Director	Hank Ruppel			
5.	Emergency Response Deputy Director	Ron Lehr			
6.	Emergency News Communications	Mike Mangan			

Note: Unless indicated otherwise, all phone numbers are area code 412. Where an area code other than 412 is shown, it applies to the office, home, and HHL numbers

2) GAI

(Normal Working Hours)

_____ _____

OFF-SITE EMERGENCY SERVICES

AGENCY/PERSONNEL	PHONE	NAME OF PERSON NOTIFIED	TIME
E. Fire Services			
1) Fairfield County Fire Services			
Give the following information:		_____	_____
This is the Virgil C. Summer Nuclear Station.			
This is a Drill ____ This is not a Drill _____			
We request fire fighting assistance at the Summer Nuclear Station. The fire truck must enter via the main gate, using (denote route to be taken)			
F. Local Law Enforcement (off-normal hours)	or	_____	_____
G. National Weather Service (Backup to Load Dispatcher for weather information).			
1) Columbia -			
2) Greer -			

CALLER'S SIGNATURE _____ DATE _____

FOLLOWUP NOTIFICATION

ALERT

AGENCY/PERSONNEL	NORMAL	EASY ACCESS	NAME OF PERSON NOTIFIED	TIME
1.* S.C. Dept of Health & Environmental Control, Bureau of Radiological Health			_____	____

Notifications complete: _____ _____
Caller's Signature Date

*Dedicated Line Also Exists.

FOLLOWUP NOTIFICATION

SITE EMERGENCY

AGENCY/PERSONNEL	NORMAL	EASY ACCESS	SITE	CALLERS SIGNATURE	NAME OF PERSON NOTIFIED	TIME
1.* S.C. Dept of Health & Environmental Control, Bureau of Radiological Health			N/A	_____	_____	____

Notifications complete: _____ _____
Caller's Signature Date

NOTE: When the State Forward EOC is established the State BRH will move their operation to the State Forward EOC and communication will be via the State Forward E.O.C. Dedicated Phone Line.

*Dedicated Line Also Exists.

FOLLOWUP NOTIFICATION

GENERAL EMERGENCY

AGENCY/PERSONNEL	NORMAL	EASY ACCESS	NAME OF PERSON NOTIFIED	TIME
1.* S.C. Dept of Health & Environmental Control, Bureau of Radiological Health			_____	____

The following notifications shall be made by the TSC or EOF Communicator until such time that the S.C. State forward EOC is staffed.

2.* Emergency Preparedness Division Adjutant General's Office			_____	____
3.* Fairfield County			_____	____
			_____	____
4.* Newberry County			_____	____
5.* Richland County			_____	____
6.* Lexington County			_____	____

Notifications complete: _____ _____
Caller's Signature Date

NOTE: When the State Forward EOC is established the State BRH will move their operation to the State Forward EOC and communication will be via the State Forward E.O.C. Dedicated Phone Line.

*Dedicated Line Also Exists.

TSC/OSC EMERGENCY TELEPHONE LIST

Technical Support Center

Nuclear Regulatory Commission

Nuclear Regulatory Commission

Nuclear Regulatory Commission

TSC Display Room

TSC Display Room

TSC Display Room

Dose Assessment Area

Technical Support Engineers

Technical Support Engineers

Technical Support Engineers

Technical Support Center Communicators

Telecopier Phone to EOF

Radiation Monitoring Teams

Assistant Manager, Support Services-Vince Albert

Radiological Assessment Supervisor-L.A. Blue

Assistant Manager, Technical Support-B. Croley

Security Supervisors-J. Sefick/Capt. Tuttle

Assistant Manager, Maintenance Services-M. Quinton

Assistant Manager, Operations-L. Storz

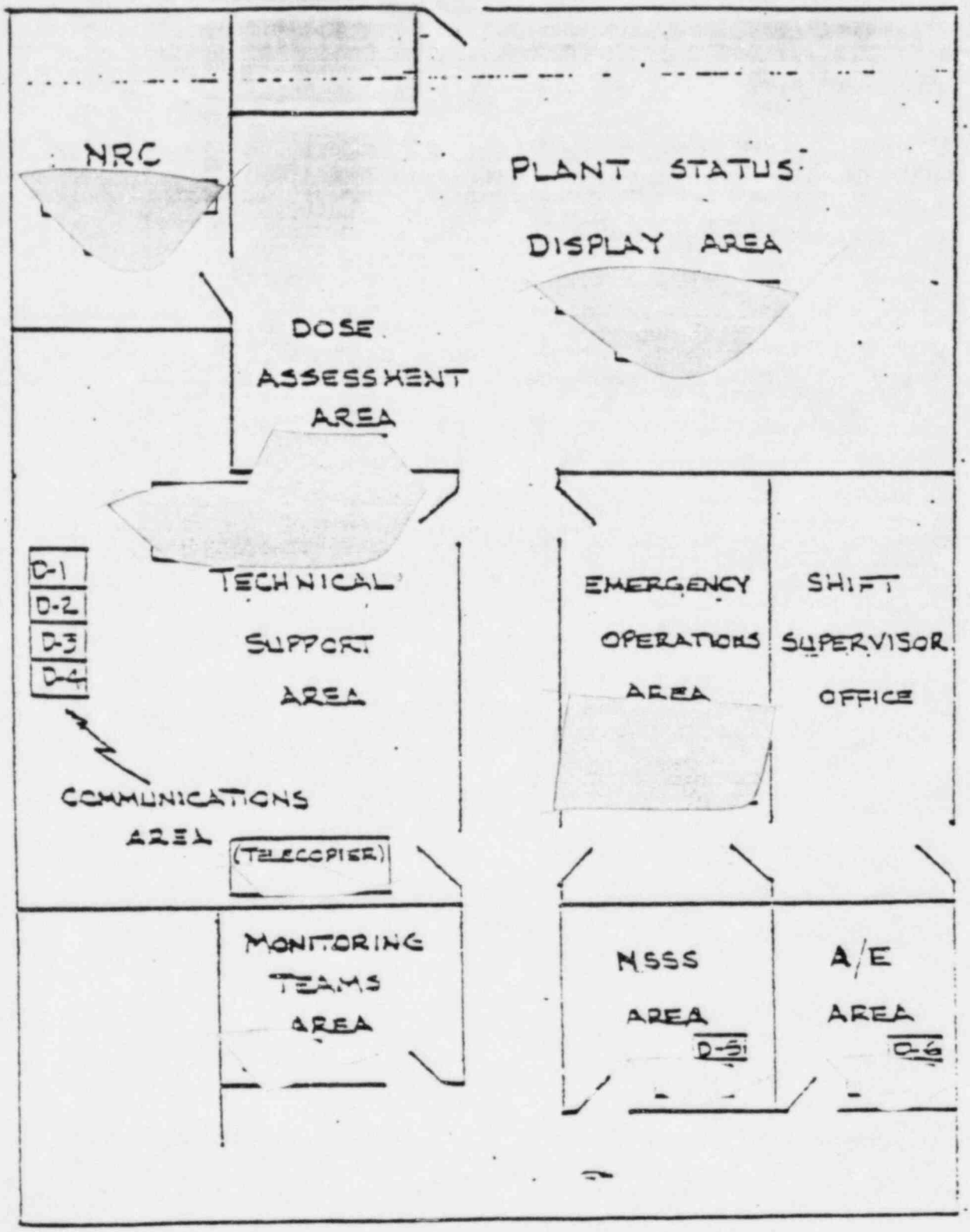
Westinghouse

GAI

OSC

OSC

TECHNICAL SUPPORT CENTER



OFF-SITE EMERGENCY TELEPHONE LIST

Emergency Operations Facility

EOF Communicator Area

EOF-NRC

EOF-NRC

EOF-NRC

EOF-NRC

EOF-Technical Support Coordinator-M.B. Whitaker

EOF-Security Coordinator-J. Harrison

EOF-Media Coordinator-R. McSwain

EOF-General Services Coordinator-J. Bailey

EOF-Construction/Repair Coordinator-J. Woods

EOF-Offsite Radiological Monitoring Coordinator-Bill Baehr

EOF-Technical Support Engineers

EOF-Technical Support Engineers

EOF-Technical Support Engineers

EOF-Technical Support Engineers

OFF-SITE EMERGENCY TELEPHONE LIST

Emergency Operations Facility

EOF-Telecopier between TSC/EOF

EOF-General Services Support Area

EOF-General Services Support Area

EOF-General Services Support Area

EOF-General Services Support Area

EOF-General Services Telecopier

EOF-Security Office

EOF-Security Office

EOF-Construction/Repair Support Areas

EOF-Construction/Repair Support Areas

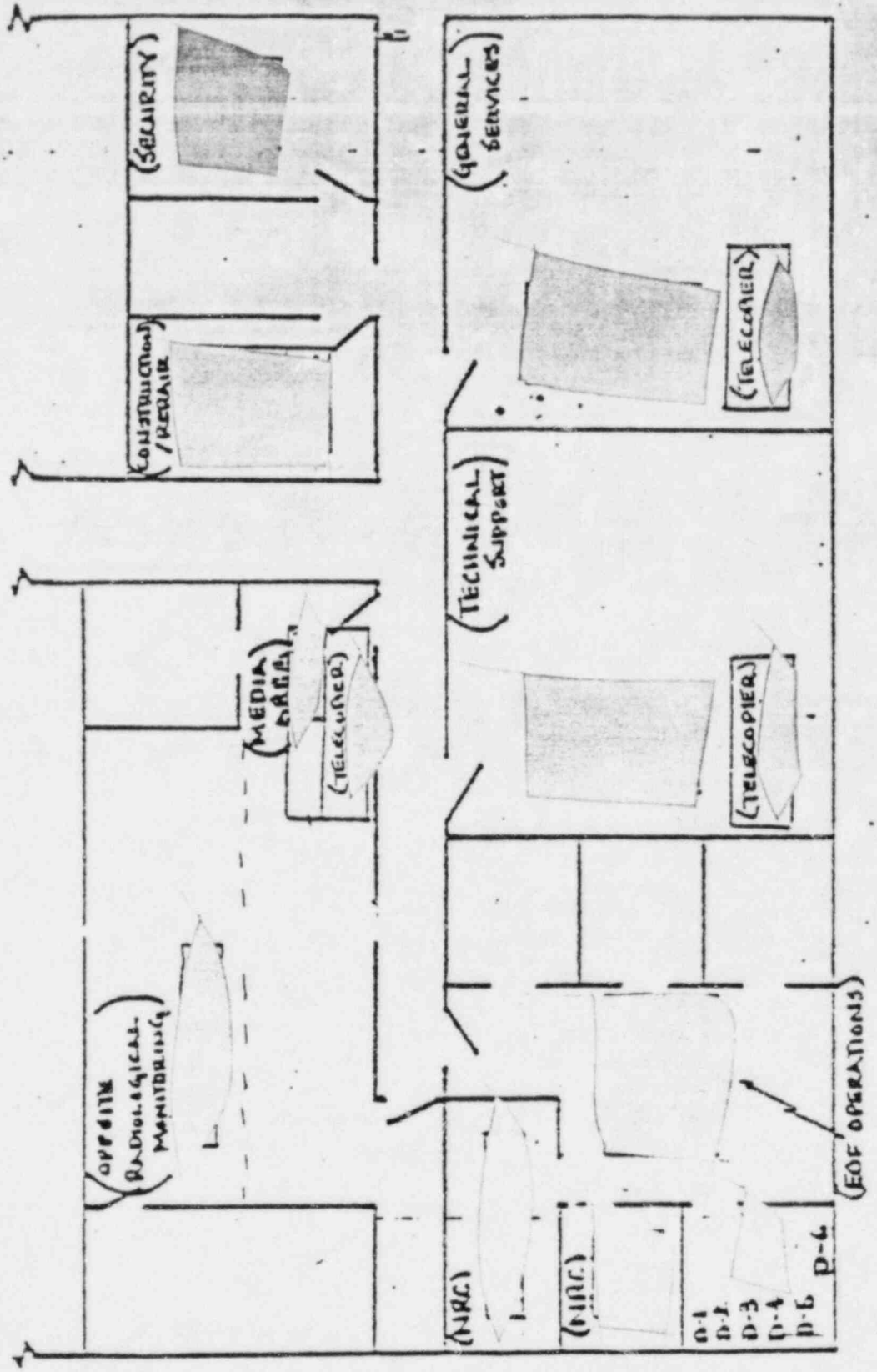
EOF-Construction/Repair Support Areas

EOF-Media Coordination Support Area

EOF-Telecopier for Media Area

EOF-Offsite Radiological Monitoring Area

EOF-Offsite Radiological Monitoring Area



INTERIM EMERGENCY OPERATIONS FACILITY

SOUTH CAROLINA ELECTRIC AND GAS COMPANY

VIRGIL C. SUMMER NUCLEAR STATION

NUCLEAR OPERATIONS

NUCLEAR OPERATIONS

COPY NO. 157-C

EMERGENCY PLAN PROCEDURE

EPP-003

IN-PLANT RADIOLOGICAL SURVEYING

REVISION 2

JUNE 10, 1982

NON-SAFETY RELATED

Reviewed by:

Mark Counts — 7/22/82
ORIGINATOR (of this revision) — Date

W. Frank Bacon — 7/13/82
QUALIFIED REVIEWER — Date

Approved:

J. G. Connelly — 7/26/82
PLANT MANAGER — Date

Date Issued: JUL 27 1982

Form AP-101-2, (1/80)

LIST OF EFFECTIVE PAGES

PAGE	REVISION
1	2
11	2
1	2
2	2
3	2
4	2
5	2
ATTACHMENTS	
ATTACHMENT I	2
ATTACHMENT II	2
ATTACHMENT III	2
ATTACHMENT IV	2
ATTACHMENT V	2

TABLE OF CONTENTS

1.0 PURPOSE

1.1 Provide guidance for the direction and implementation of Radiological Surveys inside the plant in the event of an emergency.

2.0 REFERENCES

2.1 "Virgil C. Summer Nuclear Station Radiation Emergency Plan".

2.2 HPP-151. "Use of Radiation Work Permit (RWP) and Standing Radiation Work Permit (SRWP)".

2.3 HPP-401, "Issue, Termination, and Use of RWP's".

2.4 HPP-153. "Administrative Exposure Limits".

2.5 EPP-019, "Emergency Equipment Checklist".

2.6 HPP-302, "Radiation and Contamination Survey Techniques"

2.7 HPP-810, "Sampling of Radioactive Gases and Liquids".

2.8 HPP-303, "Airborne Activity Sampling Techniques and Procedures".

3.0 CONDITIONS AND PREREQUISITES

3.1 In-Plant surveys will be directed from the TSC, Control Room, or HP Lab.

3.2 The In-Plant Monitoring Director should report to the TSC immediately after notification or upon Protected Area Evacuation.

3.3 In-Plant monitoring personnel should report to the H.P. Lab or as directed by the In-Plant Monitoring Director immediately upon notification or upon Protected Area Evacuation.

3.4 Standing RWP's are not applicable for entries into areas with severe or unknown exposure potential.

3.5 Entries into areas where a severe or unknown potential for radiation exposure exists should be limited to:

3.5.1 Operation of valves and components essential to the safe operation of the plant.

3.5.2 Repair activities essential to the safe operation of the plant.

3.5.3 Obtaining information necessary for proper evaluation of existing conditions.

3.5.4 Rescue attempts to preserve human life.

3.6 Areas with severe or suspected severe radiological conditions will be entered using the "buddy system", with a two man back-up team dressed for entry, (with the exception of donning SCBA), in stand-by.

NOTE: A minimum of one back-up team, in stand-by, is sufficient for multiple team entries. All personnel who are considered back-up (not actually performing an activity) should remain in an area of low radiation levels where practicle to keep their exposures ALARA.

3.7 Protective requirements for entering areas where high levels of radioactive contamination are suspected are as follows:

3.7.1 Minimum dress requirements:

Cloth overalls	2 pr. disposable plastic shoe covers
Cloth hood	1 pr. rubber boots
Plastic suit	2 pr. rubber gloves
Cloth gloves	Extremity Dosimetry (as applicable)
TLD and dosimeter	
High range dosimeter	

NOTE: Backup teams should not don the plastic suit until ready for entry into the affected area.

3.7.2 Additional protective requirements are as follows:

Condition	Protective Requirements
Noble gas concentrations suspected > 1×10^{-3} µci/ml	TLD placed under protective clothing. Eye protection if fuel damage has occurred or suspected.
Iodine concentrations suspected > 10 x MPC	SCBA Lapel Air Sampler
H^3 concentrations suspected > 10 x MPC	SCBA Plastic Suit
Particulate concentrations suspected > 10 x MPC	Particulate mask or SCBA (SCBA required if > 50 x MPC suspected). Lapel Air Sampler
Standing water > 1" suspected	Waders Extremity dosimetry

Protective requirements may be altered at the discretion of In-Plant Monitoring Director or the Radiological Assessment Supervisor as survey and sample data are available.

3.8 Continuously monitor radiation levels as surveys are performed. Avoid entrance into any area where the radiation levels exceed 3 R/hr, unless directed by the Plant Manager (Emergency Director). At least one person in each entry party should wear an alarming audible dosimeter, if high radiation levels are expected.

3.9 Maintain exposure ALARA - Coordinate all efforts with TSC to prevent unnecessary exposure.

3.10 AgZe cartridges must be installed in radiation monitors RM-A3 and RM-A4 as soon as possible. Other radiation monitors affected should have AgZe cartridges installed as time and conditions permit.

3.11 AgZe iodine filter cartridges should be used for air sampling when noble gas concentrations are suspected greater than 1×10^{-3} uci/ml.

3.12 Reference 2.6 should be referred to for survey techniques and considerations.

3.13 Reference 2.7 and 2.8 should be referred to for sampling techniques and considerations.

4.0 PROCEDURE

4.1 In-Plant Monitoring Director (guidelines)

4.1.1 Activate In-plant survey teams as needed.

4.1.2 Monitor readings from the radiation monitoring system and maintain display drawings and data logs current

4.1.3 Establish and maintain communications with in-plant surveyors.

4.1.4 Identify and coordinate survey and sampling locations and routes taken, with the Emergency Director, Radiological Assessment Supervisor, and in-plant surveyors, to minimize exposure.

NOTE: Attachment V of this procedure may be used to evaluate and determine access routes to vital areas under post-accident conditions.

4.1.5 Coordinate issuance of Radiation Work Permits as specified in References 2.2 and 2.3.

NOTE: If time does not permit the generation of RWP's to be used initially, ensure the following is entered in the logbook: date, time, work performed, location, originator/department, known radiological conditions, approvals and actual doses received after the job is completed.

4.2 In-Plant Surveyors

4.2.1 Don high range personal dosimeter.

4.2.2 Obtain radio(s). From H.P. Lab or TSC and establish communications with TSC.

NOTE: Communications to be kept open at all times to ensure surveyors are kept advised of changing conditions.

4.2.3 Evaluate the situation (using current data from TSC) and prepare equipment needed for entry. Don protective clothing and respiratory protection, as required.

NOTE: A teletector, or equivalent, should be used when entering areas of unknown exposure potential. If there is a potential for high level beta exposure, an instrument calibrated for beta measurements (eg. RO-2) shall be used. Check all instruments for response to radiation prior to use.

4.2.4 Prior to entry, determine amount of allowable exposure. Adjust setpoint on alarming Dosimeter accordingly.

4.2.5 Perform surveys, as directed from TSC, per HPP-302, "Radiation and Contamination Survey Techniques)

NOTE: TSC and surveyors should collaborate to determine appropriate post accident efforts (eg. type sampling, sample locations, routes, etc.), to ensure maximum data obtained with a minimum of manpower/man Rem expended.

4.2.6 Record sample data on Attachment I.

4.2.7 Relay survey results to TSC via radio, GAI-Tronics page or best means available.

4.2.8 Transport samples and smears to count room for analysis.

4.2.9 Perform analysis of air samples at the 412' elevation in the Control Building unless excessive background is present.

4.2.9.1 If excessive background is present, send samples to the Environmental Lab for Analysis. If results are needed quickly, analyze samples using RM-14 and HP-210 probe as instructed by Attachments II and III.

4.2.10 Retain and file all survey records in the TSC and/or submit the records through the Emergency Coordinator to the Documents Section for retention in the Plant History Files.

SURVEY RECORD

TYPE OF SURVEY

RADIOLOGICAL ☐ SMEAR ☐

DATE ________ TIME _______

SURVEY BY _______________

REVIEWED BY _____________

BUILDING ________________

REMARKS _________________

INST. TYPE _____ INST. _______

SERIAL NO. _____ EFFY. _______

DATE CALIB ____ BKG'D ___ ___

COUNTED BY ____

		RADIOLOGICAL Mr/hr				BETA		SMEAR		ALPHA
Item No	Equipment or Location	Distance	Gamma	Beta	Neutron	Total Counts	Count Time	Gross c/m	Net c/m	DPM 100cm^2

ATTACHMENT II

APPROXIMATION OF AIR SAMPLE IODINE AND PARTICULATE CONCENTRATION WITH RM-14 and HP-210

Instructions

1. Obtain contact reading (not 1") on front of iodine filter cartridge once it is placed in poly bag. Particulate filters cannot be placed in poly bag until after a count rate is obtained.

2. Determine volume of air sampled in liters or ft^3 as indicated on instrument.

3. Use graph (Attachment III) to approximate iodine concentration or perform computation at the bottom of the graph. Recommended allowable background is <100 cpm.

4. Use graph (Attachment IV) to approximate gross particulate concentration or perform computation at the bottom of the graph. Recommended allowable background is < 100 cpm.

Bases

1. Attachment III is derived using .37% detection efficiency with an I-131 standard and a 90% filter collection efficiency.

2. Attachment III does not compensate for noble gas interference. This method is limited for counting AgZe filters or charcoal filters used in the absence of noble gas atmospheres.

3. Attachment IV is derived using 10% detection efficiency and a 99% filter collection efficiency.

4. Calculations at the bottom of Attachment III and IV are based on the constants stated above in steps 1 and 3. The only variables are the actual volumes of the samples.

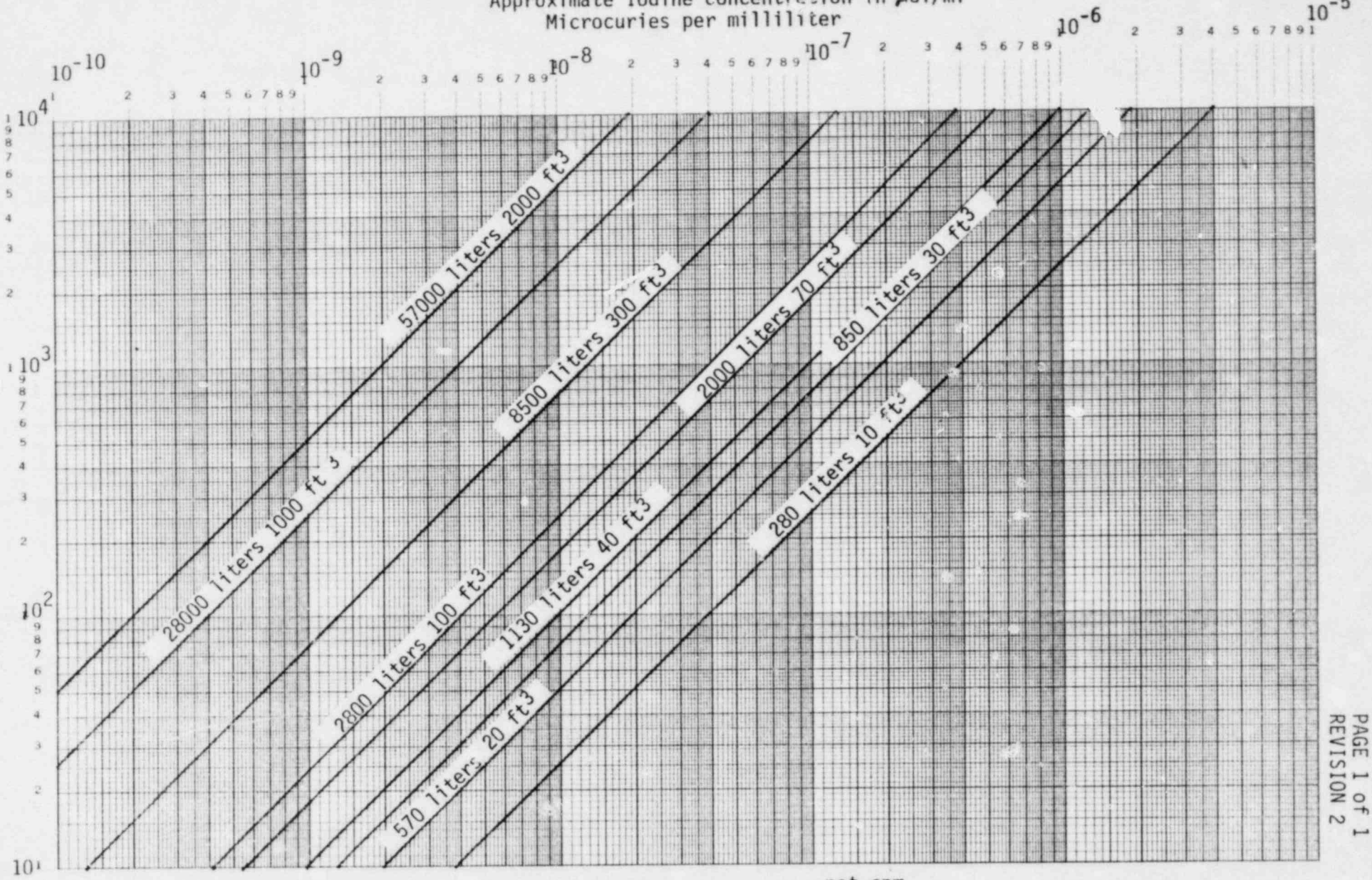
   a.) To determine volume in cu.ft., multiply run-time in minutes by flow rate in cu.ft. (20 cfm x 10 min. = 200 cu. ft).

   b.) To determine volume in liters, multiply run-time in minutes by flow rate in liters per minute (20 l/min x 10 min. = 200 liters)

K·E LOGARITHMIC 3 x 5 CYCLES KEUFFEL & ESSER CO. MADE IN U.S.A. 46 7520

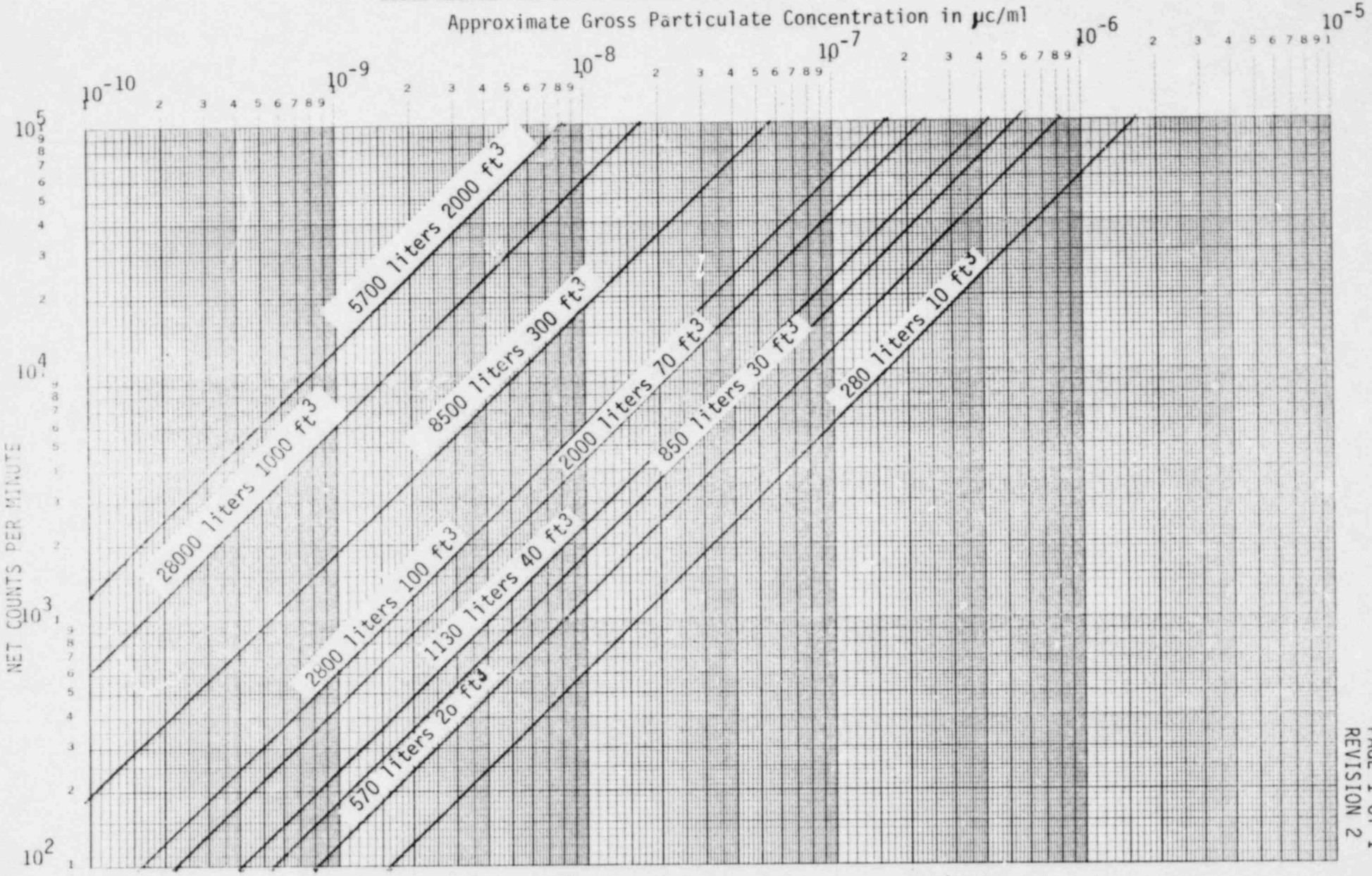
ESTIMATE OF IODINE CONCENTRATION WITH RM-14 AND HP-210

Approximate Iodine Concentration in μCi/ml
Microcuries per milliliter



$$\mu\ Ci/ml = \frac{net\ cpm}{(ft^3)\ (2.09E^8)} \quad \text{or} \quad \mu Ci/ml = \frac{net\ cpm}{(liters)\ (7.39E^6)}$$

ESTIMATE OF PARTICULATE CONCENTRATION WITH RM-14 AND HP-210



$$\mu\,Ci/ml = \frac{net\ cpm}{(ft^3)\,(2.09E^8)} \quad \text{or} \quad \mu Ci/ml = \frac{net\ cpm}{(liters)(7.39E^6)}$$

ATTACHMENT IV

POST ACCIDENT RCA ACCESS ROUTES

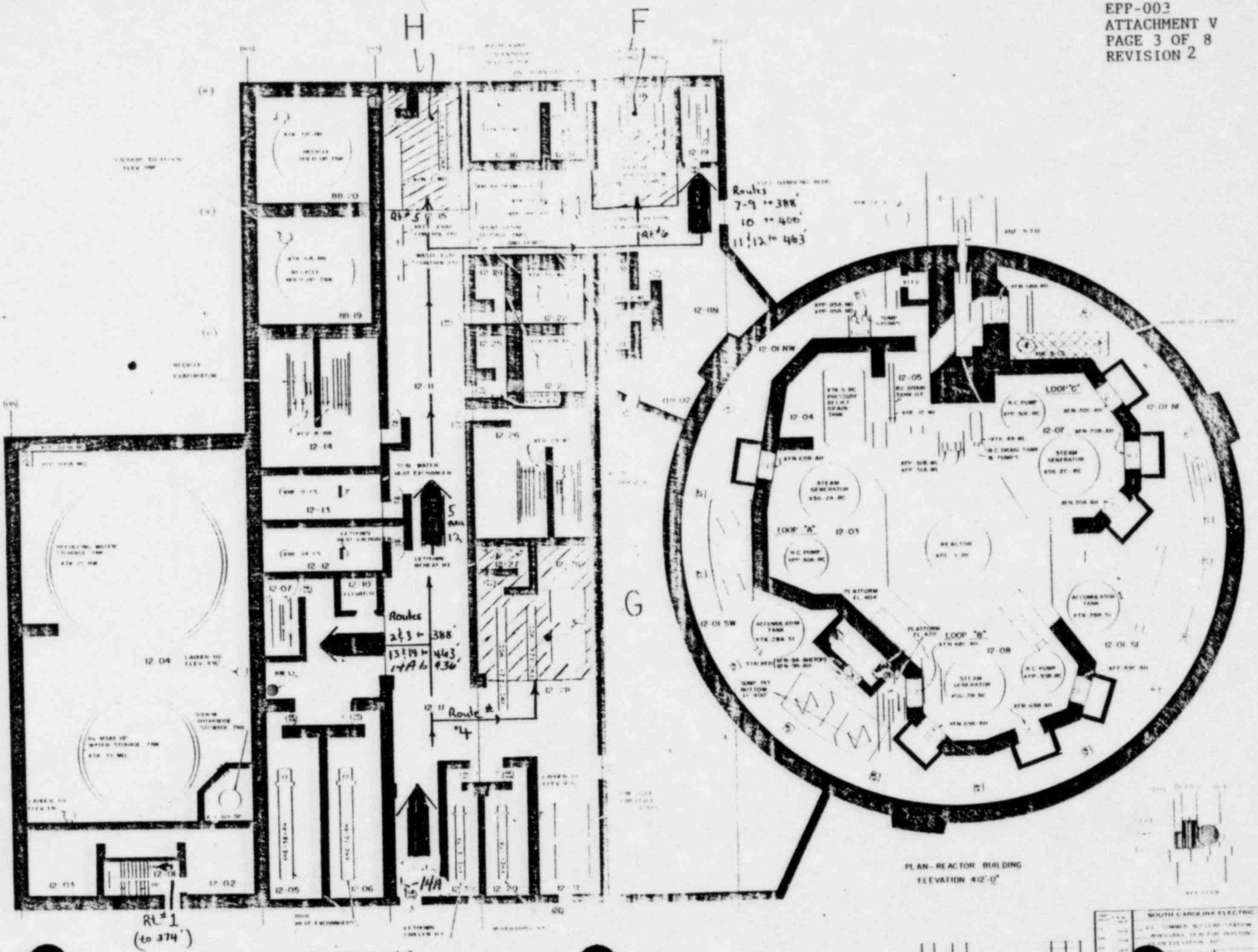
This Attachment provides access routes to specific areas within the Radiation Control Area of the plant. These access routes are the most direct route starting at the HP access control area located on the 412' elevtion of the Control Building. The routes described here are to be used as a guide in determing actual routes to be taken under emergency conditions.

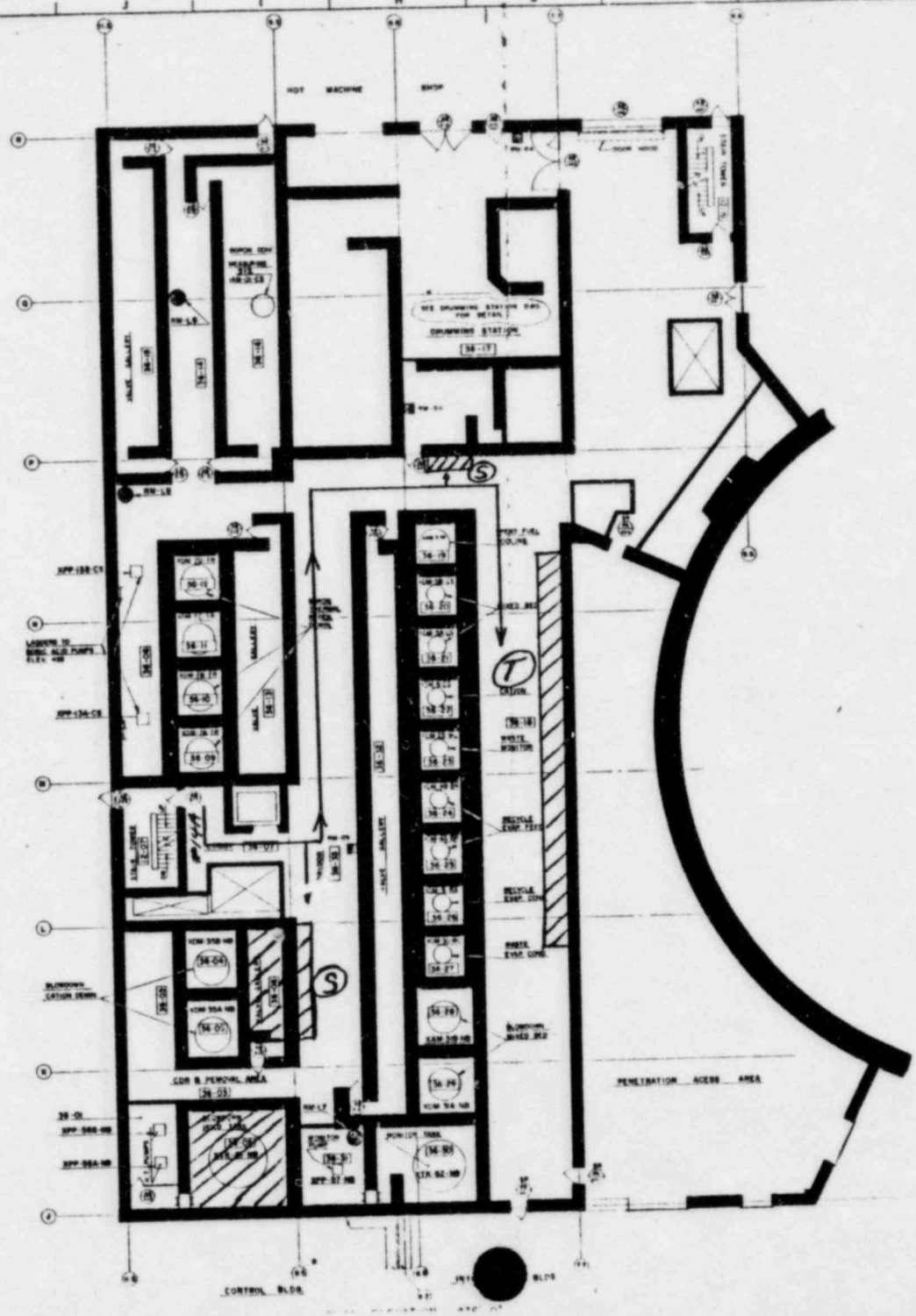
EPP-011 "Personnel Search and Rescue", requires routes to be planned and approved by the Shift Supervisor and Health Physics prior to entering the Radiation Control Area during emergencies.

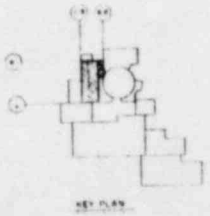
Existing and expected radiological conditions will be considered in determing the actual routes taken to ensure that entry team exposures are maintained ALARA.

Whenever access routes beginning on the 412' elevation of the Control Building are not practical, entries into affected areas of the plant fom other elevations or outside ground level access points should be considered and utilized if practical.

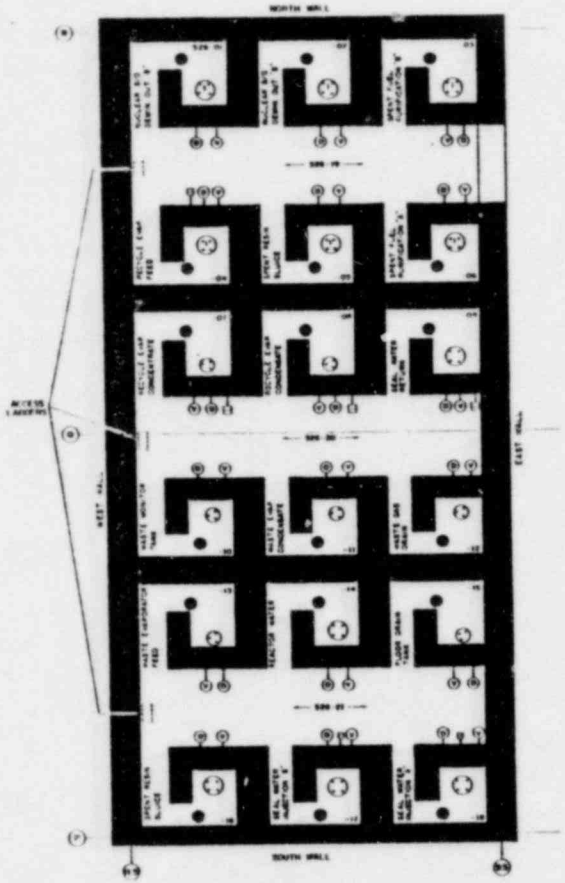
ELEV.	AREA	ROOM	ROUTE
374'	A - RHR/Spray Pump Rms. & Cooling Units	74-16&17	1
388'	B - Charging/S.I. Pump Rms.	88-23&24	3 to A/8 to B&C
	C - Charging/S.I. Pump "C" Auxiliaries Local Control Panel	88-13NE	7
	D - S.F. Pit Hx.	88-13N	9
412'	F - S.F. Pit Cooling Pumps & Local Control Panels	12-18	6
	G - Eng. Safety Feature Motor Control Center	12-28	4
	H - Waste Processing System Control Panel	12-15	5
400'	I - Charging/S.I. Pump Cooling Units	00-02	10
463'	J - Eng. Safety Feature Substation Bus and Motor Control Center	63-01	14
	K - H_2 Recomb. Control & Power Supply Panels	63-19	13
	L - H_2 Recomb. Control & Power Supply Panels	63-09	11
	M1- Reactor Bldg. Atmos. Sample Collect-Pt. & H_2 Gas Analyzer	63-01S(FHB)	12
	M2- Reactor Bldg. Atmos. Sample Collect-Pt. & H_2 Gas Analyzer	63-17	13
	N - TSC		
	O - Control Room		
412' (CB)	P - Sample Room		15
	Q - Radio Chem. Room		15
	R - Count Room		15
436' (AB)	S - Nuclear Blowdown		14A
	T - Pressurizer Heater Controls		14A


H
F
G
Routes
7-9 to 388'
10 to 400'
11 & 12 to 463'
Rt #5
Rt #6
Routes
2 & 3 to 388'
13 & 14 to 463'
14A to 436'
Route #4
Rt #1
(to 374')
LOOP "C"
LOOP "A"
LOOP "B"
STEAM GENERATOR
REACTOR
PLATFORM EL. 404'
PLAN ELEVATION 412'-0"
PLAN - REACTOR BUILDING
ELEVATION 412'-0"
SOUTH CAROLINA ELECTRIC & GAS CO.

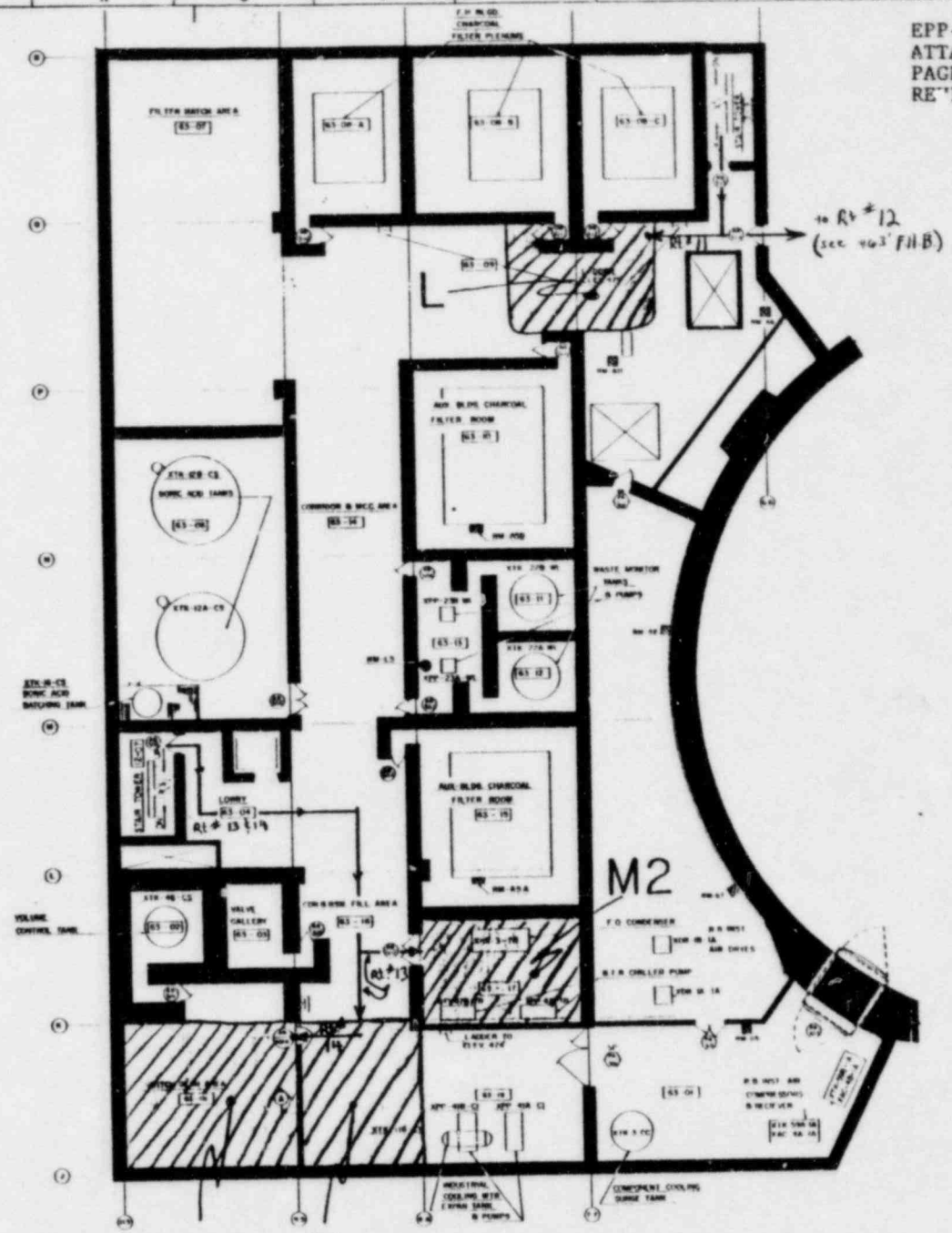




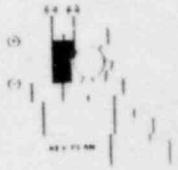
SOUTH CAROLINA ELECTRIC & GAS
V.C. SUMMER NUCLEAR STATION
AUXILIARY BUILDING FLOOR PLANS
ELEV. 0



FILTER CUBICLE AREA
PLAN ELEVATION 452'-6"

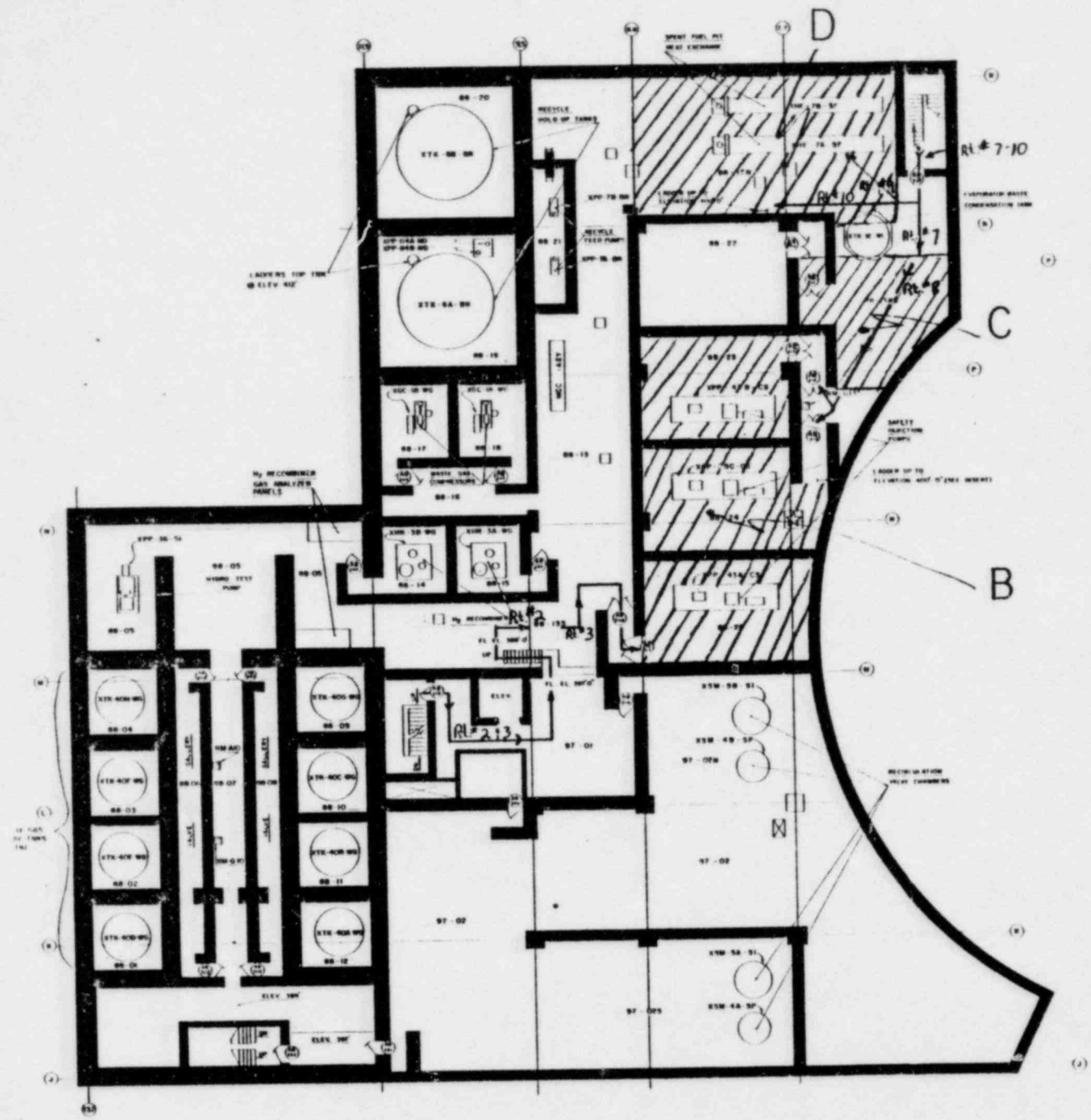


FLOOR PLAN ELEVATION 463'-0"

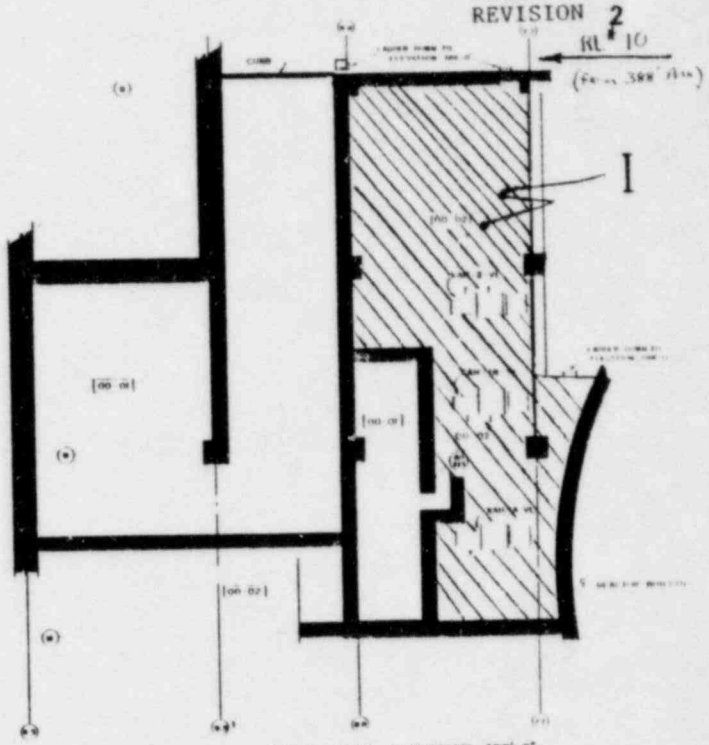


SOUTH CAROLINA ELECTRIC & GAS
V.C. SUMMER NUCLEAR STATION
AUXILIARY BUILDING FLOOR PLANS
D-21,157

EPP-003
ATTACHMENT V
PAGE 6 OF 8
REVISION 2

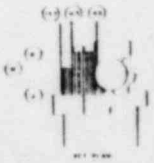


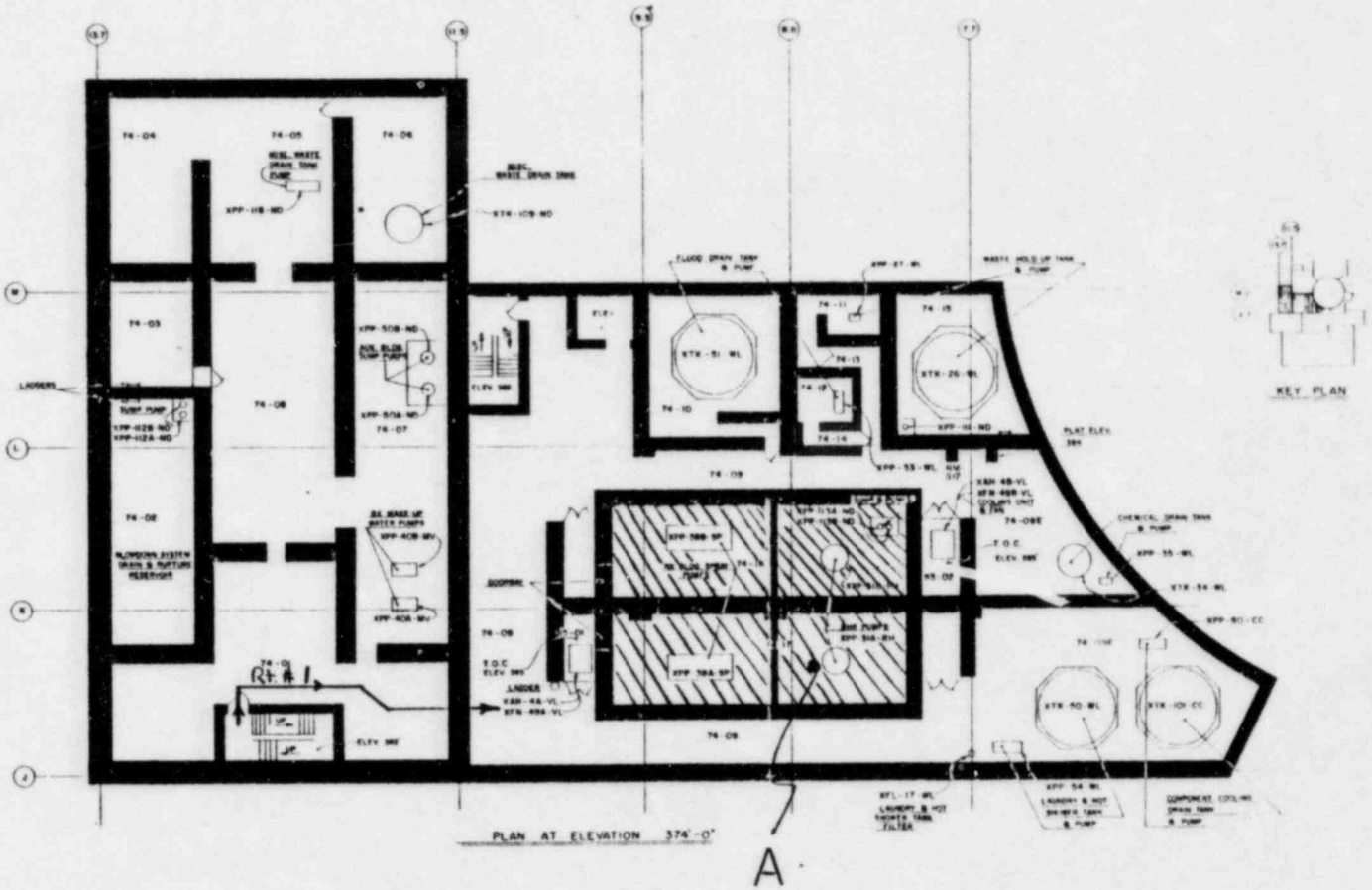
PLAN - ELEVATION 388'-0" & 397'-0"

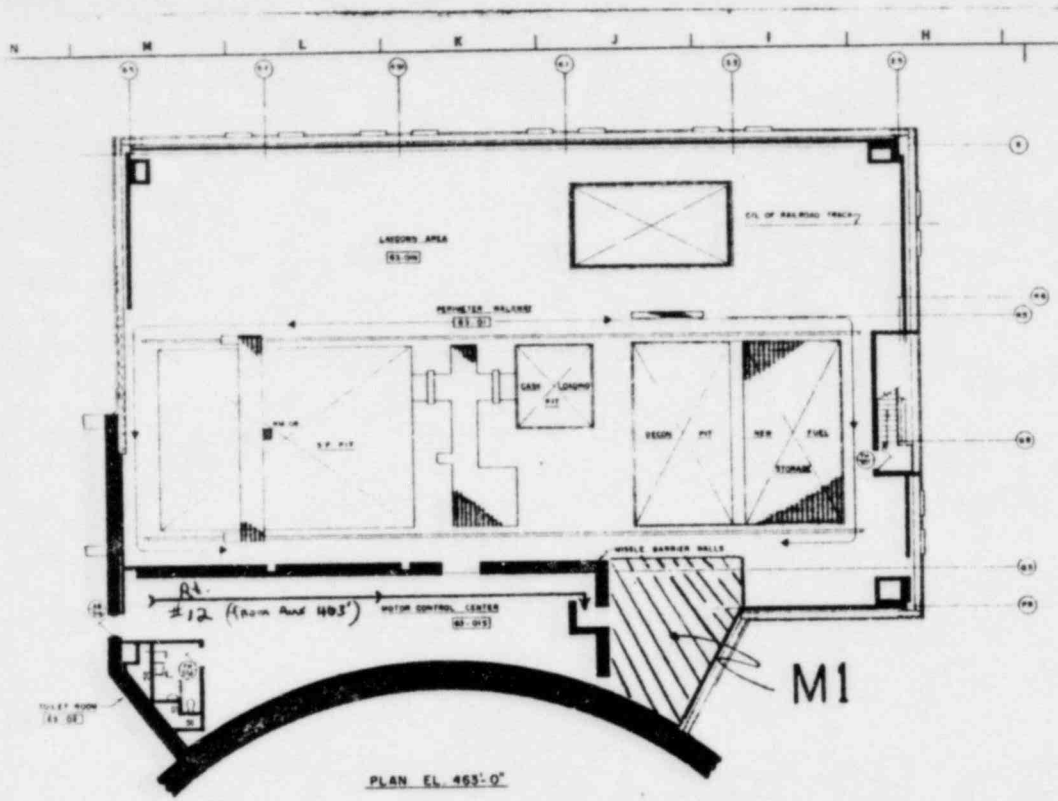


SHIELD SLAB ELEVATION 400'-0"

EPP-003
ATTACHMENT V
PAGE 5 OF 7
REVISION 1




PLAN AT ELEVATION 374'-0"
KEY PLAN
A



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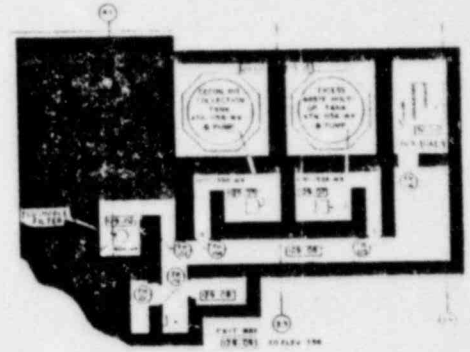

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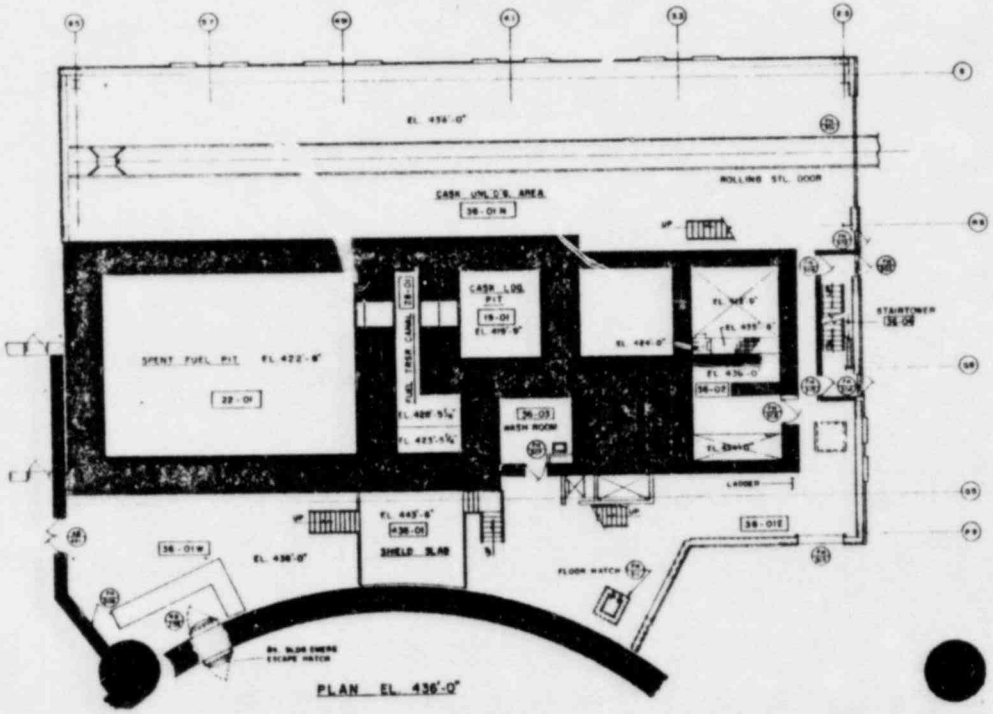

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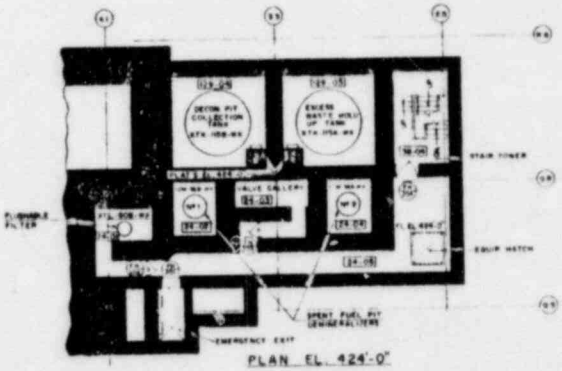

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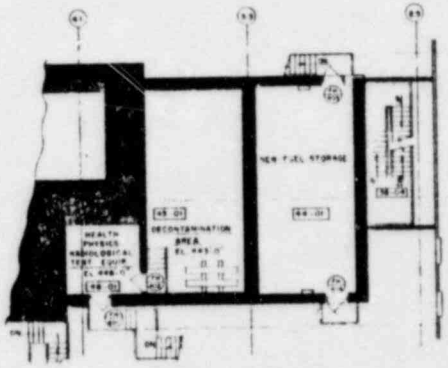
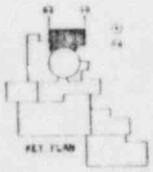


PLAN EL. 446'-0"



KEY PLAN

SOUTH CAROLINA ELECTRIC & GAS

SOUTH CAROLINA ELECTRIC AND GAS COMPANY

VIRGIL C. SUMMER NUCLEAR STATION

NUCLEAR OPERATIONS

NUCLEAR OPERATIONS

COPY NO. 152-C

EMERGENCY PLAN PROCEDURE

EPP-004

OUT-OF-PLANT RADIOLOGICAL SURVEYING

REVISION 3

JUNE 11, 1982

NON-SAFETY RELATED

Reviewed by:

Mark Counts — 7/22/82
ORIGINATOR (of this revision) — Date

W. Frank Brown — 7/13/82
QUALIFIED REVIEWER — Date

Approved:

J. W. Connelly — 7/26/82
PLANT MANAGER — Date

Date Issued: JUL 27 1982

Form AP-101-2, (1/80)

LIST OF EFFECTIVE PAGES

PAGE	REVISION
i	3
ii	3
1	3
2	3
3	3
4	3

ATTACHMENTS	
Attachment I	3
Attachment II	3
Attachment III	3
Attachment IV	3

TABLE OF CONTENTS

1.0 PURPOSE

1.1 To provide guidance for the direction and implementation of radiological surveys outside the plant in the event of an emergency.

2.0 REFERENCES

2.1 "Virgil C. Summer Nuclear Station Radiation Emergency Plan."

2.2 EPP-005, "Offsite Dose Calculations"

2.3 HPP-302, "Radiation and Contamination Survey Techniques"

2.4 HPP-303, "Airborne Activity Sampling Techniques and Procedures".

2.5 EPP-007, "Environmental Monitoring".

3.0 CONDITIONS AND PREREQUISITES

3.1 Out-of-Plant survey activities will initially be directed from the TSC. When practical, direction of areas outside a 1 mile radius will be transferred from the plant, to the EOF. The EOF is responsible for ensuring the TSC/ Out-of-plant Monitoring Director is continuously informed of monitoring results from outside the 1 mile radius.

3.2 The Out-of-Plant Monitoring Director should proceed to the TSC immediately after notification, or upon protected area evacuation.

3.3 Out-of-Plant monitoring personnel should be trained on meteorological effects on plume dispersion and projected exposures to the public.

3.4 Coordinate with TSC/EOF to determine travel routes which minimize plume exposure.

3.5 Minimize exposure while taking surveys, (e.g., 10 min. air samples). Coordinate surveys with TSC/EOF to prevent unnecessary exposure.

3.6 As time/conditions permit, surveyors should initiate spot radiation and/or contamination surveys, to expedite data collection; (e.g., if in the parking lot, conditions may allow surveyor to monitor vehicles in immediate area).

3.7 AgZe iodine filter cartridges should be used for air sampling when noble gas concentrations are suspected.

3.8 Smears of horizontal surfaces should be taken (ie; automobiles, equipment etc.) to provide data on environmental conditions.

3.9 Limit the use of protective clothing, as radiological conditions warrant, to minimize public concern.

3.10 Retain all samples and sample data for re-evaluation.

3.11 Monitoring results shall be maintained by the TSC and EOF. All monitoring results from outside the 1 mile radius should be maintained by the EOF and stored with environmental program data for subsequent report preparation. Monitoring results within the 1 mile radius should be maintained by the TSC and stored with plant records.

3.11.1 All survey and sample results obtained from outside the 1 mile radius will be documented and maintained by the EOF. This is the central location for sample/survey results outside of the 1 mile radius.

3.11.2 All surveys and samples obtained within the 1 mile radius will be documented and maintained by the TSC.

NOTE: All samples will be retained for laboratory analysis and stored at the locations specified above for possible future analysis and evaluation. Do not dispose of any samples without approval of the Radiological Assessment Supervisor.

4.0 PROCEDURE

4.1 Out-of-Plant Monitoring Director (guidelines)

4.1.1 Dispatch out-of-plant survey teams as needed.

4.1.2 Establish and maintain communications with Out-of-Plant surveyors and EOF when activated.

4.1.3 Frequently monitor meteorological and effluent conditions, keeping surveyors updated so that routes can be chosen to keep surveyors' exposures ALARA.

4.1.4 Identify sampling locations and routes, using priorities listed below as guidelines:

4.1.4.1 Residential areas within projected plume.

4.1.4.2 Centerline plume concentrations.

4.1.4.3 Identify plume edges.

4.1.5 Maintain current status of out-of-plant maps in TSC.

4.1.6 Maintain dialogue with the In-Plant Monitoring Director to coordinate post accident efforts.

4.1.7 Determine the need for further environmental sampling (e.g., grass, water and soil).

4.1.8 Transfer control of survey effort (outside one mile exclusion area) to EOF when practical.

NOTE: TSC will continue to maintain overall control of out-of-plant monitoring, within the 1-mile exclusion area.

4.2 Out-of-Plant Surveyors

4.2.1 Obtain emergency kits from Service Building Annex and radios from Health Physics Lab or TSC. Check seals and inspection on Emergency Kits.

NOTE: If seals are broken or inspection date is not current on emergency kits, perform a quick check to ensure emergency kits are adequate for field use.

4.2.2 Check instruments in kit with the source supplied for response to radiation.

4.2.3 Obtain vehicle from Security or the E.D. for off-site transportation.

4.2.4 If not already wearing personal dosimetry, don TLD and self-reading dosimeter contained in emergency kit.

4.2.5 Establish communication with TSC and/or EOF. If radios are not operable, use the nearest telephone for communication.

4.2.6 Obtain current pertinent data from TSC/EOF (estimated release rates of: particulate, iodine and noble gases; wind direction; projected plume area; etc.)

4.2.7 Perform surveys, as directed from TSC/EOF, per References 2.3, 2.4, and/or 2.5. Ensure instruments are source checked for response after each use.

NOTE: TSC/EOF and surveyors should collaborate to determine appropriate post accident efforts (e.g., type sampling, sample locations, etc.) to ensure maximum data obtained with a minimum of manpower/manRem expended.

4.2.8 Analyze samples in accordance with applicable HPP's using available equipment. Approximate air sample iodine and particulate concentration in accordance with Attachment II.

4.2.9 Record sample and survey data on Attachment I.

NOTE: Ensure that smear results and locations of contamination levels > 1000 dpm/100cm^2 are recorded in Attachment I.

4.2.10 Contain, label and retain samples for subsequent analysis in the laboratory.

4.2.11 Collect and replace TLD's and particulate and iodine filters at Environmental Stations when requested by the TSC/EOF as per Reference 2.5.

NOTE: Take precautions to minimize exposure to environmental TLD's during transportation either to or from sampling station.

OUT-OF-PLANT SURVEY/SAMPLE RECORD

DATE:_____ SURVEYOR:_____ SHEET _____ OF _____

TIME (START)	LOCATION		INSTRUMENT NUMBER (1)	GENERAL AREA RADIATION SURVEY	
	DISTANCE/DIRECTION (MILES)(DEGREES) FROM PLANT	WORD DESCRIPTION		BETA (MR/HR)	GAMMA (MR/HR)

SMEAR SURVEY

SMEAR NUMBER	GROSS CPM	BACKGROUND CPM	NET CPM	DPM/100cm^2

AIRBORNE SURVEY

SAMPLE NUMBER	PARTICULATE OR IODINE (P OR I)	TIME STOP	TOTAL TIME	FLOW RATE (1/min)	VOLUME (1)	GROSS CPM	BACKGROUND CPM	NET CPM	ACTIVITY (C/ml)

SURVEY INSTRUMENT INFORMATION

INSTRUMENT NUMBER 1	INSTRUMENT NUMBER 2
INST. TYPE_____	INST. TYPE_____
SERIAL NUMBER_____	SERIAL NUMBER_____
CALIB. DATE_____	CALIB. DATE_____
SOURCE CHECK_____ (INIT)	SOURCE CHECK_____ (INIT)
EFFICIENCY (IF REQUIRED)_____	EFFICIENCY (IF REQUIRED)____
INSTRUMENT NUMBER 3	**INSTRUMENT NUMBER 4**
INST. TYPE_____	INST. TYPE_____
SERIAL NUMBER_____	SERIAL NUMBER_____
CALIB. DATE_____	CALIB. DATE_____
SOURCE CHECK_____ (INIT)	SOURCE CHECK_____ (INIT)
EFFICIENCY (IF REQUIRED)_____	EFFICIENCY (IF REQUIRED)_____

NOTES: 1. Instrument number on front sheet should be 1 thru 4 from above information.

REMARKS:_____

_____

_____

_____

_____

_____

_____

_____

APPROXIMATION OF AIR SAMPLE IODINE AND PARTICULATE CONCENTRATIONS WITH RM-14 AND HP-210

Instructions

1. Obtain contact reading (not 1") on front of iodine filter cartridge once it is placed in poly bag. Particulate filters cannot be placed in poly bag until after a count rate is obtained.

2. Determine volume of air sampled in liters or ft^3 as indicated on instrument.

3. Use graph (Attachment III) to approximate iodine concentration or perform computation at the bottom of the graph. Recommended allowable background is < 100 cpm.

4. Use graph (Attachment IV) to approximate gross particulate concentration or perform computation at the bottom of the graph. Recommended allowable background is < 100 cpm.

Bases

1. Recommended allowable background is 100 cpm. Attachment III is derived using .37% detection efficiency with an I-131 standard and a 90% filter collection efficiency.

2. Attachment III does not compensate for noble gas interference. This method is limited for counting AgZe filters or charcoal filters used in the absence of noble gas atmospheres.

3. Attachment IV is derived using 10% detection efficiency and a 99% filter collection efficiency.

4. Calculations at the bottom of Attachments III and IV are based on the constants stated above in steps 1 and 4. The only variables are the actual volumes of the samples.

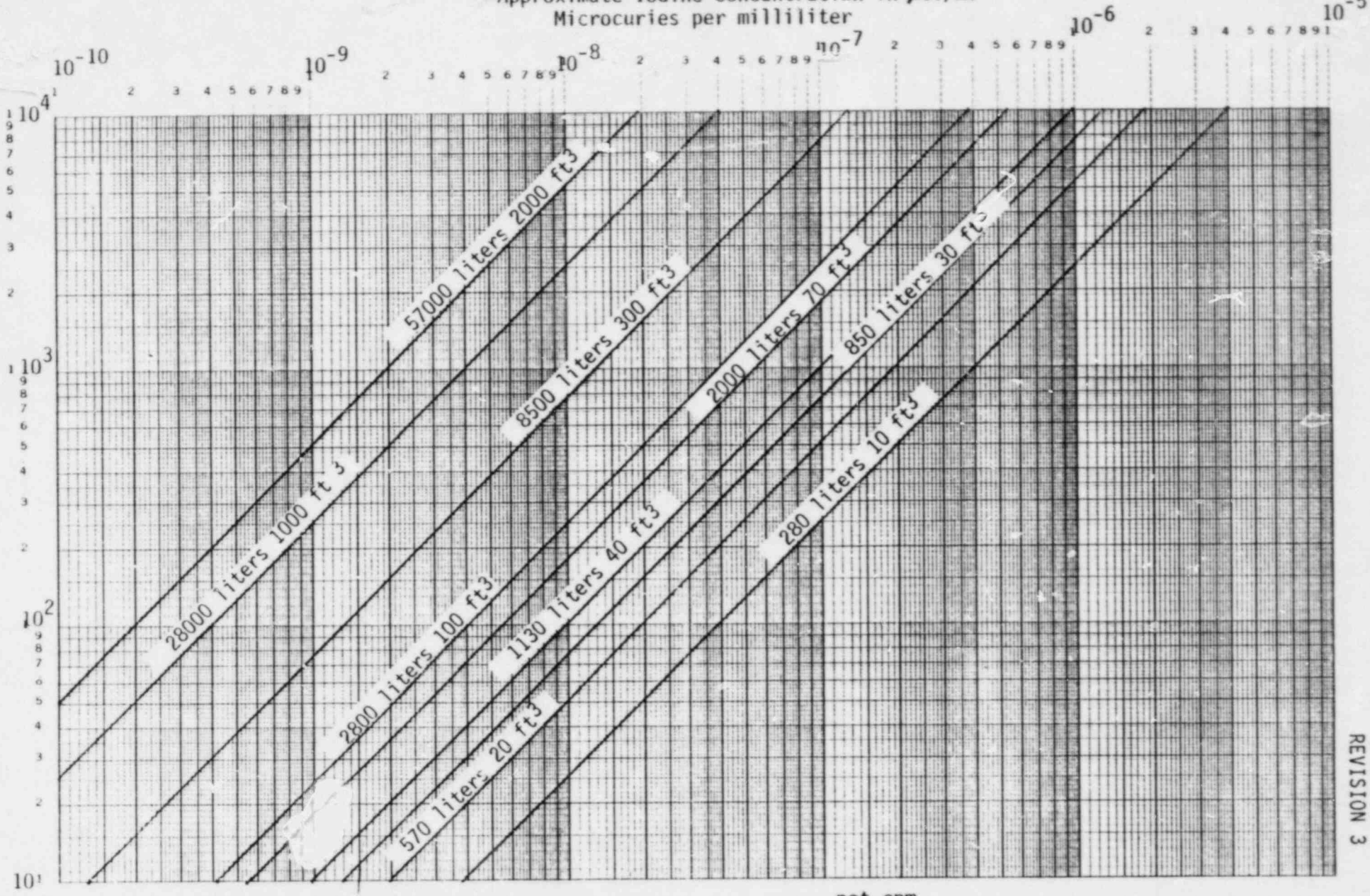
   a.) To determine volume in cu.ft., multiply run-time in minutes by flow rate in cu.ft. (20cfm x 10 min = 200 cu. ft).

   b.) To determine volume in liters, multiply run-time in minutes by flow rate in liters per minute (20 l/min x 10 min.= 200 liters).

ESTIMATE OF IODINE CONCENTRATION WITH RM-14 AND HP-210

Approximate Iodine Concentration in μCi/ml

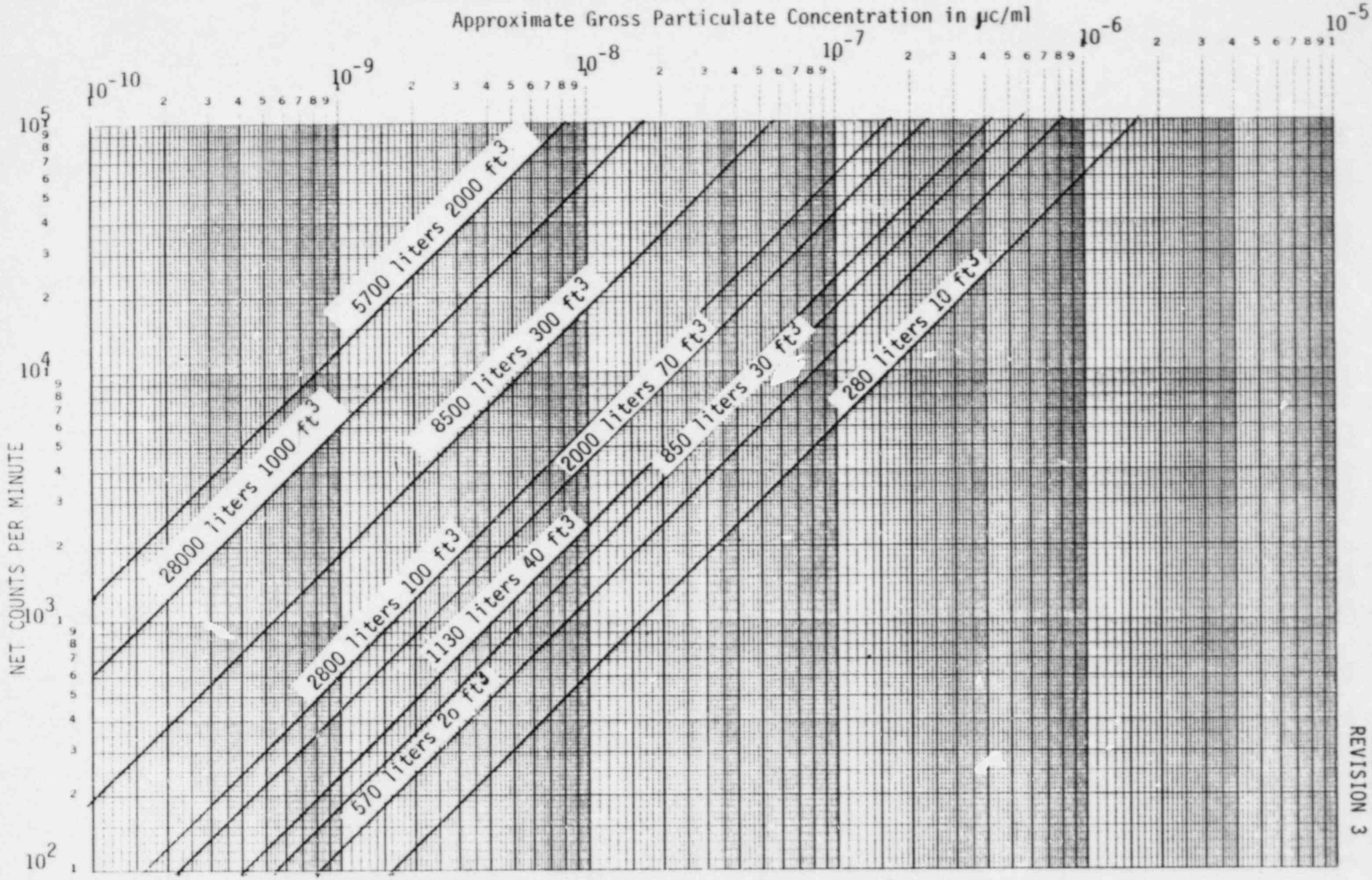
Microcuries per milliliter



$$\mu\ Ci/ml = \frac{net\ cpm}{(ft^3)\ (2.09E^{-8})} \quad \text{or} \quad \mu Ci/ml = \frac{net\ cpm}{(liters)\ (7.39E^{-6})}$$

Attachment III

ESTIMATE OF PARTICULATE CONCENTRATION WITH RM-14 AND HP-210



$$\mu\,Ci/ml = \frac{\text{net cpm}}{(ft^3)\,(2.09E^8)} \quad \text{or} \quad \mu Ci/ml = \frac{\text{net cpm}}{(\text{liters})(7.39E^6)}$$

ATTACHMENT IV

SOUTH CAROLINA ELECTRIC AND GAS COMPANY

VIRGIL C. SUMMER NUCLEAR STATION

NUCLEAR OPERATIONS

NUCLEAR OPERATIONS
COPY No. 157 C

EMERGENCY PLAN PROCEDURE

EPP-005

OFFSITE DOSE CALCULATIONS

REVISION 3

AUGUST 6, 1982

NON-SAFETY RELATED

Reviewed by:

Mark Counts — 9/1/82
ORIGINATOR (of this revision) — Date

V. R. Albert — 9/2/82
DISCIPLINE SUPERVISOR — Date

Approved:

O S Bradham — 9/8/82
PLANT MANAGER — Date

Date Issued: SEP 10 1982

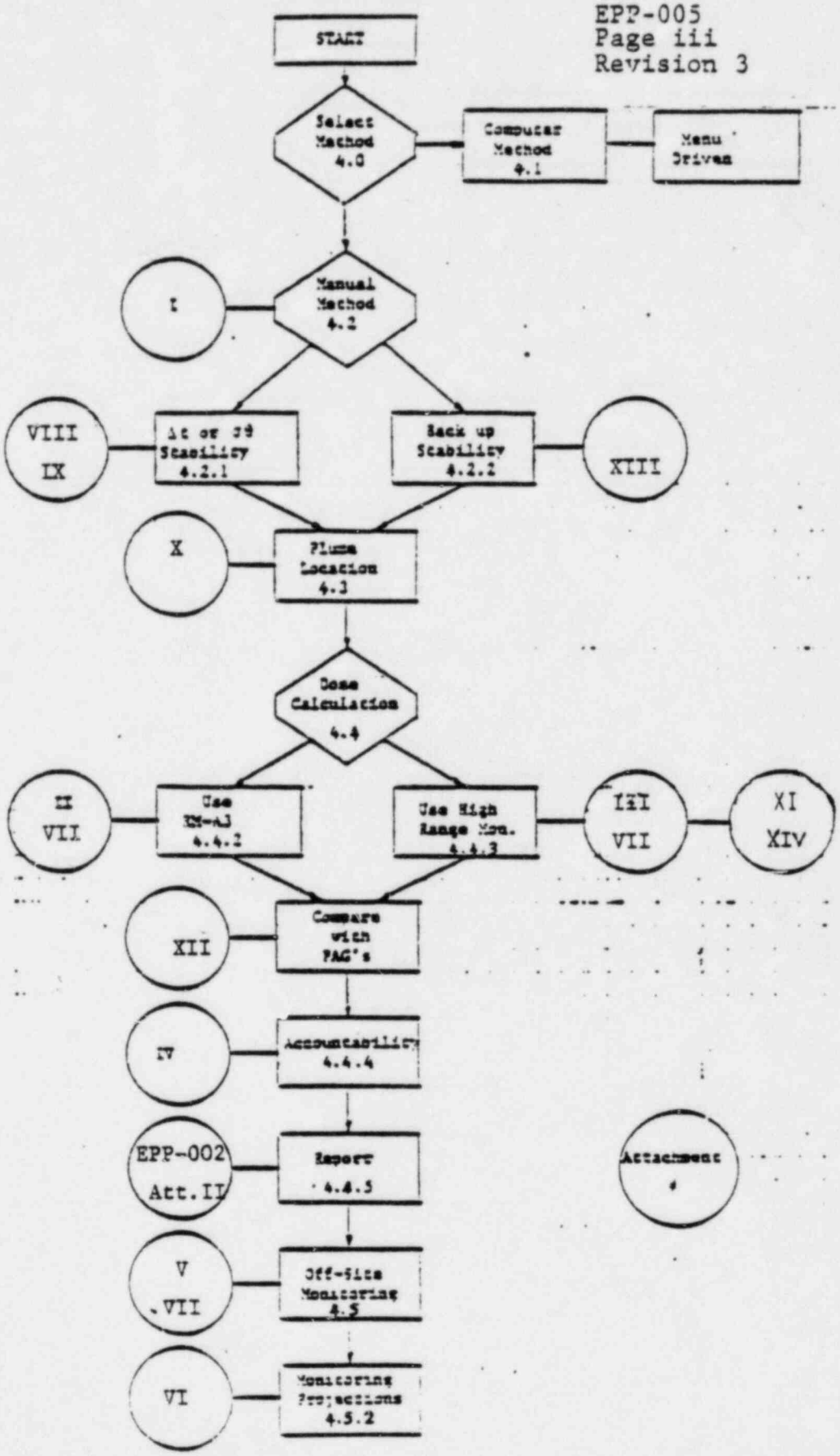
LIST OF EFFECTIVE PAGES

Page	Revision
1	3
11	3
111	3
1	3
2	3
3	3
4	3
5	3
6	3

ATTACHMENTS

I	3
II, Pages 1 and 2	3
III, Pages 1 and 2	3
IV	3
V	3
VI	3
VII	3
VIII	3
IX	3
X	3
XI	3
XII	3
XIII, Pages 1 through 3	3
XIV	3

TABLE OF CONTENTS


START
Select Method 4.0
Computer Method 4.1
Menu Driven
Manual Method 4.2
I
VIII
IX
At or 3% Stability 4.2.1
Back up Stability 4.2.2
XIII
X
Plume Location 4.3
Dose Calculation 4.4
II
VII
Use EM-A3 4.4.2
Use High Range Mon. 4.4.3
III
VII
XI
XIV
XII
Compare with PAG's
IV
Accountability 4.4.4
EPP-002
Att.II
Report 4.4.5
Attachment 4
V
VII
Off-Site Monitoring 4.5
VI
Monitoring Projections 4.5.2

1.0 PURPOSE

1.1 To provide methods for estimating wholebody and child thyroid dose rates due to abnormal releases of radioactive materials to the environment.

1.2 To provide a method of comparing the integrated wholebody and child thyroid doses to the EPA Protective Action Guides (PAG's).

2.0 REFERENCES

2.1 "Virgil C. Summer Nuclear Station Radiation Emergency Plan".

2.2 American Society of Mechanical Engineers, "Recommended Guide for the Prediction of the Dispersion of Airborne Effluents", May 1968.

2.3 Dames and Moore, "Data Reduction Procedure for Virgil C. Summer Nuclear Station", September 1974.

2.4 Slade, D. H., (ed.), "Meteorology and Atomic Energy - 1968", TID-24190, Division of Technical Information, USAEC (1968).

2.5 Turner, D. B., "A Diffusion Model for an Urban Area", Journal of Applied Meteorology, February 1964.

2.6 U. S. Nuclear Regulatory Commission, Proposed Revision 1 to Regulatory Guide 1.23, "Meteorological Programs in Support of Nuclear Power Plants", September 1980.

2.7 NUREG-0654/FEMA-REP-1, "Criteria for Preparation and Evaluation of Radiological Emergency Response Plans and Preparedness in Support of Nuclear Power Plants", December 1980.

2.8 Emergency Assessment and Response Systems, (EARS 1,000 and EARS 9845). Technical Manual. Applied Physics Technology, Inc.

2.9 EPA-520/1-75-001 (Revised June 1980) "Manual of Protective Action Guides and protective actions for Nuclear Plants."

2.10 EPP-002 Communication and Notification.

3.0 CONDITIONS AND PREREQUISITES

3.1 None

4.0 PROCEDURE

NOTE: This procedure delineates two (2) methods by which offsite doses may be calculated (i.e., computer calculation and manual calculation). Either method, or a combination of both methods, may be used since comparable results can be obtained.

4.1 Overlay Selection

4.1.1 If the computer is not available proceed to step 4.2 to initiate manual calculations.

4.1.2 Use the HP9845C in the Technical Support Center to run the menu driven real-time dose projection system. The program is started by following guidance derived through Reference 2.8.

4.1.3 Complete step 4.3 so that the manual method map is available for use in case of computer failure. The map is also useful in dispatching out of plant monitoring teams. Proceed to step 4.5.

4.2 Manual Method

4.2.1 Stability Class Determination

If the primary meteorological tower is inoperable proceed to step 4.2.2 otherwise, complete Part 1 of Attachment I to obtain meteorology and source term data from control room instrumentation. Method A. (below) is preferred.

A. Differential Temperature (ΔT) 61-10 meters and 40-10 meters Method.

1. Obtain ΔT information from the Control Room instrumentation.

NOTE: Priority should be given to the 61-10 meter information with the back up being the 40-10 meters.

2. If the Control Room instrumentation is inoperable, personnel with a portable radio may be dispatched to the meteorological tower to obtain ΔT information directly from the met tower instrumentation. Keys to towers are available in the Emergency Planning Key Box located in the Emergency Operations Area of the T.S.C.

3. Determine the Pasquill Category by using Attachment VIII and select appropriate X/Q overlay found near the plotting map.

4. Proceed to Step 4.3 for determination of plume location and X/Q values.

B. Sigma Theta Method

1. Review the wind direction chart located in Control Room and determine wind range for a period of 15 minutes to 1 hour.

2. Wind range is determined by the difference between the highest and lowest values measured. If the wind direction chart shows one or two spikes, these should be ignored in determining the wind range. If more than two spikes, these must be considered in determining wind range.

3. If the wind range is larger than 180 degrees, use 180° as the wind range value.

4. Divide the wind range by six (6).

5. Determine the Pasquill Category by using Attachment IX and select appropriate overlay.

4.2.2 Backup meteorological data can be obtained from two sources, the site 2 tower and/or the National Weather Service (NWS).

A. Dispatch personnel to site 2 tower and use data from local strip charts for windspeed and direction. Use method B of step 4.2.1 to obtain stability class. Data from site 2 is preferred over NWS data. Radio communication should be established for the duration of the incident. Dosimetry is required for personnel at site 2.

B. If primary tower data is not available call the NWS (see ref. 2.10 for phone number) and obtain windspeed, wind direction, % cloud cover and ceiling height. Also, obtain current forecast and note any fronts that may cause a rapid shift in wind speed or direction. Complete Attachment XIII "Turner's algorithm" to obtain stability class.

4.3 Location of the Effluent Plume

4.3.1 After determination of appropriate overlay in Section 4.2 place overlay to the center of the base map.

4.3.2 Orient the centerline of the overlay along the direction the wind is blowing.

NOTE: Wind directions are given as directions from which the wind is blowing; affected directions are 180° from the wind direction. When communicating wind direction, specify the direction from which the wind is blowing (e.g. wind is blowing from 270°)

4.3.3 The conversion from wind direction measured in degrees to wind direction in sectors is presented in Attachment X.

4.4 Manual Dose Calculation

4.4.1 Complete Part 2 of Attachment I.

4.4.2 Complete Attachment II if radiation monitor RM-A3 (Gas) or RM-A4 (Gas) is on scale. Compare results with the PAGS (Attachment XII).

4.4.3 If RM-A3 (Gas) or RM-A4 (Gas) is offscale or if there is a steam release complete Attachment III. Compare results with the PAGS (Attachment XII).

NOTE: Attachments VII, XI and XIV, will be necessary for completing Attachment III.

4.4.4 Complete Attachment IV to maintain curie accountability. Total activity of iodine, noble gas, particulates, and tritium must be kept current. (Hourly updates if possible)

4.4.5 Transfer all applicable results to EPP-002 Attachment II for transmittal and documentation purposes.

4.5 Environmental Monitoring

4.5.1 As soon as practical, dispatch monitoring teams to the affected meteorological sectors. Attachment V, should be used to record location and results.

NOTE: Dose projections based on source terms should be verified as soon as possible by supportive measurements. Based on these measurements, a reassessment of the PAG's should be taken.

4.5.2 Attachment VI can be used to project doses based on environmental samples. These can then be compared with source term projections.

5.0 BASES

5.1 This section is included to provide a brief explanation of the sources of constants and graphs used in the procedures and associated attachments.

A. Step 4.3.1 - Until a full class A model is developed, subsequent to the completion by Dames and Moore of a detailed study of the Summer Station Meteorology, the (X/Q) overlays will be based on a straight line gaussion plume model as described in Reg. Guide 1.145.

B. Attachment II, Section I - The Iodine to noble gas activity ratio of 0.3, until measured, is a conservative estimate from Ref. 2.9 page D-59. TMI-2 would suggest that the actual ratio could be 10^{-5} or less. A fast and accurate measurement of the actual ratio is important to avoid unnecessary evacuation orders based on the Iodine PAGS. The calibration constants 3.3×10^{-10} and 3.8×10^{-10} are based on the manufacturer's calibration and various unit conversions as follows:

$$3.3 \times 10^{-10} = \frac{1}{60}\,\frac{\text{min}}{\text{sec}} \times 10^{6}\,\frac{\text{ml}}{\text{m}^3} \times 10^{-6}\,\frac{\text{Ci}}{\mu\text{Ci}}\,\frac{1}{50 \times 10^{6}}\,\frac{\mu\text{Ci/ml}}{\text{CPM}}$$

$$3.8 \times 10^{-10} = \frac{1}{60}\,\frac{\text{min}}{\text{sec}} \times 10^{6}\,\frac{\text{ml}}{\text{m}^3} \times 10^{-6}\,\frac{\text{Ci}}{\mu\text{Ci}} \times \frac{1}{44 \times 10^{6}}\,\frac{\mu\text{Ci/ml}}{\text{CPM}}$$

C. Attachment III, Section I - Same comment as B.

The calibration constants 4.0×10^{-5}, 9.5×10^{-5} and 8.5×10^{-4} are based on the manufacturer's calibration and various conversion as follows:

$$4.0 \times 10^{-5} = 0.028 \frac{m^3}{ft^3} \times 10^6 \frac{ml}{m^3} \times 10^{-6} \frac{Ci}{\mu Ci} \times \frac{1}{60} \frac{min}{sec} \times \frac{1}{11.7} \frac{Ci/ml}{mr/hr}$$

$$9.5 \times 10^{-5} - 0.028 \frac{m^3}{ft^3} \times 10^6 \frac{ml}{m^3} \times 10^{-6} \frac{Ci}{\mu Ci} \times \frac{1}{60} \frac{min}{sec} \times \frac{1}{4.89} \frac{Ci/ml}{mr/hr}$$

$$8.5 \times 10^{-4} = 0.028 \frac{m^3}{ft^3} \times 10^6 \frac{ml}{m^3} \times 10^{-6} \frac{Ci}{\mu Ci} \times \frac{1}{3600} \frac{hr}{sec} \times \frac{1}{9.13 \times 10^{-3}} \frac{Ci/ml}{mr/hr}$$

D. Attachment VII - The curves follow the methodology and assumption of Ref. 2.9. The noble gas curve comes from EQ. 2.9, the Iodine curve from EQ. 2.13.

E. Attachment XIII-This description of the Pasquill-Turner method was supplied by Dames and Moore. The calculation of the solar altitude was obtained from the Alabama Power Company Farley Station EDCM. It was verified by comparision with selected values from the Smithsonian Meteorological Tables.

F. Attachment XII - Protective actions are taken from Ref. 2.9. The particulate concentration, $7.5 \times 10^{-7} \mu Ci/ml$, would lead to an exposure of 2000 MPC Hours in 8 hours. That is, it is analogous to a whole body exposure of 5 REM. Other concentrations are related by ratio to the specified whole body exposure found in Ref 2.9.

G. Attachment XIV is a plot of standard steam table data for saturated steam.

H. Attachment XI is a plot of the ratio of DOSE to concentration for mixed fission noble gas to that for 133 Xe as a function of time after trip.

METEOROLOGY AND SOURCE TERM

REPORT FORM

Windspeed _____ mph (10 meter preferred) Time_____

Direction _____ degrees (10 meter preferred)

Delta T _____ degrees (61-10) or (40-10) (Circle One, 61-10 is preferred)

Stability Class _____ (Use Delta T and Attachment VIII or Sigma Theta and Attachment IX or Turners Algorithm and Attachment XIII. ΔT is preferred.

Part 2: Source Term

RMA3 _____ CPM (net) Flow Rate _____

RM-A4 _____ CPM (net) Time _____

RM-A13 _____ mr/hr

RM-A14 _____ mr/hr

RM-G19 _____ mr/hr

EMERGENCY OFF-SITE DOSE CALCULATION

USING STACK MONITOR SOURCE TERM

Time of Trip _____ Current Time _____ Time after Trip _____

	RM-A3 (Gas)	RM-A4 (Gas)	
Count Rate	_____ CPM	_____ CPM	(A)
Calibration	3.3×10^{-10}	3.8×10^{-10}	(A1)

Flow rate: _____ CFM x 0.028 = _____ m^3/min. (B)

Release Rate (A) x (A1) x (B) _____ $\frac{Ci}{s}$ (C)

(C) x 3600 = _____ Ci/hr (use in EPP-001)

Wind Speed: _____ MPH x 0.45 = _____ m/sec (D)

$(X/Q)\overline{u}$ from isopleth for 1 mile _____ m^{-2} (E1)

X/Q: (E1)÷(D) = _____ sec/m^3 (F)

Noble gas dose to concentration conversion from Attachment VII _____ x 2 = _____ $\frac{rem/2hr}{Ci/m^3}$ (G)

WHOLE BODY DOSE (2 hrs): (F) x (C) x (G) = [ ] $\frac{rem}{2\ hr.}$ (H)

Iodine to noble gas activity ratio (use 0.3 unless measured) _____ (I)

Iodine dose to concentration conversion from Attachment VII _____ $\frac{rem/2hr}{Ci/m^3}$ (J)

EMERGENCY OFF-SITE DOSE CALCULATION

USING STACK MONITOR SOURCE TERM

Time of Trip _____ Current Time _____ Time after Trip _____

Iodine to noble gas dose ratio (I) x (J) ÷ (G) _____ (K)

CHILD THYROID DOSE: (K) x (H) = [ ] rem/2hr.
at 1 mile (2 hour)

$(X/Q)\overline{u}$ at 2 miles _____ (E2) (E2)/(E1) _____ (L2)

5 miles _____ (E5) (E5)/(E1) _____ (L5)

10 miles _____ (E10 (E10)/(E1)_____ (L10)

Projected Integrated Dose in Rem per Unit Time

2 miles (L2) x (H) _____ rem x (K) = _____ rem

5 miles (L5) x (H) _____ rem x (K) = _____ rem

10 miles (L10) x (H) _____ rem x (K) = _____ rem

WHOLE BODY (2 Hour) — CHILD THYROID (2 Hour)

OFF-SITE DOSE CALCULATION

USING HIGH RANGE MONITORS

Time of Trip _____ Current Time _____ Time after Trip _____

	RM-A13	RM-A14	RM-G19	
DOSE RATE	_____ mr/hr	_____ mr/hr	_____ mr/hr	(A1)
FLOW RATE	_____ CFM	_____ CFM	_____ lb/hr	(A2)
MASS/VOL	1	1	_____ ft^3/lb	(A3)
			(from Att. XIV)	
Calibration	4.0×10^{-5}	9.5×10^{-5}	8.5×10^{-4}	(B1)

Correction Factor from Attachment XI _____ (B2)

Release Rate (A1) x (A2) x (A3) x (B1)/(B2) _____ $\frac{Ci}{s}$ (C)

(C) x 3600 = _____ Ci/hr (use in EPP-001)

Wind Speed: _____ MPH x 0.45 = _____ m/sec (D)

$(X/Q)\bar{u}$ from isopleth for 1 mile _____ m^{-2} (E1)

X/Q: (E1)÷(D) = _____ sec/m^3 (F)

Noble gas dose to concentration conversion from Attachment VII _____ x 2 = _____ $\frac{rem/2hr}{Ci/m^3}$ (G)

WHOLE BODY DOSE (2 hr.): (F) x (C) x (G) = [ ] $\frac{rem}{2hr}$ (H)

Iodine to noble gas activity ratio (use 0.3 unless measured) _____ (I)

Iodine dose to concentration conversion from Attachment VII _____ $\frac{rem/2hr}{ci/m^3}$ (J)

OFF-SITE DOSE CALCULATION

USING HIGH RANGE MONITORS

Time of Trip _____ Current Time _____ Time after Trip _____

Iodine to noble gas dose ratio (I) x (J) ÷ (G) _____ (K)

CHILD THYROID DOSE: (K) x (H) = [ ] rem/2hr.
at 1 mile (2 hour)

$(X/Q)\bar{u}$ at 2 miles _____ (E2) (E2)/(E1) _____ (L2)

5 miles _____ (E5) (E5)/(E1) _____ (L5)

10 miles _____ (E10 (E10)/(E1)_____ (L10)

Projected Integrated Dose in Rem per Unit Time

2 miles (L2) x (H) _____ rem x (K) = _____ rem

5 miles (L5) x (H) _____ rem x (K) = _____ rem

10 miles (L10) x (H) _____ rem x (K) = _____ rem

WHOLE BODY (2 Hour) — CHILD THYROID (2 Hour)

ACTIVITY RELEASE STATUS

Time: _____

Elapsed time since last release calculation _____ sec (A1)
_____ hr (A2)

Noble Gas

Average release rate since last calculation _____ Ci/sec (B1)***
Activity released since last calculation (A1x B1) _____ Ci (C1)
Previous total of noble gas released _____ Ci (D1)

Total activity released (C1 + D1) _____ Ci

DISTANCE	CURRENT DOSE RATE (rem/hr)		ELAPSED TIME (A2)		CURRENT DOSE		OLD TOTAL DOSE		TOTAL DOSE	
1 mile	_____	X	_____	=	_____	+	_____	=	_____	rem
2	_____	X	_____	=	_____	+	_____	=	_____	rem
5	_____	X	_____	=	_____	+	_____	=	_____	rem
10	_____	X	_____	=	_____	+	_____	=	_____	rem

Iodine

Average release rate since last calculation _____ Ci/sec (B2)
Activity released since last calculation (A1 X B2) _____ Ci (C2)
Previous total of Iodine released _____ Ci (D2)

Total activity released (C2 + D2) _____ Ci

DISTANCE	CURRENT DOSE RATE (rem/hr)		ELAPSED TIME (A2)		CURRENT DOSE		OLD TOTAL DOSE		TOTAL DOSE	
1 mile	_____	X	_____	=	_____	+	_____	=	_____	rem
2	_____	X	_____	=	_____	+	_____	=	_____	rem
5	_____	X	_____	=	_____	+	_____	=	_____	rem
10	_____	X	_____	=	_____	+	_____	=	_____	rem

*** B1 x 3600 = ____ Ci/hr, This figure is to be used for determining Emergency Action Levels in EPP-001 Attachment I.

OUT OF PLANT MONITORING

DISPATCH AND DATA FORM

Dispatch

Unit _____ Time _____

Location _____ Miles _____ Degrees

Comments:

Report

Location Confirmation YES/NO Time _____

Rad Level _____ R per hour (A)

Air Sample Volume _____ cubic ft. x 28320 = _____ cm^3

Particulate _____ net cpm

Particulate Concentration = _____ $\mu Ci/cm^3$ (B)

Iodine _____ net cpm(c)

Iodine Concentration = _____ $\mu Ci/cm^3$ (C)

Iodine dose to concentration conversion from Attachment VII _____ $\frac{rem/2hr}{Ci/m^3}$ (D)

2 hr. child thyroid dose (C) x (D) _____ $\frac{rem}{2hr}$ (E)

NOTE: Compare (A), (B), and (E) to PAGS (Attachment XII)

OFF-SITE DOSE CALCULATION

FROM ENVIRONMENTAL MONITORING

Sample Time _____ Rad level _____

Check One:

Location _____ Iodine _____

Measured Dose Rate_____ rem/hour (A)

$X/Q\bar{u}$ at location from isopleth _____ (B)

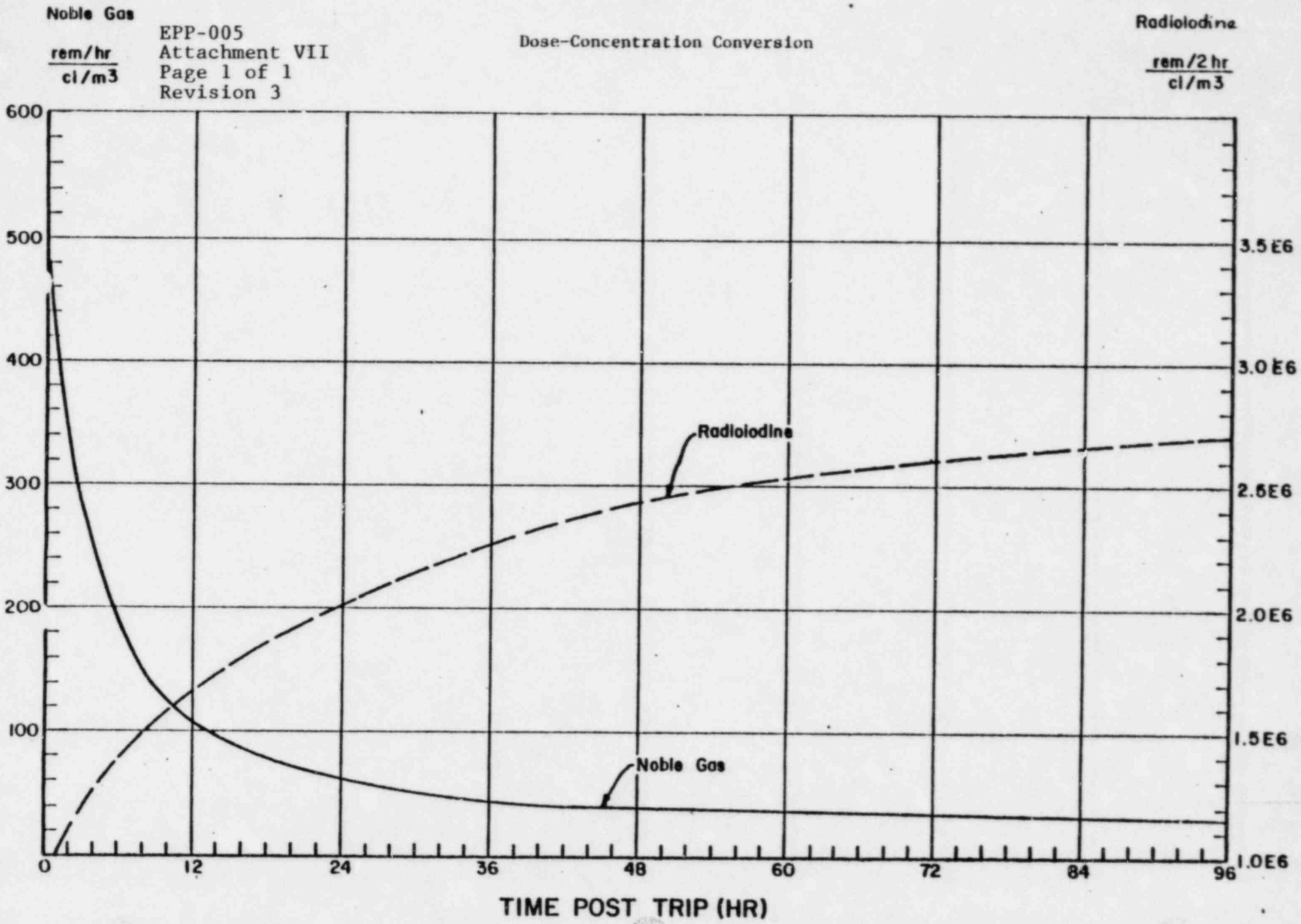
(A) + (B) = _____ (C)

$(X/Q)\bar{u}$ from isopleth at 1 mile_____ (D1)
2 miles _____ (D2)
5 miles _____ (D5)
10 miles _____ (D10)

Does Rate at 1 mile = (C) x (D1) = _____
2 miles = (C) x (D2) = _____ rem/hour
5 miles = (C) x (D5) = _____
10 miles = (C) x (D10) = _____

EPP-005
Attachment VII
Page 1 of 1
Revision 3

Dose-Concentration Conversion



ATMOSPHERIC STABILITY CLASSIFICATION

Temperature Differential (Δ T)

Stability Classification	Pasquill Categories	T in °F 61-10 m	T in °F 40-10 m
Extremely Unstable	A	$\leq$-1.75	$\leq$-1.03
Moderately Unstable	B	-1.74 to -1.56	-1.02 to -0.92
Slightly Unstable	C	-1.55 to -1.38	-0.91 to -0.81
Neutral	D	-1.37 to -0.46	-0.80 to -0.27
Slightly Stable	E	-0.45 to 1.37	-0.26 to 0.80
Moderately Stable	F	1.38 to 3.67	0.81 to 2.16
Extremely Stable	G	>3.67	>2.16

ATMOSPHERIC STABILITY CLASSIFICATION

Stability Classification	Pasquill Categories	Sigma Theta (σ_θ) (degrees)*
Extremely Unstable	A	>22.4
Moderately Unstable	B	22.4 to 17.5
Slightly Unstable	C	17.4 to 12.5
Neutral	D	12.4 to 7.5
Slightly Stable	E	7.4 to 3.8
Moderately Stable	F	3.7 to 2.1
Extremely Stable	G	<2.1

* Standard deviation of horizontal wind direction fluctuation over a period of 15 minutes to 1 hour. (Wind Range divided by 6)

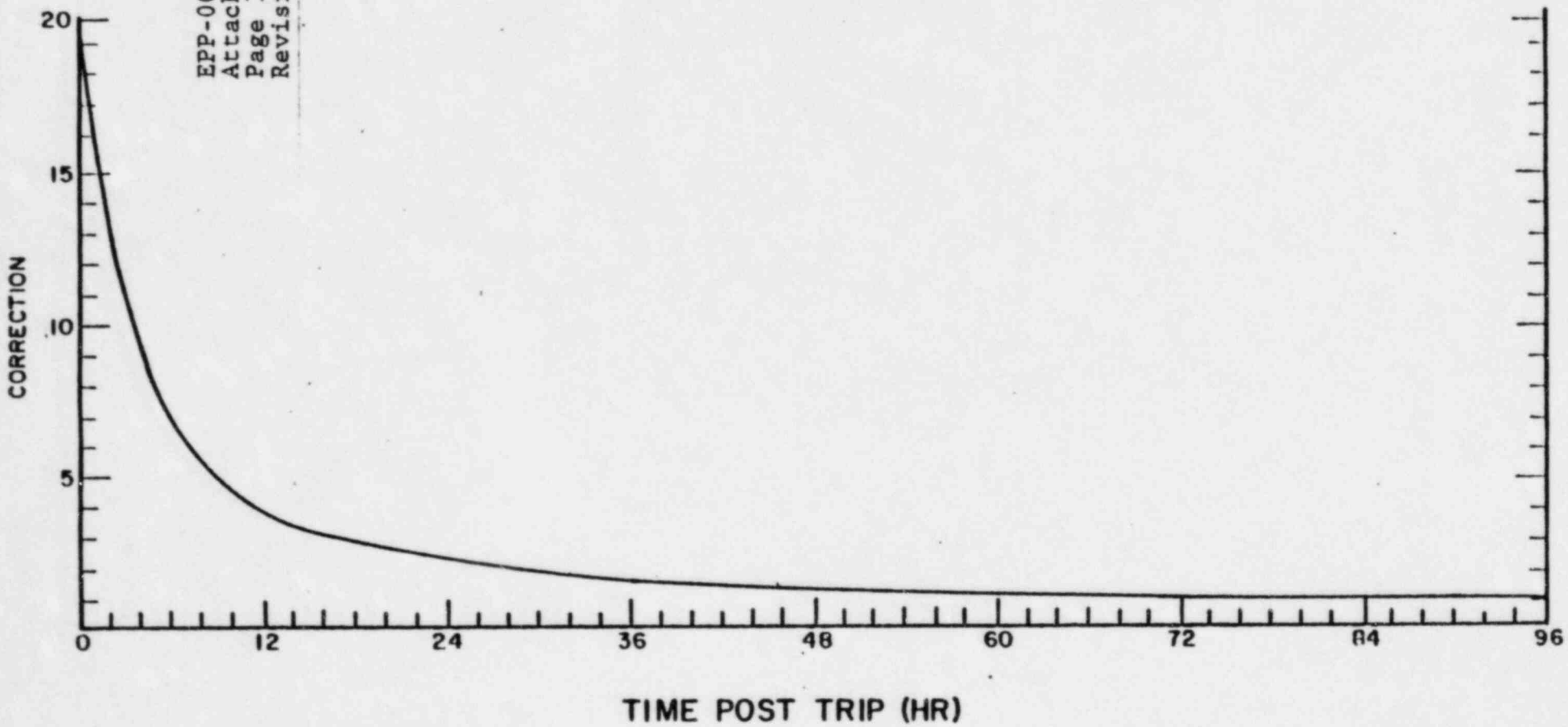
Ref. USNRC Reg. Guide 1.23, Rev. 1, Sept. 1980.

METEOROLOGICAL SECTOR DEFINITION

Wind Direction Sector	Central Value (degrees)	Limits of Sector in Degrees
NNE	22.5	11.25 < ≤ 33.75
NE	45.0	33.75 < ≤ 56.25
ENE	67.5	56.25 < ≤ 78.75
E	90.0	78.75 < ≤ 101.25
ESE	112.5	101.25 < ≤ 123.75
SE	135.0	123.75 < ≤ 146.25
SSE	157.5	146.25 < ≤ 168.75
S	180.0	168.75 < ≤ 191.25
SSW	202.5	191.25 < ≤ 213.75
SW	225.0	213.75 < ≤ 236.25
WSW	247.5	236.25 < ≤ 258.75
W	270.0	258.75 < ≤ 281.25
WNW	292.5	281.25 < ≤ 303.75
NW	315.0	303.75 < ≤ 326.25
NNW	337.5	326.25 < ≤ 348.75
N	360.0	348.75 < ≤ 11.25
CALM		Wind speed less than 0.75 mph
MISSING		Unreliable data

CORRECTION FACTOR

HIGH RANGE MONITORS



RECOMMENDED PROTECTIVE ACTIONS TO REDUCE WHOLEBODY AND THYROID DOSE FROM EXPOSURE TO A GASEOUS PLUME

Projected Dose (Rem) to the Population	Recommended Actions (a)	Comments
Wholebody < 1 Thyroid < 5 Particulate <1.5×10^{-7} μCi/ml	No planned protective actions. (b) State may issue an advisory to seek shelter and await further instruction. Monitor environmental radiation levels.	Previously recommended protective actions may be reconsidered or terminated.
Wholebody 1 to < 5 Thyroid 5 to < 25 Particulate 1.5 to <7.5×10^{-7} $\frac{\mu Ci}{ml}$	Seek shelter as a minimum. Consider evacuation. Evacuate unless constraints make it impractical. Monitor environmental radiation levels Control access.	If constraints exist, special consideration should be given for evacuation of children and pregnant women.
Wholebody 5 and above Thyroid 25 and above Particulate 7.5×10^{-7} $\frac{\mu Ci}{ml}$ and above	Conduct mandatory evacuation. Monitor environmental radiation levels and adjust area for mandatory evacuation based on these levels. Control access.	Seeking shelter would be an alternative if evacuation were not immediately possible
Projected Dose (Rem) to Emergency Team Workers		
Wholebody 25	Control exposure of emergency team members to these levels except for lifesaving missions. (Appropriate controls for emergency workers, include time limitations, respirators and stable iodine.)	Although respirators and stable iodine should be used where effective to control dose to emergency team workers, thyroid dose may not be a limiting factor for lifesaving missions.
Wholebody 100	Control exposure of emergency team members performing lifesaving missions to this level. (Control of time of exposure will be most effective.)	

(a) These actions are recommended for planning purposes. Protective action decisions at the time of the incident must take existing conditions into consideration.

(b) At the time of the incident, officials may implement low-impact protective actions in keeping with the principle of maintaining radiation exposures as low as reasonably achievable.

The Pasquill-Turner Method for Determining Atmospheric Stability

If both the primary and secondary T sensors are inoperative and sigma theta is not available, the Pasquill-Turner method for defining Pasquill stability classes may be used. Before using this method, contact should be made with the NWS. This method is based on the principle that stability near the ground is dependent primarily upon net radiation and wind speed. Determination of stability class as a function of wind speed and net radiation is given in Table 1. In this sytem, insolation is estimated by solar altitude and modified for existing conditions of total cloud cover and cloud ceiling height. At night estimates of outgoing radiation are made by considering cloud cover. The net radiation index is determined as follows:

1) If the total cloud cover is 10/10 and the ceiling is less than 7000 feet, use net radiation index equal to 0 (whether day or night).

2) For nighttime (defined as the period from one hour before sunset to one hour after sunrise):

   a) If total cloud cover $\leq$ 4/10, use net radiation index equal to -2.

   b) If total cloud cover > 4/10, use net radiation index equal to -1.

3) For daytime:

   a) Determine the insolation class number as a function of solar altitude from Table 2.

   b) If cloud cover $\leq$ 5/10, use the net radiation index corresponding to the insolation class number.

   c) If cloud cover > 5/10, modify the insolation class number by the following steps:

      i) If ceiling < 7000 feet, subtract 2

      ii) If ceiling $\geq$ 7000 feet, but <16,000 feet, subtract 1

      iii) If total cloud cover is 10/10 and ceiling is $\geq$ 7000 feet, subtract 1 (compare to 1 above)

The Pasquill-Turner Method for Determining Atmospheric Stability

iv) If total cloud cover is not 10/10 and ceiling is $\geq$ 16,000, assume modified class number equal to insolation class number

v) If modified insolation class number is less than 1, let it equal 1

vi) Use the net radiation index corresponding to the modified insolation class number

Thus, it can be seen from Table 1 that instability occurs with high positive net radiation and low wind speeds, stability with negative net radiation and light winds, and neutral conditions with cloudy skies or high wind speeds.

Calculation of Solar Altitude

$$a = \arcsin \left[\sin \delta \sin \phi + \cos \left(\left(\frac{H-12}{12}\right) 180^\circ\right) \cos \quad \cos \right]$$

where ϕ = station latitude $\cong$ 34.3°

H = hour of day (24 hour clock)

$$\delta = \arctan \left[- \tan (23.5^\circ) \cos \frac{(360^\circ (N+10)}{365}\right]$$

where N = number of days from the beginning of the year

TABLE 1

STABILITY CLASS AS A FUNCTION OF NET RADIATION AND WIND SPEED

(MPH)	Wind Speed* (knots)	Net Radiation Index 4	3	2	1	0	-1	-2
0, 1.15	0, 1	A	A	B	C	D	F	G
2, 3.45	2, 3	A	B	B	C	D	F	G
4.6, 5.75	4, 5	A	B	C	D	D	E	F
6.9	6	B	B	C	D	D	E	F
8.05	7	B	B	C	D	D	D	E
9.2, 10.35	8, 9	B	C	C	D	D	D	E
11.5	10	C	C	D	D	D	D	E
12.65	11	C	C	D	D	D	D	D
≥13.8	≥ 12	C	D	D	D	D	D	D

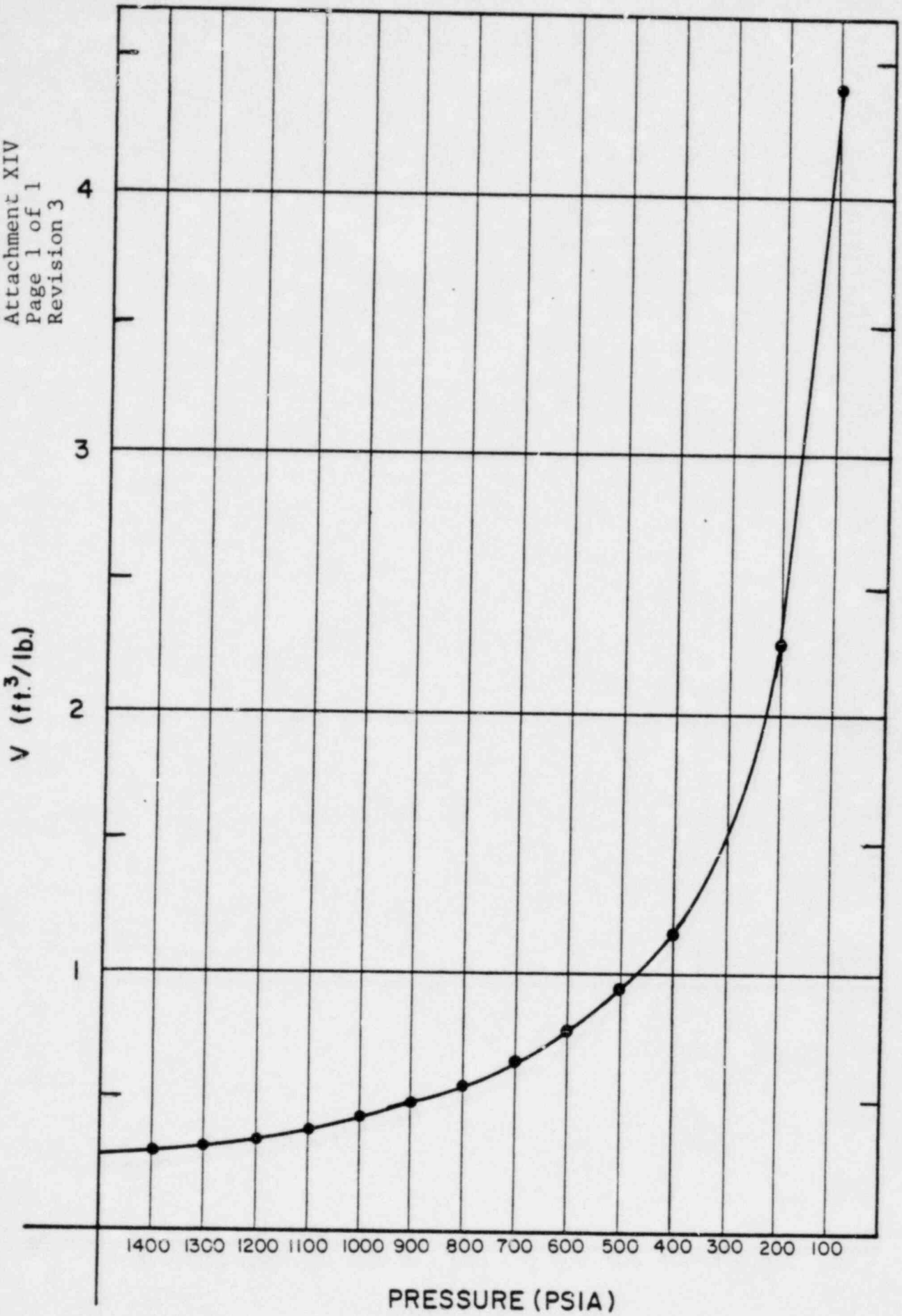
*Table 1 was developed for wind speed in knots. To convert from knots to meters per second, multiply roughly by .5, accurately by .51444.

TABLE 2

INSOLATION AS A FUNCTION OF SOLAR ALTITUDE

Solar Altitude (a)**	Insolation	Insolation Class Number
60° < a	Strong	4
35° < a ≤ 60°	Moderate	3
15° < a ≤ 35°	Slight	2
a ≤ 15°	Weak	1

** See Page 2 of this attachment.


4
3
2
1
V (ft.³/lb.)
1400 1300 1200 1100 1000 900 800 700 600 500 400 300 200 100
PRESSURE (PSIA)

PROCEDURE DEVELOPMENT FORM - A

I. DATE: 6/1/82 PROC. # EPP-006 REV. # ~~1~~ 0 CHANGE # ~~0~~ 1

TITLE: Emergency Reactor Coolant Sampling

PERMANENT? Y RESTRICTED FROM _____ TO _____ SAFETY-RELATED?
NEW PROC? ____ REVISION? X CHANGE? ____ Yes ____ No X

II. ACTION: To cancel this procedure in its intirety. Requirements covered in CHP-903 "Operation of the Nuclear Sample System Under Normal and ~~An~~ Post-Accident Conditions"

III. WILL THIS REVISION/CHANGE/NEW PROCEDURE?

	Yes	No
1. Represent a change to the plant as described in the FSAR?		X
2. Represent a change to procedures as described in the FSAR?		X
3. Represent a test or experiment not described in the FSAR?		X
4. Result in a violation of or change to Technical Specifications?		X
5. Result in significant increased personnel radiation exposure?		X
6. Result in reduction of the margin of safety to the public, environment, or plant personnel?		X
7. Violate the provisions established in the FSAR concerning operation and accident analysis?		X

Mark Counts (Originator) V.R. Albert (Evaluated by Discipline Supervisor) 7/8/82 (Date)

NOTE: If the answer to any of the above questions is "YES", further processing is withheld until licensing considerations are dispositioned. Forward to the Technical Services coordinator for action.

IV. A. REQUIRED REVIEW AND COMMENT

AP	OTHER
( ) Ops	(X) CR (75)
( ) Mnt	( )
( ) TS	(X)
( ) SPS	(X)
( ) QA	( ) QA
( ) QC	( )
( ) PSRC	( )
(X) K. Beale	(X)

B. COMMENTS VIA TELECON

Date	Time	Person Contacted	COMMENTS YES	COMMENTS NO

Telecon Originator _____

REVIEWERS COMMENTS RESOLVED: Mark Counts (Discipline Supervisor) 7/22/82 (Date)

V. RESPONSIBLE ASSISTANT MANAGER:

V.R. Albert (APPROVED) 7/26/82 (DATE)

J.G. Connelly 7/26/82

PSRC REVIEW REQUIRED YES ____ NO X

NUCLEAR OPERATIONS
COPY No. 157C

VI. PSRC REVIEW

A. Reviewed by:

PSRC CHAIRMAN Date

Comments: Yes ____ No ____

B. PSRC Comments Resolved:

ASSISTANT MANAGER Date

PSRC CHAIRMAN Date

JUL 27 1982

SOUTH CAROLINA ELECTRIC AND GAS COMPANY

VIRGIL C. SUMMER NUCLEAR STATION

NUCLEAR OPERATIONS

EMERGENCY PLAN PROCEDURE

EPP-007

ENVIRONMENTAL MONITORING

REVISION 1

JUNE 15, 1982

Non-Safety Related

Reviewed by:

Mark Coats — 7/22/82
ORIGINATOR (of this revision) — Date

W. Frank Boone — 7/13/82
QUALIFIED REVIEWER — Date

Approved:

J.H. Connelly — 7/22/82
PLANT MANAGER — Date

Date Issued: JUL 27 1982

Form AP-101-2, (1/80)

LIST OF EFFECTIVE PAGES

PAGE	REVISION
i	1
ii	1
1	1
2	1
3	1
4	1
5	1

ATTACHMENTS

Attachment I	1
Attachment II	1
Attachment III	1
Attachment IV	1
Attachment V	1

TABLE OF CONTENTS

1.0 PURPOSE

1.1 To provide guidance for the surveying of Environmental Monitoring Stations during an emergency or for post-accident monitoring.

2.0 REFERENCES

2.1 V.C. Summer Radiation Emergency Plan.

2.2 EPP-004 - "Out-of-Plant Radiological Surveying."

2.3 NUREG 0654 - "Criteria for Preparation and Evaluation of Radiological Emergency Response Plans and Preparedness in Support of Nuclear Power Plants."

2.4 HPP-303 - "Airborne Activity Sampling Techniques and Procedures".

2.5 ESP-301 - "Air Sampling for Radioactive Particulates and Radioiodine."

2.6 ESP-801 - "Emergency Plan Procedure - Introduction".

2.7 ESP-802 - "Emergency Plan Procedure - Sampling".

2.8 ESP-803 - "Emergency Plan Procedure - Sample Preparation".

2.9 ESP-804 - "Emergency Plan Procedure - Sample Counting".

3.0 CONDITIONS AND PREREQUISITES

3.1 The Shift Supervisor has determined that conditions for a site or General Emergency exists.

3.2 The Technical Support Center, (TSC),/Emergency Operations Facility (EOF) are activated and have collaborated to determine the Environmental Monitoring Stations to be serviced, and the safest route of travel.

3.3 Radiation Monitoring teams have been formed.

3.4 Radio(s) have been obtained and communications established with TSC and/or EOF.

NOTE: Communications are to be kept open at all times to ensure surveyors are kept advised of changing conditions.

3.5 When handling Environmental Thermoluminescent Dosimeters (TLS's) take precautions to minimize exposure during tranportation to and/or from Environmental stations. Either use lead shielding for TLD's during transport or include a control TLD for determining approximate dose during transport.

3.6 Off-Site Radiation Monitoring Teams will service Environmental Stations by direction from TSC/EOF (as indicated in Attachments I and II).

3.7 Ensure that access gates used enroute are left as found (e.g. open, closed, locked, etc.)

4.0 PROCEDURE

4.1 Obtain an Emergency Off-Site Monitoring Kit and any additional equipment required.

NOTE: Ensure kit seal is unbroken and inspection date is current.

4.2 Obtain vehicle for off-site monitoring from Security if team is dispatched from site. Other designated teams should use assigned vehicles. Also obtain the necessary keys to access gates for the monitored areas.

4.3 Check instrumentation for response to radiation with the source provided prior to leaving to ensure continuous radiation monitoring enroute.

4.4 Environmental TLD Replacement.

4.4.1 Pick up annealed TLD's from Environmental Surveillance Laboratory or EOF.

4.4.2 Ensure proper placement of Environmental TLD sticks into designated sampling stations.

4.4.3 When placing TLD's in field stand, align the scribe marks on the stick with the edges of the hasp. Tighten allen screw only enough to ensure the stick does not rotate in the hasp.

4.4.4 Record date, time, TLD number and any remarks on Attachment III.

NOTE: To install additional sites, nail hasp on appropriate wooden object with long hinged end down. Using a wood bolt and wrench, secure the TLD stick to the object by bolting hinged end down (only one bolt required) making sure center line of stick is parallel to the ground, perpendicular to the direction of the plant and approximately one meter above the ground.

4.5 Environmental Particulates and Radioiodine Samples

4.5.1 Permanent Environmental Air Samplers

4.5.1.1 Remove the previous (sample's) coin envelope from the unit.

4.5.1.2 Note on the envelope the ending date and time, elapsed running time (E.T.), integral flow from the gas meter and initials of collector.

4.5.1.3 Switch off the air sampler.

4.5.1.4 Carefully remove the filter holder face. Hold the coin envelope open below the filter and use forceps or a sharp object to free the sample filter making sure both filter and loose particulate matter on it are transferred to the envelope.

4.5.1.5 Remove the previous (sample's) charcoal cartridge and replace with fresh, labeled cartridge. Mark direction of air flow on cartridge.

NOTE: Replace charcoal cartridges with AgZe cartridges unless otherwise directed from [illegible] F.

4.5.1.6 Annotate Attachment IV with information requested in 4.5.2.

4.5.1.7 Turn unit on, place a new Gelman glass fiber type E, 47 mm filter in the holder and replace the holder face.

4.5.1.8 Note on a coin envelope, the starting date, time, E.T., integral flow and initials of collector.

4.5.1.9 Time one revolution on the "one cubic foot" dial and record the time in the flow rate space on the envelope.

4.5.1.10 Note any sampler malfunction on the affected sample envelope. Notify the Offsite Radiological Coordinator of sampler failure and request further instructions.

4.5.1.11 Return the labeled envelope and cartridge to the designated counting facility for analysis.

NOTE: For immediate results of particulate and/or iodine samples, count on the instrument provided in Emergency Kit. Ensure background radiation levels do not interfere with sample analysis (e.g. background levels should be less than 100 cpm). See Attachment II of EPP-004 for details.

4.5.1.12 If placing a new sampler see ESP-301 for details. (Environmental Surveillance Procedure - 301 "Air Sampling for Radioactive Particulates and Radioiodine").

4.5.2 Portable Air Samples

4.5.2.1 Set up sampler and take samples in accordance with HPP-303.

4.5.2.2 Fill out appropriate sections of Attachment IV.

4.5.2.3 Field calculations of approximate air sample iodine and particulate concentrations can be made using the RM-14 and HP-210 probe provided in the emergency kits and following instructions in Attachment II of EPP-004. (Iodine dose rates can also be obtained using Attachment VI and VIII of EPP-005, if desired).

4.6 Water Samples

4.6.1 TSC/EOF will determine water sampling points and the safest route of travel.

NOTE: The following locations may be used for indicator sampling locations:

a) Downstream of Fairfield Pump Storage.

b) Parr Hydro Plant

c) Broad River, at S.C. Route 213.

4.6.2 Label containers with markers before getting them wet.

4.6.3 Drinking and well water grab samples are taken by allowing water spigots to flush thoroughly, (at least one minute), prior to rinsing and filling container.

4.6.4 Thoroughly rinse the sampling container with water from the source to be sampled.

4.6.5 Surface water grab samples are taken by rapidly submerging the rinsed, loosely capped container approximately one foot beneath the surface, (removing the cap, allowing container to fill, recapping and retrieving the filled container avoiding surface water contamination).

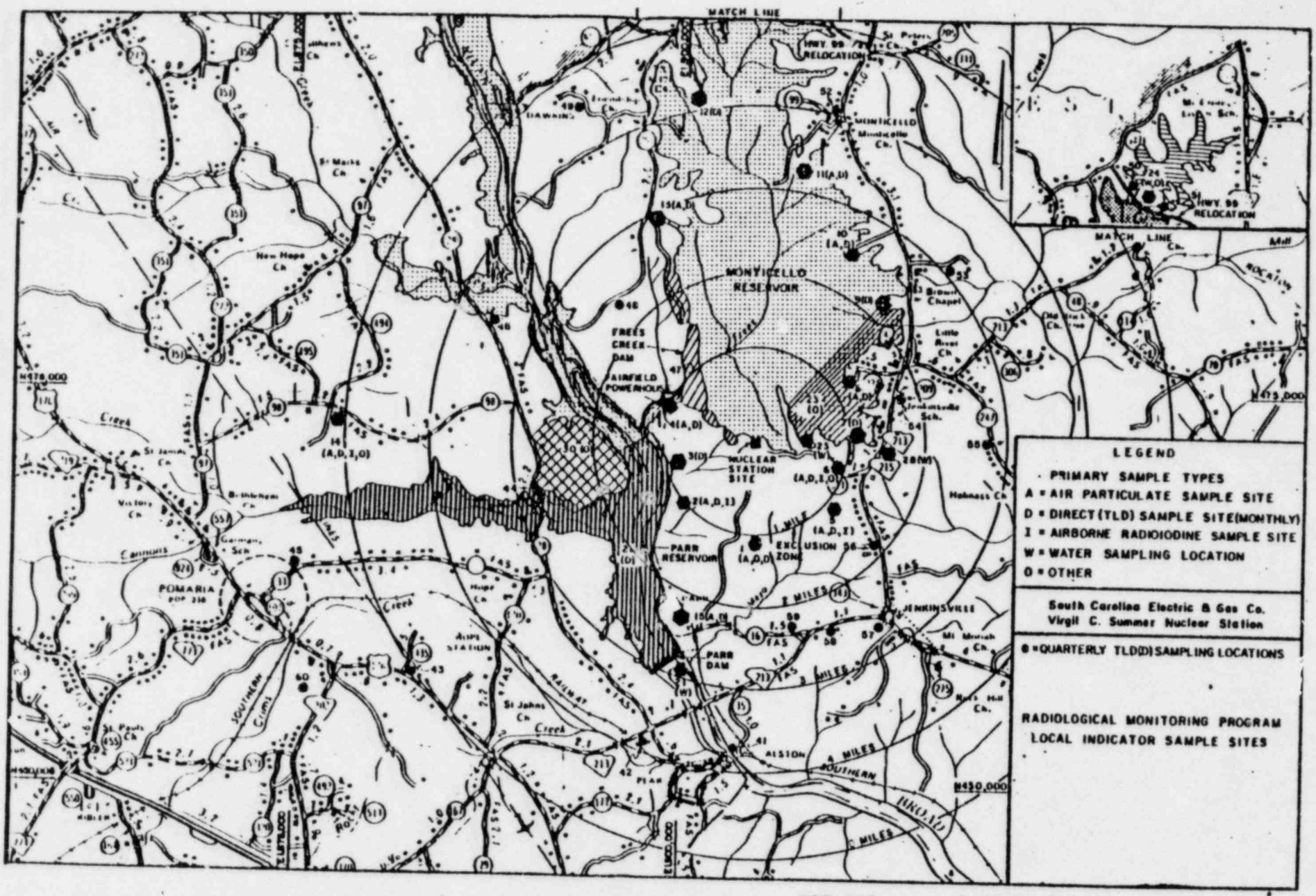
4.6.6 Label all samples with date, time and location and fill out Attachment V.

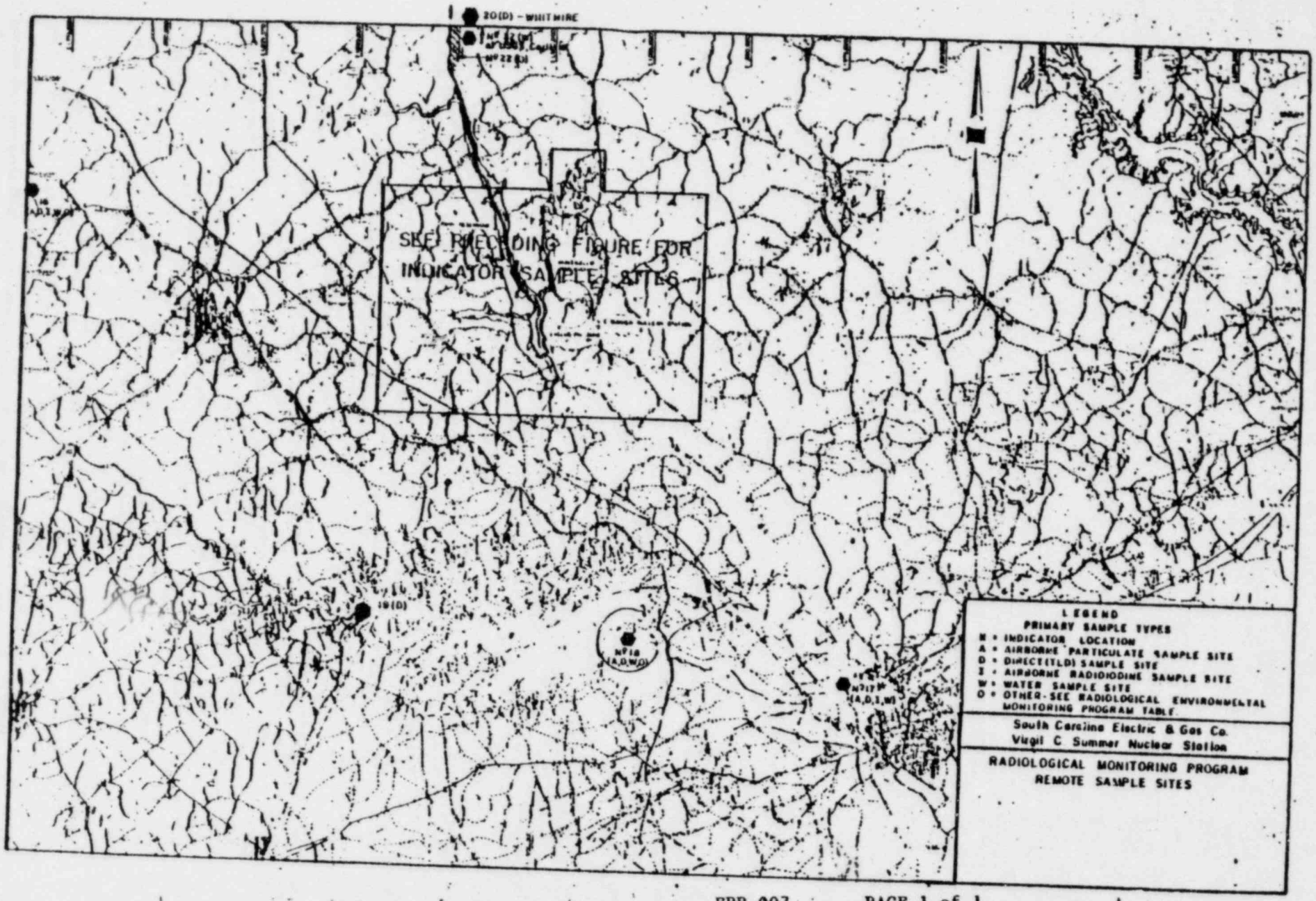
4.6.7 Return all samples to designated counting facility for analysis.

4.7 Grass and other Miscellaneous Samples.

4.7.1 Take samples per instructions of the Offsite Radiological Monitoring Coordinator and record data on Attachment V.

4.7.2 Grass (and broad, leafy vegetable) samples must be sealed in plastic bags as well as possible to avoid loss of "mobile" activities (e.g. iodines).


MATCH LINE
HWY 99 RELOCATION
MONTICELLO
MONTICELLO RESERVOIR
FREES CREEK DAM
AINFIELD POWERHOUSE
NUCLEAR STATION SITE
PARR RESERVOIR
EXCLUSION ZONE
PARR DAM
POMARIA
JENKINSVILLE
ALSTON
PLAN
N475,000
N470,000
N430,000
LEGEND
PRIMARY SAMPLE TYPES
A = AIR PARTICULATE SAMPLE SITE
D = DIRECT (TLD) SAMPLE SITE (MONTHLY)
I = AIRBORNE RADIOIODINE SAMPLE SITE
W = WATER SAMPLING LOCATION
O = OTHER
South Carolina Electric & Gas Co.
Virgil C. Summer Nuclear Station
⊗ = QUARTERLY TLD(D) SAMPLING LOCATIONS
RADIOLOGICAL MONITORING PROGRAM
LOCAL INDICATOR SAMPLE SITES


20(D) - WHITMIRE
SEE PRECEDING FIGURE FOR
INDICATOR SAMPLE SITES
19(D)
NP18
(A,D,W,O)
NP17
(A,D,I,W)
LEGEND
PRIMARY SAMPLE TYPES
N = INDICATOR LOCATION
A = AIRBORNE PARTICULATE SAMPLE SITE
D = DIRECT (TLD) SAMPLE SITE
I = AIRBORNE RADIOIODINE SAMPLE SITE
W = WATER SAMPLE SITE
O = OTHER - SEE RADIOLOGICAL ENVIRONMENTAL MONITORING PROGRAM TABLE
South Carolina Electric & Gas Co.
Virgil C Summer Nuclear Station
RADIOLOGICAL MONITORING PROGRAM
REMOTE SAMPLE SITES

VIRGIL C. SUMMER STATION

EMERGENCY ENVIRONMENTAL TLD REPORT FORM

Collector:_____

	Collected			Installed			Remarks
Location	TLD No.	Date	Time	TLD no.	Date	Time	

VIRGIL C. SUMMER STATION

EMERGENCY AIR MONITORING SAMPLE COLLECTION SHEET

Collector: _____

(Location)	Integrated Gas Reading				Remarks
	Removed		Installed	Removed	
	Date	Time	Particulate / Iodine	Particulate / Iodine	

VIRGIL C. SUMMER STATION

MISCELLANEOUS EMERGENCY ENVIRONMENTAL SAMPLES

Collector: _____

Location	Taken		Type		Quantity			Remarks
	Date	Time	Grab Water	Other	Gallons	Liter	Pound	

SOUTH CAROLINA ELECTRIC AND GAS COMPANY

VIRGIL C. SUMMER NUCLEAR STATION

NUCLEAR OPERATIONS

NUCLEAR OPERATIONS

COPY NO. 152-C

EMERGENCY PLAN PROCEDURE

EPP-008

ON-SITE ASSEMBLY

REVISION 1

JUNE 11, 1982

Non-Safety Related

Reviewed by:

Mark Courts — 7/22/82
ORIGINATOR (of this revision) — Date

W. Frank Baer — 7/13/82
QUALIFIED REVIEWER — Date

Approved:

J. B. Connelly — 7/26/82
PLANT MANAGER — Date

Date Issued: JUL 27 1982

Form AP-101-2, (1/80)

LIST OF EFFECTIVE PAGES

PAGE	REVISION
1	1
11	1
1	1
2	1
3	1
4	1

ATTACHMENTS

Attachment I	1
Attachment II	1

TABLE OF CONTENTS

1.0 PURPOSE

To provide guidelines for conducting personnel on-site assembly verifications during normal operating hours or during other than normal operating hours, weekends, or holidays. These guidelines are for personnel on-site assembly verifications when immediate site evacuation is not required.

2.0 REFERENCES

2.1 "Virgil C. Summer Nuclear Station Radiation Emergency Plan".

2.2 EPP-011, "Personnel Search and Rescue".

2.3 SPP-114, "Security Force Responsibilities During Emergencies.

2.4 NUREG-0654, Criteria for Preparation and Evaluation of Radiological Emergency Response Plans and Preparedness in Support of Nuclear Power Plants.

2.5 EPP-012, "Onsite Personnel Accountability and Evacuation.

3.0 CONDITIONS AND PREREQUISITES

3.1 Personnel on site assembly verification will be performed when ordered by the Emergency Director/Interim Emergency Director. During normal operating hours personnel are directed to proceed to their designated assembly areas/duty stations. During periods other than normal operating hours, weekends or holidays, personnel on-site assembly verifications shall be conducted as prescribed in paragraph 4.2.

3.2 When personnel are ordered to their assembly area/duty stations, they should have in their possession the personal effects necessary to evacuate to an off-site holding area if so directed.

3.3 If the personnel on-site assembly verification has not been completed within a reasonable time due to missing personnel, procedure EPP-011, "Personnel Search and Rescue," may be implemented at the discretion of the ED/IED.

3.4 Personnel on-site assembly verification will interface with SPP-114 and EPP-012.

3.5 Each group's designated Foreman/Supervisor will maintain a current listing of their personnel and badge numbers per Attachment I and report any changes to the Emergency Coordinator.

4.0 PROCEDURES

4.1 Normal operating hours (0800 - 1630 hours daily except weekends and holidays):

Personnel on-site assembly verifications will be performed by designated Foreman/Supervisor per Attachment I, after personnel are notified to proceed to their assembly areas/duty stations.

4.1.1 The Emergency Director has the overall responsibility for personnel on-site assembly verifications.

4.1.2 The Assistant Manager Support Services will coordinate the overall plant on-site assembly verification and report same to the Emergency Director. He will also periodically compile personnel information reported to him into a personnel on-site assembly verification checklist (Attachment I) for each reporting unit to aid in expediting collection and reporting of required information. (List of assembly areas/duty stations are contained in Attachment II).

4.1.3 The following personnel will submit an on-site assembly verification report to the Assistant Manager, Support Services located in the TSC:

4.1.3.1 The Assistant Manager, Technical Support for personnel located in the Technical Support Area of the Technical Support Center (TSC).

4.1.3.2 The Director of Health Physics for Radiological Assessment personnel.

4.1.3.3 The Supervisor of Operations, in coordination with the Director of Administration, for personnel assigned to the Operations Group and the Operations Support Center (OSC).

4.1.3.4 The Director of Administration for personnel reported assembled in other designated assembly areas. (Contained in Attachment II).

4.1.4 Upon direction by announcement over the plant paging system and (Fairfield Pump Storage by phone, Microwave or Control Room on back shift, personnel will proceed to their assembly areas or predetermined duty station. All contractor and visitor personnel not permanently assigned to a specific Summer Nuclear Station group will proceed or be escorted through the guard house to the Q.A./Security Building or through the Auxiliary Access Portal to the AAP Assembly Area, depending on their point of access. They will remain there until further instructions are received.

4.1.5 Each Foreman/Supervisor will initially report the status of his group to the Director of Administration located in the Operations Support Center, by a completed personnel On-Site Assembly Verification checklist (See Attachment I). If the station is in "Site Emergency" or "General Emergency" the On Site Assembly Verification will be performed per EPP-012; if in "Alert" the completed checklist is required as soon as practicable. Essential personnel should be identified to support the requirements of the particular emergency as soon as feasible and reported by a second report if possible before evacuation is directed.

4.1.6 The Security organization will obtain a copy of the completed checklists from the Assistant Manager, Support Services.

4.1.7 The Security Shift Leader will compile a list of any personnel who are unaccounted for by comparing the checklist received to the Security badge accounting results. Any discrepancies will be noted and reported to the ED/SS.

4.2 <u>Other than normal operating hours</u>:

4.2.1 The Shift Supervisor has the overall responsibility for personnel On-Site Assembly Verification until relieved by the ED or his DA.

4.2.2 The Security Shift Leader will coordinate personnel on-site assembly verification and provide the Shift Supervisor with a report of all personnel present within the protected area when directed. The Shift Supervisor will continue to be responsible for personnel On-Site Assembly Verification until the Technical Support Center is activated and he is properly relieved by the ED or his DA.

4.2.3 All shift personnel shall report to the Control Room to allow the Shift Supervisor to verify accountability.

4.2.4 All personnel not assigned to shift work shall report to the area adjacent to the guard house and service building to allow their supervisor to verify accountability, and forward same to the Security Shift Leader or DA.

4.3 Persons unaccounted for will be searched for in accordance with EPP-011, "Personnel Search and Rescue".

LOCATION

BADGE NUMBER	NAME	PRESENT	INACCESSIBLE FOR	ESSENTIAL LOCATION	REMARKS

ASSEMBLY AREA/DUTY STATION LIST

LOCATION	COMPOSITION OF GROUP	PHONE NUMBER	REMARKS
Fairfield Pump Storage	Hydro Operators, Land Department Utility Personnel		
Tech. Support Area Tech. Support Center	Engineers, STA's		
Health Physic Laboratory	Rad. Teams, H/P Personnel		
Emer. Ops. Area - Tech Support Center	Emer. Director		
	Personnel Accountability/ Assistant Manager, Support Services		
	Rad. Assess. Supv.		
	Assistant Manager, Technical Support		
	Security Supv.		
	Assistant Manager, Maintenance Services		
	Assistant Manager, Operations		
Machine Shop/ Carpenter Shop	Contract Maintenance		
448' Elev Control Bldg	Misc Contract Personnel		
Control Room/ OSC	Fire Watch		

ASSEMBLY AREA/DUTY STATION LIST

LOCATION	COMPOSITION OF GROUP	PHONE NUMBER	REMARKS
Control Room	Shift Complement		
QC Office Service Bldg.	QC Inspectors		
Operations Support Center (OSC)	Various support units plus Supervisory Personnel		
I&C Shop	I&C Personnel - SCE&G/ Butler Arde		
Water Treat-Lab - 463'elev.	Chemistry		
Start-Up Office	Start-Up Supervisors & Clerical		
Engineering Area-Serv.Bld	Engineers, Techs, Computer Maintenance		
Welding/ISI Office	Maintenance Engineer Supervisor, Support		
Warehouse "C"	Material Support		
Planning/ Scheduling Rm	Maintenance Planner/ Champs/SCI Support		
Electrical Shop	Elec. Maint. - SCE&G/ Harrison		
Machine Shop	Utility Personnel		
QA Office	QA Inspectors		
Office Sect. Service Bldg.	Clerical & Miscellaneous		
Guardhouse	Security Personnel		
Training Area Service Bldg.	Training Personnel		
Security Offices	Administrative Security Personnel		
Machine Shop	Mech. Maint. - SCE&G		
Q.A./Security Building	Visitors and Non-permanently assigned personnel		
Turbine Bldg. Truck Access	K-MAC and other contract personnel		

SOUTH CAROLINA ELECTRIC AND GAS COMPANY

VIRGIL C. SUMMER NUCLEAR STATION

NUCLEAR OPERATIONS

NUCLEAR OPERATIONS
COPY NO. 157-C

EMERGENCY PLAN PROCEDURE

EPP-009

ON-SITE MEDICAL

REVISION 2

JUNE 16, 1982

NON-SAFETY RELATED

Reviewed by:

Mark Counts — 7/22/82
ORIGINATOR (of this revision) — Date

D. Frank Bacon — 7/22/82
QUALIFIED REVIEWER — Date

Approved:

J G Connelly — 7/26/82
PLANT MANAGER — Date

Date Issued: JUL 27 1982

Form AP-101-2 (1/80)

LIST OF EFFECTIVE PAGES

PAGE	REVISION
1	2
11	2
1	2
2	2
3	2
4	2
5	2

ATTACHMENTS

Attachment I	2
Attachment II	2

TABLE OF CONTENTS

1.0 PURPOSE

1.1 To provide guidelines for handling individuals who have been injured, with or without associated contamination, and may be in need of off-site medical treatment.

2.0 REFERENCES

2.1 "Virgil C. Summer Nuclear Station Radiation Emergency Plan."

2.2 EPP-010, "Personnel/Vehicle Decontamination."

2.3 EPP-002, "Communications and Notifications."

2.4 NUREG-0654, Criteria for Preparation & Evaluation of Radiological Emergency Response Plans & Preparedness in Support of Nuclear Power Plants."

2.5 EPP-018, "Emergency Facilities Activation and Evacuation"

2.6 EPP-020, "Emergency Personnel Exposure Control."

3.0 CONDITIONS AND PREREQUISITES

3.1 The first level of treatment shall be given on-site. If the injury occurs in the Radiation Controlled Area (area beyond the 412' elevation of the Control Building) and the patient becomes contaminated, injury should be treated at the 412' elevation of the Control Building (H.P. Lab area).

3.2 If the injury does not involve contamination and the patient can be moved,the injury should be treated at either the first aid room located in the Control Building, or the first aid dispensary located in the Service Building, 436' elevation.

3.3 The First Aid Team Leader should be the "B" Nuclear Reactor Operator or his alternate as available. Other members of the First Aid Team should be available Auxiliary Operators, Maintenance personnel, Chemistry personnel, etc. as per EPP-016, Attachment II.

4.0 PROCEDURES

4.1 The Shift Supervisor/Emergency Director shall dispatch the first aid team and Health Physics representative to the area of the injured individual. The team shall initiate life saving actions where required; and then perform the following:

4.1.1 Survey the patient and determine if any contamination is present. Determine if off-site assistance is needed.

A. A member of the team should contact the control room/TSC and apprise them of the situation, i.e., name and location of victim, physical and radiological condition of victim, team recommendations for off-site assistance, and team recommendations, for next actions. If the patient is not contaminated, continue first aid treatment. The patient should be moved to the first aid room for treatment when such a move would not endanger the patient.

B. If the patient is or is expected to be externally contaminated, initially perform only the first aid treatment necessary. Follow procedure EPP-010 "Personnel/Vehicle Decontamination."

4.2 If requested by the First Aid Team, the Communicator/Interim Emergency Director/ED will notify the Company Physician, as per EPP-002.

4.3 If the report of the First Aid team indicates the person must be transported to the hospital, the IED/ED will assure that the following is performed:

4.3.1 The First Aid Team shall:

A. Decontaminate the patient to the fullest extent possible, considering the extent of the injuries.

1. Where difficulty in decontamination is encountered, wrap the affected area in a blanket, plastic, or sterile dressing (in the case of a wound) to isolate the contamination.

NOTE: Avoid excessive wrapping due to the possibility of overheating the victim.

B. Prepare the person for transport as follows:

1. Complete the Personnel Injury and Contamination Report with all available information to accompany patient (see Attachment I).

2. Notify the Technical Support Center/Control Room that the individual is ready for transport to the hospital.

3. The TSC/Control Room should inform First Aid Team where victim is to be picked up by the ambulance.

4.3.2 At the same time that the person is being prepared for transport, the Communicator will:

4.3.2.1 Notify the hospital, per EPP-002, "Communications and Notifications", so the medical personnel there will have the time to prepare the proper facilities.

4.3.2.2 Request assistance from Ambulance Services, per EPP-002.

NOTE: Depending upon Radiological conditions, inform ambulance personnel of the preferred ingress and egress routes that should be taken. Helicopter landing sites are per Attachment II.

4.4 The Shift Supervisor/Emergency Director will:

4.4.1 Ensure that a Health Physics representative or qualified radiation worker accompanies the injured person to the hospital and performs the necessary actions.

4.4.2 Direct Security Personnel to meet the ambulance at the site entrance and accompany it to the patient's location.

NOTE: If the injury occurred outside of the radiation control area, and no contamination is involved, the Shift Supervisor/Emergency Director may assign any plant personnel to accompany the victim.

NOTE: Security shall provide Dosimetry to Ambulance personnel before entry.

4.4.3 The Control Room/TSC shall notify hospital of departure of ambulance from plant site and maintain communication with the hospital via the appropriate communications equipment.

4.5 The person accompanying the injured will:

4.5.1 Ensure that the Ambulance Radiation Emergency Kit (located in the First Aid Room on the 412' elevation of the Control Building) is taken with a contaminated person who is injured. Items in the Kit are to be used on an as needed basis.

NOTE: The Ambulance Radiation Emergency Kit contains protective clothing to be used by Ambulance personnel for contamination control, poly bags to collect contaminated waste, absorbent material to cover clean areas, supplies for posting and controlling areas, and a survey instrument.

4.5.2 Ensure that the transporting vehicle uses the appropriate hospital receiving area.

4.5.3 Notify Control Room/TSC of arrival at hospital.

4.5.4 Assist in the radiological aspects of the treatment as necessary.

A. Assist the hospital staff in the decontamination activities for the hospital receiving area. Ensure all waste products are properly contained for future disposal.

4.5.5 If protective plastic has been used in the ambulance, carefully remove and bag it for return to Virgil C. Summer Nuclear Station.

4.5.6 If contaminated, decontaminate himself prior to leaving the hospital.

4.5.7 Ensure that the ambulance and its personnel are surveyed prior to being released.

A. The personnel, if contaminated, shall be decontaminated at the hospital.

B. The vehicle shall be decontaminated at the hospital facility or the Virgil C. Summer Nuclear Station.

C. Collect dosimetry from ambulance attendants and obtain appropriate information.

4.5.8 Keep the Emergency Director/Shift Supervisor informed at all times as pertinent information concerning the patient becomes available.

4.5.9 Retain all survey documentation and samples and forward to the Radiological Assessment Supervisor as soon as practical.

4.6 If the injured or any of the First Aid Team have been over exposed, the requirements of EPP-020, "Emergency Personnel Exposure Control", will be met.

PERSONNEL INJURY AND CONTAMINATION REPORT
V.C. SUMMER NUCLEAR STATION
345-5209/345-2620

Name of injured: _____

Injuries as known: _____

First Aid Treatment: _____

Medical Treatment (Initial): _____

Vital Statistics: _____

External Contamination: ☐ Yes ☐ No (if yes, denote levels on back of form).

Internal Contamination: ☐ Yes ☐ No

Body Burden Analysis Results: _____
Exposure Assigned: _____

Overexposure: ☐ Yes ☐ No

TLD results: _____

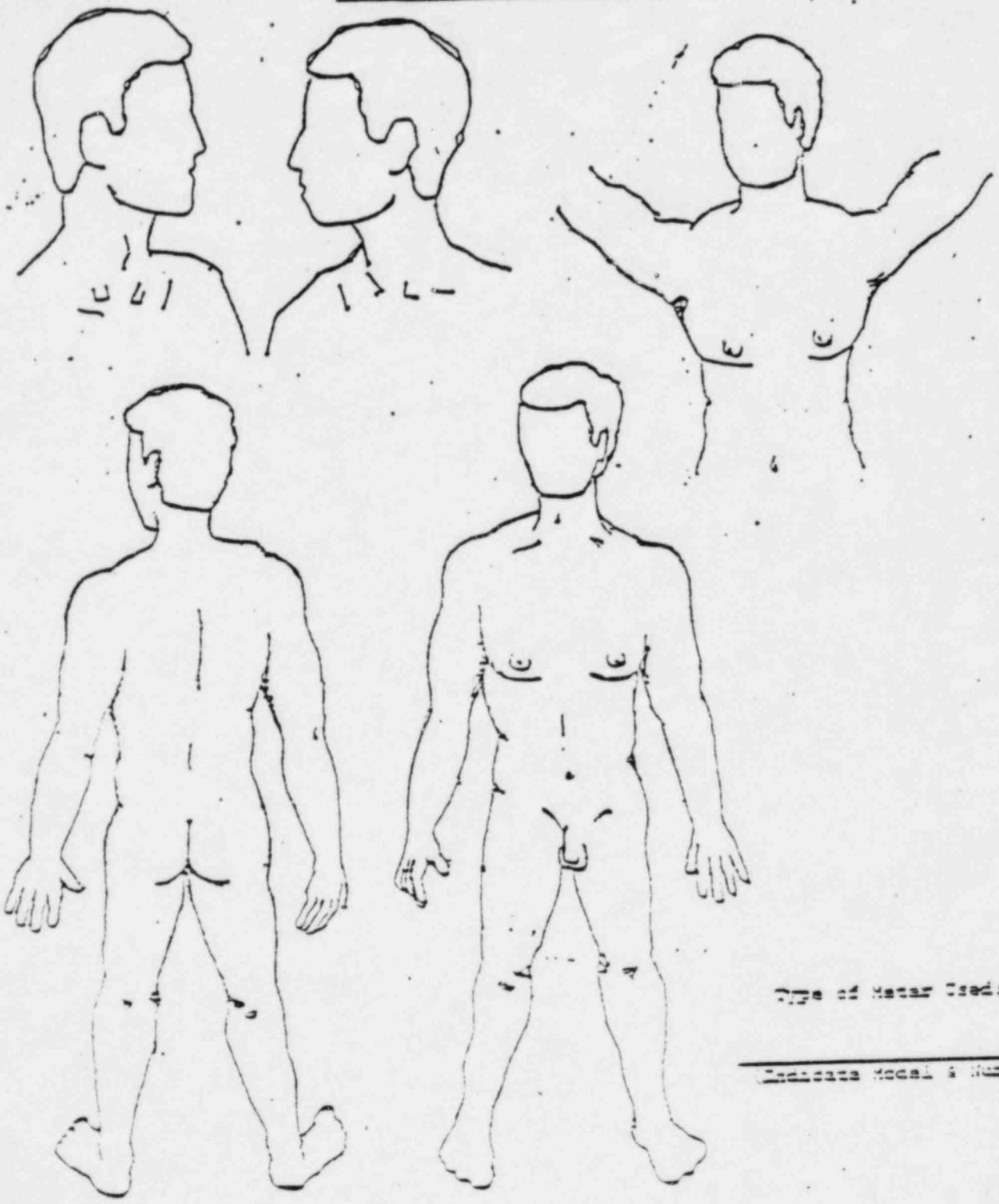
Person accompanying victim:

_____ _____
PRINT NAME SIGNATURE

PERSONNEL INJURY AND CONTAMINATION REPORT

Indicate Contaminated Areas As To Location, Degree Of Contamination, Decon Effort

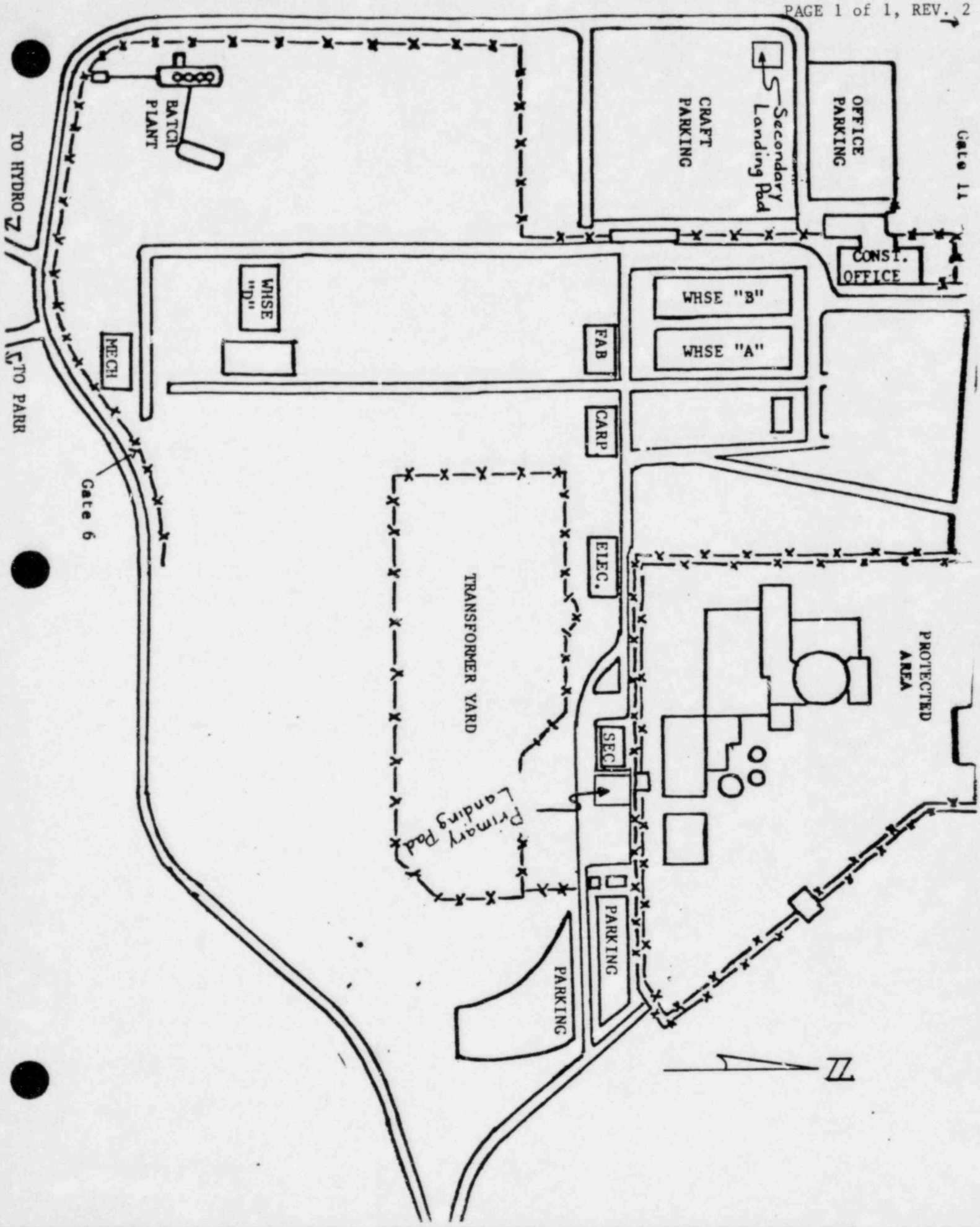
Indicate Location of Wounds



Type of Meter Used:

(Indicate Model & Number)

V. C. SUMMER HELICOPTER LANDING SITES



SOUTH CAROLINA ELECTRIC AND GAS COMPANY

VIRGIL C. SUMMER NUCLEAR STATION

NUCLEAR OPERATIONS

NUCLEAR OPERATIONS
COPY NO. 152-C

EMERGENCY PLAN PROCEDURE

EPP-010

PERSONNEL/VEHICLE DECONTAMINATION

REVISION 2

JUNE 11, 1982

NON-SAFETY RELATED

Reviewed by:

Mark Cousta — 7/22/82
ORIGINATOR (of this revision) — Date

W. Frank Baum — 7/13/82
QUALIFIED REVIEWER — Date

Approved:

J. G. Connelly — 7/26/82
PLANT MANAGER — Date

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LIST OF EFFECTIVE PAGES

PAGE	REVISION
1	2
11	2
1	2
2	2
3	2
4	2

ATTACHMENTS

Attachment I	2
Attachment II	2

TABLE OF CONTENTS

1.0 PURPOSE

To provide instructions for the decontamination of personnel and vehicles during emergency conditions.

2.0 REFERENCES

2.1 "Virgil C. Summer Nuclear Station Radiation Emergency Plan."

2.2 HPP-405, "Personnel Decontamination".

2.3 EPP-012, "Onsite Personnel Accountability and Evacuation.".

2.4 EPP-009, "On-Site Medical".

2.5 NUREG-0654, Criteria for Preparation and Evaluation of Radiological Emergency Response Plans and Preparedness in Support of Nuclear Power Plants.

3.0 CONDITIONS AND PREREQUISITES

3.1 All injuries occurring within the Radiation Control Area will be considered contaminated until monitored and cleared by Health Physics.

3.2 Potentially contaminated personnel/vehicles will be monitored and decontaminated on-site unless evacuation to an off-site area is required. When evacuated to off-site holding areas, monitoring and decontamination of personnel/vehicles will be performed at locations designated by Health Physics.

3.2.1 For offsite/Security Annex Monitoring and decontamination.

3.2.1.1 Obtain emergency kits from Service Building Annex and radios from Health Physics Lab or TSC. Check seals and inspection on Emergency Kits.

NOTE: If seals are broken or inspection date is not current on emergency kits, perform a quick check to ensure emergency kits are adequate for field use.

3.2.1.2 Check instruments in kit with the source supplied in the kit for response to radiation.

3.3 All decontamination shall be supervised by Health Physics personnel.

3.4 All personnel and vehicles found to be contaminated will be reported to the Radiological Assessment Supervisor by radio or closest available telephone.

3.5 All surveys will be documented and trasmitted to the TSC as soon as practical.

4.0 PROCEDURE

4.1 Personnel Decontamination

4.1.1 The following Radiation/contamination limits shall be utilized:

a. All personnel shall be limited to non-detectable loose surface contamination of less than 100 cpm above background at 1/2 inch using a pancake GM tube (HP-210 probe), with an efficiency greater than or equal to 10% and background less than or equal to 400 cpm.

4.1.2 All personnel who have or are suspected of having internal contamination shall have a whole body count at the earliest possible time.

4.1.3 During emergency conditions, it may become necessary to evacuate contaminated or potentially contaminated personnel. These personnel should be dressed in paper coveralls with a yellow and magenta arm band and should be monitored and decontaminated at the designated off-site holding area, if that is their destination.

4.1.4 Personnel decontamination performed inside the plant will be accomplished in the decontamination facilities described in HPP-405 "Personnel Decontamination", if possible.

4.1.5 Personnel decontamination to be performed outside the Protected Area may be accomplished by direct HP coverage in the Q.A./Security Building (whenever possible). All waste generated, both solid and liquid, shall be collected for subsequent disposal. Precautions to minimize waste should be used whenever possible.

4.1.6 If personnel decontamination is performed at the offsite holding area, decontamination supplies located in the Q.A./Security Building should be utilized.

4.1.7 Complete Attachment I for all contaminated personnel.

4.1.8 Bioassays will be administered, based upon levels of skin contamination, at the discretion of the Radiological Assessment Supervisor.

4.2 Vehicle Decontamination.

4.2.1 Vehicle monitoring should be performed by Health Physics personnel using the appropriate equipment stored in the emergency kits.

4.2.2 The following limits will be used for unconditional release of vehicles during offsite evacuation:

4.2.2.1 Less than 1000 DPM/100 cm^2 Beta/Gamma, smearable contamination.

4.2.2.2 Less than 100 cpm above background at 1/2" using a pancake GM Tube (HP-210 probe).

4.2.3 All vehicles found to be contaminated in excess of the above limits should be decontaminated using the following guidelines.

NOTE: Don appropriate protective clothing prior to decontamination attempts.

4.2.3.1 Rope and post an area accordingly.

4.2.3.2 Lay out plastic in the roped area and place the vehicle upon the plastic.

4.2.3.3 Using the decon supplies in the off-site monitoring kits, decon the vehicle using decon foam and towels or disposable rags.

4.2.3.4 Ensure that all contaminated towels and rags are placed in the radioactive trash bags provided in the Emergency Kit.

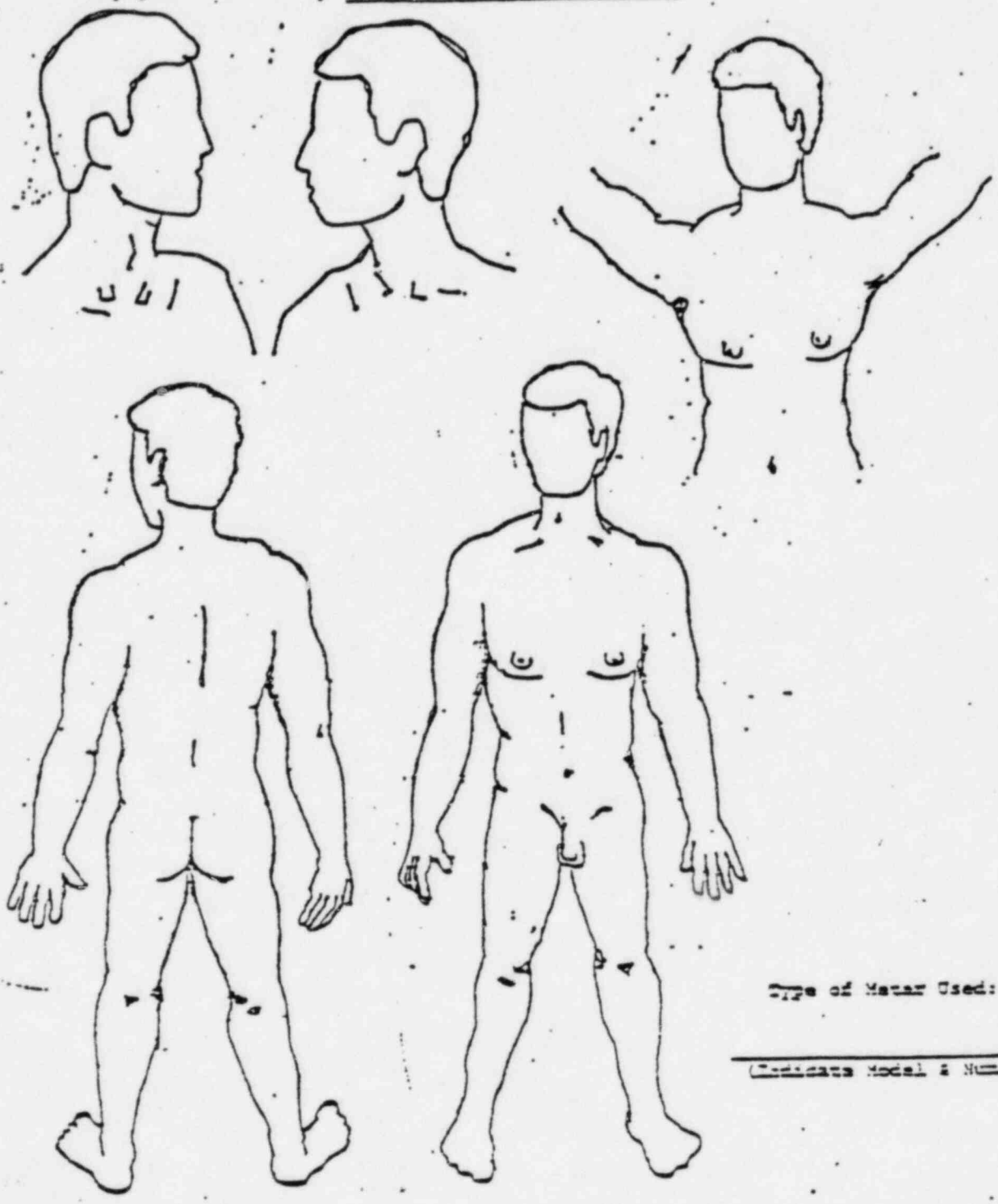
NOTE: If, after several decon attempts, the contamination levels still do not meet the criteria listed in section 4.2.2, contact the Director of Health Physics or Health Physics Supervisor for further instructions in decontamination techniques.

4.2.3.5 Complete Attachment II for all contaminated vehicles.

PERSONNEL CONTAMINATION REPORT

Indicate Contaminated Areas As To Location, Degree Of Contamination, Decon Effort

Indicate Location of Wounds



Type of Meter Used:

(Indicate Model & Number)

PERSONNEL CONTAMINATION REPORT

NAME OF PERSONS(S) INVOLVED: _____

DATE: _____

TIME: _____

RWP/SRWP NO.: _____

LOCATION OF INCIDENT: _____

_____

SUSPECTED OR KNOWN CAUSE: _____

_____

WERE CORRECT HEALTH PHYSICS PRACTICES BEING FOLLOWED? ____ YES ____ NO

PORTION OF BODY CONTAMINATED: _____

_____

INITIAL READINGS: Fixed: _____ DPM

READINGS AFTER DECONTAMINATION: Fixed _____ DPM

PERSONNEL INJURY INVOLVED: _____ YES _____ NO

ACTION TAKEN FOR DECONTAMINATION: _____

_____

MEDICAL ACTION TAKEN: _____

_____

BODY BURDEN ANALYSIS PERFORMED: _____ YES _____ NO

RESULTS OF BODY BURDEN ANALYSIS/EXPOSURE ASSIGNED: _____

_____

CORRECTIVE ACTION TAKEN TO PREVENT REOCCURRENCE: _____

_____

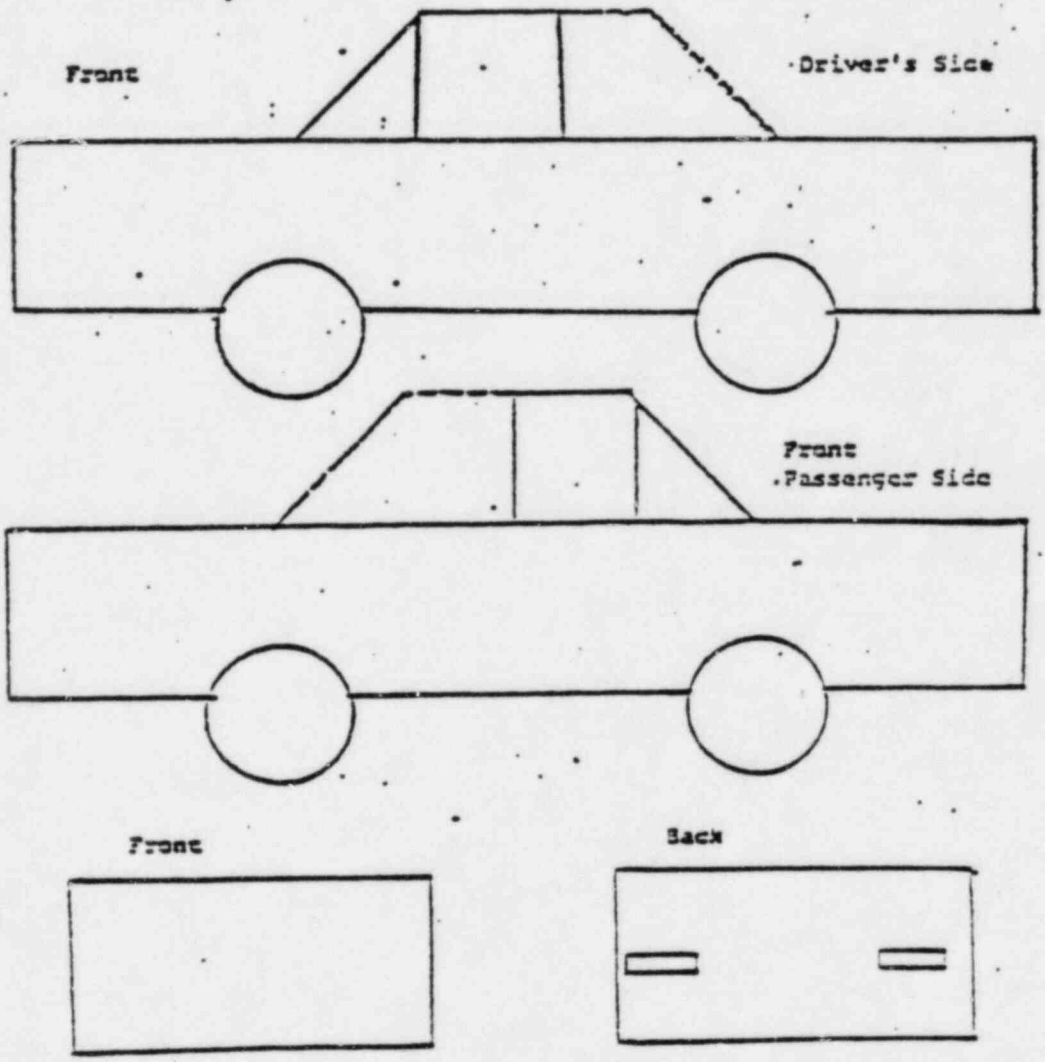
_____ / _____ / _____
INDIVIDUAL'S SUPERVISOR DATE RAD. ASSESSMENT SUPERVISOR DATE

VEHICLE SURVEY REPORT

VEHICLE MONITORING INSTRUCTIONS
VEHICLE SURVEY FORM

NOTE: Use this form for contaminated vehicles only.

Owner's Name _____ License No. _____



VEHICLE SURVEY REPORT

NOTE: Indicate vehicles needing decontamination.

License	State	Survey Results	License	State	Survey Results

Instrumentation Used

_____

_____

Survey Completed by _____ Date _____

Reviewed by _____ Date _____

SOUTH CAROLINA ELECTRIC AND GAS COMPANY

VIRGIL C. SUMMER NUCLEAR STATION

NUCLEAR OPERATIONS

NUCLEAR OPERATIONS

COPY NO. 157-C

EMERGENCY PLAN PROCEDURE

EPP-011

PERSONNEL SEARCH AND RESCUE

REVISION 2

JUNE 11, 1982

NON-SAFETY RELATED

Reviewed by:

Mark Counts — 7/22/82
ORIGINATOR (of this revision) — Date

W. Frank Bacon — 7/13/82
QUALIFIED REVIEWER — Date

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J. L. Connelly — 7/22/82
PLANT MANAGER — Date

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Form AP-101-2, (1/80)

LIST OF EFFECTIVE PAGES

PAGE	REVISION
1	2
11	2
1	2
2	2
3	2
4	2
5	2

ATTACHMENTS	
Attachment I	2
Attachment II	2

TABLE OF CONTENTS

1.0 PURPOSE

To provide guidelines for performing a search and rescue operation to find missing individuals.

2.0 REFERENCES

2.1 "Virgil C. Summer Nuclear Station Radiation Emergency Plan."

2.2 NUREG 0654, Criteria for preparation and Evaluation of Radiological Emergency Response Plans and Preparedness in Support of Nuclear Power Plants.

2.3 EPP-009, "On-Site Medical".

2.4 EPP-020, "Emergency Personnel Exposure Control".

2.5 EPP-008, "Onsite Assembly"

2.6 EPP-012, "Onsite Personnel Accountability and Evacuation"

2.7 EPP-016 "Emergency Facilities Activation and Evacuation"

3.0 CONDITIONS AND PREREQUISITES

3.1 Personnel accountability has been performed and it has been determined that a person on-site may be missing. This procedure assumes that a missing person(s) is injured until proven different.

3.2 At least one member of the Search and Rescue Team will be qualified in Health Physics monitoring techniques and one member will be at least Multi-media First Aid qualified.

3.3 The leader of the Search and Rescue Team should be the "B" Nuclear Reactor Operator or his designee as available. Other members of the Search and Rescue Team should be: available Auxiliary Operators, Maintenance Personnel, Chemistry Personnel, etc., as per EPP-016 Attachment II.

3.4 If necessary, the members of the Search and Rescue Team may be authorized to receive 100 rem to save the life of the missing individual(s) as per Reference 2.4.

4.0 PROCEDURE

4.1 When the Personnel Accountability Verification has been completed and it is determined that one or more individuals are unaccounted for, the ED/SS shall:

4.1.1 Make the following announcement over the plant paging system:

Attention, the following personnel report your location to the Control Room. [Names _____, _____,]. (Repeat this message once per minute for five minutes).

NOTE: If Security has already made this announcement in accordance with EPP-012, the ED/SS may elect to skip steps 4.1.1 and 4.1.2.

4.1.2 If after about five (5) minutes the individual(s) are still unaccounted for, contact the individual(s) supervisor in an attempt to determine the general location of the individual(s).

4.1.3 Assemble a Search and Rescue Team that should consist of personnel from the following groups: (as available)

A. Operations

B. Maintenance

C. Health Physics

D. Security Force

4.1.4 The team will be outfitted with necessary protective clothing, monitoring instruments, and a portable radio.

4.1.5 Using coordinates gained from implementation of EPP-008, the team will be provided with the following information as available:

A. Plant conditions that may affect the rescue effort.

B. The name, description, and affiliation of the missing person.

C. The last known location.

1) Check with Security for following information:

   a) Any keys checked out to individual.

   b) Door the victim last went through using card reader.

2) Check with Health Physics for any keys checked out to victim.

3) Check Control Room key logs for any keys checked out to victim.

D. The job last being performed by the person.

4.1.6 Based on the information provided in step 4.1.5 above, the ED/Shift Supervisor assisted by the designated team leader shall plan the routes to be followed with consideration of the ALARA program. Attachment II gives routes which should be used unless radiological/safety hazards cause alternate routes to be used. The team leader, as a designee of the shift supervisor, will be responsible for ensuring that:

A. A thorough search of each area is conducted using Attachments I and II.

B. The search and rescue team stays together and conducts the search as a team.

C. Attachment I is signed off as each area is searched.

NOTE: To speed the search effort, Attachment I may be signed off by the Control Room/TSC/OSC as information is received from the search and rescue team via portable radio or PA System.

4.1.7 The search and rescue team will:

A. Obtain floor plans for building being searched and determine the best route to most probable location. Obtain any necessary keys.

<u>NOTE</u>: The team leader will be assigned keys should certain suspected areas be locked, and need searching.

B. Check with Health Physics for route approval or modification for radiological reasons.

C. Search most probable area first using information supplied in 4.1.5.

D. During the search and rescue effort, utilize all possible means to keep exposures ALARA.

E. Inform ED/Shift Supervisor when each elevation is thoroughly searched. The Shift Supervisor will direct the search and rescue team to the next area to be searched and assign further search teams as needed.

4.1.8 As soon as victim is found:

A. Assess condition of victim and administer any necessary first-aid.

B. Monitor victim for contamination and determine actions necessary to remove victim from the area.

C. Inform Shift Supervisor/emergency director of:

1. Identity of victim.

2. Physical condition of victim.

3. Requirements for removal of victim from the area.

D. Remove victim from area as soon as possible.

4.2 The ED/Shift Supervisor will ensure that back-up personnel are standing by to assist as needed.

4.3 The search and rescue team will report all data to the ED/Shift Supervisor as it is received and based upon the condition of the individual, recommend initiation, if required, of one of the following Emergency Plan procedures:

A. EPP-009, On-Site Medical

B. EPP-020, Emergency Personnel Exposure Control

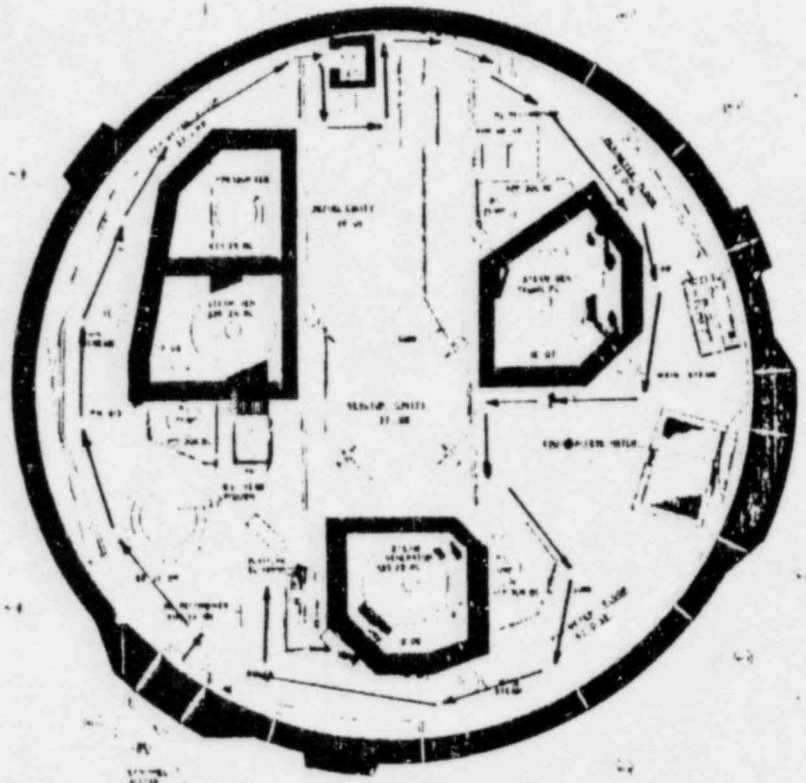
4.4 After the missing individual or individuals has/have been found and safely removed from the hazardous area, notify the ED/Shift Supervisor as to the current status and report for debriefing when the ED/Shift Supervisor authorizes termination of the search and rescue team assignment.

PLANT AREAS FOR SEARCH AND RESCUE

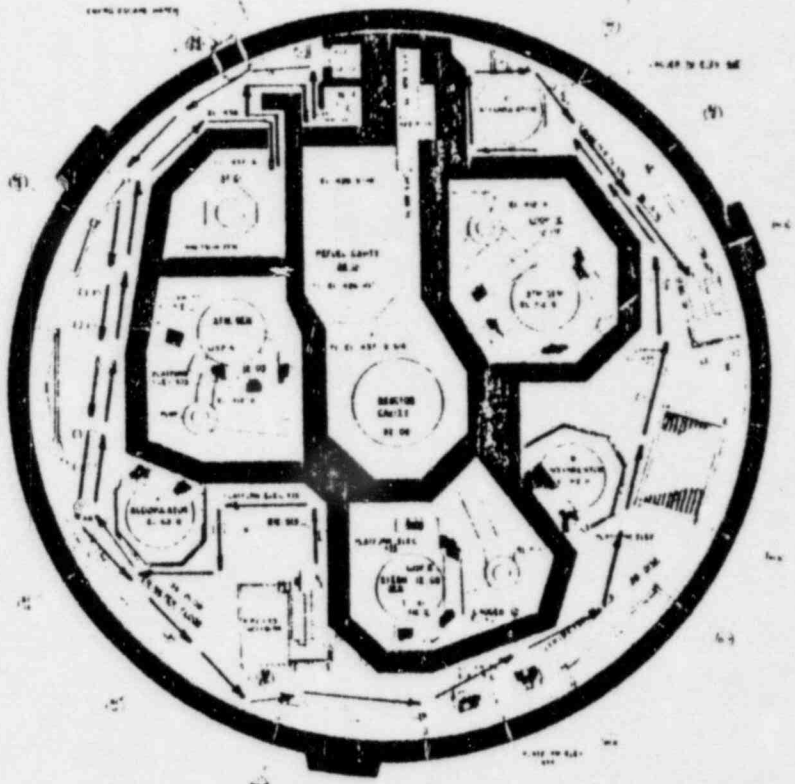
BUILDING	LEVEL	INITIAL
Auxiliary	374'	_____
	388' to 397'	_____
	412'	_____
	436'	_____
	463'	_____
	485'	_____
Stairwells		_____
Fuel Handling Building	412'	_____
	436'	_____
	463'	_____
Stairwells		_____
Control Building	412'	_____
	425'	_____
	436'	_____
	448'	_____
	463'	_____
	482'	_____
Stairwells		_____
Intermediate Building	412'	_____
	436'	_____
	463'	_____

PLANT AREAS FOR SEARCH AND RESCUE

BUILDING	LEVEL	INITIAL
Stairwells		_____
Turbine Building	412'	_____
	436'	_____
	463'	_____
Stairwells		_____
Service Building	436'	_____
	448'	_____
Stairwells		_____
Diesel Generator Building	427'	_____
	436'	_____
Water Treatment Area		_____
Service Water Intake Structure		_____
Circulating Water Intake Structure		_____
Others _____		_____
_____		_____
_____		_____

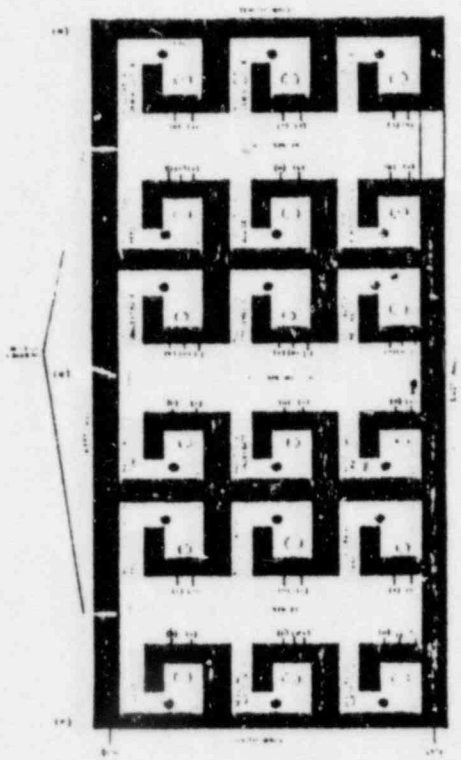


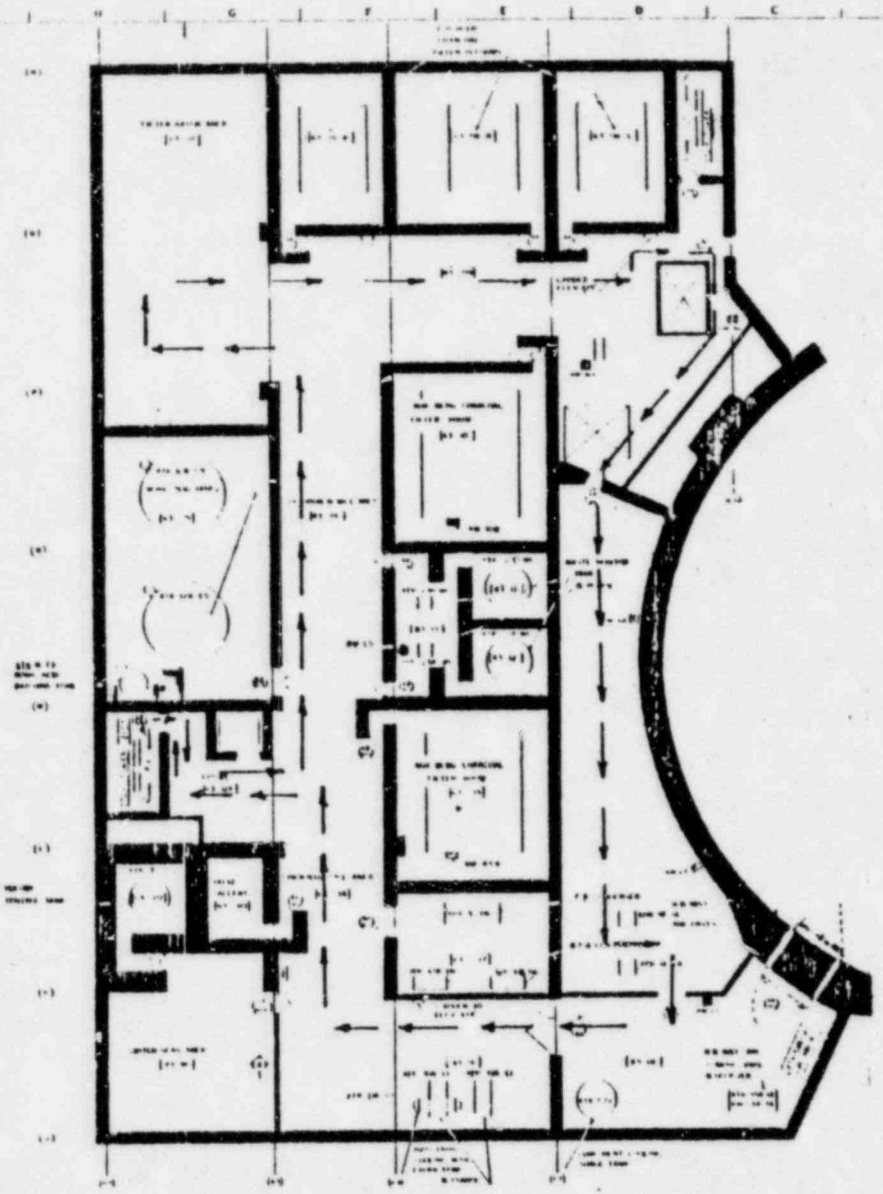
PLAN ELEVATION 393'-0"



PLAN ELEVATION 339'-0"

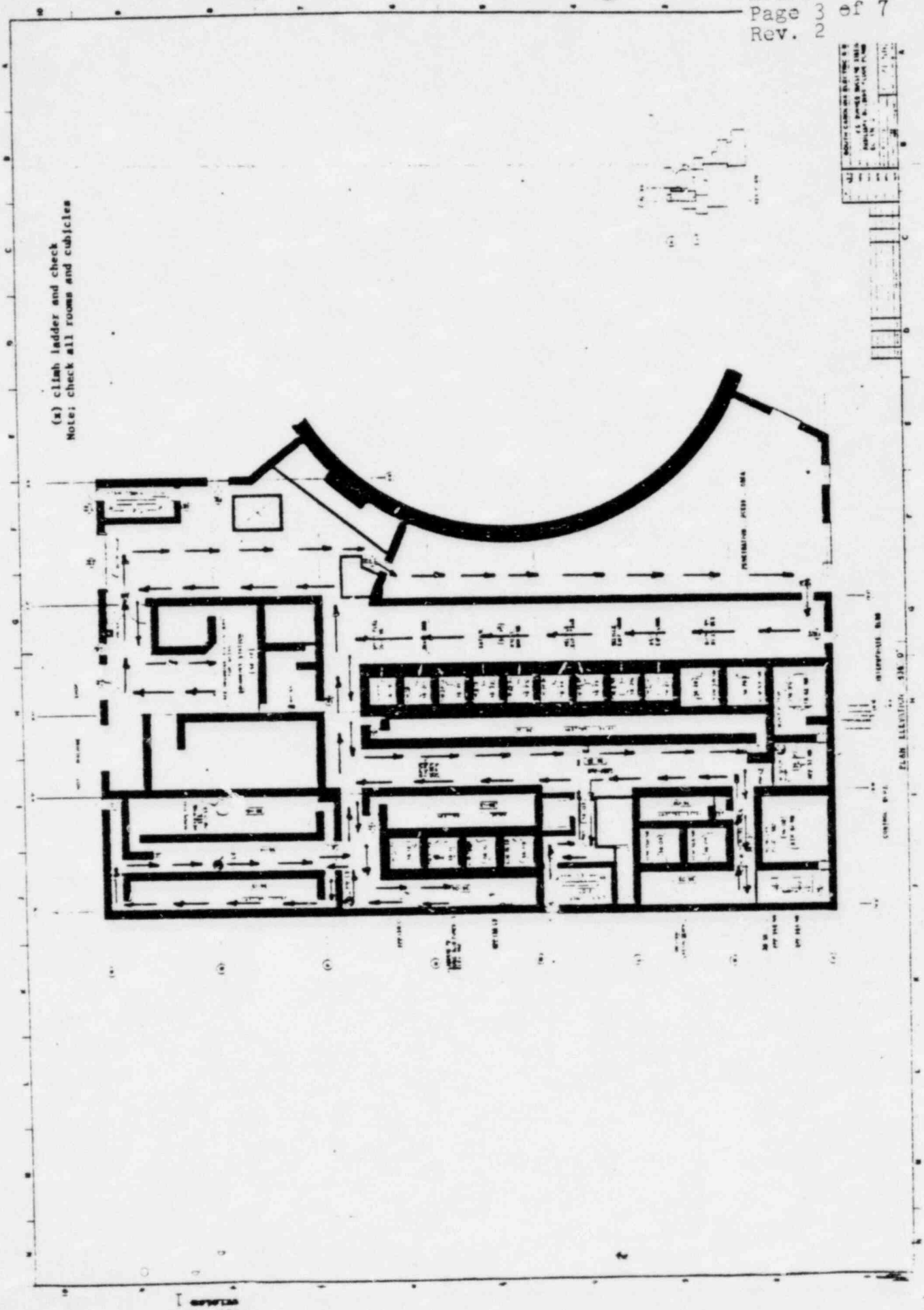
(1) check Incore mezzanine
(2) climb ladder and check all levels

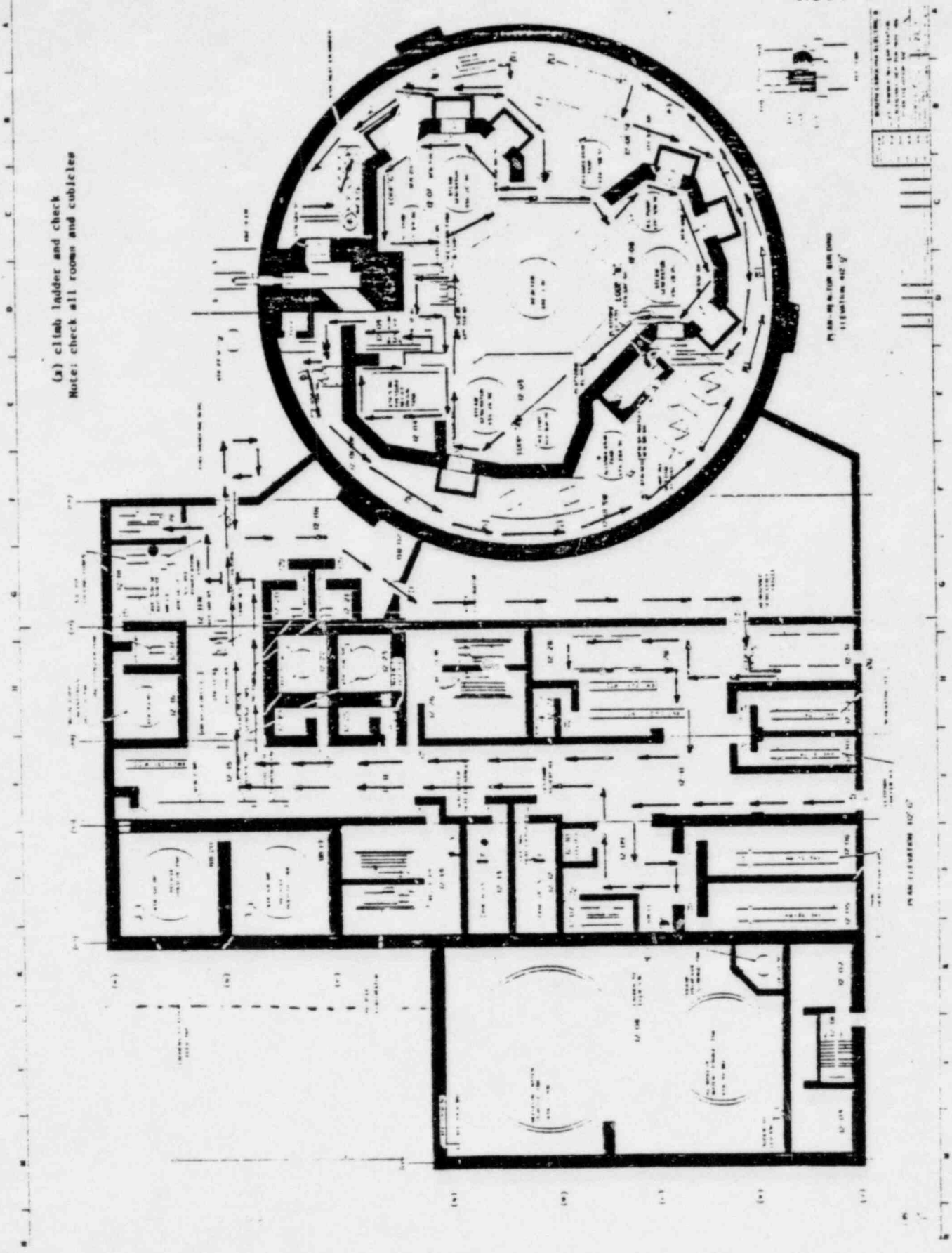


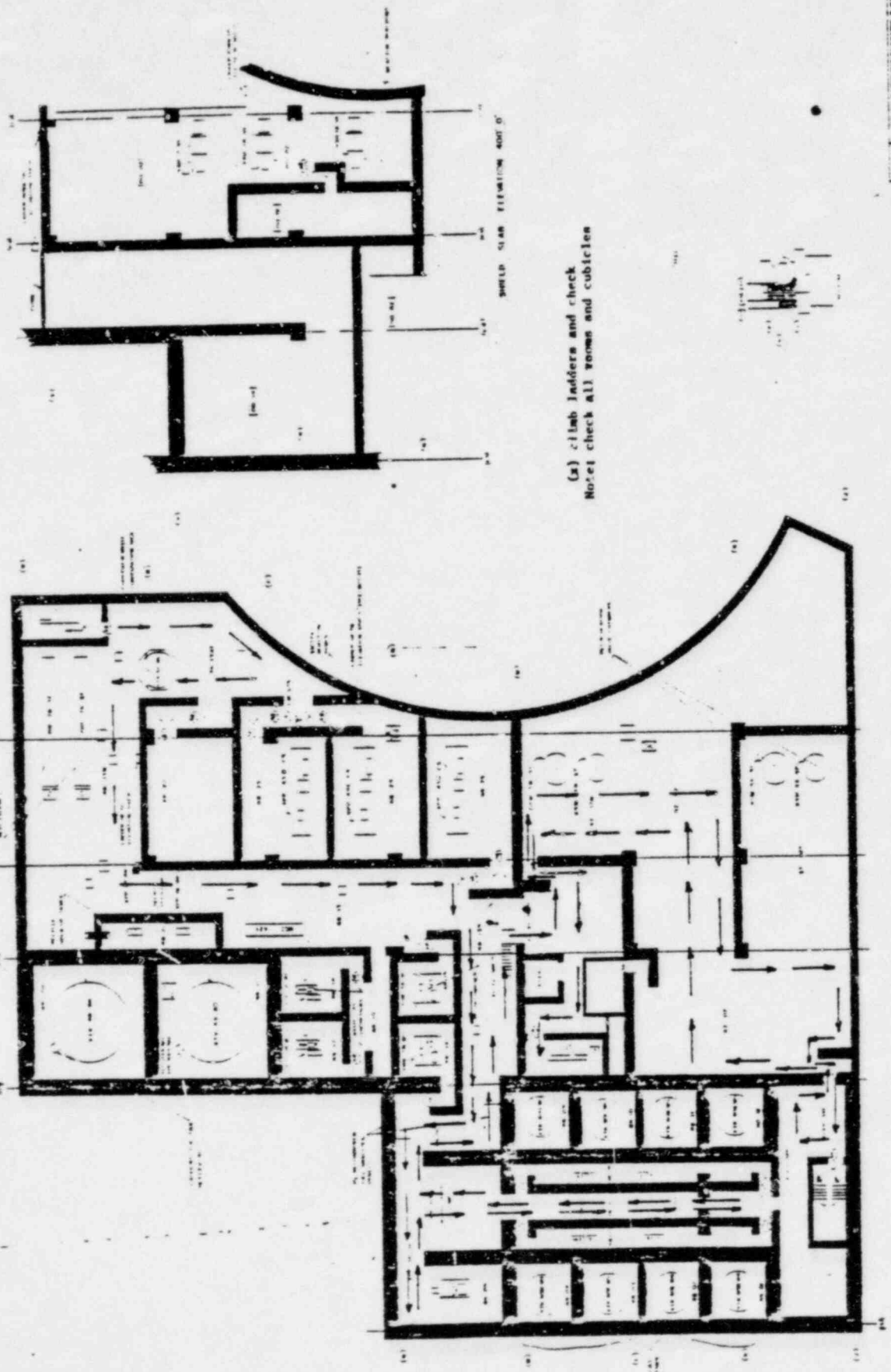


(1) climb ladder and check
Note: check all rooms and cubicles

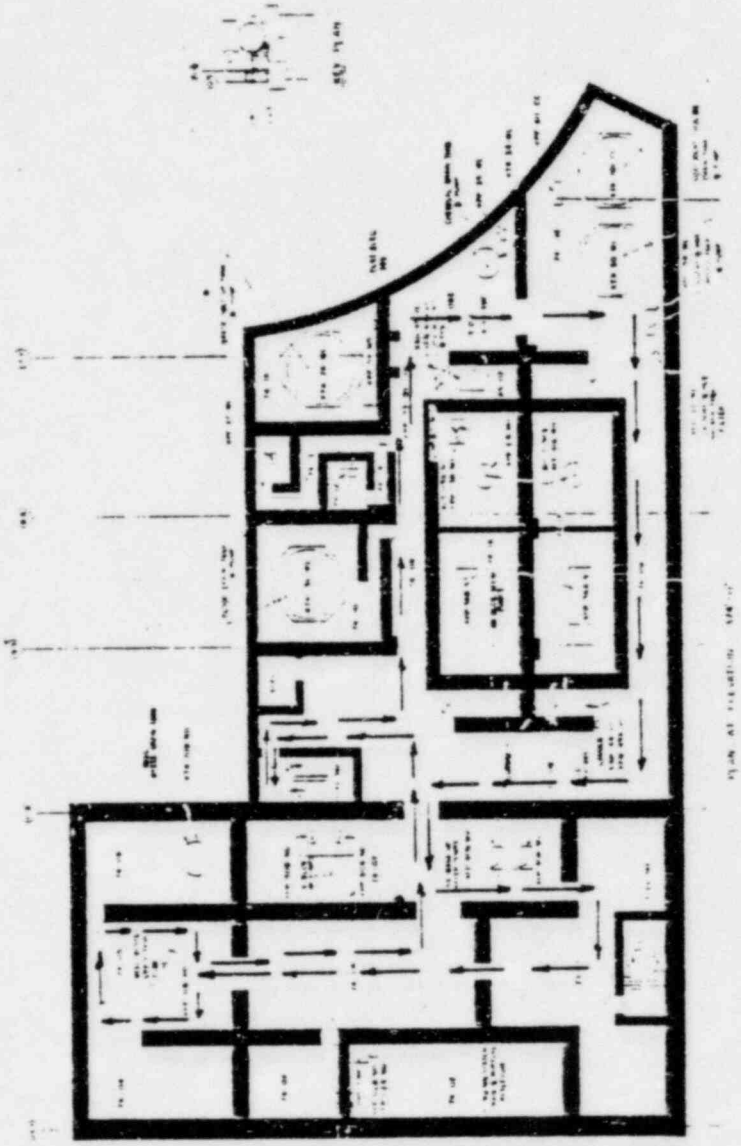
(x) climb ladder and check
Note; check all rooms and cubicles



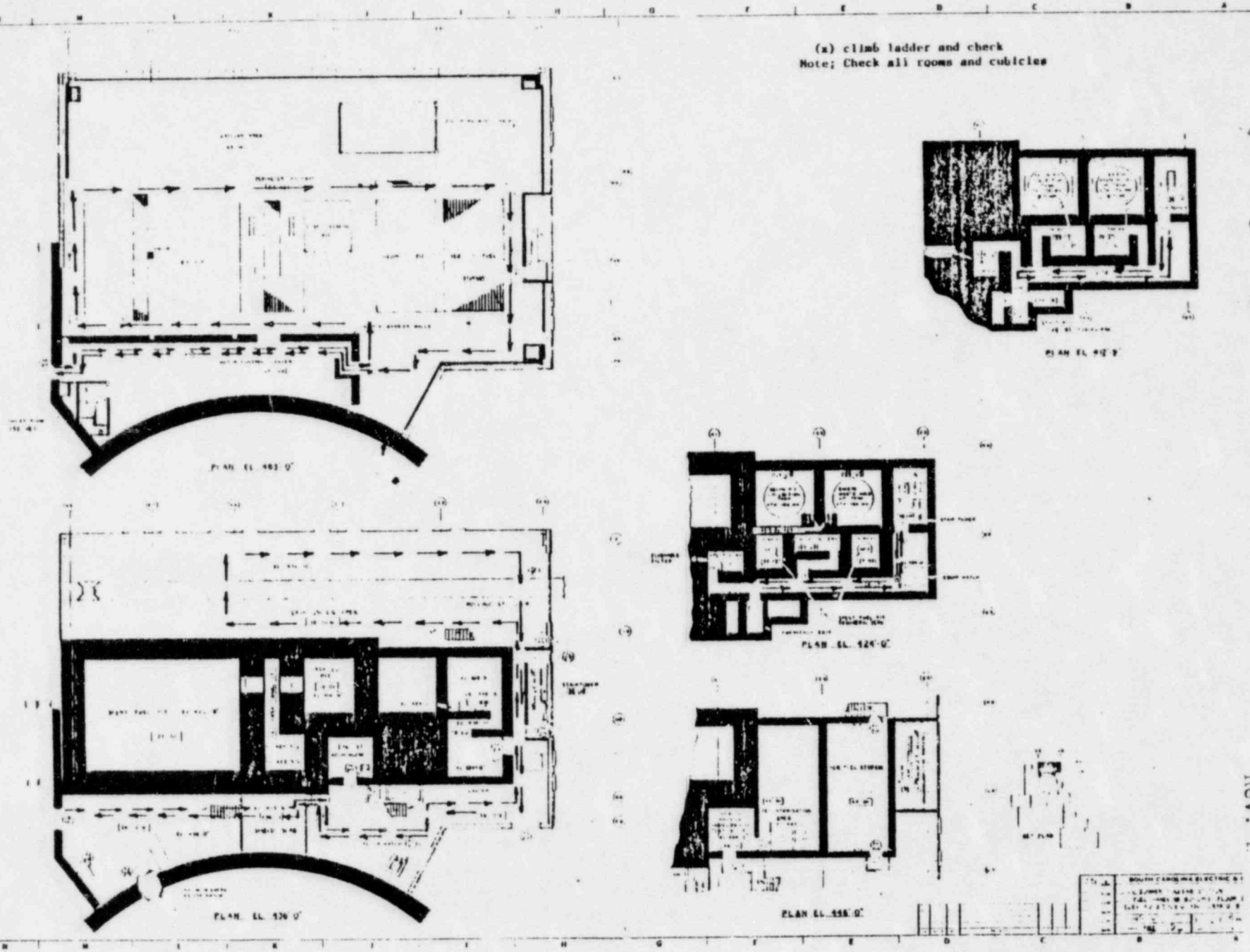

(x) climb ladder and check
Note: check all rooms and cubicles


(x) climb ladders and check
Hotel check all rooms and cubicles

(x) climb ladder and check
Note: check all rooms and cubicles



(x) climb ladder and check
Note; Check all rooms and cubicles



SOUTH CAROLINA ELECTRIC AND GAS COMPANY

VIRGIL C. SUMMER NUCLEAR STATION

NUCLEAR OPERATIONS

NUCLEAR OPERATIONS

COPY No. 152-C

EMERGENCY PLAN PROCEDURE

EPP-012

ONSITE PERSONNEL ACCOUNTABILITY AND EVACUATION

REVISION 3

JUNE 15, 1982

NON-SAFETY RELATED

Reviewed by:

Mark Counts — 7/22/82
ORIGINATOR (of this revision) — Date

W. Frank Baum — 7/15/82
QUALIFIED REVIEWER — Date

Approved:

J G Connelly — 7/26/82
PLANT MANAGER — Date

Date Issued: JUL 27 1982

Form AP-101-2, (1/80)

LIST OF EFFECTIVE PAGES

Page	Revision
i	3
ii	3
1	3
2	3
3	3
4	3
5	3
6	3
7	3
8	3

ATTACHMENTS

Attachment I	3
Attachment II	3

TABLE OF CONTENTS

1.0 PURPOSE

1.1 To describe the actions to be taken in the event that the evacuation of personnel, either in a specific area of the plant or the entire plant, is required.

2.0 REFERENCES

2.1 "Virgil C. Summer Nuclear Station Radiation Emergency Plan"

2.2 EPP-002, "Communications and Notifications"

2.3 EPP-008, "On-Site Assembly"

2.4 EPP-010, "Personnel/Vehicle Decontamination"

2.5 EPP-011, "Personnel Search and Rescue"

2.6 SPP-114, "Security Responsibilities During Emergencies".

2.7 NUREG-0654, Criteria for Preparation & Evaluation of Radiological Emergency Response Plans & Preparedness in Support of Nuclear Power Plants

3.0 CONDITIONS AND PREREQUISITES

3.1 A specific area within the plant will be evacuated under the following conditions:

a. Confirmed report of a significant radioactive spill in a work area.

b. Confirmed report of an unexpected increase in the level of radiation or airborne activity in a work area.

c. One or more area radiation monitors in a single building reach their "Warn" setpoint.

d. A fire in a work area.

e. Or as designated by the Shift Supervisor/Emergency Director.

3.2 All non-essential personnel will be evacuated from the plant site under the following conditions:

a. Site Emergency

b. General Emergency

c. As directed by the Shift Supervisor/Emergency Director

3.3 Sounding of the Reactor Building Evacuation Alarm will be cause to evacuate the Reactor Building. The Reactor Building Evacuation Alarm will sound:

a. Automatically - by source range (N-31 and N-32) nuclear instrumentation.

b. Manually - by the reactor building evacuation button located in the control room.

3.4 Evacuation signs have been placed throughout the plant. Red signs have been placed in the Radiation Control Area and direct personnel to the 412' elevation for personnel decontamination if applicable. Green signs have been placed throughout the rest of the plant and direct personnel out of the Protected Area by the way of the Guard House.

3.5 If decontamination cannot be done expeditiously, Personnel who are found to be contaminated during evacuation, should be dressed in paper coveralls and marked with a yellow and magenta arm band.

4.0 PROCEDURES

4.1 Evacuation of Personnel from a Specific Area within the Plant.

4.1.1.a When personnel become aware that the conditions outlined in Section 3.1 exist in their area or if an announcement on the plant paging system instructs them to evacuate the area they are in, they shall immediately proceed to a location away from the affected area.

4.1.1.b Personnel shall remain together as a group and contact the control room for accountability. The Shift Supervisor will be notified of the names of any individuals thought to still be in the affected area.

4.1.1.c The area may be searched for possible remaining personnel at the descretion of the Shift Supervisor /ED. Results will be reported to the Shift Supervisor/ED.

4.1.1.d Upon direction by announcement over the plant paging system and Fairfield Pump Storage by phone microwave or Control Room on back shift, personnel will proceed to their assembly areas or predetermined duty station. All contractor and visitor personnel not permanently assigned to a specific Summer Nuclear Station group, will proceed or be escorted through the guard house to the Q.A. Security Building assembly area or through the Auxiliary Access Portal (AAP) to the AAP assembly area depending upon their point of ingress. They will remain there until further instructions are received.

NOTE: "Onsite Assembly" EPP-008 may be initiated at the discretion of the Shift Supervisor/ED.

4.1.2 Personnel who have evacuated from the affected area shall remain at the Assembly Area until monitored for loose surface contamination or directed otherwise by health physics personnel. Personnel decontamination as per EPP-010, "Personnel/Vehicle Decontamination" will be performed as required.

4.2 Evacuation of Personnel from the Reactor Building.

4.2.1 Upon sounding of the Reactor Building Evacuation Alarm, all personnel will evacuate to just outside the Personnel Access Hatch until otherwise instructed.

4.2.2 If the Reactor Building Evacuation Alarm was not a spurious alarm, the SS/ED should announce over the PA System for all personnel evacuating the Reactor Building to proceed to the Access Control Area for surveys and decontamination as necessary.

NOTE: Follow normal H.P. procedures upon exit of the "RCZ".

4.2.3 Following area evacuation, the Shift Supervisor will notify the Emergency Director of the circumstances that caused the sounding of the Reactor Building Evacuation Alarm.

4.2.4 Personnel who have evacuated the Reactor Building will be monitored for loose surface contamination, as necessary. Decontamination procedures will be instituted, as required, per EPP-010. Radiation exposure will be determined and evaluated by the reading of pocket dosimeters and TLD's, if necessary.

NOTE: Sections 4.3 and 4.4 or 4.5 are to be performed simultaneously.

4.3 Personnel accountability when evacuation of non-essential personnel from the site is required.

4.3.1 After notification that a site evacuation is required, the following shall be performed.

4.3.1.a If not already on station, all essential personnel shall report to their assigned duty stations.

4.3.1.b All non-essential personnel shall exit the plant thru the guard house, or AAP (depending on their point of ingress) using normal exiting routine.

4.3.1.c Personnel working in the Radiation Control Area shall proceed to the 412' elev. of the Control Building for monitoring prior to proceeding to either a or b above.

4.3.2 Accountability for all personnel shall be performed by security at the guard house in the following manner:

4.3.2.a The Shift Supervisor, Operations Support Center Supervisor and Technical Support Center Supervisor shall account for the personnel in their respective areas and report to the guard house those personnel present per Attachment II when requested by Security.

4.3.2.b Security personnel in the guard house and AAP will verify by badge count that all personnel other than the essential have left the station. The AAP will report any descrepancies to the guard house.

4.3.2.c Security will report any suspected missing personnel to the ED/SS.

4.3.2.d Suspected missing personnel shall be paged from the guardhouse/Control Room/TSC.

Attention in the plant. Attention in the plant The following personnel report your location to Security, (Names ____,____,) Repeat this message once per minute for three minutes.

4.3.2.e If after waiting for 5 minutes the suspected missing personnel have not reported to the guard house the SS/E.D. shall be notified that these individuals cannot be accounted for.

4.3.2.f At the direction of the ED/SS EPP-011, "Personnel Search and Rescue" shall be implemented.

4.4 Evacuation of Non-Essential Personnel From the Site to their private Residence.

(At the discretion of the E.D./SS this should include personnel at Fairfield Pumped Storage Facility).

The Emergency Director/Shift Supervisor shall instruct all non-essential personnel to evacuate to their private residences by making the following announcement on the plant page.

"Attention in the plant. Attention in the plant" "All Non-Essential Personnel Evacuate the station. Proceed to your private residence and await further instructions".

Sound the Radiation Emergency Alarm Repeat message.

REPEAT THE ABOVE INSTRUCTION EVERY TWO MINUTES FOR SIX MINUTES.

The Communicator should notify Fairfield Pumped Storage as per EPP-002.

4.5 Evacuation of Non-Essential Personnel to Offsite Holding Areas (See Attachment I area map).

NOTE: Under certain conditions it may be necessary for personnel to evacuate to predesignated offsite holding areas i.e.

a. potential personnel contamination

b. need for additional personnel on short notice

c. radiation exposure considerations

(At the discretion of the E.D./SS this should include personnel at Fairfield Pumped Storage Facility).

4.5.1 The Emergency Director/Shift Supervisor shall determine which holding Area to evacuate to based on a review of prevailing wind data.

4.5.2 The Emergency Director/Shift Supervisor shall instruct all non-essential personnel to evacuate to the desired Holding Area by making the following announcement.

4.5.2.a For the south holding area

"Attention in the plant. Attention in the plant". "All Non-Essential Personnel Evacuate to Parr Steam Plant and await further instructions.

Sound the Radiation Emergency Alarm. Repeat message.

Repeat the above instruction every two minutes for six minutes.

4.5.2.b For the north holding area

Attention in the plant. Attention in the plant "All Non-Essential Personnel Evacuate to the Monticello Reservoir Recreational Facility and await further instructions".

Sound the Radiation Emergency Alarm. Repeat message.

Repeat the above instruction every two minutes for six minutes.

The Communicator should notify Fairfield Pumped Storage as per EPP-002.

4.6 General Guidance for conduct of evacuation.

4.6.1 Non-essential personnel will proceed through the Guard House, or AAP (depending on their point of ingress) leave their security badges, be checked for contamination and proceed to the off-site holding area or private residence by vehicles. (Unless otherwise directed in a drill). Personnel proceeding to an offsite holding area must keep their TLD and dosimeter unless otherwise directed by HP or Security.

4.6.2 The Security Shift Leader will ensure all non-essential personnel have exited the Guard House and all essential personnel have been accounted for within about 30 minutes or will report the situation to the Shift Supervisor or Emergency Director who will initiate EPP-011, "Personnel Search and Rescue".

4.6.3 The Emergency Director will ensure notification of the personnel at the Fairfield Pumped Storage Facility (Phone , or is performed and they are instructed to take the same actions as other non-essentialpersonnel.

4.6.4 The Emergency director will ensure that a member(s) from the security force surveys the area within the exclusion area for persons. He will also ensure that members of radiation montoring teams that are sent out to do surveys are instructed to observe the area for personnel.

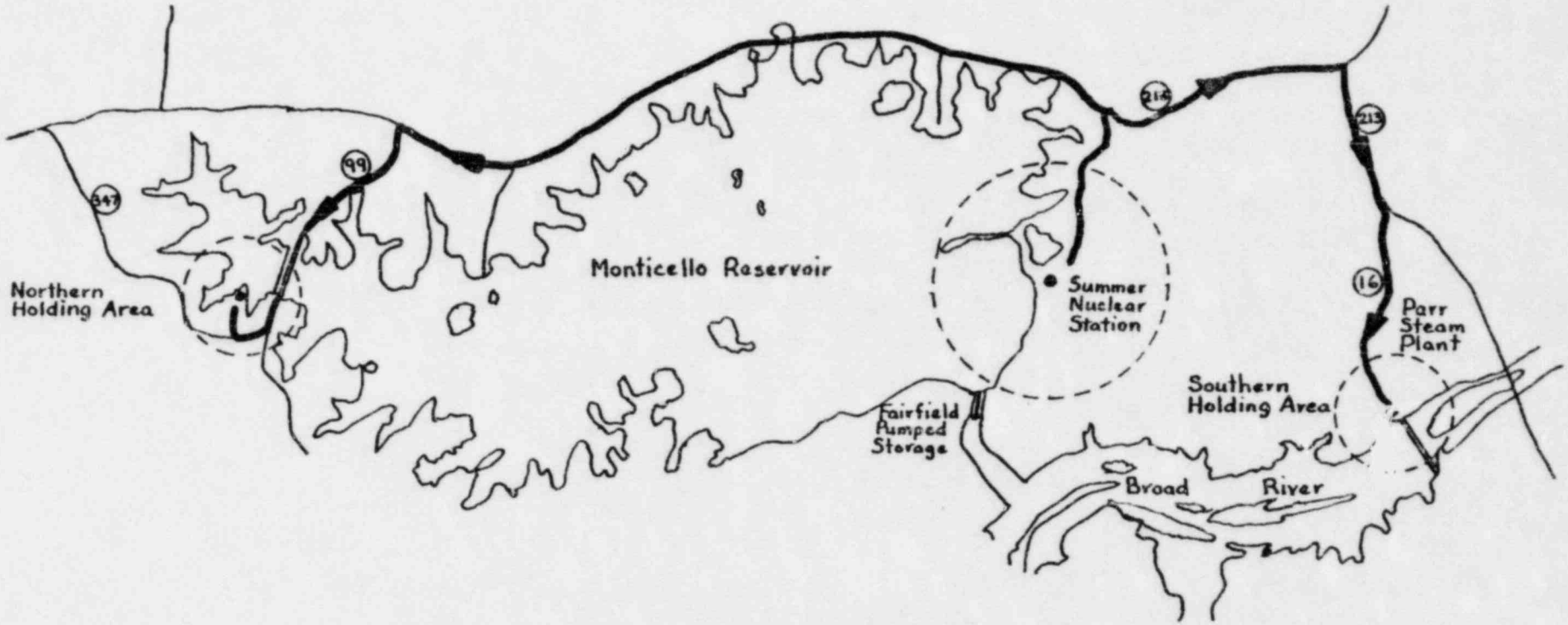
4.6.5 In the event of evacuation to an offsite holding area, a senior supervisor shall be assigned by the E.D. or S.S. to maintain communications with the site and establish control at the offsite holding area if activated.

4.6.6 The Emergency Director will ensure that a person(s) qualified in personnel monitoring and decontamination is sent to the designated off-site holding area.

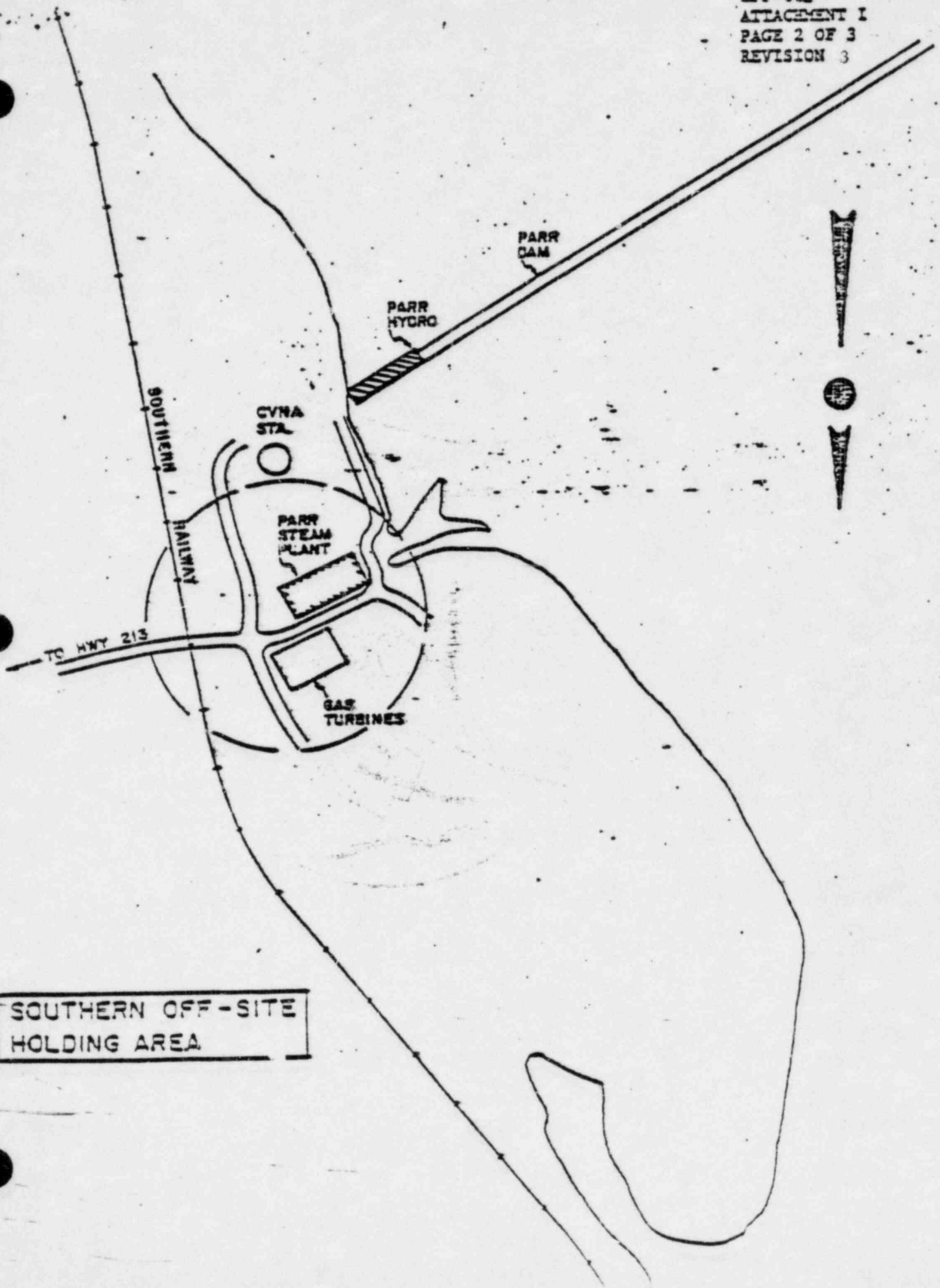
4.6.6.1 The person responsible for monitoring will obtain an offsite holding area radiation emergency kit from the security annex and proceed to the designated offsite holding area. This individual will ensure that all personnel/vehicles are monitored and decontaminated in accordance with EPP-010 Personnel/Vehicle Decontamination.

4.6.7 The Emergency Director will ensure that the Fairfield County Emergency Services Dispatcher is notified to assist in decontamination of vehicles and personnel as necessary.

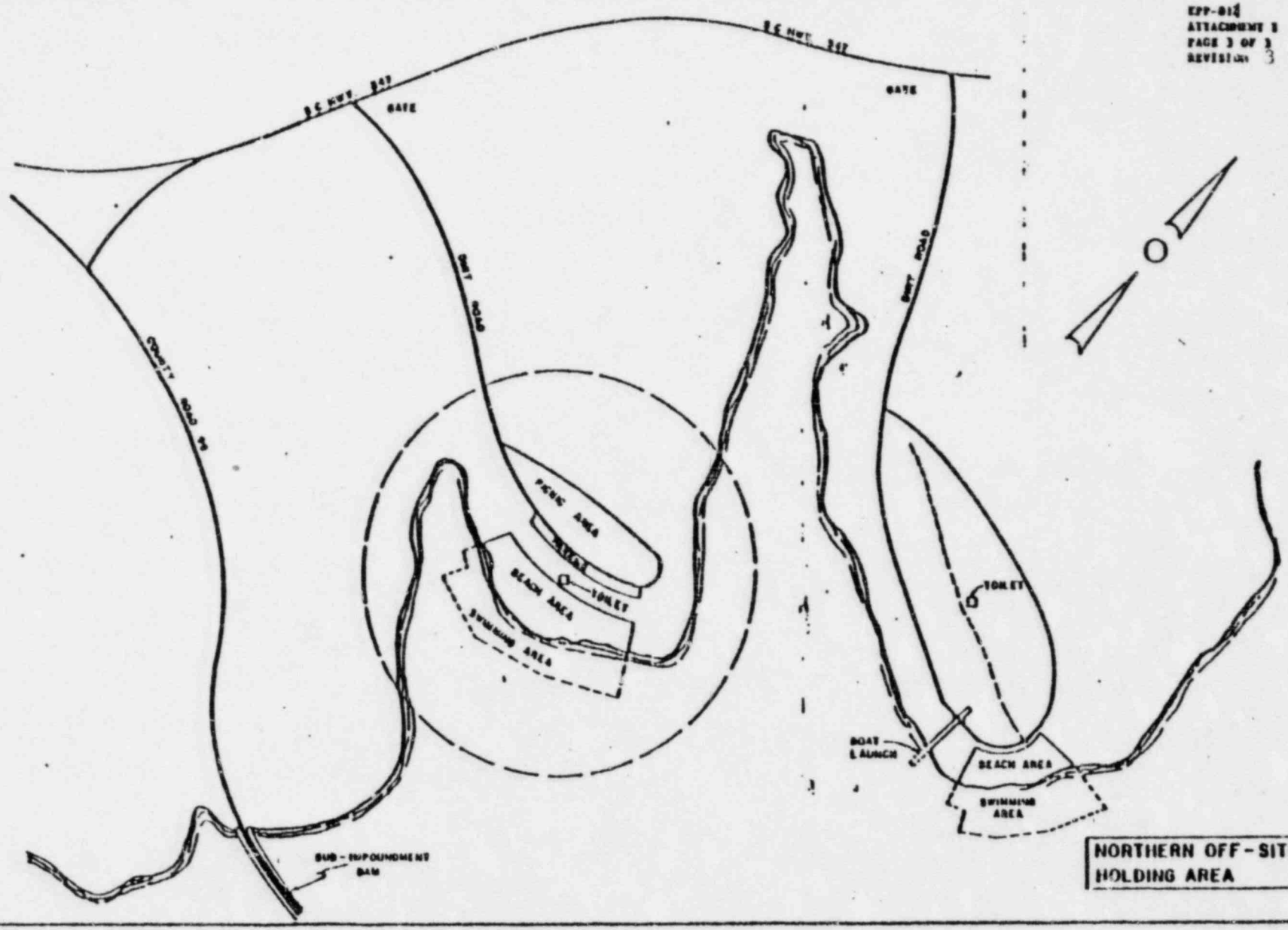
4.6.8 Personnel evacuating from inside the RCA should frisk with RM-14 or portal monitor on 412' elevation control building. Personnel evacuating the site should monitor at the guard house using the portal monitor or RM-14. Any Alarm Conditions on portal monitors or obvious increase in count route on RM-14 should be reported to H.P.



NORTHERN & SOUTHERN OFF SITE
HOLDING AREA & ROUTES



SOUTHERN OFF-SITE HOLDING AREA



NORTHERN OFF-SITE HOLDING AREA

V.C. SUMMER NUCLEAR STATION
PERSONNEL ACCOUNTABILITY CHECKLIST #

_____ DATE _____ TIME

LOCATION:

BADGE NUMBER	NAME	PRESENT	UNACCOUNTED FOR	ESSENTIAL-LOCATION	REMARKS

SOUTH CAROLINA ELECTRIC AND GAS COMPANY

VIRGIL C. SUMMER NUCLEAR STATION

NUCLEAR OPERATIONS

NUCLEAR OPERATIONS

COPY No. 152-G

EMERGENCY PLAN PROCEDURE

EPP-013

FIRE EMERGENCY

REVISION 1

JUNE 10, 1982

NON-SAFETY RELATED

Reviewed by:

Mark Counts — 7/22/82
ORIGINATOR (of this revision) — Date

W. Frank Swan — 7/15/82
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J. G. Connelly — 7/26/82
PLANT MANAGER — Date

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Form AP-101-2 (1/80)

LIST OF EFFECTIVE PAGES

PAGE	REVISION
1	1
11	1
1	1
2	1
3	1
4	1
5	1
6	1
7	1
8	1
9	1

ATTACHMENTS

Attachment I	1

TABLE OF CONTENTS

1.0 PURPOSE

To provide guidelines for the prompt and efficient handling of a fire emergency.

2.0 REFERENCES

2.1 "Virgil C. Summer Nuclear Station Radiation Emergency Plan"

2.2 "Virgil C. Summer Fire Protection Program Plan"

2.3 AP-1401, "Fire Protection Program"

2.4 "Fire Preplans"

2.5 FPP-002, "Fire Report"

2.6 AP-1502, "NRC Report Preparation"

2.7 EPP-010, "Personnel/Vehicle Decontamination"

2.8 EPP-009, "Onsite Medical"

2.9 EPP-020, "Emergency Personnel Exposure Control"

2.10 NuReg 0654, Criteria for Preparation & Evaluation of Radiological Emergency Response Plans & Preparedness in Support of Nuclear Power Plants

2.11 "Security Safeguards Contingency Plan"

3.0 CONDITIONS AND PREREQUISITES

3.1 This procedure is to be used whenever a potentially hazardous fire has been discovered or the Emergency Plan has been activated for a fire emergency. Attachment I provides a Flow diagram related to Implementations of Procedure.

4.0 PROCEDURE

4.1 The individual at V. C. Summer Nuclear Station discovering the fire shall:

4.1.1 Contact the control room by emergency number or plant Gai-tronics and report the fire by stating the location, class and approximate size of the fire.

4.1.2 Unless undue personal risk is apparent or doubt exists on ability to properly use extinguishers, attempt to control and/or extinguish the fire using fire extinguishers appropriate for the class of fire.

4.1.3 Remain in the vicinity at a safe distance until arrival of the Fire Brigade and inform the Fire Brigade of the circumstances.

4.2 The individual at the Fairfield Pumped Storage Facility discovering the fire shall:

4.2.1 Contact the shift supervisor and/or control room by Emergency Number or normal telephone, and report the fire and the need for outside assistance. The individual will also state the location and size of the fire.

4.2.2 Unless undue personal risk is apparent or doubt exists on ability to properly use extinguishers, attempt to extinguish the fire using fire extinguishers, and await the arrival of outside assistance.

4.3 Persons within an area where fire occurs shall ensure 4.1 or 4.2 are accomplished, evacuate the immediate fire area to the nearest safe distance and comply with further authorized instructions as may be given during the fire emergency. If the fire is at the V. C. Summer Station within the radiation control area, persons will comply with health physics procedures for exit from such areas unless conditions warrant immediate evacuation.

4.3.1 Upon direction by announcement over the plant paging system (Fairfield Pump Storage by phone, Microwave , or Control Room on back shift, personnel will proceed to their assembly areas or predetermined duty station. All contractor and visitor personnel not permanently assigned to a specific Summer Nuclear Station group will proceed or be escorted through the Guard House to the Q.A./Security Building or through the Auxiliary Access Portal (AAP) to the AAP Assembly Area (depending on their point of ingress). They will remain there until further instructions are received.

4.4 The Control Room Operator, upon receipt of a report of fire or fire alarm annunciation, shall:

4.4.1 Notify the Shift Supervisor or Control Room Foreman of the fire report or Integrated Fire and Security System Alarm.

4.5 The Shift Supervisor/control room foreman shall ensure that:

4.5.1 If the fire is at the Summer Station:

A. The following announcement shall be made over the plant paging system:

> Attention all personnel, there is a (state condition as known) fire (or smoke) in (state room, elevation, and building). Personnel in the vicinity of (state room, elevation, and building) should leave this area.

B. The fire alarm is sounded.

C. Repeat the message.

NOTE: Repeat steps A, B, & C above every two minutes for six minutes.

D. Notify the duty Security Shift Leader of the fire and ensure Security support and assistance has been initiated for the fire response.

E. Ensure the plant is in a safe condition commensurate with the real or potential consequences of the fire.

F. Provide general direction at the fire location and/or support to the Fire Brigade Team Leader.

NOTE: Support to the fire brigade may include radiation monitoring, first aid, evacuation, and assembling additional Fire Brigade Teams, etc. Appropriate health physics and emergency plan procedures should be used as warranted by the circumstances.

G. Determine the Emergency Action Level (EAL) represented by the fire and advise the Emergency Director of the EAL and corresponding Emergency classification, e.g., unusual event, alert, site emergency, or general emergency.

NOTE: The corresponding fire preplan identifies the safety related equipment which may be affected by the fire.

H. If offsite assistance is required, for example:

(a) Safety Related Equipment is jeopardized

(b) Fire is in excess of Fire Brigade Capabilities

(c) Fire is located outside of perimeter fence

Notify the Fairfield County Dispatcher.

Phone: (Fairfield County Dispatcher)

Give the following information:

This is Virgil C. Summer Station, (This is a drill____, This is not a drill _____.) We request fire fighting assistance at the Summer Nuclear Station. The fire trucks must assemble at the main gate, and await further instructions from Security.

I. Upon extinguishing the fire, direct necessary recovery to normal plant operation giving consideration to the following:

1. Need for fire watches as required by Technical Specifications while fire detection and suppression systems are out of service.

2. Restoring fire detection and fire suppression systems to normal operational alignment in accordance with governing System Operating Procedures.

NOTE: Maintenance may be required prior to resetting fire suppression systems. See 4.8.5.e of this procedure.

3. Initiating Licensee Event Report if required by AP-1502, NRC Report Preparation.

4.5.2 If the fire is at the Fairfield Pumped Storage Facility:

A. Notify offsite fire assistance as follows:
Phone _____. Give the following information:

(Fairfield County Dispatcher)

This is Virgil C. Summer Nuclear Station, (this is a drill _____, this is not a drill _____.) We request fire fighting assistance at the Fairfield Pump Storage Facility.

B. Notify duty security shift leader of fire and ensure security support and assistance has been initiated for the fire response.

4.6 The Emergency Director shall:

4.6.1 Activate provisions of the Emergency Plan consistent with the Emergency Classification of the fire.

4.6.2 Ensure notification of NRC I&E Regional Office is accomplished, if required.

4.7 The Fire Brigade shall:

4.7.1 Assemble at one of the two inplant fire stations or report directly to the announced fire scene dependent on the location of the fire, and watch station assignment.

A. Fire Brigade Leader: Respond directly to the scene of the fire.

B. Fire Brigade Members:

1. The Watchstander whose Watch-Station is closest to the reported fire shall respond directly to the scene of the fire.

2. All other on shift Fire Brigade Members will report to one of the two assembly points dependent upon the location of the fire.

Fire Location	Responding Aux. Operator	Assembly Points For all other FB members
Aux. bldg., West Penetration, Druming Area, Hot Machine Shop, Fuel Hdl. Bldg, Reactor Bldg.	Auxiliary Building Aux. Operator	412' Level Control Bldg. Southeast Stairwell
Intermediate bldg, East Penetration Diesel Generator bldg. Service water & circulating water pump house, warehouse	Intermediate Building Aux. Operator	436' Level Turbine Bldg. West End
Turbine building, Service bldg. Transformer areas Water Treatment Plant	Turbine bldg. Aux. Operator	436' Level Turbine Bldg. West End
Control bldg.	Operator as assigned	412' Level Control building, Southeast Stairwell
Outside of perimeter fence	Aux. Operator As directed By Fire Brigade Leader	436' Level Turbine Bldg. West End

4.7.2 Those personnel reporting to the assembly area will don full fire protection and self-contained breathing apparatus, unless otherwise directed by the Fire Brigade Leader, or Control Room and standby for further directions. A set of fire preplans shall be taken to the scene, if applicable, and when requested.

4.7.3 Under the direction of the Fire Brigade Leader extinguish the fire using the following guidelines.

A. Use the fire preplan appropriate to the room for basic information on the fire hazards, room contents, and fire fighting techniques, if applicable.

B. Observe activation of automatic suppression systems where installed.

C. If necessary, manually activate the automatic suppression system.

D. Conduct fire fighting in two person teams as directed by the Fire Brigade Leader.

4.8 The Fire Brigade Leader shall:

4.8.1 Establish a Fire Fighting Command Post.

4.8.2 Direct the fire fighting effort.

4.8.3 Advise the Shift Supervisor of the fire conditions. This should be done upon arrival at the scene and at intervals during the fire emergency as appropriate to the circumstances.

4.8.4 Request from the Shift Supervisor necessary support such as radiation monitoring, first aid, or offsite fire companies.

4.8.5 Coordinate support by offsite fire companies appropriate to the circumstances.

NOTE: The Fire Brigade Leader directs, in co-ordination with the Shift Supervisor, the activities of responding fire companies by direct communications with the Fire Chief. The Fire Brigade Leader keeps the Shift Supervisor apprised throughout the fire emergency, informs the responding Fire Chief of circumstances, and assigns firefighting objectives to the Fire Chief. Fire command of responding fire companies is provided by the Fire Chief in Charge subject to directions, restrictions and objectives assigned by the Shift Supervisor or Fire Brigade leader.

4.8.6 The Fire Brigade Leader should ensure the following actions are taken upon extinguishing the fire:

A. Notify the Shift Supervisor.

B. Secure fire suppression systems if activated by closing the supply valve(s).

NOTE: Refer to "Fire Preplan" for valve location.

C. Request the Shift Supervisor to assign a Fire Watch if there is potential for reflash or reignition.

D. Direct Fire Bridgade members' activities with respect to restoring fire fighting equipment.

E. Initiate necessary Maintenance Work Requests to restore housekeeping conditions and fire suppression systems. Maintenance Work Requests should be generated to replace fusible links and/or recharge portable fire extinguishers, halon systems and CO_2 systems, as necessary.

F. Prepare a Fire Report in accordance with FPP-002, "Fire Report".

4.9 The Fairfield County Fire Services shall:

4.9.1 Report to the designated staging area located at the main gate next to the guard house. The chief in charge will report to Security.

4.9.2 Receive instructions from the Security Force which include current status of fire if known and location to meet with the Fire Brigade Leader.

4.9.3 Receive personnel dosimetry equipment necessary for the location of the fire.

4.9.4 Conduct fire fighting in coordination with the Fire Brigade Leader, and Shift Supervisor.

4.10 The Security Force shall:

4.10.1 If the fire is at Summer Station:

A. Implement requirements of Security Safeguard Contingencies Plan.

B. When directed by the Fire Brigade Leader or Shift Supervisor, admit responding offsite fire companies to the protected area and perform the following:

1. Ensure vehicle is not under duress, and that all responding personnel are members of the fire company.

2. Distribute dosimetry devices assigned for this purpose.

3. Escort the offsite fire companies within the protected area.

4. Escort the Fire Chief of offsite fire companies to the Fire Brigade Leader.

5. Maintain the staging area for additional fire companies. The staging area will be established so as not to interfere with ingress & egress from the station, but will be such that entry into the facility, if necessary, will not be impaired.

6. Act as liaison between the Fire Brigade Leader and the staging area.

7. Prior to permitting offsite fire companies to exit the protected area, ensure that requirements of references 2.7 and 2.9 have been accomplished.

4.10.2 If the fire is located at the Fairfield Pumped Storage Facility:

A. Admit responding offsite fire companies to the Fairfield Pumped Storage Facility.

B. Provide security support as applicable during the emergency condition.

C. Establish a staging area for additional fire companies. The staging area will be established so as not to interfere with evacuation routes, but will be such that entry into the facility, if necessary will not be impaired.

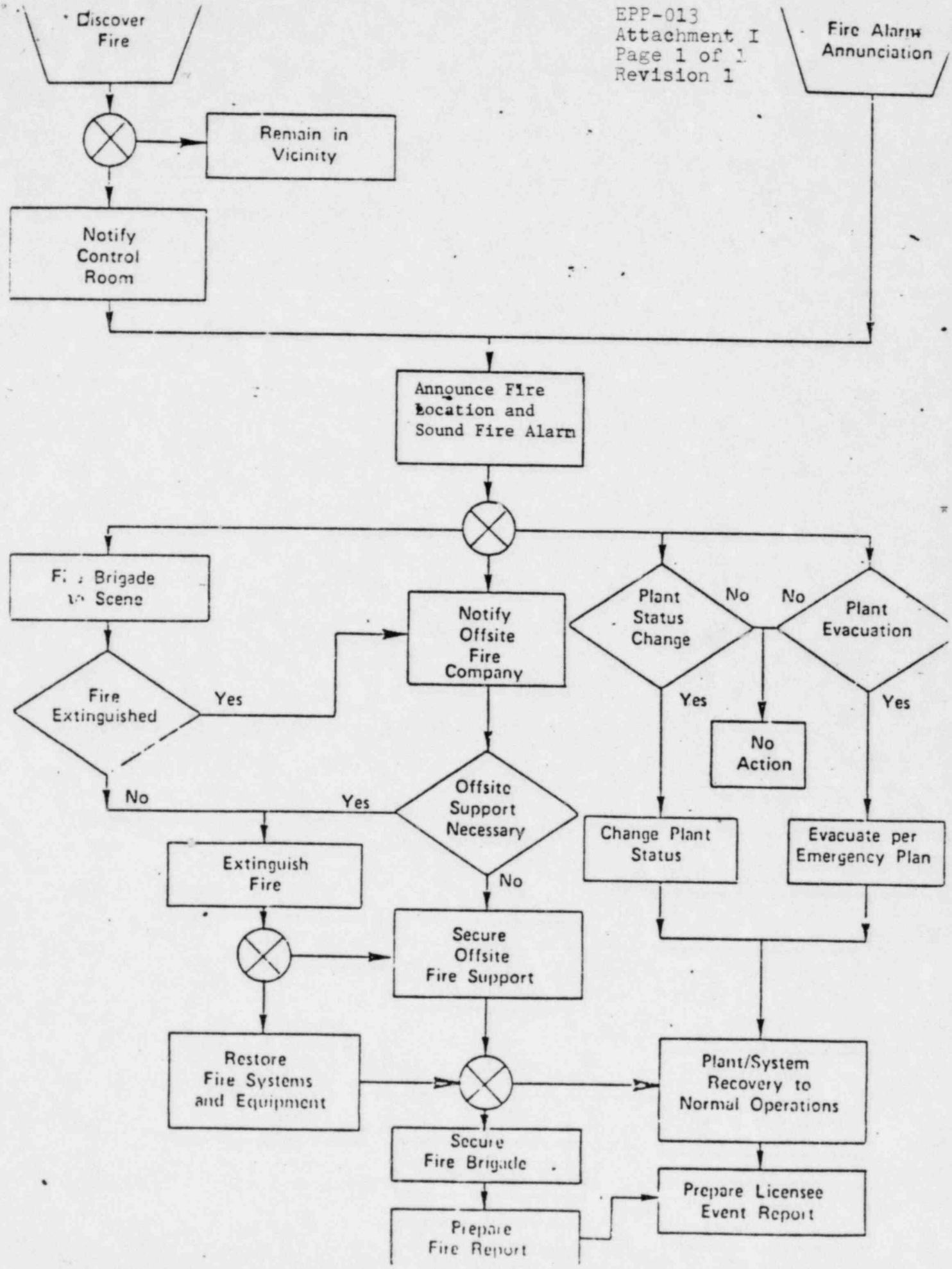
D. Act as Liaison between Fairfield Pumped Storage Personnel and the staging area.

4.11 The Health Physics group shall:

A. Log persons, their assigned dosimetry identification, and vehicles, per reference 2.9.

B. Collect dosimetry devices.

C. Ensure radiation monitoring of persons and survey of vehicles and equipment are taken by Health Physics personnel before allowing exit from Protected Area.


Discover Fire
Fire Alarm Annunciation
Remain in Vicinity
Notify Control Room
Announce Fire Location and Sound Fire Alarm
Fire Brigade to Scene
Fire Extinguished
Yes
No
Notify Offsite Fire Company
Plant Status Change
No
No
Plant Evacuation
Yes
No Action
Yes
Offsite Support Necessary
Yes
No
Change Plant Status
Evacuate per Emergency Plan
Extinguish Fire
Secure Offsite Fire Support
Restore Fire Systems and Equipment
Plant/System Recovery to Normal Operations
Secure Fire Brigade
Prepare Licensee Event Report
Prepare Fire Report

SOUTH CAROLINA ELECTRIC AND GAS COMPANY

VIRGIL C. SUMMER NUCLEAR STATION

NUCLEAR OPERATIONS

NUCLEAR OPERATIONS

COPY No. 157C

EMERGENCY PLAN PROCEDURE

EPP-013

FIRE EMERGENCY

REVISION 2

AUGUST 5, 1982

NON-SAFETY RELATED

Reviewed by:

Mark Counts — 8/13/82
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Mark Counts — 8/13/82
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O S Bradham — 8/18/82
PLANT MANAGER — Date

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LIST OF EFFECTIVE PAGES

PAGE	REVISION
i	1
ii	1
1	1
2	1
3	1
4	1
5	1
6	1
7	1
8	1
9	1

ATTACHMENTS

Attachment I	1

TABLE OF CONTENTS

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4.1.1 Contact the control room by emergency number or plant Gai-tronics and report the fire by stating the location, class and approximate size of the fire.

4.1.2 Unless undue personal risk is apparent or doubt exists on ability to properly use extinguishers, attempt to control and/or extinguish the fire using fire extinguishers appropriate for the class of fire.

4.1.3 Remain in the vicinity at a safe distance until arrival of the Fire Brigade and inform the Fire Brigade of the circumstances.

4.2 The individual at the Fairfield Pumped Storage Facility discovering the fire shall:

4.2.1 Contact the shift supervisor and/or control room by Emergency Number or normal telephone, and report the fire and the need for outside assistance. The individual will also state the location and size of the fire.

4.2.2 Unless undue personal risk is apparent or doubt exists on ability to properly use extinguishers, attempt to extinguish the fire using fire extinguishers, and await the arrival of outside assistance.

4.3 Persons within an area where fire occurs shall ensure 4.1 or 4.2 are accomplished, evacuate the immediate fire area to the nearest safe distance and comply with further authorized instructions as may be given during the fire emergency. If the fire is at the V. C. Summer Station within the radiation control area, persons will comply with health physics procedures for exit from such areas unless conditions warrant immediate evacuation.

4.3.1 Upon direction by announcement over the plant paging system (Fairfield Pump Storage by phone, Microwave ; or Control Room on back shift, personnel will proceed to their assembly areas or predetermined duty station. All contractor and visitor personnel not permanently assigned to a specific Summer Nuclear Station group will proceed or be escorted through the Guard House to the Q.A./Security Building or through the Auxiliary Access Portal (AAP) to the AAP Assembly Area (depending on their point of ingress). They will remain there until further instructions are received.

4.4 The Control Room Operator, upon receipt of a report of fire or fire alarm annunciation, shall:

4.4.1 Notify the Shift Supervisor or Control Room Foreman of the fire report or Integrated Fire and Security System Alarm.

4.5 The Shift Supervisor/control room foreman shall ensure that:

4.5.1 If the fire is at the Summer Station:

A. The following announcement shall be made over the plant paging system:

> Attention all personnel, there is a (state condition as known) fire (or smoke) in (state room, elevation, and building). Personnel in the vicinity of (state room, elevation, and building) should leave this area.

B. The fire alarm is sounded.

C. Repeat the message.

NOTE: Repeat steps A, B, & C above every two minutes for six minutes.

D. Notify the duty Security Shift Leader of the fire and ensure Security support and assistance has been initiated for the fire response.

E. If the fire occurs in any ventilation zone communicating with the Spent Fuel Pool Ventilation Sub-systems, Reactor Building Cooling Units or the Control Room Normal and Emergency Air Handling System, refer to Technical Specification 4.9.11b, 4.6.3b or 4.7.6c respectively to ensure/verify operability of the applicable HEPA filter bank.

F. Ensure the plant is in a safe condition commensurate with the real or potential consequences of the fire.

G. Provide general direction at the fire location and/or support to the Fire Brigade Team Leader.

NOTE: Support to the fire brigade may include radiation monitoring, first aid, evacuation, and assembling additional Fire Brigade Teams, etc. Appropriate health physics and emergency plan procedures should be used as warranted by the circumstances.

H. Determine the Emergency Action Level (EAL) represented by the fire and advise the Emergency Director of the EAL and corresponding Emergency classification, e.g., unusual event, alert, site emergency, or general emergency.

NOTE: The corresponding fire preplan identifies the safety related equipment which may be affected by the fire.

I. If offsite assistance is required, for example:

(a) Safety Related Equipment is jeopardized

(b) Fire is in excess of Fire Brigade Capabilities

(c) Fire is located outside of perimeter fence

Notify the Fairfield County Dispatcher.

Phone: (Fairfield County Dispatcher)

Give the following information:

This is Virgil C. Summer Station, (This is a drill____, This is not a drill _____.) We request fire fighting assistance at the Summer Nuclear Station. The fire trucks must assemble at the main gate, and await further instructions from Security.

J. Upon extinguishing the fire, direct necessary recovery to normal plant operation giving consideration to the following:

1. Need for fire watches as required by Technical Specifications while fire detection and suppression systems are out of service.

2. Restoring fire detection and fire suppression systems to normal operational alignment in accordance with governing System Operating Procedures.

NOTE: Maintenance may be required prior to resetting fire suppression systems. See 4.8.5.e of this procedure.

3. Initiating Licensee Event Report if required by AP-1502, NRC Report Preparation.

4.5.2 If the fire is at the Fairfield Pumped Storage Facility:

A. Notify offsite fire assistance as follows:
Phone Give the following information:

(Fairfield County Dispatcher)

This is Virgil C. Summer Nuclear Station, (this is a drill _____, this is not a drill _____.) We request fire fighting assistance at the Fairfield Pump Storage Facility.

B. Notify duty security shift leader of fire and ensure security support and assistance has been initiated for the fire response.

4.6 The Emergency Director shall:

4.6.1 Activate provisions of the Emergency Plan consistent with the Emergency Classification of the fire.

4.6.2 Ensure notification of NRC I&E Regional Office is accomplished, if required.

4.7 The Fire Brigade shall:

4.7.1 Assemble at one of the two inplant fire stations or report directly to the announced fire scene dependent on the location of the fire, and watch station assignment.

A. Fire Brigade Leader: Respond directly to the scene of the fire.

B. Fire Brigade Members:

1. The Watchstander whose Watch-Station is closest to the reported fire shall respond directly to the scene of the fire.

2. All other on shift Fire Brigade Members will report to one of the two assembly points dependent upon the location of the fire.

Fire Location	Responding Aux. Operator	Assembly Points For all other FB members
Aux. bldg., West Penetration, Druming Area, Hot Machine Shop, Fuel Hdl. Bldg, Reactor Bldg.	Auxiliary Building Aux. Operator	412' Level Control Bldg. Southeast Stairwell
Intermediate bldg, East Penetration Diesel Generator bldg. Service water & circulating water pump house, warehouse	Intermediate Building Aux. Operator	436' Level Turbine Bldg. West End
Turbine building, Service bldg. Transformer areas Water Treatment Plant	Turbine bldg. Aux. Operator	436' Level Turbine Bldg. West End
Control bldg.	Operator as assigned	412' Level Control building, Southeast Stairwell
Outside of perimeter fence	Aux. Operator As directed By Fire Brigade Leader	436' Level Turbine Bldg. West End

4.7.2 Those personnel reporting to the assembly area will don full fire protection and self-contained breathing apparatus, unless otherwise directed by the Fire Brigade Leader, or Control Room and standby for further directions. A set of fire preplans shall be taken to the scene, if applicable, and when requested.

4.7.3 Under the direction of the Fire Brigade Leader extinguish the fire using the following guidelines.

A. Use the fire preplan appropriate to the room for basic information on the fire hazards, room contents, and fire fighting techniques, if applicable.

B. Observe activation of automatic suppression systems where installed.

C. If necessary, manually activate the automatic suppression system.

D. Conduct fire fighting in two person teams as directed by the Fire Brigade Leader.

4.8 The Fire Brigade Leader shall:

4.8.1 Establish a Fire Fighting Command Post.

4.8.2 Direct the fire fighting effort.

4.8.3 Advise the Shift Supervisor of the fire conditions. This should be done upon arrival at the scene and at intervals during the fire emergency as appropriate to the circumstances.

4.8.4 Request from the Shift Supervisor necessary support such as radiation monitoring, first aid, or offsite fire companies.

4.8.5 Coordinate support by offsite fire companies appropriate to the circumstances.

NOTE: The Fire Brigade Leader directs, in co-ordination with the Shift Supervisor, the activities of responding fire companies by direct communications with the Fire Chief. The Fire Brigade Leader keeps the Shift Supervisor apprised throughout the fire emergency, informs the responding Fire Chief of circumstances, and assigns firefighting objectives to the Fire Chief. Fire command of responding fire companies is provided by the Fire Chief in Charge subject to directions, restrictions and objectives assigned by the Shift Supervisor or Fire Brigade leader.

4.8.6 The Fire Brigade Leader should ensure the following actions are taken upon extinguishing the fire:

A. Notify the Shift Supervisor.

B. Secure fire suppression systems if activated by closing the supply valve(s).

NOTE: Refer to "Fire Preplan" for valve location.

C. Request the Shift Supervisor to assign a Fire Watch if there is potential for reflash or reignition.

D. Direct Fire Bridgade members' activities with respect to restoring fire fighting equipment.

E. Initiate necessary Maintenance Work Requests to restore housekeeping conditions and fire suppression systems. Maintenance Work Requests should be generated to replace fusible links and/or recharge portable fire extinguishers, halon systems and CO_2 systems, as necessary.

F. Prepare a Fire Report in accordance with FPP-002, "Fire Report".

4.9 The Fairfield County Fire Services shall:

4.9.1 Report to the designated staging area located at the main gate next to the guard house. The chief in charge will report to Security.

4.9.2 Receive instructions from the Security Force which include current status of fire if known and location to meet with the Fire Brigade Leader.

4.9.3 Receive personnel dosimetry equipment necessary for the location of the fire.

4.9.4 Conduct fire fighting in coordination with the Fire Brigade Leader, and Shift Supervisor.

4.10 The Security Force shall:

4.10.1 If the fire is at Summer Station:

A. Implement requirements of Security Safeguard Contingencies Plan.

B. When directed by the Fire Brigade Leader or Shift Supervisor, admit responding offsite fire companies to the protected area and perform the following:

1. Ensure vehicle is not under duress, and that all responding personnel are members of the fire company.

2. Distribute dosimetry devices assigned for this purpose.

3. Escort the offsite fire companies within the protected area.

4. Escort the Fire Chief of offsite fire companies to the Fire Brigade Leader.

5. Maintain the staging area for additional fire companies. The staging area will be established so as not to interfere with ingress & egress from the station, but will be such that entry into the facility, if necessary, will not be impaired.

6. Act as liaison between the Fire Brigade Leader and the staging area.

7. Prior to permitting offsite fire companies to exit the protected area, ensure that requirements of references 2.7 and 2.9 have been accomplished.

4.10.2 If the fire is located at the Fairfield Pumped Storage Facility:

A. Admit responding offsite fire companies to the Fairfield Pumped Storage Facility.

B. Provide security support as applicable during the emergency condition.

C. Establish a staging area for additional fire companies. The staging area will be established so as not to interfere with evacuation routes, but will be such that entry into the facility, if necessary will not be impaired.

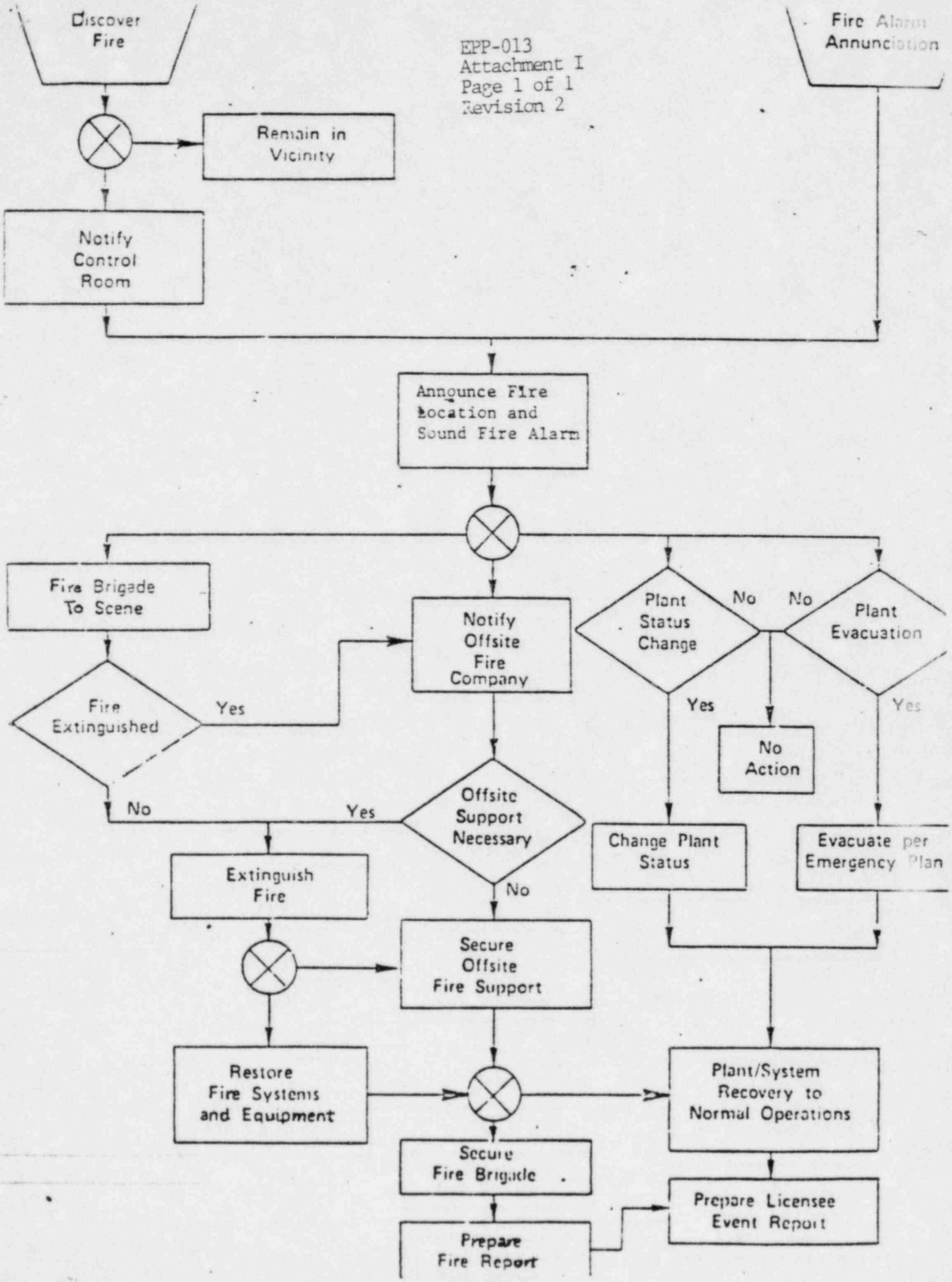
D. Act as Liaison between Fairfield Pumped Storage Personnel and the staging area.

4.11 The Health Physics group shall:

A. Log persons, their assigned dosimetry identification, and vehicles, per reference 2.9.

B. Collect dosimetry devices.

C. Ensure radiation monitoring of persons and survey of vehicles and equipment are taken by Health Physics personnel before allowing exit from Protected Area.


Discover Fire
Fire Alarm Annunciation
Remain in Vicinity
Notify Control Room
Announce Fire Location and Sound Fire Alarm
Fire Brigade To Scene
Notify Offsite Fire Company
Plant Status Change
No
No
Plant Evacuation
Fire Extinguished
Yes
Yes
Yes
No Action
No
Yes
Offsite Support Necessary
Change Plant Status
Evacuate per Emergency Plan
Extinguish Fire
No
Secure Offsite Fire Support
Restore Fire Systems and Equipment
Plant/System Recovery to Normal Operations
Secure Fire Brigade
Prepare Licensee Event Report
Prepare Fire Report

SOUTH CAROLINA ELECTRIC AND GAS COMPANY

VIRGIL C. SUMMER NUCLEAR STATION

NUCLEAR OPERATIONS

NUCLEAR OPERATIONS
COPY No. 152-C

EMERGENCY PLAN PROCEDURE

EPP-014

TOXIC RELEASE

REVISION 1

JUNE 10, 1982

NON-SAFETY RELATED

Reviewed by:

Mark Counts — 7/22/82
ORIGINATOR (of this revision) — Date

W. Frank Jones — 7/15/82
QUALIFIED REVIEWER — Date

Approved:

J. G. Connelly — 7/26/82
PLANT MANAGER — Date

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Form AP-101-2, (1/80)

LIST OF EFFECTIVE PAGES

PAGE	REVISION
i	1
ii	1
1	1
2	1
3	1
4	1
5	1
6	1

TABLE OF CONTENTS

1.0 PURPOSE

1.1 To provide guidelines for the protection of plant personnel in the event of a significant unplanned or planned release of toxic or flammable material on-site.

1.2 To terminate the release of toxic or flammable materia on-site.

2.0 REFERENCES

2.1 "Virgil C. Summer Nuclear Station Radiation Emergency Plan."

2.2 "Virgil C. Summer Nuclear Station Environmental Report, Section 7.3.3."

2.3 EPP-009, "On-Site Medical"

2.4 FPP-006, "Handling of Flammable Liquids and Gases."

2.5 NUREG-0654, Criteria for Preparation & Evaluation of Radiological Emergency Response Plans and Preparedness in Support of Nuclear Power Plants.

3.0 CONDITIONS AND PREREQUISITES

3.1 A toxic release exists when there is significant leakage or spillage on or around the following:

NOTE: When searching for the location of a chlorine leak, a rag dipped in ammonia on a stick will facilitate the operation. The ammonia will emit a white vapor in the presence of high concentrations of chlorine.

a. Chlorine cylinders

b. Sodium hydroxide tanks

c. Sulfuric acid tanks

d. Ammonia tanks

e. Any flammable liquid container

f. Any flammable gas cylinder

4.0 PROCEDURES

4.1 In the event of a gaseous chlorine leak, the following steps should be taken immediately:

4.1.1 Evacuate the affected area immediately.

4.1.2 Immediately inform the Shift Supervisor of the incident.

4.1.3 The Shift Supervisor/Emergency Director will assure that the following are accomplished:

a. Announce over the plant paging system:

Attention in the Plant. Attention in the Plant. There is a release of chlorine in the (area of Plant) All persons in the vicinity evacuate this area. Repeat the message.

b. Notify the Security Shift Leader of the details of the release.

c. Dispatch an emergency team and they will:

1. Don a Scott AirPak (or equal) and other protective equipment as necessary and immediately remove any overcome personnel in the area.

2. Attempt to isolate the leak.

NOTE: Unplanned or planned releases could occur on site from plant equipment or from units off-site (such as a tanker truck).

3. When the emergency no longer exists, take steps to return cylinders to normal operating condition with all precautions.

4.1.4 In the case of chlorine inhalation, these first aid procedures should be followed:

a. Keep the patient quiet and warm.

b. Do not give the patient alcohol.

c. If the patient is conscious, give black coffee.

d. Give the patient warm milk or cream to relive throat irriation.

e. If required, Cardio-Pulmonary Resuscitation should be commenced.

f. Additional first aid and followup treatment will be in accordance with Reference 2.3.

4.2 In the event of a sodium hydroxide leak these actions should be followed:

4.2.1 Evacuate the affected area to ensure safety of plant personnel.

4.2.2 Immediately inform the Shift Supervisor.

4.2.3 The Shift Supervisor/Emergency Director will assure that the following are accomplished:

a. Announce on the plant paging system:

Attention in the Plant. Attention in the Plant. There is a release of sodium hyroxide in (area of plant). All persons in the vicinity evacuate this area. Repeat the message.

b. Notify the Security Shift Leader of the details of the release.

c. Dispatch an emergency team and they will:

1. Evaluate the situation and isolate the tank area.

2. Don the necessary protective equipment.

3. Wash down the leakage with a large volume of water.

4.3 In case of a sulfuric acid leakage or spillage these emergency steps should be taken immediately:

4.3.1 Small leaks

a. Inform the Shift Supervisor.

b. The Shift Supervisor/Emergency Director will:

(1) Take the necessary actions to stop the spill and wash acid down the drain with a large volume of water.

4.3.2 Spontaneous large release.

a. Inform Shift Supervisor.

b. The Shift Supervisor/Emergency Director will assure that the following are accomplished:

1. Announce over the plant paging system:

Attention in the Plant. Attention in the Plant. There is a release of sulfuric acid in (area of plant). All persons in the vicinity evacuate this area. Repeat the message.

2. Notify the Security Shift Leader of the details of the release.

3. Dispatch an emergency team and they will:

a. Evaluate the situation and isolate the affected area to ensure the safety of plant personnel.

b. Don the necessary protective equipment and take the action necessary to stop the spill.

c. Dilute the acid with large volumes of water.

4.4 In case of an aqueous ammonia release these steps should be followed:

4.4.1 Inform the Shift Supervisor immediately.

4.4.2 Direct all personnel away for the affected area.

4.4.3 The Shift Supervisor/Emergency Director will assure that the following are accomplished:

a. Announce over the plant paging system:

Attention in the Plant. Attention in the Plant. There is a release of aqueous ammonia in (area of plant). All persons in the vicinity evacuate this area. Repeat the message.

b. Notify the Security Shift Leader of the details of the release.

c. Dispatch an emergency team and they will:

1. Don a Scott Air Pak and take action necessary to stop the spill.

2. Dilute the ammonia with a spray of water. Add dilute acid if available.

4.5 In the event of a flammable liquid leak these emergency steps should be followed:

4.5.1 Immediately inform the Shift Supervisor.

4.5.2 The Shift Supervisor/Emergency Director will assure that the following are accomplished.

a. Announce over the plant paging system:

Attention in the Plant. Attention in the Plant. There is a release of flammable liquid in (area of plant). All persons in the vicinity evacuate this area. Repeat the message.

b. Notify the Security Shift Leader of the details of the release.

c. Dispatch an emergency team and they will:

1. Don the necessary protective clothing.

2. Stop the leak.

3. Wash down the area with a large volume of water.

NOTE: All personnel entering the affected area should take extreme precaution not to take any actions that could cause sparks, electrical arcs, or open flames.

4.6 In the event of a flammable gas leak these emergency steps should be taken:

4.6.1 Immediately inform the Shift Supervisor.

4.6.2 The Shift Supervisor/Emergency Director will assure that the following are accomplished:

a. Announce over the plant paging system:

Attention in the Plant. Attention in the Plant. There is a release of flammable gas in (area of plant). All persons in the vicinity evacuate this area. Repeat the message.

b. Notify the Security Shift Leader of the details of the release.

c. Dispatch an emergency team and they will:

1. Don the necessary protective clothing.

2. Attempt to increase the ventilation flow of the area.

3. Stop the leakage.

NOTE: All personnel entering the affected area should take extreme precautions not to take any actions that could cause sparks, electric arcs, or open flames.

SOUTH CAROLINA ELECTRIC AND GAS COMPANY

VIRGIL C. SUMMER NUCLEAR STATION

NUCLEAR OPERATIONS

NUCLEAR OPERATIONS
COPY No. 157-C

Emergency Plan Procedure

EPP-015

NATURAL EMERGENCY

(EARTHQUAKE, TORNADO)

REVISION 1

JUNE 10, 1982

Non-Safety Related

Reviewed by:

Mark Courts — 7/22/82
ORIGINATOR (of this revision) — Date

W. Frank Sanders — 7/15/82
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J S Connelly — 7/26/82
PLANT MANAGER — Date

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Form AP-101-2, (1/80)

LIST OF EFFECTIVE PAGES

Page	Revision
i	1
ii	1
1	1
2	1

TABLE OF CONTENTS

1.0 PURPOSE

1.1 To provide guidelines for initiating actions when either a tornado or earthquake threatens plant structures or personnel.

2.0 REFERENCES

2.1 Virgil C. Summer Nuclear Station Radiation Emergency Plan.

2.2 "Virgil C. Summer Nuclear Station Final Safety Analysis Report, Chapter 3".

2.3 NUREG-0654, Criteria for Preparation & Evaluation of Radiological Emergency Response Plans & Preparedness in Support of Nuclear Power Plants.

2.4 EPP-012, "Onsite Personnel Accountability and Evacuation.

2.5 EPP-002, "Communication and Notification".

3.0 CONDITIONS AND PREREQUISITES

3.1 A tornado watch is declared by the National Weather Services when meteorological conditions in an area are such that the potential for the formation of tornadoes exists.

3.2 A tornado warning is declared by the National Weather Services when (radar sighting, verified visual observation) a tornado has been sighted.

4.0 PROCEDURES

4.1 Tornadoes

4.1.1 When information is received, from either the load dispatcher or other reliable source, that a tornado watch/warning is in effect for the area surrounding V.C. Summer Nuclear Station, the Shift Supervisor shall perform the following:

a. Inform the Management Duty Supervisor.

b. Announce the watch/warning over the plant paging system directing personnel to seek shelter in a secure structure, if necessary and inform the guard house.

c. Designate Shift Personnel, or if the OSC is activated, an Emergency Repair Team to ensure that all exterior doors to the plant structures are shut and secure (include non-protected buildings if time permits). The Emergency Repair Team should secure any equipment/materials in the Protected Area that could become missiles in high winds and put all heavy equipment in a safe condition (i.e., lowering crane booms).

d. An Emergency Repair Team should stand by in the event emergency assessment and corrective actions are required. The Emergency Repair Team should consist of the following:

1. Operations Personnel
2. Health Physics Personnel
3. Maintenance Personnel

NOTE: Should a situation arise which would require the presence of an armed individual such as work being done on the physical security system, assistance from the Security Force may be requested.

e. If evacuation of the site is required, follow the procedure outlined in EPP-012, Onsite Personnel Accountability and Evacuation.

f. Upon cancellation of the watch/warning by the load dispatcher or the National Weather Service, make the appropriate announcement over the plant paging system and resume all normal activities.

NOTE: Backup to load dispatcher for weather information is the National Weather Service (Refer to EPP-002 for telephone number)

4.2 Earthquake

4.2.1 In the event of seismic disturbance, the Shift Supervisor will initiate the appropriate corrective actions for any resulting damage.

4.2.2 If the seismic instrumentation in the Control Room indicates that the operating basis earthquake has been exceeded, the plant must be shutdown.

4.2.3 If evacuation of the site is required, follow the procedures outlined in EPP-012.

SOUTH CAROLINA ELECTRIC AND GAS COMPANY

VIRGIL C. SUMMER NUCLEAR STATION

NUCLEAR OPERATIONS

NUCLEAR OPERATIONS
COPY No. 157-G

EMERGENCY PLAN PROCEDURE

EPP-016

EMERGENCY FACILITIES ACTIVATION AND EVACUATION

REVISION 2

JUNE 18, 1982

NON-SAFETY RELATED

Reviewed by:

Mark Counts — 7/22/82
ORIGINATOR (of this revision) — Date

W. Frank Sam — 7/15/82
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Form AP-101-2 (1/80)

LIST OF EFFECTIVE PAGES

PAGE	REVISION
i	2
ii	2
1	2
2	2
3	2
4	2
5	2
6	2
7	2

ATTACHMENTS

Attachment I	2
Attachment II	2

TABLE OF CONTENTS

1.0 PURPOSE

1.1 The purpose of this procedure is to delineate the actions necessary to activate and conditions for evacuation of, the Technical Support Center, Operations Support Center, the Health Physics Lab, the Emergency Operations Facility, and the News Media Area.

2.0 REFERENCES

2.1 "Virgil C. Summer Nuclear Station Radiation Emergency Plan"

2.2 NUREG 0654, "Criteria for Preparation & Evaluation of Radiological Emergency Response Plans & Preparedness in Support of Nuclear Power Plants".

2.3 SPP-114 - Security Force Responsibilities During Emergencies

2.4 EPP-019 - Emergency Equipment Checklist

2.5 "CEMP" - Corporate Emergency Management Plan

2.6 CEP-001 - Corporate Emergency Procedure - 001

2.7 CEP-007 - Corporate Emergency Procedure - 007

3.0 DEFINITIONS AND ABBREVIATIONS

3.1 Definitions

3.1.1 Activation of Facility - A facility is activated when the facility is manned with the necessary personnel, prepared to provide its support function, as determined by the Facility Leader.

3.2 Abbreviations

3.2.1 TSC - Technical Support Center

3.2.2 OSC - Operations Support Center

3.2.3 EOF - Emergency Operations Facility

3.2.4 NMA - News Media Area

3.2.5 ED - Emergency Director

3.2.6 IED - Interim Emergency Director

3.2.7 OEC - Offsite Emergency Coordinator

3.2.8 CR - Control Room

4.0 CONDITIONS AND PREREQUISITES

4.1 Plant conditions exist requiring implementation of the Emergency Plan; and the conditions have been classified as an Alert, Site or General Emergency.

4.2 Attachment II is an aid to the ED/IED to identify personnel, by title, who are qualified to direct and/or perform functions as per applicable Emergency Plan Procedures (EPP).

4.2.1 In the section "Normal Assigned EPP Responsibility", responsibility is delineated as follows:

A. "X" - responsible for the initiation of action required by the procedure;

1. "X(1)" - first alternate for "X".

2. "X(2)" - second alternate for "X".

B. "L" - responsibile for being the leader of the team and/or activity described in the procedure;

1. "L(1)" - first alternate for "L".

2. "L(2)" - second alternate for "L".

C. "M" - responsible for performing actions/assessment or being a member of the team described in the procedure.

NOTE: The ED/IED has overall responsibility for the initiation of and activities required in all EPP's.

4.3 Each emergency facility is equipped per appropriate procedure.

4.3.1 TSC/OSC/HP lab per EPP-019.

4.3.2 EOF/News Media Area per CEP-007.

4.4 At the discretion of the Interim Emergency Director, turnover of various responsibilities to the appropriate designated personnel can be accomplished as those persons respond to the emergency prior to the activation of the TSC/OSC.

5.0 PROCEDURE

5.1 Activation of Technical Support Center (TSC)

5.1.1 Upon declaration of an Alert, Site Emergency, or General Emergency the following essential personnel shall proceed to the TSC.

A. Emergency Director (ED)

B. TSC Communicator

C. ED Administrative Assistants (2)

D. Radiological Assessment Supervisor (1)

E. Out-of-Plant Monitoring Director

F. In-plant Monitoring Director

G. Personnel with:

1. Core Expertise

2. Mechanical Expertise

3. Electrical Expertise

5.1.2 Upon declaration of an alert, site emergency, or general emergency the following key personnel should proceed to the TSC.

A. Security Supervisor

B. Assistant Manager Support Services

C. Assistant Manager Technical Support

D. Assistant Manager Maintenance Services

E. Deputy Manager

5.1.3 At the discretion of the Radiological Assessment Supervisor, a radiological survey is performed to determine the habitability of the TSC. If the radiation dose rate is greater than 100MR/hr. or the airborne radiation levels exceed 10CFR20 Appendix B, Table 1 limits, the evacuation requirements of Section 5.2 of this procedure shall be carried out.

5.1.4 A personnel accountability check shall be performed.

5.1.5 The Emergency Director (ED) shall receive an update on the emergency condition from the Interim Emergency Director (IED).

5.1.6 Following the update of the ED, the IED shall officially turnover the Emergency Director duties and responsibilities to the ED along with the Emergency Log.

5.1.7 The emergency log shall be kept by the ED's logger following the official turnover.

5.1.8 The TSC communicator shall report to the CR to receive official turnover of the Emergency Notification Log from the interim communicator.

5.1.9 Upon the request of the ED, the TSC staff shall provide technical evaluations of the emergency condition and/or courses of action to be taken to minimize the effects of the emergency condition.

5.2 Evacuation of the TSC

If the airborne radiation levels exceed 10CFR20, Appendix B, Table 1 limits or the radiation levels exceed 100 MR/hr. in the TSC, the following actions shall be taken.

5.2.1 The Emergency Director (ED) shall designate the personnel required to stay in the TSC and Control Room.

5.2.2 The remainder of the personnel shall proceed to the Emergency Operations Facility (EOF).

5.2.3 If the EOF is or becomes uninhabitable, the ED shall designate the alternate assembly area.

5.3 Activation of the Operational Support Center (OSC)

5.3.1 Upon declaration of an Alert, Site Emergency, or General Emergency the following personnel shall proceed to the OSC.

A. Rad-Waste Operator (1)

B. Mechanical Maintenance (1)

C. I & C Maintenance (1)

D. Electrical Maintenance (2)

E. Chemistry Specialist

NOTE: All personnel on "shift" shall report to the Control Room initially unless otherwise directed by the SS/ED. All 30/60 min. response personnel shall report to the OSC unless otherwise directed by the SS/ED.

5.3.2 The Operations Support Center Supervisor, upon being notified, should proceed to the OSC; along with other personnel as designated by the Emergency Director.

5.3.3 At the discretion of the Radiological Assessment Supervisor, a radiation survey shall be performed to determine the habitability of the OSC. If the general area dose rate is greater than 100 mr/hr or airborne levels exceed 10CFR20, Appendix B, Table 1 limits, the OSC shall be evacuated in accordance with Section 5.4 of this procedure.

5.3.4 A personnel accountability check shall be performed.

5.3.5 When the OSC is manned the OSC Supervisor shall report to the ED/IED that the OSC is activated and prepared to perform its support function.

5.3.6 Upon the request of the ED/IED, the OSC staff shall provide personnel to man fire brigade teams, search and rescue teams, first-aid teams, maintenance and repair teams, and any other support deemed necessary by the ED/IED.

5.4 Evacuation of the OSC

If the airborne radiation levels exceed 10CFR20, Appendix B, Table 1 limits or the general area radiation levels exceed 100 mr/hr in the OSC, the following actions will be taken:

5.4.1 The OSC will be transferred to a location designated by the ED/IED. The ED/IED will designate any personnel who must remain in the OSC.

5.5 Activation of the Health Physics Lab (HP Lab).

5.5.1 Upon declaration of an Alert, Site Emergency, or General Emergency the following personnel shall proceed to the HP Lab:

A. Inplant HP Support (2)

B. Offsite Survey Team (2)

C. Onsite Survey Team (1)

5.5.2 At the discretion of the Radiological Assessment Supervisor, a radiological survey is performed to determine the habitability of the HP Lab. If the general area radiation dose rate is greater than 100 mr/hr or airborne levels exceed 10CFR20, Appendix B, Table 1 limits the HP Lab shall be evacuated per Section 5.6 of this procedure.

5.5.3 A personnel accountability check shall be performed.

5.5.4 The Radiological Assessment Supervisor shall report to the ED/IED when the Radiological Monitoring team(s) is/are ready to perform their support function.

5.5.5 Upon the request of the ED/IED, the Radiological Monitoring Group shall provide in-plant and out-of-plant survey teams, personnel to accompany OSC support teams into the plant, and any other support deemed necessary by the ED/IED.

5.6 Evacuation of the HP Lab:

If the airborne radiation levels exceed 10CFR20, Appendix B,

Table 1 limits or the general area radiation levels exceed 100 mr/hr. in the HP Lab, the following actions shall be taken.

5.6.1 The ED/Radiological Assessment Supervisor shall designate the personnel required to stay in the HP Lab.

5.6.2 The remainder of the personnel shall proceed to the Technical Support Center (TSC).

5.7 Activation of the Emergency Operations Facility (EOF) - News Media Area (NMA), will be in accordance with "CEMP" and CEP-001.

5.8 Attachment I provides general information regarding the interface between the onsite and offsite emergency organizations.

5.9 Attachment II provides guidelines for the response of the onsite emergency organization; duty stations and basic responsibilities.

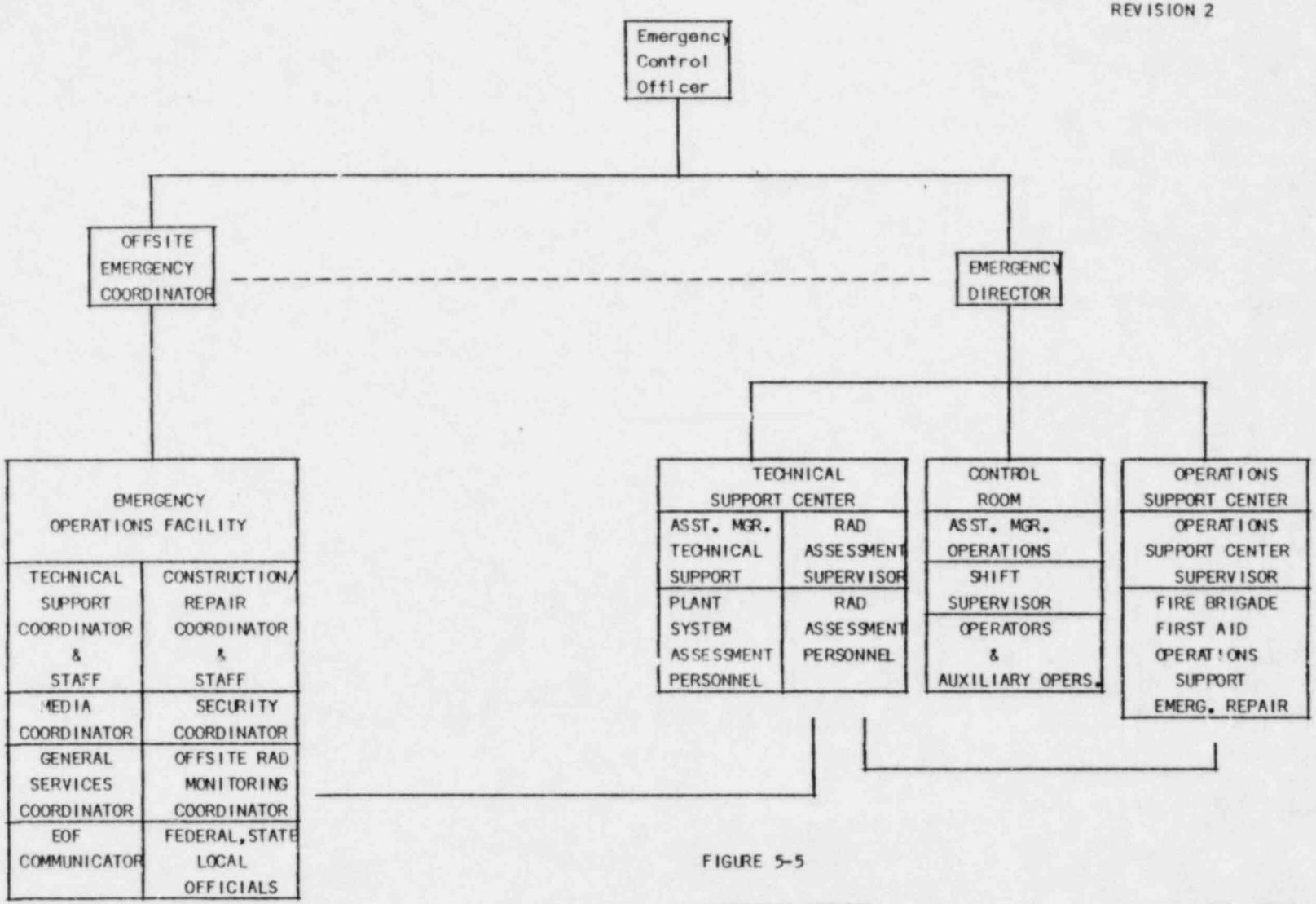

FIGURE 5-5

INTERFACE BETWEEN
ONSITE/OFFSITE
EMERGENCY OPERATIONS

Oct. 1981
Rev. 5

DOCUMENT/ PAGE PULLED

ANO. 8211110134

NO. OF PAGES 1

REASON

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PROCEDURE DEVELOPMENT FORM - A

DATE: 9/23/82 PROC. # EPP-016 REV. # 2 CHG. # 1

TITLE: Emergency Facilities Activation and Evacuation

PERMANENT? X RESTRICTED FROM ____ TO ____ SAFETY RELATED?
NEW PROC? ____ REVISION? ____ RESTRICTED CHANGE? ____ Yes ____ No X

II. DESCRIPTION: (See Section 6.3.4)
Add to the "Note" under step 4.2.1:
The ED/IED/SS may designate any qualified personnel to perform any emergency response duty as conditions warrant.

III. WILL THIS REVISION/CHANGE/NEW PROCEDURE?

	Yes	No
1. Represent a change to procedures as described in the FSAR? (50.59 review)		X
2. Represent a test or experiment not described in the FSAR? (50.59 review)		X
3. Requires a change to Technical Specifications? (50.59 review)		X
4. Result in significant increased personnel radiation exposure? (ALARA review)		X

SUMMARY JUSTIFICATION (List FSAR References) (attach additional pages as required):
To ~~close~~ satisfy NRC inspection item.

Mark Counts (Originator) V.R. Albert (Evaluated by Discipline Supervisor) 9/24/82 (Date)

NOTE: If the answer to any of the above questions is "YES" - See Section 6.3.3 of procedure.

IV. A. REQUIRED REVIEW AND COMMENT

SAP	OTHER
( ) Ops	(X) QR (TS)
( ) Mnt	(X) Ops
( ) TS	(X) K. Beale
( ) SS	( )
( ) QA	( ) QA
( ) QC	( )
	( )
( )	( )

B. COMMENTS VIA TELECON

Date / Time	Person Contacted	COMMENTS YES	COMMENTS NO
/			
/			
9/27/82 / 0930	K. Beale		X
/			
/			
/			

Telecon Originator Mark Counts

REVIEWERS COMMENTS RESOLVED: NA (Discipline Supervisor) 9/27/82 (Date)

V. FINAL QA REVIEW (As applicable, refer to section IV.A)
N/A
Concurrence ____ Date ____

VI. FINAL APPROVAL:

A. Responsible Individual
J. Connelly 9/27/82
Approval/Concurrence Date

B. PSRC Review Required: Yes ✓ No ✓ JC

VII. PSRC REVIEW

A. Reviewed by:
PSRC CHAIRMAN / Date

Comments: Yes ____ No ____

B. PSRC Comments Resolved:
ASSISTANT MANAGER / Date

PSRC CHAIRMAN / Date

SEP. 28 1982

NUCLEAR OPERATIONS
COPY No. 157C

SOUTH CAROLINA ELECTRIC AND GAS COMPANY

VIRGIL C. SUMMER NUCLEAR STATION

NUCLEAR OPERATIONS

NUCLEAR OPERATIONS

COPY No. 152-C

EMERGENCY PLAN PROCEDURE

EPP-017

POST-RECOVERY AND RE-ENTRY

REVISION 2

JUNE 10, 1982

Non-Safety Related

Reviewed by:

Mark Counts — 7/22/82
ORIGINATOR (of this revision) — Date

W. Frank Aaron — 7/15/82
QUALIFIED REVIEWER — Date

Approved:

J. L. Connelly — 7/26/82
PLANT MANAGER — Date

Date Issued: JUL 27 1982

Form AP-101-2, (1/80)

LIST OF EFFECTIVE PAGES

Page	Revision
i	2
ii	2
1	2
2	2
3	2
4	2
5	2
6	2
7	2

ATTACHMENTS

Attachment I	2

TABLE OF CONTENTS

1.0 PURPOSE

1.1 To provide guidelines for the following emergency actions:

1.1.1 Re-entry into affected areas of the plant.

1.1.2 Initial recovery operations to the establishment of the Long Term Recovery Organization.

2.0 REFERENCES

2.1 "Virgil C. Summer Nuclear Station Radiation Emergency Plan".

2.2 NUREG-0654, Criteria for Preparation & Evaluation of Radiological Emergency Response Plans & Preparedness in Support of Nuclear Power Plants.

2.3 EPP-016 Emergency Facilities Activation and Evacuation

2.4 EPP-020 Emergency Personnel Exposure Control.

2.5 HPP-160 Control and Posting of Radiation Control Zones.

3.0 CONDITIONS AND PREREQUISITES

3.1 Immediate corrective and protective actions have established an effective control over the emergency condition.

3.2 Radiological conditions for affected areas within the plant have been determined.

3.3 Plant personnel, who have completed the onsite radiation control and Safety Training Program and are eligible to receive emergency dose rates as delineated in EPP-020, are available.

3.4 Extended actions are necessary to return the plant to its normal operating status and the following recovery phase criteria have been met:

3.4.1 Radiation levels in all in-plant areas except waste processing systems are stable or decreasing with time.

3.4.2 Releases of radioactive materials to the environment from the plant are under control or have ceased.

3.4.3 Any fire, tornado or similar emergency condition is controlled or has ceased.

3.5 All Post-Recovery and Re-entry activities will be carefully planned and reviewed prior to implementation of any such activities.

4.0 PROCEDURE

4.1 Planning of Re-entry Operations.

4.1.1 Review the following data prior to authorizing re-entry by the emergency teams:

A. Radiological surveillance data to determine plant areas potentially affected by high levels of radiation and contamination.

B. Current radiation exposure of emergency personnel who will participate in the re-entry operation.

C. Environmental conditions such as temperature, gases, smoke that the re-entry team will encounter.

4.1.2 Preplan the activities of the Re-entry Teams taking the following items into account:

NOTE: Since it is not possible to anticipate, in advance, all the conditions that may be encountered in any emergency situation, the recovery plan must be flexible enough to allow for any unanticipated occurrences and/or conditions encountered during the recovery operation.

A. Areas to be surveyed

B. Anticipated radiation and contamination levels

C. Adequacy of radiation survey instrumentation and equipment shall be reviewed. Additional equipment which may be needed to effect the recovery/re-entry will be made available by emergency operation facility.

D. Shielding requirements and availability

E. Protective clothing and equipment required

F. Access control procedures

G. Decontamination requirements

H. Communications

I. Exposure control limits, personnel dosimetry requirements, and allowable exposures

J. Route to be followed

4.1.3 Designate a Re-entry Team which should consist of the following personnel:

A. Appropriate Technical/Operations/Maintenance Personnel - 3 (As per EPP-016 Att. II).

B. Health Physics - 1

NOTE: Ensure that each member of the team has sufficient exposure remaining to complete the re-entry procedures and not exceed the normal Virgil C. Summer exposure limits. (Re: Section 3.3)

4.2 Actions to be Accomplished During Initial Reentry.

4.2.1 Give the members of the emergency team the following instructions:

A. Do not deviate from the planned route unless unanticipated conditions are encountered.

B. If dose rates encountered during re-entry are significantly greater than anticipated, reentry personnel shall return to a safe area and contact the Emergency Director for further instructions.

4.2.2 Instruct the members of the Re-entry Team to assess the following items in the specified priority:

A. Determination of initial required recovery operations including assessment of equipment damage.

B. Determination of real or potential hazards associated with the required recovery operation.

C. Without delaying the mission or causing unnecessary exposures, the Re-entry Team should monitor the dose rate along the route followed to obtain as much radiological information as possible.

4.2.3 After reentry procedures have been completed, the Re-entry Team will:

A. Follow established self-monitoring and personnel decontamination procedures, as necessary, under the supervision of the individual charged with health physics monitoring of the Re-entry Team.

B. Record and report to the Emergency Director the radiological conditions and damage assessments in the emergency area.

C. If possible, areas of contamination shall be isolated and posted with appropriate warning signs. These areas will be posted in accordance with ref. 2.5. Portable shielding material should be used whenever practical.

4.3 Evaluation of Conditions

4.3.1 The ED/OEC will evaluate the radiological conditions and the damage assessment report, and then determine:

A. The areas that have been affected by the emergency.

B. What must be done to restore the station to normal conditions.

C. Radiological controls to be instituted.

D. Personnel, equipment, and time required.

4.4 Recovery

4.4.1 During recovery operations, station supervisory personnel will take the action necessary to ensure that:

A. Recovery and clean-up techniques are in accordance with good health physics practices and procedures.

B. Personnel radiation exposure during the recovery stage of the incident is closely controlled and documented. Individual exposures shall be in accordance with administrative limits, where possible.

C. Recovery activities and repairs are properly documented and controlled.

D. Test programs to confirm fitness of equipment for return to service are developed and executed.

4.4.2 Based upon the extent of the emergency, long-term recovery operations may be required. The Emergency Director will notify the Offsite Emergency Coordinator and make recommendations as to the establishment of the Long Term Recovery Organization.

4.4.3 Recovery Organization (See Attachment I)

A. The Offsite Emergency Coordinator, with concurrence by the Emergency Control Officer and Emergency Director will shift from an Emergency Organization to a Recovery Organization. When a Recovery Organization is implemented, the Offsite Emergency Coordinator will inform appropriate offsite agencies.

B. The Recovery Organization will depend upon the nature of the accident and the situation after the accident. A general organization is shown in Attachment I. Specific organizational structure and staffing of the organization will be the responsibilty of the Emergency Control Officer. He will also determine the required scope and function of the recovery organization. The Emergency Control Officer is the Vice President, Nuclear Operations.

C. The Recovery Manager, the General Manager, Nuclear Operations, will be responsible for recovery activities, including technical decisions and courses of action. He will coordinate the functional activities of the various groups.

D. The Technical Support Manager, Group Manager, Nuclear Engineering and Licensing, is responsible for recovery activities including analysis and the development of plans and procedures in direct support of Plant Operations personnel with the objective of taking the plant to a safe shutdown condition in a manner which minimizes the effect on the health and safety of the public. This provides the central facility for the collection, retention, retrieval, and transmitting of plant and local environmental parameters.

E. The Plant Operations Manager, Station Manager at the V.C. Summer Nuclear Station, is responsible for implementation of in-plant recovery activities with the objective of taking the plant to a safe shutdown condition in a manner which minimizes the effect to the health and safety of the public.

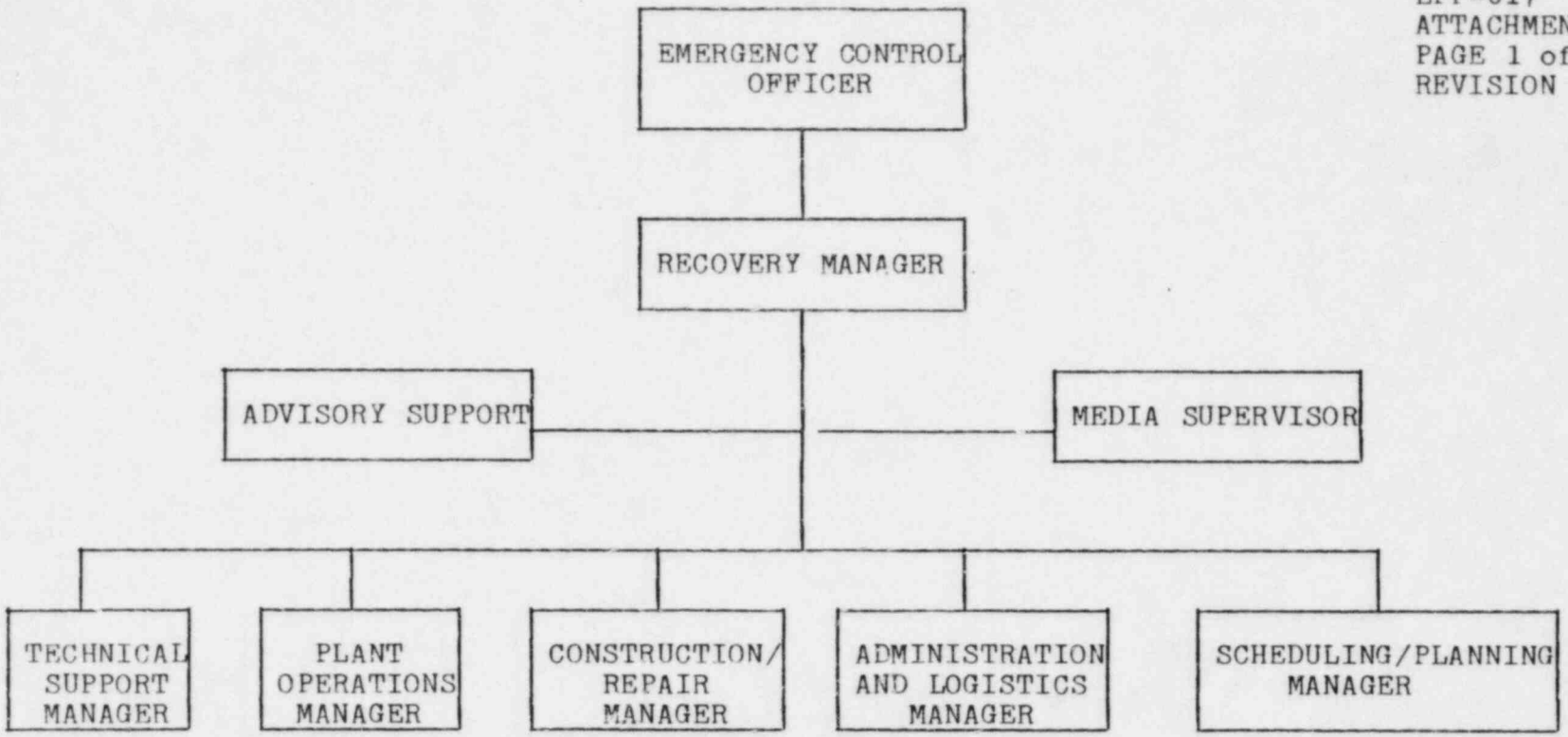
F. The Construction/Repair Manager, Group Manager, Production Engineering Quality Control and Construction, coordinates the construction activities of the recovery operation.

G. Advisory Support, a staff function consisting of senior technical personnel, will serve on the Recovery Manager's staff. Typically, they consist of senior representatives from the NSSS supplier, the A.E., and the NRC. Representatives for the recovery organization will be management personnel who have the requisite authority to represent their respective organizations in making resource commitments and resolving technical issues. This group provides day-to-day support to the Recovery Manager and his staff and will be in attendance at the routine meetings of the recovery organization.

H. The Scheduling/Planning Manager, Senior Engineer, Nuclear Operations, serves as a support resource for the Recovery Manager, assisting him in the short-term planning, scheduling, and expediting of recovery operations. Usual measures are required to identify key problems; significant operations, technical decisions, resource limitations, and schedule milestones. The organization of this function will be strongly dependent upon the specific needs of the Recovery Manager. This group would develop the agenda for recovery staff meetings and follow up with expediting of commitments made at these meetings.

I. The Administration and Logistics Manager, Manager of Purchasing, Production, and Construction, provides administration, logistic, communications, and personnel support for the recovery operation.

J. The Media Coordinator, Manager, Nuclear Information at the V. C. Summer Nuclear Station, is the ranking public information representative at the News Media Area who (1) relays information to other employees at the center, (2) supervises all communications operations at the center, (3) distributes all news releases and statements, and (4) maintains direct contact with public information specialists to develop guidance on policy and background material. The Media Coordinator will also coordinate information at the news center with counterparts from local, state, federal agencies, and other companies involved with the emergency, and provide a means of meeting the media's needs.



RECOVERY ORGANIZATION

SOUTH CAROLINA ELECTRIC AND GAS COMPANY

VIRGIL C. SUMMER NUCLEAR STATION

NUCLEAR OPERATIONS

NUCLEAR OPERATIONS

COPY No. 152-G

EMERGENCY PLAN PROCEDURE

EPP-018

EMERGENCY TRAINING AND DRILLS

REVISION 1

JUNE 15, 1982

NON-SAFETY RELATED

Reviewed by:

Mark Courts — 7/22/82
ORIGINATOR (of this revision) — Date

W. Frank Baum — 7/15/82
QUALIFIED REVIEWER — Date

Approved:

J. H. Connelly — 7/22/82
PLANT MANAGER — Date

Date Issued: JUL 27 1982

Form AP-101-2 (1/80)

LIST OF EFFECTIVE PAGES

PAGE	REVISION
i	1
ii	1
1	1
2	1
3	1
4	1
5	1
6	1

ATTACHMENTS

Attachment I, Pages 1 through 3	1
Attachment II, Pages 1 through 4	1

TABLE OF CONTENTS

1.0 PURPOSE

1.1 The purpose of this procedure is:

1.1.1 To establish the Virgil C. Summer Emergency Plan Training requirements as they apply to emergency organization personnel, general SCE&G employees, contractors and support agencies.

1.1.2 To delineate the administrative controls and procedures for the performance of Virgil C. Summer Radiation Emergency Plan drills and exercises.

1.1.3 To provide a standard method to be used for the performance evaluation and documentation of Virgil C. Summer Radiation Emergency Plan drills and exercises.

2.0 REFERENCES

2.1 "Virgil C. Summer Nuclear Station Radiation Emergency Plan"

2.2 "Virgil C. Summer Nuclear Station Final Safety Analysis Report, Section 13A.7.1, Organization Preparedness"

2.3 AP-1101, "General Employee Training"

2.4 AP-1103, "Fire Protection Training and Drills"

2.5 NUREG-0654/FEMA-REP-1, January 1980, "Criteria for Preparation and Evaluation of Radiological Emergency Response Plans and Preparedness in Support of Nuclear Power Plants"

3.0 CONDITIONS AND PREREQUISITES

3.1 An emergency plan drill tests a portion of the emergency organization.

3.2 An emergency plan exercise tests all or most of the emergency organizations.

4.0 PROCEDURE

4.1 Emergency Plan Training

4.1.1 The Manager, Nuclear Operations/Education and Training is responsible for coordinating the training of all Virgil C. Summer Nuclear Station personnel.

4.1.2 The Manager, Nuclear Operations/Education and Training may delegate the training responsibilities to those personnel qualified to teach a specific subject.

4.1.3 The instructor for Emergency Plan Training should have an excellent understanding of the VCSNS Radiation Emergency Plan, Emergency Plan Procedures, and State and County emergency plans. Competence in instructional technique shall be verified through evaluation conducted by the Manager, Nuclear Operations, Education & Training, or his designee. The instructor shall be approved by the Manager, VCSNS.

4.1.4 Lesson plans should be provided for each instructor's program and the designated instructor will be responsible for identifying and correcting weak areas within his part of the training program.

4.1.5 All on-site and off-site Virgil C. Summer Nuclear Station staff listed in the Training Groups and Associated Training Requirements (Attachment I) shall be required to attend, on an annual basis, a training session covering a review of the Emergency Plan and Emergency Plan Procedures.

4.1.6 All non-essential personnel, including contract people, shall receive Emergency Plan training, on an annual basis, as part of the General Employee Training Program, AP-1101.

4.1.7 All off-site emergency organizations listed shall be invited, on an annual basis, to attend an Emergency Plan and Emergency Plan Procedure Training Program per the requirements of Attachment I.

4.1.8 Tests may be administered to attendees as deemed applicable by the instructor. These tests may be written or oral. A minimum grade of 70% shall be considered a satisfactory performance.

4.2 Emergency Plan Drill and Exercise Development

4.2.1 The Emergency Coordinator is responsible for the planning, scheduling and coordination of all emergency planning related drills and exercises, with assistance provided by other groups and individuals, such as the Nuclear Education and Training Department.

4.2.2 All drills and exercises are approved by the Station Manager, with the exception of the Annual Radiation Emergency Drill which shall be approved by the General Manager Nuclear Operations.

4.2.3 The following is the sequence of events for the development and implementation of drills and exercises:

A. Determine the type of drill to be held and the date and time that it will occur.

B. Develop the scenario for the drill, including plant status prior to the occurrence of the emergency.

NOTE: Scenarios for drills and exercises shall include but not be limited to, the following:

1. The basic objective(s) of each drill and exercise.

2. The date(s), time period, place(s) and participating organizations.

3. The simulated events.

4. A time schedule of real and simulated initiating events.

5. A narrative summary describing the conduct of the exercises or drills to include such things as simulated casualties, offsite fire department assistance, rescue of personnel, use of protective clothing, deployment of radiological monitoring teams, and public information activities.

6. Arrangements for qualified observers.

Drill scenarios shall be prepared that involve particication of several emergency teams and all or specific parts of the on-site and off-site emergency organizations including varying degrees of participation of State, County, and Federal organizations and agencies, and local services support personnel and organizations. The Emergency Coordinator shall notify the off-site emergency response organization and agencies at least thirty (30) days in advance of the scheduled date of the drill or exercise.

C. Forward the completed scenario to the Station Manager or General Manger Nuclear Operatons for review and approval.

D. Assign personnel who will be evaluators/controllers/observers during the course of the drill.

E. A pre-exercise meeting will be held to brief evaluators/controllers/observers on the scope, sequence of events, and individual responsibilities.

F. Conduct the drill as scheduled.

G. Upon completion of the drill, conduct a post-exercise critique during which time evaluators/controllers/observers comments shall be heard. The criteria for evaluation of the exercise is given in Attachment II.

H. The names of all emergency personnel who participated in the drill shall be documented as per AP-1101 "General Employee Training."

I. Recommendations of improvements in the Emergency Plan based upon the critique, shall be forwarded to the Coordinator, Emergency Planning for initiation of review and approval. Recommendations of improvements in the Emergency Plan Procedures, based upon the critique, shall be forwarded to the Station Manager for his review and approval.

J. All pertinent documents generated as a result of the drill shall be forwarded to the Emergency Coordinator.

K. Ensure that deficiencies discovered are reported to the Station Manager for review and corrective action.

4.2.4 Scheduled drills and exercises shall be held involving off-site as well as on-site emergency personnel, organizations, and agencies.

4.2.5 Each scheduled drill will be conducted in a manner that ensures:

A. The drill participants are familiar with their respective duties and responsibilities.

B. The adequacy of the methods used in the Emergency Plan Procedures.

C. A check has been performed on the availability of emergency supplies and equipment.

D. The operability of emergency equipment.

E. Plant conditions and operations will not be jeopardized.

4.2.6 The Emergency Coordinator is responsible for preparing drill scenarios. Section Supervisors/Assistant Managers shall provide assistance as requested by the Emergency Coordinator to ensure the drills achieve the desired effect to the maximum extent possible.

4.2.7 The Emergency Coordinator should ensure the notification of any offsite agencies to be involved in a drill at least thirty days prior to the drill initiation. He should, as a reminder, also verify that the off-site agencies can still support their involvement in the drill by contacting them within forty-eight hours of the drill initiation.

4.2.8 Prior to the running of a drill, a pre-drill briefing should be conducted by the Drill Coordinator. All drill monitors should be in attendance to discuss the expected sequence of events and to receive instructions on precautions to be observed during the drill sequence. After completion of the drill, the individual specified as the lead Controller should conduct a post-drill critique with drill monitors and participants at the earliest time when all applicable personnel can be gathered.

4.3 Emergency Plan Drill and Exercise Schedule

4.3.1 Drills will be scheduled so that the following periodicity is adhered to:

A. Medical Drills

1. Annually with the participation of local medical support personnel and organizations and should involve cases of radiation over-exposure and contaminated personnel with and without injuries.

B. Fire Emergency Drill

1. Fire Brigade Members (quarterly)

2. Fire Brigade and off-site fire fighting support (annually)

C. Radiological Monitoring Drills (annually)

D. Health Physics Drills (semi-annually)

E. Communication Drills

1. Monthly with state and counties within the 10 mile plume exposure Emergency Planning Zone.

2. Quarterly with Federal and State agencies within the 50 mile ingestion Emergency Planning Zone.

3. Annually between site, State and local emergency operations centers and field assessment teams.

F. Radiation Emergency Exercise

1. Annually such that all plans and preparedness organizations are tested within a five year period.

2. Once every six years the annual exercise will start between the hours of 6:00 p.m. & midnite; and another between the hours of midnite and 6:00 a.m.

NOTE: Items A through E above may be included in the Radiation Emergency Exercise; however, the periodicity as stated for each item must be adhered to in addition to any inclusions in the Radiation Emergency Exercise.

Emergency Plan Training Topics

MODULE 1 EP-LP-01 Rev. 1 (7/81)

Introduction to Emergency Planning	EP-LP-01-01	Rev. 1(7/81)
VC Summer Emergency Organization	EP-LP-01-02	Rev. 1(7/81)
SCE&G Corporate Emergency Organization	EP-LP-01-03	Rev. 1(7/81)
State Emergency Organization	EP-LP-01-04	Rev. 1(7/81)
Role of Federal Support Agencies	EP-LP-01-05	Rev. 1(7/81)
Emergency Classification System	EP-LP-01-06	Rev. 1(7/81)
Emergency Facilities	EP-LP-01-07	Rev. 1(7/81)
Emergency Equipment and Supplies	EP-LP-01-08	Rev. 1(7/81)
Summary of Potential Actions of Non-Essentials	EP-LP-01-09	Rev. 1(7/81)

MODULE 2 EP-LP-02 Rev. 1 (7/81)

Notification Procedures	EP-LP-02-01	Rev. 1(7/81)

MODULE 3 EP-LP-03 Rev. 1 (7/81)

Personnel Accountability and Evacuation	EP-LP-03-01	Rev. 1(7/81)
Radiation Exposure Control for Plant Personnel	EP-LP-03-02	Rev. 1(7/81)

MODULE 4 EP-LP-04 Rev. 1 (7/81)

In-Plant Radiation Monitoring	EP-LP-04-02	Rev. 1(7/81)
Out-of-Plant Radiation Monitoring	EP-LP-04-03	Rev. 1(7/81)
Protective Action Guidelines	EP-LP-04-04	Rev. 1(7/81)
Dose Assessment	EP-LP-04-05	Rev. 1(7/81)
Environmental Assessment	EP-LP-05-06	Rev. 1(7/81)

MODULE 5 EP-LP-05 Rev. 1 (7/81)

Site Access Control During Emergencies	EP-LP-05-01	Rev. 1(7/81)
First Aid/Medical Capabilities and Response	EP-LP-05-02	Rev. 1(7/81)
Review of Onsite Firefighting Practices	EP-LP-05-03	Rev. 1(7/81)
First-Aid Team Response	EP-LP-05-04	Rev. 0(7/81)

MODULE 6 EP-LP-06 Rev. 1 (7/81)

Post Recovery and Re-Entry	EP-LP-06-01	Rev. 1(7/81)

MODULE 7 EP-LP-07 Rev. 1 (7/81)

Public Affairs Procedures	EP-LP-07-01	Rev. 1(7/81)

MODULE 8 EP-LP-08 Rev. 1 (7/81)

Basic Health Physics for Offsite Personnel	EP-LP-08-01	Rev. 1(7/81)
Radiation Exposure Control	EP-LP-08-02	Rev. 1(7/81)
Site Access Control During Emergencies	EP-LP-08-03	Rev. 1(7/81)
Facility Layout and Orientation	EP-LP-08-04	Rev. 1(7/81)

MODULE 9 EP-LP-09 Rev. 1 (7/81)

Firefighting Practices and Equipment	EP-LP-09-01	Rev. 1(7/81)
Local Law Enforcement Response	EP-LP-09-02	Rev. 1(7/81)
Ambulance Response to Medical Emergencies	EP-LP-09-03	Rev. 1(7/81)
RMH-ER Staff Response	EP-LP-09-04	Rev. 1(7/81)

EMERGENCY PLAN TRAINING GROUPS INDEX

GROUP 1 - Operations Personnel

Shift Supervisor, Shift Foreman, Reactor Operators, Auxiliary Operators Shift Technical Advisors

Modules: 1, 2, 3, 4, 5, 6, all EPP's that are not included in Modules.

GROUP 2 - Management, Supervisory, Emergency Personnel, and Essential Corporate Personnel

Emergency Coordinator, TSC Staff, EOF Staff, Emergency Planning Coordinator

Modules: 1, 2, 3, 4, 5, 6, 7, all EPP's that are not in modules.

GROUP 3 - Health Physics and Environmental Surveillance Personnel

Modules: 1, 2, 3, 4, 5, 6, EPP-010-011

GROUP 4 - Essential Maintenance Personnel

Modules: 1, 3, 6, EPP-011

GROUP 5 - Chemistry Personnel

Modules: 1, 3, EPP-006, EPP-009. EPP-011, EPP-014

GROUP 6 - Security Force Personnel

Modules: 1, 2, 3, 5, EPP-011

GROUP 7 - Personnel not involved with Emergency Plan

Modules 1, 3

GROUP 8 - Off-Site Support Personnel -

News Media --- MODULES: 7, 8

Fire Departments --- MODULES: 8, Fire Fighting Practices and Equipment. (EP-LP-09-01)

Ambulance Services --- MODULES: 8, Ambulance Response to Medical Emergencies (EP-LP-09-03)

RMH-ER Staff --- Basic Health Physics for Off-Site Personnel, RMH-ER Staff Response (EP-LP-09-04)

LLEA --- MODULES: 8, Local Law Enforcement Response (EP-LP-09-02)

Exercise Evaluation Criteria

GENERAL PROCEDURES

1. Each evaluator, controller, observer has been furnished and should be familiar with:

   a. Emergency Exercise Objectives.

   b. The specific objectives to test the Virgil C. Summer Nuclear Station, State and Local Emergency plant with the ten-mile Emergency Planning zone.

   c. The exercise scenario, initiating events, and expected courses of action to be undertaken.

2. For each area to be surveyed the following should be discussed with the evaluators, controllers, observers.

   a. A summary and description of the area's location, emergency mission, and personnel and their emergency responsibilities.

3. Evaluators, controllers, observers should be at their assigned posts between 30 and 45 minutes prior to the commencement of the exercise, even though the area being evaluted may not be activated until later in the exercise.

4. If controllers are to provide information (initiating events, instrumentation readings, environmental monitoring results, etc.) to the exercise participants, the information must be provided exactly as prescribed and exactly when prescribed. Failure to provide the information appropriately may invalidate the results of the exercise.

5. A Chronological Record must be kept for areas surveyed. The record should show the actual time of the event or occurrence, the result or action taken, elapsed time, (where applicable) and pertinent comments.

6. Controllers should offer no information, advice or assistance to the drill participants other than what is intended by the scenario. Any such requests should be respectfully declined. Controllers will only interpose themselves if the participants are taking an action that will cause the exercise to go far afield of the anticipated time schedule and/or outcome. Examples of problems requiring such interpositions may include: a dose calculation/projection that is so grossly inaccurate that an action level other than the one postulated for the scenario would be instituted; an activity that is taking so much longer than predicted that the exercise scenario is in danger of not progressing as postulated.

PERFORMANCE EVALUATION CRITERIA

To ensure validity of the evaluation, all exercise evaluators, controllers, observers must utilize the same grading criteria. The following grading standards should be utilized.

1. Recording Times of Actions

   a. For grading purposes, it will be assumed that onsite personnel have been alerted when the emergency siren is sounded.

   b. For calculating elapsed times, evaluators will be given the actual time the exercise is initiated. This will be T = 0 on all reports. All elapsed time calculations will be based on this time, regardless of when the separate evaluated activities are initiated.

   c. An emergency facility or other activity will be deemed to be in service when its personnel accountability check is completed and reported or when a formal declaration of turnover of command has been accomplished.

   d. The "Chronological Events Summary" should be the primary evaluation record.

2. Evaluation Standards

   a. Excellent: Personnel and equipment always functioned without error the first time, every time. There were no problems encountered, and all personnel and equipment functioned at a level much greater than could be anticipated.

   b. Good: Personnel and equipment generally performed better than expectations. Any errors or problems were minor, and easily correctable.

   c. Satisfactory: Personnel and/or equipment performed according to expectations, with some minor exceptions. Any errors noted were not severe and could be corrected without undue labor and/or expense.

   d. Poor: Personnel and/or equipment generally performed below expectations and/or there were several significant deficiencies noted. The area's ability to carry out its mission was diminished.

e. Fail: Personnel and/or equipment consistently failed to perform as required and/or there were serious deficiencies noted which severely impaired the ability of the area to carry out its mission.

3. Categories for Evaluation

a. Assess and Evaluate - Mission Performance

(1) Command Functions - did the area carry out its mission of directing the activities of other components?

(2) Assessment and Evaluation - was information promptly and corrected received, assessed and evaluated?

(3) Did personnel know and carry out their duties with efficiency and without undue direction?

(4) Did the area establish and maintain communications with other components? Was the information received and/or transmitted accurate, concise, appropriate, and timely?

(5) Was the recordkeeping system designed and implemented to record significant events and actions for further use?

b. Assess and Evaluate - Facilities and Equipment

(1) Physical Facilities: Was the area utilized appropriate by virtue of its size and location? Was there enough furniture, ventilation, rest rooms, office supplies, etc., to support the mission? Could the area support the personnel assigned to it?

(2) Resource Materials: Were the resource materials readily available to assess the emergency situation and to plan corrective actions -- maps, reference books, copies of emergency plans and procedures?

(3) Communications Equipment: Was the onsite, offsite, and connecting communications equipment adequate in quantity, operability and availability? Did personnel know how to utilize the equipment efficiently?

(4) Emergency Equipment: Was emergency equipment readily available, completely operable, appropriate to the task or situation, and did personnel know how to use it efficiently? Emergency equipment includes: portable environmental monitoring equipment; personal protective equipment - clothing, respirators; decontamination supplies and equipment; first aid and firefighting equipment; and communications equipment.

(5) Personnel Quantity: Was there enough trained personnel to carry out the mission? Too few? Too many?

(6) Area Access Control: Did all assigned personnel respond to their areas promptly and stay in assigned area for the duration of the exercise? Was the area secured against unauthorized persons being presented?

(7) Recordkeeping: Was all data accurately recorded and maintained in a systematic readily retrievable manner for further reference?

c. Interface with Other Areas and Groups

Although this is not specifically addressed on all evaluation forms, obviously it is an item of extreme importance. An area that performs its own mission satisfactorily but that does not interface adequately with other areas, has not performed in an overall satisfactorily manner. Any deficiences noted in the areas interfacing with other areas should be noted. Such deficiencies may be due to inadequate communications hardware, organizational deficiencies, or inadequacies in plans and procedures.

4. Summary

a. Describe any problems noted by the area being evaluated, a description of the problem, its outcome or effect, and any recommended corrective courses of action to mitigate or correct the deficiency.

b. After completing his evaluation report the evaluator(s) is to sign the report and promptly return it as directed.

c. A critique of the exercise will be held with all key participants, key evaluators/controllers/observers, and NRC/FEMA observers if present, as attendees.

SOUTH CAROLINA ELECTRIC AND GAS COMPANY

VIRGIL C. SUMMER NUCLEAR STATION

NUCLEAR OPERATIONS

NUCLEAR OPERATIONS

COPY No. 152-C

EMERGENCY PLAN PROCEDURE

EPP-019

EMERGENCY EQUIPMENT CHECKLIST

REVISION 2

JUNE 17, 1982

NON-SAFETY RELATED

Reviewed by:

Mark Counts — 7/22/82
ORIGINATOR (of this revision) — Date

W. Mark Bacon — 7/15/82
QUALIFIED REVIEWER — Date

Approved:

J. G. Connelly — 7/26/82
PLANT MANAGER — Date

Date Issued: JUL 27 1982

Form AP-101-2 (1/80)

LIST OF EFFECTIVE PAGES

PAGE	REVISION
1	2
ii	2
1	2
2	2

ATTACHMENTS

Attachment I - Pages 1 and 2	2
Attachment II - Pages 1 through 6	2
Attachment III - Pages 1 through 5	2
Attachment III.1	2
Attachment III.2	2
Attachment III.3	2
Attachment III.4 - Pages 1 through 6	2
Attachment III.5	2
Attachment III.6 - Pages 1 through 4	2
Attachment III.7 - Pages 1 through 3	2
Attachment III.8 - Pages 1 through 4	2
Attachment III.9	2
Attachment III.10	2
Attachment III.11	2

TABLE OF CONTENTS

1.0 PURPOSE

1.1 This procedure establishes the actions to be taken to ensure the operational readiness of emergency equipment and supplies.

2.0 REFERENCES AND GLOSSARY

2.1 References

2.1.1 "Virgil C. Summer Nuclear Station Radiation Emergency Plan"

2.1.2 AP-301.1, "Document Control Procedure"

2.1.3 NUREG-0654, Criteria for Preparation and Evaluation of Radiological Emergency Response Plans and Preparedness in Support of Nuclear Power Plants

2.1.4 HPP-603, Decontamination, Inspection, Maintenance and Storage of Respiratory Equipment.

2.2 Glossary

2.2.1 Abbreviations

The following abbreviations appear in the attachments to this procedure:

A. AP - Administrative Procedures

B. BRH - Bureau of Radiological Health

C. CHP - Chemistry Procedures

D. CR - Control Room

E. DHEC- Department of Health and Environmental Control

F. EOA - Emergency Operations Area

G. EOC - Emergency Operations Center

H. EOF - Emergency Operations Facility

I. EOP - Emergency Operating Procedures

J. EPP - Emergency Plan Procedures

K. FHP - Fuel Handling Procedure

L. FPP - Fire Protection Procedure

M. FSAR- Final Safety Analysis Report

N. GOP - General Operating Procedures

O. HPP - Health Physics Procedure

P. LLEA- Local Law Enforcement Agency

Q. OSC - Operations Support Center

R. SCEPD-South Carolina Emergency Preparedness Division

S. SOP - Systems Operating Procedures

T. TSC - Technical Support Center

U. SCBA - Self Contained Breathing Apparatus

V. SAP - Station Administrative Procedures

3.0 CONDITIONS AND PREREQUISITES

3.1 Specific procedural requirements for the operation of the survey instruments listed in this procedure will be adhered to except for source/daily response checks. The instruments in this procedure shall be checked for response to radiation with the source provided in the kits prior to use.

4.0 PROCEDURE

4.1 Surveillance of emergency equipment shall be in accordance with the requirements specified in the attachments to this procedure.

4.2 The Emergency Coordinator shall assure that surveillance of the equipment and supplies is accomplished within the specified frequencies.

4.3 All discrepancies detected during surveillance activities shall be corrected within fourteen (14) days. Those not corrected within (14) days will be brought to the attention of the Plant Manager by the Emergency Coodinator.

4.4 Upon successful completion of each surveillance requirement, acceptable results will be documentated by signing and dating in the spaces provided. Forward completed Emergency Equipment Checklists to the Emergency Coordinator.

4.5 All drawings and procedures shall be controlled in accordance with AP-301.1, "Document Control Procedure".

4.6 All completed equipment checklists will be retained as permanent plant records and maintained in accordance with AP-301.2.

CONTROL ROOM RADIATION EMERGENCY EQUIPMENT CHECK LIST QUARTERLY

DATE PERFORMED:

ITEM #	EQUIPMENT DESCRIPTION	SURVEIL. REQMT	MIN. QTY.	PERFORMED BY SIGNATURE	COMMENTS	SHELF LIFE
1	VCSNS Radiation Emergency Plan	Inventory	1 copy			N/A
2	Emergency Plan Procedures	Inventory	1 set			N/A
3	Map of 10 mile radius	Inventory	1 copy			N/A
4	Overlays for 10 mile map (Stab. Classes A - G)	Inventory	1 each of 7			N/A
5	Plant Drawings (Control Copy #384)	Inventory	1 set			N/A
6	First Aid Kit	Inventory by list inside Kit	1 each			N/A
7	Portable Radios (in birnak use)	Inventory & verify operability	4			N/A
8	Operations Retransmitter	Inventory & verify Operability	1 each			N/A
9	Security Channel Base Radio Transceiver	Inventory & verify operability	1 each			N/A

Ops. REVIEWER _____ DATE _____ EMERG. COORDINATOR _____ DATE _____

CONTROL ROOM RADIATION EMERGENCY KIT
EQUIPMENT CHECK LIST
QUARTERLY

DATE PERFORMED:

ITEM #	EQUIPMENT DESCRIPTION	SURVEIL. REQMT	MIN. QTY.	PERFORMED BY SIGNATURE	COMMENTS	SHELF LIFE
10	Telephone	Inventory & Verify Operability	1 ea.			N/A
11	Intercom	Inventory & Verify Operability	1 ea.			N/A

H.P. REVIEWER _____ DATE _____ EMERG. COORDINATOR _____ DATE _____

CONTROL ROOM RADIATION EMERGENCY EQUIPMENT CHECK LIST QUARTERLY

DATE PERFORMED:

ITEM #	EQUIPMENT DESCRIPTION	SURVEIL. REQMT	MIN. QTY.	PERFORMED BY SIGNATURE	COMMENTS	SHELF LIFE
1	Safety parameter display system	Verify operability of software	1			N/A
2	TSC computer and TSC displays	Verify operability of software	1			N/A
3	Aperature and reader-printer	Inventory & verify operability	1			N/A
4	Copying Machine	Inventory & verify operability	1			N/A
5	Graphs, Overlays, Maps	Inventory	1 set			N/A
6	Log Book	Inventory	1			N/A
7	Plant Procedures 1 - GOP 2 - SOP 3 - EOP 4 - EPP 5 - HPP 6 - FPP 7 - FHP 8 - CHP 9 - AP 10- SAP	Audit	1 set each			N/A

T.S. REVIEWER _____ DATE_____ EMERG. COORDINATOR _____ DATE _____

CONTROL ROOM RADIATION EMERGENCY
EQUIPMENT CHECK LIST
QUARTERLY

DATE PERFORMED:

ITEM #	EQUIPMENT DESCRIPTION	SURVEIL. REQMT	MIN. QTY.	PERFORMED BY SIGNATURE	COMMENTS	SHELF LIFE
10	Drawings of facility and systems to the compoonent level	Audit	1 set			N/A
11	FSAR including the Environmental Report	Audit	1 set			N/A
12	VCS Technical Specifications	Audit	1			N/A
13	Mitigating core damage manual	Audit	1			N/A
14	Precautions, Limitations and Setpoints Documents	Audit	1			N/A
15	State Radiological Emergency Response Plan	Audit	1 1			N/A
16	County Radiological Emergency Response Plan	Audit				
	1 - Fairfield County		1			N/A
	2 - Newberry County		1			N/A
	3 - Lexington County		1			N/A
	4 - Richland County		1			N/A
17	Title 10, Code of Federal Regulations	Audit	1			N/A

T.S. REVIEWER _____ DATE _____ EMERG. COORDINATOR _____ DATE _____

CONTROL ROOM RADIATION EMERGENCY
EQUIPMENT CHECK LIST
QUARTERLY

DATE PERFORMED:

ITEM #	EQUIPMENT DESCRIPTION	SURVEIL. REQMT	MIN. QTY.	PERFORMED BY SIGNATURE	COMMENTS	SHELF LIFE
18	V. C. Summer Station Radiological Emergency Plan	Inventory	1			N/A
19	Potassium Iodine Pills	Inventory & check expiration date Audit	100 (min)			3 yrs

T.S. REVIEWER _____ DATE _____ EMERG. COORDINATOR _____ DATE _____

Radiation Emergency Kit Surveillance Requirements

Health Physics is responsible for performing the inventory and surveillance of the radiation emergency kits listed in Attachments III.1 through III.8. The required frequency of inventories is at least quarterly. Respiratory Protective equipment shall be inspected monthly in accordance with HPP-603. If a kit is used (the seal is broken), the required surveillance shall be performed prior to the kit being placed back into service. Any equipment removed from these kits for the purposes of repairs, functional checks or calibration will be replaced with equivalent equipment during absence.

The following Surveillance Requirements are used during inventories to ensure that all equipment is functional. These requirements are coded and used to verify completion of each kit surveillance. Any discrepancies found during the performance of inventories should be noted in the comments sections of the attached Check Lists. The person(s) performing surveillance will ensure that each item on each check list meets or exceeds the Surveillance Requirements specified and the latest approved attachments to this procedure are used prior to signing off each item.

Completed Check Lists will be forwarded to the Emergency Coordinator for retention and review.

Surveillance Requirements

Code

A. Check procedures, maps or forms listed as emergency equipment to ensure that the latest approved/issued revision is in place. Replace as necessary.

B. Ensure that the Hospital Survey Packet contains a minimum of:

1 - roll of rad. ribbon or approx. 100' of rad. rope
10 - 3 pocket radiation signs with inserts
100 - smears in envelopes
2 ea. - Pencil, pens, grease pencils
8 - Rad. Material labels for waste containers
10 - Blank survey maps
10 - Survey Forms (HPP-302 Att. I)
1 pr. - scissors
10 - Survey Forms (EPP-010 Att.I)

Code

Surveillance Requirements

These items may be placed in one packet, several packets or individually stored. Ensure items listed are present prior to signoff.

C. Ensure that equipment in "packets"/poly bags are sealed and/or taped and labeled with the date the "packet" was sealed. "Packets" which should be replaced due to shelf life estimates require the label to also contain the due date for replacement. Ensure these packets are replaced no later than the month following the due date. "Packets" with broken seals require itemized inventory inspection, and resealing prior to sign-off.

D. Ensure individual items with estimated shelf life are labeled with the date the item was placed in the kit and the due date. Replacement requirements are the same as "packets" in Surveillance Requirement C.

E. Ensure batteries are replaced with good fresh ones or functionally tested semiannually.

F. Operability of portable survey instruments is verified during calibration on a quarterly basis in accordance with HPP-611 Calibration of Station Survey Instruments.

Verify that calibration is current during inventory. If calibration is past due, remove the instrument after replacement with equivalent instrumentation. If the calibration is due prior to the next scheduled inventory, record the due date in the comments section.

G. Perform inventory and ensure that the monthly inspection of respiratory equipment has been performed in accordance with HPP-603 Decontamination, Inspection, Maintenance, and Storage of Respiratory Equipment, prior to sign-off.

Surveillance Requirements

Code

H. Ensure this tool kit packet contains a minimum of: 1 allen wrench, 4 hasps, 4 nails, 1 screwdriver/nut drive set and 1 hammer.

I. These items require a physical inventory and a visual inspection of condition prior to sign-off unless the package is sealed. If seal is intact, only the presence of the package is necessary for sign-off.

J. Ensure this posting/survey 'packet' contains a minimum of:
   - 50 - particulate air filters
   - 2 ea. - pencil, pens, grease pencils
   - 4 - 3 pocket radiation signs with inserts
   - 50 - smears in envelopes
   - 1 pr. - tweezers
   - 20 - environmental envelopes
   - 1 roll - radiation ribbon or 100 ft. of Rad rope (approx.)
   - 1 - Record Logbook
   - 1 - scratch pad
   - 10 - planchets
   - 10- vegetation bags
   - 1 - clipboard
   - 10 - Labeled Air Sample Bags

   These items may be placed in one packet, several packets or individually stored. Ensure items listed are present in each kit prior to sign-off.

K. Place visitor TLD's in a plastic bag and label bag with date of TLD changeout. TLD's are to be changed quarterly.

L. Inventory, check calibration date(s), re-zero if >20% of full scale or off scale.

M. Inventory and functionally check charger at each battery replacement by zeroing a pocket dosimeter.

N. First Aid Kits - Ensure each kit contains the following cotton, gauze bandage, elastic bandage, bandaids, and sponge.

Code

Surveillance Requirements

O. Ensure the protective clothing 'packets' contains a minimum of the following items:

1 pair	-	coveralls (cloth or paper)
1	-	head cover or hood
1 pair	-	cloth gloves (liners)
1 pair	-	rubber or work gloves (heavy)
1 pair	-	disposable gloves (light)
1 pair	-	disposable shoe covers
1 pair	-	rubber shoe covers
*1 box	-	disposable gloves

* This item is not included in the packet; ensure it is present prior to sign off.

These 'packets' will be opened and inspected at the specified shelf life frequency. All items will be inspected for signs of deterioration and replaced as necessary.

P. Verify operability at 6 month intervals when batteries are replaced. Do not store batteries in calculator or flashlight.

Q. Ensure the radiation emergency monitoring kit battery "packet" contains a minimum of:

1 set of batteries for the calculator
1 set of batteries for the flashlight
1 set of batteries for each portable survey instrument
2 ea. - 1 amp slow blow fuses for the air sampler
2 ea. - 1/8 amp slow blow fuses for RM-14 (or equivalent.

R. Replace the survey instrument in the kit with a calibrated instrument with a fully charged battery.

S. Ensure the Decon Kit includes a minimum of:
100 - Smears and envelopes
4 cans - Radcon foam (or equivalent) - Check for expiration
2 rolls - Paper towels
1 - Scratch pad

Surveillance Requirements

Code

4 - 3 pocket radiation signs with inserts
2 each - Pens, Pencils, Grease Pencils
1 - Roll of Rad ribbon
2 - Poly sheets (approx. 20' x 50')
3 - Poly bags (approx. 18" x 36")

These items may be placed in one "packet", several packets, or individually stored. Ensure all items are present in each kit.

T. Ensure the Off-Site Holding Area Protective Clothing 'Packets' include a minimum of:

20 pairs - Paper coveralls
20 pairs - Disposable shoe covers
20 - Paper head covers
2 rolls - Masking tape
50 pairs - Disposable gloves (Surgeon)

These items may be placed in one "packet", several "packets", or individually stored. Ensure all items are present in each kit.

Z. Run Hewlett Packard 1000 Computer Program to read meteorological data and obtain a listing of latest met tower values to verify proper operation of met tower to Hewlett Packard 1000 data link as outlined by EARS Program Software Package.

U. Ensure the survey 'packet' contains a minimum of

1 - roll of Radiation Ribbon
4 - 3 pocket Radiation Signs with inserts
50 - Smears and Envelopes
2 ea - pencils, pens, grease pencils
5 pr - Disposable gloves

CONTROL ROOM RADIATION EMERGENCY KIT
EQUIPMENT CHECK LIST

DATE PERFORMED:

ITEM #	EQUIPMENT DESCRIPTION	SURVEIL. REQMT.	MIN. QTY.	PERFORMED BY SIGNATURE	COMMENTS	SHELF LIFE
1	Self Contained Breathing Apparatus	G	6			N/A
2	SCBA Spare Bottles	G	6			N/A
3	Respirators (Full Face)	G	6			N/A
4	Spare filter cartridges for full face respirators	D	12			4 yr.

H.P. REVIEWER _____ DATE _____ EMERG. COORDINATOR _____ DATE _____

OPERATIONS SUPPORT CENTER RADIATION EMERGENCY KIT EMERGENCY CHECKLIST

DATE PERFORMED:

ITEM #	EQUIPMENT DESCRIPTION	SURVEIL. REQMT.	MIN. QTY.	PERFORMED BY SIGNATURE	COMMENTS	SHELF LIFE
1	Protective clothing "packets"	C,O	10			2 yr.
2	Respirators (Full Face)	G	5			N/A
3	Spare filter cartridges for full face respirators	D	10			4 yr.
4	5 rolls of Tape "packet"	C	1			2 yr.
5	Flashlight	P	5			N/A
6	Battery "Packet" for 5 Flashlights	C,E	1			6 mo.
7	GM Survey Meter (E-400/ E-530) or equivalent	F	1			N/A
8	1 set of batteries for survey insturment	C,E	1			6 mo.
9	Vamp Area Monitor (or equiv.)	F	1			N/A
10	Cs^{-137} check	I	1			N/A
11	SCBA	G	2			N/A

H.P. REVIEWER _____ DATE _____ EMERG. COORDINATOR _____ DATE _____

FIRST AID ROOM (412' CONTROL BUILDING
AMBULANCE RADIATION EMERGENCY KIT EQUIPMENT CHECKLIST

DATE PERFORMED:

ITEM #	EQUIPMENT DESCRIPTION	SURVEIL. REQMT.	MIN. QTY.	PERFORMED BY SIGNATURE	COMMENTS	SHELF LIFE
1	Protective Clothing Packets (Disposable)	C,O	4			2 yr.
2	Poly bags (appr.18"x36")	I	5			N/A
3	Poly bags (appr.12"x25")	I	5			N/A
4	Poly bags (appr.12"x12")	I	5			N/A
5	Poly bags (appr. 3"x6")	I	10			N/A
6	Absorbent Material (36' x 20" approx.)	I	1			N/A
7	Patient Injury Contamination Forms, EPP-009 Att. I	A	5			N/A
8	Radiation Tape (roll)	I	1			N/A
9	Survey "Packet"	C,U	1			N/A
10	RM-14/HP-210 Probe (or equivalent)	F,R	1			N/A

H.P. REVIEWER _____ DATE _____ EMERG. COORDINATOR _____ DATE _____

SECURITY ANNEX RADIATION EMERGENCY KIT EQUIPMENT CHECK LIST

DATE PERFORMED:

ITEM #	EQUIPMENT DESCRIPTION	SURVEIL. REQMT.	MIN. QTY.	PERFORMED BY SIGNATURE	COMMENTS	SHELF LIFE
1	Radiation Emergency/Monitoring Kits (Each kit to contain the following items.)	*	2		*Per listed items	N/A
	a) Posting/Survey Packet	C,J	1			N/A
	b) Poly sheets (approx. 20' x 50')	I	2			N/A
	c) 2 roll masking tape "packet"	C	1			2 yr.
	d) Tool Kit "packet"	C,H	1			N/A
	e) First Aid Kit	N	1			N/A
	f) Bottles (1 liter)	I	3			N/A
	g) Cs^{137} Check Source	I	1			N/A
	i) AgZ Filters (Plant) "packet"	D	10			4 yr.
	j) AgZ Filters (Environmental) "packet"	D	5			4 yr.
	k) Calculator	P	1			N/A

H.P. REVIEWER _____ DATE _____ EMERG. COORDINATOR _____ DATE _____

SECURITY ANNEX RADIATION EMERGENCY KIT
EQUIPMENT CHECK LIST

DATE PERFORMED:

ITEM #	EQUIPMENT DESCRIPTION	SURVEIL. REQMT.	MIN. QTY.	PERFORMED BY SIGNATURE	COMMENTS	SHELF LIFE
(1 Cont)	l) Watch	**	1		** Verify Operability	N/A
	m) Environmental Key(s)	I	1 set			N/A
	n) Map of 10 mi. EPZ/ Sampling Stations	A	1			N/A
	o) Disposable gloves "pkt"	I	5 pr.			N/A
	p) Roll of paper towels	I	1			N/A
	q) Flashlight	P	1			N/A
	r) Battery "Packet"	C, E, Q	1			6 mo.
	s) E-400/E-530 (or equivalent)	F	1			N/A
	t) PIC-6A (or equivalent)	F	1			N/A
	u) RM-14/HP-210 probe (or equivalent)	F, R	1			N/A
	v) 12V Air Sampler (or equivalent) w/cables	F	1			N/A
	w) Low Range Dosimeter (0-500 mr)	L	2			N/A
	x) High Range Dosimeter (0-1R)	L	2			N/A
	y) Whole Body TLD	K	2			N/A

H.P. REVIEWER _____ DATE _____ EMERG. COORDINATOR _____ DATE _____

SECURITY ANNEX RADIATION EMERGENCY KIT
EQUIPMENT CHECK LIST

DATE PERFORMED:

ITEM #	EQUIPMENT DESCRIPTION	SURVEIL. REQMT.	MIN. QTY.	PERFORMED BY SIGNATURE	COMMENTS	SHELF LIFE
(1 Cont)	Z) Procedures/Forms	A	1 ea			N/A
	1) EPP-004 Out of Plant Radiological Surveying	A	1			N/A
	2) EPP-007 Environmental Monitoring	A	1			N/A
	3) EPP-010 Personnel/Vehicle Decontamination	A	1			N/A
	4) EPP-020 Emergency Personnel Exposure Control	A	1			N/A
	5) Out of Plant Survey/ Sample record (EPP-004 Att. I)	A	10			N/A
	6) Personnel Contamination Report (EPP-010 Att. I)	A	10			N/A
						N/A
						N/A
						N/A
						N/A

H.P. REVIEWER _____ DATE _____ EMERG. COORDINATOR _____ DATE _____

SECURITY ANNEX RADIATION EMERGENCY KIT
EQUIPMENT CHECK LIST

DATE PERFORMED:

ITEM #	EQUIPMENT DESCRIPTION	SURVEIL. REQMT.	MIN. QTY.	PERFORMED BY SIGNATURE	COMMENTS	SHELF LIFE
2	Off-Site Holding Area Kit (Each kit to contain the following items.)	*	2		* Per listed items	N/A
	a) Decon Kit "Packet"	C,S	1			N/A
	b) Protective Clothing "Packet"	C,T	1			2 yr.
	c) First Aid Kit	N	1			N/A
	d) Check Source (Cs-137)	I	1			N/A
	e) E-400/E-530 (or equivalent)	F	1			N/A
	f) 1 Sets of batteries for survey instrument ("packet")	C,E	1			6 mo.
	g) RM-14/HP-210 probe (or equivalent)	F,R	1			N/A
	h) Irrigation bottles (500 ml)	I	2			N/A

H.P. REVIEWER _____ DATE _____ EMERG. COORDINATOR _____ DATE _____

SECURITY ANNEX RADIATION EMERGENCY KIT
EQUIPMENT CHECK LIST

DATE PERFORMED:

ITEM #	EQUIPMENT DESCRIPTION	SURVEIL. REQMT.	MIN. QTY.	PERFORMED BY SIGNATURE	COMMENTS	SHELF LIFE
	h) Procedures/Forms	A	1 ea			N/A
2 (Cont)	1) EPP-010 Personnel/ Vehicle Decontamination	A	1			N/A
	2) Personnel Contamination Report (EPP-010 Att. I)	A	20			N/A
	3) Vehicle Survey Record (EPP-010 Att. II)	A	20			N/A
	4) Survey Record (HPP-302 Att. I)	A	20			N/A

H.P. REVIEWER _____ DATE _____ EMERG. COORDINATOR _____ DATE _____

AUXILIARY BUILDING (436') & FUEL HANDLING BUILDING (463')
RADIATION EMERGENCY KIT EQUIPMENT CHECK LIST

DATE PERFORMED:

ITEM #	EQUIPMENT DESCRIPTION	SURVEIL. REQMT.	MIN. QTY.	PERFORMED BY SIGNATURE	COMMENTS	SHELF LIFE
1	Aux. & FHB Kits Each kit will contain the following:	I*	2		* Ensure both Kits are inventoried	
1.1	Protective Clothing "Packets"	C,O	10			2 yr.
1.2	Respirators (Full Face)	G	5			N/A
1.3	Spare filter cartridges for full face respirators	D	10			4 yr.
1.4	5 roll - masking tape "packet"	C	1			2 yr.

H.P. REVIEWER _____ DATE _____ EMERG. COORDINATOR _____ DATE _____

T.S.C. RADIATION EMERGENCY KIT
EQUIPMENT CHECK LIST

DATE PERFORMED:

ITEM #	EQUIPMENT DESCRIPTION	SURVEIL. REQMT.	MIN. QTY.	PERFORMED BY SIGNATURE	COMMENTS	SHELF LIFE
1	S.C.B.A.	G	8			N/A
2	S.C.B.A. Spare Bottles	G	8			N/A
3	Respirators (Full Face)	G	8			N/A
4	Spare filter cartridges for full face respirators	D	16			4 yr.
5	Radiological and meteorological data computer	Z	1			N/A
6	Whole Body TLD's "packet"	K	25			N/A
7	Extremity TLD Holders "pkt" (for ankle or wrist)	I	15			N/A
8	High Range Dosimeter "packet" (0-5R)	L	25			N/A
9	Low Range Dosmeter "packet" (0-500mr)	L	25			N/A
10	Dosimeter charger with 2 "D" cell batteries attached	D,M,E	1			6 mo. batt.
11	PIC-6A (or Equivalent)	F	1			N/A
12	E-400/E-530 (or (Equivalent)	F	1			N/A

H.P. REVIEWER _____ DATE _____ EMERG. COORDINATOR _____ DATE _____

T.S.C. RADIATION EMERGENCY KIT
EQUIPMENT CHECK LIST

DATE PERFORMED:

ITEM #	EQUIPMENT DESCRIPTION	SURVEIL. REQMT.	MIN. QTY.	PERFORMED BY SIGNATURE	COMMENTS	SHELF LIFE
13	Portable P&I Air Samplers	F*	2		* Ensure P&I adaptor is present	N/A
14	1 set of batteries for high range survey instrument, and 1 set of batteries for low range survey instrument and 1 set of batteries for the alarming dosimeters	C,E	1			6 mo.
15	First Aid Kits	N	2			N/A
16	Flashlights "Pocket"	P	10			N/A
17	Battery "Packet" for 10 Flashlights	C,E	1			6 mo.
18	5 rolls of Tape "Packet"	C	1			2 yr.
19	Protective Clothing "Packet"	C,O	25			2 yr.
20	Survey 'packets'	U	2			N/A
21	Alarming Dosimeter	F	2			N/A
22	Plastic P.C. Set "packet"	D	10			2 yr.
23	Particulate air filters "pkt"	I	10			N/A
24	AgZ Filters (Plant) "pkt"	D	10			4 yr.

H.P. REVIEWER _____ DATE _____ EMERG. COORDINATOR _____ DATE _____

T.S.C. RADIATION EMERGENCY KIT
EQUIPMENT CHECK LIST

DATE PERFORMED:

ITEM #	EQUIPMENT DESCRIPTION	SURVEIL. REQMT.	MIN. QTY.	PERFORMED BY SIGNATURE	COMMENTS	SHELF LIFE
25	Air Sample Results Log (HPP-404 Att. II)	A	20			N/A
26	Personnel Contamination Report (HPP-405 Att. I)	A	20			N/A
27	Perimeter Survey (HPP-410 Att. V)	A	20			N/A
28	Rad Work Permit (HPP-151 Att. I)	A	10			N/A
29	(S)RWP Signature Att (HPP-151 Att. III)	A	10			N/A
30	Self Read. Dos. Card (HPP-152 Att. I)	A	50			N/A
31	Auth. To Exceed Exp. Limits	A	10			N/A
32	Resp. Issue Log (HPP-154 Att. I)	A	10			N/A
33	Air. Rad Area Entry Log (HPP-155 Att. I)	A	10			N/A
34	Cs-137 Check source	I	1			N/A
35	Survey Record (HPP-302 Att. I)	A	50			N/A

H.P. REVIEWER _____ DATE _____ EMERG. COORDINATOR _____ DATE _____

T.S.C. RADIATION EMERGENCY KIT
EQUIPMENT CHECK LIST

DATE PERFORMED:

ITEM #	EQUIPMENT DESCRIPTION	SURVEIL. REQMT.	MIN. QTY.	PERFORMED BY SIGNATURE	COMMENTS	SHELF LIFE
36	Blank Survey Map (HPP-302 Att. II)	A	50			N/A
37	RWP Issue/Termination Log (HPP-401 Att. I)	A	10			N/A

H.P. REVIEWER _____ DATE _____ EMERG. COORDINATOR _____ DATE _____

RICHLAND MEMORIAL HOSPITAL RADIATION EMERGENCY KIT EQUIPMENT CHECKLIST

DATE PERFORMED:

ITEM #	EQUIPMENT DESCRIPTION	SURVEIL. REQMT.	MIN. QTY.	PERFORMED BY SIGNATURE	COMMENTS	SHELF LIFE
1	E400/E530 (or equivalent)	F	1			N/A
2	Pic-6A (or equivalent)	F	1			N/A
3	Dosimeter charger with 2 "D" cell batteries attached	D,M,E	1			6 months (Battery)
4	Low Range Dosimeter (0-500 MR)	L	6			N/A
5	High Range Dosimeter (0-1R)	L	2			N/A
6	Hospital survey Packet	A,C,B	1			N/A
7	Disposable Shoe Covers "packet"	I	25 pr.			N/A
8	Waste Containers (Liquid) with lids	I	2			N/A
9	Waste Containers (Solid) with lids	I	2			N/A

H.P. REVIEWER _____ DATE _____ EMERG. COORDINATOR _____ DATE _____

RICHLAND MEMORIAL HOSPITAL RADIATION
EMERGENCY KIT EQUIPMENT CHECKLIST

DATE PERFORMED:

ITEM #	EQUIPMENT DESCRIPTION	SURVEIL. REQMT.	MIN. QTY.	PERFORMED BY SIGNATURE	COMMENTS	SHELF LIFE
11	Decon Solution	D, I	5 gal.			As Labled
12	Movable Shield 1" steel with 4" Lead glass window	I	1			N/A
13	Lead Container Approx. 6"x8"	I	1			N/A
14	Decontamination Tabletop	I	1			N/A
15	Portable Cart	I	1			N/A
16	Blotter Paper	I	1 roll			N/A
17	5 rolls of tape "Packet"	C	2			2 years
18	Herculite approx. 10'x100'	I	1			N/A
19	Polyethylene	I	1 roll			N/A
20	Poly Bags approx (38"x63") (yellow, labled)	I	10			N/A
21	Protective clothing "packets" (Disposable)	C,O	10			2 year

H.P. REVIEWER _____ DATE _____ EMERG. COORDINATOR _____ DATE _____

RICHLAND MEMORIAL HOSPITAL RADIATION
EMERGENCY KIT EQUIPMENT CHECKLIST

DATE PERFORMED:

ITEM #	EQUIPMENT DESCRIPTION	SURVEIL. REQM.	MIN. QTY.	PERFORMED BY SIGNATURE	COMMENTS	SHELF LIFE
23	Battery 'packet' to contain one complete set of batteries for instruments (Item #1 & 2)	C,E	1			6 months

H.P. REVIEWER _____ DATE _____ EMERG. COORDINATOR _____ DATE _____

E.O.F. RADIATION EMERGENCY KIT
EQUIPMENT CHECK LIST

DATE PERFORMED:

ITEM #	EQUIPMENT DESCRIPTION	SURVEIL. REQMT.	MIN. QTY.	PERFORMED BY SIGNATURE	COMMENTS	SHELF LIFE
1	Radiation Emergency/Monitoring Kits (Each kit to contain the following items.)	*	2		*Per listed items	N/A
	a) Posting/Survey Packet	C,J	1			N/A
	b) Poly sheets (approx. 20' x 50')	I	2			N/A
	c) 2 roll masking tape "packet"	C	1			2 yr.
	d) Tool Kit "packet"	C,H	1			N/A
	e) First Aid Kit	N	1			N/A
	f) Bottles (1 liter)	I	3			N/A
	g) Cs^{137} Check Source	I	1			N/A
	h) Decontamination Materials	I	2			N/A
	i) AgZ Filters (Plant) pkt	D	10			4 yr.
	j) AgZ Filters (Environmental) "packet"	D	5			4 yr.
	k) Calculator	P	1			N/A

H.P. REVIEWER _____ DATE _____ EMERG. COORDINATOR _____ DATE _____

E.O.F. RADIATION EMERGENCY KIT
EQUIPMENT CHECK LIST

DATE PERFORMED:

ITEM #	EQUIPMENT DESCRIPTION	SURVEIL. REQMT.	MIN. QTY.	PERFORMED BY SIGNATURE	COMMENTS	SHELF LIFE
(1 Cont)	l) Watch	**	1		** Verify Operability	N/A
	m) Environmental Key(s)	I	1 set			N/A
	n) Map of 10 mi. EPZ/ Sampling Stations	A	1			N/A
	o) Disposable gloves "pkt"	I	5 pr.			2 yr.
	p) Roll of paper towels	I	1			N/A
	q) Flashlight	P	1			N/A
	r) Battery "Packet"	C, E, Q	1			6 mo.
	s) E-400/E-530 (or equivalent)	F	1			N/A
	t) PIC-6A (or equivalent)	F	1			N/A
	u) RM-14/HP-210 probe (or equivalent)	F, R	1			N/A
	v) 12V Air Sampler (or equivalent) w/cables	F	1			N/A
	w) Low Range Dosimeter (0-500 mr)	L	2			N/A
	x) High Range Dosimeter (0-1R)	L	2			N/A
	y) Whole Body TLD	K	2			N/A

H.P. REVIEWER _____ DATE _____ EMERG. COORDINATOR _____ DATE _____

E.O.F. RADIATION EMERGENCY KIT
EQUIPMENT CHECK LIST

DATE PERFORMED:

ITEM #	EQUIPMENT DESCRIPTION	SURVEIL. REQMT.	MIN. QTY.	PERFORMED BY SIGNATURE	COMMENTS	SHELF LIFE
(1 Cont)	Z) Procedures/Forms	A	1 ea			N/A
	1) EPP-004 Out of Plant Radiological Surveying	A	1			N/A N/A
	2) EPP-007 Environmental Monitoring	A	1			N/A
	3) EPP-010 Personnel/Vehicle Decontamination	A	1			N/A
	4) EPP-020 Emergency Personnel Exposure Control	A	1			N/A N/A
	5) Out of Plant Survey/ Sample record (EPP-004 Att. I)	A	10			N/A N/A
	6) Personnel Contamination Report (EPP-010 Att. I)	A	10			N/A
	7) HPP-301 Operation of Station Portable Survey Instruments	A	1			N/A N/A
	8) HPP-302 Radiation and Contamination Survey Techniques	A	1			N/A

H.P. REVIEWER _____ DATE _____ EMERG. COORDINATOR _____ DATE _____

E.O.F. RADIATION EMERGENCY KIT
EQUIPMENT CHECK LIST

DATE PERFORMED:

ITEM #	EQUIPMENT DESCRIPTION	SURVEIL. REQMT.	MIN. QTY.	PERFORMED BY SIGNATURE	COMMENTS	SHELF LIFE
(1 Cont)	9) HPP-303 Airborne Activity Sampling Techniques & Procedure	A	1			N/A
	10) Procedure for Operation of Survey Instrument in Item u).	A	1			N/A

H.P. REVIEWER _____ DATE _____ EMERG. COORDINATOR _____ DATE _____

E.O.F. SURVEY KIT
EQUIPMENT CHECK LIST

DATE PERFORMED:

ITEM #	EQUIPMENT DESCRIPTION	SURVEIL. REQMT.	MIN. QTY.	PERFORMED BY SIGNATURE	COMMENTS	SHELF LIFE
1	Dosimeter charger with 2 D-cell batteries attached	D,M,E	1			N/A
2	RM-14 with HP-210 probe (or equivalent)	F,R	1			N/A
3	E-400 (or equivalent)	F	1			N/A

H.P. REVIEWER _____ DATE _____ EMERG. COORDINATOR _____ DATE _____

E.O.F. DOSIMETRY ISSUANCE KIT
EQUIPMENT CHECK LIST

DATE PERFORMED:

ITEM #	EQUIPMENT DESCRIPTION	SURVEIL. REQMT.	MIN. QTY.	PERFORMED BY SIGNATURE	COMMENTS	SHELF LIFE
1	Whole Body TLD's	K	50			N/A
2	Control TLD	K	1			N/A
3	0-500mR Dosimeters	L	50			N/A
4	0-1R Dosimeters	L	20			N/A

H.P. REVIEWER _____ DATE _____ EMERG. COORDINATOR _____ DATE _____

GUARD HOUSE EMERGENCY DOSIMETRY ISSUANCE KIT
EQUIPMENT CHECK LIST

DATE PERFORMED:

ITEM #	EQUIPMENT DESCRIPTION	SURVEIL. REQMT.	MIN. QTY.	PERFORMED BY SIGNATURE	COMMENTS	SHELF LIFE
1	Whole Body TLD's	K	15			N/A
2	Control TLD's	K	1			N/A
3	0-500mR Dosimeters	L	15			N/A
4	EPP-020 Emergency Personnel Exposure Control	A	1 copy			N/A

H.P. REVIEWER _____ DATE _____ EMERG. COORDINATOR _____ DATE _____

SOUTH CAROLINA ELECTRIC AND GAS COMPANY

VIRGIL C. SUMMER NUCLEAR STATION

NUCLEAR OPERATIONS

NUCLEAR OPERATIONS
COPY No. 157C

EMERGENCY PLAN PROCEDURE

EPP-019

EMERGENCY EQUIPMENT CHECKLIST

REVISION 3

SEPTEMBER 2, 1982

NON-SAFETY RELATED

Reviewed by:

Mark Lantz — 9/7/82
ORIGINATOR (of this revision) — Date

V. A. Albert — 9/7/82
DISCIPLINE SUPERVISOR — Date

Approved:

O. S. Bradham — 9/7/82
PLANT MANAGER — Date

Date Issued: SEP 10 1982

LIST OF EFFECTIVE PAGES

PAGE	REVISION
i	3
ii	3
1	3
2	3
3	3

ATTACHMENTS

Attachment I - Pages 1 and 2	3
Attachment II - Pages 1 through 3	3
Attachment III - Pages 1 through 5	3
Attachment III.1	3
Attachment III.2	3
Attachment III.3	3
Attachment III.4 - Pages 1 through 5	3
Attachment III.5	3
Attachment III.6 - Pages 1 through 4	3
Attachment III.7 - Pages 1 through 3	3
Attachment III.8 - Pages 1 through 4	3
Attachment III.9	3
Attachment III.10	3
Attachment III.11	3

TABLE OF CONTENTS

1.0 PURPOSE

1.1 This procedure establishes the actions to be taken to ensure the operational readiness of emergency equipment and supplies.

2.0 REFERENCES AND GLOSSARY

2.1 References

2.1.1 "Virgil C. Summer Nuclear Station Radiation Emergency Plan"

2.1.2 AP-301.1, "Document Control Procedure"

2.1.3 NUREG-0654, Criteria for Preparation and Evaluation of Radiological Emergency Response Plans and Preparedness in Support of Nuclear Power Plants

2.1.4 HPP-603, Decontamination, Inspection, Maintenance and Storage of Respiratory Equipment.

2.2 Glossary

2.2.1 Abbreviations

The following abbreviations appear in the attachments to this procedure:

A. AP - Administrative Procedures

B. BRH - Bureau of Radiological Health

C. CHP - Chemistry Procedures

D. CR - Control Room

E. DHEC- Department of Health and Environmental Control

F. EOA - Emergency Operations Area

G. EOC - Emergency Operations Center

H. EOF - Emergency Operations Facility

I. EOP - Emergency Operating Procedures

J. EPP - Emergency Plan Procedures

K. FHP - Fuel Handling Procedure

L. FPP - Fire Protection Procedure

M. FSAR- Final Safety Analysis Report

N. GOP - General Operating Procedures

O. HPP - Health Physics Procedure

P. LLEA- Local Law Enforcement Agency

Q. OSC - Operations Support Center

R. SCEPD-South Carolina Emergency Preparedness Division

S. SOP - Systems Operating Procedures

T. TSC - Technical Support Center

U. SCBA - Self Contained Breathing Apparatus

V. SAP - Station Administrative Procedures

3.0 CONDITIONS AND PREREQUISITES

3.1 Specific procedural requirements for the operation of the survey instruments listed in this procedure will be adhered to except for source/daily response checks. The instruments in this procedure shall be checked for response to radiation with the source provided in the kits prior to use.

4.0 PROCEDURE

4.1 Surveillance of emergency equipment shall be in accordance with the requirements specified in the attachments to this procedure.

4.2 The Emergency Coordinator shall assure that surveillance of the equipment and supplies is accomplished within the specified frequencies.

4.3 All discrepancies detected during surveillance activities shall be corrected within fourteen (14) days. Those not corrected within (14) days will be brought to the attention of the Plant Manager by the Emergency Coodinator.

4.4 Upon successful completion of each surveillance requirement, acceptable results will be documentated by signing and dating in the spaces provided. Forward completed Emergency Equipment Checklists to the Emergency Coordinator.

4.5 All drawings and procedures shall be controlled in accordance with AP-301.1, "Document Control Procedure".

4.6 All completed equipment checklists will be retained as permanent plant records and maintained in accordance with AP-301.2.

CONTROL ROOM RADIATION EMERGENCY EQUIPMENT CHECK LIST QUARTERLY

DATE PERFORMED:

ITEM #	EQUIPMENT DESCRIPTION	SURVEIL. REQMT	MIN. QTY.	PERFORMED BY SIGNATURE	COMMENTS	SHELF LIFE
1	VCSNS Radiation Emergency Plan	Inventory	1 copy			N/A
2	Emergency Plan Procedures	Inventory	1 set			N/A
3	Map of 10 mile radius	Inventory	1 copy			N/A
4	Overlays for 10 mile map (Stab. Classes A - G)	Inventory	1 each of 7			N/A
5	Plant Drawings (Control Copy #384)	Inventory	1 set			N/A
6	First Aid Kit	Inventory by list inside Kit	1 each			N/A
7	Portable Radios (in normal use)	Inventory & verify operability	4			N/A
8	Operations Retransmitter	Inventory & verify Operability	1 each			N/A
9	Security Channel Base Radio Transceiver	Inventory & verify operability	1 each			N/A

Ops. REVIEWER _____ DATE _____ EMERG. COORDINATOR _____ DATE _____

CONTROL ROOM RADIATION EMERGENCY KIT
EQUIPMENT CHECK LIST
QUARTERLY

DATE PERFORMED:

ITEM #	EQUIPMENT DESCRIPTION	SURVEIL. REQMT	MIN. QTY.	PERFORMED BY SIGNATURE	COMMENTS	SHELF LIFE
10	Telephone	Inventory & Verify Operability	1 ea.			N/A
11	Intercom	Inventory & Verify Operability	1 ea.			N/A

H.P. REVIEWER _____ DATE _____ EMERG. COORDINATOR _____ DATE _____

TECHNICAL SUPPORT CENTER RADIATION EMERGENCY EQUIPMENT CHECK LIST QUARTERLY

DATE PERFORMED:

ITEM #	EQUIPMENT DESCRIPTION	SURVEIL. REQMT	MIN. QTY.	PERFORMED BY SIGNATURE	COMMENTS	SHELF LIFE
1	Safety parameter display system	Verify operability of software	1			N/A
2	TSC computer and TSC displays	Verify operability of software	1			N/A
3	Aperature card reader-printer	Inventory & verify operability	1			N/A
4	Copying Machine	Inventory & verify operability	1			N/A
5	Graphs, Overlays, Maps	Inventory	1 set			N/A
6	Log Book	Inventory	1			N/A
7	Plant Procedures 1 - GOP 2 - SOP 3 - EOP 4 - EPP 5 - HPP 6 - FPP 7 - FHP 8 - CHP 9 - AP 10- SAP	Audit	1 set each			N/A

T.S. REVIEWER _____ DATE _____ EMERG. COORDINATOR _____ DATE _____

TECHNICAL SUPPORT CENTER RADIATION EMERGENCY
EQUIPMENT CHECK LIST
QUARTERLY

DATE PERFORMED:

ITEM #	EQUIPMENT DESCRIPTION	SURVEIL. REQMT	MIN. QTY.	PERFORMED BY SIGNATURE	COMMENTS	SHELF LIFE
10	Drawings of facility and systems to the compoonent level	Audit	1 set			N/A
11	FSAR including the Environmental Report	Audit	1 set			N/A
12	VCS Technical Specifications	Audit	1			N/A
13	Mitigating core damage manual	Audit	1			N/A
14	Precautions, Limitations and Setpoints Documents	Audit	1			N/A
15	State Radiological Emergency Response Plan	Audit	1 1			N/A
16	County Radiological Emergency Response Plan	Audit				
	1 - Fairfield County		1			N/A
	2 - Newberry County		1			N/A
	3 - Lexington County		1			N/A
	4 - Richland County		1			N/A
17	Title 10, Code of Federal Regulations	Audit	1			N/A

T.S. REVIEWER _____ DATE _____ EMERG. COORDINATOR _____ DATE _____

TECHNICAL SUPPORT CENTER RADIATION EMERGENCY
EQUIPMENT CHECK LIST
QUARTERLY

DATE PERFORMED:

ITEM #	EQUIPMENT DESCRIPTION	SURVEIL. REQMT	MIN. QTY.	PERFORMED BY SIGNATURE	COMMENTS	SHELF LIFE
18	V. C. Summer Station Radiological Emergency Plan	Inventory	1			N/A
19	Potassium Iodine Pills	Inventory & check expiration date Audit	100 (min)			3 yrs

T.S. REVIEWER _____ DATE _____ EMERG. COORDINATOR _____ DATE _____

Radiation Emergency Kit Surveillance Requirements

Health Physics is responsible for performing the inventory and surveillance of the radiation emergency kits listed in Attachments III.1 through III.8. The required frequency of inventories is at least quarterly. Respiratory Protective equipment shall be inspected monthly in accordance with HPP-603. If a kit is used (the seal is broken), the required surveillance shall be performed prior to the kit being placed back into service. Any equipment removed from these kits for the purposes of repairs, functional checks or calibration will be replaced with equivalent equipment during absence.

The following Surveillance Requirements are used during inventories to ensure that all equipment is functional. These requirements are coded and used to verify completion of each kit surveillance. Any discrepancies found during the performance of inventories should be noted in the comments sections of the attached Check Lists. The person(s) performing surveillance will ensure that each item on each check list meets or exceeds the Surveillance Requirements specified and the latest approved attachments to this procedure are used prior to signing off each item.

Completed Check Lists will be forwarded to the Emergency Coordinator for retention and review.

Surveillance Requirements

Code

A. Check procedures, maps or forms listed as emergency equipment to ensure that the latest approved/issued revision is in place. Replace as necessary.

B. Ensure that the Hospital Survey Packet contains a minimum of:

1 - roll of rad. ribbon or approx. 100' of rad. rope
10 - 3 pocket radiation signs with inserts
100 - smears in envelopes
2 ea. - Pencil, pens, grease pencils
8 - Rad. Material labels for waste containers
10 - Blank survey maps
10 - Survey Forms (HPP-302 Att. I)
1 pr. - scissors
10 - Survey Forms (EPP-010 Att.I)

Code

Surveillance Requirements

These items may be placed in one packet, several packets or individually stored. Ensure items listed are present prior to signoff.

C. Ensure that equipment in "packets"/poly bags are sealed and/or taped and labeled with the date the "packet" was sealed. "Packets" which should be replaced due to shelf life estimates require the label to also contain the due date for replacement. Ensure these packets are replaced no later than the month following the due date. "Packets" with broken seals require itemized inventory inspection, and resealing prior to sign-off.

D. Ensure individual items with estimated shelf life are labeled with the date the item was placed in the kit and the due date. Replacement requirements are the same as "packets" in Surveillance Requirement C.

E. Ensure batteries are replaced with good fresh ones or functionally tested semiannually.

F. Operability of portable survey instruments is verified during calibration on a quarterly basis in accordance with HPP-611 Calibration of Station Survey Instruments.

Verify that calibration is current during inventory. If calibration is past due, remove the instrument after replacement with equivalent instrumentation. If the calibration is due prior to the next scheduled inventory, record the due date in the comments section.

G. Perform inventory and ensure that the monthly inspection of respiratory equipment has been performed in accordance with HPP-603 Decontamination, Inspection, Maintenance, and Storage of Respiratory Equipment, prior to sign-off.

Surveillance Requirements

Code

H. Ensure this tool kit packet contains a minimum of: 1 allen wrench, 4 hasps, 4 nails, 1 screwdriver/nut drive set and 1 hammer.

I. These items require a physical inventory and a visual inspection of condition prior to sign-off unless the package is sealed. If seal is intact, only the presence of the package is necessary for sign-off.

J. Ensure this posting/survey 'packet' contains a minimum of:
- 50 - particulate air filters
- 2 ea. - pencil, pens, grease pencils
- 4 - 3 pocket radiation signs with inserts
- 50 - smears in envelopes
- 1 pr. - tweezers
- 20 - environmental envelopes
- 1 roll - radiation ribbon or 100 ft. of Rad rope (approx.)
- 1 - Record Logbook
- 1 - scratch pad
- 10 - planchets
- 10- vegetation bags
- 1 - clipboard
- 10 - Labeled Air Sample Bags

These items may be placed in one packet, several packets or individually stored. Ensure items listed are present in each kit prior to sign-off.

K. Place visitor TLD's in a plastic bag and label bag with date of TLD changeout. TLD's are to be changed quarterly.

L. Inventory, check calibration date(s), re-zero if >20% of full scale or off scale.

M. Inventory and functionally check charger at each battery replacement by zeroing a pocket dosimeter.

N. First Aid Kits - Ensure each kit contains the following cotton, gauze bandage, elastic bandage, bandaids, and sponge.

Code

Surveillance Requirements

O. Ensure the protective clothing 'packets' contains a minimum of the following items:

1 pair	-	coveralls (cloth or paper)
1	-	head cover or hood
1 pair	-	cloth gloves (liners)
1 pair	-	rubber or work gloves (heavy)
1 pair	-	disposable gloves (light)
1 pair	-	disposable shoe covers
1 pair	-	rubber shoe covers
*1 box	-	disposable gloves

* This item is not included in the packet; ensure it is present prior to sign off.

These 'packets' will be opened and inspected at the specified shelf life frequency. All items will be inspected for signs of deterioration and replaced as necessary.

P. Verify operability at 6 month intervals when batteries are replaced. Do not store batteries in calculator or flashlight.

Q. Ensure the radiation emergency monitoring kit battery "packet" contains a minimum of:

1 set of batteries for the calculator
1 set of batteries for the flashlight
1 set of batteries for each portable survey instrument
2 ea. - 1 amp slow blow fuses for the air sampler
2 ea. - 1/8 amp slow blow fuses for RM-14 (or equivalent.

R. Replace the survey instrument in the kit with a calibrated instrument with a fully charged battery.

S. Ensure the Decon Kit includes a minimum of:
100 - Smears and envelopes
4 cans - Radcon foam (or equivalent) - Check for expiration
2 rolls - Paper towels
1 - Scratch pad

Surveillance Requirements

Code

4 - 3 pocket radiation signs with inserts
2 each - Pens, Pencils, Grease Pencils
1 - Roll of Rad ribbon
2 - Poly sheets (approx. 20' x 50')
3 - Poly bags (approx. 18" x 36")

These items may be placed in one "packet", several packets, or individually stored. Ensure all items are present in each kit.

T. Ensure the Off-Site Holding Area Protective Clothing 'Packets' include a minimum of:

20 pairs - Paper coveralls
20 pairs - Disposable shoe covers
20 - Paper head covers
2 rolls - Masking tape
50 pairs - Disposable gloves (Surgeon)

These items may be placed in one "packet", several "packets", or individually stored. Ensure all items are present in each kit.

Z. Run Hewlett Packard 1000 Computer Program to read meteorological data and obtain a listing of latest met tower values to verify proper operation of met tower to Hewlett Packard 1000 data link as outlined by EARS Program Software Package.

U. Ensure the survey 'packet' contains a minimum of

1 - roll of Radiation Ribbon
4 - 3 pocket Radiation Signs with inserts
50 - Smears and Envelopes
2 ea - pencils, pens, grease pencils
5 pr - Disposable gloves

CONTROL ROOM RADIATION EMERGENCY KIT
EQUIPMENT CHECK LIST

DATE PERFORMED:

ITEM #	EQUIPMENT DESCRIPTION	SURVEIL. REQMT.	MIN. QTY.	PERFORMED BY SIGNATURE	COMMENTS	SHELF LIFE
1	Self Contained Breathing Apparatus	G	6			N/A
2	SCBA Spare Bottles	G	6			N/A
3	Respirators (Full Face)	G	6			N/A
4	Spare filter cartridges for full face respirators	D	12			4 yr.

H.P. REVIEWER _____ DATE _____ EMERG. COORDINATOR _____ DATE _____

OPERATIONS SUPPORT CENTER RADIATION EMERGENCY KIT EMERGENCY CHECK LIST

DATE PERFORMED:

ITEM #	EQUIPMENT DESCRIPTION	SURVEIL. REQMT.	MIN. QTY.	PERFORMED BY SIGNATURE	COMMENTS	SHELF LIFE
1	Protective clothing "packets"	C,O	10			2 yr.
2	Respirators (Full Face)	G	5			N/A
3	Spare filter cartridges for full face respirators	D	10			4 yr.
4	5 rolls of Tape "packet"	C	1			2 yr.
5	Flashlight	P	5			N/A
6	Battery "Packet" for 5 Flashlights	C,E	1			6 mo.
7	GM Survey Meter (E-400/ E-530) or equivalent	F	1			N/A
8	1 set of batteries for survey instrument	C,E	1			6 mo.
9	Vamp Area Monitor (or equiv.)	F	1			N/A
10	Cs^{-137} Check Source	I	1			N/A
11	SCBA	G	2			N/A

H.P. REVIEWER _____ DATE _____ EMERG. COORDINATOR _____ DATE _____

FIRST AID ROOM (412' CONTROL BUILDING)
AMBULANCE RADIATION EMERGENCY KIT EQUIPMENT CHECKLIST

DATE PERFORMED:

ITEM #	EQUIPMENT DESCRIPTION	SURVEIL. REQMT.	MIN. QTY.	PERFORMED BY SIGNATURE	COMMENTS	SHELF LIFE
1	Protective Clothing Packets (Disposable)	C,O	4			2 yr.
2	Poly bags (appr.18"x36")	I	5			N/A
3	Poly bags (appr.12"x25")	I	5			N/A
4	Poly bags (appr.12"x12")	I	5			N/A
5	Poly bags (appr. 3"x6")	I	10			N/A
6	Absorbent Material (36' x 20" approx.)	I	1			N/A
7	Patient/Injury/Contamination Forms, EPP-009 Att I	A	5			N/A
8	Radiation Tape (roll)	I	1			N/A
9	Survey "Packet"	C, U	1			N/A
10	RM-14/HP-210 Probe (or equivalent)	F, R	1			N/A

H.P. REVIEWER _____ DATE _____ EMERG. COORDINATOR _____ DATE _____

SECURITY ANNEX RADIATION EMERGENCY KIT
EQUIPMENT CHECK LIST

DATE PERFORMED:

ITEM #	EQUIPMENT DESCRIPTION	SURVEIL. REQMT.	MIN. QTY.	PERFORMED BY SIGNATURE	COMMENTS	SHELF LIFE
1	Radiation Emergency/Monitoring Kits (Each kit to contain the following items.)	*	2		*Per listed items	N/A
	a) Posting/Survey Packet	C,J	1			N/A
	b) Poly sheets (approx. 20' x 50')	I	2			N/A
	c) 2 roll masking tape "packet"	C	1			2 yr.
	d) Tool Kit "packet"	C,H	1			N/A
	e) First Aid Kit	N	1			N/A
	f) Bottles (1 liter)	I	3			N/A
	g) Cs^{137} Check Source	I	1			N/A
	i) AgZ Filters (Plant) "packet"	D	10			4 yr.
	j) AgZ Filters (Environmental) "packet"	D	5			4 yr.
	k) Calculator	P	1			N/A

H.P. REVIEWER _____ DATE _____ EMERG. COORDINATOR _____ DATE _____

SECURITY ANNEX RADIATION EMERGENCY KIT
EQUIPMENT CHECK LIST

DATE PERFORMED:

ITEM #	EQUIPMENT DESCRIPTION	SURVEIL. REQMT.	MIN. QTY.	PERFORMED BY SIGNATURE	COMMENTS	SHELF LIFE
(1 Cont)	l) Watch	**	1		** Verify Operability	N/A
	m) Environmental Key(s)	I	1 set			N/A
	n) Map of 10 mi. EPZ/ Sampling Stations	A	1			N/A
	o) Disposable gloves "pkt"	I	5 pr.			N/A
	p) Roll of paper towels	I	1			N/A
	q) Flashlight	P	1			N/A
	r) Battery "Packet"	C, E, Q	1			6 mo.
	s) E-400/E-530 (or equivalent)	F	1			N/A
	t) PIC-6A (or equivalent)	F	1			N/A
	u) RM-14/HP-210 probe (or equivalent)	F, R	1			N/A
	v) 12V Air Sampler (or equivalent) w/cables	F	1			N/A
	w) Low Range Dosimeter (0-500 mr)	L	2			N/A
	x) High Range Dosimeter (0-1R)	L	2			N/A
	y) Whole Body TLD	K	2			N/A

H.P. REVIEWER _____ DATE _____ EMERG. COORDINATOR _____ DATE _____

SECURITY ANNEX RADIATION EMERGENCY KIT
EQUIPMENT CHECK LIST

DATE PERFORMED:

ITEM #	EQUIPMENT DESCRIPTION	SURVEIL. REQMT.	MIN. QTY.	PERFORMED BY SIGNATURE	COMMENTS	SHELF LIFE
(1 Cont)	Z) Procedures/Forms	A	1 ea			N/A
	1) EPP-004 Out of Plant Radiological Surveying	A	1			N/A N/A
	2) EPP-007 Environmental Monitoring	A	1			N/A
	3) EPP-010 Personnel/Vehicle Decontamination	A	1			N/A
	4) EPP-020 Emergency Personnel Exposure Control	A	1			N/A N/A
	5) Out of Plant Survey/ Sample record (EPP-004 Att. I)	A	10			N/A N/A
	6) Personnel Contamination Report (EPP-010 Att. I)	A	10			N/A
						N/A
						N/A
						N/A

H.P. REVIEWER _____ DATE _____ EMERG. COORDINATOR _____ DATE _____

SECURITY ANNEX RADIATION EMERGENCY KIT
EQUIPMENT CHECK LIST

DATE PERFORMED:

ITEM #	EQUIPMENT DESCRIPTION	SURVEIL. REQMT.	MIN. QTY.	PERFORMED BY SIGNATURE	COMMENTS	SHELF LIFE
2	Off-Site Holding Area Kit (Each kit to contain the following items.)	*	2		* Per listed items	N/A
	a) Decon Kit "Packet"	C,S	1			N/A
	b) Protective Clothing "Packet"	C,T	1			2 yr.
	c) First Aid Kit	N	1			N/A
	d) Check Source (Cs-137)	I	1			N/A
	e) E-400/E-530 (or equivalent)	F	1			N/A
	f) 1 Sets of batteries for survey instrument ("packet")	C,E	1			6 mo.
	g) RM-14/HP-210 probe (or equivalent)	F,R	1			N/A
	h) Irrigation bottles (500 ml)	I	2			N/A

H.P. REVIEWER _____ DATE _____ EMERG. COORDINATOR _____ DATE _____

SECURITY ANNEX RADIATION EMERGENCY KIT
EQUIPMENT CHECK LIST

DATE PERFORMED:

ITEM #	EQUIPMENT DESCRIPTION	SURVEIL. REQMT.	MIN. QTY.	ERFORMED BY SIGNATURE	COMMENTS	SHELF LIFE
	h) Procedures/Forms	A	1 ea			N/A
2 (Cont)	1) EPP-010 Personnel/ Vehicle Decontamination	A	1			N/A
	2) Personnel Contamination Report (EPP-010 Att. I)	A	20			N/A
	3) Vehicle Survey Record (EPP-010 Att. II)	A	20			N/A
	4) Survey Record (HPP-302 Att. I)	A	20			N/A

H.P. REVIEWER _____ DATE _____ EMERG. COORDINATOR _____ DATE _____

AUXILIARY BUILDING (436') & FUEL HANDLING BUILDING (463')
RADIATION EMERGENCY KIT EQUIPMENT CHECK LIST

DATE PERFORMED:

ITEM #	EQUIPMENT DESCRIPTION	SURVEIL. REQMT.	MIN. QTY.	PERFORMED BY SIGNATURE	COMMENTS	SHELF LIFE
1	Aux. & FHB Kits Each kit will contain the following:	I*	2		* Ensure both Kits are inventoried	
1.1	Protective Clothing "Packets"	C,O	10			2 yr.
1.2	Respirators (Full Face)	G	5			N/A
1.3	Spare filter cartridges for full face respirators	D	10			4 yr.
1.4	5 roll - masking tape "packet"	C	1			2 yr.

H.P. REVIEWER _____ DATE _____ EMERG. COORDINATOR _____ DATE _____

T.S.C. RADIATION EMERGENCY KIT
EQUIPMENT CHECK LIST

DATE PERFORMED:

ITEM #	EQUIPMENT DESCRIPTION	SURVEIL. REQMT.	MIN. QTY.	PERFORMED BY SIGNATURE	COMMENTS	SHELF LIFE
1	S.C.B.A.	G	8			N/A
2	S.C.B.A. Spare Bottles	G	8			N/A
3	Respirators (Full Face)	G	8			N/A
4	Spare filter cartridges for full face respirators	D	16			4 yr.
5	Radiological and meteorological data computer	Z	1			N/A
6	Whole Body TLD's "packet"	K	25			N/A
7	Extremity TLD Holders "pkt" (for ankle or wrist)	I	15			N/A
8	High Range Dosimeter "packet" (0-5R)	L	25			N/A
9	Low Range Dosmeter "packet" (0-500mr)	L	25			N/A
10	Dosimeter charger with 2 "D" cell batteries attached	D,M,E	1			6 mo. batt.
11	PIC-6A (or Equivalent)	F	1			N/A
12	E-400/E-530 (or (Equivalent)	F	1			N/A

H.P. REVIEWER _____ DATE _____ EMERG. COORDINATOR _____ DATE _____

T.S.C. RADIATION EMERGENCY KIT
EQUIPMENT CHECK LIST

DATE PERFORMED:

ITEM #	EQUIPMENT DESCRIPTION	SURVEIL. REQMT.	MIN. QTY.	PERFORMED BY SIGNATURE	COMMENTS	SHELF LIFE
13	Portable P&I Air Samplers	F*	2		* Ensure P&I adaptor is present	N/A
14	1 set of batteries for high range survey instrument, and 1 set of batteries for low range survey instrument and 1 set of batteries for the alarming dosimeters	C,E	1			6 mo.
15	First Aid Kits	N	2			N/A
16	Flashlights "Pocket"	P	10			N/A
17	Battery "Packet" for 10 Flashlights	C,E	1			6 mo.
18	5 rolls of Tape "Packet"	C	1			2 yr.
19	Protective Clothing "Packet"	C,O	25			2 yr.
20	Survey 'packets'	U	2			N/A
21	Alarming Dosimeter	F	2			N/A
22	Plastic P.C. Set "packet"	D	10			2 yr.
23	Particulate air filters "pkt"	I	10			N/A
24	AgZ Filters (Plant) "pkt"	D	10			4 yr.

H.P. REVIEWER _____ DATE _____ EMERG. COORDINATOR _____ DATE _____

T.S.C. RADIATION EMERGENCY KIT
EQUIPMENT CHECK LIST

DATE PERFORMED:

ITEM #	EQUIPMENT DESCRIPTION	SURVEIL. REQMT.	MIN. QTY.	PERFORMED BY SIGNATURE	COMMENTS	SHELF LIFE
25	Air Sample Results Log (HPP-404 Att. II)	A	20			N/A
26	Personnel Contamination Report (HPP-405 Att. I)	A	20			N/A
27	Perimeter Survey (HPP-410 Att. V)	A	20			N/A
28	Rad Work Permit (HPP-151 Att. I)	A	10			N/A
29	(S)RWP Signature Att (HPP-151 Att. III)	A	10			N/A
30	Self Read. Dos. Card (HPP-152 Att. I)	A	50			N/A
31	Auth. To Exceed Exp. Limits	A	10			N/A
32	Resp. Issue Log (HPP-154 Att. I)	A	10			N/A
33	Air. Rad Area Entry Log (HPP-155 Att. I)	A	10			N/A
34	Cs-137 Check source	I	1			N/A
35	Survey Record (HPP-302 Att. I)	A	50			N/A

H.P. REVIEWER _____ DATE _____ EMERG. COORDINATOR _____ DATE _____

T.S.C. RADIATION EMERGENCY KIT
EQUIPMENT CHECK LIST

DATE PERFORMED:

ITEM #	EQUIPMENT DESCRIPTION	SURVEIL. REQMT.	MIN. QTY.	PERFORMED BY SIGNATURE	COMMENTS	SHELF LIFE
36	Blank Survey Map (HPP-302 Att. II)	A	50			N/A
37	RWP Issue/Termination Log (HPP-401 Att. I)	A	10			N/A

H.P. REVIEWER _____ DATE _____ EMERG. COORDINATOR _____ DATE _____

RICHLAND MEMORIAL HOSPITAL RADIATION EMERGENCY KIT EQUIPMENT CHECKLIST

DATE PERFORMED:

ITEM #	EQUIPMENT DESCRIPTION	SURVEIL. REQMT.	MIN. QTY.	PERFORMED BY SIGNATURE	COMMENTS	SHELF LIFE
1	E400/E530 (or equivalent)	F	1			N/A
2	Pic-6A (or equivalent)	F	1			N/A
3	Dosimeter charger with 2 "D" cell batteries attached	D,M,E	1			6 months (Battery)
4	Low Range Dosimeter (0-500 MR)	L	6			N/A
5	High Range Dosimeter (0-1R)	L	2			N/A
6	Hospital survey Packet	A,C,B	1			N/A
7	Disposable Shoe Covers "packet"	I	25 pr.			N/A
8	Waste Containers (Liquid) with lids	I	2			N/A
9	Waste Containers (Solid) with lids	I	2			N/A

H.P. REVIEWER _____ DATE _____ EMERG. COORDINATOR _____ DATE _____

RICHLAND MEMORIAL HOSPITAL RADIATION
EMERGENCY KIT EQUIPMENT CHECKLIST

DATE PERFORMED:

ITEM #	EQUIPMENT DESCRIPTION	SURVEIL. REQMT.	MIN. QTY.	PERFORMED BY SIGNATURE	COMMENTS	SHELF LIFE
11	Decon Solution	D, I	5 gal.			As Labled
12	Movable Shield 1" steel with 4" Lead glass window	I	1			N/A
13	Lead Container Approx. 6"x8"	I	1			N/A
14	Decontamination Tabletop	I	1			N/A
15	Portable Cart	I	1			N/A
16	Blotter Paper	I	1 roll			N/A
17	5 rolls of tape "Packet"	C	2			2 years
18	Herculite approx. 10'x100'	I	1			N/A
19	Polyethylene	I	1 roll			N/A
20	Poly Bags approx (38"x63") (yellow, labled)	I	10			N/A

H.P. REVIEWER _____ DATE _____ EMERG. COORDINATOR _____ DATE _____

RICHLAND MEMORIAL HOSPITAL RADIATION
EMERGENCY KIT EQUIPMENT CHECKLIST

DATE PERFORMED:

ITEM #	EQUIPMENT DESCRIPTION	SURVEIL. REQMT.	MIN. QTY.	PERFORMED BY SIGNATURE	COMMENTS	SHELF LIFE
21	Battery 'packet' to contain one complete set of batteries for instruments (Item #1 & 2)	C,E	1			6 months

H.P. REVIEWER _____ DATE _____ EMERG. COORDINATOR _____ DATE _____

E.O.F. RADIATION EMERGENCY KIT
EQUIPMENT CHECK LIST

DATE PERFORMED:

ITEM #	EQUIPMENT DESCRIPTION	SURVEIL. REQMT.	MIN. QTY.	PERFORMED BY SIGNATURE	COMMENTS	SHELF LIFE
1	Radiation Emergency/Monitoring Kits (Each kit to contain the following items.)	*	2		*Per listed items	N/A
	a) Posting/Survey Packet	C,J	1			N/A
	b) Poly sheets (approx. 20' x 50')	I	2			N/A
	c) 2 roll masking tape "packet"	C	1			2 yr.
	d) Tool Kit "packet"	C,H	1			N/A
	e) First Aid Kit	N	1			N/A
	f) Bottles (1 liter)	I	3			N/A
	g) Cs^{137} Check Source	I	1			N/A
	h) Decontamination Materials	I	2			N/A
	i) AgZ Filters (Plant) pkt	D	10			4 yr.
	j) AgZ Filters (Environmental) "packet"	D	5			4 yr.
	k) Calculator	P	1			N/A

H.P. REVIEWER _____ DATE _____ EMERG. COORDINATOR _____ DATE _____

E.O.F. RADIATION EMERGENCY KIT
EQUIPMENT CHECK LIST

DATE PERFORMED:

ITEM #	EQUIPMENT DESCRIPTION	SURVEIL. REQMT.	MIN. QTY.	PERFORMED BY SIGNATURE	COMMENTS	SHELF LIFE
(1 Cont)	l) Watch	**	1		** Verify Operability	N/A
	m) Environmental Key(s)	I	1 set			N/A
	n) Map of 10 mi. EPZ/ Sampling Stations	A	1			N/A
	o) Disposable gloves "pkt"	I	5 pr.			2 yr.
	p) Roll of paper towels	I	1			N/A
	q) Flashlight	P	1			N/A
	r) Battery "Packet"	C, E, Q	1			6 mo.
	s) E-400/E-530 (or equivalent)	F	1			N/A
	t) PIC-6A (or equivalent)	F	1			N/A
	u) RM-14/HP-210 probe (or equivalent)	F, R	1			N/A
	v) 12V Air Sampler (or equivalent) w/cables	F	1			N/A
	w) Low Range Dosimeter (0-500 mr)	L	2			N/A
	x) High Range Dosimeter (0-1R)	L	2			N/A
	y) Whole Body TLD	K	2			N/A

H.P. REVIEWER _____ DATE _____ EMERG. COORDINATOR _____ DATE _____

E.O.F. RADIATION EMERGENCY KIT
EQUIPMENT CHECK LIST

DATE PERFORMED:

ITEM #	EQUIPMENT DESCRIPTION	SURVEIL. REQMT.	MIN. QTY.	PERFORMED BY SIGNATURE	COMMENTS	SHELF LIFE
(1 Cont)	Z) Procedures/Forms	A	1 ea			N/A
	1) EPP-004 Out of Plant Radiological Surveying	A	1			N/A N/A
	2) EPP-007 Environmental Monitoring	A	1			N/A
	3) EPP-010 Personnel/Vehicle Decontamination	A	1			N/A
	4) EPP-020 Emergency Personnel Exposure Control	A	1			N/A N/A
	5) Out of Plant Survey/ Sample record (EPP-004 Att. I)	A	10			N/A N/A
	6) Personnel Contamination Report (EPP-010 Att. I)	A	10			N/A
	7) HPP-301 Operation of Station Portable Survey Instruments	A	1			N/A N/A
	8) HPP-302 Radiation and Contamination Survey Techniques	A	1			N/A

H.P. REVIEWER _____ DATE _____ EMERG. COORDINATOR _____ DATE _____

E.O.F. RADIATION EMERGENCY KIT
EQUIPMENT CHECK LIST

DATE PERFORMED:

ITEM #	EQUIPMENT DESCRIPTION	SURVEIL. REQMT.	MIN. QTY.	PERFORMED BY SIGNATURE	COMMENTS	SHELF LIFE
(1 Cont)	9) HPP-303 Airborne Activity Sampling Techniques & Procedure	A	1			N/A
	10) Procedure for Operation of Survey Instrument in Item u).	A	1			N/A

H.P. REVIEWER _____ DATE _____ EMERG. COORDINATOR _____ DATE _____

E.O.F. SURVEY KIT
EQUIPMENT CHECK LIST

DATE PERFORMED:

ITEM #	EQUIPMENT DESCRIPTION	SURVEIL. REQMT.	MIN. QTY.	PERFORMED BY SIGNATURE	COMMENTS	SHELF LIFE
1	Dosimeter charger with 2 D-cell batteries attached	D,M,E	1			N/A
2	RM-14 with HP-210 probe (or equivalent)	F,R	1			N/A
3	E-400 (or equivalent)	F	1			N/A

H.P. REVIEWER _____ DATE _____ EMERG. COORDINATOR _____ DATE _____

E.O.F. DOSIMETRY ISSUANCE KIT
EQUIPMENT CHECK LIST

DATE PERFORMED:

ITEM #	EQUIPMENT DESCRIPTION	SURVEIL. REQMT.	MIN. QTY.	PERFORMED BY SIGNATURE	COMMENTS	SHELF LIFE
1	Whole Body TLD's	K	50			N/A
2	Control TLD	K	1			N/A
3	0-500mR Dosimeters	L	50			N/A
4	0-1R Dosimeters	L	20			N/A

H.P. REVIEWER _____ DATE _____ EMERG. COORDINATOR _____ DATE _____

GUARD HOUSE EMERGENCY DOSIMETRY ISSUANCE KIT
EQUIPMENT CHECK LIST

DATE PERFORMED:

ITEM #	EQUIPMENT DESCRIPTION	SURVEIL. REQMT.	MIN. QTY.	PERFORMED BY SIGNATURE	COMMENTS	SHELF LIFE
1	Whole Body TLD's	K	15			N/A
2	Control TLD's	K	1			N/A
3	0-500mR Dosimeters	L	15			N/A
4	EPP-020 Emergency Personnel Exposure Control	A	1 copy			N/A

H.P. REVIEWER _____ DATE _____ EMERG. COORDINATOR _____ DATE _____

SOUTH CAROLINA ELECTRIC AND GAS COMPANY

VIRGIL C. SUMMER NUCLEAR STATION

NUCLEAR OPERATIONS

NUCLEAR OPERATIONS

COPY No. 152-G

EMERGENCY PLAN PROCEDURE

EPP-020

EMERGENCY PERSONNEL EXPOSURE CONTROL

REVISION 1

JUNE 10, 1982

Non-Safety Related

Reviewed by:

Mark Counts — 7/22/82
ORIGINATOR (of this revision) — Date

W. Frank Saum — 7/15/82
QUALIFIED REVIEWER — Date

Approved:

J. G. Connelly — 7/26/82
PLANT MANAGER — Date

Date Issued: JUL 27 1982

Form AP-101-2, (1/80)

LIST OF EFFECTIVE PAGES

Page	Revision
i	1
ii	1
1	1
2	1
3	1
4	1
ATTACHMENTS	
Attachment I	1
Attachment II	1

TABLE OF CONTENTS

1.0 PURPOSE

1.1 Provide guidelines for issuing dosimetry and controlling personnel exposure when responding to conditions that have placed the plant in an Alert, Site, or General Emergency status.

2.0 REFERENCES

2.1 Virgil C. Summer Nuclear Station Radiation Emergency Plan.

2.2 10CFR20.

2.3 NCRP Report #39 "Basic Radiation Protection Criteria".

2.4 HPP-153, "Administrative Exposure Limits".

2.5 HPP-150, "Issuance and Control of Personnel Dosimetry.

2.6 HPP-505, "Issuance and Control of Personnel Dosimetry".

2.7 NCRP Report #55, Protection of the Thyroid Gland in the Event of Releases of Radioiodine.

3.0 CONDITIONS AND PREREQUISITES

3.1 Limits and Precautions.

3.1.1 This procedure may be activated by the Interim Emergency Director/Emergency Director or Radiological Assessment Supervisor when conditions dictate. Any deviations from this procedure should be authorized by the Interim Emergency Director/Emergency Director or Radiological Assessment Supervisor and documented. As soon as conditions allow return to normal plant procedures.

3.2 In an emergency, the following exposure limits may be utilized:

3.2.1 Normal Administrative exposure limits may be suspended or modified verbally by the Interim Emergency Director/Emergency Director, Radiological Assessment Supervisor, or Shift Supervisor. Verbal exposure extensions should be followed-up with the appropriate documentation as defined by reference 2.4.

3.2.2 Federal limits of 10 CFR 20 will not knowingly be exceeded, except as described in Section 3.2.4 of this procedure.

3.2.3 Maintain exposure ALARA.

3.2.4 Planned exposures of up to 100 Rem to save human life or prevent the serious endangerment of human life, or up to 25 Rem to save or mitigate significant damage to vital equipment and/or facilities must be approved by the Interim Emergency Director/Emergency Director or Radiological Assessment Supervisor. Persons performing the planned actions should be Volunteers broadly familiar with exposure consequences.

NOTE: This does not apply to "spontaneous reactions" by on the scene personnel in a threatening situation.

3.2.5 If an individual receives an annual dose equivalent in excess of twice the Annual Dose Equivalent Limit, the case should be referred to a medical physician for review (as per ICRP Report 26).

4.0 PROCEDURE

4.1 Dosimetry Issue for non-plant Emergency Personnel requiring "Rapid Access" to the station". (i.e. ambulance crews, fire fighters, etc).

4.1.1 Dosimetry should be issued at the Main Security Guardhouse.

4.1.2 Responsibility of Security Personnel:

a. Issue TLD's and self-reading dosimeters.

b. Complete columns (1) thru (4) of Attachment I.

c. Notify the ED/IED and Health Physics upon issuance of dosimeters to non-plant emergency personnel.

d. Escort emergency personnel to the appropriate locations as directed by the ED/IED.

4.1.3 Responsibilities of Health Physics:

a. Oversee activities of rapid access personnel with regard to radiological safety and Station Health Physics procedures.

b. Collection of dosimetry upon completion of radiologically related activities.

c. Ensure completion of dose cards and Attachment I following termination of radiologically related activities.

NOTE: Steps b and c may be accomplished enroute to hospital or at hospital as time and conditions allow.

4.2 Dosimetry issue for support personnel not requiring "rapid access" (i.e. contractors, vendor and governmental representatives, etc.) and pers nnel not posessing adequate dosimetry for emergency actions.

4.2.1 Badges and Dosimetry should be issued at the EOF for "on coming" personnel and "On-Site" personnel who do not already have dosimetry issued and stored at Guard House.

4.2.2 Document dosimetry issue using Attachments I and II.

4.2.3 As soon as conditions allow and at the direction of the Interim Emergency Director/Emergency Director or the Radiological Assessment Supervisor, normal dosimetry issue and exposure control should be reinstituted in accordance with references 2.4 and 2.5.

4.2.4 Responsibilities of Health Physics:

a) Proper collection of dosimetry.

b) Completion of dose cards and Attachment I's.

c) Completion of all required personnel exposure records.

4.3 Use of KI thyroid blocking agent.

4.3.1 The Director of Health Physics or Radiological Assessment Supervisor shall determine the need for administering KI (stored in the TSC).

4.3.2 KI should be administered within one hour following an acute uptake that involves a projected thyroid exposure greater than 10 Rem. Guidelines are:

4.3.2.1 Individuals suspected to have received greater than 650 MPC-hours of internal exposure to radioiodines should be showered and analyzed by whole body counting (torso) immediately following the uptake. Measured torso burdens greater than 4 μCi (I-131) may result in a thyroid exposure greater than 10 Rem.

4.3.2.2 If conditions do not allow whole body counting within two hours after the uptake, the estimated MPC-Hour exposure should be used to determine the need for KI.

4.3.2.3 KI (100-300 mg) should be taken on a daily basis not to exceed 7-10 days until the thyroid uptake of radioiodine is adequately blocked.

4.3.2.4 Any individual has the right to refuse KI and accept the resulting thyroid exposure.

4.3.3 Attachment II must be completed prior to administering KI.

EMERGENCY DOSIMETRY ISSUE LOG

DATE: _____

(1) NAME	(2) AGE IN YEARS*	(3) TLD NO.	(4) DOSIMETER NO.	(5) DOSIMETER READING	EST. of CURRENT QTR. WB EXPO.	1000 mR - Est. WB Expo.	SSN	DOB	SIGNATURE

* MUST BE AT LEAST 18 YEARS OF AGE.

** SIGNATURE INDICATES:

(A) I HAVE READ AND UNDERSTAND EMERGENCY DOSIMETRY USAGE (ATTACHMENT II).

(B) THE INDICATED ESTIMATE OF CURRENT QTR. W.B. EXPOSURE IS CORRECT TO THE BEST OF MY KNOWLEDGE.

ACUTE UPTAKES INVOLVING PROJECTED THYROID DOSE COMMITMENTS GREATER THAN 10 REM

Date:_____ Time:_____

Name	TLD#	MPC-HRS/Time of Estimate/Uptake	I-131 Torso/Time of Burden(Ci) Count	Time KI Taken

The threshold for the possibility to experience thyroid abnormalities after uptake of radioiodines is estimated at 20 Rem (low probability of 6×10^{-4} Higher probabilities (greater than .075) exist with thyroid exposures greater than 2500 Rem.

KI can be taken after an uptake to prevent accumulation of radioactive iodine in the thyroid due to saturation of the thyroid with stable iodine. KI is over 90% effective if administered within one hour after the uptake and over 50% effective if administered within three to four hours after the uptake.

Usually, side effects of potassium iodide happen when people take higher doses for a long time. You should be careful not to take more than the recommended dose or take if for longer than you are told. Side effects are unlikely because of the low dose and the short time you will be taking the drug.

Possible side effects include skin rashes, swelling of the salivary glands, and "iodism" (metallic taste, burning mouth and throat, sore teeth and gums, symptoms of a head cold, and sometimes stomach upset and diarrhea).

A few people have an allergic reaction with more serious symtoms. These could be fever and joint pains, or swelling of parts of the face and body and at times severe shortness of breath requiring immediate medical attention.

Taking iodide may rarely cause overactivity of the thyroid gland, underactivity of the thyroid gland, or enlargement of the thyroid gland (goiter).

If side effects are noted or if you have an allergic reaction, stop taking potassium iodide. Then, notify the V. C. Summer Plant Manager and obtain medical assistance as needed.

The only people who should not take potassium iodide are people who know they are allergic to iodide. You may take potassium iodide even if you are taking medicines for a thyroid problem (for example, a thyroid hormone or antithyroid drug). Pregnant and nursing women and babies and children can also take this drug.

ACKNOWLEDGEMENT

I understand and accept the risk associated with receiving KI and will not hold SCE&G Company liable for any payments or costs resulting from side effects excluding that provided by normal Company policies.

Signature(s)	Date	Time

I choose to accept thyroid exposure instead of minimizing thyroid exposure by taking KI. I will not hold SCE&G Company liable for any subsequent thyroid abnormalities which may be related to thyroid exposure.

Signature(s)	Date	Time

Director of Health Physics (or) Radiological Assessment Supervisor	Station Manager (or) Emergency Director

SOUTH CAROLINA ELECTRIC AND GAS COMPANY

VIRGIL C. SUMMER NUCLEAR STATION

NUCLEAR OPERATIONS

NUCLEAR OPERATIONS
COPY No. 152-C

EMERGENCY PLAN PROCEDURE

EPP-021

ACTIVATION OF THE EARLY WARNING SIREN SYSTEM (EWSS)

REVISION 2

JUNE 15, 1982

NON-SAFETY RELATED

Reviewed by:

Mark Counts — 7/22/82
ORIGINATOR (of this revision) — Date

W. Fred Sam — 7/15/82
QUALIFIED REVIEWER — Date

Approved:

J. A. Connelly — 7/26/82
PLANT MANAGER — Date

Date Issued: JUL 27 1982

Form AP-101-2, (1/80)

LIST OF EFFECTIVE PAGES

Page	Revision
1	2
ii	2
1	2
2	2
3	2
4	2

ATTACHMENTS

Attachment I	2
Attachment II	2
Attachment III	2

TABLE OF CONTENTS

1.0 PURPOSE

1.1 To provide guidance for the activation of the Early Warning Siren System. (EWSS)

2.0 REFERENCES

2.1 "Virgil C. Summer Nuclear Station Radiation Emergency Plan".

2.2 (A.C.A) Alerting Communicators of America Operations Manual.

2.3 EMP-170.003, "Electrical Maintenance Procedure", Warning Siren Maintenance.

2.4 Plectron Remote Control Head (Siren Interface) Model No. G8 Operations Manual.

2.5 EPP-001, "Activation and Implementation of Emergency Plan"

2.6 EPP-002, "Communication and Notification".

2.7 EPP-005, "Offsite Dose Calculations".

3.0 CONDITIONS AND PREREQUISITES

3.1 A release of radioactive materials from the plant has commenced or has increased to levels which will subject portions of the Emergency Planning Zones to doses equal to or exceeding levels established by the Environmental Protection Agency that recommend certain public actions as per Reference 2.7.; or, as a precautionary measure as deemed necessary by the Interim Emergency Director/Emergency Director.

3.2 This procedure shall be implemented when a Site or General Emergency is declared.

3.3 The I.E.D/E.D. shall ensure that actions in Reference 2.1, 2.5, 2.6, and 2.7 are being or will be carried out.

3.4 The sirens and recreational areas speaker systems should be activated once every fifteen (15) minutes for forty-five (45) minutes.

4.0 PROCEDURES

4.1 The communicator, under direction of the IED/ED, shall refer to Att. III and determine the applicable county official who may authorize activation of the EWSS.

4.2 The communicator shall complete section I of Attachment I.

4.3 The communicator shall contact the applicable county by the dedicated phone line for that county; or, if unavailable, by regular land line.

4.4 The communicator shall read section I of Attachment I to each person contacted in each county, as applicable.

4.5 When authorization to activate the EWSS is granted by an appropriate county official as per Att. III, the communicator shall complete section III of Attachment I for that county.

4.6 When all required authorizations have been received the communicator shall notify the State Emergency Operations Center (EOC) or State Forward EOC and request activation of the Emergency Broadcast System (EBS) at a specific time and complete Section IV of Attachment I.

NOTE: If the State EOC or Forward EOC have not been activated, make the request for EBS activation to Richland County.

4.7 The communicator shall quickly review Sections I through III of Attachment I for completeness and accuracy and submit it to the Emergency Director.

4.8 The ED shall sign the Att. I and direct an individual to activate the EWSS and ensure that the Communicator has implemented EPP-002.

4.9 The designated individual should obtain the EWSS key from the Shift Supervisor's security key box and insert the key into the slot on the EWSS panel in the Control Room and turn key to the right to power the EWSS panel.

Push the appropriate button:

NOTE: When a button is pushed, the ALERT light will activate. Wait until the ALERT light deactivates before pushing another button.

4.9.1 Fairfield County sirens will be activated by pushing buttons numbered 1, 3, and 5.

4.9.2 Newberry County sirens will be activated by pushing the buttons numbered 4 and 6.

4.9.3 Lexington County sirens will be activated by pushing the button numbered 7.

4.9.4 Richland County sirens will be activated by pushing the button numbered 8.

NOTE: The activated sirens will sound for three (3) minutes. If a wrong button is pushed, the button numbered 10 will cancel the signal if pushed within one (1) second of the wrong push. If pushed anytime within the three minutes the sirens are sounding, button numbered 10 will cut off all sirens except the three sirens at the off-site fire departments.

4.10 After the sequence of buttons have been pushed for the selected county(s), push the sequence of buttons again to assure signal was transmitted.

4.11 To activate the speaker systems and the flashing red lights at the two recreational facilities on Monticello Reservoir, the designated individual should:

4.11.1 Wait until a three minute cycle of the sirens has ended.

4.11.2 Announce over the operations radio frequency:

Attention all personnel. Attention all personnel. Do not use your radios until otherwise instructed. Do not, I repeat, Do not use your radios until otherwise instructed.

4.11.3 Push button numbered 9 on the EWSS panel.

4.11.4 Within three(3) seconds of pushing the button numbered 9, key the microphone on the Control Room base radio to activate the speaker system and hold down.

4.11.5 Read the message on Att. II over the speaker system, if applicable.

NOTE: If microphone key is let up, system will deactivate. To reactivate, begin at step 4.11.3 of this procedure.

4.12 To deactivate speaker system, let up on the microphone key.

4.13 If not during daylight hours, request Security to shoot flares over Monticello Reservoir.

4.14 While maintaining radio silence, activate the Voice Command Radios at the schools within the 10 mile Emergency Planning Zone.

4.14.1 Push button numbered 11 on the EWSS panel and await the ALERT light to go out.

4.14.2 Within three (3) seconds after the ALERT light has gone out, key the Operations Frequency Base Radio microphone and hold down.

4.14.3 Read the message below into the microphone.

ATTENTION! This is the Summer Nuclear Station. An emergency is in progress at the plant. Contact your Superintendant of Education for instructions.

Repeat message one time.

4.14.4 To deactivate the system, release the microphone key and MAINTAIN RADIO SILENCE FOR FIFTEEN (15) SECONDS.

4.14.5 After 15 seconds, announce over the operations frequency radio that personnel are now cleared to use their radios.

Date _____ Time _____

RECOMMENDATION FOR ACTIVATION OF THE EWSS

I.

1. This is _____
   Name Title

2. An accident is in progress at the V. C. Summer Nuclear Station that warrants the recommendation by the Emergency Director _____ _____
   Name Title
   to activate the Early Warning Siren System. We request that a County Official (Ref. Attachment III) authorize the activation of the sirens for his/her county. This is an urgent matter that requires an immediate decision.

II. County Authorization

1. Fairfield County (635-5511 or 635-4444 EZ Access 012)

   County Official authorizing activation of EWSS _____
   Name

   (ensure this person is listed in Att. III)

   Authorization given by _____ / _____
   Time

   Communicator_____

2. Newberry County: (276-4295 EZ Access 013)

   County Official authorizing activation of EWSS _____
   Name

   (ensure this person is listed in Att. III)

   Authorization given by _____ / _____
   Time

   Communicator _____

Date _____ Time _____

RECOMMENDATION FOR ACTIVATION OF THE EWSS

---

3. Richland County (254-9296 EZ Access 014)

   County Official authorizing activation of EWSS _____
   Name

   (ensure this person is listed in Att. III)

   Authorization given by _____ / _____
   Time

   Communicator_____

4. Lexington County (359-8141 EZ Access 015)

   County Official authorizing activation of EWSS _____
   Name

   (ensure this person is listed in Att. III)

   Authorization given by _____ / _____
   Time

   Communicator _____

III. Request for Activation of the EBS made to:

   1. A. Emergency Preparedness Div-State EOC _____
      B. Alternate - Richland County

   2. Person Contacted _____
      Time EBS is to be activated _____

IV. Emergency Directors Approval _____ / _____ / _____
   Signature Date Time

Message for the Evacuation of the Recreational Facilities on Monticello Reservoir.

Attention all personnel. Attention all personnel. This is the V. C. Summer Nuclear Station. An event is in progress at the plant that requires evacuation of the Monticello Reservoir Recreational Areas. You are requested to leave the lake area. Turn on your radio or television to an Emergency Broadcasting Station for more information. Drive safely. Don't panic. You are not in any immediate danger.

(Repeat message.)

Communicator's Signature	Date	Time

AUTHORIZATION LIST

(County Officials with Approval Power to activate the EWSS).

FAIRFIELD COUNTY

R. B. (Bud) Cooper, Chairman, County Council
Donald P. (Rusty) Reed, County Administrator
George Douglas, Director, Disaster Preparedness

* In the event that the aforementioned agency parties are not available, the utility is authorized to act as Fairfield County's agent in the activation of the EWSS.

NEWBERRY COUNTY

Thomas E. (Tommy) Longshore, Jr. Public Safety Director
David C. Waldrop, Jr., Public Safety Department Deputy Director
E. F. Lominack, Jr., County Administrator
L. L. Henderson, Sheriff

RICHLAND COUNTY

Richland Co. EMS Dispatcher
Hugh K. Boyd, Jr., Director
Joyce F. Goodwin, Administrative Assistant

LEXINGTON COUNTY

(Under signature of Charles A. Whitehead, Director - Public Safety Department). The aforementioned has delegated that two telecommunications operators are on duty 24 hours per day in the Central Communication Center in the County Emergency Operations Center. These operators are authorized to render the county's decision based on the Company's estimate of the situation, emergency classification and recommendations.

NOTE: Use Reference 2.6 for land line telephone numbers if dedicated lines fail.

SOUTH CAROLINA ELECTRIC AND GAS COMPANY

VIRGIL C. SUMMER NUCLEAR STATION

NUCLEAR OPERATIONS

NUCLEAR OPERATIONS

COPY No. 157C

EMERGENCY PLAN PROCEDURE

EPP-021

ACTIVATION OF THE EARLY WARNING SIREN SYSTEM (EWSS)

REVISION 3

SEPTEMBER 2, 1982

NON-SAFETY RELATED

Reviewed by:

Mark Counts — 9/7/82
ORIGINATOR (of this revision) — Date

V. R. Albert — 9/7/82
DISCIPLINE SUPERVISOR — Date

Approved:

O. S. Bradham — 9/7/82
PLANT MANAGER — Date

Date Issued: SEP 10 1982

LIST OF EFFECTIVE PAGES

Page	Revision
i	3
ii	3
1	3
2	3
3	3
4	3

ATTACHMENTS

Attachment I	3
Attachment II	3
Attachment III	3

TABLE OF CONTENTS

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2.5 EPP-001, "Activation and Implementation of Emergency Plan"

2.6 EPP-002, "Communication and Notification".

2.7 EPP-005, "Offsite Dose Calculations".

3.0 CONDITIONS AND PREREQUISITES

3.1 A release of radioactive materials from the plant has commenced or has increased to levels which will subject portions of the Emergency Planning Zones to doses equal to or exceeding levels established by the Environmental Protection Agency that recommend certain public actions as per Reference 2.7.; or, as a precautionary measure as deemed necessary by the Interim Emergency Director/Emergency Director.

3.2 This procedure shall be implemented when a Site or General Emergency is declared.

3.3 The I.E.D/E.D. shall ensure that actions in Reference 2.1, 2.5, 2.6, and 2.7 are being or will be carried out.

3.4 The sirens and recreational areas speaker systems should be activated once every fifteen (15) minutes for forty-five (45) minutes.

4.0 PROCEDURES

4.1 The communicator, under direction of the IED/ED, shall refer to Att. III and determine the applicable county official who may authorize activation of the EWSS.

4.2 The communicator shall complete section I of Attachment I.

4.3 The communicator shall contact the applicable county by the dedicated phone line for that county; or, if unavailable, by regular land line.

4.4 The communicator shall read section I of Attachment I to each person contacted in each county, as applicable.

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4.8 The ED shall sign the Att. I and direct an individual to activate the EWSS and ensure that the Communicator has implemented EPP-002.

4.9 The designated individual should obtain the EWSS key from the Shift Supervisor's security key box and insert the key into the slot on the EWSS panel in the Control Room and turn key to the right to power the EWSS panel.

4.10 Announce over the operations frequency radio:

Attention all personnel. Attention all personnel. Do not use your radios until otherwise instructed. Do not, I repeat, do not use your radios until otherwise instructed.

4.11 Push the appropriate button on the EWSS panel:

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4.13 To activate the speaker systems and the flashing red lights at the two recreational facilities on Monticello Reservoir, the designated individual should:

4.13.1 Wait until a three minute cycle of the sirens has ended.

4.13.2 Ensure radio silence is maintained.

4.13.3 Push button numbered 9 on the EWSS panel.

4.13.4 Within three(3) seconds of pushing the button numbered 9, key the microphone on the Control Room base radio to activate the speaker system and hold down.

4.13.5 Read the message on Att. II over the speaker system, if applicable.

NOTE: If microphone key is let up, system will deactivate. To reactivate, begin at step 4.13.2 of this procedure.

4.14 To deactivate speaker system, let up on the microphone key.

4.15 If not during daylight hours, request Security to shoot flares over Monticello Reservoir.

4.16 While maintaining radio silence, activate the Voice Command Radios at the schools within the 10 mile Emergency Planning Zone.

4.16.1 Push button numbered 11 on the EWSS panel and await the ALERT light to go out.

4.16.2 Within three (3) seconds after the ALERT light has gone out, key the Operations Frequency Base Radio microphone and hold down.

4.16.3 Read the message below into the microphone.

ATTENTION! This is the Summer Nuclear Station. An emergency is in progress at the plant. Contact your Superintendant of Education for instructions.

Repeat message one time.

4.16.4 To deactivate the system, release the microphone key and MAINTAIN RADIO SILENCE FOR FIFTEEN (15) SECONDS.

4.16.5 After 15 seconds, announce over the operations frequency radio that personnel are now cleared to use their radios.

Date _____ Time _____

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I.

1. This is _____.
   Name Title

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   Name

   (ensure this person is listed in Att. III)

   Authorization given by _____/_____
   Time

   Communicator_____

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   County Official authorizing activation of EWSS _____
   Name

   (ensure this person is listed in Att. III)

   Authorization given by _____/_____
   Time

   Communicator _____

Date _____ Time _____

RECOMMENDATION FOR ACTIVATION OF THE EWSS

---

3. Richland County (254-9296 EZ Access 014)

   County Official authorizing activation of EWSS _____ _____
   Name

   (ensure this person is listed in Att. III)

   Authorization given by _____ / _____
   Time

   Communicator_____

4. Lexington County (359-8141 EZ Access 015)

   County Official authorizing activation of EWSS _____
   Name

   (ensure this person is listed in Att. III)

   Authorization given by _____ / _____
   Time

   Communicator _____

III. Request for Activation of the EBS made to:

   1. A. Emergency Preparedness Div-State EOC _____
      B. Alternate - Richland County

   2. Person Contacted _____
      Time EBS is to be activated _____

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   Signature Date Time

Message for the Evacuation of the Recreational Facilities on Monticello Reservoir.

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(Repeat message.)

Communicator's Signature	Date	Time

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* In the event that the aforementioned agency parties are not available, the utility is authorized to act as Fairfield County's agent in the activation of the EWSS.

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(Under signature of Charles A. Whitehead, Director - Public Safety Department). The aforementioned has delegated that two telecommunications operators are on duty 24 hours per day in the Central Communication Center in the County Emergency Operations Center. These operators are authorized to render the county's decision based on the Company's estimate of the situation, emergency classification and recommendations.

NOTE: Use Reference 2.6 for land line telephone numbers if dedicated lines fail.

SOUTH CAROLINA ELECTRIC AND GAS COMPANY

VIRGIL C. SUMMER NUCLEAR STATION

NUCLEAR OPERATIONS

NUCLEAR OPERATIONS

COPY No. 152-C

EMERGENCY PLAN PROCEDURE

EPP-022

VERIFICATION OF COMMUNICATIONS OPERABILITY

REVISION 1

JUNE 15, 1982

NON-SAFETY RELATED

Reviewed by:

Mark Counts — 7/22/82
ORIGINATOR (of this revision) — Date

W. Frank Bass — 7/15/82
QUALIFIED REVIEWER — Date

Approved:

J. H. Campbell — 7/26/82
PLANT MANAGER — Date

Date Issued: JUL 27 1982

Form AP-101-2, (1/80)

LIST OF EFFECTIVE PAGES

Page	Revision
i	1
ii	1
1	1
2	1

ATTACHMENTS

Attachment I, Pages 1 through 5	1

TABLE OF CONTENTS

1.0 PURPOSE

1.1 To provide guidance for verifying that communications designated for use during an emergency are functional.

1.2 To provide for a method to document the tests of the emergency communication equipment.

2.0 REFERENCES

2.1 Virgil C. Summer Nuclear Station Radiation Emergency Plan.

2.2 NUREG - 0654/FEMA REP-1, Criteria for Preparation and Evacuation of Radiological Emergency Response plans and Preparedness in support of Nuclear Power Plants.

2.3 EPP-001, "Activation and Implementation of Emergency Plan"

2.4 EPP-002, "Communication and Notification"

2.5 EPP-021, "Activation of the Early Warning Siren System"

2.6 CEP-007, "(EOF) Equipment and Supply Inventory, Procedure"

3.0 CONDITIONS AND PREREQUISITES

3.1 The required frequency for verification of communications operability is as follows:

A. Communications with state and counties within a 10 mile plume exposure (EPZ) Emergency Planning Zone, will be tested at least monthly (Attachment I, page 1).

B. Communications with Federal and State Agencies within the 50 mile Ingestion (EPZ) Emergency Planning Zone, will be tested quarterly (Attachment I, page 2 and 3).

C. Communications between Summer Station, State, County emergency operations centers and Radiation Monitoring Team(s) will be tested annually (Attachment I, page 4).

D. Telephone numbers referenced in EPP-002, Communication and Notification will be verified quarterly (Attachment I, page 3).

3.2 The Emergency Coordinator is responsible for the conduct of all communications tests addressed in this procedure and the documentation thereof.

3.3 If a substantial loss of off-site communications is identified, refer to reference 2.3.

4.0 PROCEDURES

4.1 The Emergency Coordinator or his designee shall test each mode of communication as per Attachment I on a frequency as specified in Section 3.1 of this procedure.

4.2 The person performing the test should indicate in the appropriate space on the Attachment I if the communication link is operable.

4.3 The person performing the test should write "OOS" (out-of-service) in the appropriate space on the Attachment I if the communication link is inoperable and contact the applicable maintenance group for repair.

4.4 If the quantity available is not equal to or greater than the minimum quantity, indicate this in the appropriate space on the Attachment I and contact the applicable maintenance group for replacement.

4.5 Where applicable, the person performing the test should require all off-site persons contacted to return the call within two minutes to verify the proper person/agency has been reached.

4.6 Completed checklists should be filed in the Emergency Coordinator's office.

4.7 Any equipment found inoperable shall be reported to the Shift Supervisor.

4.8 When the equipment has been repaired, the Emergency Coordinator or his designee shall test the equipment and document the test in his files.

VERIFICATION OF COMMUNICATIONS OPERABILITY
MONTHLY COMMUNICATIONS TEST

ITEM #	EQUIPMENT DESCRIPTION	OPERABILITY	MINIMUM QUANTITY	QUANTITY AVAILABLE	COMMENTS
1.	TSC Communicator's Area				
	Dedicated Lines				
	1-State Emerg. Ops. Center		1		
	2-State Forward Emerg. Ops. Center		1		
	3-Fairfield Co.		1		
	4-Newberry Co.		1		
	5-Richland Co.		1		
	6-Lexington Co.		1		
	7-BRH-DHEC		1		
2.	Control Room Dedicated Lines		1		
	1-State Emerg. Ops. Center		1		
	2-State Forward Emerg. Ops. Center		1		
	3-Fairfield Co.		1		
	4-Newberry Co.		1		
	5-Richland Co.		1		
	6-Lexington Co.		1		
	7-BRH-DHEC		1		
3.	ENS Hot Line		1		
	1-in Control Room				
	2-in NRC Area		1		
	3-in EOA		1		
4.	HPN Hot Line		1		
	1-in Control Room				
	2-in Monit. Team Area		1		
	3-in Dir. of H.P. Office		1		
5.	Dedicated Line in NSSS Office		1		
6.	Dedicated Line in A/E Office		1		
7.	Plant Alarms		1		
	1. Fire Alarm		1		
	2. Rx Bldg. Evacuation Alarm		1		
	3. Radiation Emerg. Alarm		1		
8.	Safety Parameter Display System		1		

VERIFICATION OF COMMUNICATIONS OPERABILITY
QUARTERLY COMMUNICATIONS TEST

ITEM #	EQUIPMENT DESCRIPTION	OPERABILITY	MINIMUM QUANTITY	QUANTITY AVAILABLE	COMMENTS
1	Technical Support Area				
	1 - Four Telephone Lines		4		
	2 - Telecopier		1		
	3 - Plant Page		1		
	4 - Intercom (Tech Support Area to CR, TSC and OSC)		1		
2	Dose Assessment Area				
	1 - One Telephone Line		1		
	2 - Radio, Monitoring Teams		1		
	3 - Intercom (Dose Assessment Area to TSC, HP Lab, and Plant Monitoring Teams Areas)		1		
	4 - Plant Page		1		
3	NRC Area				
	1 - Three Telephone Lines		3		
	2 - Plant Page		1		
4	Plant Status Display Area				
	1 - Three Telephone Lines		3		
	2 - Plant Page		1		
	3 - Intercom (this area to CR, TSC and OSC)				

VERIFICATION OF COMMUNICATIONS OPERABILITY
QUARTERLY COMMUNICATIONS TEST

ITEM #	EQUIPMENT DESCRIPTION	OPERABILITY	MINIMUM QUANTITY	QUANTITY AVAILABLE	COMMENTS
5	Monitoring Teams Area				
	1 - One Telephone Line		1		
	2 - Plant Page		1		
	3 - Intercom		1		
6	NSSS Area				
	1 - One Telephone Line		1		
	2 - Plant Page		1		
7	A/E Area				
	1 - One Telephone Line		1		
	2 - Plant Page		1		
8	TSC Emergency Operations Area				
	1 - Telephone Lines		6		
	2 - LLEA Radio		1		
	3 - Radio (Security)		1		
	4 - Intercom		1		
	5 - Plant Page		1		
9	Operations Support Center				
	1 - Telephones		2		
	2 - Intercom		1		
	3 - Plant Page		1		

VERIFICATION OF COMMUNICATIONS OPERABILITY
QUARTERLY COMMUNICATIONS TEST

ITEM #	EQUIPMENT DESCRIPTION	OPERABILITY	MINIMUM QUANTITY	QUANTITY AVAILABLE	COMMENTS
10	Verify telephone numbers in EPP-002	N/A	N/A	N/A	
11	Monitoring Team Radios (in H.P. Lab and Environmental Surv. Lab)		7		

VERIFICATION OF COMMUNICATIONS OPERABILITY
ANNUAL COMMUNICATIONS TEST

ITEM #	EQUIPMENT DESCRIPTION	OPERABILITY	MINIMUM QUANTITY	QUANTITY AVAILABLE	COMMENTS
1.	Fairfield Co. Emergency Operations Center (EOC)		N/A		
2.	Newberry Co. E.O.C.		N/A		
3.	Richland Co. E.O.C.		N/A		
4.	Lexington Co. E.O.C.		N/A		
5.	Monitoring Teams Radios		8		