



Tennessee Valley Authority, Post Office Box 2000, Soddy-Daisy, Tennessee 37379

October 4, 2000

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

Gentlemen:

In the Matter of) Docket Nos. 50-327
Tennessee Valley Authority) 50-328

**SEQUOYAH NUCLEAR PLANT (SQN) - UNITS 1 AND 2 - EMERGENCY PLAN
IMPLEMENTING PROCEDURE (EPIP) REVISIONS**

In accordance with the requirements of 10 CFR 50, Appendix E,
Section V, the enclosure provides the following EPIP:

<u>EPIP</u>	<u>Revision</u>	<u>Title</u>
EPIP-6	30	Activation and Operation of the Technical Support Center
EPIP-16	4	Termination and Recovery

If you have any questions concerning this matter, please
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Sincerely,

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Licensing and Industry Affairs Manager

Enclosure
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A045

U.S. Nuclear Regulatory Commission
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TENNESSEE VALLEY AUTHORITY
SEQUOYAH NUCLEAR PLANT
EMERGENCY PLAN IMPLEMENTING PROCEDURE

EPIP-6

**ACTIVATION AND OPERATION OF THE
TECHNICAL SUPPORT CENTER**

Revision 30

QUALITY RELATED

PREPARED BY: W. P. Brooks

RESPONSIBLE ORGANIZATION: Emergency Preparedness

APPROVED BY: John H. Casey

EFFECTIVE DATE: 09/25/2000

Level of Use: Reference

REVISION DESCRIPTION:

Intent Revision. Appendix Y, Phone list changed to reference the REND for phone numbers as corrective action for PER 00-006599-000.

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1.0 PURPOSE

The purpose of this procedure is to describe activation of the Technical Support Center (TSC), describe the TSC organization, and provide for TSC operation once it has been staffed. The TSC is activated during an Alert, Site Area Emergency, and General Emergency.

2.0 REFERENCES

2.1 Interface Documents

- A. EPIP-15, "Emergency Exposure Guidelines"
- B. EPIP-16, "Termination and Recovery"
- C. 0-SO-67-3, "ERCW Strainers and Traveling Screens"
- D. EPIP-7 "Activation and Operation of the Operations Support Center"
- E. EPIP-14 "Radiological Control Response"

2.2 Developmental Documents

- A. Memorandum from J. B. Hosmer to R. J. Johnson dated 1/15/88, Implementing PRDCS and Operation Training (RIMS-B25880115028)
- B. EPIP-7, "Activation and Operation of the Operations Support Center (OSC)"

3.0 INSTRUCTIONS

3.1 Declaration of the Event

The Shift Manager (SM) upon detection of an emergency condition becomes the Site Emergency Director (SED), classifies the emergency, and declares the event. Upon arrival of the Plant Manager or alternate defined in the Duty Roster or Call List, the SM will be relieved of the SED duties. Appendix U may be used to ensure a complete turnover. The SED activates and operates the TSC (Appendix B) and oversees the operations of the Operations Support Center (OSC).

3.2 Activation of the TSC

3.2.1 Shift Manager (SM)

The SM will activate the TSC and OSC by announcing the emergency condition by one or more of the following methods.

- A. Plant Public Address (PA) announcement.
- B. The SM or Operations Clerk will normally activate the Emergency Paging System (EPS) or, contact the persons designated on the call list. If the EPS cannot be activated from the site, contact the Operations Duty Specialist (ODS) on the ringdown line or 5-751-1700 and have the EPS activated from the CECC.
- C. The SM may activate the onsite emergency sirens at an "Alert" and shall activate the sirens at a "Site Area Emergency" or "General Emergency."

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3.2.2 Call List

The Emergency Preparedness Manager (EPM) shall maintain a call list listing all TSC personnel by name, plant and home telephone numbers. The Call List will be updated at least quarterly by the EPM or designee with input by the appropriate section/group supervisors. The list will be provided to the SM and placed in the TSC.

3.2.3 Response

Personnel performing the following REP functions should report to the TSC, or the assigned TSC support locations (see NP-REP Appendix B Figure B-3 for TSC Layout), upon announcement of an "ALERT" or higher emergency classification or at the direction of the SED.

- A. Site Vice President
- B. Site Emergency Director
- C. Operations Manager
- D. Technical Assessment Manager
- E. Operations Advisor, TAT
- F. Site Security Manager
- G. Radiological Control Manager (RCM)
- H. Chemistry Manager
- I. NRC Coordinator
- J. Control Room Communicator (affected Unit Control Room)
- K. EP Manager
- L. TSC Clerical/Logkeeper Staff (Clerical will be called)
- M. Maintenance Manager
- N. Technical Assessment Team
- O. Operations Communicator
- P. Other Plant staff the SED determines to be necessary to support TSC functions will be called.

3.2.4 TSC Operations

The TSC shall operate to ensure the following:

- A. Provide plant management and technical support to plant operations personnel during emergency conditions.
- B. Perform CECC functions for the Alert Emergency class, the Site Area Emergency class, and General Emergency class until the CECC is functional.
- C. Help the reactor operators determine the plant safety status.
- D. Relieve the reactor operators of peripheral duties and communications not directly related to reactor system manipulations.

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3.2.4 TSC Operations continued

- E. Prevent congestion in the control room.
- F. Provide assistance to the operators by technical personnel who have comprehensive plant data at their disposal.
- G. Provide a coordinated emergency response by both technical and management personnel.
- H. Provide reliable communications between onsite and offsite emergency response personnel.
- I. Provide a focal point for development of recommendations for offsite actions.
- J. Provide relevant plant data to the NRC for its analysis of abnormal plant operating conditions.

3.2.5 Site Vice President

The Site Vice President serves as a corporate interface for the SED, relieving him from duties which could distract from the SED's primary purpose of plant operations and accident mitigating activities. The Site Vice President shall provide assistance in the areas of TVA Policy, site resources, direct interface with the CECC, onsite media, NRC, FEMA, or other federal organizations responding to the site. The Site Vice President may assist the SED as requested. Appendix A, Site Vice President Checklist, shall be used to ensure required actions are completed.

3.2.6 Site Emergency Director (SED)

The SED directs activities of the onsite emergency organization; determines the emergency classification; initiates protective actions onsite; prior to the CECC being staffed, makes notification of escalated emergency classification to the State and recommendations for protective actions to State and local agencies in accordance with Appendix R, Protective Action Recommendation Guidance or EPIP-5; coordinates emergency actions with onsite NRC; and approves or authorizes emergency doses that will exceed occupational dose limits. May be relieved by the Operations Manager as needed. Appendix B, Site Emergency Director Checklist, shall be used to ensure required actions are completed.

3.2.7 Operations Manager

The Operations Manager directs operational activities; informs SED of plant status and operational problems; provides input to the SED for emergency classification declaration; performs damage assessment as necessary; and recommends solutions and mitigating action for operational problems. The Operations Manager may relieve the SED when the SED must leave the TSC. Appendix C, Operations Manager Checklist, shall be used to ensure required actions are completed.

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3.2.8 Technical Assessment Manager (TAM)

The TAM directs onsite effluent assessment; directs activities of Technical Assessment Team (TAT); provides information, evaluations, and projections to the SED; provides input to the SED for emergency classification declaration; coordinates assessment activities with the CECC plant assessment team; and establishes and maintains a status of significant plant problems. Appendix D, Technical Assessment Manager Checklist, shall be used to ensure required actions are completed.

3.2.9 Technical Assessment Team (TAT)

The TAT prepares and provides periodic current assessment on plant conditions and provides this information to the CECC Plant Assessment Team on Appendix Q when requested; monitors and trends key plant parameters against EAL criteria and provides technical assessment; projects future plant status based on present plant conditions; provides technical support to plant operations on mitigating actions. Appendix N, Technical Assessment Team Checklist, shall be used to ensure required actions are completed.

3.2.10 Operations Advisor, TAT

The Operations Advisor, TAT operates the ICS to obtain plant status and parameters; completes plant parameter data sheets, as needed, and provides information from the Control Room to the Technical Assessment Manager and Technical Assessment Team. Appendix E, Operations Advisor, TAT Checklist, shall be used to ensure required actions are completed.

3.2.11 Site Security Manager

The Site Security Manager directs activities of Site Security; controls access to site and control room; and reports on site accountability/evacuation. Appendix F, Site Security Checklist, shall be used to ensure required actions are completed.

3.2.12 Radiological Control Manager

The TSC RCM directs assessment of inplant and onsite radiological conditions; coordinates additional RADCON support with CECC; recommends protective actions for onsite personnel to the SED; after notifying the SED authorizes KI issue; coordinates assessment of radiological conditions offsite with CECC; and provides RADCON surveillance/support to MET station personnel ensuring the Maintenance Manager is tracking those off-site personnel on the Team Tracking Board. Provides input to the SED for emergency classification declaration and PARs. Appendix G, RADCON Manager Checklist, shall be used to ensure required actions are completed.

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3.2.13 Chemistry Manager

The Chemistry Manager coordinates assessment of radioactive effluents with the CECC; directs post accident sampling system (PASS) activities; directs the initiation of onsite/off-site dose assessment if needed prior to the CECC being staffed; and determines impact of the incident on radwaste and various effluent treatment systems; and provides input to the SED for emergency classification and PARs. Appendix H, Chemistry Manager Checklist, shall be used to ensure required actions are completed.

3.2.14 NRC Coordinator

The NRC Coordinator acts as primary liaison with onsite NRC personnel; updates NRC personnel on plant status; and obtains information from TSC personnel as requested by the NRC; and may be assigned communication duties on the ENS line to the NRC. Appendix I, NRC Coordinator Checklist, shall be used to ensure required actions are completed.

3.2.15 Control Room Communicator

The Control Room Communicator serves in the control room as the communications interface with the Operations Communicator in the TSC and OSC Operations Advisor; provides advice regarding Technical Specifications, system response, safety limits, etc.; communicates status of plant systems and major equipment, automatic and manual initiation of ESF equipment, important system parameters, procedure transitions, and communicates messages between the Shift Manager and the TSC; assists in development of recommended solutions to developing problems; informs the Operations Communicator and OSC Ops. Advisor of Ops. personnel/teams dispatched by the SM. Appendix J, Control Room Communicator Checklist, should be used to ensure required actions are completed.

3.2.16 EP Manager

The EP Manager advises the SED regarding the overall radiological emergency plan, use of implementing procedures, emergency equipment availability, and coordination with CECC; and confirms TSC and OSC are operating properly. He will keep the plant staff informed, by P/A system, of current plant conditions as directed by the SED. He will be responsible for the call in of Clerks (action may be delegated). He will provide assistance to the OSC Manager as requested. Appendix K, EP Planning Manager Checklist, shall be used to ensure required actions are completed.

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3.2.17 TSC Clerical/Logkeeper Staff

The TSC clerks provide logistics support to the TSC. The designated TSC logkeeper will maintain a chronological log of the SED and TSC activities. The log should include entries such as decisions made by the SED, content of SED discussions, time of classification upgrades and PARs and the level of each, status of repair and damage control teams, briefing times and any other entry as directed by the SED. The logkeeper may prepare briefing notes for the SED. The notes should include activities since the last briefing and include team status, changes in classification and PARs, and current plant conditions. The TSC logkeeper should have some technical writing ability. Appendix L, TSC Clerical Staff Checklist, shall be used to ensure required actions are completed.

3.2.18 Maintenance Manager

The Maintenance Manager maintains communications between the OSC and TSC, maintains cognizance of dispatched teams and status, and assists the SED and OSC Manager in establishing OSC work priorities. Appendix M, Maintenance Manager checklist, shall be used to ensure required actions are completed.

3.2.19 Operations Communicator

The Operations Communicator monitors the Control Room Operations Bridge, provides information from the MCR to the TSC, and maintains a current log of major operational events for the Operations Manager's use. Appendix AA shall be used to ensure required actions are completed.

3.3 Termination and Deactivation

- A. The TSC will be deactivated when the indicated plant conditions are such that in accordance with EPIP-16 "Termination and Recovery" the emergency has been terminated, and the OSC has been deactivated.
- B. All records generated during the operation of the TSC and OSC have been reviewed and forwarded to the Emergency Preparedness Manager.
- C. All equipment and usable supplies have been returned to their storage locations.

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4.0 RECORDS

4.1 QA Records

The following appendices and checklists necessary to demonstrate key actions during an emergency are considered QA records. These records shall be forwarded to the EP Manager who shall submit QA records and any other records deemed necessary to corporate Emergency Preparedness for maintenance.

- A. TSC Checklists
- B. Plant Parameter Data Sheets
- C. Predictive Release Data Sheets
- D. TSC Accident Assessment Sheets
- E. TSC Log Book

4.2 Non-QA Records

The appendices and checklists in this instruction necessary to demonstrate key actions during NRC evaluated exercises will be retained by the SQN EP Manager for at least two years.

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SITE VICE PRESIDENT

INITIAL ACTIVATION OF THE TECHNICAL SUPPORT CENTER

INT/TIME

- | | |
|-------|-------------------------------------------------------------------------------------------------------|
| _____ | 1. Fill out the Organizational/Staffing Chart. |
| _____ | 2. Establish log of communications/events. |
| _____ | 3. Establish contact with the Media Relations Specialist. |
| _____ | 4. Check the status of emergency actions already in effect such as accountability or site evacuation. |

OPERATIONAL RESPONSIBILITIES

- Provides TVA policy direction to the Site Emergency Director.
- Directs the site resources to support the SED in the accident mitigation activities.
- Provides direct interface on overall site response activities with NRC, FEMA, Federal organizations, the CECC Director, and onsite media.
- At your discretion, may provide interface at the appropriate offsite location on the overall site response activities with State and Local agencies, NRC region/corporate, and the Joint Information Center.
- Provides support to other emergency operation centers as necessary. As applicable, designates an alternate to provide direction and/or support for the overall site response and support to the SED.
- Will assure that following all changes in emergency classification that the State has been notified in accordance with established procedures. Will appoint an alternate to complete this function if absent from the TSC.

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SITE EMERGENCY DIRECTOR

INITIAL ACTIVATION OF THE TECHNICAL SUPPORT CENTER

INT/TIME

- | | |
|-------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| _____ | 1. Obtain turnover briefing from SM/SED in accordance with Appendix U. (Note: Transfer of responsibilities does not take place until Step 8 below has been confirmed.) |
| _____ | 2. Fill out the Organizational/Staffing Chart. |
| _____ | 3. Establish log of communications/events. |
| _____ | 4. Establish contact with the CECC Director and determine if the Director has assumed responsibility for primary contact with the site and state. (NOTE: the ODS has this responsibility until the CECC Director assumes the function.) |
| _____ | 5. Note that if the emergency classification is escalated, and the CECC has not assumed responsibility for communications with the State, ensure the State is notified within 15 minutes by implementing EPIP-3, EPIP-4 or EPIP-5, as appropriate. |
| _____ | 6. Check the status of emergency actions already in effect such as accountability or site evacuation. |
| _____ | 7. Review checklist with key positions (Operations, Technical Assessment Manager, RADCON, Maintenance Manager, etc.). |
| _____ | 8. Ensure minimum staffing is present for TSC operability. The following individuals must be present: SED, RADCON Manager, reactor engineer, mechanical engineer, and electrical engineer. |
| _____ | 9. Assume role of SED from SM/SED and <ul style="list-style-type: none"> • Notify CECC that TSC is operational. • Notify OSC that TSC is operational. • Announce on plant PA system TSC is operational. |
| _____ | 10. Clearly announce the time of activation of the TSC and OSC to the TSC and OSC staffs. |

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SITE EMERGENCY DIRECTOR

OPERATIONAL RESPONSIBILITIES

- Periodically briefs the TSC/OSC staff on the current situation.
- Periodically direct key TSC positions to provide status summary to TSC staff.
- Periodically updates the plant staff on plant status and emergency conditions.
- Periodically reviews operation of the OSC with the OSC Manager.
- Directs activities of onsite emergency organizations.
- Consults with the CECC Director and Site VP on important decisions.
- Initiates onsite protective actions.
- When necessary, establish a RADCON checkpoint for site evacuation.
- Coordinates emergency actions with onsite NRC.
- Initiates long-term 24 Hour/day operation.
- Approves or authorizes, in accordance with EPIP-15, emergency doses that may exceed occupational dose limits. This responsibility cannot be delegated.
- Prior to the CECC being staffed, in accordance with Appendix R or EPIP-5 makes recommendations for protective actions to State and Local agencies through the Operations Duty Specialist within about five minutes of the determination. This responsibility cannot be delegated except to the CECC Director.
- Determines the emergency classification and periodically reevaluates the classification. Changes to the classification will be reported to the CECC Director within about five minutes and the NRC. The classification of the event cannot be delegated.
- Evaluates conditions and determines if additional emergency procedures should be implemented.
 - a. CECC EPIP-9 "Emergency Environmental Radiological Monitoring Procedures"
 - b. SQN EPIP-10 "Medical Emergency Response"
 - c. PHYSI-32 "Security Instructions to Members of the Security Force"
 - d. SQN EPIP-8 "Personnel Accountability and Evacuation"
 - e. SQN EPIP-14 "Radiological Control Response"

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SITE EMERGENCY DIRECTOR

OPERATIONAL RESPONSIBILITIES CONTINUED

- Assumes responsibility for Severe Accident Management when directed by the MCR and the TSC is functional and the SAMG evaluators are monitoring the Diagnostic Flow Chart. The TSC must have Three evaluators monitoring SAMGs to assume the accident responsibility.

DEACTIVATION RESPONSIBILITIES

- Declare the event to be terminated in accordance with EPIP-16 "Termination and Recovery."
- Activate recovery personnel.
- Declare the OSC is deactivated.
- Declare the TSC deactivated

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APPENDIX C
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OPERATIONS MANAGER

INITIAL ACTIVATION OF THE TECHNICAL SUPPORT CENTER

INT/TIME

- | | |
|-------|-------------------------------------------------------------------------------------------------------------------------------|
| _____ | 1. Fill out the Organizational/Staffing Chart. |
| _____ | 2. Establish log of communications/events. |
| _____ | 3. Log on to ICS. |
| _____ | 4. Check the status of emergency actions already in effect such as Accountability or Site Evacuation. |
| _____ | 5. Verify notification of the NRC has been accomplished. |
| _____ | 6. Designates an operationally competent person to establish and maintain communications with the NRC via the FTS 2000 PHONE. |

OPERATIONAL RESPONSIBILITIES

- Directs operational activities.
- Provide input to the SED for emergency classification.
- Informs the SED of plant status and operational problems.
- Recommends solutions and mitigating action for operational problems.
- Periodically reviews the emergency status with the control room. Reviews trended parameters, time history information, and status boards with the control room staff.
- Assures the control room is aware of the TSC accident assessment.
- Discuss with the control room the OSC activities such as repair and response priorities and, status of damage control and repair teams.
- During long term accident operating conditions, evaluate routine activities which would be performed under normal plant operating conditions, e.g., AUO rounds, equipment inspections, surveillance instructions, compensatory measures, or other similar activities. Determine if any of these actions should be performed on a normal or reduced frequency.
- Assume SED responsibilities if the SED must leave the TSC

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TECHNICAL ASSESSMENT MANAGER

INITIAL ACTIVATION OF THE TECHNICAL SUPPORT CENTER

INT/TIME

- | | |
|-------|-------------------------------------------------------------------------------------------------------|
| _____ | 1. Fill out the Organizational/Staffing Chart. |
| _____ | 2. Establish log of communications/events. |
| _____ | 3. Check the status of emergency actions already in effect such as Accountability or Site Evacuation. |
| _____ | 4. Check status of minimum staff members (Rx Engr, Mech Engr, Elec Engr). |

OPERATIONAL RESPONSIBILITIES

- Directs onsite effluent assessment.
- Directs activities of the Technical Assessment Team.
- Projects future plant status based on present plant conditions.
- Keeps assessment team informed of plant status.
- Provides information, evaluations, and projections to the SED.
- Coordinates assessment activities with the CECC Plant Assessment team.
- Establishes and maintains a status of significant plant problems.
- Assures information on EPIP-6, Appendix P, is sent to the CECC to be used in the predictive release rate model.
- If the need for post accident sampling is anticipated, alert TSC Chemistry Manager so that they can prepare RWP and support.
- Assures Post Accident sampling in accordance with 1,(2)-TI-CEM-043-066.0 is initiated as required.
- Provides for trending of significant parameters.
- Designates personnel to maintain Plant Status and Trending Boards.
- Provide input to the SED for emergency classification.

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OPERATIONS ADVISOR, TAT

INITIAL ACTIVATION OF THE TECHNICAL SUPPORT CENTER

INT/TIME

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|-------|-------------------------------------------------------------------------------------------------------|
| _____ | 1. Fill out the Organizational/Staffing Chart. |
| _____ | 2. Log on to ICS. |
| _____ | 3. Establish contact with the Control Room. (Dial PAX 101) |
| _____ | 4. Check the status of emergency actions already in effect such as Accountability or Site Evacuation. |

OPERATIONAL RESPONSIBILITIES

- Operates ICS to obtain plant status and parameters.
- Monitors procedure direction taken by the main control room operators and keeps TATL informed of potential future problems and status of safety related equipment.
- Provides information from the Control Room to the Technical Assessment Manager and Technical Assessment Team.
- Completes portions of plant parameters data sheets (Appendix O and Appendix P) as needed.
- Plots/trends as designated by TAM.
- Obtains supplemental data as needed by the TSC, OSC, or CECC.

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APPENDIX F
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SITE SECURITY MANAGER

INITIAL ACTIVATION OF THE TECHNICAL SUPPORT CENTER

INT/TIME

- | | |
|-------|------------------------------------------------------------------------------------------------------------------------------------|
| _____ | 1. Fill out the Organizational/Staffing Chart. |
| _____ | 2. Establish log of communications/events. |
| _____ | 3. Establish contact with the CAS and the SAS. |
| _____ | 4. Check the status of emergency actions already in effect such as Accountability or Site Evacuation and report status to the SED. |

OPERATIONAL RESPONSIBILITIES

- Directs activities of Site Security personnel.
- Controls access to Site and control room.
- Reports on site accountability/evacuation as defined in EIPs.
- Assures an officer is dispatched to areas outside the protected area such as the STC, Visitor Center, Livewell, and Design Services Complex during accountability / evacuation.
- Advises incoming emergency response personnel at the gate house of any radiological hazards in route to the TSC or OSC.
- Assists in establishing search teams, as required.
- Provides status updates to Site Security personnel.

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APPENDIX G
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RADCON Manager

INITIAL ACTIVATION OF THE TECHNICAL SUPPORT CENTER

INT/TIME

- | | |
|-------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| _____ | 1. Fill out the Organizational/Staffing Chart. |
| _____ | 2. Establish log of communications/events. |
| _____ | 3. Establish contact with the OSC RADCON Supervisor (Bridge 103), the radiological monitoring van (if dispatched), and the CECC Radiological Assessment Coordinator (RAC) or Radiological Assessment Manager if the RAC is not available. |
| _____ | 4. Log on to ICS. |
| _____ | 5. Check the status of emergency actions already in effect such as Accountability or Site Evacuation. |

OPERATIONAL RESPONSIBILITIES

- Remains cognizant of assessments of inplant and onsite radiological conditions from the OSC RADCON Manager.
- Keeps the CECC Radiological Assessment Coordinator informed of site radiological conditions.
- Coordinates supplemental RADCON support with the CECC Radiological Assessment Coordinator
- Makes recommendations for protective actions for onsite personnel to the SED.
- Authorizes issue of KI to onsite personnel after informing SED.
- Coordinates assessment of radiological conditions offsite with CECC Radiological Assessment Coordinator.
- Maintains status maps of offsite radiological conditions and inplant radiation status board.
- Provides RADCON surveillance through the OSC for off-site personnel assigned to the SQN Training Center, MET station, Communication Node Building, etc. if required by environmental releases. Ensure these off-site personnel are tracked by the Maintenance Manager on the Team Tracking Board.
- Assures the RADCON Laboratory Supervisor has designated a qualified/knowledgeable person to provide inplant radiological data to the NRC HP Network (HPN) upon request.
- Provides periodic status reports to the SED on radiological conditions and input on the emergency classification and PARs.

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APPENDIX H
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CHEMISTRY MANAGER

INT/TIME

- | | |
|-------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| _____ | 1. Fill out the Organizational/Staffing Chart. |
| _____ | 2. Establish log of communications/events. |
| _____ | 3. Establish contact with the Chemistry Supervisor in the lab and the CECC Radiological Assessment Coordinator. Obtain assessment of any radiological release in progress and provide to the SED. |
| _____ | 4. Log on to ICS. |
| _____ | 5. Check the status of emergency actions already in effect such as Accountability or Site Evacuation. |

OPERATIONAL RESPONSIBILITIES

- Directs the Chem. Lab Supervisor to implement the applicable portions of EPIP-14 to initiate onsite/off-site dose assessment if needed prior to the CECC being staffed.
- Coordinates the assessment of radioactive effluents with the CECC Radiological Assessment Coordinator.
- Remains cognizant of Chemistry lab Post Accident Sampling Activities.
- Determines the impact of the incident on radwaste and various effluent treatment systems.
- Performs release rate calculations and dose projections in accordance with EPIP-14 when required.
- Completes portions of plant parameter data sheets (Appendix O and P) as needed.
- Provides all plant chemistry data to the Technical Assessment Team.
- Completes Predictive Release Data sheet (Appendix P) and transmits it to the CECC PAT.
- Provide input to the SED for emergency classification and PARs.

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NRC COORDINATOR

INITIAL ACTIVATION OF THE TECHNICAL SUPPORT CENTER

INT/TIME

- | | |
|-------|-------------------------------------------------------------------------------------------------------|
| _____ | 1. Fill out the Organizational/Staffing Chart. |
| _____ | 2. Establish log of communications/events. |
| _____ | 3. Check the status of emergency actions already in effect such as Accountability or Site Evacuation. |
| _____ | 4. Contact the Operations Manager to determine if the ENS line requires continuous communications. |

OPERATIONAL RESPONSIBILITIES

- Acts as primary liaison with onsite NRC personnel.
- Updates NRC personnel on plant status.
- Provides information requests from NRC to TSC personnel.
- Maintain contact with the NRC on ENS line, if requested and coordinate the transfer of responsibility for ENS continuous communications with the MCR..
- Obtain copy of Appendix Q from the TATL and report data to NRC in the event ERDS fails.
- If necessary establish ENS communication at 1-301-816-5100 (see below).

If requested to maintain contact with the NRC, coordinate the turnover of responsibilities with the MCR. It is recommended that the NRCC use the cordless phone and get on the NRC bridge by dialing 1-301-816-5100. The NRCC should listen long enough to determine the status of questions and when ready, instruct the existing MCR ENS communicator that you are assuming responsibility and identify yourself as the TSC NRCC. The next page provides information on expected questions and sources of information.

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Typical questions and sources of information:

1. **Classification change and reason** - This information is available thru SED briefings.
2. **Ongoing/imminent damage to the facility, including affected equipment and safety features** - This information should be available thru SED briefings and by discussions at the SED table.
3. **Toxic or radiological release current or projected, both onsite and offsite and what is the basis** - This information should be provided by the Chemistry Manager.
4. **What are the health effects onsite and offsite and how many people are affected** - Same as item 3 only the RadCon Mgr will provide the input.
5. **What is being done to bring the event under control** - this information should be available thru the SED briefings and the OSC tracking board (NRCC will probably need to know why we are doing these items).
6. **Onsite protective measures** - Available by SED briefing.
7. **Offsite protective measures** - Available by SED briefing.
8. **Status of State/local/Federal agencies if known** - This information should be provided by the Site VP through CECC.
9. **Status of public information activities such as alarms, broadcast press releases and status of JIC** - same as 8.

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CONTROL ROOM COMMUNICATOR

INITIAL ACTIVATION OF THE TECHNICAL SUPPORT CENTER

INT/TIME

- | | |
|-------|--------------------------------------------------------------------------------------------------------------------------|
| _____ | 1. Fill out the Organizational/Staffing Chart. |
| _____ | 2. Pick up headset report to the Control Room (phone is already in MCR). |
| _____ | 3. Establish log of communications/events. |
| _____ | 4. Establish contact with the TSC Operations Communicator and OSC Operations Advisor. (Dial PAX 101). |
| _____ | 5. Check the status of emergency actions already in effect such as Accountability or Site Evacuation. |
| _____ | 6. Locate all Ops. Personnel/teams currently or previously tasked and ensure each is tracked on the OSC Ops. Team board. |

OPERATIONAL RESPONSIBILITIES

- Serves as the control room - TSC and OSC communications link.
- Provides operational knowledge for status evaluation of plant systems.
- Provides advice regarding Technical Specifications, system response, safety limits, etc.
- Assists in development of recommended solutions to developing problems.
- May use ICS to trend parameters.
- Assures the control room staff is aware of the TSC accident assessments and OSC activities
- Ensures the OSC Ops. Advisor and TSC Ops. Communicator are informed of the status of all Ops. personnel/teams dispatched by the SM.
- Communicate operational status of plant systems and major equipment, automatic and manual initiation of ESF equipment, important system parameters associated with EALs, and procedure transitions by the MCR.
- Communicate messages between the Shift Manager and the TSC.

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EP MANAGER

INITIAL ACTIVATION OF THE TECHNICAL SUPPORT CENTER

INT/TIME

- | | |
|-------|-------------------------------------------------------------------------------------------------------|
| _____ | 1. Fill out the Organizational/Staffing Chart. |
| _____ | 2. Establish log of communications/events. |
| _____ | 3. Check the status of emergency actions already in effect such as Accountability or Site Evacuation. |
| _____ | 4. Verifies checklists are distributed and are being completed. |
| _____ | 5. Verifies all essential positions are filled. |
| _____ | 6. Verifies all activation activities (TSC and OSC) are proceeding normally. |
| _____ | 7. Call in Clerical Support and other personnel as necessary. |

OPERATIONAL RESPONSIBILITIES

- Advises the SED regarding overall REP, use of EIPs, emergency equipment availability, and coordination with the CECC.
- Confirms TSC and OSC are operating properly.
- Provides assistance to the SED and OSC Manager as requested.
- Makes P/A announcements to update plant personnel of emergency status.
- Tracks entry into EAL's and PAR's.

DEACTIVATION RESPONSIBILITIES

- Collect all logs and information from all TSC and OSC staff.
- Return the TSC and OSC to "stand by" condition.

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APPENDIX L
Page 1 of 1

TSC CLERICAL/LOGKEEPER STAFF

INITIAL ACTIVATION OF THE TECHNICAL SUPPORT CENTER

INT/TIME

- | | |
|--|---------------------------------------------------------------------------------------|
| | 1. Fill out the Organizational/Staffing Chart. |
| | 2. Establish a log of activities. |
| | 3. Notify the EP Manager of arrival (if called in by phone to support otherwise N/A). |

OPERATIONAL RESPONSIBILITIES

- Assists in setup and activation of the TSC.
- Maintains accountability of TSC personnel.
- Answers telephones.
- Distributes plant parameter data sheets.
- Uses TSC call list to obtain staff for unfilled positions or replacement staff for shift turnover.
- Operates facsimile machines.
- Operates the TSC information clock.
- Logkeeper maintains a chronological log of the SED and TSC activities to include classification changes, PARs, changes in plant conditions, briefings, team status, content of discussions, and decisions made by the SED.
- Logkeeper assists the SED in preparing briefing notes.
- Obtain TSC checklist if requested:

- | | | |
|-------------------------------------------|----------------------------------------------------------------------|-------------------------------------|
| <input type="checkbox"/> SED | <input type="checkbox"/> Ops Mgr | <input type="checkbox"/> RADCON Mgr |
| <input type="checkbox"/> Site VP | <input type="checkbox"/> Chemistry Mgr | <input type="checkbox"/> TATL |
| <input type="checkbox"/> Ops Communicator | <input type="checkbox"/> TAT Ops Advisor | <input type="checkbox"/> EP Mgr |
| <input type="checkbox"/> TAM | <input type="checkbox"/> Maint Mgr | <input type="checkbox"/> NRCC |
| <input type="checkbox"/> Security | <input type="checkbox"/> Control Room Communicator (on deactivation) | |

DEACTIVATION OF THE TECHNICAL SUPPORT CENTER

- Transfers all logs, notes, and other materials to the EP Planning Manager for documentation and storage.
- Deactivates the TSC by returning all equipment, reference materials and supplies to the TSC storage cabinets.

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MAINTENANCE MANAGER

INITIAL ACTIVATION OF THE TECHNICAL SUPPORT CENTER

INT/TIME

- | | |
|-------|-------------------------------------------------------------------------------------------------------|
| _____ | 1. Fill out the Organizational/Staffing Chart. |
| _____ | 2. Establish log of communications/events. |
| _____ | 3. Establish contact with the Assistant OSC Manager (Bridge 104). |
| _____ | 4. Check the status of emergency actions already in effect such as Accountability or Site Evacuation. |
| _____ | 5. Check status of deployed emergency response teams. |

OPERATIONAL RESPONSIBILITIES

- Maintains cognizance of deployed OSC emergency response teams purpose and status.
- Assists the SED and the OSC Manager in determining the relative priorities of activities.
- Maintains the emergency response team tracking and periodically faxes a copy to the OSC.

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TECHNICAL ASSESSMENT TEAM

INITIAL ACTIVATION OF THE TECHNICAL SUPPORT CENTER

INT/TIME

- | | |
|-------|-------------------------------------------------------------------------------------------------------|
| _____ | 1. Fill out the Organizational/Staffing Chart. |
| _____ | 2. Establish log of communications/events. |
| _____ | 3. Establish contact with the Technical Assessment Manager. |
| _____ | 4. Establish contact with the CECC Plant Assessment Team (751-1629). |
| _____ | 5. Check the status of emergency actions already in effect such as Accountability or Site Evacuation. |

OPERATIONAL RESPONSIBILITIES

- Prepares and provides current assessment on plant conditions and provides this information to the CECC Plant Assessment Team.
- Project future status based on present plant conditions.
- Provide technical support to plant operations on mitigating actions.
- Monitor containment sump level per Appendix S.
- Provides direction for environmental qualification operating concerns for containment cooling following a non-LOCA event inside containment (i.e., loss of secondary side coolant) per Appendix T.
- Determines the condition of the reactor and nuclear fuel.
- Prepares TSC accident assessment sheet Appendix Q and transmits to the CECC when requested.
- Performs trending of key plant parameters against EAL criteria and provides technical assessment.
- Provides Technical Assessment to TAM on Appendix Q when requested.
- Team leader may designate a TSC log keeper and board writer.

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- Verifies that all ABSCE doors are closed (call Fire Ops at 7447 or OSC Fire Ops Advisor at 6430).
- Identifies and tracks the status of current ABSCE breaches (call Fire Ops at 7447 or OSC Fire Ops Advisor at 6430).
- Verifies that all Control Room Emergency Ventilation Pressure Boundary (CREVS) doors are closed (call Fire Ops at 7447 or OSC Fire Ops Advisor at 6430).
- Identifies and tracks the status of current CREVS breaches (call Fire Ops at 7447 or OSC Fire Ops Advisor at 6430).
- If all control building battery room exhaust fans are off, then refer to Appendix V.
- Monitor the temperature of the 6.9kv shutdown board rooms in accordance with Appendix V.
- Refer to Appendix W, for contingency plan for control and processing of large volumes of contaminated water in the plant secondary side.
- Refer to Appendix X, for guidance for large break LOCA concerns - CCP/SIP run-out due to throttle valve erosion (applicable to Unit 2 only ... DCN D20348A installed orifices making this issue not applicable to unit 1).
- Interface with Nuclear Engineering onsite and in the CECC (751-1634) for specific technical assistance and support as needed.
- In the event of a high energy line break (HELB) in the Auxiliary Building, evaluate the need to restore the environmental condition of the Auxiliary Building back to a normal condition within 6 to 24 hours. If environmental conditions are adverse, make recommendations to the Technical Assessment Manager to mitigate the condition.

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PLANT PARAMETER DATA SHEETS

DATE: _____
TIME: _____
UNIT: _____

GENERAL INFORMATION

1. CST LEVEL: (LI-2-230A) _____ FT (LI-2-233A) _____ FT
2. SG HEAT SINK: CONDENSER _____ ATMOSPHERE _____
3. AFW PUMPS RUNNING: MD-A _____ MD-B _____ TD _____
4. SG LEVELS: NR: (1) _____ (2) _____ (3) _____ (4) _____ %
(LI-3-39) (LI-3-52) (LI-3-94) (LI-3-107)
- WR: (1) _____ (2) _____ (3) _____ (4) _____ %
(LR-3-43) (LR-3-98)
5. SG PRESSURES: (1) _____ (2) _____ (3) _____ (4) _____ PSI
(PI-1-2A) (PI-1-9A) (PI-1-20A) (PI-1-27A)
6. RVLIS: (LOWER RANGE) (WIDE RANGE) (PLENUM)
(LI-68-367) _____ (LI-68-368) _____ (LI-68-369) _____ %
(LI-68-370) _____ (LI-68-371) _____ (LI-68-372) _____ %
7. PZR LEVEL: (LI-68-335) _____ (LI-68-320) _____ %
8. PZR PRESSURE: (PI-68-342A) _____ (PI-68-340A) _____ PSIG
9. RCS PRESSURE: WR: (LOOP 1 HOT LEG) (PI-68-69) _____ PSIG
10. RCS HL TEMP: WR: (1) _____ (2) _____ (3) _____ (4) _____ °F
(TR-68-1) (TR-68-24) (TR-68-43) (TR-68-65)
11. RCS CL TEMP: WR: (1) _____ (2) _____ (3) _____ (4) _____ °F
(TR-68-1) (TR-68-24) (TR-68-43) (TR-68-65)
12. RCS FLOW: RUNNING RCPs _____ NATURAL CIRCULATION _____
13. ECCS STATUS: STANDBY _____ INJECT _____ RECIRC _____ SPRAY _____
14. RWST LEVEL: (LI-63-50) _____ (LI-63-51) _____ %
15. CONTAINMENT SUMP LEVEL: WR: (LI-63-176) _____ %
16. CHARGING SI FLOW RATE: (FI-62-93) _____ (FI-63-170) _____ GPM
17. CONTAINMENT PRESSURE: NR: (PI-30-44) _____ (PI-30-45) _____ PSID

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APPENDIX O
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PLANT PARAMETER DATA SHEETS

DATE: _____
TIME: _____
UNIT: _____

GENERAL INFORMATION (Continued)

18. INCORE THERMOCOUPLES:

(Exo-Sensor)	QUAD 1 - (1 of #41,28,24,56,55,29,6)	_____ °F
	QUAD 2 - (1 of #44,22,58,21,16,63,64)	_____ °F
	QUAD 3 - (1 of #54,12,8,40,4,3,7)	_____ °F
	QUAD 4 - (1 of #60,9,45,6,46,42,36)	_____ °F

19. NIS SOURCE RANGE: (N31) _____ (N32) _____ CPS

DATA BY: _____

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PLANT PARAMETER DATA SHEETS

DATE: _____
 TIME: _____
 UNIT: _____

RADIATION MONITORS

1. LOWER CONTAINMENT (RM-90-106) (A) PARTICULATE _____ CPM
 ISOLATED _____ BLOCKED _____ (B) TOTAL GAS _____ CPM
 0-M-12 (C) IODINE _____ CPM

2. UPPER CONTAINMENT (RM-90-112) (A) PARTICULATE _____ CPM
 ISOL _____ BLOCKED _____ TO LOWER _____ (B) TOTAL GAS _____ CPM
 0-M-12 (C) IODINE _____ CPM

3. SHIELD BLDG VENT (RM-90-400) M-30 Eff. Level _____ μ Ci/sec

4. AUXILIARY BLDG VENT (RM-90-101) (A) PARTICULATE _____ CPM
 ISOLATED _____ BLOCKED _____ (B) TOTAL GAS _____ CPM
 0-M-12 (C) IODINE _____ CPM

5. SG BLOWDOWN: (RM-90-120A) _____ (RM-90-121A) _____ CPM
 0-M-12 0-M-12

6. CONDENSER EXHAUST:(HR) _____ (LR) _____ CPM
 RM-90-99 RM-90-119
 0-M-12 0-M-12

7. ERCW DISCHARGE: HEADER A: _____ CPM
 RM-90-133A RM-90-140A
 0-M-12 0-M-12
 HEADER B: _____ CPM
 RM-90-134A RM-90-141A
 0-M-12 0-M-12

DATA BY: _____

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PLANT PARAMETER DATA SHEETS

DATE: _____
TIME: _____
UNIT: _____

POST ACCIDENT AND AREA RADIATION MONITORS

1. UPPER CONTAINMENT: (TOP OF #2 & #3 SG) RM-90-271: _____ R/HR
(TOP OF #1 & #4 SG) RM-90-272: _____ R/HR
2. LOWER CONTAINMENT: (BETWEEN #2 & #3 SG) RM-90-273: _____ R/HR
(BETWEEN #1 & #4 SG) RM-90-274: _____ R/HR
3. SHIELD BLDG VENT (LR/RM-90-260) U1 _____ U2 _____ MR/HR
(HR/RM-90-261) U1 _____ U2 _____ MR/HR
(FLOW/FE-90-400) U1 _____ U2 _____ CFM
4. RCDT PUMP DISCH: (RM-90-277) _____ (RM-90-278) _____ MR/HR
5. RX FLOOR/EQ SUMP
DISCHARGE HEADER: (RM-90-275) _____ (RM-90-276) _____ MR/HR
6. RHR PUMP A-A: (LR/RM-90-290) _____ (HR/RM-90-291) _____ MR/HR
ROOMS: B-B: (LR/RM-90-292) _____ (HR/RM-90-293) _____ MR/HR
7. COND VAC EXHAUST: (LR/RM-90-255) _____ (HR/RM-90-256) _____ MR/HR
8. AREA MONITORS: (RM-90-59) _____ MR/HR
(RM-90-60) _____ MR/HR
9. ERCW DISCH A: (RM-90-133A) _____ (RM-90-140A) _____ CPM
HEADERS: B: (RM-90-134A) _____ (RM-90-141A) _____ CPM
10. MN STM LINES: (RM-90-421) _____ (RM-90-422) _____ μ Ci/cc
(RM-90-423) _____ (RM-90-424) _____ μ Ci/cc

DATA BY: _____

APPENDIX O
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PLANT PARAMETER DATA SHEETS

DATE: _____
 TIME: _____
 UNIT: _____

RADIOLOGICAL RELEASE DATA

1. RELEASE POINT: _____
2. RELEASE RATES: DECREASING STABLE INCREASING UNKNOWN

AIRBORNE		LIQUID RELEASE					
GROSS RELEASES μ Ci/SEC	ISO-TOPE	CONCENTRATION VALUE	UNITS	FLOW RATE VALUE	UNITS	TOTAL RELEASE VALUE	UNITS
NOBLE GAS	_____	_____	_____	_____	_____	_____	_____
IODINES	_____	_____	_____	_____	_____	_____	_____
PARTICULATE	_____	_____	_____	_____	_____	_____	_____
ISOTOPE	RELEASE RATE	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____

3. RELEASE BEGAN _____ EXPECTED TO END _____ EST/EDT. DURATION _____ HR
 RELEASE POTENTIAL: _____ Ci, IN VOLUME OF _____ (CU FT OR GAL)

4. METEOROLOGICAL CONDITIONS: (IF REQUESTED DUE TO MET DATA LINK INOPERABLE)

DATE	TIME	WINDSPEED	FROM	ELEVATION
TEMPERATURE		(METER/S)	(DEGREES)	(METERS)
DIFFERENTIAL	/	_____	_____	_____
_____	/	_____	_____	_____
_____	/	_____	_____	_____
_____	/	_____	_____	_____

5. REMARKS/COMMENTS:

DATA BY: _____

APPENDIX P
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PREDICTIVE RELEASE DATA SHEET

TO: CECC PAT DATE: _____ TIME: _____ UNIT: _____
DATA NEEDED FOR CECC TO PERFORM PREDICTIVE RELEASE METHODOLOGY

1. PRIMARY COOLANT CONCENTRATION

	IN GAS $\mu\text{Ci/cc}$	IN LIQ $\mu\text{Ci/ml}$	SAMPLE DATA
ISOTOPE			DATE: _____ TIME _____
I-131	_____	_____	
I-132	_____	_____	LOCATION: _____
I-133	_____	_____	TEMPERATURE: _____ DEG F
I-134	_____	_____	PRESSURE _____ PSIA
I-135	_____	_____	GAS VOLUME: _____ CC
CS-137	_____	_____	WATER MASS: _____ GRAMS
CS-138	_____	_____	WATER LEVEL: _____
KR-85m	_____	_____	
KR-85	_____	_____	
KR-87	_____	_____	
KR-88	_____	_____	
XE-133	_____	_____	
XE-135	_____	_____	

2. CONCENTRATION OF HYDROGEN IN CONTAINMENT ATMOSPHERE

H CONC (MOLE %): _____ DATE: _____
 CNTMT TEMP: _____ DEGREES F TIME: _____
 CNTMT PRESS _____ PSID LOCATION: _____

3. OPERATING POWER HISTORY (IF ICS DATA LINK INOPERABLE)

DATE/TIME OF SHUTDOWN: _____

START PERIOD	END PERIOD	AVG POWER IN MWt	START PERIOD	END PERIOD	AVG POWER IN MWt
_____	_____	_____	_____	_____	_____

4. EXO-SENSOR CORE EXIT THERMOCOUPLE READINGS (IF ICS DATA LINK INOPERABLE)

THERMOCOUPLE NUMBER	DATE	TIME	READING (°F)	NOTES:
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____

5. Rx WATER LEVEL HISTORY (IF ICS DATA LINK INOP) * See TI-28, Appendix B, Page 5

TIME	RVLIS %	RCS COOLANT ELEVATION (FT)	RCS GALS.* BY VOL.	RCS VOL. BY CUFT.
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____

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APPENDIX Q

To: Technical Assessment Manager (cc: CECC PAT & NRC Coordinator)
From: SQN Technical Assessment Team

1. HEAT REMOVAL CAPABILITY (FR-H and FR-C; S/G Level, RCP Flow, ECCS Flow, Subcooling RCS):
2. FUEL INTEGRITY: (Rad Monitors, Core Exit T/Cs, RCS Chemistry, RVLIS, H2 Concentration):
3. RADIOACTIVITY IN CONTAINMENT: (Rad Monitors, Rad Surveys, Fuel Integrity):
4. CONTAINMENT INTEGRITY: (FR-Z; CNTMT Pressure, CNTMT Breaches, Releases Outside CNTMT):
5. SUBCRITICALITY: (FR-S; Rods all inserted, NIS SR + IR Decreasing):
6. RCS INVENTORY: (FR-1; PZR Level, RVLIS, RCS Subcooling, Core Exit T/Cs):
7. OVERALL ASSESSMENT:
8. RECOMMENDATIONS:

TAT Leader: _____ Time: _____ Date: _____

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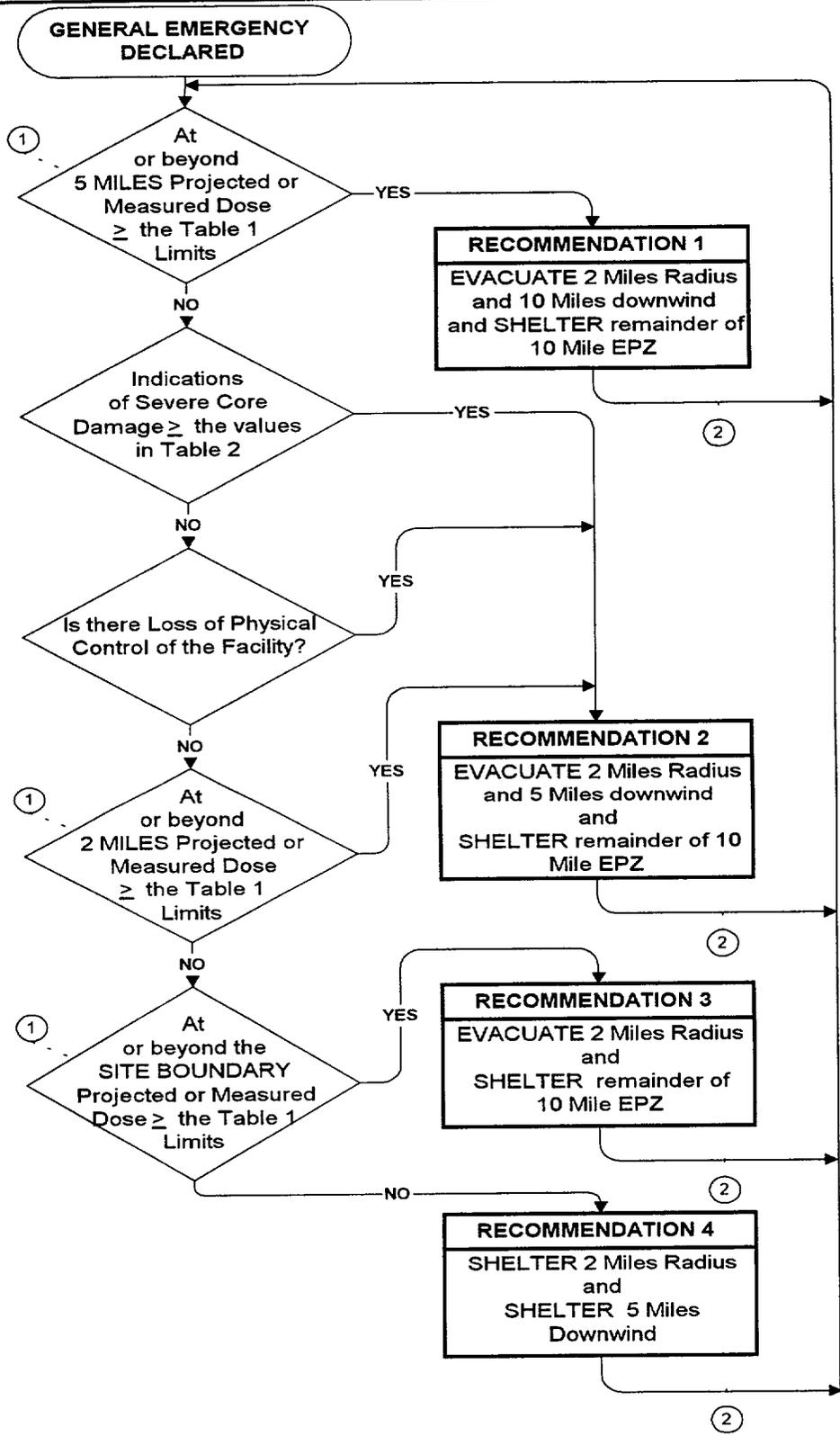
PROTECTIVE ACTION RECOMMENDATION LOGIC DIAGRAM

SEQUOYAH NUCLEAR PLANT

NOTES	
①	If conditions are not known Then Answer NO.
②	CONTINUE ASSESSMENT. Modify protective actions based on available plant and field monitoring information. Locate and evacuate additional localized hotspots.

TABLE 1 RADIOACTIVITY RELEASE DOSE	
TYPE	LIMIT
Measured	3.9E-6 microCi/cc of Iodine 131
	1 REM/hr External Dose
Projected	1 REM TEDE
	5 REM Thyroid CDE

TABLE 2 SEVERE CORE DAMAGE INDICATIONS	
1.	Containment Radiation Monitor Reading on RM-90-271 or 272 is ≥ 28 REM/hr.
	or
2.	Containment Radiation Monitor Reading on RM-90-273 or 274 is ≥ 29 REM/hr.
	or
3.	Reactor coolant Activity of ≥ 300 microCi/gm Dose Equivalent I-131.
	or
4.	Inadequate core cooling as indicated by "red" or "orange" path from core cooling status tree.



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CONTAINMENT SUMP OPERATION AND LEVEL GUIDANCE

1. The 11 percent containment level set point for switch over was specified to prevent an inappropriate automatic switch over to the containment sump for steam line breaks in the yard that could damage the RWST. Switch over, as required for a LOCA, is based on change in RWST level (i.e., volume of water injected). Based upon RWST Technical Specification limits and switch over setpoints, the actual sump level will be at least 63.5 percent (el. 693) at the time of switch over.
2. During the injection phase following a LOCA, the only function of the containment sump level instrumentation is to provide a permissive input for the switch over.
3. Until the inflow into the containment sump and the leakage out of it through the crane wall reaches equilibrium, the actual transient sump level could approach 90 percent. When instrumentation errors are considered, the sump level indication could go high off scale for a short period of time.
4. Actual equilibrium level in the containment sump is expected to be 63.5 percent (i.e., crane wall penetrations are sealed up to 63.5 percent, and more than enough water will be injected to reach this level; surplus water will flow into the area outside the crane wall). However, due to instrument inaccuracies, the indicated level could vary between 50 percent and 78 percent.
5. After the sump has reached equilibrium and temperature effects on instrumentation have stabilized, the indicated sump level should remain constant. Because the sump volume is large and will tend to mask small leaks, any significant trend showing an increase or decrease in level, however slow, should be investigated.
6. The containment sump is subject to vortexing, which could damage the pumps if the sump is operated at too low level. As long as the indicated level stays above 37 percent, the sump will operate as designed with full ECCS flow.
7. The limiting set point for sump operation at full flow (37 percent level) is based upon vortex prevention requirements.
8. If recirculation from the sump is required with a low sump level (less than 37 percent) following a large break LOCA, then the operator should be aware that vortex-free sump operation is no longer assured. If operation under these conditions is required, the probability of effective ECCS operation will improve if flow from the sump is reduced. Also, other system indicators (e.g., pump amps, pressure, and flow) should be monitored for signs of vortexing.
9. For near normal conditions (i.e., containment spray is no longer required and total flow from the sump is less than 11,000 gal/min, the instrument inaccuracies are less than +/- 8 percent and a minimum indicated level of 18 percent will ensure vortex free sump operation.
- 10 Utilize the "External Leakage Rates" notebook, in the affected unit Control Room, to anticipate areas of potentially high dose rates when sump recirculation is initiated.

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APPENDIX T
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ERCW CONCERNS FOR TECHNICAL ASSESSMENT TEAM

1. Provide direction for environmental qualification operating concerns for containment cooling following a non-LOCA event (e.g. loss of secondary coolant) inside containment. Items which should be addressed are listed below:
 - a. Cooldown the RCS to less than 350°F within 12 hours and continue as conditions allow.
 - b. In case of failure of the normal RHR suction valve FCV-74-1 to open, continue cooldown using the steam generators.

CAUTION: Prior to initiating ERCW flow to the LCC coils, the potential for water hammer must be considered. Parameters to consider are containment temperature which can cause boiling in the coils, available system pressure to prevent boiling, and maintenance of system inventory after initiating ERCW flow.

- c. Within one to four hours after event initiation, place at least two lower containment coolers in service. Ensure ERCW is aligned before placing coolers in service. This action will require entry into the annulus to manually open the ERCW valve if one train of power is lost. Preferably, all lower containment coolers should be placed in service.
 - (1) If A-train power is lost, A-train valves FCV-67-104, FCV-67-112, FCV-67-83 and FCV-67-91, located in the annulus (approx. el. 690) will have to be manually operated in order to place the B-train ERCW header to the B-train lower compartment coolers in service. See Appendix T, page 3, for the specific location of these valves.
 - (2) If B-train power is lost, B-train valves FCV-67-88, and FCV-67-96, FCV-67-99 and FCV-67-107, located in the annulus (approx. el. 690) will have to be manually operated in order to place the A-train ERCW header to the A-train lower compartment coolers in service. See Appendix T, page 3, for the specific location of these valves.
 - (3) The Temperature Control Valves (TCV's) for each Lower Compartment Cooler must be opened to obtain ERCW flow. The TCV's are operated from panel M-9 for Units 1 & 2 or can also be failed open from the Auxiliary Control Room via transfer switches.
- d. Evaluate containment heat loads. If a reactor coolant pump is running, then at least three lower containment coolers should be in service.
- e. ERCW gages are located in the 669 Penetration Room. Expect that each string of ERCW entering containment would require >400 gpm if all coolers in that string are receiving flow. Evaluate the ERCW flow to the lower compartment coolers and consider reducing flow to other equipment such as the containment spray heat exchangers if the required flow is not available. (The system flow balance assumes that containment spray flow will be removed if the lower compartment coolers are used.)

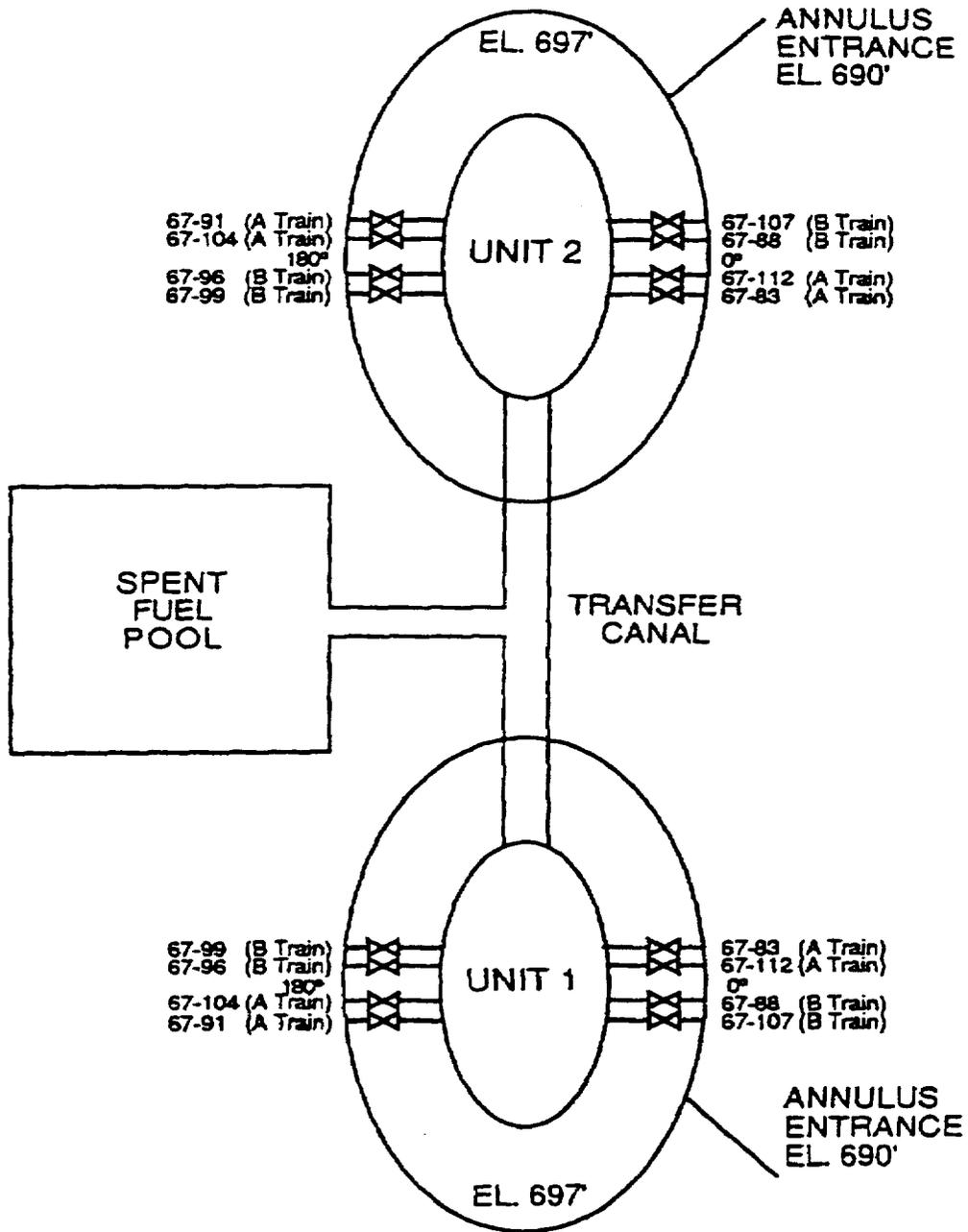
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ERCW CONCERNS FOR TECHNICAL ASSESSMENT TEAM

- f. In case of failure of both the CVCS letdown and excess letdown flow paths, then evaluate use of the reactor vessel head vent system or pressurizer PORV.
2. Monitor ERCW screens and strainers. Within 3 hours after an operating [C.2] basis earthquake (1/2 SSE), a loss of downstream dam, a stage I flood, a tornado warning or within 12 hours following a LOCA, then perform the following actions
 - a. Isolate chlorination to ERCW.
 - b. Inspect ERCW traveling screens and place screens into continuous backwash.
 - c. Inspect ERCW strainers differential pressure and place into continuous backwash.
3. For events other than those listed in previous step, then maintain the normal monitoring and cleaning frequency of the ERCW screens and strainers per 0-SO-67-3.

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APPENDIX U
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SED TURNOVER DATASHEET

1. Current Emergency Classification: UE ALERT SAE GE
EAL(s) _____

Time Declared _____ Time ODS Notified _____

State Notified _____ Time NRC Notified _____

2. Event Description:

3. Equipment Problems:

4. Rad Release: Yes No

Onsite Dose Assessment Initiated: Yes No

Filtered Unfiltered

Monitored Unmonitored

Controlled Uncontrolled

Projected Duration _____ (Hours/Minutes)

Wind Speed _____ mi/hr Wind Direction From _____ Degrees

Projected TEDE _____ mrem @ _____ miles

Projected Thyroid CDE _____ mrem @ _____ miles

5. Protective Action Recommendations to Offsite Officials (General Emergency Only)

None 1 2 3 4

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6. Onsite Protective Actions Taken:

7. Field Monitoring Vans Activated: Yes No

8. Emergency Facilities Activated: TSC OSC CECC

9. Personnel/Actions Dispatched by the SM:

10. Ensure minimum staffing of the TSC has completed (see App B Step #8)

11. Review this turnover Appendix with SM for any changes.

12. SED Responsibility Transferred:

From _____ To _____
SED SED

Time _____ Date _____

13. Return to App B #9

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APPENDIX V
Page 1 of 1

**CONTROL BUILDING BATTERY ROOM EXHAUST FAN FAILURE AND
6.9KV SHUTDOWN BOARD ROOMS TEMPERATURE MONITOR**

With all control building battery room exhaust fans off there is a potential for Hydrogen buildup in the battery rooms. Calculations (EEB 800723 901 and EEB 800723 902) show that it will take approximately 11 days to reach potentially explosive limits of hydrogen in the room. The TSC staff shall monitor the time frame that the battery room exhaust fans are off. The TSC staff shall determine how and when the fans are to be returned to service prior to the explosive limits being reached.

Monitor the temperature of the 6900V shutdown board rooms within the first hour and then every 24 hours in accordance with O-PI-OPS-000-606.0 to ensure that the temperature remains below 80°F. If the temperature of a Board Room exceeds 80°F, actions must be taken (as determined by the TSC) to reduce the temperature below 80°F and the temperature of the affected Board Room(s) must be monitored at an increased frequency as determined by the TSC.

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APPENDIX W
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**CONTINGENCIES FOR CONTROL AND PROCESSING LARGE VOLUMES OF
SECONDARY SIDE CONTAMINATED WATER**

The method of processing large amounts of contaminated water in the secondary side of the plant due to a steam generator tube rupture will be determined by the Chemistry Lab, based on condensate samples for activity.

The preferred method is to process the water through the condensate D.I. Waste Regeneration System to the High Crud Tanks (HCT). The water can then be released to the release header using 0-SI-CEM-077-400.1 or 0-SI-CEM-077-400.2. Reference flow diagrams 1,2-47W838-1 and 4.

If the contamination levels of the condensate are almost within limits for release, consideration should be given to using one of the condensate D.I. beds to reduce the activity level to a point that release using method one is possible. This will depend on the age and condition of the resins. Contact the WWPG manager or Technical Support Engineer for guidance.

If the contamination levels are high enough to prevent release, consider processing the water through a Demineralizer System similar to the Rad Waste D.I. being supplied by Chem Nuclear, under agreement contract #93N7B-79294A-000.

Two methods of D.I. operation are discussed here. The first being the best method.

METHOD 1 (PREFERRED)

Process the water through the condensate D.I. Waste Regeneration System. This will provide a flow path from the condensate system through a vendor supplied demineralizer system back to the unit hotwell through an open manway (vacuum will have to be broken). This will allow recirculation of water from the condensate system of up to 200 gpm back to the hotwell until the activity levels are at a point that the water can be released to the HCT's, or after Chem Lab analysis indicates that it can be saved as condensate.

METHOD 2 (ALTERNATE)

Process water through a vendor supplied D.I. System to the HCT's and then release the HCT's to the release header, using 0-SI-CEM-077-400.1 or 0-SI-CEM-077-400.2, as clean D.I. water. As this water is being removed additional make-up water will be required to maintain inventory in the unit hotwell.

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APPENDIX X
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Unit 2 Only

LARGE BREAK LOCA CONCERN
CCP/SIP RUN OUT DUE TO THROTTLE VALVE EROSION

There is a design related ECCS deficiency associated with the Centrifugal Charging Pump and Safety Injection Pump throttle/balancing valves during a Large Break LOCA when on sump recirculation. Valve erosion leads to excessive pump run out.

In as little as two days after a LBLOCA,:

- Evaluate the condition of the CCP's and SIP's by closely monitoring their discharge flows SIP @ 675 gpm; CCP @ 555 gpm.
- Consider shutdown of any or all CCP's & SIP's that exceed the run out flow limits.

The CCP's and SIP's will be operating on cold leg recirculation and SIP's will be operating on hot leg recirculation at this time. Throttle/balancing valve erosion, due to the system's high operating pressures, will begin to seriously impact the pump's run out limits. Exceeding the allowable run out flows will quickly lead to pump damage and failure. Shutdown of the CCP's & SIP's at this point in time is acceptable since the accident should have been turned around and both the core and containment parameters should be within the mitigation capabilities of one RHR pump.

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APPENDIX Y
Page 1 of 1

Telephone Lists can be found in the REND

TELEPHONE LIST	REND LOCATION
FAX Machine Numbers	Section A Item # 8
CECC Numbers	Section B Item # 1
TSC Numbers	Section B Item # 9
OSC Numbers	Section B Item # 10
Tennessee State Numbers	Section E Item # 2
Communications Support	Section I
Medical Support Numbers	Section K
Meteorological Support Numbers	Section L

SITE EMERGENCY ORGANIZATION
(Including Minimum Staffing and Augmentation)

See Nuclear Power Radiological Emergency Plan (NP-REP) Appendix B, Figure B-1 and associated Notes.

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The following reference materials are provided in the TSC:

1. Sequoyah Nuclear Plant FSAR.
2. Sequoyah Nuclear Plant Technical Specifications (Unit 1).
3. Sequoyah Nuclear Plant Technical Specifications (Unit 2).
4. Surveillance Instructions (Selected).¹
5. Technical Instructions (Selected).¹
6. Radiological Control Instructions.
7. Site Health and Safety Manual.
8. System Operating Instructions.
9. General Operating Instructions.
10. REP and SQN and CECC Emergency Plan Implementing Procedures
11. Plant Functional Drawings.
12. Abnormal Operating Instructions.
13. Emergency Operating Instructions.
14. Westinghouse Emergency Response Guidelines².

1 Selection to be made by Technical Support Manager.

2 Obtain copy from 24-Hour.

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APPENDIX AA

OPERATIONS COMMUNICATOR
Page 1 of 1

INITIAL ACTIVATION OF THE TECHNICAL SUPPORT CENTER

INT/TIME

- _____ 1. Fill out the Organization/Staffing Chart.
- _____ 2. Obtain headset connect to the Control Room
Operations Bridge(dial X 101).
- _____ 3. Provide the completed checklist to the TSC log keeper.

OPERATIONAL RESPONSIBILITIES

- Monitors the Control Room Operations Bridge.
- Provides information from the MCR and OSC to TSC personnel.
- Monitors plant status boards and ICS.
- Obtains supplemental data as needed by the TSC, OSC, or CECC.
- Makes inquiries to the Control Room Communicator to obtain specific information as necessary.
- Maintains a current log of major operational events for the Operations Manager's use.

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SOURCE NOTES

REQUIREMENTS

STATEMENT

**IMPLEMENTING
SOURCE DOCUMENT
STATEMENT**

To address emergency classification by the Site Emergency Director (SED) in the TSC.

NRC Exercise Weakness
50/327, 328/86-64-08

C.1

Operation of ERCW screens/strainers to be consistent with DNE USQD (RIMS-B25871008558).

NRC-IE-87-52-02
Weakness No. 1
NCO-870324038

C.2

NP Radiological Emergency
Plan (NP-REP)

NUREG-0696

TENNESSEE VALLEY AUTHORITY
SEQUOYAH NUCLEAR PLANT
EMERGENCY PLAN IMPLEMENTING PROCEDURE

EPIP-16
TERMINATION AND RECOVERY

Revision 4

QUALITY RELATED

PREPARED/PROOFREAD BY: W. P. Brooks

RESPONSIBLE ORGANIZATION: Emergency Preparedness

APPROVED BY: John Casey

EFFECTIVE DATE: 09/20/2000

LEVEL OF USE: REFERENCE

REVISION

DESCRIPTION: Intent Change. Change titles to agree with REP. Added actions for SED to ensure CECC Director has announced termination as required by the REP Section 13.1.2. Revised Appendix C TVA Recovery Organization to match the REP.

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1.0 PURPOSE

This procedure gives guidance on terminating an emergency classification by the Site Emergency Director (SED) following staffing of the Emergency Response Facilities (ERFs), and the development of recovery procedures to efficiently utilize resources and keep radiation doses ALARA.

This procedure also provides a minimum list, in the form of a checklist, of the plant system parameters to be considered prior to termination of an emergency. A checklist of guidelines for development of a recovery strategy are also included.

These checklist should not be considered as all inclusive. They should be used only as a minimum basis, excluding the specifics of the event, for termination and recovery.

2.0 REFERENCES

2.1 Interface Documents

- A. NP Radiological Emergency Plan
- B. EPIP-15, Emergency Exposure Guidelines

2.2 Development Documents

- A. None.

3.0 INSTRUCTIONS

3.1 Termination

- A. The decision to terminate an event where the ERFs are not staffed is the responsibility of the SM /SED.
- B. The decision to terminate an event following staffing of the ERFs will be made by the SED after consultation with the plant technical and operations staffs and coordinated with the CECC Director. This decision will be based upon a comprehensive review of plant system parameters and completion of Appendix A, Termination Guidelines.
- C. Should an emergency situation occur following the termination, the SED shall reactivate the Emergency Response Organization.

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3.2 Recovery

- A. The overall goal of the recovery effort is to assess the plant condition resulting from the emergency, perform clean-up and repair operations to restore the plant to a predetermined status.
- B. The decision to enter the recovery phase will be made by the SED with concurrence from the CECC Director and the Senior Vice President, Nuclear Operations. Following the decision to enter into the recovery phase, the Senior Vice President, Nuclear Operations or his designee will direct the overall recovery effort.
- C. If the recovery phase is expected to be a long-term process, he may form a team to be responsible for continuous control of the recovery operation. The organizational structure of such a team would be contingent upon the emergency situation and procedures required for recovery. The Local Recovery Center (LRC) is available to provide additional office space near the site for the recovery team at the discretion of the Senior Vice President, Nuclear Operations. See paragraph 3.3 for information concerning the Local Recovery Center.
- D. All major post accident onsite recovery measures shall be performed in accordance with written procedures.
- E. Personnel protective measures shall be taken on initial entries and throughout the assessment and recovery operation to limit exposures As Low As Reasonable Achievable (ALARA) in accordance to SQN EPIP-15, Emergency Exposure Guidelines.
- F. The State of Tennessee has the authority for actions taken offsite however, TVA will serve as an important source of technical and analytical assistance for the State in offsite monitoring and sampling. The Senior Vice President, Nuclear Operations, or his designee will serve as the State's contact for coordination of TVA's efforts in offsite monitoring, sampling and recovery.

3.3 Local Recovery Center (LRC)

- A. The purpose of the LRC, located at the Sequoyah Training Center (STC), is to provide a nearsite facility for TVA recovery management as well as NRC emergency response personnel and other emergency and/or recovery personnel.
- B. The LRC provides adequate space for TVA and others who may locate there to support the site should additional office space near the site become necessary during the recovery phase.
- C. The LRC will provide dedicated space for NRC personnel containing adequate supplies, communication, and data necessary for them to carry out appropriate functions. See NP-REP, Appendix B for description.

3.4 Radiation Dose Management

- A. Radiological Control (RADCON) personnel will provide monitoring services and dosimetry and prescribe the protective equipment to be used during the recovery of personnel or equipment.
- B. Before entry to the affected area is attempted, RADCON will estimate airborne and direct radiation levels in the recovery area. From the information obtained, respiratory protection and occupancy times will be established.
- C. RADCON personnel will accompany the recovery personnel on the initial entry to confirm that the airborne radioactivity and radiation levels are as expected.
- D. Dose for recovery personnel will be kept within the limits described in EPIP-15, and NP-REP. Respiratory protection factors given in EPIP-15 may be used in determining appropriate respiratory protection for the entry team.
- E. TLD badges worn by recovery personnel will be processed by TVA. Process time for a badge would be approximately 2 hours.
- F. Although an emergency situation transcends the normal requirements of limiting exposure, there are suggested levels in NP-REP and EPIP-15 for exposure to be accepted in emergencies. However, every reasonable effort to minimize exposure to ALARA would be made, even in emergencies.

4.0 RECORDS

4.1 QA Records

The following checklists necessary to demonstrate key actions during an emergency are considered QA records. These records shall be forwarded to the EP Manager who shall submit QA records to corporate Emergency Preparedness for maintenance.

- A. Termination Guidelines Checklist
- B. Recovery Guidelines Checklist

4.2 Non-QA Records

None.

APPENDIX A
Page 1 of 2

TERMINATION GUIDELINES

Site Emergency Director (Signature) _____ TIME _____
Date ____/____/____

1. ENSURE THE STABILITY OF THE REACTOR SHUTDOWN CONDITION, I.E. SUCCESSFUL PROGRESS TOWARD A COLD SHUTDOWN CONDITION.
COMMENTS: _____
_____ YES
 NO
 N/A

2. ENSURE THE INTEGRITY OF THE REACTOR CONTAINMENT BUILDING.
COMMENTS: _____
_____ YES
 NO
 N/A

3. ENSURE THE OPERABILITY OF THE ENGINEERED SAFETY SYSTEMS AND DECONTAMINATION FACILITIES.
COMMENTS: _____
_____ YES
 NO
 N/A

4. ENSURE THE AVAILABILITY AND OPERABILITY OF A HEAT SINK.
COMMENTS: _____
_____ YES
 NO
 N/A

5. ENSURE THE INTEGRITY OF POWER SUPPLIES AND ELECTRICAL EQUIPMENT.
COMMENTS: _____
_____ YES
 NO
 N/A

6. ENSURE THE OPERABILITY AND INTEGRITY OF INSTRUMENTATION INCLUDING RADIATION MONITORING EQUIPMENT AND ANY PORTABLE EQUIPMENT THAT MAY HAVE BEEN ASSIGNED DURING THE EMERGENCY.
COMMENTS: _____
_____ YES
 NO
 N/A

7. ENSURE THE AVAILABILITY OF TRAINED PERSONNEL AND SUPPORT SERVICES.
COMMENTS: _____
_____ YES
 NO
 N/A

8. ENSURE THAT ANY RADIOLOGICAL EFFLUENT RELEASES ARE UNDER CONTROL.
COMMENTS: _____
_____ YES
 NO
 N/A

APPENDIX A
Page 2 of 2

TERMINATION GUIDELINES

9. COORDINATE THE TERMINATION OF THE EVENT WITH THE CECC DIRECTOR, TECHNICAL SUPPORT AND OPERATIONS. YES
 NO
 N/A
 COMMENTS: _____

10. COORDINATE WITH SQN RADIOLOGICAL CONTROL OR CHEMISTRY MANAGER SPECIFICS REGARDING THE USE OR NEED FOR POST ACCIDENT SAMPLING. YES
 NO
 N/A
 COMMENTS: _____

11. ENSURE THAT THE CECC DIRECTOR HAS INFORMED THE NRC AND THE AFECTED STATE AGENCIES THE DECISION TO TERMINATE THE EMERGENCY. AND THAT HE/SHE HAS ANNOUNCED THAT THE EMERGENCY HAS TERMINATED AND THE RECOVERY PHRASE IS TO BE INITIATED. YES
 NO
 N/A
 COMMENTS: _____

FORWARD TO EMERGENCY PREPAREDNESS MANAGER, OPS 4I-SQN

APPENDIX B
Page 1 of 1

RECOVERY GUIDELINES

TIME

Site Emergency Director (Signature) _____ **Date** ____/____/____

1. ENSURE THAT A DETAILED SEQUENCE OF EVENTS IS RECONSTRUCTED. YES
 NO
 N/A
 COMMENTS: _____

2. ENSURE THAT THERE IS A RECONSTRUCTION OF OPERATION'S ACTIVITIES DURING THE EVENT (I.E., SYSTEM ALIGNMENTS AND EQUIPMENT CONFIGURATIONS). YES
 NO
 N/A
 COMMENTS: _____

3. ENSURE THAT A RECOVERY ORGANIZATION IS ESTABLISHED AND THAT DIRECTION AND CONTROL ARE PROVIDED. SEE APPENDIX C FOR ORGANIZATION STRUCTURE. YES
 NO
 N/A
 COMMENTS: _____

4. COORDINATE ASSESSMENT OF CURRENT CONDITIONS AND PLANNED RECOVERY ACTIVITIES FOR TECHNICAL SPECIFICATION IMPACT. YES
 NO
 N/A
 COMMENTS: _____

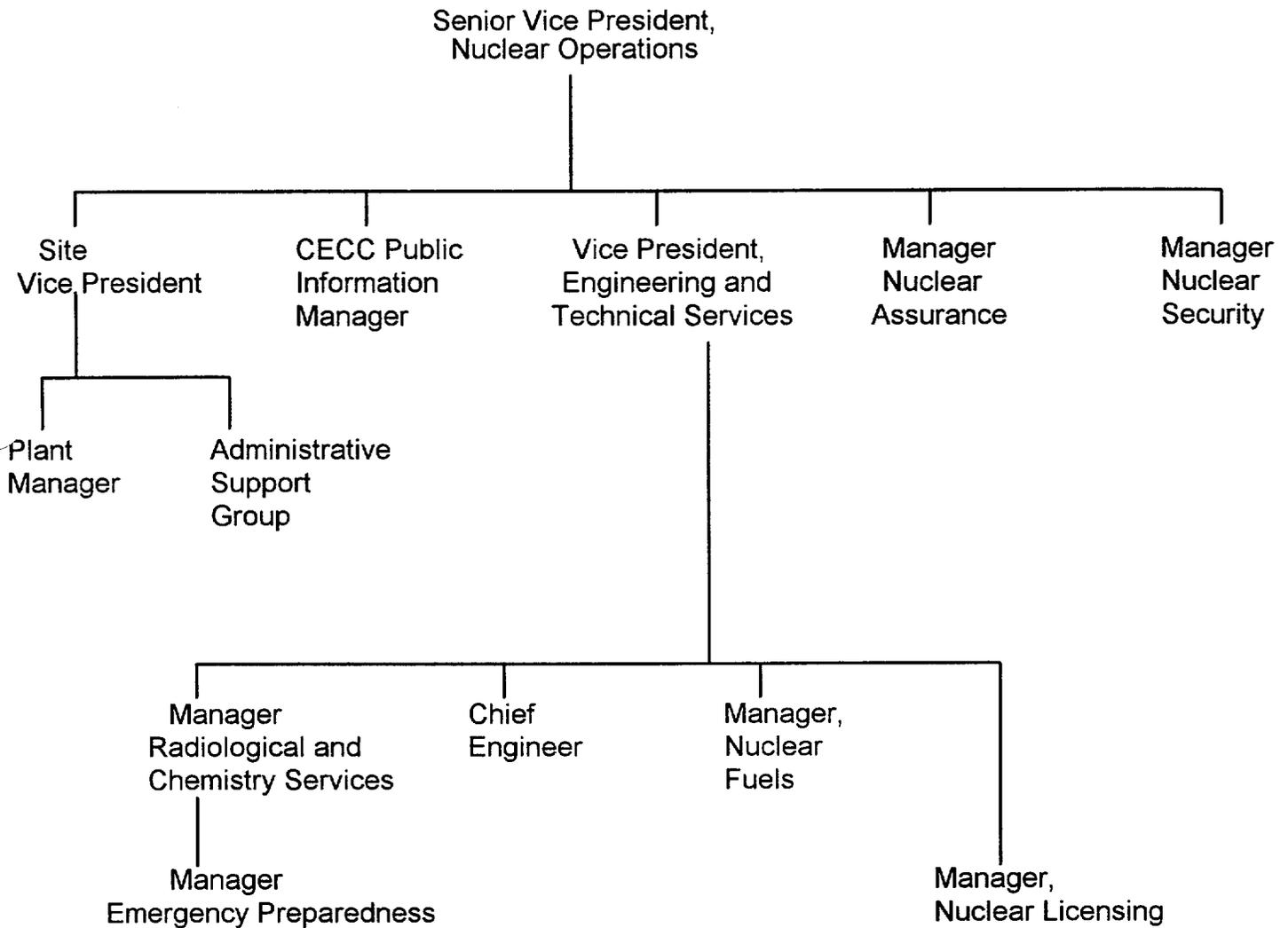
5. ENSURE A RECOVERY PLAN INCLUDES WRITTEN PROCEDURES FOR ALL MAJOR POST INCIDENT RECOVERY MEASURES. THESE PROCEDURES MAY INCLUDE BUT ARE NOT LIMITED TO THE FOLLOWING: YES
 NO
 N/A
 - A) FIRST REACTOR BUILDING ENTRY
 - B) FIRST CONTAINMENT BUILDING ENTRY
 - C) DAMAGE EVALUATION
 - D) DECONTAMINATION
 - E) DISASSEMBLY
 - F) REPAIR
 - G) DISPOSAL
 - H) TEST AND STARTUP OF RESTORED FACILITIES
 COMMENTS: _____

6. ENSURE THAT STATION RECOVERY ACTIVITIES ARE CONDUCTED IN ACCORDANCE THE RADIATION EXPOSURE LIMITS OF 10 CFR 20 AND SQN EPIP-15. YES
 NO
 N/A
 COMMENTS: _____

Forward to Emergency Preparedness Manager, OPS 4I-SQN

APPENDIX C
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TVA RECOVERY ORGANIZATION



For position responsibilities refer to the Radiological Emergency Plan, Section 13.2.

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SOURCE NOTES

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**IMPLEMENTING
STATEMENT**

SECTION 13.0

**REQUIREMENTS
DOCUMENT**

NP Radiological
Emergency Plan
(NP-REP)

**REQUIREMENTS
STATEMENT**