

Southern Nuclear Operating Company
Vogtle Electric Generating Plant
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Energy to Serve Your WorldSM

April 16, 2002

U. S. Nuclear Regulatory Commission
ATTN: Document Control Desk
Washington, DC 20555

NOT-03820

**VOGTLE ELECTRIC GENERATING PLANT
EMERGENCY PLAN IMPLEMENTING PROCEDURE REVISIONS**

Gentlemen:

In accordance with 10 CFR 50.4, as required by 10 CFR 50, Appendix E, Part V, Southern Nuclear hereby submits the following revision(s) to the Vogtle Emergency Plan Implementing Procedure(s):

<u>Procedure</u>	<u>Revision</u>	<u>Effective Date</u>
91103-C	17	04/05/2002
91602-C	15	04/05/2002
91106-C	12	04/05/2002
91601-C	16	04/05/2002
91502-C	12	04/05/2002
91107-C	10	04/05/2002
91108-C	08	04/05/2002
91111-C	09	04/05/2002
91503-C	10	04/05/2002
91104-C	17	04/12/2002
91202-C	12	04/12/2002
91302-C	10	04/12/2002
91304-C	14	04/12/2002


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By copy of this letter, the NRC Region II Administrator and the Site NRC Senior Resident Inspector will receive one copy each of the revision(s).

Please contact Lawrence Mayo at (706) 826-3356 if you have questions.

Sincerely,


Lawrence E. Mayo
Emergency Preparedness Coordinator

LEM:jjm


Enclosure: Emergency Plan Implementing Procedure(s)

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REFERENCE USE PROCEDURE

PRB REVIEW REQUIRED

1.0 PURPOSE


The purpose of this procedure is to provide instructions to the Technical Support Center (TSC) Manager for overall direction of the TSC and the onsite VEGP Emergency Response Organization (ERO).

2.0 RESPONSIBILITIES

2.1 TSC MANAGER

2.1.1 The TSC Manager shall have the following responsibilities:

- 2.1.1.1 Timely offsite communications (when Emergency Director (ED) is in TSC).
- 2.1.1.2 Declaring the TSC operational, managing the TSC and directing TSC emergency response personnel.
- 2.1.1.3 Assuming the ED responsibilities while the ED is in transit from the TSC to the Emergency Operations Facility (EOF). A formal relief sheet is not required for this temporary transfer of ED responsibilities.
- 2.1.1.4 Coordination of inputs and recommendations from technical and corrective action advisors.
- 2.1.1.5 Providing technical assistance and operational guidance to Control Room personnel.
- 2.1.1.6 Coordinating and directing all onsite emergency response functions.
- 2.1.1.7 Providing technical information and recommendations to the ED.
- 2.1.1.8 Recommending onsite and offsite protective actions based on plant conditions.
- 2.1.1.9 Providing recommendations on emergency classifications to the ED.
- 2.1.1.10 Establishing and maintaining communications with the NRC.
- 2.1.1.11 Notifying offsite ambulance service and hospitals as required.
- 2.1.1.12 Direction of onsite emergency personnel involved in restoration of the plant to a safe condition.

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- 2.1.1.13 Direction of TSC staff in analysis of problems, design and planning for temporary modifications.
- 2.1.1.14 Development of temporary operating procedures.
- 2.1.1.15 Assignment of an individual to ensure that all personnel entering the TSC sign in on the Personnel Roster.
- 2.1.1.16 Ensuring that ALL VEGP employees and vendor/contractors reporting to the TSC meet the requirements of the Fitness For Duty (FFD) policy for recall of off-duty personnel.
- 2.1.1.17 Ensuring that the Emergency Response Data System (ERDS) Computer has been activated by TSC chemistry staff within one hour of an Alert or higher emergency classification.
- 2.1.1.18 Filling the position of Decision Maker or Evaluator if Severe Accident Management Guidelines (SAMGs) are implemented.

3.0 PREREQUISITES

An Alert, Site Area Emergency or General Emergency has been declared.


4.0 PRECAUTIONS

- 4.1 This procedure shall not take priority over measures required to maintain or restore the plant to a safe operating condition.
- 4.2 This procedure does not replace any plant operating procedure. During an emergency condition, the TSC Manager will continue to use appropriate plant procedures in parallel with this and other Emergency Plan Implementing Procedures.

5.0 PROCEDURE


5.1 TSC ACTIVATION

- 5.1.1 For an Alert, Site Area Emergency or General Emergency, the TSC Manager shall report to the TSC, receive a briefing from the ED, and declare the TSC operational as soon as it is adequately staffed.
- 5.1.2 The TSC Manager shall utilize the designated "TSC Manager Checklist" as soon as practicable.

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5.2 STAFF SUPERVISION

- 5.2.1 The TSC Manager shall supervise the activities of the OSC Manager and the following TSC staff:
 - 5.2.1.1 Engineering Supervisor (core damage assessment, technical support, liaison with NRC staff in the TSC).
 - 5.2.1.2 Maintenance Supervisor (maintenance, damage control, plant modifications).
 - 5.2.1.3 Operations Supervisor (interface with Control Room and develop temporary emergency operating procedures as necessary).
 - 5.2.1.4 Health Physics (HP) Supervisor (onsite radiological assessment, on-site protective action recommendations, radiation exposure record keeping, In-Plant Monitoring Team control; and until Emergency Operations Facility (EOF) Dose Assessment is activated, dose projections, offsite protective action recommendations, and Field Monitoring Team control).
 - 5.2.1.5 TSC Support Coordinator (logistics, staffing, TSC evacuation) and TSC Support group (communications, log keeping, status boards, etc.).
 - 5.2.1.6 Chemistry Supervisor (post-accident sampling, plant chemistry, ERDS activation).
 - 5.2.1.7 Security Coordinator (access control, site evacuation , accountability).

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6.0 REFERENCES

6.1 VEGP EMERGENCY PLAN

6.2 PROCEDURES

- 6.2.1 91002-C, "Emergency Notifications"
 - 6.2.2 91101-C, "Emergency Response Organization"
 - 6.2.3 91104-C, "Duties Of The OSC Manager"
 - 6.2.4 91201-C, "Activation And Operation Of The TSC"
 - 6.2.5 91204-C, "Emergency Response Communications"
 - 6.2.6 91302-C, "In-Plant Sampling And Surveys"
 - 6.2.7 91303-C, "Field Sampling And Surveys"
 - 6.2.8 91306-C, "Contamination Monitoring And Decontamination"
 - 6.2.9 91307-C, "Contaminated Injury"
 - 6.2.10 91501-C, "Recovery"
 - 6.2.11 60613-C, "Control And Use Of Severe Accident Management Guidelines (SAMG)"
- 6.3 NUREG-0654, FEMA-REP-1, Rev. 1, "Criteria for Preparation and Evaluation of Radiological Emergency Response Plans and Preparedness in Support of Nuclear Power Plants"**

END OF PROCEDURE TEXT

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TSC MANAGER CHECKLIST


DESIGNEES: Plant Operations Assistant General Manager
Nuclear Plant General Manager
Operations Manager
Operations Superintendent
Plant Support Assistant General Manager

RESPONSIBILITIES:

Manage the TSC and direct the onsite Emergency Response Organization. Assist the ED with technical information, classifications, and protective action recommendations. Provide technical and operational support to the Control Room.

INITIAL ACTIONS

1. Report to the TSC.
2. Sign in on Emergency Response Facility Roster.
3. Obtain appropriate work packet and emergency identification badge.
4. Receive briefing from ED.
5. Assign an individual (normally the TSC Support Coordinator) to ensure that all personnel reporting to the TSC sign in on the Personnel Roster.
6. Ensure that key TSC positions have been filled by reviewing the Emergency Response Facility Roster. Refer to Procedure 91201-C, "Activation And Operation Of The TSC" for minimum TSC staff requirements.
7. Review facility and equipment readiness with TSC staff. Ensure all communication equipment is operating.
8. When adequately staffed, declare the TSC operational, notify the ED, EOF Manager, Shift Superintendent and OSC Manager.
9. Ensure that the TSC Chemistry staff have activated the ERDS Computer System.

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TSC MANAGER CHECKLIST

INITIAL ACTIONS (Cont'd)

NOTE

If a recall of off-duty personnel has been initiated, perform the following:

10. FFD determinations
 - a. Review the sign in roster and ensure that ALL personnel reporting to the TSC answer the fitness for duty question.
 - b. If any personnel have answered yes to the FFD question then a FFD evaluation is required. The Safety and Health department is available to help make this determination.
11. Provide initial briefing to TSC staff.


SUBSEQUENT ACTIONS

- 1.* Maintain a communications log.
- 2.* Assist the ED, as needed.
- 3.* Provide periodic briefings to TSC staff.
- 4.* Direct actions to provide the technical and operational assistance to the Control Room.
5. Review readiness of the OSC.

Notifications

- 1.* Assist the ED in performing notifications as directed.
- 2.* Complete the Emergency Notification message forms (Procedure 91002-C, "Emergency Notifications") as appropriate. Provide to the ED for review and approval.
3. Ensure a plant knowledgeable individual is assigned to maintain communications and provide updates to the NRC. (Normally assigned to engineering)
4. Direct the HP Supervisor to assign an individual to staff the Health Physics Network (HPN) telephone when requested by the NRC.

* Continuing Activity

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TSC MANAGER CHECKLIST

SUBSEQUENT ACTIONS (CONT'D)


Protective Actions

- 1.* Confer with the Engineering Supervisor and Operations Supervisor regarding protective actions based on present and projected plant conditions.
- 2.* Prior to EOF activation, confer with the HP Supervisor regarding offsite protective actions.
- 3.* Evaluate the need for onsite protective actions.
- 4.* Review habitability of onsite emergency facilities with the HP Supervisor.
- 5.* Recommend protective actions per Procedure 91305-C, "Protective Action Guidelines" to the ED.
6. If the OSC or TSC become uninhabitable:
 - a. Inform the ED and direct the relocation of staff, equipment and supplies to an alternate location (CR and EOF for TSC; TSC for OSC).
 - b. The TSC Manager, Operations Supervisor and HP Supervisor shall relocate to the alternate TSC in the Control Room should the TSC become uninhabitable.
 - c. Inform other facilities of new location and communication links.

Team Deployment

- 1.* Approve dispatch of all in-plant emergency teams via the OSC Manager, Operations Supervisor, HP Supervisor, or Chemistry Supervisor.
- 2.* If necessary, obtain authorization from the ED for any radiation exposures in excess of 10 CFR20 limits.
- 3.* Determine if decontamination of contaminated equipment/areas is necessary and direct their decontamination per Procedure 91306-C, "Contamination Monitoring And Decontamination".

* Continuing Activity

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TSC MANAGER CHECKLIST

SUBSEQUENT ACTIONS (CONT'D)

- 4.* Approve and direct the transport of the post-accident grab samples to Framatome Technologies if back-up analysis is needed.
- 5.* Approve timely dispatch of Field Monitoring Teams until the EOF dose assessment is activated.
- 6.* Assure that the HP Supervisor provides permits for Emergency Radiation Exposure, keeps exposure records, and informs you when authorizations to exceed 10CFR20 limits are required.
- 7.* Determine whether there is a need for offsite fire fighting assistance. Should such assistance be required, request it from Burke County Emergency Management Agency.


Contaminated Injury

- 1. Upon notification of a potentially contaminated injury, direct the OSC Manager to dispatch a First Aid Team (Procedure 91307-C, "Contaminated Injury").
- 2. If an ambulance is needed perform the following:
 - a. Request ambulance assistance via Data Sheet 3, "Request for Ambulance Assistance" (Procedure 91307-C, "Contaminated Injury") , and provide reporting instructions. (Data sheets normally completed by the TSC Support Coordinator)
 - b. Contact hospital via Data Sheet 4, "Request for Hospital Assistance" (Procedure 91307-C, "Contaminated Injury"). Inform hospital that a contaminated injury is enroute and provide estimated arrival time. (Data sheets normally completed by the TSC Support Coordinator)

Emergency Classification

- 1.* Review emergency classification in Procedure 91001-C, "Emergency Classification And Implementing Instructions".
- 2.* Determine if the classification level requires upgrading or downgrading based on present or projected plant conditions.
- 3.* Recommend changes in classifications to the ED.

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SUBSEQUENT ACTIONS (CONT'D)

Relief

1. Perform relief and complete General Relief Checklist in Procedure 91101-C, "Emergency Response Organization".

Severe Accident Management Guidelines

1. Diagnose plant conditions and evaluate if a specific guideline entry is required.
2. Evaluate the positive and negative impacts of strategies presented in the guidelines.
3. Respond to severe challenges.
4. Interpret the response of plant parameters following strategy implementation.
5. Assess the effectiveness of implemented strategies and determine whether additional mitigation is needed.

Emergency Termination

1. After the emergency condition has been declared terminated, proceed as follows:
 - a. Hold a final staff briefing.
 - b. Collect all logs and checklists.
 - c. With key staff members, attend a final staff briefing with the ED to determine recovery actions and staff assignments.

Recovery

1. Coordinate with Emergency Director to provide support for initial recovery planning activities (Procedure 91501-C, "Recovery").

Restoration of the TSC

1. Restore the TSC to the ready condition at the termination of each emergency.

* Continuing Activity

PRB REVIEW REQUIRED


REFERENCE USE PROCEDURE

1.0 PURPOSE

- 1.1 The purpose of this procedure is to provide guidance and instructions for developing, conducting, evaluating and documenting emergency preparedness drills and exercises.
- 1.2 This procedure includes provisions to exercise both onsite and offsite emergency response personnel, equipment, communications and procedures including the interface with federal, state, and county agencies.
- 1.3 The result of implementing this procedure will be to verify the adequacy of the Vogtle Electric Generating Plant (VEGP) Emergency Plan and Emergency Plan Implementing Procedures and the overall effectiveness of the onsite and offsite Emergency Response Organization (ERO).

2.0 RESPONSIBILITIES

- 2.1 The Emergency Preparedness Coordinator (EPC) shall have the following responsibilities:
 - 2.1.1 Coordinating the planning and scheduling of drills and biennial exercises, and ensuring that this will fulfill the requirements of 10CFR50, Appendix E and the Emergency Plan.
 - 2.1.2 With the assistance of state/county emergency planning personnel, developing the objectives to be met for each exercise, including mutually agreeable dates and times.
 - 2.1.3 Developing scenarios for drills and biennial exercises.
 - 2.1.4 Coordinating scenario development with state and local agencies.
 - 2.1.5 Arranging for official observers to observe, evaluate and critique the drills and biennial exercises and for coordinating the critiques.
 - 2.1.6 Ensuring that identified critique items are addressed and corrective actions planned with deadlines for completion.
 - 2.1.7 Monitor the status of completion of corrective actions. Significant problems shall be brought to the attention of appropriate plant management.

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- 2.1.8 Maintaining records of all drills and exercises.
- 2.1.9 Submitting scope, objectives and scenario to NRC for biennial exercises.
- 2.1.10 Conducting periodic drills or tabletop scenarios to exercise the plant staff on Severe Accident Management Guidelines (SAMG).

3.0 PRECAUTIONS

Drills and exercises shall be conducted in such a manner that the safety of the plant and personnel are not jeopardized.

4.0 PROCEDURE

4.1 DRILLS/EXERCISES

4.1.1 Scheduling

4.1.1.1 Drills/Exercises listed on Checklist 1 will be conducted at the periodicity specified. Additional drills/exercises may be conducted as deemed appropriate by the Training and Emergency Preparedness Manager.

4.1.1.2 NRC and FEMA evaluated emergency exercises that test integrated response capabilities are conducted in accordance with NRC and FEMA directives. Vogtle will conduct an exercise every two calendar years.


4.1.1.3 The scope and objectives of the biennial exercise will be submitted to the NRC (75) days prior to the exercise date.

4.1.1.4 During a six-year period, an exercise shall be conducted which starts between 6:00 P.M. and 4:00 A.M.


4.1.1.5 Some drills/exercises will be unannounced.

4.1.2 Scenarios

4.1.2.1 The EPC is responsible for preparing the scenario for the biennial exercise as directed by the Training and Emergency Preparedness Manager.

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- 4.1.2.2 The scenario for the biennial exercise will be submitted to the NRC (45) days prior to the exercise date.
- 4.1.2.3 Drill/Exercise scenarios should be developed using Checklist 2 as a guide. Many parts of Checklist 2 are inappropriate for small scale drills and may be omitted at the discretion of the EPC.
- 4.1.2.4 The scenario shall be varied from year to year so that all major elements of the response plans and preparedness organizations are tested within a six year period.
- 4.1.2.5 An Exercise Coordinator, with the assistance of representatives of state and county organizations (as appropriate), shall develop the objectives to be met for each drill or exercise.
- 4.1.2.6 The Exercise Coordinator, with the cooperation of the state representatives, shall ensure that the simulated events and site initial conditions are developed in a manner that will adequately test the level of emergency preparedness of the groups participating in the exercise. FEMA will receive a copy of the scenario from the participating states.
- 4.1.2.7 The EPC shall assign controllers/evaluators to areas based on their skills and knowledge.
- 4.1.2.8 The EPC shall ensure that approval has been obtained from the Nuclear Plant General Manager and any other appropriate plant management prior to conducting a drill/exercise (see Data Sheet 2).
- 4.1.2.9 A pre-drill/exercise briefing shall be conducted to inform controllers/evaluators of the scenario, objectives, which portions of the scenario require strong control, and which portions of the scenario permit free play. Appropriate materials to conduct and evaluate the drill shall be distributed during the briefing.
- 4.1.2.10 As drills are a supervised instruction period, controllers/evaluators may assist and correct players during a drill.
- 4.1.2.11 During an exercise, Controllers/Evaluators should not provide guidance regarding the use of emergency procedures and equipment, unless the conduct of the exercise or safe operation of the plant would be jeopardized. Any such guidance will be made a critique item.

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4.1.3 A critique will be conducted following each drill/exercise which includes players and controllers/evaluators. Players and controllers/evaluators are encouraged to identify areas where improvements are required.

4.1.4 The EPC shall submit a written report of drills and exercises to the Nuclear Plant General Manager or Plant Support Assistant General Manager which will include significant critique comments and corrective actions which will be tracked through the condition reporting tracking program. (See Data Sheet 3)

4.1.5 The EPC shall maintain a record of all drills for a period of 2 years and biennial exercises for 5 years.

4.2 OFF YEAR DRILLS

4.2.1 Off Year Drills shall be conducted to ensure that adequate response capabilities are maintained in the interval between biennial exercises. At least one of these drills will be conducted during the calendar year when there is no biennial exercise and shall involve a combination of some of the principal functional areas of the onsite emergency response capabilities.

4.2.2 The principal functional areas include the following activities:

4.2.2.1 Command and control of emergency response


4.2.2.2 Accident assessment

4.2.2.3 Protective action decision making

4.2.2.4 Plant system repair and corrective actions

4.2.3 Activation of all onsite emergency response facilities (TSC, OSC, and EOF) are not required.

4.2.4 The States of Georgia and South Carolina including the Counties of Burke, Aiken, Allendale and Barnwell will be permitted to participate in off year drills when requested by the State or County Government.

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4.3 COMMUNICATION DRILLS

4.3.1 The EPC should develop, conduct, and document communications drills in accordance with the guidelines in Section 4.1 as appropriate.

4.3.2 Communications Drills shall make use of the actual message format.

4.3.3 Communication drills among the following shall be conducted every two-calendar years (usually during the biennial exercise):

- a. Control Room (normally conducted from the Simulator)
- b. Technical Support Center (TSC)
- c. Operations Support Center (OSC)
- d. Emergency Operations Facility (EOF)
- e. Emergency News Center (ENC)
- f. Corporate Emergency Operations Center (CEOC)
- g. State of Georgia (Georgia Emergency Management Agency)
- h. Burke County
- i. Savannah River Site (SRS)
- j. VEGP Field Monitoring Teams
- k. State of South Carolina
- l. Aiken County
- m. Barnwell County
- n. Allendale County
- o. VEGP Radiological Emergency Teams

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4.4 MEDICAL EMERGENCY DRILLS

4.4.1 The EPC should coordinate with the Safety and Health representative to assure that medical emergency drills are developed, conducted and documented per Section 4.1 as appropriate.

4.4.2 A medical emergency drill shall be conducted each calendar year (annually) with one or more of the offsite support organizations listed below:

- a. Burke County Ambulance Service
- b. Burke County Hospital and/or Doctors Hospital


4.4.3 The annual medical emergency drill shall involve treatment of a simulated contaminated person, transport by ambulance or other appropriate means, and arrival and treatment at the hospital, per Procedure 91307-C, "Contaminated Injury". (These activities may be performed out of sequence, i.e. treatment at hospital one day and treatment and transport of contaminated injury another day.)

4.4.4 The annual medical drill may be held in conjunction with the biennial exercise.

4.5 RADIOLOGICAL MONITORING/HEALTH PHYSICS (HP) DRILLS

4.5.1 The EPC shall develop, conduct and document radiological monitoring and HP drills in accordance with Section 4.1 as appropriate.

4.5.2 Plant environs and radiological monitoring drills shall be conducted for VEGP each calendar year (annually). For these drills, a team is dispatched with a controller to obtain the required measurements or samples. The drill controller will evaluate the proper use of survey instruments, record keeping, communications and the collection of sample media (soil, air, water, and vegetation) as appropriate, per Procedures 91302-C, "In-Plant Sampling And Surveys" and 91303-C, "Field Sampling And Surveys". The use of sample techniques, survey techniques, monitoring methods, decontamination methods, protective clothing, respirators and exposure control considerations will be demonstrated as appropriate. (Field Monitoring teams will not wear protective clothing.) The annual plant environs and radiological monitoring drill may be performed in conjunction with one of the semi-annual Health Physics drills.

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4.5.3 The ability to perform post-accident sampling under simulated accident conditions will be demonstrated each calendar year. The post-accident sample analysis should be performed using laboratory equipment to demonstrate the methods employed under actual accident condition. Messages will be used to simulate high radiation levels.

4.5.4 Semi-annual HP drills shall be conducted to test response to and analysis of simulated airborne and liquid samples and radiation in the environment. The drill may include the actual use of protective equipment. Semi-annual HP drills may be conducted in conjunction with the biennial exercise or radiological monitoring drills.

4.6 ASSEMBLY AND ACCOUNTABILITY DRILLS

4.6.1 The EPC should develop, conduct and document assembly and accountability drills in accordance with the guidelines in Section 4.1 as appropriate.

4.6.2 An assembly and accountability drill shall be conducted each calendar year (annually) to test the response of plant personnel and to maintain their awareness of their responsibilities. Personnel in the protected area shall actually perform assembly unless otherwise directed by plant management.


4.6.3 The annual assembly and accountability drill may be held in conjunction with the biennial exercise.

4.7 SAMG (TABLETOP) DRILLS

4.7.1 A SAMG tabletop drill will normally be conducted once each calendar year. The tabletop drill will not normally be a part of or associated with the normal emergency drills or exercises.


4.7.2 A SAMG tabletop drill may be used when a new guideline has been developed or when major revisions have been made to guidelines.

4.7.3 Decision makers and evaluators, per procedure 60613-C, may receive retraining by participating in a SAMG tabletop drill.

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5.0 EVALUATION OF THE BIENNIAL EXERCISE

- 5.1** Following the biennial exercise, critiques shall be conducted by VEGP Controllers/Evaluators as follows:
- 5.1.1** The lead controller/evaluator of each major facility (EOF, TSC & OSC) will conduct a facility critique with players and controllers/evaluators. Players are encouraged to submit written comments and evaluations in addition to verbal comments. Lead Controllers/evaluators are required to submit written evaluations.
- 5.1.2** Following the facility critique, controllers/evaluators and key players are invited to an overall exercise critique.
- 5.2** A written report with critique results and action items shall be prepared by the EPC and submitted to the Nuclear Plant General Manager.
- 5.2.1** Appropriate departments are responsible for implementing corrective actions approved by the Nuclear Plant General Manager.
- 5.2.2** The EPC is responsible for ensuring that Emergency Plan Implementing Procedures are revised as necessary, as a result of critique items identified by the exercise.
- 5.2.3** If resulting changes to the procedures warrant retraining of emergency personnel, such training shall be scheduled and conducted, per Procedure 91601-C, "Emergency Preparedness Training".
- 5.2.4** If changes to the procedures impact the interface with offsite agencies, or result in necessary changes to plans and/or procedures of offsite agencies, those items of impact will be documented and the changes sent to the offsite agencies by the Training and Emergency Preparedness Manager.

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6.0 REFERENCES

6.1 VEGP EMERGENCY PLAN

6.2 PROCEDURES

- 6.2.1 00051-C, "Procedures Review And Approval"
- 6.2.2 00150-C, "Condition Reporting and Tracking System"
- 6.2.3 60613-C, "Control and Use of Severe Accident Management Guidelines (SAMG)"
- 6.2.4 91302-C, "In-Plant Sampling And Surveys"
- 6.2.5 91303-C, "Field Sampling And Surveys"
- 6.2.6 91304-C, "Estimating Offsite Dose"
- 6.2.7 91307-C, "Contaminated Injury"
- 6.2.8 91601-C, "Emergency Preparedness Training"
- 6.2.9 91701-C, "Preparation And Control Of Emergency Planning Documents"
- 6.2.10 92000-C, "Fire Protection Program"
- 6.3 NUREG-0654, FEMA-REP-1, Rev. 1, "Criteria for Preparation and Evaluation of Radiological Emergency Response Plans and Preparedness in Support of Nuclear Power Plants"
- 6.4 10CFR50.48, "Fire Protection"
- 6.5 10CFR50, Appendix E, "Emergency Planning and Preparedness for Production and Utilization Facilities"
- 6.6 NRC Letter, Docket Nos. 50-424 and 50-425, License Nos. NPF-68 and NPF-61 "Submission of Emergency Preparedness Exercise Scope, Objectives and Scenarios"

END OF PROCEDURE TEXT

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CHECKLIST 1

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DRILL/EXERCISE FREQUENCIES

1. SEMI-ANNUALLY


- Health Physics drill.

2. CALENDAR YEAR (ANNUALLY)

- Off year drill (perform during year when there is no biennial exercise).
- Medical emergency drill.
- Radiological monitoring drill.
- Post-accident sampling drill.
- Assembly and accountability drill.
- SAMG table top drill

3. BIENNIAL (EVERY TWO YEARS)

- Communications between VEGP, federal, state and county Emergency Response Organizations, and emergency teams.
- Emergency exercise.

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CHECKLIST 2

DRILL/EXERCISE SCENARIO FORMAT

1. The following format may be used by the Drill or Exercise Preparer.
2. The first page of the drill/exercise package should be a Title Page containing the following information:

VOGTLE ELECTRIC GENERATING PLANT

Emergency Preparedness

Drill/Exercise

(Title)

(Date)

3. Page number 2 of the package should be a "Table of Contents" similar in design to the following outline:

Sections:

- I Introduction
- II Objectives and Extent of Play
- III Guidelines
 - A. ****Safety Precautions**
 - B. ****Controller/Evaluator Instruction**
 - C. ****Performance Evaluation Standards**
 - D. Controller Assignments

****Information in Controller Handbook**

CHECKLIST 2

DRILL/EXERCISE SCENARIO FORMAT


IV Scenario

- A. Initial Conditions
 - 1. Plant Status
 - 2. Meteorological Conditions
- B. Narrative Summary
- C. Major Sequence of Events

V Data

- A. Messages
- B. Plant Parameters
- C. In-plant Chemistry
- D. In-plant Health Physics
- E. PERMS
- F. Meteorological
- G. Dose Assessment
- H. Offsite Plume Maps & Data

4. Introduction - This section contains the schedule, a list of participants, controller assignments and the extent of the drill or exercise.

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CHECKLIST 2

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DRILL/EXERCISE SCENARIO FORMAT

5. Objectives and Extent of Play - This section shall clearly state, in detail, the objectives that the drill/exercise package was designed to evaluate. In addition, areas of simulation will be defined and the extent to which elements will be demonstrated.


6. Guidelines - Includes those items that provide guidance to the participants, Controllers and Evaluators throughout the performance of the drill. This section is broken down into several subsections.
 - a. Safety Precautions - General and detailed precautions necessary to prevent jeopardizing plant and personnel safety.

 - b. Controller/Evaluator Instruction - Those information items that the Controllers and Evaluators need to be aware of to perform their function.

 - c. Performance Evaluation Standards - To ensure validity of the evaluation, all drill Controllers must utilize the same grading criteria. The following standards should be utilized:
 - (1) Recording Times of Actions
 - (a) An Emergency Response Facility will be deemed to be in service when its personnel accountability check is completed and reported or when the facility manager declares that the facility is functional.

 - (b) Controllers shall use the forms provided during the course of the drill to take notes of the time and events. It is intended to be used to complement the Evaluation Forms used to grade the exercise.


 - (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 reasonably be anticipated.

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CHECKLIST 2

DRILL/EXERCISE SCENARIO FORMAT

- (b) Good - Personnel and equipment generally performed better than expected. Any errors or problems were minor and easily correctable.
 - (c) Satisfactory - Personnel and equipment performed according to expectations with few minor exceptions. Any errors noted were not severe and could be corrected without undue labor or expense.
 - (d) Poor - Personnel and equipment generally performed below expectations and there were several significant deficiencies noted. The area's ability to carry out its functions was diminished.
 - (e) Failure - Personnel and equipment consistently failed to perform as required and there were serious deficiencies noted which severely impaired the ability of the Emergency Response Facility (ERF) to carry out its functions.
 - (f) Not Observed - Through no fault of the exercise.
- (3) Categories for Evaluation
- (a) Activation and Response
 - (b) Communications/Dissemination of Information
 - (c) Procedures
 - (d) Direction and Control
 - (e) Material and Equipment
 - (f) Protective Measures
 - (g) Access Control

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CHECKLIST 2

DRILL/EXERCISE SCENARIO FORMAT

7. Exercise Scenario - An outline of the sequence of drill events.
 - a. Initial Conditions - Those parameters and plant conditions necessary to be established to set the stage to commence the drill or exercise.
 - b. Meteorological Condition - Those meteorological parameters necessary to establish the initial conditions for the drill or exercise radiation release.
 - c. Narrative Summary - A brief narrative description of the drill/exercise sequence of events.
 - d. Major Sequence of Events - A timetable detailing when major drill/exercise events will occur.

8. Data
 - a. Messages Summary (optional) - a multi-column format which provides scenario time, page/message number, a summary of the message, anticipated response of the players and any instructions to the Controller.
 - b. Messages - Document used to transmit parameters and plant conditions to the participants of the drill/exercise. The Message (Data Sheet 1) should be given to the participant. The time block shall be the drill time or condition under which the message should be issued. The message should contain in chronological sequence the events, changes in parameters, indications or actions that the participant shall observe, hear, smell, feel or experience and then respond to.
 - c. Plant Data - This section shall include supportive tables of applicable plant data for various times throughout the drill/exercise. (When the simulator is used, a simulator script will be substituted for the plant data.)
 - d. Radiological Data - This section shall include offsite plume maps and data, in-plant radiological conditions and maps and tables of applicable radiation monitor readings.
 - e. Meteorological Data - This section shall contain meteorological conditions for the drill/exercise.

Approved By
J. T. Gasser

Vogtle Electric Generating Plant 

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DATA SHEET 1

Sheet 1 of 1

SAMPLE MESSAGE FORM

DRILL/EXERCISE TITLE _____

TO: _____ TIME: _____

MESSAGE: _____

THIS IS A DRILL

DO NOT initiate actions affecting normal plant operations.

THIS IS A DRILL

EXPECTED ACTIONS:

CONTROLLER PROMPTS (IF NECESSARY):

Page No. ____

DATA SHEET 2

DRILL/EXERCISE APPROVAL REQUEST

DATE _____

From: Emergency Preparedness Coordinator _____

via Training & Emergency Preparedness Manager _____

To: Nuclear Plant General Manager

1. Request your approval to conduct an

Emergency Drill Emergency Exercise Test as follows:

Date _____ Start Time _____ Duration _____

2. Drill/Exercise date and time confidential? Yes No

3. Type of Drill

Full Scale Exercise

NRC Evaluated

FEMA Evaluated

On-Site Facility Activation

Classification & Notification

Recall

Drill

Test

Health Physics

Notification

Medical/Contaminated Injured

Assembly and Accountability

SAMG Table Top

Other _____

4. Anticipated Classification Levels

NOUE

GENERAL EMERGENCY

ALERT

Not Applicable

SITE AREA EMERGENCY

5. On-Site Participation

Control Room

Security

Simulator

Corporate Emergency Operations Center

TSC

Public Info EOF ENC GPC Atlanta

OSC

Other _____

EOF

NONE

DATA SHEET 2

DRILL/EXERCISE APPROVAL REQUEST

6. Off-Site Participation: NONE Communications Only
- | | | | | |
|---|---------------------------------------|---|---------------------------------------|------------------------------|
| <input type="checkbox"/> GEMA | <input type="checkbox"/> EOC | <input type="checkbox"/> FEOC | <input type="checkbox"/> Field Teams | <input type="checkbox"/> EOF |
| <input type="checkbox"/> S. Carolina | <input type="checkbox"/> EOC | <input type="checkbox"/> FEOC | <input type="checkbox"/> Field Teams | <input type="checkbox"/> EOF |
| <input type="checkbox"/> Burke County | <input type="checkbox"/> EOC | <input type="checkbox"/> Ambulance | <input type="checkbox"/> Fire Support | |
| <input type="checkbox"/> SRS | <input type="checkbox"/> EOC | <input type="checkbox"/> Field Teams | <input type="checkbox"/> EOF | |
| <input type="checkbox"/> Aiken County | <input type="checkbox"/> EOC | | | |
| <input type="checkbox"/> Allendale County | <input type="checkbox"/> EOC | | | |
| <input type="checkbox"/> Barnwell County | <input type="checkbox"/> EOC | | | |
| <input type="checkbox"/> Hospital | <input type="checkbox"/> Burke County | <input type="checkbox"/> Doctors Hospital | | |
|
 | | | | |
| <input type="checkbox"/> NRC | | | | |
| <input type="checkbox"/> Other _____ | | | | |

7. Radiological NONE
- Off-Site Release
 - On-Site High Radiation
 - Dose Projection and Field Monitoring
 - Post-Accident Sampling

8. Objectives: Attached/See Below
- a. _____
- b. _____
- c. _____
- d. _____

Submitted: _____ Date

Emergency Preparedness Coordinator

_____ Date

Training & Emergency Preparedness Manager

Approved: _____ Date

Nuclear Plant General Manager

_____ Date

*Verbal Approval Obtained

* Verbal approval may be obtained for minor drills.

Approved By
J. T. Gasser

Vogtle Electric Generating Plant



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EMERGENCY DRILLS AND EXERCISES

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DATA SHEET 3

Sheet 1 of 1

SAMPLE DRILL/EXERCISE REPORT

From:

Emergency Preparedness Coordinator

Date

Training and Emergency Preparedness Manager

Date

To:

Nuclear Plant General Manager

1. An Emergency Drill/Exercise was conducted on _____
Date
2. The results of the critique, recommended corrective actions, and responsibility for corrective actions are attached for your approval.

NOTE

[Format for Critique Items]

Item #

Critique Item:

Corrective Action:

Responsibility:

Due Date:

A/I# _____


From:

Nuclear Plant General Manager

3. The results of the critique have been reviewed and corrective action recommendations are approved.

Nuclear Plant General Manager

Date

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REFERENCE USE PROCEDURE

PRB REVIEW REQUIRED

1.0 PURPOSE

The purpose of this procedure is to provide instructions to the Technical Support Center (TSC) Support Coordinator for overall TSC logistical support.

2.0 RESPONSIBILITIES

2.1 TSC SUPPORT COORDINATOR

2.1.1 The TSC Support Coordinator shall have the following responsibilities:

- 2.1.1.1 Plan and implement logistical support including personnel, transportation needs, equipment, supplies, and communications.
- 2.1.1.2 Contact private organizations for required support services.
- 2.1.1.3 Timely completion of offsite notifications.

3.0 PREREQUISITES

An Alert, Site Area Emergency, or General Emergency has been declared or the Emergency Director has ordered activation of the TSC.

4.0 PRECAUTIONS

- 4.1 This procedure shall not take priority over measures required to maintain or restore the plant to a safe operating condition.
- 4.2 This procedure does not replace any plant operating procedure.

5.0 PROCEDURE

5.1 TSC ACTIVATION

- 5.1.1 For an Alert, Site Area Emergency, or General Emergency, the TSC Support Coordinator shall report to the TSC and receive a briefing from the TSC Manager.
- 5.1.2 The TSC Support Coordinator shall obtain and initiate the "TSC Support Coordinator Checklist".

Approved By
J. T. Gasser

Vogtle Electric Generating Plant



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DUTIES OF THE TSC SUPPORT COORDINATOR

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5.2 STAFF SUPERVISION

The TSC Support Coordinator shall supervise the activities of the following TSC staff:

5.2.1 Status Loop Communicator

5.2.2 Admin Support Staff (Assist the Support Coordinator with administrative duties).

5.2.3 Emergency Notification Network (ENN) communicators (timely completion of offsite notifications).

5.3 RECOVERY

The TSC Support Coordinator shall provide support for recovery and re-entry operations as requested by the TSC Manager or Emergency Director.

6.0 REFERENCES

6.1 VEGP EMERGENCY PLAN

6.2 PROCEDURES

6.2.1 91101-C, "Emergency Response Organization"


6.2.2 91201-C, "Activation And Operation Of The TSC"

6.2.3 91204-C, "Emergency Response Communications"

6.2.4 91401-C, "Assembly And Accountability"

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

END OF PROCEDURE TEXT

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DATA SHEET 1
REQUEST FOR AMBULANCE ASSISTANCE

NOTE

State "This is a Drill" when appropriate.

1. This is _____ at the Vogle Electric Generating Plant (VEGP).
(Name, Title)

2. Today _____ at _____ we have had a contaminated injury at the
(Date) (Time, 24-hour clock)

plant requiring transport to _____ Hospital.
(Hospital Name)

3. Accident Information:
 - a. Number of Contaminated Injured Patients _____
 - b. Description of Injured _____

 - c. Remarks _____

4. We request that you report to Plant Vogle as soon as possible. Plant Security will escort you to the scene.

5. Please provide:
 - a. Your Name/Title _____
 - b. Expected Time of Arrival _____
(Time, 24-hour clock)

6. For further information, call _____ at _____
(Name/Title) (Phone Number)

_____ (Name/Title) _____ (Date/ Time)

DATA SHEET 2
REQUEST FOR HOSPITAL ASSISTANCE

NOTE

State "This is a Drill" when appropriate.

1. This is _____ at the Vogle Electric Generating Plant (VEGP).
(Name, Title)

2. Today _____ at _____ we have had a contaminated injury at the plant
(Date) (Time, 24-hour clock) requiring your assistance.

3. Accident Information:
 - a. Number of Contaminated Injured Patients _____
 - b. Description of Injured _____

 - c. Expected Time of Arrival at Hospital* _____
 - d. Remarks _____


4. We request that you implement your Hospital Radiological Procedures to receive and treat a contaminated injury from Plant Vogle.

5. Please provide:
 - a. Your Name/Title _____
 - b. Expected Time of Arrival _____
(Time, 24-hour clock)

6. For further information, call _____ at _____
(Name/Title) (Phone Number)

_____ (Name/Title) _____ (Date/ Time)

* Under normal driving conditions, it will require 25 minutes to drive from VEGP to Burke County Hospital, and 45 minutes to drive from VEGP to Doctors Hospital. Use this as a guide in estimating the time of arrival.

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TSC SUPPORT COORDINATOR CHECKLIST

Sheet 1 of 3

DESIGNEES: Document Control Supervisor; Materials Supervisor; Senior Specialists; Administrative Assistants, Senior; Designated Document Control Personnel


RESPONSIBILITIES:

Plan and implement logistical support including personnel, equipment and supplies. Contact private organizations for support services.

INITIAL ACTIONS

1. Report to the TSC.
2. Sign in on Emergency Response Facility Roster and post names on TSC organization board.
3. Ensure that all TSC personnel badge in at TSC Automated Control Access Terminal (ACT).
4. If a recall of off duty personnel is initiated, assist the TSC manager in the review of the Emergency Response Facility Roster. Ensure that all personnel reporting to the TSC have answered the Fitness For Duty question.
5. Obtain work packets and emergency position badge.
6. Receive briefing from TSC Manager.
7. Direct facility personnel to check operability of all communications equipment (i.e. telephones, radios and facsimiles). (Procedure 91204-C, "Emergency Response Communications")
8. Ensure that the (West Door) to the TSC corridor is secured.
9. Ensure the facility clocks are synchronized with the Integrated Plant Computer.
- 10.* Ensure the TSC Status Loop Communicator performs the following responsibilities:
 - a. Maintains and controls communications between Emergency Response Facilities.
 - b. Maintains TSC sequence of events board, plant parameters board, and radiation monitor status boards every 30 minutes.
 - c. Provide pertinent information to individual stations when they cannot retrieve it themselves.

*Continuing Activity

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TSC SUPPORT COORDINATOR CHECKLIST


SUBSEQUENT ACTIONS

- 1.* Maintain emergency log.
- 2.* Maintain current Emergency Response Facility Roster for all personnel reporting to the TSC as directed in Procedure 91201-C, "Activation And Operation Of The TSC". Ensure that personnel sign in and out when entering and leaving the TSC.
- 3.* Ensure sufficient support staff are available.
- 4.* Distribute drawings, documents and office supplies as required.
- 5.* Obtain drawings, manuals and other procedures from the Document Control Room or Maintenance Building. (Equipment manuals may be obtained from the Document Control Room, Maintenance Building or Service Building.)
- 6.* Obtain tools and other equipment from the Auxiliary Building tool crib or in the Maintenance Building.
7. Arrange for tools and equipment not available onsite with offsite private organizations.

NOTES

- a. Ensure that Security personnel are notified whenever an ambulance is requested.
- b. Use Data Sheet 1 or 2 if ambulance or hospital assistance is needed.
- 8.* At the direction of the TSC Manager or Emergency Director, contact private organizations to provide support services.
9. Provide information to Security regarding offsite assistance vehicles needing to enter the protected area to include estimated time of arrival and vehicle type.
10. Develop a duty roster for extended emergency operations.

*Continuing Activity


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TSC SUPPORT COORDINATOR CHECKLIST

SUBSEQUENT ACTIONS CONTINUED

11. Provide temporary quarters and meals for personnel involved with the emergency operations. Local hotels and caterers are listed in the offsite telephone directories.
12. As designated NRC personnel report to the TSC; issue them emergency identification badges, direct them to sign in on the Emergency Response Facility Roster and direct them to their pre-designated work spaces.
13. Perform relief and complete "General Relief Checklist" in Procedure 91101-C, "Emergency Response Organization".
14. After the emergency condition has been declared terminated, proceed as follows:
 - a. Participate in briefing with TSC Manager and assist in transition to Recovery Organization.
 - b. Collect emergency logs and checklists from TSC staff and turn over to the Emergency Preparedness Coordinator.
 - c. Stand by for assignment to the Recovery Organization, return to normal work station, or dismissal.

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REFERENCE USE PROCEDURE

PRB REVIEW REQUIRED

1.0 PURPOSE

The purpose of this procedure is to specify the training development, training requirements and the periodic retraining of all personnel assigned to the Emergency Response Organization (ERO), including offsite emergency response personnel who may support an emergency at Vogtle Electric Generating Plant (VEGP).

2.0 DEFINITIONS

2.1 ANNIVERSARY MONTH

The month one year after an individual completed training or the end of the training period for those individuals who completed ERO training in a continuing training program. Training related qualifications will normally be considered expired the last day of the anniversary month.

2.2 SEMI-ANNUALLY

Semi-annual means once in the first six months and once in the second six months of each calendar year.

2.3 CALENDAR YEAR


Calendar year is January 1st through December 31st. Training related qualifications will normally be considered expired the last day of December.

2.4 TRIENNIAL ANNIVERSARY MONTH

The month three years after an individual completed training or the end of the training period for those individuals who completed ERO training in a continuing training program. Training related qualifications will normally be considered expired the last day of the triennial anniversary month.

3.0 RESPONSIBILITIES

3.1 The Emergency Preparedness Coordinator (EPC) is responsible for ensuring that all emergency preparedness training is conducted and for coordinating training for offsite ERO Agencies (i.e. offsite licensee and offsite support agencies).

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- 3.2** The Training and Emergency Preparedness Manager is responsible for the following:
- 3.2.1** Developing, scheduling, and conducting training for onsite ERO personnel in accordance with the training matrix presented in Table 1.
 - 3.2.2** Developing, scheduling, and conducting fire training for onsite fire brigade personnel.
 - 3.2.3** Developing, scheduling, and conducting specialized emergency preparedness training for selected security officers.
 - 3.2.4** Conducting Multi-Media First Aid Training, or its equivalent.
 - 3.2.5** Scheduling and training non-licensed augmentation personnel (e.g. contractors, health physicists, vendors, etc.).
 - 3.2.6** Extending individuals training related qualifications into a minimal grace period not to exceed 15 months from last training date. This applies to those training requirements listed in Table 1 excluding post-accident sampling, First Aid and SAMG retraining.

4.0 **PREREQUISITES**

None


5.0 **PRECAUTIONS**

- 5.1** Lesson plans should be developed in conformance with applicable VEGP training policies and procedures.

6.0 **PROCEDURE**

6.1 **VEGP GENERAL EMPLOYEE TRAINING (GET)**

- 6.1.1** All badged VEGP employees will be required to demonstrate a working knowledge of applicable emergency response procedures. Associated instruction will be provided as a part of implementation of Procedure 00700-C, "General Employee Training (GET)", and will include the following topics:
 - 6.1.1.1** Emergency classifications.
 - 6.1.1.2** Emergency warning signals.
 - 6.1.1.3** Assembly and accountability.
 - 6.1.1.4** Site evacuation.

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6.1.1.5 Radiation exposure control, monitoring, and decontamination.

6.1.1.6 Individual response.

6.2 VEGP EMERGENCY RESPONSE ORGANIZATION TRAINING

6.2.1 Personnel assigned to the ERO shall receive training specific to their assignments. Training categories required for emergency personnel are detailed in Table 1, while training subjects are described in Table 2.

6.2.2 Written lesson plans shall be maintained for all courses described in Table 2 except Multimedia First Aid. Written exams and hands-on equipment or procedure demonstrations may be used to establish trainee proficiency. Walk-through drills with on-the-spot correction of erroneous performance will be incorporated when appropriate. When applicable, industry emergency experience (e.g., lessons learned at TMI-2) shall be included in the instructional materials.

6.2.3 The training shall be provided initially to personnel assigned to the ERO, and no later than the anniversary month thereafter. Anniversary month retraining consists of initial training material reinforcement and appropriate lessons learned from the previous year's operating experience. Lessons learned that are distributed by other methods may not be included in anniversary month retraining. Additionally, the training shall be conducted whenever necessitated by significant revisions to the VEGP Emergency Plan, procedures or emergency equipment. Training will be provided as often as necessary to ensure that an adequate number of qualified personnel are available to staff the ERO at all times.

6.2.4 The Nuclear Plant General Manager may receive credit for Management of Radiological Emergencies (MRE) retraining by participating in an integrated drill or exercise.


6.2.5 Personnel responsible for performing post accident sampling shall be trained semi-annually. Pertinent Supervision will receive anniversary month retraining.

6.2.6 In addition to that specified in the Emergency Plan training matrix (Table 1), the following training shall be provided:

6.2.6.1 The Fire Brigade will receive specialized training in accordance with Procedure 00705-C, "Fire Protection Training Program".

6.2.6.2 The First Aid Team (both members), and Search and Rescue Team (one member) shall receive the Multi-Media First Aid course, or equivalent within their triennial anniversary month.

6.2.6.3 Selected security officers shall receive specialized emergency preparedness training (e.g., Security Supervisor, Alarm Station Operators).

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6.2.7 Designees for positions in the Emergency Response Organization will be selected commensurate with normal duty managerial, supervisory and/or technical skills. The EPC will provide the appropriate Training Supervisor with a list of all ERO designees. The appropriate Training Supervisor will schedule such designees for required training in accordance with the Emergency Plan training matrix (Table 1). A list of all onsite ERO qualified personnel is maintained on a Training Qualification Database. This database has the ability to be reviewed by all plant staff. An unqualified ERO report will be published monthly and distributed to plant management.

6.2.8 Select ERO personnel, (Emergency Director, Technical Support Center (TSC) Manager, TSC Operations Supervisor and TSC Engineering Supervisor), will receive Severe Accident Management Guidelines (SAMGs) training in accordance with procedure 60613-C, "Control and Use of Severe Accident Management Guidelines (SAMG)".

6.3 OFFSITE EMERGENCY RESPONSE ORGANIZATION TRAINING

6.3.1 The EPC shall assure that special training is available to members of the Offsite ERO who may enter the site to provide emergency support to VEGP. Training in site emergency response for Offsite ERO personnel shall include the following:

6.3.1.1 Procedures for notification.


6.3.1.2 Expected emergency roles.

6.3.1.3 Basic radiation protection procedures.

6.3.1.4 Site orientation.

6.3.1.5 Security procedures.

6.3.2 The EPC shall offer initial training to offsite ERO agencies (fire/rescue, ambulance, etc.). Retraining shall be offered each calendar year thereafter. This retraining is normally performed prior to the annual exercise. This training will be coordinated through, and presented by, the responsible onsite training agency (HP/Chem Training, Security Training Staff, Fire Training, etc.). When local agencies are a part of a mutual aid pact, the EPC shall offer the training to members of the pact to ensure thorough coverage.

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6.3.3 Selected state and local emergency response management personnel with offsite emergency response roles will be offered a seminar/training course in specific areas:

- a. The VEGP emergency classification system.
- b. The VEGP protective action recommendation criteria and their relationship to plant conditions.
- c. The VEGP emergency response organization.

6.3.3.1 These offsite management personnel will be offered initial training and retraining each calendar year thereafter. Coordination with offsite authorities during these training sessions will include planning for participation in VEGP emergency exercises.

6.4 MEDIA TRAINING

Georgia Power Company's Public Information Department is responsible for news media training as described in the Emergency Communication Plan, Appendix 8 to VEGP Emergency Plan.

6.5 QUALIFICATION CRITERIA


6.5.1 Qualification for members of the ERO shall be based on the completion of all required training in accordance with Table 1.

6.5.2 Instructor qualifications for emergency preparedness training shall be completed according to Procedure 60100-C, "Training Department Training And Qualification Procedure".

6.5.3 Student performance criteria shall be established for emergency preparedness courses, and included in the written lesson plans. Written examinations shall be based on the student performance criteria. In the instance where an individual does not receive a passing grade on a written examination or does not perform adequately during a hands-on, walk-through drill, the student shall receive additional instruction until the student performs satisfactorily, or is relieved of ERO assignments.

6.6 DOCUMENTATION

6.6.1 All emergency preparedness training shall be documented. The Supervisor of HP/Chem Training shall maintain the training program for the onsite ERO.

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6.6.2 Training records shall include the following:

6.6.2.1 Written lesson plans, including visual aid packages and student handouts.

6.6.2.2 Attendance lists.

6.6.2.3 Examination records and test scores for emergency personnel.

6.6.3 Training records for courses conducted for the offsite ERO shall include:

6.6.3.1 Written lesson plans or course/lesson outlines.

6.6.3.2 Attendance lists.

6.6.4 Training records for onsite ERO members shall be maintained for the life of the plant. Training records for offsite ERO members shall be maintained for 5 years.

7.0 REFERENCES

7.1 VEGP EMERGENCY PLAN, Section O and Appendix 8

7.2 PROCEDURES

7.2.1 60100-C, "Training Department Training And Qualification Procedures"

7.2.2 00700-C, "General Employee Training"

7.2.3 00705-C, "Fire Protection Training Program"

7.2.4 60613-C, "Control and Use of Severe Accident Management Guidelines (SAMG)".

7.3 NUREG-0654, FEMA-REP-1, Rev. 1, "Criteria for Preparation and Evaluation of Radiological Emergency Response Plan and Preparedness in Support of Nuclear Power Plants".

END OF PROCEDURE TEXT

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**TABLE 1
TRAINING REQUIREMENTS FOR VEGP ERO PERSONNEL**

NOTE:
a - General Office Staff excepted
b - Included in General Employee Training (GET)
c - Required by only one team member

	CORE DAMAGE ASSESSMENT	OFFSITE COMMUNICATION	EMERGENCY PLAN OVERVIEW (b)	FIRST AID	MANAGEMENT OF RAD. EMERGENCIES	OFFSITE DOSE ASSESSMENT	POST-ACCIDENT SAMPLING	REPAIR AND CORRECTIVE ACTIONS	FIELD MONITORING TEAM	RAD EMERGENCY TEAM IN-PLANT	SECURITY	MEDICAL SUPPORT OF RAD EMERGENCY	SCBA	RECALL AND ACCOUNTABILITY	RESPIRATORY PROTECTION	SAMG IMPLEMENTOR	SAMG EVALUATOR/DECISION MAKER	FIELD MONITORING TEAM COMM.	ENS OFFSITE COMMUNICATION	COMMENTS
Emergency Director			X		X								X ^(a)				X			
EOF Manager			X		X															
EOF Support Coordinator		X	X																	
Dose Assessment Manager			X			X														
Dose Analyst			X			X														
Security Coordinators			X								X									
TSC Manager			X		X												X			
TSC Support Coordinator		X	X																	
Engineering Supervisor	X		X														X			
Reactor Engineers	X		X																	
Maintenance Supervisor			X					X												
Operations Supervisor			X		X												X			
Health Physics Supervisor			X			X				X		X								
Chemistry Supervisor			X				X													
OSC Manager			X		X			X												
ENN Communicators		X	X																	
ENS Communicators			X																X	
TSC Engineering Staff			X																	
Alarm Station Operators			X											X						

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TABLE 1 (Cont'd)
TRAINING REQUIREMENTS FOR VEGP ERO PERSONNEL

NOTE:

- a - General Office Staff excepted
- b - Included in General Employee Training (GET)
- c - Required by only one team member

	CORE DAMAGE ASSESSMENT	OFFSITE COMMUNICAITON	EMERGENCY PLAN OVERVIEW (b)	FIRST AID	MANAGEMENT OF RAD. EMERGENCIES	OFFSITE DOSE ASSESMENT	POST-ACCIDENT SAMPLING	REPAIR AND CORRECTIVE ACTION	FIELD MONITORING TEAM	RAD EMERGENCY TEAM IN-PLANT	SECURITY	MEDICAL SUPPORT OF RAD EMERGENCY	SCBA	RECALL AND ACCOUNTABILITY	RESPIRATORY PROTECTION	SAMG IMPLEMENTOR	SAMG EVALUATOR/DECISION MAKER	FIELD MONITORING TEAM COMM.	COMMENTS
Clerks/Support Staff			X																
In-Plant Monitoring			X							X			X						
Damage Control/ Assessment			X					X					X						
Repair and Modification			X					X					X						
Search and Rescue (c)			X	X									X						
Fire Brigade			X										X						Training provided per 00705-C
First-Aid			X	X								X	X						
Field Monitoring			X						X						X				
Dosimetry			X																
Health Physics Technicians			X	X						X		X	X						
Field Monitoring Team Comm.			X															X	
Post Accident Sampling			X				X						X						
Other ERO Personnel			X																
Senior Reactor Operators			X		X								X			X			
Reactor Operators			X										X			X			

TABLE 2

TRAINING COURSE DESCRIPTIONS

<u>Training Course</u>	<u>Description</u>
Core Damage Assessment	This course covers the calculation methodology for assessing core damage and estimating potential source terms. It includes retrieval of pertinent plant parameter data from the control room; core inventory determinations based on reactor power history; estimating cladding and/or fuel damage; and resultant activity released to the containment atmosphere.
Offsite Communications	This course covers operation of communications equipment in the ERFs, communications methods, and procedures for notification of offsite emergency response agencies.
Emergency Plan Overview (a)	The course covers an overview of the Emergency Plan with special attention to emergency planning zones (EPZs); emergency classification system; onsite emergency response organizations; responsibilities of emergency response personnel; and site accountability and evacuation.
First-Aid	This course covers standard Red Cross multi-media first aid, or equivalent.
Management of Radiological Emergencies	This course covers classification of emergencies; emergency notification of onsite and offsite emergency response personnel and agencies; activation and staffing of emergency response facilities; core damage assessment; protective action recommendation decision-making based on EPA PAGs; retrieval of available Integrated Plant computer (IPC) data; re-entry and repair operations; communications and information management; and recovery.

(a) EPO is included in G.E.T. badge training for all unescorted personnel.

TABLE 2 (Cont'd.)

TRAINING COURSE DESCRIPTIONS

Training Course	Description
Offsite Dose Assessment	This course covers dose projection methodology including computerized methods; retrieval of IPC data; methods for obtaining meteorological data; operation of the dose assessment computer; and interpretation of offsite dose calculation results.
Post-Accident Sampling	This course covers collection of samples from the RCS and containment atmosphere under emergency conditions; measuring radionuclide and selected chemical concentrations in those samples. Post-accident sampling training for the TSC Chemistry Supervisor will address general concepts appropriate to Supervision.
Repair and Corrective Actions	This course covers As Low As Reasonably Achievable (ALARA) principles as they apply to planning and implementing repair and corrective action; emergency exposure guidelines; and communications during repair and corrective actions.
Field Monitoring Team	This course covers field measurement of airborne radioactivity; radiation levels and contamination in the EPZ; collecting environmental samples; map reading; record keeping and radio communications.
Field Monitoring Team Communicator	This course covers the specific procedural requirements for briefing, dispatching, documenting and supervising of field monitoring teams. Training is also provided to insure the FMT communicator employs proper three-way communication with the Dose Assessment Manager and/or the Dose Analyst in reference to the information gathered by the field monitoring teams


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TABLE 2 (Cont'd.)

TRAINING COURSE DESCRIPTIONS

Training Course	Description
In-Plant Monitoring Team	This course covers methods for performing in-plant radiation, contamination and airborne radioactivity surveys under emergency conditions; search and rescue of missing personnel; managing health physics activities at evacuation assembly areas and relocation centers; and communications for the above activities.
Security	This course covers emergency response activities of the security department including personnel accountability; traffic control; communications; access control to emergency response facilities.
Respiratory Protection	This course covers the hazards of airborne radioactive contamination and the means by which these hazards may be reduced.
Medical Support of Radiation Emergencies	This course covers the responsibilities and methods for handling exposed and/or contaminated injuries. It includes interfacing with onsite and/or offsite ambulance crews; health physics activities for transporting a contaminated injury patient to the hospital; monitoring and decontamination while at the hospital; and final disposition of the ambulance, ambulance crew, hospital staff, and radiation emergency area (REA) at the hospital.
SCBA	This course covers the use of a self-contained breathing apparatus, including equipment description; proper donning and use; and inspection and actions in case of equipment failure.
Recall and Accountability	This course covers the use of the emergency recall system, which includes equipment description, use, and proper conditions for use. Training is also provided on use of the site siren and the methods used to conduct accountability.



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TABLE 2 (Cont'd.)

TRAINING COURSE DESCRIPTIONS

Training Course	Description
SAMG Decision Maker/Evaluator	This course covers the usage and application of the SAMGs, which includes the philosophy of maintaining a high-level, big picture perspective. Training is also provided on diagnosing conditions that require entry into specific guidelines, evaluating the positive and negative impacts of strategies presented in certain guidelines, responding to severe challenges, interpreting the response of plant parameters following strategy implementation, assessing the effectiveness of implementing strategies and determining whether additional mitigation is needed and using computational aids.
SAMG Implementor	This course covers the usage and application of two SAMGs; Severe Accident Control Room Guidelines-1 & 2. This includes guidelines to mitigate fast acting transients that proceed to core damage.
ENS Offsite Communications	This course covers operation of communication equipment in the ERFs, communications methods, and procedures for notification of the Nuclear Regulatory Commission.

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PRB REVIEW REQUIRED

1.0 PURPOSE

This procedure provides a method to classify and estimate the extent of core damage through containment high range radiation monitor indications, and core exit thermocouple temperatures together with additional auxiliary indicators.

2.0 PRECAUTIONS AND LIMITATIONS

It is anticipated that physical processes during accidents may cause a variety of accident scenarios, resulting in differing levels of contamination throughout the containment. Containment High Range Radiation Monitors RE-005 and RE-006 view different areas and volumes of the containment. Figures 1 through 4 are intended to provide a realistic estimate of dose rate rather than bounding values. These results can be affected by:

- Changes in the density of the containment atmosphere
- Iodine spiking
- Uncertainties in core inventory
- Migration of fission products from the core to the containment
- Fission product plateout during accident conditions
- Fission product accumulation in operating equipment
- Rain-out of fission products on floor areas vs. grating.

3.0 PREREQUISITES

An emergency condition has been declared and core damage is suspected.


4.0 RESPONSIBILITIES

4.1 CHEMISTRY DEPARTMENT

4.1.1 Chemistry personnel are responsible for post-accident sampling and analysis activities and transmitting data to the Engineering personnel coordinating core damage assessment activities.

4.2 OPERATIONS DEPARTMENT

4.2.1 Operations Department personnel are responsible for collecting, recording and transmitting to the TSC Engineering personnel coordinating damage assessment activities, data provided by Control Room instrumentation through implementation of Procedure 91503-C, "Control Room Instrumentation Output For Assessment Of Core Damage".

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4.3 PLANT ENGINEERING DEPARTMENT

4.3.1 Engineering personnel are responsible for overall coordination of this procedure including the assignment of responsibilities to other groups or individuals as is required to complete the assessment.

NOTE

Coordinate with the Operations Supervisor on starting of the H₂ analyzers inside the affected containment building if core damage is suspected. Indication of hydrogen concentration is available within 30 minutes of initiating flow through the monitors when in standby.

4.3.2 Engineering personnel are responsible for implementing Procedure 91504-C, "Core Inventory Determinations Using Reactor Power History".

4.3.3 Engineering personnel, as coordinators of assessment activities, are responsible for data management.

4.3.4 Engineering personnel are responsible to review the completed core damage estimates (Data Sheet 1 of this procedure).

4.3.5 Engineering personnel are responsible for making all damage estimates.

5.0 **MAIN BODY**

5.1 **EVALUATION OF INITIATING EVENT AND PRELIMINARY INDICATIONS OF CORE INVENTORY**

NOTES

- a. No generalized core damage is likely if the fuel assemblies have not been uncovered. If the RVLIS full range instrument indicates that the collapsed liquid level has never been below the top of the core and no core exit thermocouple temperatures corresponding to superheated steam at the corresponding RCS pressure were indicated, then no generalized core damage is probable.

- b. If the core was uncovered, increases in the CVCS letdown monitor, containment atmosphere process radiation monitor, and the Containment Building area radiation monitors are evidence that some degree of fuel damage occurred.

- c. The automated core damage spreadsheet may be used in lieu of the manual method when performing core damage assessment.

5.1.1 The TSC Engineering group may implement Procedure 91504-C, "Core Inventory Determinations Using Reactor Power History", if required by step 5.2.3.b or step 5.3.3.b.

5.1.2 The TSC Engineering personnel should request the Operations Department to implement Procedure 91503-C, "Control Room Instrumentation Output For Assessment Of Core Damage". The data may be available from the Integrated Plant Computer or the Status Loop and recorded on Data Sheet 1 of procedure 91503-C, "Control Room Instrumentation Output For Assessment Of Core Damage".

5.1.3 Obtain the maximum thermocouple temperature observed, maximum containment high range radiation monitor reading and time of readings, minimum RCS pressure, and containment spray status from Data Sheet 1 of Procedure 91503-C, "Control Room Instrumentation Output For Assessment Of Core Damage, and record on Data Sheet 1.

5.1.4 Determine the time lapse between core shutdown and the containment high range radiation monitor reading.

5.1.5 Using the data from step 5.1.3 and the time lapse from step 5.1.4, compare the data to the plant status in Table 1, "Preliminary Core Damage Assessment," and record the fuel rod fission product status on Data Sheet 1.

5.1.6 Complete Preliminary Core Damage Assessment section of Data Sheet 1. Immediately transmit a copy of the preliminary core damage assessment results to the Emergency Director or TSC Manager.

5.1.7 If the preliminary core damage assessment indicates possible fuel rod clad damage, go to Step 5.2. If preliminary core damage assessment indicates possible fuel over-temperature damage, go to Step 5.3. Otherwise continue to monitor plant parameters.

5.2 ESTIMATION OF FUEL ROD CLAD DAMAGE

5.2.1 Estimate Fuel Rod Clad Damage Based on Containment High Range Radiation Monitor Reading.

- a. Find containment radiation level for 100% clad damage from Figure 3.
- b. Obtain current containment radiation level.
- c. Estimate clad damage using:

$$\% \text{ Clad Damage}_{\text{CRM}} = \frac{\text{Current Containment Radiation Level}}{\text{Predicted Containment Radiation Level at 100\% Clad Damage}}$$

5.2.2 Estimate Fuel Rod Clad Damage Based on Core Exit Thermocouple Readings.

- a. With RCS Pressure GREATER THAN 1600 psig:

$$\% \text{ Clad Damage}_{\text{CET}} = \frac{\text{Number of CETs} > 1400 \text{ } ^\circ\text{F}}{\text{Total Number of Operable CETs}}$$

- b. With RCS Pressure LESS THAN 1600 psig:

$$\% \text{ Clad Damage}_{\text{CET}} = \frac{\text{Number of CETs} > 1200 \text{ } ^\circ\text{F}}{\text{Total Number of Operable CETs}}$$

5.2.3 Confirm Reasonableness of Clad Damage Estimates.

a. Compare actual values to expected response.

- Containment Hydrogen Concentration LESS THAN 0.2%
- RVLIS LESS THAN 64% AND GREATER THAN 50%
- Hot Leg RTD GREATER THAN T_{sat} AND LESS THAN 650 °F
- Source Range Monitor GREATER THAN 3000 cps
- Deviation in clad damage estimates from containment high range radiation monitor and core exit thermocouples LESS THAN 50% using


$$\text{ABSOLUTE VALUE} \left[\frac{\% \text{Clad Damage}_{CRM} - \% \text{Clad Damage}_{CET}}{\% \text{Clad Damage}_{CRM}} \right]$$

b. If the expected response is not obtained, determine if the deviation can be explained from the accident progression:

- injection of water into the RCS
- bleed paths from the RCS
- direct radiation to the containment high range radiation monitors
- from conservatisms in the predictive model
 - fuel burnup
 - fission product retention in the RCS
 - fission product removal from the containment.

5.2.4 Record % Clad Damage_{CRM} and % Clad Damage_{CET} on Data Sheet 1.

5.2.5 Go to Step 5.4.

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5.3 ESTIMATION OF FUEL OVER-TEMPERATURE DAMAGE

5.3.1 Estimate Fuel Over-temperature Damage Based on Containment High Range Radiation Monitor Reading.

- a. Find containment radiation level for 100% core over-temperature damage from Figure 4.
- b. Obtain current containment radiation level.
- c. Estimate over-temperature damage using:

$$\% \text{ Core Damage}_{\text{CRM}} = \frac{\text{Current Containment Radiation Level}}{\text{Predicted Containment Radiation Level at 100\% Overtemp Damage.}}$$

5.3.2 Estimate Fuel Over-temperature Damage Based on Core Exit Thermocouple Readings.

- a. Obtain current core exit thermocouple temperature readings.
- b. Estimate over-temperature damage using:

$$\% \text{ Core Damage}_{\text{CET}} = \frac{\text{Number of CETs} > 2000 \text{ } ^\circ\text{F}}{\text{Total Number of Operable CETs}}$$

5.3.3 Confirm Reasonableness of Core Over-temperature Damage Estimates

- a. Compare actual values to expected response.
 - RVLIS LESS THAN 50%
 - Hot Leg RTD GREATER THAN 650 °F
 - Source Range Monitor GREATER THAN 3000 cps
 - Deviation in fuel over-temperature damage estimates from containment high range radiation monitor and core exit thermocouples LESS THAN 50% using

$$\text{ABSOLUTE VALUE} \left[\frac{\% \text{Core Damage}_{\text{CRM}} - \% \text{Core Damage}_{\text{CET}}}{\% \text{Core Damage}_{\text{CRM}}} \right]$$

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- Containment hydrogen concentration
 - Obtain containment hydrogen concentration at 100% core over-temperature from Table 2 and Figure 5.
 - Obtain current containment hydrogen concentration
 - Estimate over-temperature damage using:

$$\% \text{ Core Damage}_{H_2} = \frac{\text{Current } H_2 \text{ Concentration}}{\text{Predicted } H_2 \text{ Concentration at 100\% Overtemp Damage}}$$

- Deviation in fuel over-temperature damage estimates from containment hydrogen concentration and core exit thermocouples LESS THAN 25% using:


$$\text{ABSOLUTE VALUE} \left[\frac{\% \text{Core Damage}_{H_2} - \% \text{Core Damage}_{CET}}{\% \text{Core Damage}_{H_2}} \right]$$

- Deviation in fuel over-temperature damage estimates from containment high range radiation monitor and containment hydrogen concentration LESS THAN 25% using:

$$\text{ABSOLUTE VALUE} \left[\frac{\% \text{Core Damage}_{CRM} - \% \text{Core Damage}_{H_2}}{\% \text{Core Damage}_{H_2}} \right]$$

b. If expected response is not obtained, determine if the deviation can be explained from the accident progression:

- Injection of water into the RCS
- bleed paths from the RCS
- direct Radiation to the containment high range radiation monitor
- hydrogen burn in containment or operation of hydrogen recombiners
- conservatisms in the predictive model
 - fuel burnup
 - fission product retention in the RCS
 - fission product removal from containment.

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5.3.4 Record % Core Damage_{CRM}, % Core Damage_{CET}, and % Core Damage_{H₂} on Data Sheet 1.

5.4 FINAL ASSESSMENT

5.4.1 Perform the final core damage assessment by evaluating the data recorded on Data Sheet 1, "Core Damage Assessment Summary". Record the final assessment on the appropriate line on Data Sheet 1.

NOTE

The final assessment is a broad based examination of all data collected. Because of overlapping values of release activities and potential simultaneous conditions of clad damage, overtemperature, and core melt, Considerable Judgment is required in the final assessment.

5.4.2 On completion of the final assessment, forward the completed Data Sheet 1 to the Emergency Director or the TSC Manager.

5.4.3 Continue to monitor plant status as described in step 5.1.

6.0 ACCEPTANCE CRITERIA

NONE

7.0 REFERENCE

7.1 Westinghouse Owners Group Post-Accident Core Damage Assessment Guidance WCAP – 14696-A, Revision 1, November 1999.

7.2 PROCEDURES

7.2.1 91504-C, "Core Inventory Determinations Using Reactor Power History"

7.2.2 91503-C, "Control Room Instrumentation Output For Assessment Of Core Damage"

END OF PROCEDURE TEXT

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TABLE 1

PRELIMINARY CORE DAMAGE ASSESSMENT

Plant Status	Fuel Rod Fission Product Status
Core Exit Thermocouples LESS THAN 711 °F AND RE-005/006 LESS THAN Figure 1 Rad/hr	No Core Damage; Return to Step 5.1.5
Core Exit Thermocouples LESS THAN 2000 °F AND RE-005/006 LESS THAN Figure 2 Rad/hr	Possible Fuel Rod Clad Damage; Return to Step 5.1.5
Core Exit Thermocouples GREATER THAN 2000 °F OR RE-005/006 GREATER THAN Figure 2 Rad/hr	Possible Fuel Overtemperature Damage; Return to Step 5.1.5

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TABLE 2

FUEL OVER-TEMPERATURE ESTIMATE
 (Based on containment hydrogen concentration)

RCS Pressure	Water Injection into RCS	100% Fuel Over-temperature Predicted Containment Hydrogen Concentration
LESS THAN 1050 psig	Yes	50% Reaction-Low RCS Press line on Figure 5
	No	25% Reaction-Low RCS Press line on Figure 5
GREATER THAN 1050 psig	Yes	75% Reaction-High RCS Pressline on Figure 5
	No	50% Reaction-High RCS Press line on Figure 5

RCS AT 10% OF TECHNICAL SPECIFICATION 3.4.16 ACTIVITY

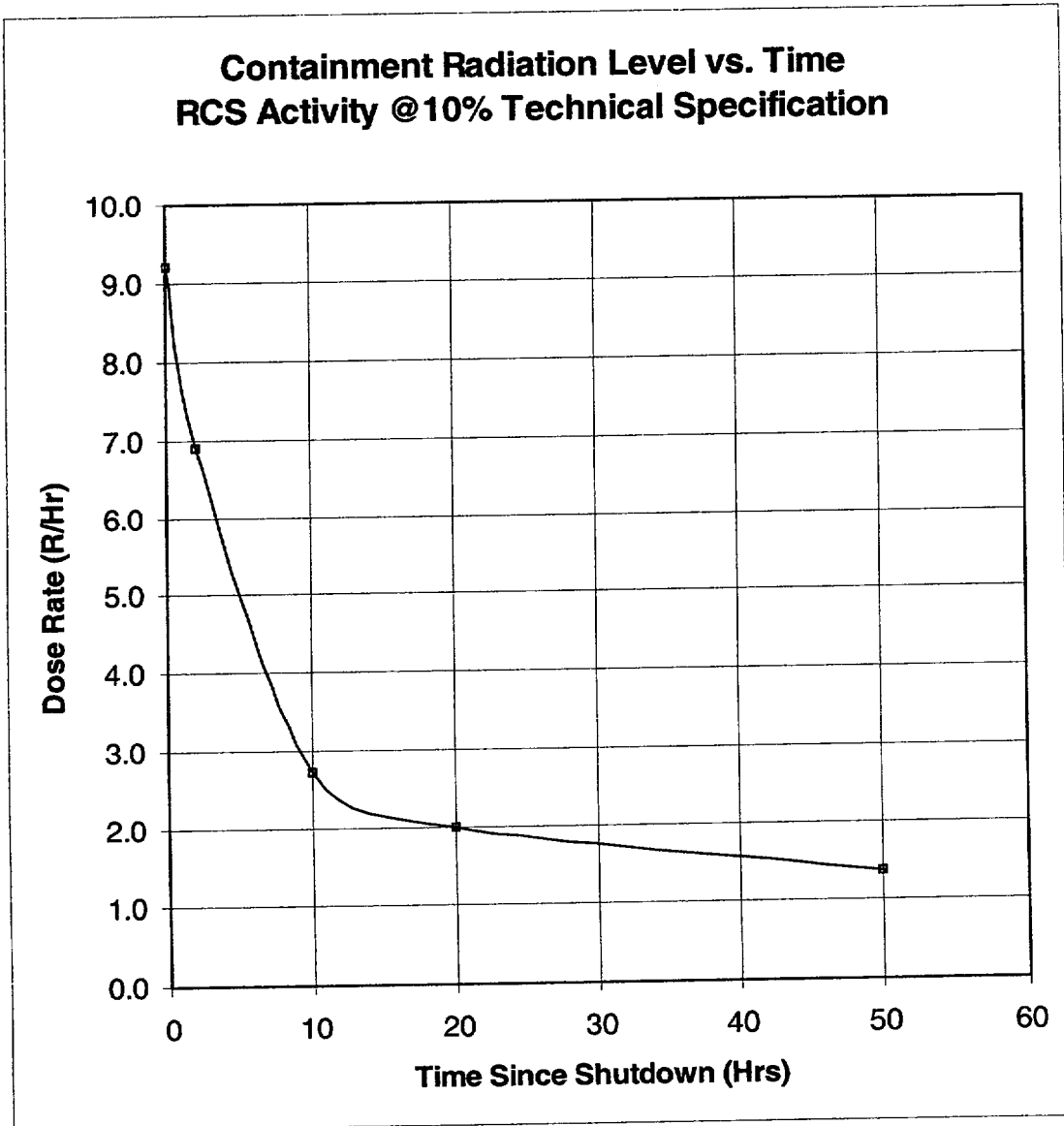


FIGURE 1

1% CORE OVERTEMPERATURE

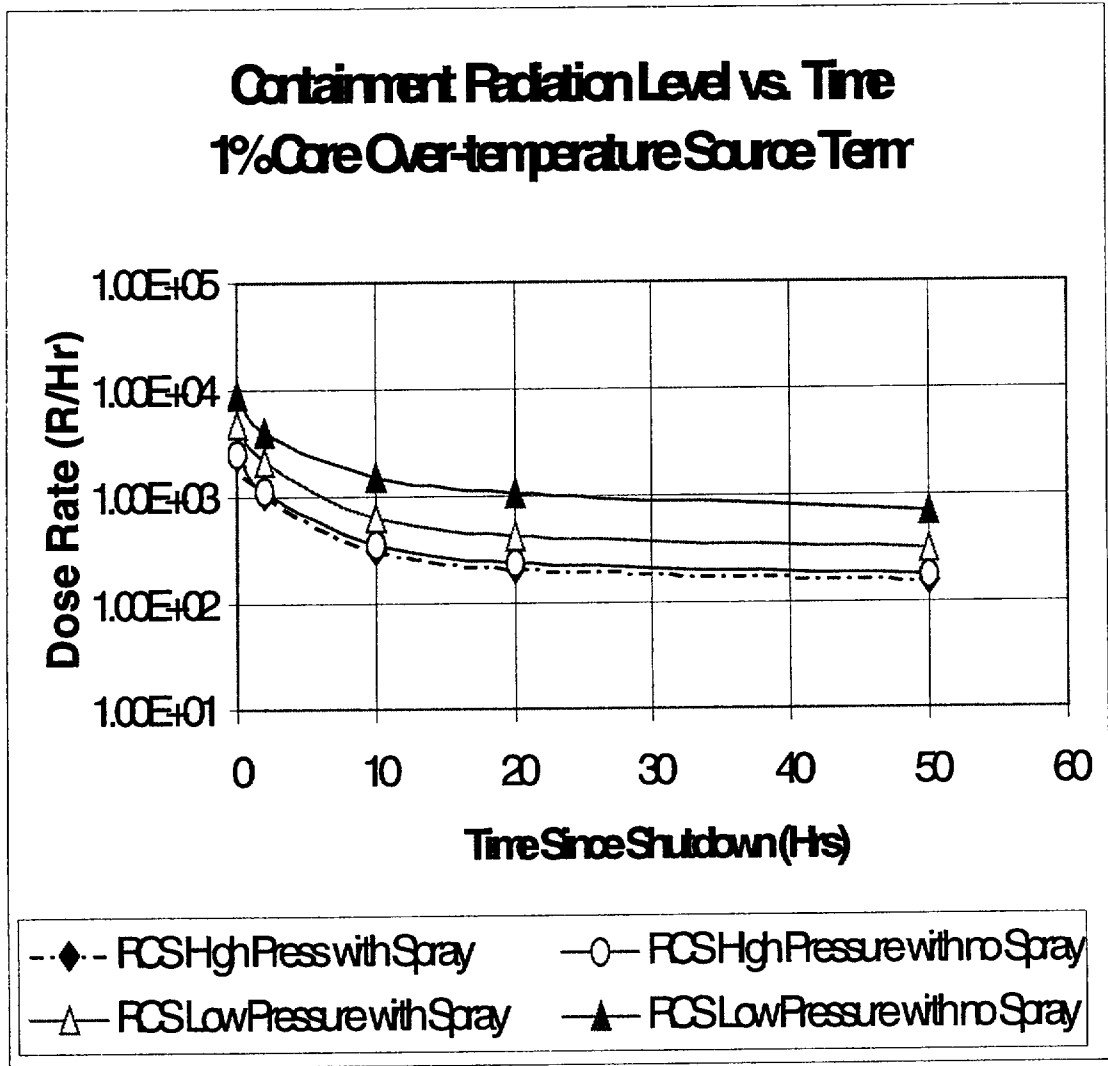


FIGURE 2

100% CLAD DAMAGE

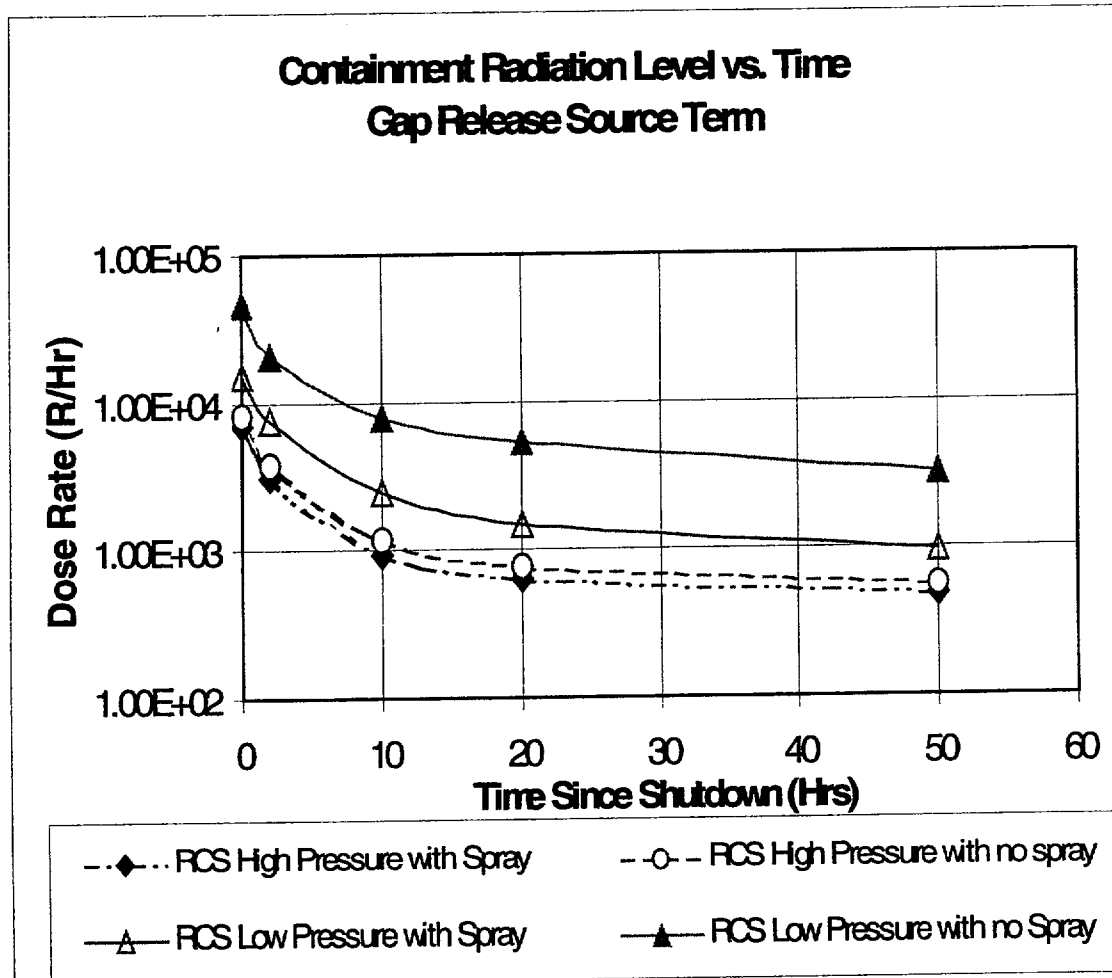


FIGURE 3



100% CORE OVER-TEMPERATURE

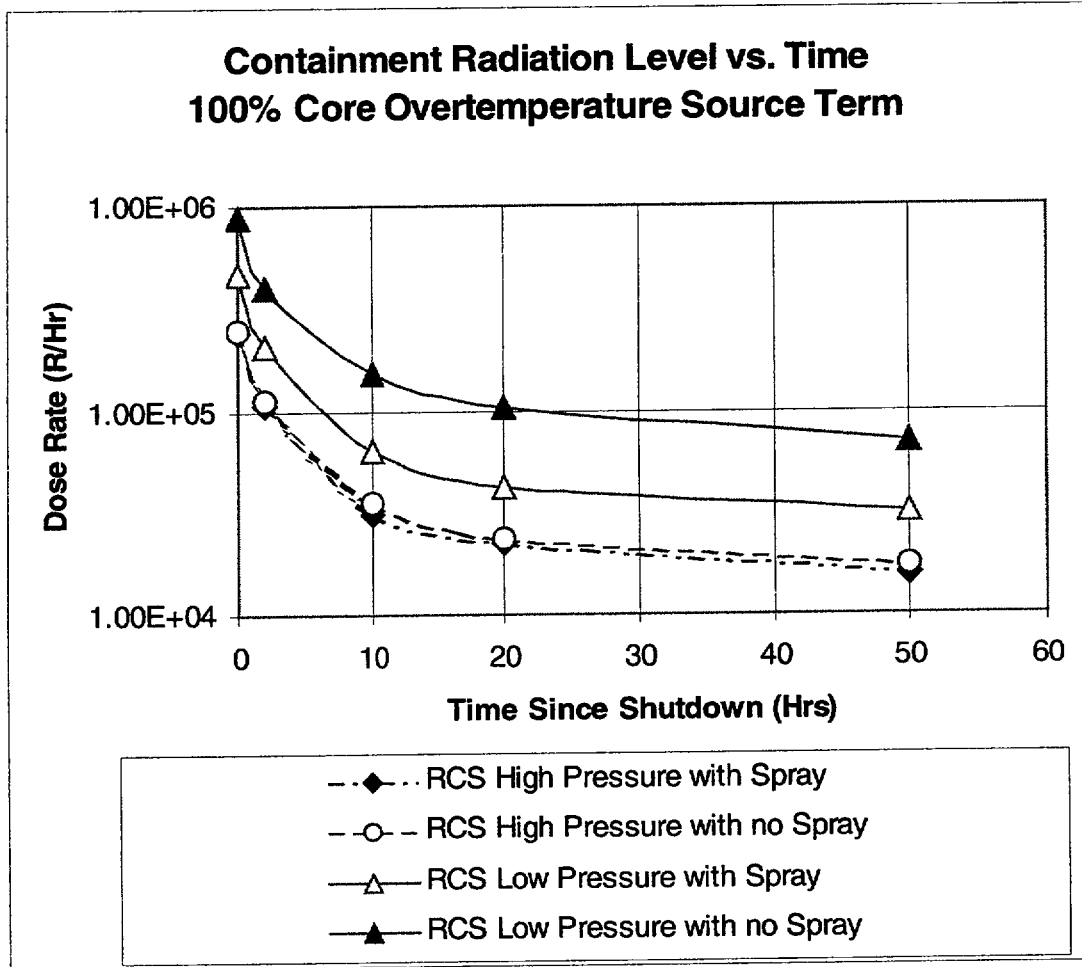


FIGURE 4



**100% OVER-TEMPERATURE PREDICTED
CONTAINMENT HYDROGEN CONCENTRATION**

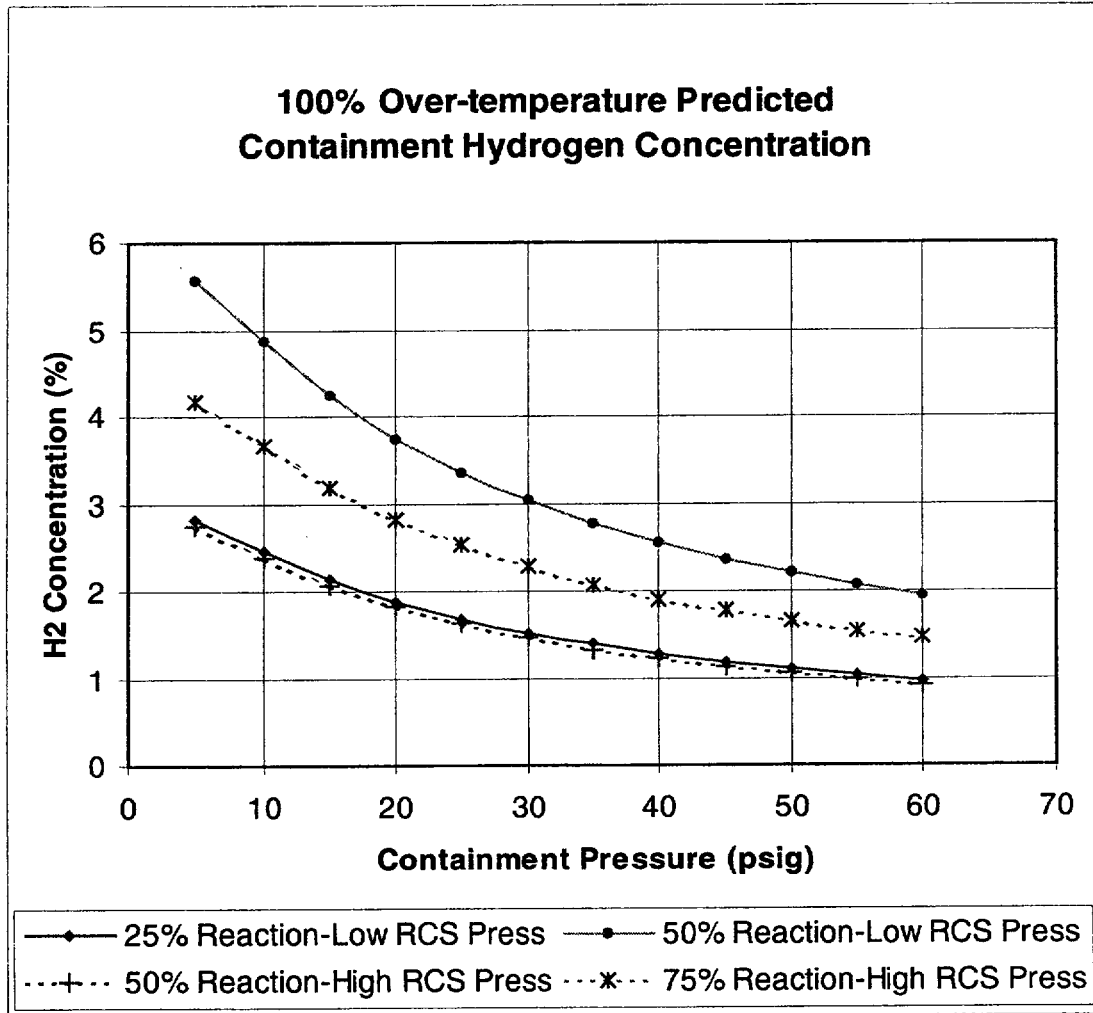



FIGURE 5

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DATA SHEET 1
CORE DAMAGE ASSESSMENT SUMMARY

A. PRELIMINARY CORE DAMAGE ASSESSMENT

From Step 5.1

- 1. RVLIS Indication:
No Core Uncovery _____
Uncovery Indicated _____
- 2. Maximum Core Exit Thermocouple Reading: _____
- 3. Maximum Containment High Range Monitor Reading: _____
Time of Reading: _____
- 4. Minimum RCS Pressure: _____
- 5. Containment Spray: Operated _____ Not Operated _____
- 6. Preliminary Core Damage Assessment Results: _____

DATE: _____ TIME: _____ PERFORMED BY: _____

REVIEWED BY: _____

B. DETAILED CORE DAMAGE ASSESSMENT

From Step 5.2.4

- 1. % Clad Damage based on Containment High Range Radiation Monitor _____
- 2. % Clad Damage based on Core Exit Thermocouples _____

OR


From Step 5.3.4

- 3. % Core Damage based on Containment High Range Radiation Monitors _____
- 4. % Core Damage based on Core Exit Thermocouples _____
- 5. % Core Damage Based on Containment Hydrogen Concentration _____

C. FINAL CORE DAMAGE ASSESSMENT (From Step 5.4)

DATE: _____ TIME: _____ PERFORMED BY: _____

REVIEWED BY: _____

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REFERENCE USE PROCEDURE

PRB REVIEW REQUIRED

1.0 PURPOSE

The purpose of this procedure is to provide instructions to the Engineering Supervisor for technical evaluations and support.

2.0 RESPONSIBILITIES

2.1 ENGINEERING SUPERVISOR

2.1.1 The Engineering Supervisor shall have the following responsibilities:

2.1.1.1 Provide technical support to the TSC Manager.

2.1.1.2 Analyze plant problems.

2.1.1.3 Advise the Emergency Director (ED) on technical matters.

2.1.1.4 Interface with appropriate Federal response personnel stationed in the TSC.

2.1.1.5 Assign a plant knowledgeable person to communicate with the NRC on the Emergency Notification System (ENS) and report upgrades in emergency classification and/or significant changes in plant conditions.

2.1.1.6 Ensure that core damage assessment is performed.

2.1.1.7 Trend key plant parameters using the Integrated Plant Computer (IPC) or a manual method.

2.1.1.8 Supervise Engineering Staff assigned to TSC.

2.1.1.9 Fill the position of Evaluator, if Severe Accident Management Guidelines (SAMGs) are implemented.


3.0 PREREQUISITES

An Alert, Site Area Emergency, or General Emergency has been declared, or the (ED) has ordered activation of the TSC.

4.0 PRECAUTIONS

4.1 This procedure shall not take priority over measures required to maintain or restore the plant to a safe operating condition.

4.2 This procedure does not replace any plant operating procedure.

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5.0 **PROCEDURE**

5.1 **TSC ACTIVATION**

For an Alert Emergency, Site Area Emergency, or General Emergency, the Engineering Supervisor shall:

5.1.1 Report to the TSC.

5.1.2 Obtain and initiate the "Engineering Supervisor Checklist".

5.2 **STAFF SUPERVISION**

The Engineering Supervisor shall supervise the activities of the following TSC staff:

5.2.1 Reactor Engineer (analyze core physics and heat transfer parameters, perform core damage assessment).

5.2.2 Mechanical Engineer (analyze mechanical systems).

5.2.3 Electrical Engineer (analyze electrical systems).

5.3 **RECOVERY**

The Engineering Supervisor shall provide support for recovery and re-entry operations as requested by the TSC Manager or (ED).

6.0 **REFERENCES**


6.1 **VEGP EMERGENCY PLAN**

6.2 Procedure 91101-C, "Emergency Response Organization"

6.3 Procedure 60613, "Control And Use Of Severe Accident Management Guidelines (SAMG)"

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

END OF PROCEDURE TEXT

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ENGINEERING SUPERVISOR CHECKLIST

Sheet 1 of 3

DESIGNEES:

Manager Engineering Support
Engineering Supervisor(s)


RESPONSIBILITIES:

Provide technical support to the TSC Manager. Analyze plant problems. Recommend corrective actions. Advise the Emergency Director on technical matters. Interface with Federal response personnel stationed in the TSC. Ensure that core damage assessment is performed.

INITIAL ACTIONS

1. Report to the TSC.
2. Sign-in on the Emergency Response Facility Roster.
3. Obtain work packets and emergency identification badge.
4. Ensure that the following positions are staffed:
 - a. Electrical Engineer
 - b. Mechanical Engineer
 - c. Reactor Engineer
5. Receive briefing from TSC Manager.
- 6.* Assume responsibility from the on-shift operations staff for NRC notifications by assigning an Engineer to maintain communications on the ENS when directed by the TSC Manager. (These communications should include any further degradation in the plant conditions, any change from one emergency class to another, or for the termination of an emergency.)
7. Advise TSC Manager when ready for operation and begin maintaining appropriate logs and checklists.

*Continuing Activity

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ENGINEERING SUPERVISOR CHECKLIST

Sheet 2 of 3

SUBSEQUENT ACTIONS


- 1.* Maintain a log.
- 2.* Determine need for any additional engineering and technical support personnel, and inform TSC Manager, TSC Support Coordinator or Corporate Emergency Operating Center (CEOC) as appropriate.
- 3.* Assist TSC Manager, as requested, to determine corrective actions.
- 4.* Assist TSC Manager, as requested, during reclassification activities.
- 5.* Provide technical support to the TSC Manager and to the Control Room by communicating through the Operations Supervisor.
- 6.* Direct the engineering staff to perform analyses of plant problems and determine corrective actions. Estimate time of fission product barrier failure when failure is anticipated from analyses of plant parameters.
- 7.* Provide recommendations for plant modifications to mitigate the effects of the accident.
- 8.* Determine the need for offsite technical assistance and coordinate with the TSC Manager, TSC Support Coordinator or CEOC as appropriate.
- 9.* Supervise activities of vendors reporting to the TSC or supervise via communications links to vendor's home offices.
- 10.* Provide liaison with the NRC staff in the TSC.

NOTE

IPC's that are not in the main TSC (i.e. ERDS and Dose Assessment Areas) may be used if necessary.

- 11.* Trend key plant parameters using the IPC or a manual method.
12. Perform core damage assessment.

*Continuing Activity

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ENGINEERING SUPERVISOR CHECKLIST

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SUBSEQUENT ACTIONS (CONT'D)

13. Perform the evaluations within the context of Severe Accident Management Guidelines.
 - a. Diagnose plant conditions and evaluate if a specific guideline entry is required.
 - b. Evaluate the positive and negative impacts of strategies presented in the guidelines.
 - c. Respond to severe challenges.
 - d. Interpret the response of plant parameters following strategy implementation.
 - e. Assess the effectiveness of implemented strategies and determine whether additional mitigation is needed.

14. Perform relief and complete "General Relief Checklist" in Procedure 91101-C, "Emergency Response Organization".

15. After the emergency condition has been declared terminated, proceed as follows:
 - a. Participate in a briefing with the TSC Manager and assist in transition to Recovery Organization.
 - b. Collect logs and checklist from your staff and turn over to the TSC Support Coordinator.
 - c. Standby for assignment to the Recovery Organization, return to normal work station, or dismissal.

*Continuing Activity

REFERENCE USE PROCEDURE

PRB REVIEW REQUIRED

1.0 PURPOSE

The purpose of this procedure is to provide instructions to the Maintenance Supervisor for planning and coordinating emergency maintenance and repairs.

2.0 RESPONSIBILITIES

2.1 MAINTENANCE SUPERVISOR

2.1.1 The Maintenance Supervisor shall have the following responsibilities:

2.1.1.1 Planning and coordination of emergency repair, damage control, and plant modifications.

2.1.1.2 Advise the TSC Manager on the impact of proposed emergency activities.

3.0 PREREQUISITES

An Alert, Site Area Emergency, or General Emergency has been declared or the Emergency Director (ED) has ordered activation of the TSC.

4.0 PRECAUTIONS

4.1 This procedure shall not take priority over measures required to maintain or restore the plant to a safe operating condition.

4.2 This procedure does not replace any plant operating procedure.

5.0 PROCEDURE


5.1 TSC ACTIVATION

5.1.1 For an Alert, Site Area Emergency, or General Emergency, the Maintenance Supervisor shall report to the TSC and receive a briefing from the TSC Manager.

5.1.2 The Maintenance Supervisor shall obtain and initiate the "Maintenance Supervisor Checklist".

5.2 RECOVERY

The Maintenance Supervisor shall provide support for recovery and re-entry operations as requested by the TSC Manager or ED.

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6.0 REFERENCES

6.1 VEGP EMERGENCY PLAN

6.2 Procedure 91101-C, "Emergency Response Organization"

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

END OF PROCEDURE TEXT

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MAINTENANCE SUPERVISOR CHECKLIST

Sheet 1 of 2

- DESIGNEES:**
- Maintenance Assistant Performance Team Manager
 - Maintenance Team Leaders/Assistant Team Leaders

RESPONSIBILITY:

Manage the planning and coordination of emergency repair, damage control and plant modifications. Advise the TSC Manager on the impact of proposed emergency activities. Direct maintenance operations through the OSC.


INITIAL ACTIONS

1. Report to the TSC.
2. Sign in on the Emergency Response Facility Roster.
3. Obtain work packets and emergency identification badge.
4. Receive briefing from TSC Manager.

SUBSEQUENT ACTIONS

- 1.* Maintain communications log.
- 2.* In coordination with the Engineering Supervisor, assess operation of plant systems including mechanical, electrical, and I&C equipment.
- 3.* Determine if emergency repair, damage control or plant modification operations are crucial to needs of Emergency Response Organization.
4. Provide information to OSC Manager.
- 5.* Advise TSC Manager on matters dealing with repair, maintenance and deployment of Repair and Modification Teams.
- 6.* Maintain Team Tracking Status Board.

*Continuing Activity

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MAINTENANCE SUPERVISOR CHECKLIST

SUBSEQUENT ACTIONS (CONT'D)

- 6.* Confer with TSC Manager, Engineering Supervisor and Health Physics Supervisor and provide information on:
 - a. Work to be performed.
 - b. Number of personnel required.
 - c. Tools, spare parts, and equipment needed.
 - d. Relaxation of normal work order procedures, if required.
- 7.* Request the OSC Manager to assemble and dispatch Repair and Modification Teams, as necessary.
- 8.* Determine if contaminated areas and/or equipment are crucial to needs of Emergency Response Organization and inform TSC Manager to arrange decontamination or other acceptable alternatives.
- 9.* Determine need for additional personnel and inform TSC Support Coordinator or TSC Manager.
- 10. Upon notification from the TSC Manager that a post-accident grab sample is being collected for shipment for offsite analysis, make arrangements for loading the sample into the Pooled Inventory Management System (PIMS) transport cask. Make arrangements to obtain the PIMS cask via the warehouse supervisor and assist in loading the cask when it arrives from the PIMS warehouse (located in Memphis, TN).
- 11. Perform relief and complete "General Relief Checklist" in Procedure 91101-C, "Emergency Response Organization".
- 12. After the emergency condition has been declared terminated, proceed as follows:
 - a. Participate in a briefing with the TSC Manager and assist in transition to Recovery Organization.
 - b. Collect logs and checklists from your staff and turn over to the TSC Manager.
 - c. Stand by for assignment to the Recovery Organization, return to normal work station, or dismissal.

*Continuing Activity

PRB REVIEW REQUIRED

REFERENCE USE PROCEDURE

1.0 **PURPOSE**

The purpose of this procedure is to provide instructions to the Chemistry Supervisor (TSC) during a radiological emergency.

2.0 **RESPONSIBILITIES**

2.1 **CHEMISTRY SUPERVISOR (TSC)**

2.1.1 The Chemistry Supervisor (TSC) shall have the following responsibilities:

2.1.1.1 Direct and evaluate in-plant chemistry and analyses.

2.1.1.2 Direct and evaluate post-accident sampling.

2.1.1.3 Ensure that the Emergency Response Data System (ERDS) computer is activated for the affected unit.

3.0 **PREREQUISITES**

An Alert, Site Area Emergency, or General Emergency has been declared or the Emergency Director (ED) has ordered activation of the TSC.

4.0 **PRECAUTIONS**

4.1 This procedure shall not take priority over measures required to maintain or restore the plant to a safe operating condition.

4.2 This procedure does not replace any plant operating procedures.


5.0 **PROCEDURE**

5.1 **TSC ACTIVATION**

For an Alert, Site Area Emergency, or General Emergency, the Chemistry Supervisor shall:

5.1.1 Report to the TSC.

5.1.2 Obtain and initiate the "Chemistry Supervisor (TSC) Checklist".

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5.2 RECOVERY

The Chemistry Supervisor (TSC) shall provide support for recovery and re-entry operations as requested by the TSC Manager or the ED.


6.0 REFERENCES

6.1 VEGP EMERGENCY PLAN

6.2 Procedure 91101-C, "Emergency Response Organization"

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

END OF PROCEDURE TEXT

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CHEMISTRY SUPERVISOR (TSC) CHECKLIST

- DESIGNEES:**
- Chemistry Superintendent
 - Chemistry Supervisor(s)
 - Plant Chemist
 - Chemistry Foremen
 - Chemistry Senior Nuclear Specialist(s)

RESPONSIBILITY:

Evaluates in-plant chemistry conditions and keeps TSC Manager informed of status of plant.


INITIAL ACTIONS

1. Report to the TSC.
2. Sign in on Personnel Roster.
3. Obtain work packets and emergency identification badge.
4. Activate the ERDS in accordance with the posted instructions if not already activated by the Chemistry In-plant Sampler. ERDS is required to be activated within one hour of an Alert or higher emergency declaration.
5. Ensure that the TSC Manager informs the Emergency Director that ERDS has been activated if not already done by the Chemistry In-plant Sampler.
6. Obtain briefings from the TSC Manager and Shift Chemistry In-plant Sampler/Chem. Tech on status of plant.
7. Ensure that the following position is staffed:
 - a. Chemistry Technician/In-plant Sampler
8. Advise TSC Manager when ready for operation and begin maintaining appropriate logs and checklists.

SUBSEQUENT ACTIONS

- 1.* Maintain a log.
- 2.* Direct in-plant chemistry sampling and analysis.

*Continuing Activity

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CHEMISTRY SUPERVISOR (TSC) CHECKLIST

SUBSEQUENT ACTIONS (Cont'd)

- 3.* Evaluate in-plant chemistry sample data and report abnormal results to the TSC Manager.
4. If necessary, dispatch chemistry technicians to take post-accident samples for laboratory analysis.
5. Determine release source term. Obtain a grab sample of released gas from the plant vent or air ejector condenser as applicable if release is in progress. Determine the isotopic mix of released gas.
6. Assist the Emergency Notification System (ENS) communicator with release rates and total activity calculations. Use Data Sheet 1 as needed.
7. In the event the analysis capabilities for post-accident samples are inoperative and a grab sample can not be analyzed on site, consult the TSC Manager to arrange for back-up analyses of samples at Framatome Technologies, Lynchburg VA.
8. Direct Chemistry personnel to obtain a transport cask, collect the post-accident grab sample and transport it to the loading area in accordance with plant Chemistry Procedures.
9. Perform relief and complete the General Relief Checklist in Procedure 91101-C, "Emergency Response Organization".
10. After the emergency has been declared terminated, proceed as follows:
 - a. Participate in a briefing with the TSC Manager and assist in transition to Recovery Organization.
 - b. Collect logs and checklists from your staff and turn over to the TSC Support Coordinator.
 - c. Stand by for assignment to the Recovery Organization, return to normal work station, or dismissal.

*Continuing Activity

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DATA SHEET 1

Sheet 1 of 1

TOTAL ACTIVITY CALCULATIONS FOR NRC EVENT NOTIFICATION WORKSHEET

Use the following formulas with the appropriate IPC radiation monitors for the determination of release rates. The iodine channels look at build-up on the collection media, therefore this calculation will over estimate the release rate for radioiodines.

a. Airborne Release (RE-12442, RE-12444, RE-12839):


$$\text{_____ } \mu\text{Ci/cc X _____ cfm X } 4.72\text{E-4} = \text{_____ Ci/sec}$$

b. Liquid Release (RE-018, RE-020, RE-021, or RE-0848): Liquid activity (excluding tritium and dissolved noble gases) may be obtained from liquid effluent monitors or grab samples. Liquid tritium activity is obtained from grab samples.

$$\text{_____ } \mu\text{Ci/cc X _____ gpm X } 6.30\text{E-5} = \text{_____ Ci/sec}$$

c. Total Activity:

$$\text{_____ (Ci/sec) X _____ release duration (seconds) = _____ Ci (total activity)}$$

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PRB REVIEW REQUIRED

1.0 **PURPOSE**

This procedure provides instruction for collecting and recording information obtained from Control Room instrumentation needed in assessing the extent of core damage.

2.0 **PRECAUTIONS AND LIMITATIONS**

NONE

3.0 **PREREQUISITES**

An emergency condition has been declared and core damage is suspected.

4.0 **RESPONSIBILITIES**

4.1 **ENGINEERING DEPARTMENT**

4.1.1 Engineering personnel assigned to the Technical Support Center (TSC) are responsible for overall coordination of this procedure including the assignment of responsibilities to other groups or individual as is required to complete the assessment.

4.2 **OPERATIONS DEPARTMENT**

4.2.1 The Operations Department shall execute this procedure if requested by TSC. The recorded results will be transmitted to the TSC Engineering personnel coordinating core damage assessment activities.

5.0 **MAIN BODY**

5.1 **REACTOR VESSEL LEVEL INDICATION SYSTEM (RVLIS) READINGS AND RECORDING**

5.1.1 No RCP(s) Running

5.1.1.1 Review the RVLIS indications to determine if the core was uncovered (< 64 % Full Range) at any time during the transient. If it is apparent that it was uncovered, estimate the length of time, in minutes, that it was uncovered and record on Data Sheet 1, "Control Room Instrumentation Data Record For Core Damage Assessment". If the core was never uncovered, record "0 min." on Data Sheet 1.

5.1.2 RCP(s) Running:

5.1.2.1 Review the RVLIS indications to determine if the core was uncovered (see Dynamic Ranges below) at any time during the transient.

Number of RCP's Running	RVLIS Dynamic Range
4	<44%
3	<30%
2	<20%
1	<13%

If it is apparent that it was uncovered, estimate the length of time, in minutes, that it was uncovered and record on Data Sheet 1, "Control Room Instrumentation Data Record For Core Damage Assessment". If the core was never uncovered, record "0 min." on Data Sheet 1.


5.2 CORE EXIT THERMOCOUPLE TEMPERATURES

5.2.2 Record on the core map of Data Sheet 1, "Control Room Instrumentation Data Record For Core Damage Assessment", all temperatures that exceed 750 degrees Fahrenheit during the incident along with the corresponding thermocouple identification numbers. A core map is provided for additional use in display of the location of thermocouples indicating high temperatures.

5.3 RADIATION MONITOR READINGS AND RECORDS

5.3.1 Obtain the maximum CET temperatures observed, maximum containment high range radiation monitor (RE-005/006) reading and time of reading, minimum RCS pressure, hot leg RTD temperature, RVLIS reading, and containment spray status.

5.3.2 Record the values obtained in the spaces provided on Data Sheet 1.

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5.4 POST-ACCIDENT RCS ADDITION VOLUME DETERMINATION

5.4.1 Determine volume of all Reactor Coolant System (RCS) additions made during the accident and prior to the collection of RCS core damage assessment data as follows:

- a. From Control Room tank level indications for the refueling water storage tank (RWST) and boric acid tank prior to and following safety injection, estimate the volume of each addition, and convert to gallons.
- b. If the accumulators discharge, add 26,900 gallons.
- c. Record the estimated addition for each source on the appropriate line in Data Sheet 2, "Post-Accident RCS Addition Volume Determination".
- d. Record initial Tav_g at commencement of transient.

5.5 Transmit the completed Data Sheets to the Engineering personnel coordinating core damage assessment activities.

6.0 REFERENCES

6.1 VEGP EMERGENCY PLAN

6.2 PROCEDURES

6.2.1 91502-C, "Core Damage Assessment"

6.2.2 19200-C, "F-0 Critical Safety Function Status Tree"

6.3 Westinghouse Owners Group Core Damage Assessment Guidance WCAP-14696-A, Revision 1, November 1999.

6.4 Emergency Response Guide FR – S/C/H

END OF PROCEDURE TEXT

DATA SHEET 1

Sheet 1 of 2

UNIT 1 - CONTROL ROOM INSTRUMENTATION DATA RECORD FOR CDA

Date: _____ Time: _____ Performed by: _____

Length Of Time Core Uncovered (minutes) _____

Minimum RVLIS Readings (%) _____ Containment High Range Radiation Monitor

Containment Building RE-005/006 Output (mrem/hr) _____

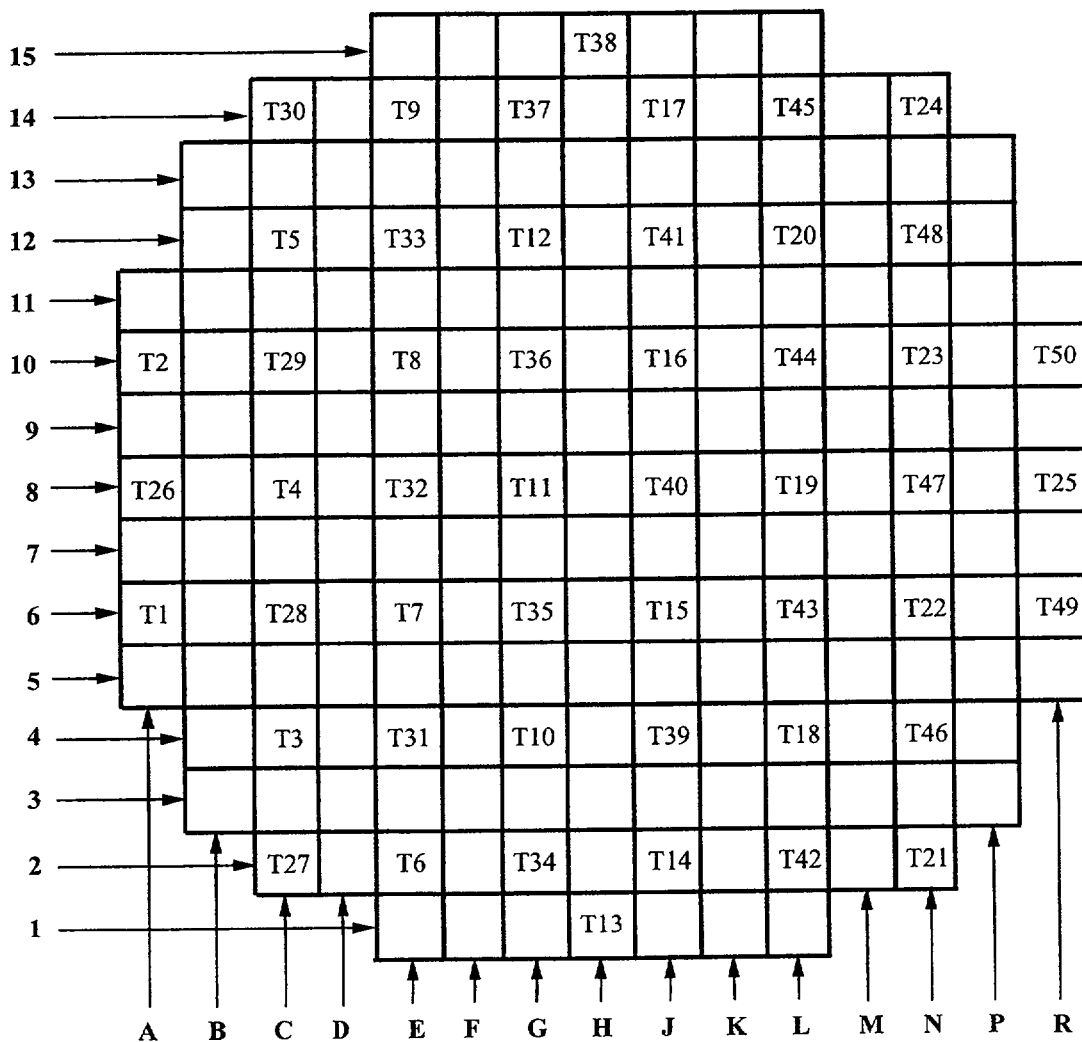
Atmosphere Hydrogen (%) _____ *(R6203) / (R6204)

*(UV 7501)

Containment Spray Operating (Yes/No) _____ Minimum RCS Pressure _____

* - Denotes Integrated Plant Computer Points Hot Leg RTD Temperature _____

NORTH
0°



Thermocouple Temperatures >711 Degrees F

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DATA SHEET 1

Sheet 2 of 2

UNIT 2 - CONTROL ROOM INSTRUMENTATION DATA RECORD FOR CDA

Date: _____ Time: _____ Performed by: _____

Length Of Time Core Uncovered (minutes) _____

Minimum RVLIS Readings (%) _____ Containment High Range Radiation Monitor

Containment Building RE-005/006 Output (mrem/hr) _____

Atmosphere Hydrogen (%) _____ *(R6203) / (R6204)

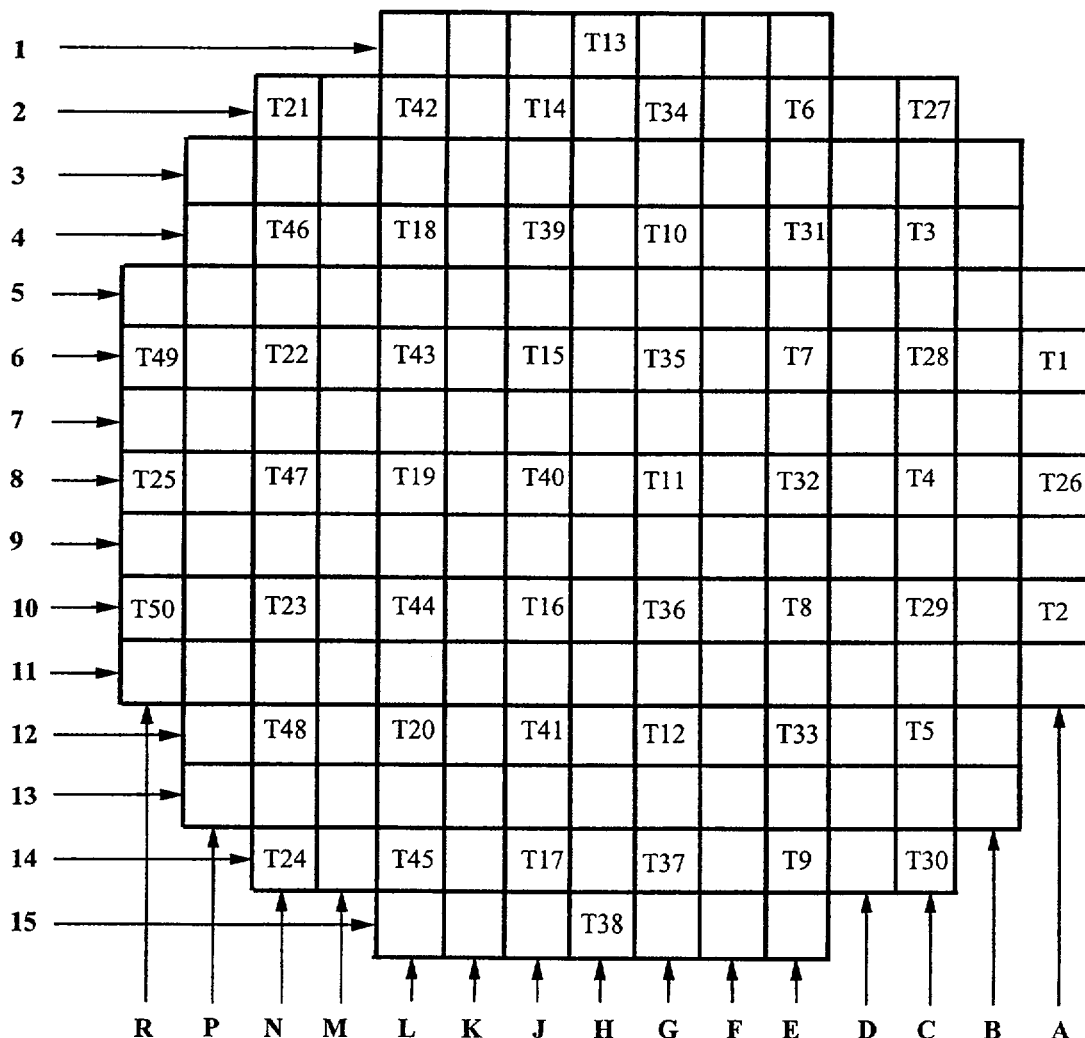
*(UV 7501)

Containment Spray Operating (Yes/No) _____ Minimum RCS Pressure _____

* - Denotes Integrated Plant Computer Points Hot Leg RTD Temperature _____

NORTH

180°



Thermocouple Temperatures >711 Degrees F

DATA SHEET 2

Sheet 1 of 1

POST-ACCIDENT RCS ADDITION VOLUME DETERMINATION

Date: _____ Time: _____ Performed by: _____


Unit Number _____

1.

SOURCE OF ADDITION	TANK LEVEL (%) PRE-ACCIDENT	POST-ACCIDENT	DELTA LEVEL		
	From Logs (%)	Present Level (%)	Pre-Post (%)	Conversion factor (GAL/%)	Gallons Added
RWST *(UV 6130)	(_____ - _____)	= _____	X	6,900	= _____
Boric Acid Tank *Ch. 1 - (L6321) *Ch. 4 - (L6320)	(_____ - _____)	= _____	X	442	= _____
Accumulators (If discharged add 26,900 gal) *Tank 1 - (LO 490) *Tank 2 - (LO 491) *Tank 3 - (LO 492) *Tank 4 - (LO 493)					= _____
TOTAL GALLONS ADDED					_____

2. Record T_{avg} at the commencement of transient _____
*(UT 5468)

* - Denotes Integrated Plant Computer Points

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REFERENCE USE PROCEDURE

PRB REVIEW REQUIRED

1.0 PURPOSE

The purpose of this procedure is to provide instructions to the Operations Support Center (OSC) Manager for overall direction of the OSC.

2.0 RESPONSIBILITIES

2.1 OSC MANAGER

2.1.1 The OSC Manager shall have the following responsibilities:

2.1.1.1 Managing the OSC and directing OSC emergency response personnel.

2.1.1.2 Coordinating staff resources available in the OSC and ensuring proper composition of Radiological Emergency Teams (RETs)

2.1.1.3 Allocating emergency equipment and supplies.

2.1.1.4 Supervising the movement of OSC personnel in the plant and onsite except those assigned to the Technical Support Center (TSC), Security Department, Control Room and those assigned to In-Plant or Field Monitoring Teams.

2.1.1.5 Ensuring that all VEGP employees and vendor/contractors reporting to the OSC meet the requirements of the Fitness For Duty (FFD) policy for recall of off-duty personnel.

2.1.1.6 Ensuring that all teams receive a proper briefing to include radiological conditions.

2.1.1.7 Conducting and maintaining personnel accountability for those personnel assigned to the OSC.


2.1.1.8 Ordering evacuation of OSC once approved by the TSC Manager.

3.0 PREREQUISITES

An Alert, Site Area Emergency or General Emergency has been declared or the Emergency Director (ED) has ordered activation of the OSC.

4.0 PRECAUTIONS

4.1 This procedure shall not take priority over measures required to maintain or restore the plant to a safe operating condition.

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4.2 This procedure does not replace any operating procedure. During an emergency condition, the OSC Manager will continue to use appropriate plant procedures in parallel with this and other Emergency Plan Implementing Procedures.

5.0 **PROCEDURE**

5.1 **OSC ACTIVATION**

The OSC Manager shall report to the OSC, receive a briefing from the TSC Manager or ED (TSC not activated) and implement the OSC Manager's Checklist.

5.2 **STAFF SUPERVISION**

5.2.1 The OSC Manager shall provide direction to the activities of the OSC Staff which may consist of the following:

5.2.1.1 Health Physics/Chemistry Foreman

5.2.1.2 Maintenance Foreman (Mechanical)

5.2.1.3 Maintenance Foreman (Electrical)

5.2.1.4 I&C Foreman

5.2.1.5 I&C Technicians

5.2.1.6 Mechanics

5.2.1.7 Electricians

5.2.1.8 HP Technicians


5.2.1.9 Chemistry Technicians

5.2.1.10 System Operators

5.2.1.11 Off-Shift Personnel or others assigned to OSC

5.2.1.12 OSC Status Loop Communicator (s)

5.2.2 In addition to providing manpower for Emergency Teams, OSC Staff should be employed to assist in developing possible preventive and corrective actions.

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6.0 REFERENCES


6.1 VEGP EMERGENCY PLAN

6.2 PROCEDURES

- 6.2.1 91101-C, "Emergency Response Organization"
- 6.2.2 91202-C, "Activation And Operation Of The OSC"
- 6.2.3 91204-C, "Emergency Response Communications"
- 6.2.4 91301-C, "Emergency Exposure Guidelines"
- 6.2.5 91302-C, "In-Plant Sampling And Surveys"
- 6.2.6 91303-C, "Field Sampling And Surveys"
- 6.2.7 91305-C, "Protective Action Guidelines"
- 6.2.8 91306-C, "Contamination Monitoring And Decontamination"
- 6.2.9 91307-C, "Contaminated Injury"
- 6.2.10 91401-C, "Assembly And Accountability"
- 6.2.11 92000-C, "Fire Protection Program"

- 6.3 NUREG-0654, FEMA-REP-1, Rev. 1, "Criteria for Preparation and Evaluation of Radiological Emergency Response Plans and Preparedness in Support of Nuclear Power Plants"**

END OF PROCEDURE TEXT

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OSC MANAGER CHECKLIST


- DESIGNEES:**
- Maintenance Manager
 - Maintenance Superintendent
 - Maintenance Team Leader(s)

RESPONSIBILITY:

Perform OSC activation and report readiness to TSC Manager. Coordinate, assemble and dispatch manpower and equipment resources available at the OSC.

INITIAL ACTIONS

1. Report to the OSC (Maintenance Building, second floor lunch room).
2. Sign in on Emergency Response Facility Roster, Data Sheet 1 in Procedure 91202-C, "Activation And Operation of the Operations Support Center" and badge in on the OSC ACAT.
3. Assign an individual to ensure that all personnel reporting to the OSC sign in on the Emergency Response Facility Roster and badge in on the OSC ACAT.
4. Obtain OSC Managers Handbook and emergency identification badge.
5. Direct an individual to complete the OSC Activation Checklist in Procedure 91202-C.
6. As designated OSC staff begin reporting to the OSC, ensure they obtain copies of procedures, checklists and other supplies from OSC supply lockers.
7. When personnel, equipment and supplies are in a state of readiness to support the emergency, activate the OSC and inform the TSC Manager or ED in the Control Room (TSC not activated) that the OSC is activated. Maintain communications log and status boards. Provide an initial briefing.
8. Conduct personnel accountability of OSC staff (Procedure 91401-C, "Assembly And Accountability").
 - a. Ensure all personnel log in on OSC ACAT.
 - b. In addition, obtain the name and badge number (not ACAD) of all personnel and record on Data Sheet 2 or equivalent of Procedure 91401-C, "Assembly And Accountability".
 - c. If the ACAT is not operational, deliver a copy of the OSC Emergency Response Facility Roster to the PESB within 20 minutes of the notification of the event over the PA.

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OSC MANAGER CHECKLIST

INITIAL ACTIONS (CONT'D)

- 9. Dispatch visitors and non-essential personnel to the Administration Building.
- 10. Designate HP Technician(s) to staff the Health Physics (HP) access control point if not completed by HP Supervisor in the TSC.

NOTE


The initial field monitoring team will be briefed and dispatched by the TSC.

- 11. Form and dispatch (Notify the EOF Manager or TSC Manager) the second field monitoring team. Dispatch the third team if requested by the Dose Assessment Manager.

NOTE

Consult with HP Supervisor in TSC or HP Foreman to determine appropriate relocation center.

- 12. Assign a HP Technician or other qualified HP staff member to report with Evacuation Leader (Security Officer) to the offsite relocation center at an Alert to set up for contamination monitoring and decontamination should a Site Evacuation be ordered.
- 13. Ensure that ALL VEGP employees and vendor/contractors reporting to the OSC meet the requirements of the Fitness For Duty (FFD) policy for recall of off-duty personnel. The Safety and Health Department is available to help make FFD determinations.
- 14. Establish communications per Procedure 91204-C, "Emergency Response Communications."

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OSC MANAGER CHECKLIST

INITIAL ACTIONS (CONT'D)

15. The OSC Manager has the option to release excess personnel to:
- a. Be sent home, after logging out, with instructions to return for a later shift or
 - b. The maintenance building to relieve overcrowding.

If the OSC Manager elects option b the following steps should be taken:

- Designate personnel who can leave the OSC and have them log out.
- Instruct them not to leave the maintenance building unless approved by OSC Manager.
- Instruct remaining personnel not to leave OSC unless they log out and are relieved.
- Instruct all personnel that subsequent briefings will be given over the maintenance building public address system.
- Instruct all personnel to minimize entry and exit of the OSC and to always log in and out when going into and out of the maintenance building.
- Instruct Health Physics to conduct habitability surveys of the maintenance areas when applicable.


SUBSEQUENT ACTIONS

- 1.* Maintain a current Emergency Response Facility Roster including assigned teams.
- 2.* Periodically brief staff of plant conditions and work evolution's.

OSC Habitability and Evacuation

- 1.* If a release has occurred, direct a HP Technician to conduct an area survey inside the OSC.
2. If the survey indicates airborne activity in excess of the criteria detailed in Procedure 91202-C, "Activation And Operation Of The OSC", immediately inform the HP Supervisor (at the TSC, if activated) or the ED (in Control Room if TSC not yet activated).
3. Receive instructions from the TSC Manager or designee concerning OSC evacuation and relocation.
4. Ensure all OSC staff and the OSC tool kit, flashlights, and other appropriate equipment are relocated. Inform the TSC Manager when evacuation and relocation have been completed.

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SUBSEQUENT ACTIONS (CONT'D)


Radiological Emergency Teams (RETs) - General

NOTES

- a. To expedite the dispatch of the RETs, direct the appropriate discipline OSC maintenance foreman to form and brief the teams.
- b. One-person teams may be formed, briefed, and dispatched if there are no safety concerns and the radiological conditions are normal. (e.g., person to document control, person to warehouse, person to perform habitability of PESB)
- c. The first letter of the Emergency Response Facility that the team is dispatched from should precede the team number. (i.e. "T-1" for the first team dispatched from the TSC or "O-1" for the first team dispatched from the OSC). Teams are to maintain the same name throughout the task assigned to them.

- 1.* Ensure that RETs are staffed according to the requirements of the assignment and are properly briefed and equipped. (Briefing may occur at TSC or HP Control Point if appropriate.)
- 2.* Analyze potential exposures of RETs. Consult with the HP Foreman or the HP Supervisor if the TSC has been activated.
- 3.* If emergency exposures are projected to exceed 10CFR20 limits, ensure authorization has been obtained from the ED and that a Permit for Emergency Radiation Exposure (PERE) has been initiated.
- 4.* Inform RETs who are expected to receive emergency exposures in excess of 10CFR20 limits, consider the following selection criteria (Procedure 91301-C, "Emergency Exposure Guidelines").
 - a. Personnel should be familiar with the risks of exposure to high radiation levels which are likely during emergency conditions.
 - b. Personnel shall receive a briefing on the emergency situation. For exposures greater than 25 rem, personnel should be volunteers and aware of the risks involved.

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SUBSEQUENT ACTIONS (CONT'D)

- c. Declared pregnant women shall be excluded from receiving emergency exposures.
 - d. Emergency exposures in excess of 25 rem, for life saving missions, should be limited to one occurrence in a lifetime.
 - e. Administrative methods to minimize personnel exposure to As Low As Reasonably Achievable (ALARA) should remain in effect to the extent consistent with timely rescue, corrective and protective actions.
 - f. Personnel should wear dosimeters of a type and range appropriate for the anticipated exposure.
 - g. Protective clothing, respirators, self-contained breathing apparatus, and thyroid blocking agents (i.e., KI-Potassium Iodide) should be used as appropriate for the situation.
- 5.* Ensure that Radiation Work Permits (as time permits) or PERE have been properly completed.
 - 6.* As necessary, ensure that potassium iodide (KI) is available for distribution to RETs.
 - 7.* Designate one person on each RET to be the RET Leader and instruct him to contact the OSC Communicator/Recorder at least every one-half hour via radio or plant telephone. In-Plant Monitoring Teams are to be instructed to contact HP Supervision via HP Control Point.
 - 8.* Appoint an on-the-scene response leader when teams from different disciplines or departments are dispatched in response to a plant emergency event.
 - 9.* When briefing RETs, include the following information:
 - a. Radiological conditions (high external radiation levels, surface or airborne contamination), ALARA, and stay times. (This step may be performed at the HP control point.)
 - b. Other emergency conditions and hazards (fire, steam, etc.)
 - c. Equipment and supplies needed and location.
 - d. Special instructions on communications.

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OSC MANAGER CHECKLIST


SUBSEQUENT ACTIONS (CONT'D)

- e. Radiation Work Permit and/or PERE, as appropriate. Ensure RET is familiar with restrictions.
 - f. Use of potassium iodide per Procedure 91305-C, "Protective Action Guidelines".
 - g. Other information provided in checklist under specific area.
- 10.* Track movements of RETs and have the OSC Communicator/Recorder or other OSC staff record team locations and other pertinent data on Status Boards.
- 11.* Ensure that teams are debriefed upon return to the OSC and that important information obtained by the team is disseminated to the TSC. Report all unrecorded exposures to the HP Supervisor.

Search and Rescue

1. Upon instruction from the ED or TSC Manager, ensure that the following actions are taken to form and dispatch Search and Rescue Team(s).
- a. Each team consists of at least two members that are familiar with the plant, one must be First-Aid trained.
 - b. At least one is a HP Technician if radiological conditions warrant.
2. Obtain information from Security concerning identification and last known location of missing persons.
3. Provide team(s) with search and rescue data:
- a. I.D. of missing person(s).
 - b. Last known location (check Radiation Work Permit if one was issued).
 - c. Job individual(s) was/were working on.
 - d. Pertinent details of plant status.
 - e. Other information provided in checklist under RETs-General.

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OSC MANAGER CHECKLIST

SUBSEQUENT ACTIONS (CONT'D)

4. If an ambulance is required, perform the following:
 - a. Inform the TSC Manager that an ambulance is required.
 - b. Designate one person to meet, prepare and accompany the ambulance to the injured person (Procedure 91307-C, "Contaminated Injury").
 - c. Inform Security of ambulance arrival (Procedure 91307-C, "Contaminated Injury") to expedite site access and issue dosimetry.


Contaminated Injury

1. Upon instruction from the Control Room, Emergency Director or TSC Manager, form First Aid Team (Procedure 91307-C, "Contaminated Injury").
 - a. Each team consists of at least two members, First Aid trained.
 - b. At least one is a HP Technician.

NOTE

Team members that are paged by the Control Room on the 911 pagers receive their brief, concerning the specifics of the event in step 2 below, when they call back to the Control Room.

2. Obtain information from the TSC Manager or his designee concerning specifics of the contaminated injury and brief the team.
 - a. Number of injured individual(s), names and affiliations.
 - b. Location (unit, building, elevation and column coordinates).
 - c. Injury type and severity.
 - d. Contamination of injured personnel.
3. Ensure that the team understands priorities of treatment of injury, monitoring, and decontamination.
4. Instruct the team to maintain communications with the OSC Communicator/Recorder.

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OSC MANAGER CHECKLIST

SUBSEQUENT ACTIONS (CONT'D)


5. Ensure that the HP Technicians are aware of their responsibilities during and after the transport of contaminated injured personnel offsite (see Procedure 91307-C, "Contaminated Injury").

Damage Assessment/Control/Repair

1. Receive information from TSC Manager, Maintenance Supervisor and HP Supervisor on the following items.
 - a. Work to be performed, location and route.
 - b. Number of people required.
 - c. Requirements to follow normal work order procedures.
2. Form, brief and dispatch Damage Control Team, upon direction from Control Room or TSC.
 - a. In Contaminated or High Radiation Areas, team shall consist of at least two members, one of whom shall be an HP Technician, and other necessary Technicians or Equipment Operators.
 - b. In the absence of work in high radiation areas, the team must consist of at least two members but need not include an HP Technician.
3. Receive report from RET Leader (or appropriate OSC Supervisor) upon leaving if task cannot be completed in allotted stay time or allotted dose.

In-Plant Monitoring Teams

1. Upon request from the HP Supervisor, form and dispatch In-Plant Monitoring Teams (Procedure 91302-C, "In-Plant Sampling And Surveys").
 - a. Each team consists of at least two members.
 - b. At least one is a HP technician.
2. Ensure that teams understand that they report to the HP Supervisor at the TSC through the HP Control Point.
3. Account for the teams until notified by the HP Supervisor that team accountability has been assumed by the TSC.

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SUBSEQUENT ACTIONS (CONT'D)

Field Monitoring Teams

1. Upon activation of the OSC, dispatch two (2) qualified personnel (1 team) per Procedure 91303-C, "Field Sampling And Surveys." Dispatch total of four (4) personnel (2 teams), if requested by the Dose Assessment Manager. Inform the EOF or TSC HP Supervisor when teams have been dispatched.
2. Account for the Field Monitoring Teams until notified by the Dose Assessment Manager or HP Supervisor that team accountability has been assumed by the EOF.

Site Evacuation

1. At the Alert level, dispatch a monitoring team (Health Physics Tech or other qualified HP staff member and Evacuation Leader assigned by Security) to the relocation center designated by the HP Supervisor.
2. When Site Evacuation is ordered, dispatch additional monitoring teams to the relocation center as needed.


Fire

1. Upon instruction from the TSC Manager or the ED, assemble and dispatch personnel to augment the Fire Brigade (Procedure 92000-C, "Fire Protection Program").
2. Inform the TSC Manager if offsite fire fighting assistance is required.

Personnel

- 1.* Hold periodic briefings with key OSC staff to review the status of corrective and protective actions.
- 2.* Maintain accountability of all OSC staff by periodically checking on team status and personnel located at OSC.
- 3.* Coordinate OSC personnel requirements with the Support Coordinator or his designee at the TSC.

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SUBSEQUENT ACTIONS (CONT'D)

Emergency Equipment and Supplies

- 1.* Manage the allocation of emergency equipment and supplies for the VEGP Emergency Response Teams.
- 2.* As necessary, request additional equipment and supplies via the TSC Support Coordinator.


Relief

1. Complete General Relief Checklist in Procedure 91101-C, "Emergency Response Organization".

Emergency Termination

1. After the emergency condition has been declared terminated, proceed as follows:
 - a. Contact the TSC Manager or the ED to determine if OSC staff will be required during transition to the recovery phase.
 - b. Hold a final briefing with key OSC staff.
 - c. Ensure that all OSC staff are accounted for.
 - d. If Emergency Teams are still on assignment, ensure that they are informed of the transition to recovery phase and related reporting requirements.
 - e. Collect all logs and checklists and provide these to the TSC Manager.
2. Restore the OSC to the ready condition.
3. Inventory and seal all emergency kits.

* Continuing Activity

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REFERENCE USE PROCEDURE

PRB REVIEW REQUIRED

1.0 PURPOSE

The purpose of this procedure is to provide instructions for the activation and operation of the Operations Support Center (OSC).

2.0 RESPONSIBILITIES

2.1 The first knowledgeable person from the Emergency Response Organization (ERO) arriving at the OSC shall be responsible for initiating preparations to physically activate the OSC.

2.2 The OSC Manager shall be responsible for declaring the OSC operational and coordinating Radiological Emergency Team (RET) formation and dispatch.

2.3 The OSC Status Loop Communicator shall be responsible for supporting the OSC Manager with communications between the OSC and other Emergency Response Facilities and RETs.

2.4 I&C Technicians, Electricians, Mechanics, Chemistry Technicians, Health Physics Technicians, oncoming shift personnel and off-shift operators shall be responsible for assisting in determining repair/damage control alternatives, corrective actions and serving as members of RETs.

2.5 The TSC Manager shall be responsible for ordering evacuation of the OSC based upon recommendations from the OSC Manager and/or the Health Physics Supervisor.

3.0 PREREQUISITES

3.1 An Alert, Site Area Emergency or General Emergency has been declared or the Emergency Director (ED) has ordered activation of the OSC.

3.2 For a Notification of Unusual Event, the ED may order partial activation of the OSC to provide manpower resources for assignment to RETs.

4.0 PRECAUTIONS

If the radiological conditions indicate that the OSC is uninhabitable, the TSC Manager should consider evacuation of the OSC and to reassemble at the TSC and/or the EOF.

5.0 **PROCEDURE**

5.1 **ACTIVATION**

5.1.1 The ED shall order activation of the OSC, which is located on the second floor of the Maintenance Building, and notifications of appropriate OSC staff will be made per Procedure 91002-C, "Emergency Notifications". The OSC will be operational (capable of being activated) within about an hour of initial notification.

NOTES

OSC personnel that are already in the field performing their emergency duties may be credited as minimum shift staffing for activation. (i.e. HP Technicians/FMT members/crafts).


5.1.1.1 To declare the facility activated the following minimum OSC staff must be present to perform the following functions:

<u>POSITION</u>	<u>FUNCTION</u>
• OSC Manager	OSC Management
• Health Physics Technicians (2) (May be located at TSC or HPCP)	Radiation Protection/First Aid
• Field Monitoring Personnel (2) (Filled by on-shift personnel for first FMT)	Offsite Surveys
• Electricians (2)	Electrical Maintenance
• Mechanics (2)	Mechanical Maintenance
• Instrument & Control Technicians (2)	Instrument & Control Maintenance


NOTE

The first letter of the Emergency Response Facility that the team is dispatched from should precede the team number. (i.e. "T-1" for the first team dispatched from the TSC or "O-1" for the first team dispatched from the OSC). Teams are to maintain the same name throughout the task assigned to them.

5.1.2 The following personnel who are members of the RETs, shall report to the OSC, obtain dosimetry and emergency identification badges, sign in on the "Emergency Response Facility Roster", Data Sheet 1, or similar form, set up work stations inclusive of status boards, and follow the directions of the OSC Manager:

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- 5.1.2.1 Maintenance Team Leaders/Assistant Team Leaders not assigned to the TSC.
- 5.1.2.2 I&C Technicians
- 5.1.2.3 Mechanics
- 5.1.2.4 Electricians
- 5.1.2.5 Chemistry and Health Physics Technicians not assigned to TSC or control point.
- 5.1.2.6 Other Operators
- 5.1.2.7 OSC Support Staff Personnel
 - 5.1.2.7.1 Nuclear Specialist
 - 5.1.2.7.2 Work Planners
 - 5.1.2.7.3 Quality Control Specialist
 - 5.1.2.7.4 Performance Team Technical Staff
- 5.1.2.8 OSC Status Loop Communicator(s)
- 5.1.3 If other personnel have assumed their assigned position, stand by the OSC for second shift duty or other assignment in accordance with directions from the OSC Manager.
- 5.1.4 The OSC Manager shall report OSC readiness per the OSC Manager Checklist, Procedure 91104-C, "Duties Of The OSC Manager".
- 5.2 FUNCTIONS AND OPERATIONS**
 - 5.2.1 After activation, the following functions shall be performed at the OSC according to the organization shown in Figure 1:
 - 5.2.1.1 Serve as the assembly and staging area for personnel pooled for emergency response.
 - 5.2.1.2 Respond to requests from the ED and TSC concerning deployment of RETs.
 - 5.2.1.3 Management of emergency equipment and supplies.
 - 5.2.1.4 Coordination of movement of personnel in the plant and onsite, except for those assigned to the TSC and Control Room.

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5.2.2 The OSC Manager shall coordinate the activities of the Search and Rescue, First Aid, Damage Assessment, Damage Control, and Repair and Modification Teams. This shall include ensuring that teams are properly briefed and equipped prior to dispatch and debriefed upon return to the OSC. He shall maintain a communications logbook and ensure that important information obtained by these teams is disseminated to the TSC and Control Room, as appropriate.

5.2.3 The OSC Manager shall issue vehicle and fuel pump keys to the offsite survey teams.

5.2.4 The OSC Status Loop Communicator(s) shall report directly to the OSC Manager and maintain communications logs and status boards.

5.2.5 The OSC support staff personnel shall conduct personnel accountability of OSC Staff, under the direction of the OSC Manager, per Procedure 91401-C, "Assembly and Accountability".

5.2.6 Technicians, Off-shift Operators and oncoming shift personnel shall assist the OSC Manager and serve as members of emergency teams. Team members shall be qualified as RET members. Each team shall include at least one health physics technician if radiological conditions warrant. The composition of teams, reporting requirements and appropriate procedures/checklists are as follows:

5.2.6.1 Search and Rescue Team

a. Designees and Qualifications:


At least two members that are familiar with the plant and ONE must be First Aid-trained, ONE being a Health Physics Technician if radiological conditions warrant. Team formed by OSC Manager or designee.

b. Reporting Requirements:

Team Leader (designated by OSC Manager) reports to the OSC Manager directly, or via OSC Foreman/Supervisor at least every one-half hour by hand-held radio, plant telephone, or page.

c. Procedure/Checklist:

Procedure 91306-C, "Contamination Monitoring and Decontamination".

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NOTE

First Aid Team members that are paged by the Control Room on the 911 pagers receive their brief, concerning the specifics of the event, when they call back to the Control Room.

5.2.6.2 First Aid Team

a. Designees and Qualifications:

At least two members, who are First Aid-trained, ONE being a Health Physics Technician if the injured person is potentially contaminated.

b. Reporting Requirements:

Team Leader (designated by OSC Manager) reports to the OSC Manager directly or via OSC Foreman/Supervisor at least every one-half hour by hand-held radio, plant telephone or page.

c. Procedures/Checklists:

Procedure 91306-C, "Contamination Monitoring and Decontamination".
Procedure 91307-C, "Contaminated Injury".

5.2.6.3 Damage Assessment/Control Team

a. Designees and Qualifications:

At least two appropriately qualified OSC personnel. Formed by OSC Manager or designee.

b. Reporting Requirements:

Team Leader (designated by OSC Manager) reports to OSC Manager directly or via OSC Foreman/Supervisor at least every one-half hour by hand-held radio, plant telephone or page.

c. Procedure/Checklist:

Procedure 91306-C, "Contamination Monitoring and Decontamination", if Health Physics Technician accompanies team.



5.2.6.4 Repair and Modification Team

a. Designees and Qualifications:

At least two appropriately qualified OSC personnel. Formed by OSC Manager or designee.

b. Reporting Requirements:

Team Leader (designated by OSC Manager) reports to OSC Manager directly or via OSC Foreman/Supervisor at least every one-half hour by hand-held radio, plant telephone or page.

c. Procedures/Checklists:

Procedures 91306-C, "Contamination Monitoring and Decontamination", if Health Physics Technician accompanies team.

NOTE

In-plant monitoring teams are normally formed at the Health Physics Control Point.

5.2.6.5 In-Plant Monitoring Team

a. Designees and Qualifications:


At least two members, with at least one being a Health Physics Technician. Formed by OSC Manager or designee when dispatched from the OSC.

b. Reporting Requirements:

Team Leader (designated by OSC Manager when dispatched from the OSC) reports at least every one-half hour to Health Physics Supervisor or via Survey Team Communicator in the TSC by hand-held radio, plant telephone or page.

c. Procedure/Checklist:

Procedure 91302-C, "In-Plant Sampling and Surveys".

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5.2.6.6 Back-up Fire Brigade

a. Designees and Qualifications:

Assigned Fire Brigade personnel. Formed by OSC Manager or designee.

b. Reporting Requirements:

Team Leader (designated by OSC Manager) reports to Fire Brigade Captain and OSC Manager when assigned task is completed.

c. Procedure/Checklist:

Procedure 92000-C, "Fire Protection Program".

5.2.6.7 Field Monitoring Team

a. Designees and Qualifications:

Assigned Field Monitoring Team (FMT) personnel. At least two members who are Field Monitoring Team trained.


b. Reporting Requirements:

Team Leader (designated by OSC Manager or designee) reports at least every one-half hour to the Dose Assessment Manager (or HP Supervisor if the EOF is not activated) via the Field Monitoring Team Communicator in TSC or EOF by mobile and/or hand held radio.

c. Procedures/Checklist

Procedure 91303-C, "Field Sampling and Surveys".

Procedure 91306-C, "Contamination Monitoring and Decontamination".

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5.2.6.8 Site Evacuation Team

a. Designees and Qualifications:

At least two members with one being a Health Physics Tech or other qualified HP staff member and an assigned Evacuation Team Leader (Nuclear Security Officer). Team formed by the OSC Manager or his designee.

b. Reporting Requirements:

Team leader provides periodic progress report to the OSC Manager directly or via OSC Foreman/Supervisor by radio or telephone.

c. Procedures/Checklists:

Procedure 91306-C, "Contamination Monitoring and Decontamination"

Procedure 91403-C, "Site Evacuation", Evacuation Leader Checklist


5.2.7 Prior to activation of the OSC, the ED may dispatch Emergency Teams from assigned shift personnel. In this case, teams will be formed by and report to the ED, or his designee.

NOTES

a. Communications links available in the OSC are described in Procedure 91204-C, "Emergency Response Communications".

b. Emergency equipment and supplies stored at or near the OSC are detailed in Procedure 91702-C, "Emergency Equipment and Supplies" or 91705-C, "Inventory And Testing Of Emergency Preparedness Material/Equipment Which Are Not Part Of The Emergency Kits".

5.2.8 The OSC Manager will make provisions for a shift change within 12 to 16 hours of the initiation of the current shift.

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5.3 OSC EVACUATION


- 5.3.1 Evacuation of the OSC should be considered if the facility is not functional or its radiological conditions reach or exceed either or both of the following values:
- a. Dose Rate = 100 mRem/hr
 - b. Iodine Activity - $2.7E-7$ μ Ci/cc
- 5.3.2 The TSC Manager may order evacuation of the OSC as recommended by the OSC Manager. He shall instruct the OSC Manager to relocate staff, equipment and supplies to the TSC and/or the EOF, as appropriate.
- 5.3.3 The OSC Manager shall determine the reassembly points for the OSC staff and direct the evacuation. Personnel who may be called on for immediate support will be relocated to the TSC.
- 5.3.4 The OSC Manager shall contact all RETs performing in-plant activities and inform them of OSC evacuation, interim communications methods and reassembly locations.
- 5.3.5 The OSC Manager shall keep the TSC Manager apprised of all phases of the evacuation and shall report completion of relocation.

6.0 REFERENCES

6.1 VEGP EMERGENCY PLAN

6.2 PROCEDURES

- 6.2.1 91002-C, "Emergency Notifications"
- 6.2.2 91104-C, "Duties of the OSC Manager"
- 6.2.3 91204-C, "Emergency Response Communications"
- 6.2.4 91302-C "In-Plant Sampling and Surveys"
- 6.2.5 91303-C, "Field Sampling And Surveys"
- 6.2.6 91306-C, "Contamination Monitoring and Decontamination"

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- 6.2.7 91307-C, "Contaminated Injury"
- 6.2.8 91401-C, "Assembly and Accountability"
- 6.2.9 91702-C, "Emergency Equipment And Supplies"
- 6.2.10 91705-C, "Inventory And Testing Of Emergency Preparedness Material/Equipment Which Are Not Part Of The Emergency Kits"
- 6.2.11 92000-C, "Fire Protection Program"
- 6.3 NUREG-0654, FEMA-REP-1, Rev 1, "Criteria for Preparation and Evaluation of Radiological Emergency Response Plans and Preparedness in Support of Nuclear Power Plants"
- 6.4 NUREG-0696, "Functional Criteria for Emergency Response Facilities"

END OF PROCEDURE TEXT



OSC ORGANIZATION CHART

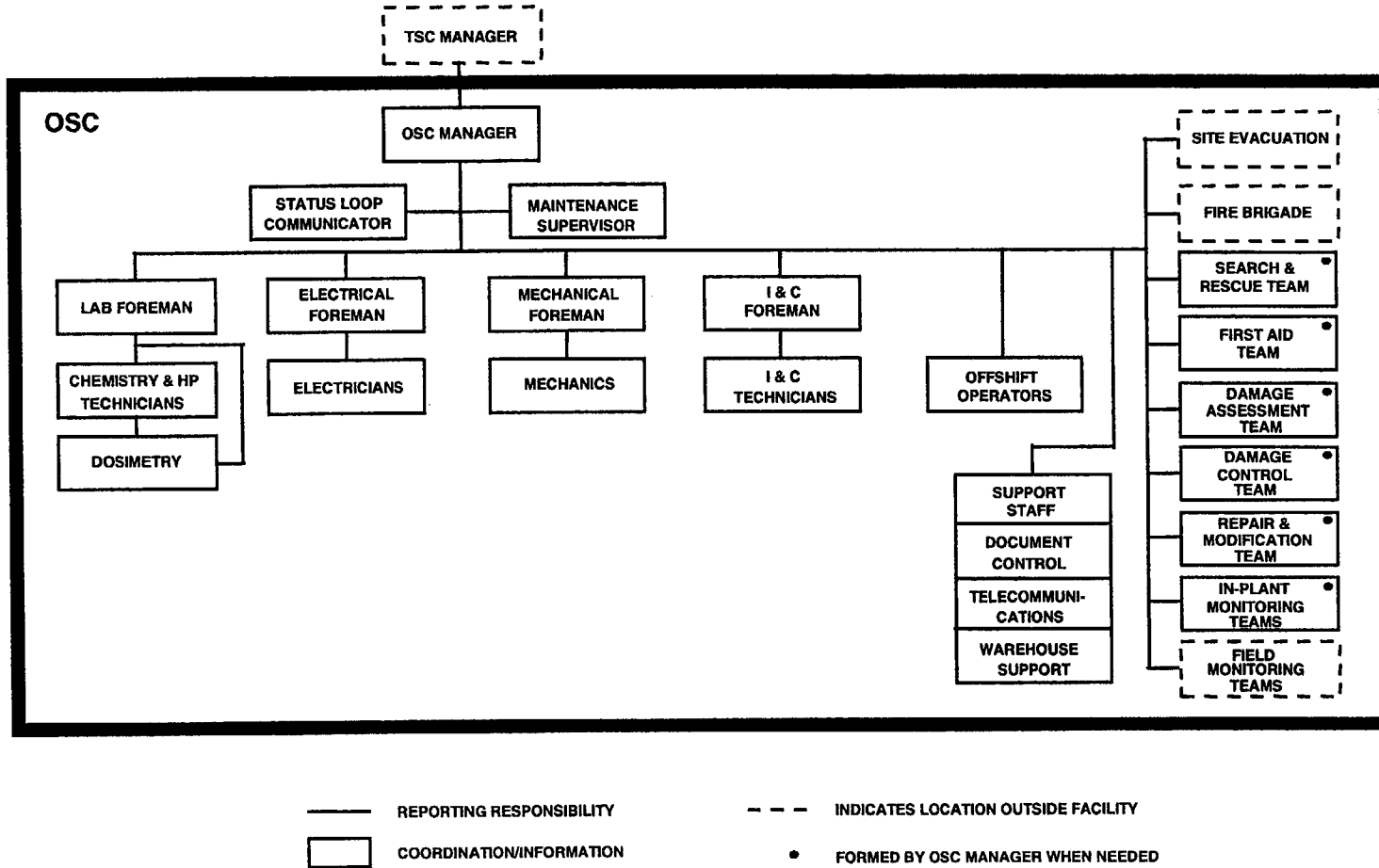


FIGURE 1

DATA SHEET 1
EMERGENCY RESPONSE FACILITY ROSTER

Sheet 1 of 1

Facility _____

Date _____

(FOR RECALLED PERSONNEL ONLY)	
Have you consumed any alcohol in the past 5 hours?	
NO	YES

TIME		BADGE NO. (NO, SG, SD)	NAME	(FOR RECALLED PERSONNEL ONLY) Have you consumed any alcohol in the past 5 hours?	
IN	OUT			NO	YES

Approved By
J. T. Gasser

Date Approved
04/12/2002

ACTIVATION AND OPERATION OF THE OPERATIONS SUPPORT CENTER


DATA SHEET 2

HABITABILITY SURVEY

OSC FACILITY

Date _____

Time (once per hour minimum)							
Dose Rate (100 mRem/hr limit)							
Iodine Activity (2.7E-7 μ Ci/cc limit)							
Air Sample Activity							
Swipe Survey							
OSC Manager and HP Supervisor advised of the results							
Performed by initials							

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OSC ACTIVATION CHECKLIST

RESPONSIBILITY:

All personnel reporting to the OSC shall prepare the OSC physically for use by the VEGP Emergency Response Organization.


INITIAL ACTIONS

1. Badge in on the OSC ACAT.
2. Review the OSC Floor Plan per layout posted in OSC.
3. Sign in on the Emergency Response Facility Roster and answer Fitness for Duty (FFD) question. (FFD question for recalled personnel only).
4. Remove emergency response materials and equipment from storage areas and arrange physical facilities per layout posted in OSC.
5. Remove telephones, emergency identification badges, status boards, copies of procedures, checklists, maps and other equipment/supplies from the OSC Emergency Kit and prepare the OSC for activation.
6. Check operability of telephones by lifting receiver and listening for a dial tone.
7. Perform radio check of hand held radios (Ops, HP, Mech, Elec/I&C and FMT/REX Channels).

NOTES

OSC personnel that are already in the field performing their emergency duties may be credited as minimum shift staffing for activation. (i.e. HP Technicians/FMT members/crafts).

8. Ensure that the minimum OSC staff that is needed for activation is present per section 5.1.1.1 of this procedure.
9. Report readiness to the OSC Manager.
10. If the OSC Manager has not arrived, begin completing OSC Manager Checklist in Procedure 91104-C, "Duties Of The OSC Manager".
11. Establish your workstation and await instructions from the OSC Manager or TSC Manager.

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LAB FOREMAN CHECKLIST

POSITION FILLED BY: HP Foreman

INITIAL ACTIONS


1. Report to the OSC.
2. Sign-in on the Emergency Response Facility Roster and badge in on OSC ACAT.
3. Obtain work packets. (Packets located in the OSC document control cabinet.)
4. Obtain briefings from OSC Manager, senior on-shift Health Physics Technician or HP Supervisor (from TSC) on status of plant and any releases.
5. Advise OSC Manager when ready for operation and begin maintaining appropriate logs and checklists.
6. Establish an unmanned personnel-monitoring station at the entrance to the OSC.
7. Periodically monitor conditions in accordance with the Habitability Checklist on the following sheet.

SUBSEQUENT ACTIONS

1. Assign Health Physics Technicians to Radiological Emergency Teams (RETs) if radiological conditions warrant or are unknown in areas where teams will be working. (i.e., Plant Entry Security Building, Secondary Alarm Station, Supervisor Nuclear Security office).

NOTE

- a. Do not use a designated emergency response field-monitoring vehicle for transportation to the relocation center. Non-emergency department vehicle keys may be obtained from the maintenance tool room (Maintenance Building) and Human Resources department (Administrative Building).
 - b. Ensure that the offsite relocation team takes their procedure manual when dispatched from OSC.
2. Assign Health Physics personnel to report with the Evacuation Leader (Nuclear Security Officer) to the offsite relocation center at an ALERT to set up for decontamination, should a Site Evacuation be ordered.

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LAB FOREMAN CHECKLIST

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SUBSEQUENT ACTIONS CONTINUED


**OFFSITE PERSONNEL MONITORING AND DECONTAMINATION
(SITE EVACUATION)**

1. Upon instruction from the HP Supervisor, dispatch available HP Foreman or Health Physics personnel to the Plant Entry and Security Building Exit to monitor personnel as they evacuate the protected area. Exiting personnel should be frisked for contamination if they alarm the high sensitivity portal monitors.
2. If exiting personnel are found to be contaminated, have any contaminated clothing removed and provide temporary coveralls and shoe covers. Direct individuals to the offsite relocation center or other appropriate location for decontamination.
3. When required, request permission from the TSC to dispatch additional monitoring teams to the assigned relocation center.
4. Remain in contact with the offsite relocation center (via radio channel FMT/REX or telephone) to review the progress of offsite monitoring and decontamination activities.

OSC RADIOLOGICAL HABITABILITY CHECKLIST

1. *Periodically monitor radiological conditions in the area if a radiological release is suspected or occurring.
2. *Log the time, dose rate (if appropriate), air sample results, iodine concentration and swipe survey results. (Use Data Sheet 2 or similar form)
3. Report findings to the HP Supervisor and OSC Manager.

*Continuing Activity

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REFERENCE USE PROCEDURE

PRB REVIEW REQUIRED

1.0 **PURPOSE**

The purpose of this procedure is to provide instructions for performing sampling and surveys within the protected area during emergency conditions.

2.0 **RESPONSIBILITIES**

2.1 The Health Physics (HP) Supervisor (HP/Chem Shared Foreman after normal working hours until relieved by augmented personnel) shall have the following responsibilities:

2.1.1 Determining the need for In-Plant Monitoring Teams.

2.1.2 Evaluating survey results and reporting radiological information to the Emergency Director (ED) or Technical Support Center (TSC) Manager with recommendations.

2.2 The Operations Support Center (OSC) Manager (or HP Foreman if OSC is not activated) shall form, brief and dispatch In-Plant Monitoring Teams when the team is dispatched from the OSC.

2.2.1 If the team is dispatched from the HP Control Point, the HP Foreman with the permission of the HP Supervisor shall form, brief and dispatch the In-Plant Monitoring Teams.

2.3 The In-Plant Monitoring Teams shall conduct sampling and surveys as directed by the HP Supervisor.


3.0 **PREREQUISITES**

3.1 An emergency has been classified per Procedure 91001-C, "Emergency Classification And Implementing Instructions".

3.2 The HP Supervisor has directed that in-plant sampling and survey activity be initiated.

4.0 **PRECAUTIONS**

Emergency radiation exposures in excess of 10CFR20 limits shall be authorized by the ED in accordance with Procedure 91301-C, "Emergency Exposure Guidelines".

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NOTE

For the purposes of this procedure, in-plant areas shall be considered those areas that are within the radiologically - controlled areas and shall be the responsibility of the HP Supervisor. All other areas within the protected area may be surveyed by in-plant teams or field monitoring teams. Field monitoring is the responsibility of the Dose Assessment Manager in the Emergency Operations Facility (EOF) (once it is activated).

5.0 PROCEDURE

5.1 TEAM FORMATION

5.1.1 The OSC Manager (or HP Foreman, if OSC not activated or the HP Foreman at the HP Control Point) shall form teams consisting of at least two qualified Radiological Emergency Team (RET) members each. At least one member of the team shall be an HP Technician and shall be qualified to ANSI 18.1-1971. One of the team members shall be appointed Team Leader.

5.1.2 The team shall report to the HP Supervisor at the HP Control Point or OSC for a briefing.


5.1.3 Monitoring teams shall perform In-Plant Monitoring in accordance with Plant Health Physics Procedures. The In-Plant Monitoring Team Checklist may be used as a guide for these activities.

5.1.3.1 While performing sampling and survey activities, the Team Leader shall contact the HP or OSC Communicator at least every 30 minutes for transmittal of radiation data and personnel exposure. The TSC Communicator will monitor transmissions and report appropriate information to the HP Supervisor (TSC).

5.2 REPORTING SURVEY RESULTS

5.2.1 Personnel in the counting room shall analyze in-plant samples such as effluent and air samples using a gamma spectrometer whenever possible, document all results in accordance with standard laboratory procedures and provide results to HP supervision.

5.2.2 Results, which indicate abnormally high amounts of radioactivity, shall be communicated immediately to HP supervision before providing documented results, as time may be critical in these instances.

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6.0 REFERENCES

6.1 VEGP EMERGENCY PLAN

6.2 PROCEDURES

6.2.1 91001-C, "Emergency Classification And Implementing Instructions"


6.2.2 91301-C, "Emergency Exposure Guidelines"

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

6.4 Title 10 Code of Federal Regulations Part 20, "Standards for Protection Against Radiation"

6.5 ANSI/ANS-18.1, "Standard For Selection and Training Personnel for Nuclear Power Plants"

END OF PROCEDURE TEXT

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IN-PLANT MONITORING TEAM CHECKLIST

Sheet 1 of 4

POSITION FILLED BY: At least one Health Physics Technician and one other RET member.

RESPONSIBILITY: Perform in-plant sampling and surveys.

NOTE

Time critical actions (i.e. actions that would contribute to the termination of a radiological release) must be given priority.

IMMEDIATE ACTIONS

1. Obtain briefing from HP supervision.

This briefing should include the following:

NOTE

- a. The first letter of the Emergency Response Facility that the team is dispatched from should precede the team number. (i.e. "T-1" for the first team dispatched from the TSC or "O-1" for the first team dispatched from the OSC). Teams are to maintain the same name throughout the task assigned to them.
- b. All teams dispatched from the HPCP are to be considered dispatched from the TSC and will receive the next available team number from the TSC HP Supervisor.

Team number.


Current radiation levels for areas of concern.

Results from any preliminary in-plant surveys.

Ongoing accident related conditions or events (e.g., unchecked leaks, steam leaks, or unusual sources of high radiation, if known).

Specific locations where sampling and monitoring is to be performed.

2. Log onto proper Radiation Work Permit (RWP) and/or Emergency Radiation Work Permit (ERWP) (if appropriate) as time permits.

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IN-PLANT MONITORING TEAM CHECKLIST


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IMMEDIATE ACTIONS, CON'T.

3. Obtain emergency survey kit, radiation monitoring instruments and/or necessary equipment (i.e., keys, etc.).
4. Prepare equipment and supplies.
5. Perform visual inspection, check batteries and verify source check has been completed or perform source check tests on survey meters and operational checks on portable radios.
6. Determine entry and exit routes if different from standard procedures.
7. List survey points on survey map.
8. Number all smears and include extra smears.
9. Don necessary protective clothing and respiratory equipment.
10. Obtain dosimetry including TLD and direct-reading dosimeter capable of monitoring the highest exposure expected.

SUBSEQUENT ACTIONS

1. Conduct sampling and surveys as directed for the following in accordance with plant Health Physics Procedures:
 - a. Radioiodine and air particulate samples
 - b. General area radiation surveys
 - c. Surface contamination surveys
2. Check self-reading dosimeters every 15 to 30 minutes.
3. The team leader shall maintain communications at least every 30 minutes with the HP or OSC Communicator to transmit radiation data, personnel exposure and other information via portable radio, telephone or plant page.

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IN-PLANT MONITORING TEAM CHECKLIST

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SUBSEQUENT ACTIONS, CONT.

Air Sampling

1. Proceed to sampling locations as directed by the HP Supervisor. Use a portable survey meter to note exposure levels along routes.
2. Ensure that Silver Zeolite (AgX) or charcoal cartridges are used with the air sampler as appropriate or per Health Physics Supervision. A standard particulate filter shall be placed upstream from the AgX or charcoal cartridge in order to remove particulates from the air.
3. The HP Supervisor shall specify flow rate and sampling duration if different from standard procedures.
4. Frisk samples and transport to the counting room for analysis. Inform HP Supervisor prior to transporting samples reading greater than 20 mRem/hr on contact.


NOTE

Locked doors or flashing lights shall be utilized for samples that can produce a whole body dose rate of greater than or equal to 1000 mRem/hr. Area posting shall be in accordance with Health Physics procedures.

5. If the HP and Chemistry counting rooms are unusable, alternate facilities to be considered are:
 - a. VEGP Training Center
 - b. Hatch Nuclear Plant
 - c. Savannah River Site

General Area Radiation Surveys

1. Proceed to sampling locations as directed by the HP Supervisor.
2. While enroute to survey locations, keep the instrument on with the meter set to scale which permits an upscale reading. Change the scale up or down as necessary.

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IN-PLANT MONITORING TEAM CHECKLIST

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SUBSEQUENT ACTIONS, CONT.

CAUTION

Any unexpected in-plant readings of 10 rem/h or greater shall be reported immediately to the HP Supervisor.

3. Obtain radiation measurements at survey locations. Take beta readings, as directed by HP supervision, and document results on standard Health Physics Survey Forms.
4. When surveys are complete, report back to HP supervision with the results.

Surface Contamination Surveys


1. Proceed to sampling location as directed by HP supervision. Use a portable survey meter to note exposure levels along routes.
2. Obtain smear samples as directed at survey locations.
3. Count the smear samples in a low dose area and record results.
4. When surveys are complete, report back to HP supervision.

Reporting Survey Results

1. Include preliminary survey results in all briefings.
2. Submit all records to HP Supervisor.

Final Condition

1. Conduct contamination survey of all team members.
2. Hold final team briefing with appropriate HP supervision prior to disbanding team.

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REFERENCE USE PROCEDURE

PRB REVIEW REQUIRED

1.0 PURPOSE

The purpose of this procedure is to provide instructions for estimating offsite doses.

2.0 RESPONSIBILITIES

2.1 The Emergency Director shall initially be responsible to ensure that offsite dose calculations are performed.

2.2 The Health Physics/Chemistry (HP/Chem) Shared Foreman is the designated on-shift dose analyst.

2.3 The HP Supervisor shall assume the responsibility for determining release rates and performing offsite dose calculations from the time the Technical Support Center (TSC) is activated until the Emergency Operations Facility (EOF) Dose Assessment is activated.

2.4 The Dose Assessment Manager shall assume the responsibility for offsite dose calculations from the time the EOF Dose Assessment is activated until the need for dose assessment is no longer required.

3.0 PREREQUISITES


3.1 An actual release of airborne radioactive material has occurred or a projected release has become a possibility because of an emergency condition.

4.0 PRECAUTIONS

4.1 Iodine release rate factors of this procedure were developed based on engineering assumptions. Whenever available, sampling, survey and/or fixed iodine cartridge evaluation results should be utilized to refine these values or as a direct input for iodine release rate(s).

4.2 The accuracy and representatives of the radiological and meteorological data and the accuracy of atmospheric dispersion calculations are such that no more than two significant figures should be used in the final results.

4.3 The dose rates estimated using this procedure are based on conservative meteorological and radiological assumptions and may result in an overestimation of the actual offsite dose rates. Verification by field monitoring teams should be obtained as soon as practicable.

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5.0 **PROCEDURE**

5.1 **COMPUTER DOSE CALCULATIONS**

5.1.1 The Dose Assessment Manager shall assign an individual to collect and record meteorological and radiological data at approximate 15-minute intervals using Data Sheet 1.

NOTE

- a. A radiological release is defined as a radioactive release to the environment, detected by effluent monitors or environmental monitoring, above normal levels that is attributable to a declared event. Normal levels are the highest reading in the last 24 hours prior to the emergency, excluding the current peak value for effluent monitors.

- b. In addition, the Emergency Director has the discretion to declare that a radiological release is occurring based on plant conditions that would indicate that a release is in progress. (i.e., A Steam Generator Tube Rupture with an ARV lifting)

5.1.1.1 The Dose Assessment Manager shall assign a dose analyst to perform the computer dose calculations using the Checklist 1 in this procedure. The initial dose projections should be made within 15 minutes of the radiological release. Dose Projection Calculations subsequent to initial calculation shall be performed at least every 30 minutes if input data is changing (i.e., meteorological, or source term).


5.1.2 The individual assigned to collect and record meteorological and radiological data shall:

5.1.2.1 Obtain meteorological data (Wind Direction from - to, Wind Speed, Stability Class and Precipitation) from one of the following sources in the priority given below. Obtain 15-minute averages for meteorological parameters.

Sources of Meteorological Data:

- a. Integrated Plant Computer (IPC)
 - (1) Primary Met Tower 10 Meters
 - (2) Secondary Met Tower 10 Meters

- b. Send individual to meteorological towers to call back data.

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- c. Savannah River Site Emergency Operations Center (number may be obtained from VEGP Emergency Response Telephone Directory)
- d. National Weather Service (NWS) (Columbia, S.C.) - wind speed and wind direction (NWS number may be obtained from VEGP Emergency Response Telephone Directory).

NOTE

Obtain HP Supervisor or Dose Assessment Manager approval prior to using defaults.

- e. Use Sigma Theta Table, Table 1 to obtain stability class if the computed stability class and delta Temperature data are not available.
- f. Default meteorology:
wind speed = 5.4 mph
wind direction = no predominant direction
stability class = E
estimate precipitation = None – 0, Light – L, Medium - M, Heavy - H

- 5.1.2.2 Obtain weather forecast information from National Weather Service in Columbia, S.C. by commercial telephone.
- 5.1.2.3 In the event that significant wind speed or stability class changes are expected, perform dose assessment calculation utilizing both current and forecast parameters.
- 5.1.2.4 Obtain radiological and effluent release data from one of the following sources in the priority given below.

NOTE

Plant Vent Flow Transmitter FT-12835 (Point ID F5106) is seismically qualified and can be used as an alternate for the Plant Vent Source Term Flow Rate during the occurrence of a seismic event. There are no remote indications for FT-12835 and can only be obtained via the Integrated Plant Computer.

Sources of Radiological and effluent release rate data:

- a. IPC
- b. PDC (PERMS Display Console)

- c. Safety Related Display Cabinet (Status Loop Communicator in the Control Room)


NOTE

Chemistry personnel are to ensure that proper channels are displayed on the Data Processing Module (PERMS) remote indicator before use.

- d. Data Processing Module (PERMS)
- e. Direct measurement of effluent path with a portable instrument.
- f. Default values in COMPUTER CODE.

5.1.2.5 Obtain effluent flow rates from the IPC or default flow rates from the following table if the IPC is not available:

RELEASE POINT	DEFAULT FLOW RATE (CFM)	
	Unit 1	Unit 2
Turbine Building Steam Jet Air Ejector	9.0 E+2	
Containment Leakage	3.8	
Radwaste Processing Facility	1.7480 E+4	
Plant Vent Stack to Atmosphere	Unit 1	Unit 2
Normal Flow	1.4E+5	9.5E+4
FHB Ventilation Isolation	1.2E+5	9.5E+4
Containment Ventilation Isolation	5.0E+4	6.0E+3
U-1 Containment and FHB Ventilation Isolation	2.0E+4	9.5E+4
U-1&2 Containment and FHB Ventilation Isolation	2.0E+4	6.0E+3

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NOTES

- a. The default release duration (remaining duration) will be used every time MIDAS is run until Operations/Plant Management specifically tells dose assessment personnel that the release will be stopped within a specific time frame.
- b. Contact the Emergency Director (Shift Superintendent before facility activation) or TSC Operations Supervisor to determine if the affected Steam Generator is faulted.
- c. The 1-hour default release duration for a non-faulted Steam Generator Tube Rupture (SGTR) is only to be used during the first hour of the release. If the release has not been stopped within the first hour, then a 4-hour release duration should be used.


5.1.2.6 If an estimate of release duration cannot be determined, use the following default release durations.

- a. 1 hour for a non-faulted Steam Generator Tube Rupture (SGTR)
- b. 4 hours for any other Design Based Accident (DBA)

NOTE

When the "High Alarm" set point is reached or exceeded on the release point gaseous effluent monitors (RE-12839C or RE-12444C), the ODCM limits are being exceeded. Contact Chemistry department if you have any questions when determining if the plant is above or below normal operating limits.

5.1.2.7 When completing items 10 through 15 on the Emergency Notification Network (ENN) form, refer to Checklist 2 of this procedure.

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5.2 THYROID DOSE FROM FIELD DATA

5.2.1 When air sample data is available from field measurements, and as directed by the Dose Assessment Manager or his designee, perform the following activities:

5.2.1.1 Obtain the net cpm data on the silver Zeolite (AgZ) or charcoal cartridge as reported by the field team to the Monitoring Team Communicator. This information is on Data Sheet 2 of Procedure 91303-C, "Field Sampling And Surveys".

5.2.1.2 Obtain the sample volume, in liters, for the sample specified in the preceding step.

5.2.1.3 Calculate the thyroid dose rate in Worksheet 1.


5.2.2 Report the result obtained in Worksheet 1 to the Dose Assessment Manager. The results may be compared to the field monitoring dose rate calculated by the MIDAS program. (FM Iodine Dose Rate Plot)

5.3 ANALYSIS OF FIELD MONITORING SAMPLES

5.3.1 Upon return of field teams to the vicinity of the EOF, the Dose Assessment Manager should ensure that the air and other samples (soil, vegetation and water) are collected for subsequent analysis.

5.3.2 Perform gamma spectroscopy analysis on the samples and record results.

5.3.3 Calculate the thyroid dose rate from the air sample results in accordance with Worksheet 1 by obtaining, from Chemistry, the isotopic concentration ($\mu\text{Ci/cc}$) of each pertinent Iodine isotope from the gamma spectroscopy and multiplying it by the Dose Conversion Factor ($\text{mRem/hr}/\mu\text{Ci/cc}$). To find the Thyroid CDE Dose Rate, simply add up the totals from the Base Rate Column (mRem/hr). Report the results to the Dose Assessment Manager. The results may be compared to the field monitoring dose rate calculated by the MIDAS program. (FM Iodine Dose Rate Plot).

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5.4 FIELD MONITORING READINGS

NOTE

- a. When performing a back calculation, using field-monitoring data, the MIDAS software program assumes the dose rate is measured at the plume centerline. The centerline radiation levels should be measured and input into the MIDAS back calculation (using Figure 3), as directed by the dose assessment manager.
- b. When performing a back calculation, using field-monitoring data readings from low-level radioactive plumes, a (3000 cpm/1.0 mR/hr) conversion factor will be used to convert count rate to dose rate.

5.4.1 Field monitoring measurements are important in determining the actual radiation levels in the environment. The dose assessment computer code provides only a rough approximation of radiation levels and location of the plume. The uncertainties in the source term and meteorological conditions in the affected areas are the chief contributors to the inaccuracies of projected dose and dose rate. There is no widely accepted formula on how to use field monitoring data to reduce the uncertainties and inaccuracies in the dose assessment computer code. The Dose Assessment Manager or HP Supervisor must exercise professional judgment in determining the proper correction factors.

5.4.2 The following are some examples of situations that require a back calculation to perform dose assessment:

- a. Unmonitored releases
 - (1) SGTR releasing out the ARV/Code Safeties/Terry Turbine where the RCS leak rate cannot be determined (section 5.5.1.a).
 - (2) Accidents which involve a release from an onsite radioactive material shipment (i. e. transport vehicle with HIC).
 - (3) Release path effluent monitor (i. e. RE-12444, RE-12839, RE-16980) is out of service with a release in progress.
- b. When requested by the Dose Assessment Manager.

5.5 SGTR/LEAK QUICK DOSE ASSESSMENT FOR UNMONITORED RELEASES

NOTE

- a. Chemistry may not be able to obtain a RCS Total Gaseous Activity sample unless affected unit is at normal operating temperature and pressure.
- b. Trend monitors RE-724 or RE-810 to determine RCS leak rate in gallons per day (GPD). GPD must be divided by 1440 minutes/day to obtain gallons per minute (GPM)
- c. If the RCS leak rate is greater than or equal to 500 gallons per minute or cannot be determined due to plant conditions, then priorities should be to obtain field monitoring data for performing a back calculation (section 5.4).

5.5.1 A quick dose assessment for a SGTR/leak which results in a release to the environment may be performed using this section when the following conditions exist:


- a. The RCS leak rate as a result of the rupture/leak is less than 500 GPM.
- b. The release to the atmosphere is not monitored (i.e. Turbine Driven Aux. Feed water exhaust, ARV cycling or stuck open S/G Code Safety valve).

5.5.2 Using the most recent RCS chemistry sample, determine the Off Site Dose as follows:

RCS Total Gas Activity ($\mu\text{Ci/cc}$)	Above or Below ODCM Limits	Off Site Dose TEDE and Thyroid CDE
$\leq 1.0 \text{ E } -01$	Below	< .02 mRem
$>1.0 \text{ E } -01$ but ≤ 1.0	Above	< 0.1 mRem
> 1.0 but ≤ 10	Above	< 1.0 mRem
> 10	Above	see 5.5.2.1 for ODA

5.5.2.1 If the RCS gaseous activity is greater than 10 micro curies per cc, a dose assessment should be performed as follows:

- a. Using the MIDAS computer program, enter the RCS gaseous activity in micro curies per cc for monitor RE-12839C.
- b. Determine the release rate in CFM by multiplying the RCS leak rate in GPM by 0.13, and enter this value for RE-12839 flow.
- c. Use accident type SGTR, appropriate release duration and real meteorology.

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6.0 REFERENCES

6.1 VEGP EMERGENCY PLAN

6.2 PROCEDURES

6.2.1 91001-C, "Emergency Classifications And Implementing Instructions"

6.2.2 91002-C "Emergency Notifications"

6.2.3 91303-C, "Field Sampling And Surveys"

6.2.4 91305-C, "Protective Action Guidelines"

6.3 VEGP FSAR, Section 11.5.5, Post-Accident Radiation Monitoring.

6.4 VEGP FSAR, Section 2.3.4, Short Term Diffusion Estimates.

6.5 VEGP Offsite Dose Calculation Manual.

6.6 NUREG/CR-3011, "Dose Projection Considerations for Emergency Conditions at Nuclear Power Plants", 1983.

6.7 Regulatory Guide 1.109, "Calculation of Annual Doses to Man from Routine Releases of Reactor Effluents for the Purpose of Evaluating Compliance with 10 CFR Part 50, Appendix I, Revision 1, 1977.

END OF PROCEDURE TEXT

WORKSHEET NO. 1

**THYROID DOSE RATE (\dot{D})
FROM FIELD MONITORING DATA**

Sample No. _____ Time of Sample _____ Date _____ Location _____

A. FIELD DATA

1. Total volume of air sampled (V): _____ liters
2. Net cpm (Iodine) above background (N): _____ cpm
(Data Sheet 2 of Procedure 91303-C)

B. Thyroid CDE dose rate (\dot{D}): _____ mRem/hr
(Use appropriate expression below to calculate)

NOTE

T is time since reactor shutdown until release occurred.

FOR T < 24 hr: $\dot{D} = \frac{N(12)}{V}$ FOR T > 24 hr: $\dot{D} = \frac{N(65)}{V}$

**SILVER ZEOLITE SAMPLE GAMMA SPECTROSCOPY RESULTS AND
THYROID CDE DOSE RATE DETERMINATION**

Radionuclide	(Concentration) $\mu\text{Ci/cc}$	x	(Dose Conversion Factor) $\frac{\text{mrem/h}}{\mu\text{Ci/cc}}$	=	(Dose Rate) $\frac{\text{mrem}}{\text{h}}$	
I-131		x	1.30E+9	=		
I-132		x	7.7E+6	=		
I-133		x	2.2E+8	=		
I-134		x	1.3E+6	=		
I-135		x	3.8E+7	=		
(Thyroid CDE Dose Rate)					$\frac{\text{mrem}}{\text{h}}$	=

TABLE 1

SIGMA THETA TABLE

Atmospheric Stability by Standard Deviation of Horizontal Wind Direction, Sigma Theta

<u>SIGMA THETA</u> (degrees)	<u>STABILITY CLASSIFICATION</u>
<2.1	G Extremely stable
2.1 to 3.8	F Moderately stable
3.8 to 7.5	E Slightly stable
7.5 to 12.5	D Neutral
12.5 to 17.5	C Slightly unstable
17.5 to 22.5	B Moderately unstable
≥ 22.5	A Extremely unstable

The accuracy of this method is poor when wind speed is less than 3.4 MPH.



FLOW CHART FOR DOSE ASSESSMENT USING MIDAS

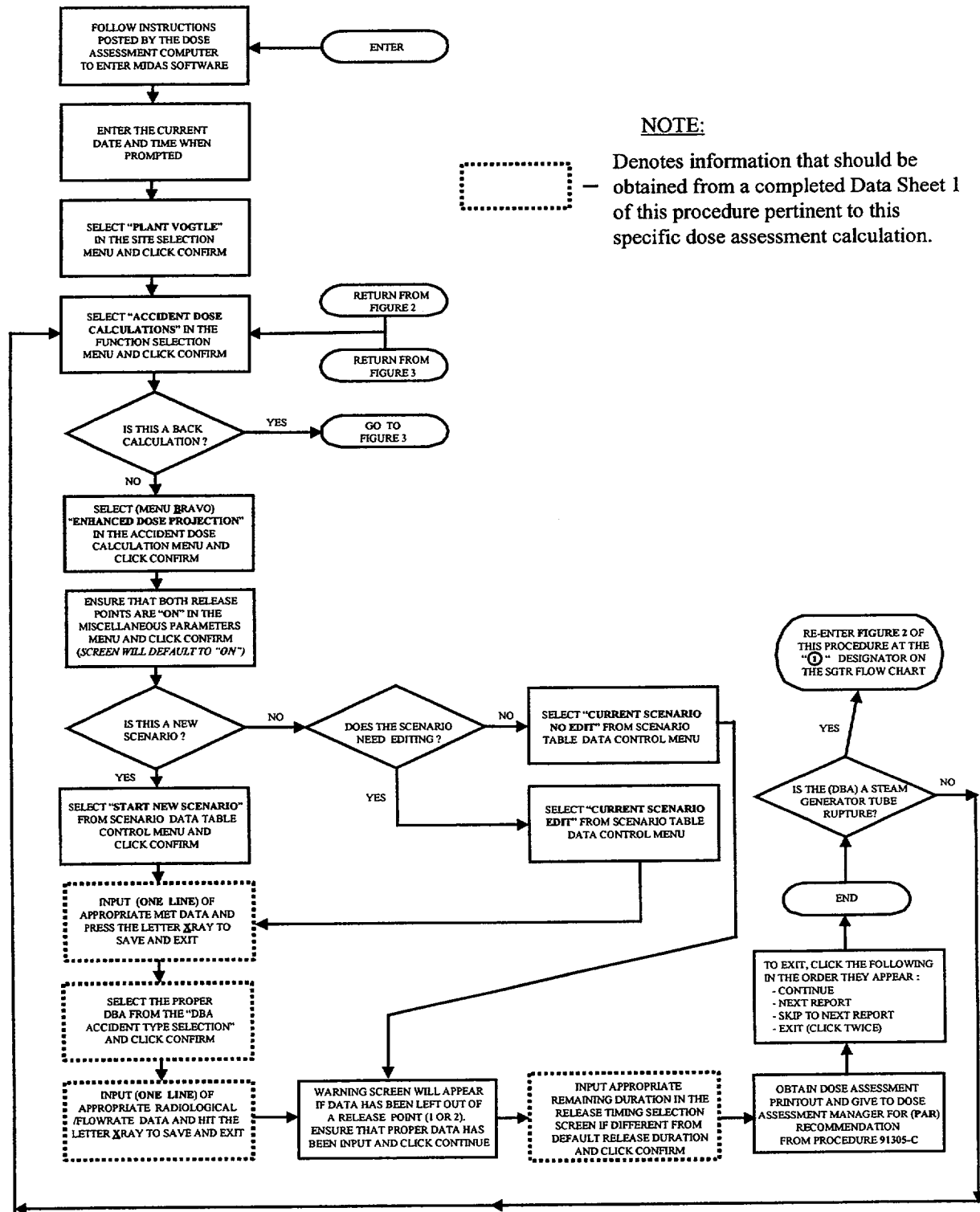
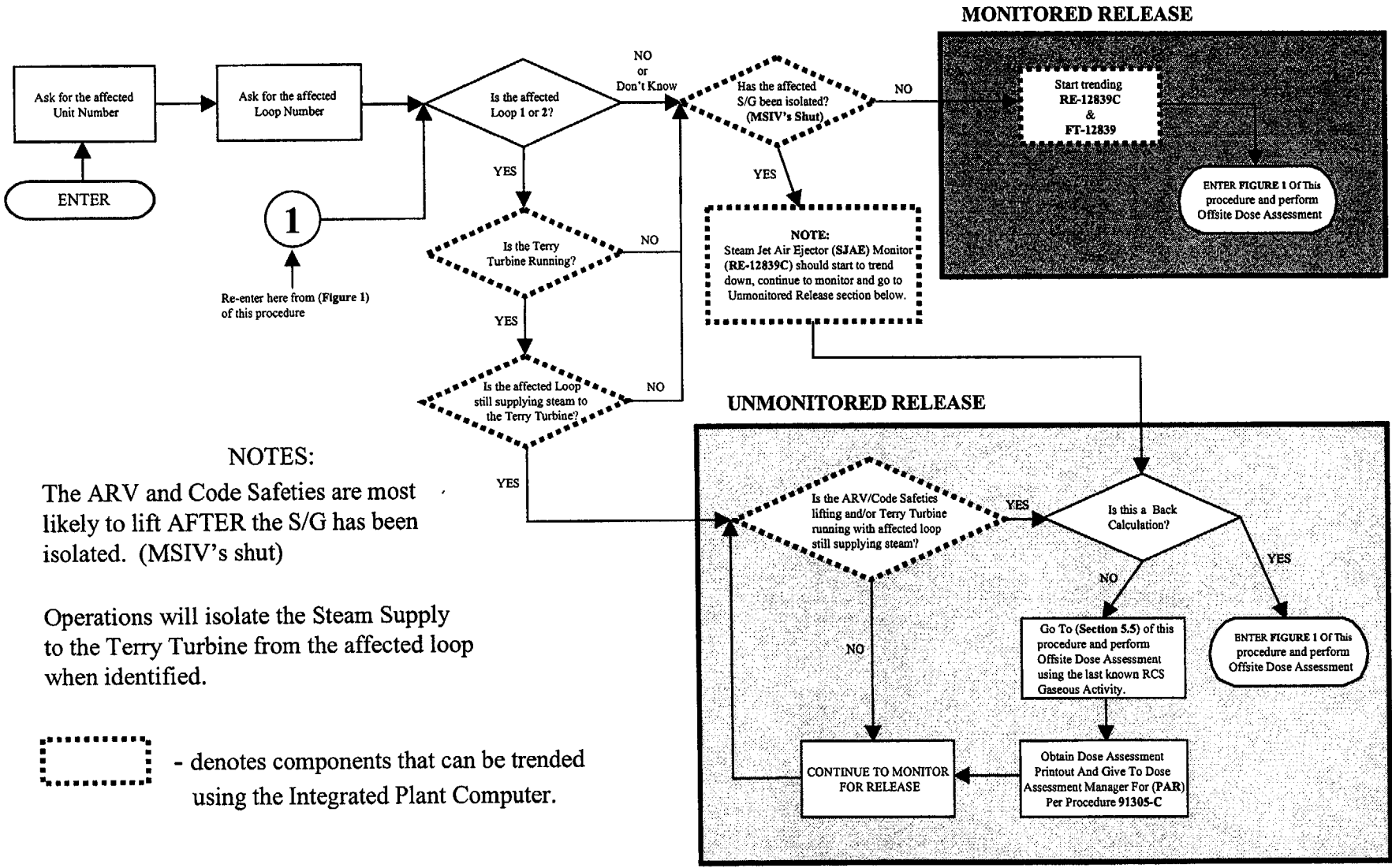


FIGURE 1

FLOW CHART FOR STEAM GENERATOR TUBE RUPTURE



NOTES:
The ARV and Code Safeties are most likely to lift AFTER the S/G has been isolated. (MSIV's shut)

Operations will isolate the Steam Supply to the Terry Turbine from the affected loop when identified.

- denotes components that can be trended using the Integrated Plant Computer.

FIGURE 2

FLOW CHART FOR DOSE ASSESSMENT BACK CALCULATION USING MIDAS

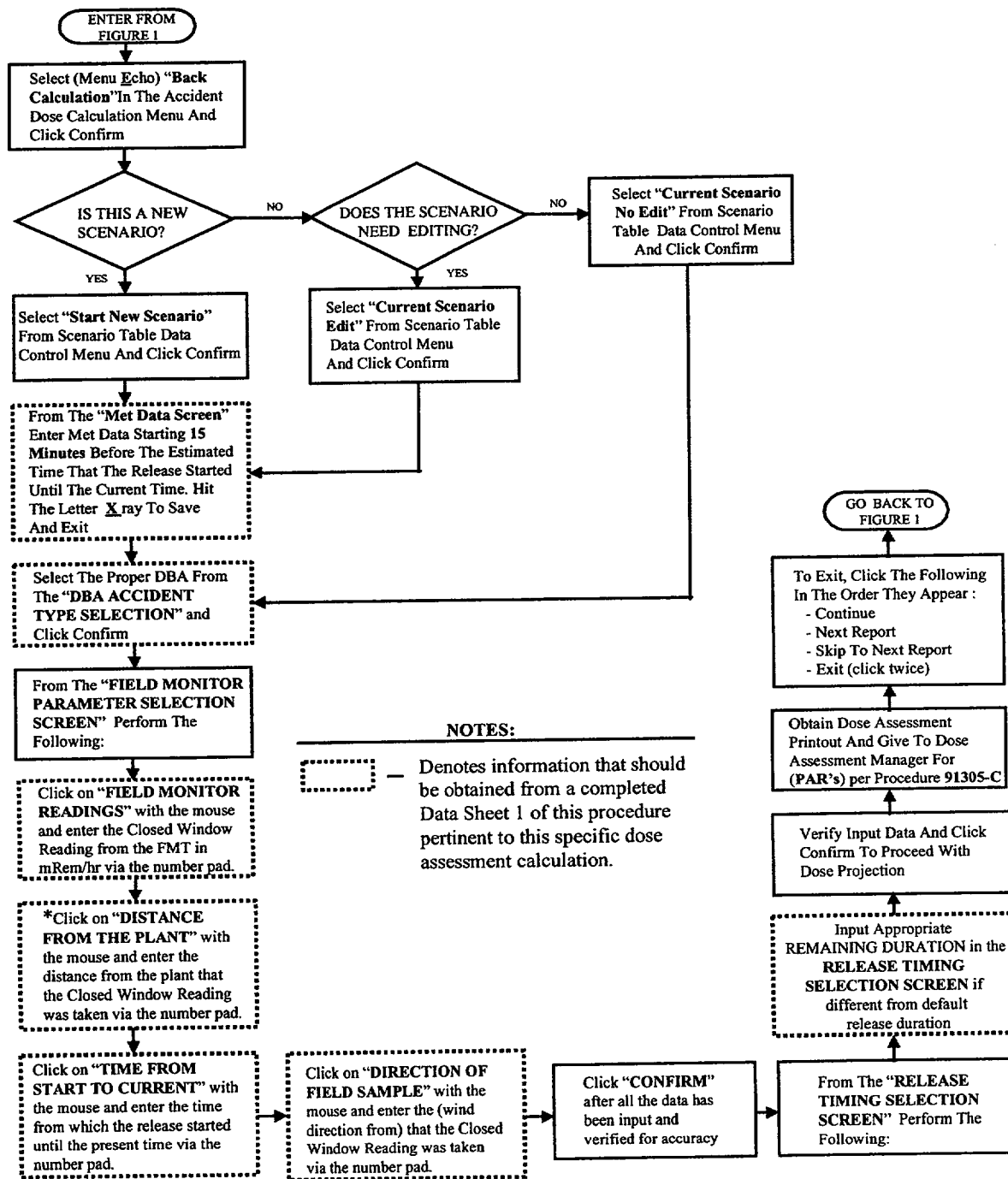


FIGURE 3

Approved By
J. T. Gasser

Date Approved
04/12/2002

Vogtle Electric Generating Plant 

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ESTIMATING OFFSITE DOSE

Sheet 1 of 1

DATA SHEET 1
OFFSITE DOSE ASSESSMENT DATA

Unit 1 2 C

Date / / Time Notification Message Number

MET DATA (15 minute averages)

Primary 10 meter	Speed (mph)	Wind Direction (from)	Stability Class	Rain (inches)
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
Second 10 meter	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>

RELEASE DURATION (Section 5.1.2.6)

Time Release Started	Release Duration (mins)
<input type="text"/>	<input type="text"/>

RCS GASEOUS ACTIVITY

Reading (uCi/cc)
<input type="text"/>

EFFLUENT MONITOR DATA

	Monitor	Reading	Flow Transmitter (CFM)	Reading
Plant Vent	RE-12444C (uCi/cc)		FT-12442	
			FT-12835 - Seismic Event	
Steam Jet Air Ejector	RE-12839C (uCi/cc)		FT-12839	
Radwaste Processing Facility	RE-16980A (uCi/cc)		AFT-16980F	
Reactor Building Area	RE-005/006 (mR/hr)		Containment Default	3.8

DBA TYPE(S) CIRCLE APPLICABLE


<input type="checkbox"/> Unknown	<input type="checkbox"/> LOCA	<input type="checkbox"/> WGDT	<input type="checkbox"/> CR Eject	<input type="checkbox"/> L Rotor	<input type="checkbox"/> Steam Line	<input type="checkbox"/> RPF	<input type="checkbox"/> Fuel Handling	<input type="checkbox"/> SGTR - Loop	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4
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FIELD MONITORING TEAM DATA

* Dose Rate (mRem/hr)	Air Sample Results (CPM)	# Distance from Containment Building (Miles)	Field Monitoring Team Sample Point Location (i.e. L-21)	Time Measured
Open Window	Particulate			
Closed Window	Iodine			

* - When performing a back calculation using field-monitoring data readings from low level radioactive plumes, a (3000 cpm/1.0 mR/hr) conversion factor will be used to convert count rate to dose rate.

- Use 5280 feet/mile when determining the distance from the plant utilizing the Site Map.

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CHECKLIST 1

INITIAL ACTIONS

1. Obtain the Dose Assessment Team Package:
 - a. TSC - Cabinet #4 in the TSC proper.
 - b. EOF - Briefcase in the EOF Storage Room.

NOTE

- a. Shift Superintendent will be the source for the following information prior to Emergency Response Facility activation.
- b. Immediately contact the Emergency Director if information that is required for performing Offsite Dose Assessment cannot be obtained.

- 2.* Contact pertinent Emergency Response Facility Management (i.e. TSC Operations Supervisor, TSC Manager, EOF Manager) to obtain the following information.


- a. Affected Unit Number
- b. Type of Design Base Accident occurring (i.e. LOCA, SGTR)
- c. Affected Loop Number if DBA is a Steam Generator Tube Rupture
- d. Plant Conditions (i.e. duration of release)

NOTE

A separate Data Sheet 1 should be completed for each individual dose assessment calculation.

- 3.* Complete Data Sheet 1, "Offsite Dose Assessment Data" of this procedure.
4. Go to (Figure 2) of this procedure if the DBA is a SGTR.
5. Go to (Figure 1) to perform Offsite Dose Assessment.
- 6.* Once the initial Offsite Dose Assessment has been completed, continue to monitor and trend those parameters that are needed for the DBA that is occurring.

* Continuing Activity

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CHECKLIST 2

COMPLETING LINES 10-15 ON THE OFFSITE NOTIFICATION FORM

1. Line 10 Emergency Release(s)
 - a. Box A – “None” (Go to Line 14 instructions)
 - b. Box B – “Potential” (Go to Line 14 instructions) should not be normally marked. This will reduce confusion with offsite agencies as to the probability and magnitude of a release.
 - c. Box C – “Is Occurring” This indicates that a known radiological release, per section 5.1.1 of this procedure, is in progress.
 - d. Box D – “Has Occurred” This indicates that a known radiological release, per section 5.1.1 of this procedure, has taken place sometime in the past.

2. Line 11 Type of Release
 - a. Check box “Ground Level”
 - b. Box A – “Airborne” If a release has occurred or is occurring, give time and date the release started and time and date release stopped, if applicable.

3. Line 12
 - a. Release Magnitude - Check box “Curies per second”
 - b. Normal Operating Limits
 - (1) Check the “Below” Box if any of the following conditions exist:
 - (a) The high alarm set points on the gaseous effluent release monitors (RE-12444C and RE-12839C) have not been exceeded.
 - (b) Dose assessment results at the site boundary are calculated to be less than 0.02 mRem for both TEDE and CDE.

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CHECKLIST 2

COMPLETING LINES 10-15 ON THE OFFSITE NOTIFICATION FORM (CONTINUED)

- (2) Check the "Above" Box if any of the following conditions exist:
 - (a) The high alarm set points on the gaseous effluent release monitors (RE-12444C and RE-12839C) have been exceeded.
 - (b) Dose assessment results at the site boundary are calculated to be greater than 0.02 mRem for either TEDE or CDE.
- (3) The "Noble Gases", "Particulate's", "Iodine's" and "Other" Check Boxes information will be obtained from the MIDAS printout or can be left blank if the information is not available.


4. Line 13 Estimate of Projected Offsite Dose

- a. Check the "New" box if the following conditions exist:
 - (1) This is the initial projected offsite dose estimation.
 - (2) The projected offsite dose estimation has changed since the last notification.
- b. Check the "Unchanged" box if the projected offsite dose estimation has not changed since the last notification.
- c. "Projection Time" is the time that the dose projection was run in MIDAS. This time will be on the MIDAS printout.
- d. "Estimated Duration" is the amount of time that the release is expected to last. Personnel performing offsite dose assessment will determine the release duration via section 5.1.2.6 of this procedure.

NOTE

If the "Below" box is selected for the Normal Operating Limits on Line 12, then the recorded Site Boundary dose for TEDE and Thyroid CDE will be less than 0.02 mRem.

- e. "TEDE" and "Thyroid CDE" offsite doses for the Site, 2 Mile, 5 Mile and 10 Mile boundaries will be taken directly from the MIDAS printout.

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CHECKLIST 2

Sheet 3 of 3

COMPLETING LINES 10-15 ON THE OFFSITE NOTIFICATION FORM (CONTINUED)

NOTE

The same Meteorological Data that was inputted into MIDAS during the Offsite Dose calculation must be used on the Notification Form. Do not use the current Integrated Plant Computer Meteorological Data on the Notification Form.

5. Line 14 Meteorological Data will be taken directly from the MIDAS printout.
6. Line 15 Recommended Protective Actions
 - a. Box A – “No Recommended Protective Actions” is checked if a NOUE, Alert or Site Area Emergency has been declared.
 - b. Box B and C – “Evacuate” and “Shelter-In-Place” are checked if a General Emergency has been declared.
 - (1) Protective action recommendations will be determined by implementing Procedure 91305-C, “Protective Action Guidelines”.
 - (2) The Dose Assessment Manager shall be responsible for making offsite dose estimates and recommending offsite protective actions to the Emergency Director.
 - c. Box D – “Other” will remain blank.