



Tennessee Valley Authority, Post Office Box 2000, Spring City, Tennessee 37381-2000

SEP 01 2000

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

Gentlemen:

In the Matter of) Docket No. 50-390
Tennessee Valley Authority)

WATTS BAR NUCLEAR PLANT (WBN) - EMERGENCY PLAN IMPLEMENTING
PROCEDURE (EPIP) REVISION

In accordance with the requirements of 10 CFR Part 50, Appendix E, Section V, the enclosure provides revised EPIPs as follows:

<u>EPIP</u>	<u>Rev</u>	<u>Title</u>	<u>Effective Date</u>
EPIP-1	15	Emergency Plan Classification Flowchart	08-17-2000
EPIP-5	17	General Emergency	08-16-2000
EPIP-6	16	Activation and Operation of the Technical Support Center	08-15-2000

Filing instructions are included with these documents.

A045

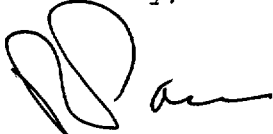
U.S. Nuclear Regulatory Commission

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If you should have any questions, please contact me at
(423) 365-1824.

Sincerely,

A handwritten signature in black ink, appearing to be 'P. D. Pace', written over a horizontal line.

P. D. Pace
Manager, Licensing and Industry Affairs

Enclosure

cc: See Page 3

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PLP:JES

Enclosure

cc (Enclosure)

NRC Resident Inspector (w/o Enclosure)
Watts Bar Nuclear Plant
1260 Nuclear Plant Road
Spring City, Tennessee 37381

Mr. Robert E. Martin, Senior Project Manager
U.S. Nuclear Regulatory Commission
One White Flint North
11555 Rockville Pike
Rockville, Maryland 20852

U.S. Nuclear Regulatory Commission (2 copies)
Region II
Atlanta Federal Center
61 Forsyth St., SW,
Suite 23T85
Atlanta, Georgia 30303

FILING INSTRUCTIONS

DOCUMENT NUMBER EPIP-1

REMOVE REVISION 14 INSERT REVISION 15
8/17/00

Comments _____

TENNESSEE VALLEY AUTHORITY

WATTS BAR NUCLEAR PLANT

**EMERGENCY PLAN IMPLEMENTATING
PROCEDURES**

EPIP-1

EMERGENCY PLAN CLASSIFICATION FLOWCHART

Revision 15

Unit 0

QUALITY RELATED

PREPARED BY: Ben McNew
(Type Name)

SPONSORING ORGANIZATION: Emergency Planning

APPROVED BY: Frank L. Pavlechko

EFFECTIVE DATE: 8/17/00

LEVEL OF USE: REFERENCE

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REVISION LOG

Revision Number	Implementation Date	Description of Revision
0	04/13/90	New WBN-EPIP. Supersedes IP-1.
1	02/04/91	Revised to separate RCS leak and identified S/G tube leak initiating conditions. Clarified initiating condition in fire. Updated ODS telephone numbers.
2	11/28/91	Add initiation conditions. Clarify reference to Attachment 1 Definitions. Define Protected Area, Owner Controlled Area, and Vital Areas throughout procedures. Clarify NOUE declaration for Uncontrolled Shutdown.
3	03/04/92	Change all Technical Specification references to reflect new "Merit" Tech Specs and ODCM references.
4	02/10/93	Procedure revised to reflect the new methodology for development of Emergency Action Levels per: NUMARC/NESP-007, Rev. 3, 1/92, endorsed by REG GUIDE 1.101 Emergency Planning and Preparedness For Nuclear Power Reactors Rev. 3, 8/92.
5	09/15/93	Editorial (non-intent) and formal changes. Text changes made to EALs to meet review comments identified by the NRC.
6	01/01/94	Procedure revised to reflect new 10 CFR 20 changes.
7	05/27/94	Procedure revised to reflect changes to System 90 (Radmonitoring) and establish site perimeter monitoring points.
8	01/10/95	FPBM, EAL 1.3.4, CNTMT, Bypass, Loss (1), revised to eliminate potential for misclassification. Maps revised to reference north and wind direction. Table 7-2, Alert, Radiation Levels enhanced to provide Operators additional information.
9	4/28/98	Revised Revision Log to include page numbers. References added to the document. Fission Product Barrier Matrix revised to reflect information found in the EOP Set Point Verification Document (WBN-OS64-188). Reference to AOI-27 revised to AOI-30.2. Phone numbers to the National Weather Service changed due to their reorganization. Annunciator window references for the earthquake corrected to match Main Control Room alignment. All references to RM were changed to RE to make it consistent with site description documents. Tables in section seven revised to reflect the following: System 90 changes, monitor efficiencies, default flow rates, release time durations, and annual meteorological data enhancements.

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REVISION LOG(Continued)

Revision Number	Implementation Date	Pages Affected	Description of Revision
CN-1	09/28/95	10, 14, 26	The following non-intent enhancements were made: (CCP) Acronym added to the Fission Product Barrier Matrix in 1.2 RCS Barrier, (2. RCS Leakage LOCA), to enhance description. New SI reference number for Reactor Coolant System Water Inventory Balance identified in event 2.5 (RCS Unidentified Leakage) and 2.6 (RCS Identified Leakage). Area code and phone number in event 5.2 (Tornado) revised to new number.
CN-2	11/10/95	3, 6, 34	The following non-intent enhancements were made: Corresponding ERFDS system identifiers were added next to the rad monitors on Table 7-1; Table 7-1 was realigned to improve its usability; an enhanced description for RE-404 was provided in Note 3 of Table 7-1; the ERFDS Operators Manual was added to the Reference section.
CN-3	05/24/96	8, 11, 16, 19, 23, 24, 26, 29, 32, 34	The following non-intent enhancements were made: Due to revisions made to AOI-27, it was added back to the EALs in event 4.5 "Control Room Evacuation"; The Assessment Method on Table 7-1 was enhanced to correspond with the note at the top of the table. In addition, the reference to TI-30 was removed since this procedure will be terminated due to the enhancements being made to EP-IP-16 and ERFDS. The word Projectile was added to the index and title reference to event 5.3 "Aircraft/Projectile Crash", to make it consistent with the EALs within it's classification.
10	3/15/99	All	The following non-intent enhancement were made: Software revised to Microsoft Word which re-formatted pages along with other enhancements; minor typographical errors corrected; two references revised - one added; SOS/ASOS replaced with SM/US; index page, effluent added to gaseous; vital area definition enhanced; spent fuel pit revised to pool on Table 7-2; SP revised to EAB in Event 7.1; TVA Load Dispatcher/Water Resources revised to River Systems Operations and revised ERFDS/P-2500 to ICS.
11	4/15/99	2, 34	Non intent change. Typo corrected. Changed >1.0 to >0.1.
11A	7/1/99	3,26	Corrected typo on phone number The remaining pages of this procedure are Rev 11 only page 3, and the fold out page for 26 have been changed.

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REVISION LOG (Continued)

Revision Number	Implementation Date	Pages Affected	Description of Revision
12	9/30/99	All	Non intent change. Minor editorial/format changes made. Typographical errors corrected. Seismic windows revised to reflect DCN-50007 per ERPI Report 6695. (LTL) Lower toxicity limit replaced with (PEL) Permissible Exposure Limit. This revision is also part of the resolution to PER 99-009326-000.
13	12/08/99	All	Non-intent change. Revised page 33 for resolution of PER 99-015478-000. Minor editorial change to Event 5.1 step 1 of the Alert classification.
14	04/10/00	All (Pg.4 & 45)	Non-intend change. Revised page 45 for DCN 50484, stage 1 which moved 0-RE-90-101B, & -132B from ICS Screen 4RM2 to 4RM1. DCN also moved 1-RE-90-421B thru -424B and 0-RE-90-120 & -121 from ICS Screen 4RM1 to 4RM2. This revision allows all liquid radiation monitors to be observable on one ICS screen and all gaseous radiation monitors to be observed on a separate ICS screen.
15	08/17/00	All (Pg. 4, 11A & B)	Intent change. Revised CNTMT Rad Monitors (1-RE-90-271, 272, 273, & 274) readings to correspond with the new TI-RPS-162, "Response of the Primary Containment High Range Monitors" readings (Reference EDC-50600). This analysis resulted in a revision to the EALs 1.1.5 on the Barrier matrix page, 11b. This revision resolves action items from CORP PER 99-000038-000. This revision was also determined not to reduce the level of effectiveness of the procedure or REP.

WBN	EMERGENCY PLAN CLASSIFICATION FLOWCHART	EP-1 Revision 15 Page 5 of 49
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1.0 PURPOSE⁴

This Procedure provides guidance in determining the classification and declaration of an emergency based on plant conditions.

2.0 RESPONSIBILITY^{2,4}

The responsibility of declaring an Emergency based on the guidance within this procedure belongs to the Shift Manager/Site Emergency Director (SM/SED) or designated Unit Supervisor (US) when acting as the SM or the TSC Site Emergency Director (SED). These duties CAN NOT be delegated.

3.0 INSTRUCTIONS⁴

- 3.1 The criteria in WBN EP-1 are given for GUIDANCE ONLY: knowledge of actual plant conditions or the extent of the emergency may require that additional steps be taken. In all cases, this logic procedure should be combined with the sound judgment of the SM/SED and/or the TSC SED to arrive at a classification for a particular set of circumstances.
- 3.2 The Nuclear Power (NP) Radiological Emergency Plan (REP) will be activated when any one of the conditions listed in this logic is detected.
- 3.3 Classification Determination
 - 3.3.1 To determine the classification of the emergency, review the Initiating Conditions of the Events described in this procedure with the known or suspected conditions and CARRY OUT the notifications and actions referenced.
 - 3.3.2 If a Critical Safety Function (CSF) is listed as an Initiating Condition: the respective status tree criteria will be monitored and used to determine the Event classification for the modes listed on the classification flowchart.
 - 3.3.3 The highest classification for which an Emergency Action level (EAL) currently exists shall be declared.

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3.0 INSTRUCTIONS (continued)

- 3.3.4 After an Event classification, if the following investigation shows that Initiating Conditions were met that dictate a higher Event classification, the new event classification shall be declared at the clock time of the determination.
- 3.3.5 IF an EAL for a higher classification was exceeded but the present situation indicates a lower classification, the fact that the higher classification occurred SHALL be reported to the NRC and Central Emergency Control Center (CECC), but should not be declared.
- 3.3.6 IF the Parameter is indeterminate due to instrument malfunction and the existence of the condition **CAN NOT** be reasonably discounted (i.e., spurious or false alarm that can be substantiated within 15 minutes) the condition is considered **MET** and the SM/SED SHALL follow the indications provided until such time as the alarm is verified to be false.
- 3.3.7 IF an EAL was exceeded, but the emergency has been totally resolved (prior to declaration), the emergency condition that was appropriate shall not be declared but reported to the NRC and Operations Duty Specialist (ODS) at the same clock time.
- 3.3.8 The **ACCEPTABLE** time frame for notification to the Operation Duty Specialist (ODS) is considered to be five (5) minutes. This is the time period between declaration of the emergency and notifying the ODS.

4.0 RECORDS

4.1 QA Records

None

4.2 Non-QA Records

None

WBN	EMERGENCY PLAN CLASSIFICATION FLOWCHART	EPIP-1 Revision 15 Page 7 of 49
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5.0 REFERENCES

5.1 Interfacing Documents

BP-236, *Event Critique and Root Cause Analysis*

SPP 3.5, *Regulatory Reporting Requirements*

WBN-EPIP-2, *Unusual Event*

WBN-EPIP-3, *Alert*

WBN-EPIP-4, *Site Area Emergency*

WBN-EPIP-5, *General Emergency*

WBN-EPIP-9, *Loss of Meteorological Data*

WBN-EPIP-13, *Termination of the Emergency and Recovery*

WBN-EPIP-14, *Radiological Control Response*

WBN-EPIP-16, *Initial Dose Assessment For Radiological Emergencies*

CECC-EPIP-9, *Emergency Environmental Radiological Monitoring Procedures*

SI-4.04, *Measurement of Identified and Unidentified Leakage of the Reactor Coolant System*

5.2 Other Documents

10 CFR 50, *Domestic Licensing of Production and Utilization Facilities*

10 CFR 20, *Standards for Protection From Radiation*

REG GUIDE-1.101, *Emergency Planning and Preparedness For Nuclear Power Reactors endorsing NUMARC NESP-007 Methodology for Development of Emergency Action Levels.*

Site Technical Specifications (Tech Specs), Abnormal Operating Instructions (AOIs), Emergency Operating Procedures (EOPs), Set Point Verification documents, Chemistry Technical documents (CTDs), and the Final Safety Analysis Report (FSAR) are also referenced in Appendix C of the Radiological Emergency Plan.

ICS Operator's Manual

EPPOS #2, "NRC EP Position on Timeliness of Classification of Emergency Conditions

EPRI Report 6695 Guidelines for Nuclear Power Plant Response to Earthquakes.

EMERGENCY

PLAN

CLASSIFICATION

FLOWCHART ^{1,3,4,5}

FISSION PRODUCT BARRIER MATRIX (Modes 1-4)

- 1.1 Fuel Clad
- 1.2 RCS
- 1.3 Containment

1

SYSTEM DEGRADATION

- | | |
|------------------------------------|-----------------------------|
| 2.1 Loss of Instrumentation | 2.6 RCS Identified Leakage |
| 2.2 Loss of Function/Communication | 2.7 Uncontrolled Cool Down |
| 2.3 Failure of Reactor Protection | 2.8 Turbine Failure |
| 2.4 Fuel Clad Degradation | 2.9 Technical Specification |
| 2.5 RCS Unidentified Leakage | 2.10 Safety Limit |

2

LOSS OF POWER

- 3.1 Loss of AC (Power Ops)
- 3.2 Loss of AC (Shutdown)
- 3.3 Loss of DC

3

HAZARDS and SED JUDGMENT

- | | | |
|---------------|-------------------|-----------------------------|
| 4.1 Fire | 4.3 Flammable Gas | 4.5 Control Room Evacuation |
| 4.2 Explosion | 4.4 Toxic Gas | 4.6 Security |
| Table 4-1 | Table 4-2 | 4.7 SED Judgment |
| Figure 4-A | Figure 4-B | Table 4-3 |

4

DESTRUCTIVE PHENOMENON

- | | |
|-------------------------------|----------------------|
| 5.1 Earthquake | 5.4 River Level High |
| 5.2 Tornado | 5.5 River Level Low |
| 5.3 Aircraft/Projectile Crash | 5.6 Watercraft Crash |
| Table 5-1 | Figure 5-A |

5

SHUTDOWN SYSTEM DEGRADATION

- 6.1 Loss of Shutdown Systems
- 6.2 Loss of AC (Shutdown)
- 6.3 Loss of DC (Shutdown)
- 6.4 Fuel Handling

6

RADIOLOGICAL

- | | |
|----------------------|----------------------|
| 7.1 Gaseous Effluent | 7.3 Radiation Levels |
| 7.2 Liquid Effluent | 7.4 Fuel Handling |
| Table 7-1 | Table 7-2 |
| Figure 7-A | |

7

DEFINITIONS/ACRONYMS

UNUSUAL EVENT, ALERT, SITE AREA EMERGENCY and GENERAL EMERGENCY: (see SED Judgment 4.7).

BOMB: An explosive device (See EXPLOSION).

CIVIL DISTURBANCE: A group of twenty (20) or more persons violently protesting station operations or activities at the site.

CRITICAL-SAFETY FUNCTION (CSFs): A plant safety function required to prevent significant release of core radioactivity to the environment. There are six CSFs: Sub-criticality, Core Cooling, Heat Sink, Pressurized Thermal Shock, Integrity (Containment) and Inventory (RCS).

EVENT: Assessment of an EVENT commences when recognition is made that one or more of the conditions associated with the event exist. Implicit in this definition is the need for timely assessment, i.e. within 15 minutes.

EXCLUSION AREA BOUNDARY (EAB): The demarcation of the area surrounding the WBN units in which postulated FSAR accidents will not result in population doses exceeding the criteria of 10 CFR Part 100. Refer to Figure 7-A.

EXPLOSION: A rapid, violent, unconfined combustion, or a catastrophic failure of pressurized equipment that imparts energy of sufficient force to potentially damage permanent structures required for safe operation.

EXTORTION: An attempt to cause an action at the station by threat of force.

FAULTED: (Steam Generator) Existence of secondary side leakage (i.e., steam or feed line break) that results in an uncontrolled decrease in steam generator pressure or the steam generator being completely depressurized.

FIRE: Combustion characterized by heat and light. Source of smoke such as slipping drive belts or overheated electrical components do not constitute fires. Observation of flame is preferred but is NOT required if large quantities of smoke and heat are observed.

FLAMMABLE GAS: Combustible gases maintained at concentrations less than the LOWER EXPLOSIVE LIMIT (LEL) will not explode due to ignition.

HOSTAGE: A person(s) held as leverage against the station to ensure that demands will be met by the station.

INEFFECTIVE: The specified restoration action(s) does not result in a reduction in the level of severity of the RED PATH condition within 15 minutes from identification of the Core Cooling CSF Status Tree RED PATH. A reduction in the level of severity is an improvement in the applicable parameters, e.g., Increasing Trend in Reactor Vessel Water Level (Full RVLIS) and/or Decreasing Trend on Core Thermocouple Temperatures.

INITIATING CONDITIONS: Plant Parameters, radiation monitor readings or personnel observations that identify an Event for purposes of Emergency Plan Classification.

INTRUSION/INTRUDER: Suspected hostile individual present in a protected area without authorization.

ODCM: Offsite Dose Calculation Manual.

ORANGE PATH: Monitoring of one or more CSFs by FR-0 which indicates that the CSF(s) is under severe challenge.

PROJECTILE: An object ejected, thrown, or launched towards a plant structure. The source of the projectile may be onsite or offsite. Damage is sufficient to cause concern regarding the integrity of the affected structure or the operability or reliability of safety equipment contained therein.

PROTECTED AREA: Encompasses all owner controlled areas within the security protected area fence as shown on Figure 4-A.

RED PATH: Monitoring of one or more CSFs by the FR-0 which indicates that the CSF(s) is under extreme challenge; prompt operator action is required.

RUPTURED: (Steam Generator) Existence of primary to secondary leakage of a magnitude greater than charging pump capacity.

SABOTAGE: Deliberate damage, misalignment, or mis-operation of plant equipment with the intent to render the equipment inoperable.

SIGNIFICANT TRANSIENT: An UNPLANNED event involving one or more of the following: (1) An automatic turbine runback > 15% thermal reactor power; (2) Electrical load rejection > 25% full electrical load; (3) Reactor Trip or (4) Safety Injection System Activation.

SITE PERIMETER (SP): Encompasses all owner controlled areas in the immediate site environs as shown on Figures 4-A and 7-A.

STRIKE ACTION: A work stoppage within the PROTECTED AREA by a body of workers to enforce compliance with demands made on TVA. The STRIKE ACTION must threaten to interrupt normal plant operations.

TOXIC GAS: A gas that is dangerous to life or limb by reason of inhalation or skin contact (e.g., chlorine).

UNPLANNED: An event or action that is not the expected result of normal operations, testing, or maintenance. Events that result in corrective or mitigative actions being taken in accordance with abnormal or emergency procedures are UNPLANNED.

UNPLANNED: (With specific regard to radioactivity releases) A release of radioactivity is UNPLANNED if the release has not been authorized by a Discharge Permit (DP). Implicit in this definition are unintentional releases, unmonitored releases, or planned releases that exceed a condition specified on the DP, e.g., alarm setpoints, minimum dilution flow, minimum release times, maximum release rates, and/or discharge of incorrect tank.

VALID: An indication or report or condition is considered to be VALID when it is conclusively verified by (1) an instrument channel check, or (2) indications on related or redundant indicators, or (3) by direct observation by plant personnel. Implicit in this definition is the need for timely assessment, i.e., within 15 minutes.

VISIBLE DAMAGE: Damage to equipment that is readily observable without measurements, testing, or analyses. Damage is sufficient enough to cause concern regarding the continued operability or reliability of affected safety structure, system, or component. Example damage includes: deformation due to heat or impact, denting, penetration, rupture, cracking, and/or paint blistering. Surface blemishes (e.g., paint chipping, scratches) should NOT be included.

VITAL AREA: Is any area within the PROTECTED AREA which contains equipment, systems, devices, or material, the failure, destruction, or release of which could directly or indirectly endanger the public health and safety by exposure to radiation.

1.1 Fuel Clad Barrier	
1. Critical Safety Function Status	
LOSS	Potential LOSS
Core Cooling Red	Core Cooling Orange OR Heat Sink Red (RHR Not in Service)
-OR-	
2. Primary Coolant Activity Level	
LOSS	Potential LOSS
RCS sample activity is Greater Than 300 µCi/gm dose equivalent iodine-131	Not applicable
-OR-	
3. Incore TCs Hi Quad Average	
LOSS	Potential LOSS
Greater Than 1200°F	Greater Than 727°F
-OR-	
4. Reactor Vessel Water Level	
LOSS	Potential LOSS
Not Applicable	VALID RVLIS level <33% (No RCP running)
-OR-	
5. Containment Radiation Monitors	
LOSS	Potential LOSS
VALID reading increase of Greater Than: 74 R/hr On 1-RE-90-271 and 272 OR 59 R/hr On 1-RE-90-273 and 274	Not Applicable
-OR-	
6. Site Emergency Director Judgment	
Any condition that, in the Judgment of the SM/SED, Indicates Loss or Potential Loss of the Fuel Clad Barrier Comparable to the Conditions Listed Above.	

1.2 RCS Barrier	
1. Critical Safety Function Status	
LOSS	Potential LOSS
Not Applicable	Pressurized Thermal Shock Red OR Heat Sink Red (RHR Not in Service)
-OR-	
2. RCS Leakage/LOCA	
LOSS	Potential LOSS
RCS Leak results in Loss of subcooling (<65°F Indicated), [85°F ADV]	Non Isolatable RCS Leak Exceeding The Capacity of One Charging Pump (CCP) In the Normal Charging Alignment. OR RCS Leakage Results In Entry Into E-1
-OR-	
3. Steam Generator Tube Rupture	
LOSS	Potential LOSS
SGTR that results in a safety injection actuation OR Entry into E-3	Not Applicable
-OR-	
4. Reactor Vessel Water Level	
LOSS	Potential LOSS
VALID RVLIS level <33% (No RCP Running)	Not Applicable
-OR-	
5. Site Emergency Director Judgment	
Any condition that, in the Judgment of the SM/SED, Indicates Loss or Potential Loss of the RCS Barrier Comparable to the Conditions Listed Above.	

1.3 CNTMT Barrier	
1. Critical Safety Function Status	
LOSS	Potential LOSS
Not Applicable	Containment (FR-Z.1) Red OR Actions of FR-C.1 (Red Path) are INEFFECTIVE
-OR-	
2. Containment Pressure/Hydrogen	
LOSS	Potential LOSS
Rapid unexplained decrease following initial increase OR Containment pressure or Sump level Not increasing (with LOCA in progress)	Containment Hydrogen Increases to >4% by volume OR Pressure >2.8 PSIG (Phase B) with < One full train of Containment spray
-OR-	
3. Containment Isolation Status	
LOSS	Potential LOSS
Containment Isolation is Incomplete AND a Release Path to the Environment Exists	Not Applicable
-OR-	
4. Containment Bypass	
LOSS	Potential LOSS
RUPTURED S/G is also FAULTED outside CNTMT OR Prolonged (>4 Hours) Secondary Side release outside CNTMT from a S/G with a SGTL > T/S Limits	Unexplained VALID increase in area or ventilation RAD monitors in areas adjacent to CNTMT (with LOCA in progress)
-OR-	
5. Significant Radioactivity in Containment	
LOSS	Potential LOSS
Not Applicable	VALID Reading increase of Greater Than: 360 R/hr on 1-RE-90-271 and 1-RE-90-272 OR 280 R/hr on 1-RE-90-273 and 1-RE-90-274
-OR-	
5. Site Emergency Director Judgment	
Any condition that, in the Judgment of the SM/SED, Indicates Loss or Potential Loss of the CNTMT Barrier Comparable to the Conditions Listed Above.	

Modes: 1, 2, 3, 4	
INSTRUCTIONS	
NOTE: A condition is considered to be MET if, in the judgment of the Site Emergency Director, the condition will be MET imminently (i.e., within 1 to 2 hours, in the absence of a viable success path). The classification shall be made as soon as this determination is made.	
1. In the matrix to the left, review the INITIATING CONDITIONS in all columns and identify which, if any, INITIATING CONDITIONS are MET. Circle these CONDITIONS.	
2. For each of the three barriers, identify if any LOSS or Potential LOSS INITIATING CONDITIONS have been MET.	
3. If a CSF is listed as an INITIATING CONDITION; the respective status tree criteria will be monitored and used to determine the EVENT classification for the Modes listed on the classification flowchart.	
4. Compare the barrier losses and potential losses to the EVENTS below and make the appropriate declaration.	
EVENTS	
UNUSUAL EVENT	ALERT
Loss or Potential LOSS of Containment Barrier	Any LOSS or Potential LOSS of Fuel Clad barrier OR Any LOSS or Potential LOSS of RCS barrier
SITE AREA EMERGENCY	GENERAL EMERGENCY
LOSS or Potential LOSS of any two barriers	LOSS of any two barriers and Potential LOSS of third barrier

F
I
S
S
I
O
N

P
R
O
D
U
C
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B
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1

FISSION PRODUCT BARRIER MATRIX (Modes 1-4)

- 1.1 Fuel Clad
- 1.2 RCS
- 1.3 Containment

1

SYSTEM DEGRADATION

- | | |
|------------------------------------|-----------------------------|
| 2.1 Loss of Instrumentation | 2.6 RCS Identified Leakage |
| 2.2 Loss of Function/Communication | 2.7 Uncontrolled Cool Down |
| 2.3 Failure of Reactor Protection | 2.8 Turbine Failure |
| 2.4 Fuel Clad Degradation | 2.9 Technical Specification |
| 2.5 RCS Unidentified Leakage | 2.10 Safety Limit |

2

LOSS OF POWER

- 3.1 Loss of AC (Power Ops)
- 3.2 Loss of AC (Shutdown)
- 3.3 Loss of DC

3

HAZARDS and SED JUDGMENT

- | | | |
|---------------|-------------------|-----------------------------|
| 4.1 Fire | 4.3 Flammable Gas | 4.5 Control Room Evacuation |
| 4.2 Explosion | 4.4 Toxic Gas | 4.6 Security |
| Table 4-1 | Table 4-2 | 4.7 SED Judgment |
| Figure 4-A | Figure 4-B | Table 4-3 |

4

DESTRUCTIVE PHENOMENON

- | | |
|-------------------------------|----------------------|
| 5.1 Earthquake | 5.4 River Level High |
| 5.2 Tornado | 5.5 River Level Low |
| 5.3 Aircraft/Projectile Crash | 5.6 Watercraft Crash |
| Table 5-1 | Figure 5-A |

5

SHUTDOWN SYSTEM DEGRADATION

- 6.1 Loss of Shutdown Systems
- 6.2 Loss of AC (Shutdown)
- 6.3 Loss of DC (Shutdown)
- 6.4 Fuel Handling

6

RADIOLOGICAL

- | | |
|----------------------|----------------------|
| 7.1 Gaseous Effluent | 7.3 Radiation Levels |
| 7.2 Liquid Effluent | 7.4 Fuel Handling |
| Table 7-1 | Table 7-2 |
| Figure 7-A | |

7

DEFINITIONS/ACRONYMS

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CIVIL DISTURBANCE: A group of twenty (20) or more persons violently protesting station operations or activities at the site.

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EVENT: Assessment of an EVENT commences when recognition is made that one or more of the conditions associated with the event exist. Implicit in this definition is the need for timely assessment, i.e. within 15 minutes.

EXCLUSION AREA BOUNDARY (EAB): The demarcation of the area surrounding the WBN units in which postulated FSAR accidents will not result in population doses exceeding the criteria of 10 CFR Part 100. Refer to Figure 7-A.

EXPLOSION: A rapid, violent, unconfined combustion, or a catastrophic failure of pressurized equipment that imparts energy of sufficient force to potentially damage permanent structures required for safe operation.

EXTORTION: An attempt to cause an action at the station by threat of force.

FAULTED: (Steam Generator) Existence of secondary side leakage (i.e., steam or feed line break) that results in an uncontrolled decrease in steam generator pressure or the steam generator being completely depressurized.

FIRE: Combustion characterized by heat and light. Source of smoke such as slipping drive belts or overheated electrical components do not constitute fires. Observation of flame is preferred but is NOT required if large quantities of smoke and heat are observed.

FLAMMABLE GAS: Combustible gases maintained at concentrations less than the LOWER EXPLOSIVE LIMIT (LEL) will not explode due to ignition.

HOSTAGE: A person(s) held as leverage against the station to ensure that demands will be met by the station.

INEFFECTIVE: The specified restoration action(s) does not result in a reduction in the level of severity of the RED PATH condition within 15 minutes from identification of the Core Cooling CSF Status Tree RED PATH. A reduction in the level of severity is an improvement in the applicable parameters, e.g., Increasing Trend in Reactor Vessel Water Level (Full RVLIS) and/or Decreasing Trend on Core Thermocouple Temperatures.

INITIATING CONDITIONS: Plant Parameters, radiation monitor readings or personnel observations that identify an Event for purposes of Emergency Plan Classification.

INTRUSION/INTRUDER: Suspected hostile individual present in a protected area without authorization.

ODCM: Offsite Dose Calculation Manual.

ORANGE PATH: Monitoring of one or more CSFs by FR-0 which indicates that the CSF(s) is under severe challenge.

PROJECTILE: An object ejected, thrown, or launched towards a plant structure. The source of the projectile may be onsite or offsite.

Damage is sufficient to cause concern regarding the integrity of the affected structure or the operability or reliability of safety equipment contained therein.

PROTECTED AREA: Encompasses all owner controlled areas within the security protected area fence as shown on Figure 4-A.

RED PATH: Monitoring of one or more CSFs by the FR-0 which indicates that the CSF(s) is under extreme challenge; prompt operator action is required.

RUPTURED: (Steam Generator) Existence of primary to secondary leakage of a magnitude greater than charging pump capacity.

SABOTAGE: Deliberate damage, misalignment, or mis-operation of plant equipment with the intent to render the equipment inoperable.

SIGNIFICANT TRANSIENT: An UNPLANNED event involving one or more of the following: (1) An automatic turbine runback > 15% thermal reactor power; (2) Electrical load rejection > 25% full electrical load; (3) Reactor Trip or (4) Safety Injection System Activation.

SITE PERIMETER (SP): Encompasses all owner controlled areas in the immediate site environs as shown on Figures 4-A and 7-A.

STRIKE ACTION: A work stoppage within the PROTECTED AREA by a body of workers to enforce compliance with demands made on TVA. The STRIKE ACTION must threaten to interrupt normal plant operations.

TOXIC GAS: A gas that is dangerous to life or limb by reason of inhalation or skin contact (e.g., chlorine).

UNPLANNED: An event or action that is not the expected result of normal operations, testing, or maintenance. Events that result in corrective or mitigative actions being taken in accordance with abnormal or emergency procedures are UNPLANNED.

UNPLANNED: (With specific regard to radioactivity releases) A release of radioactivity is UNPLANNED if the release has not been authorized by a Discharge Permit (DP). Implicit in this definition are unintentional releases, unmonitored releases, or planned releases that exceed a condition specified on the DP, e.g., alarm setpoints, minimum dilution flow, minimum release times, maximum release rates, and/or discharge of incorrect tank.

VALID: An indication or report or condition is considered to be VALID when it is conclusively verified by (1) an instrument channel check, or (2) indications on related or redundant indicators, or (3) by direct observation by plant personnel. Implicit in this definition is the need for timely assessment, i.e., within 15 minutes.

VISIBLE DAMAGE: Damage to equipment that is readily observable without measurements, testing, or analyses. Damage is sufficient enough to cause concern regarding the continued operability or reliability of affected safety structure, system, or component. Example damage includes: deformation due to heat or impact, denting, penetration, rupture, cracking, and/or paint blistering. Surface blemishes (e.g., paint chipping, scratches) should NOT be included.

VITAL AREA: Is any area within the PROTECTED AREA which contains equipment, systems, devices, or material, the failure, destruction, or release of which could directly or indirectly endanger the public health and safety by exposure to radiation.

2.1 Loss of Instrumentation			2.2 Loss of Function		
	Mode	Initiating/Condition	Mode	Initiating/Condition	
GENERAL SITE		Refer to "Fission Product Barrier Matrix" and "Radiological Effluents" (Section 7)		Refer to "Fission Product Barrier Matrix"	
	1,2 3,4	Inability to monitor a SIGNIFICANT TRANSIENT in progress (1 and 2 and 3 and 4) 1. Loss of most (>75%) of MCR annunciators (and Annunciator Printer) or indications 2. SIGNIFICANT TRANSIENT in progress 3. Loss of ICS Computer and SPDS 4. Inability to directly monitor any of the following CSFs: Sub-criticality PTS Core Cooling Containment Heat Sink Inventory	1,2 3,4	Complete loss of function needed to achieve or maintain Hot Shutdown (1 or 2) 1. CSF status tree indicates Core Cooling Red 2. CSF status tree indicates Heat Sink Red (RHR not in service) Note: Also Refer to "Failure of Rx Protection" (2.3) and "Fission Product Barrier Matrix"	
ALERT	1,2 3,4	UNPLANNED loss of most (>75%) MCR annunciators (and Annunciator Printer) or indications for >15 minutes with either a SIGNIFICANT TRANSIENT in progress or ICS computer and SPDS Unavailable (1 and 2 and 3) 1. UNPLANNED loss of most (>75%) MCR annunciators (and Annunciator Printer) or indications for >15 minutes. 2. SM/SED Judgment that increased surveillance is required to Safely operate the unit (beyond Shift compliment) 3. (a or b) a. SIGNIFICANT TRANSIENT in Progress b. Loss of ICS Computer and SPDS	4	Complete loss of function needed to achieve Cold Shutdown when Shutdown required by Tech Specs (1 and 2 and 3) 1. Shutdown is required 2. Loss of RHR capability 3. Loss of secondary heat sink and condenser	
	1,2 3,4	UNPLANNED loss of most or All Safety System annunciators or indications in the Control Room for >15 Minutes (1 and 2 and 3) 1. UNPLANNED loss of most (>75%) MCR annunciators (and Annunciator Printer) or indications for >15 minutes. 2. SM/SED Judgment that increased surveillance is required to Safely operate the unit (beyond Shift compliment) 3. ICS Computer or SPDS is in service and capable of displaying data requested.	ALL	A. Unplanned loss of all In-Plant Communication capability (1 and 2 and 3) 1. UNPLANNED loss of EPABX (PAX) phones 2. UNPLANNED loss of all sound powered phones 3. UNPLANNED loss of all radios or B. UNPLANNED loss of all Offsite Communication capability (1 and 2 and 3 and 4 and 5) 1. UNPLANNED loss of all EPABX (PAX) phones 2. UNPLANNED loss of all Radio frequencies 3. UNPLANNED loss of all OPX (Microwave) system 4. UNPLANNED loss of all 1 FB-Bell lines 5. UNPLANNED loss of all FTS 2000 (NRC) system	
UNUSUAL EVENT					

2.3 Failure of Rx Protection

2.4 Fuel Clad Degradation

GENERAL
SITE
ALERT
UNUSUAL
EVENT

SYSTEM
DEGRADATION
UNIT

Mode	Initiating/Condition
1,2	Loss of Core cooling capability and VALID Trip Signals did <u>not</u> result in a reduction of Rx power to <5% and decreasing (1 and 2) (a or b) - CSF status tree indicates Core Cooling Red - CSF status tree indicates Heat Sink Red - FR-S.1 entered <u>and</u> subsequent actions <u>Did Not</u> result in a Rx Power of <5% and decreasing
1,2	Rx power <u>Not</u> <5% and decreasing after VALID Auto and Manual trip signals (1 and 2 and 3) - VALID Rx Auto Trip signal received or required - Manual Rx Trip from the MCR was <u>Not</u> successful. - FR-S.1 has been entered.
1,2	Automatic Rx trip did not occur after VALID Trip signal and manual trip from MCR was successful (1 and 2) - VALID Rx Auto Trip signal received or required - Manual Rx Trip from the MCR <u>was</u> successful and power is <5% and decreasing.
	Not Applicable

Mode	Initiating/Condition
	Refer to "Fission Product Barrier Matrix"
	Refer to "Fission Product Barrier Matrix"
	Refer to "Fission Product Barrier Matrix"
1,2, 3,4, 5	Reactor Coolant System specific activity exceeds LCO (Refer to WBN Tech. Spec. 3.4.16) - Radiochemistry analysis indicates (a or b) - Dose equivalent iodine (I-131) >1.0 $\mu\text{Ci/gm}$ for >48 Hours <u>or</u> in excess of T/S Figure 3.4.16-1 - Specific activity >100/$\sqrt{E}$ $\mu\text{Ci/gm}$

2.5 RCS Unidentified Leakage			2.6 RCS Identified Leakage		
GENERAL SITE ALERT UNUSUAL EVENT	Mode	Initiating/Condition	Mode	Initiating/Condition	
		Refer to "Fission Product Barrier Matrix"		Refer to "Fission Product Barrier Matrix"	
		Refer to "Fission Product Barrier Matrix"		Refer to "Fission Product Barrier Matrix"	
		Refer to "Fission Product Barrier Matrix"		Refer to "Fission Product Barrier Matrix"	
	1,2 3,4, *5	Unidentified <u>or</u> pressure boundary RCS leakage >10 GPM 1. Unidentified or pressure boundary leakage (as defined by Tech. Spec.) >10 GPM as indicated below (a or b) a. 1-SI-68-32 results b. With RCS Temperature <u>and</u> PZR Level Stable, VCT Level Dropping at a Rate >10 GPM <i>*Note: Applies to Mode 5 if RCS Pressurized</i>	1,2, 3,4, *5	Identified RCS leakage >25 GPM 1. Identified RCS leakage (as defined by Tech. Spec.) >25 GPM (a or b) a. 1-SI-68-32 results b. Level rise in excess of 25 GPM total into PRT, RCDT or CVCS Holdup Tank <i>*Note: Applies to Mode 5 if RCS Pressurized</i>	

2.7 Uncontrolled Cooldown	
Mode	Initiating/Condition
GENERAL SITE ALERT UNUSUAL EVENT	Refer to "Fission Product Barrier Matrix"
	Refer to "Fission Product Barrier Matrix"
	Refer to "Fission Product Barrier Matrix"
1,2,3	UNPLANNED rapid depressurization of the Main Steam System resulting in a rapid RCS cooldown <u>and</u> Safety Injection Initiation (1 and 2) - Rapid depressurization of Main Steam System (<675 psig) - Safety Injection has initiated <u>or</u> is required

2.8 Turbine Failure	
Mode	Initiating/Condition
	Refer to "Fission Product Barrier Matrix"
	Refer to "Fission Product Barrier Matrix"
1,2,3	Turbine Failure has generated PROJECTILES that cause VISIBLE DAMAGE to any area containing Safety Related equipment Turbine PROJECTILES has resulted in VISIBLE DAMAGE in any of the following areas: Control Building Auxiliary Building Unit #1 Containment Diesel Generator Bldg. RWST Intake Pumping Station CST
1,2,3	Turbine Failure results in Casing penetration Turbine Failure which results in penetration of the Turbine Casing <u>or</u> Damage to Main Generator Seals

SYSTEM DEGRADATION U 1

2.9 Technical Specification		
	Mode	Initiating/Condition
GENERAL SITE		Not Applicable
		Not Applicable
		Not Applicable
ALERT UNUSUAL EVENT	1,2 3,4	Inability to reach required Shutdown within Tech. Spec. limits (1 and 2) 1. Any Tech. Spec. LCO Statement, requiring a Mode reduction, has been entered 2. The Unit has not been placed in the required Mode within the time prescribed by the LCO Action Statement

2.10 Safety Limit		
	Mode	Initiating/Condition
		Not Applicable
		Not Applicable
		Not Applicable
	1,2, 3,4, 5	Safety Limits have been Exceeded (1 or 2) 1. The combination of thermal power, RCS temperature, and RCS pressure > safety limits as indicated by WBN Tech. Spec. Figure 2.1.1-1 "Reactor Core Safety Limits" 2. RCS/Pressurizer pressure exceeds safety limit (>2735 psig)

FISSION PRODUCT BARRIER MATRIX (Modes 1-4)

- 1.1 Fuel Clad
- 1.2 RCS
- 1.3 Containment

1

SYSTEM DEGRADATION

- | | |
|------------------------------------|-----------------------------|
| 2.1 Loss of Instrumentation | 2.6 RCS Identified Leakage |
| 2.2 Loss of Function/Communication | 2.7 Uncontrolled Cool Down |
| 2.3 Failure of Reactor Protection | 2.8 Turbine Failure |
| 2.4 Fuel Clad Degradation | 2.9 Technical Specification |
| 2.5 RCS Unidentified Leakage | 2.10 Safety Limit |

2

LOSS OF POWER

- 3.1 Loss of AC (Power Ops)
- 3.2 Loss of AC (Shutdown)
- 3.3 Loss of DC

3

HAZARDS and SED JUDGMENT

- | | | |
|---------------|-------------------|-----------------------------|
| 4.1 Fire | 4.3 Flammable Gas | 4.5 Control Room Evacuation |
| 4.2 Explosion | 4.4 Toxic Gas | 4.6 Security |
| Table 4-1 | Table 4-2 | 4.7 SED Judgment |
| Figure 4-A | Figure 4-B | Table 4-3 |

4

DESTRUCTIVE PHENOMENON

- | | |
|-------------------------|----------------------|
| 5.1 Earthquake | 5.4 River Level High |
| 5.2 Tornado | 5.5 River Level Low |
| 5.3 Aircraft/Projectile | 5.6 Watercraft Crash |
| Crash | Figure 5-A |
| Table 5-1 | |

5

SHUTDOWN SYSTEM DEGRADATION

- 6.1 Loss of Shutdown Systems
- 6.2 Loss of AC (Shutdown)
- 6.3 Loss of DC (Shutdown)
- 6.4 Fuel Handling

6

RADIOLOGICAL

- | | |
|----------------------|----------------------|
| 7.1 Gaseous Effluent | 7.3 Radiation Levels |
| 7.2 Liquid Effluent | 7.4 Fuel Handling |
| Table 7-1 | Table 7-2 |
| Figure 7-A | |

7

DEFINITIONS/ACRONYMS

UNUSUAL EVENT, ALERT, SITE AREA EMERGENCY and GENERAL EMERGENCY: (see SED Judgment 4.7).

BOMB: An explosive device (see EXPLOSION).

CIVIL DISTURBANCE: A group of twenty (20) or more persons violently protesting station operations or activities at the site.

CRITICAL-SAFETY FUNCTION (CSFs): A plant safety function required to prevent significant release of core radioactivity to the environment. There are six CSFs: Sub-criticality, Core Cooling, Heat Sink, Pressurized Thermal Shock, Integrity (Containment) and Inventory (RCS).

EVENT: Assessment of an EVENT commences when recognition is made that one or more of the conditions associated with the event exist. Implicit in this definition is the need for timely assessment, i.e. within 15 minutes.

EXCLUSION AREA BOUNDARY (EAB): The demarcation of the area surrounding the WBN units in which postulated FSAR accidents will not result in population doses exceeding the criteria of 10 CFR Part 100. Refer to Figure 7-A.

EXPLOSION: A rapid, violent, unconfined combustion, or a catastrophic failure of pressurized equipment that imparts energy of sufficient force to potentially damage permanent structures required for safe operation.

EXTORTION: An attempt to cause an action at the station by threat of force.

FAULTED: (Steam Generator) Existence of secondary side leakage (i.e., steam or feed line break) that results in an uncontrolled decrease in steam generator pressure or the steam generator being completely depressurized.

FIRE: Combustion characterized by heat and light. Source of smoke such as slipping drive belts or overheated electrical components do not constitute fires. Observation of flame is preferred but is NOT required if large quantities of smoke and heat are observed.

FLAMMABLE GAS: Combustible gases maintained at concentrations less than the LOWER EXPLOSIVE LIMIT (LEL) will not explode due to ignition.

HOSTAGE: A person(s) held as leverage against the station to ensure that demands will be met by the station.

INEFFECTIVE: The specified restoration action(s) does not result in a reduction in the level of severity of the RED PATH condition within 15 minutes from identification of the Core Cooling CSF Status Tree RED PATH. A reduction in the level of severity is an improvement in the applicable parameters, e.g., Increasing Trend in Reactor Vessel Water Level (Full RVLIS) and/or Decreasing Trend on Core Thermocouple Temperatures.

INITIATING CONDITIONS: Plant Parameters, radiation monitor readings or personnel observations that identify an Event for purposes of Emergency Plan Classification.

INTRUSION/INTRUDER: Suspected hostile individual present in a protected area without authorization.

ODCM: Offsite Dose Calculation Manual.

ORANGE PATH: Monitoring of one or more CSFs by FR-0 which indicates that the CSF(s) is under severe challenge.

PROJECTILE: An object ejected, thrown, or launched towards a plant structure. The source of the projectile may be onsite or offsite. Damage is sufficient to cause concern regarding the integrity of the affected structure or the operability or reliability of safety equipment contained therein.

PROTECTED AREA: Encompasses all owner controlled areas within the security protected area fence as shown on Figure 4-A.

RED PATH: Monitoring of one or more CSFs by the FR-0 which indicates that the CSF(s) is under extreme challenge; prompt operator action is required.

RUPTURED: (Steam Generator) Existence of primary to secondary leakage of a magnitude greater than charging pump capacity.

SABOTAGE: Deliberate damage, misalignment, or mis-operation of plant equipment with the intent to render the equipment inoperable.

SIGNIFICANT TRANSIENT: An UNPLANNED event involving one or more of the following: (1) An automatic turbine runback > 15% thermal reactor power; (2) Electrical load rejection > 25% full electrical load; (3) Reactor Trip or (4) Safety Injection System Activation.

SITE PERIMETER (SP): Encompasses all owner controlled areas in the immediate site environs as shown on Figures 4-A and 7-A.

STRIKE ACTION: A work stoppage within the PROTECTED AREA by a body of workers to enforce compliance with demands made on TVA. The STRIKE ACTION must threaten to interrupt normal plant operations.

TOXIC GAS: A gas that is dangerous to life or limb by reason of inhalation or skin contact (e.g., chlorine).

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VITAL AREA: Is any area within the PROTECTED AREA which contains equipment, systems, devices, or material, the failure, destruction, or release of which could directly or indirectly endanger the public health and safety by exposure to radiation.

3.1 Loss of AC (Power Ops)		
	Mode	Initiating/Condition
GENERAL SITE	1,2, 3,4	Prolonged loss of Offsite and Onsite AC power (1 and 2) 1A <u>and</u> 1B 6.9KV Shutdown Bds de-energized for >15 minutes (a or b) - Core Cooling Red <u>or</u> Orange - Restoration of Either 1A <u>or</u> 1B 6.9KV Shutdown Bds is not likely within 4 hours of loss.
	1,2, 3,4	Loss of Offsite <u>and</u> Onsite AC Power > 15 minutes 1A and 1B 6.9KV Shutdown Bds de-energized for >15 minutes
ALERT UNUSUAL EVENT	1,2, 3,4	Loss of Offsite Power for >15 minutes (1 and 2) - C <u>and</u> D CSSTs not available for >15 minutes 1A <u>or</u> 1B Diesel Generator not available
	1,2 3,4	Loss of Offsite Power for >15 minutes (1 and 2) - C <u>and</u> D CSSTs not available for >15 minutes - Each Diesel Generator is supplying power to its respective Shutdown Board

3.2 Loss of AC (Shutdown)	
Mode	Initiating/Condition
	<i>Not Applicable</i>
	<i>Not Applicable</i>
5,6, or De-fuel	UNPLANNED loss of Offsite <u>and</u> Onsite AC power for >15 minutes 1A and 1B 6.9KV Shutdown Bds de-energized for >15 minutes <i>Also Refer to "Loss of Shutdown Systems" (6.1)</i>
5,6, or De-fuel	UNPLANNED loss of Offsite Power for >15 minutes (1 and 2) - C <u>and</u> D CSSTs not available for >15 minutes - Either Diesel Generator is supplying power to its respective Shutdown Board

3.3 Loss of DC Power

GENERAL SITE ALERT UNUSUAL EVENT	Mode	Initiating/Condition
		Refer to "Fission Product Barrier Matrix" and "Loss of Function" (2.2)
	1,2, 3,4	Loss of All Vital DC Power for >15 minutes 1. Voltage <105V DC on 125V DC Vital Battery Buses 1-I <u>and</u> 1-II <u>and</u> 1-III <u>and</u> 1-IV for >15 minutes Also Refer to "Fission Product Barrier Matrix", "Loss of Function" (2.2), and "Loss of Instrumentation" (2.1)
		Also Refer to "Fission Product Barrier Matrix", "Loss of Function" (2.2), and "Loss of Instrumentation" (2.1)
	5,6, or De-fuel	UNPLANNED Loss of the Required Train of DC power for >15 minutes (1 or 2) 1. Voltage <105V DC on 125V DC Vital Battery Buses 1-I <u>and</u> 1-III for >15 minutes 2. Voltage <105V DC on 125V DC Vital Battery Buses 1-II <u>and</u> 1-IV for >15 minutes

FISSION PRODUCT BARRIER MATRIX (Modes 1-4)

- 1.1 Fuel Clad
- 1.2 RCS
- 1.3 Containment

1

SYSTEM DEGRADATION

- | | |
|------------------------------------|-----------------------------|
| 2.1 Loss of Instrumentation | 2.6 RCS Identified Leakage |
| 2.2 Loss of Function/Communication | 2.7 Uncontrolled Cool Down |
| 2.3 Failure of Reactor Protection | 2.8 Turbine Failure |
| 2.4 Fuel Clad Degradation | 2.9 Technical Specification |
| 2.5 RCS Unidentified Leakage | 2.10 Safety Limit |

2

LOSS OF POWER

- 3.1 Loss of AC (Power Ops)
- 3.2 Loss of AC (Shutdown)
- 3.3 Loss of DC

3

HAZARDS and SED JUDGMENT

- | | | |
|---------------|-------------------|-----------------------------|
| 4.1 Fire | 4.3 Flammable Gas | 4.5 Control Room Evacuation |
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| Table 4-1 | Table 4-2 | 4.7 SED Judgment |
| Figure 4-A | Figure 4-B | Table 4-3 |

4

DESTRUCTIVE PHENOMENON

- | | |
|-------------------------------|----------------------|
| 5.1 Earthquake | 5.4 River Level High |
| 5.2 Tornado | 5.5 River Level Low |
| 5.3 Aircraft/Projectile Crash | 5.6 Watercraft Crash |
| Table 5-1 | Figure 5-A |

5

SHUTDOWN SYSTEM DEGRADATION

- 6.1 Loss of Shutdown Systems
- 6.2 Loss of AC (Shutdown)
- 6.3 Loss of DC (Shutdown)
- 6.4 Fuel Handling

6

RADIOLOGICAL

- | | |
|----------------------|----------------------|
| 7.1 Gaseous Effluent | 7.3 Radiation Levels |
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VITAL AREA: Is any area within the PROTECTED AREA which contains equipment, systems, devices, or material, the failure, destruction, or release of which could directly or indirectly endanger the public health and safety by exposure to radiation.

4.1 FIRE		
	Mode	Initiating/Condition
GENERAL SITE		Refer to "Fission Product Barrier Matrix"
		Refer to "Control Room Evacuation," (4.5) or Fission Product Barrier Matrix"
ALERT	All	FIRE in any of the areas listed in Table 4-1 that is affecting Safety Related equipment (1 and 2) 1. FIRE in any of the areas listed in Table 4-1 2. (a or b) a. VISIBLE DAMAGE to permanent structure <u>or</u> Safety Related equipment in the specified area is observed due to the FIRE b. Control Room indication of degraded Safety System <u>or</u> component response due to the FIRE
	All	FIRE in the PROTECTED AREA threatening any of the areas listed in Table 4-1 that is <u>Not</u> extinguished within 15 minutes from the Time of Control Room notification <u>or</u> verification of Control Room Alarm (Figure 4-A)
UNUSUAL EVENT		

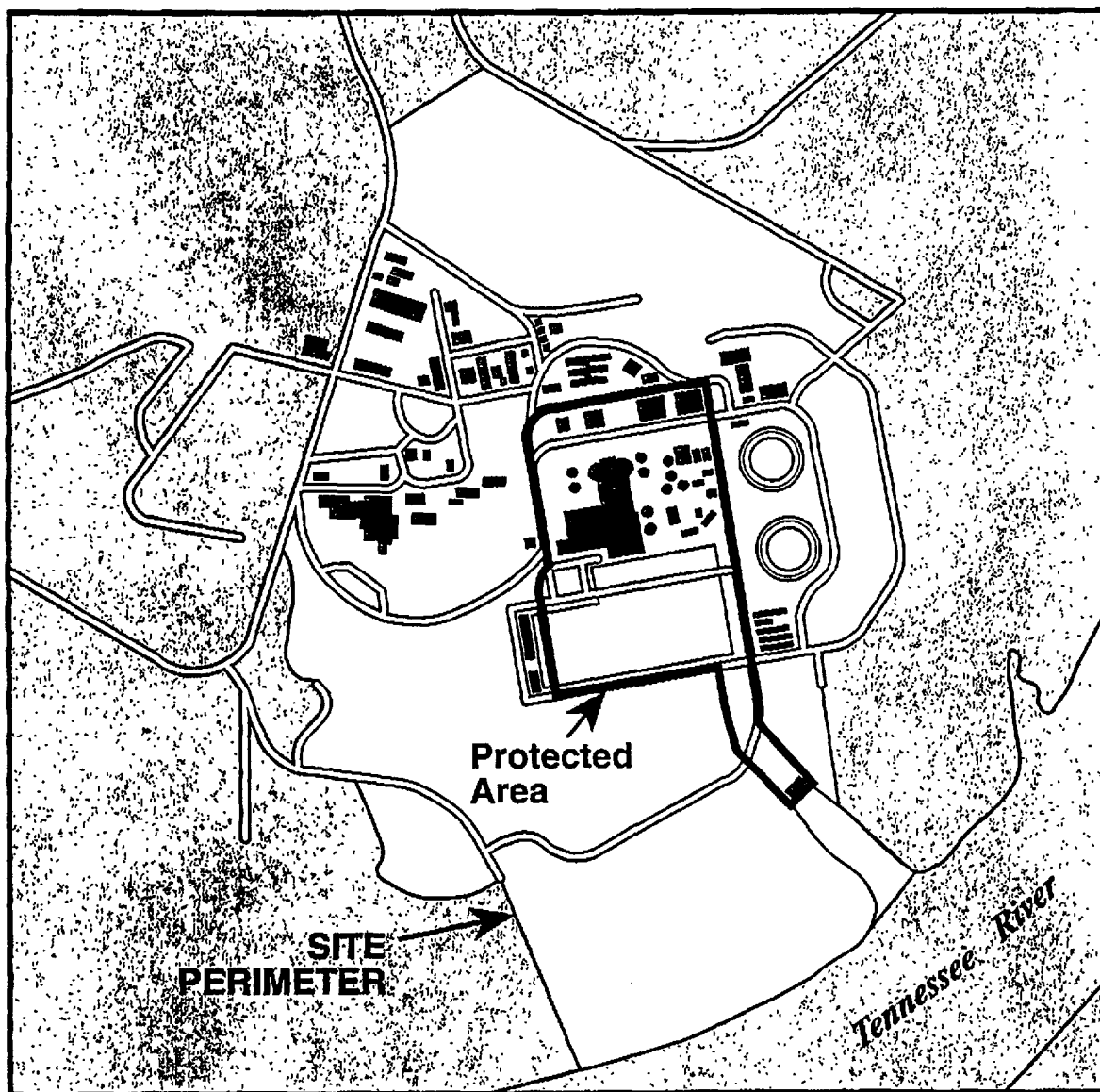
4.2 Explosions		
	Mode	Initiating/Condition
		Refer to "Fission Product Barrier Matrix"
		Refer to "Fission Product Barrier Matrix"
	All	EXPLOSION in any of the areas listed in Table 4-1 that is affecting Safety Related equipment (1 and 2) 1. EXPLOSION in any of the areas listed in Table 4-1 2. (a or b) a. An EXPLOSION has caused VISIBLE DAMAGE to Safety Related equipment b. Control Room indication of degraded Safety System <u>or</u> component response due to the EXPLOSION Refer to "Security" (4.6)
	All	UNPLANNED EXPLOSION within the PROTECTED AREA resulting in VISIBLE DAMAGE to any permanent structure <u>or</u> equipment (Figure 4-A) Refer to "Security" (4.6)

TABLE 4-1
PLANT AREAS ASSOCIATED WITH FIRE AND EXPLOSION EALS

Unit #1 Reactor Building
Auxiliary Building
Control Building
Diesel Generator Building
CST

Additional Diesel Generator Building
Intake Pumping Station
Additional Equipment Buildings (Unit 1&2)
RWST

Figure 4-A
PROTECTED AREA/SITE PERIMETER



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4.3 Flammable Gas		
	Mode	Initiating/Condition
GENERAL SITE		Refer to "Fission Product Barrier Matrix"
		Refer to "Fission Product Barrier Matrix"
ALERT	All	UNPLANNED release of Flammable Gas within a facility structure containing Safety Related equipment <u>or</u> associated with Power production 1. Plant personnel report the average of three readings taken in a ~10ft triangular Area is >25% (LEL) Lower Explosive Limit, as indicated on the monitoring instrument within any building listed in Table 4-2.
	All	A. UNPLANNED release of Flammable Gas within the SITE PERIMETER 1. Plant personnel report the average of three readings taken in a ~10ft Triangular Area is >25% (LEL) Lower Explosive Limit, as indicated on the monitoring instrument within the SITE PERIMETER (Refer to Figure 4-B) <u>OR</u> B. Confirmed report by Local, County, <u>or</u> State Officials that a Large Offsite Flammable Gas release has occurred within One Mile of the Site with potential to enter the SITE PERIMETER in concentrations >25% of LEL Lower Explosive Limit (Refer to Figure 4-B)

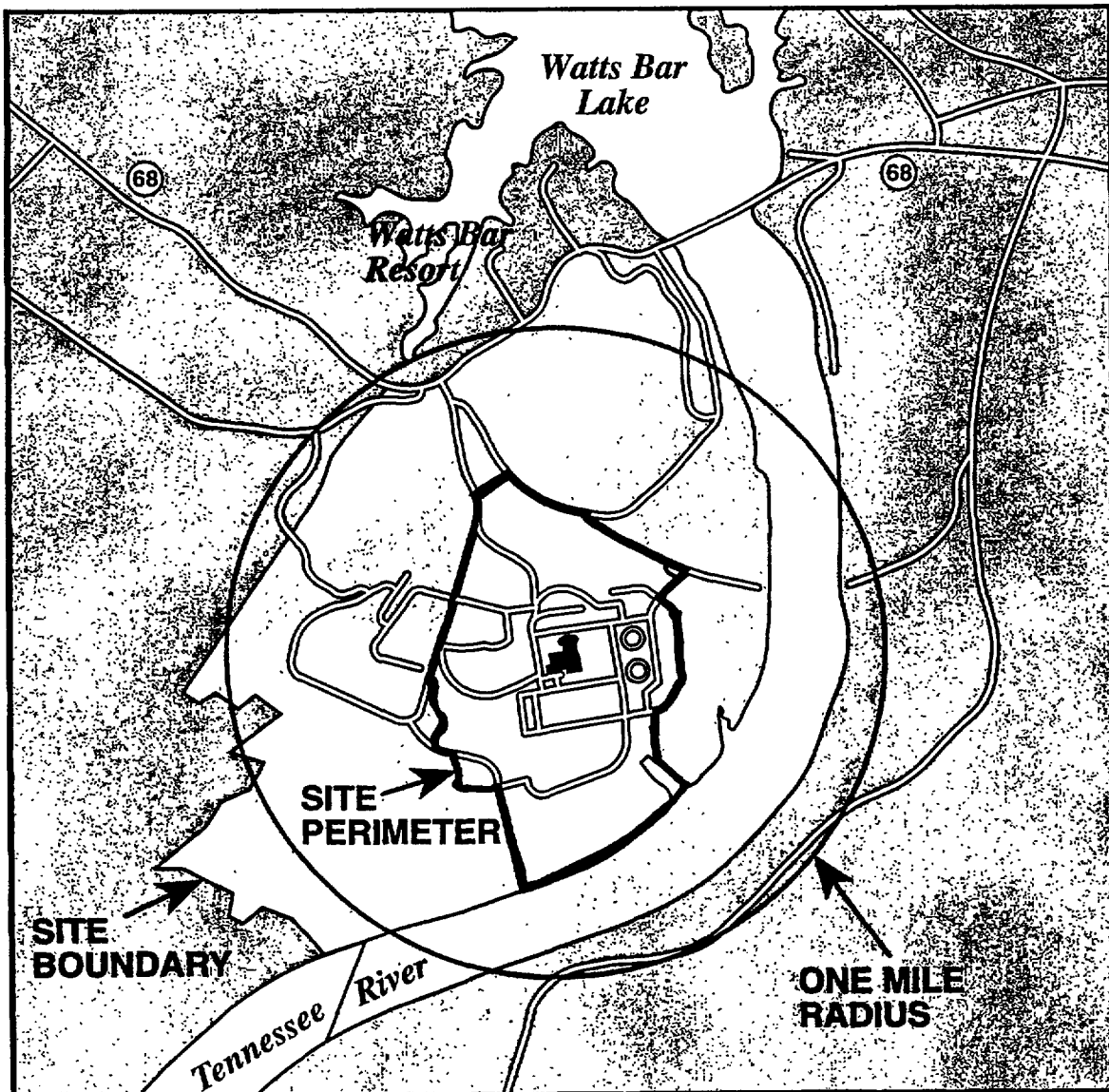
4.4 Toxic Gas		
	Mode	Initiating/Condition
		Refer to "Fission Product Barrier Matrix"
		Refer to "Fission Product Barrier Matrix"
All	All	Release of TOXIC GAS within a facility structure which Prohibits Safe Operation of systems required to establish <u>or</u> maintain Cold S/D (1 and 2 and 3) 1. Plant personnel report TOXIC GAS within any building listed in Table 4-2 2. (a or b) a. Plant personnel report Severe Adverse Health Reactions due to TOXIC GAS (i.e., burning eyes, nose, throat, dizziness) b. Sampling indications > (PEL) Permissible Exposure Limit 3. Plant personnel would be unable to perform actions necessary to establish and maintain Cold Shutdown while utilizing appropriate personnel protection equipment.
	All	A. Normal Operations impeded due to access restrictions caused by TOXIC GAS concentrations within a Facility Structure listed in Table 4-2 <u>OR</u> B. Confirmed report by Local, County, <u>or</u> State Officials that a Large Offsite TOXIC GAS release has occurred within One Mile of the Site with potential to enter the Site Perimeter in concentrations >than the (PEL) Permissible Exposure Limit thus causing an Evacuation (Figure 4-B)

TABLE 4-2
Plant Structures Associated With TOXIC or Flammable Gas EALs

Unit #1 & 2 Reactor Buildings
Auxiliary Building
Control Building
Diesel Generator Building

Additional Diesel Generator Building
Intake Pumping Station
Additional Equipment Bldgs (Unit 1&2)
CDWE Building
Turbine Building

Figure 4-B
ONE MILE RADIUS/SITE PERIMETER



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4.5 Control Room Evacuation

GENERAL SITE ALERT UNUSUAL EVENT	Mode	Initiating/Condition
		Refer to "Fission Product Barrier Matrix"
	All	Evacuation of the Control Room has been initiated <u>and</u> Control of all necessary equipment <u>Has Not</u> been established within 15 minutes of manning the Auxiliary Control Room (1 and 2 and 3) 1. (a or b) a. AOI-30.2 "Fire Safety Shutdown" entered b. AOI-27 "Main Control Room Inaccessibility" entered 2. SM/SED Orders Control Room evacuation 3. Control has <u>Not</u> been established at the Remote Shutdown Panel within 15 minutes of manning the Auxiliary Control Room and transfer of switches on Panels L11A and L11B
	All	Evacuation of the Control Room is Required (1 and 2) 1. (a or b) a. AOI-30.2 "Fire Safe Shutdown" entered b. AOI-27 "Main Control Room Inaccessibility" entered 2. SM/SED Orders Control Room evacuation
		Not Applicable

4.6 Security

Mode	Initiating/Condition
All	Security Event resulting in loss of Control of the Plant 1. Hostile Armed Force has taken Control of the Plant, Control Room, <u>or</u> Remote shutdown capability
All	Security Event has <u>or</u> is occurring which results in Actual <u>or</u> Likely Failures of Plant Functions needed to Protect the Public 1. VITAL AREA, other than the Control Room, has been penetrated by a Hostile Armed Force
All	Confirmed Security Event which indicates an Actual <u>or</u> Potential Substantial Degradation in the level of Safety of the Plant (1 or 2 or 3) 1. BOMB discovered within a VITAL AREA 2. CIVIL DISTURBANCE ongoing within the PROTECTED AREA 3. PROTECTED AREA has been penetrated by a Hostile Armed Force <i>Refer to Figure 4-A For a Drawing of Protected Area and Site Perimeter</i>
All	Confirmed Security Event which indicates a Potential Degradation in the level of Safety of the Plant (1 or 2) 1. BOMB discovered within the PROTECTED AREA 2. Security Shift Supervisor reports one <u>or</u> more of the events listed in Table 4-3

4.7 Emergency Director Judgment

	Mode	Initiating/Condition
GENERAL SITE ALERT	All	Events are in progress <u>or</u> have occurred which involve Actual <u>or</u> Imminent Substantial Core Degradation <u>or</u> Melting With Potential for Loss of Containment Integrity. Releases can be reasonable expected to exceed EPA Plume Protective Action Guidelines Exposure Levels outside the EXCLUSION AREA BOUNDARY, Refer to Figure 7-A.
	All	Events are in progress <u>or</u> have occurred which involve Actual <u>or</u> Likely Major Failures of Plant Functions needed for the Protection of the Public. Any releases are not expected to result in Exposure Levels which Exceed EPA Plume Protective Action Guidelines Exposure Levels outside the EXCLUSION AREA BOUNDARY, Refer to Figure 7-A.
	All	Events are in progress <u>or</u> have occurred which involve Actual <u>or</u> Potential Substantial Degradation of the Level of Safety of the Plant. Any releases are expected to be limited to small fractions of the EPA Plume Protective Action Guidelines Exposure Levels.
UNUSUAL EVENT	All	Unusual Events are in Progress <u>or</u> have occurred which indicate a Potential Degradation of the Level of Safety of the Plant. No releases of Radioactive Material requiring Offsite Response <u>or</u> Monitoring are expected unless further degradation of Safety Systems occurs.

Table 4-3

SECURITY EVENTS

- a. SABOTAGE/INTRUSION has occurred or is occurring within the PROTECTED AREA

b. HOSTAGE/EXTORTION Situation that Threatens to interrupt Plant Operations

c. CIVIL DISTURBANCE ongoing between the SITE PERIMETER and PROTECTED AREA

d. Hostile STRIKE ACTION within the PROTECTED AREA which threatens to interrupt Normal Plant Operations (Judgment Based on behavior of Strikers and/or Intelligence received)

FISSION PRODUCT BARRIER MATRIX (Modes 1-4)

- 1.1 Fuel Clad
- 1.2 RCS
- 1.3 Containment

1

SYSTEM DEGRADATION

- | | |
|------------------------------------|-----------------------------|
| 2.1 Loss of Instrumentation | 2.6 RCS Identified Leakage |
| 2.2 Loss of Function/Communication | 2.7 Uncontrolled Cool Down |
| 2.3 Failure of Reactor Protection | 2.8 Turbine Failure |
| 2.4 Fuel Clad Degradation | 2.9 Technical Specification |
| 2.5 RCS Unidentified Leakage | 2.10 Safety Limit |

2

LOSS OF POWER

- 3.1 Loss of AC (Power Ops)
- 3.2 Loss of AC (Shutdown)
- 3.3 Loss of DC

3

HAZARDS and SED JUDGMENT

- | | | |
|---------------|-------------------|-----------------------------|
| 4.1 Fire | 4.3 Flammable Gas | 4.5 Control Room Evacuation |
| 4.2 Explosion | 4.4 Toxic Gas | 4.6 Security |
| Table 4-1 | Table 4-2 | 4.7 SED Judgment |
| Figure 4-A | Figure 4-B | Table 4-3 |

4

DESTRUCTIVE PHENOMENON

- | | |
|-------------------------------|----------------------|
| 5.1 Earthquake | 5.4 River Level High |
| 5.2 Tornado | 5.5 River Level Low |
| 5.3 Aircraft/Projectile Crash | 5.6 Watercraft Crash |
| Table 5-1 | Figure 5-A |

5

SHUTDOWN SYSTEM DEGRADATION

- 6.1 Loss of Shutdown Systems
- 6.2 Loss of AC (Shutdown)
- 6.3 Loss of DC (Shutdown)
- 6.4 Fuel Handling

6

RADIOLOGICAL

- | | |
|----------------------|----------------------|
| 7.1 Gaseous Effluent | 7.3 Radiation Levels |
| 7.2 Liquid Effluent | 7.4 Fuel Handling |
| Table 7-1 | Table 7-2 |
| Figure 7-A | |

7

DEFINITIONS/ACRONYMS

UNUSUAL EVENT, ALERT, SITE AREA EMERGENCY and GENERAL EMERGENCY: (see SED Judgment 4.7).

BOMB: An explosive device (See EXPLOSION).

CIVIL DISTURBANCE: A group of twenty (20) or more persons violently protesting station operations or activities at the site.

CRITICAL-SAFETY FUNCTION (CSFs): A plant safety function required to prevent significant release of core radioactivity to the environment. There are six CSFs: Sub-criticality, Core Cooling, Heat Sink, Pressurized Thermal Shock, Integrity (Containment) and Inventory (RCS).

EVENT: Assessment of an EVENT commences when recognition is made that one or more of the conditions associated with the event exist. Implicit in this definition is the need for timely assessment, i.e. within 15 minutes.

EXCLUSION AREA BOUNDARY (EAB): The demarcation of the area surrounding the WBN units in which postulated FSAR accidents will not result in population doses exceeding the criteria of 10 CFR Part 100. Refer to Figure 7-A.

EXPLOSION: A rapid, violent, unconfined combustion, or a catastrophic failure of pressurized equipment that imparts energy of sufficient force to potentially damage permanent structures required for safe operation.

EXTORTION: An attempt to cause an action at the station by threat of force.

FAULTED: (Steam Generator) Existence of secondary side leakage (i.e., steam or feed line break) that results in an uncontrolled decrease in steam generator pressure or the steam generator being completely depressurized.

FIRE: Combustion characterized by heat and light. Source of smoke such as slipping drive belts or overheated electrical components do not constitute fires. Observation of flame is preferred but is NOT required if large quantities of smoke and heat are observed.

FLAMMABLE GAS: Combustible gases maintained at concentrations less than the LOWER EXPLOSIVE LIMIT (LEL) will not explode due to ignition.

HOSTAGE: A person(s) held as leverage against the station to ensure that demands will be met by the station.

INEFFECTIVE: The specified restoration action(s) does not result in a reduction in the level of severity of the RED PATH condition within 15 minutes from identification of the Core Cooling CSF Status Tree RED PATH. A reduction in the level of severity is an improvement in the applicable parameters, e.g., Increasing Trend in Reactor Vessel Water Level (Full RVLIS) and/or Decreasing Trend on Core Thermocouple Temperatures.

INITIATING CONDITIONS: Plant Parameters, radiation monitor readings or personnel observations that identify an Event for purposes of Emergency Plan Classification.

INTRUSION/INTRUDER: Suspected hostile individual present in a protected area without authorization.

ODCM: Offsite Dose Calculation Manual.

ORANGE PATH: Monitoring of one or more CSFs by FR-0 which indicates that the CSF(s) is under severe challenge.

PROJECTILE: An object ejected, thrown, or launched towards a plant structure. The source of the projectile may be onsite or offsite. Damage is sufficient to cause concern regarding the integrity of the affected structure or the operability or reliability of safety equipment contained therein.

PROTECTED AREA: Encompasses all owner controlled areas within the security protected area fence as shown on Figure 4-A.

RED PATH: Monitoring of one or more CSFs by the FR-0 which indicates that the CSF(s) is under extreme challenge; prompt operator action is required.

RUPTURED: (Steam Generator) Existence of primary to secondary leakage of a magnitude greater than charging pump capacity.

SABOTAGE: Deliberate damage, misalignment, or mis-operation of plant equipment with the intent to render the equipment inoperable.

SIGNIFICANT TRANSIENT: An UNPLANNED event involving one or more of the following: (1) An automatic turbine runback > 15% thermal reactor power; (2) Electrical load rejection > 25% full electrical load; (3) Reactor Trip or (4) Safety Injection System Activation.

SITE PERIMETER (SP): Encompasses all owner controlled areas in the immediate site environs as shown on Figures 4-A and 7-A.

STRIKE ACTION: A work stoppage within the PROTECTED AREA by a body of workers to enforce compliance with demands made on TVA. The STRIKE ACTION must threaten to interrupt normal plant operations.

TOXIC GAS: A gas that is dangerous to life or limb by reason of inhalation or skin contact (e.g., chlorine).

UNPLANNED: An event or action that is not the expected result of normal operations, testing, or maintenance. Events that result in corrective or mitigative actions being taken in accordance with abnormal or emergency procedures are UNPLANNED.

UNPLANNED: (With specific regard to radioactivity releases) A release of radioactivity is UNPLANNED if the release has not been authorized by a Discharge Permit (DP). Implicit in this definition are unintentional releases, unmonitored releases, or planned releases that exceed a condition specified on the DP, e.g., alarm setpoints, minimum dilution flow, minimum release times, maximum release rates, and/or discharge of incorrect tank.

VALID: An indication or report or condition is considered to be VALID when it is conclusively verified by (1) an instrument channel check, or (2) indications on related or redundant indicators, or (3) by direct observation by plant personnel. Implicit in this definition is the need for timely assessment, i.e., within 15 minutes.

VISIBLE DAMAGE: Damage to equipment that is readily observable without measurements, testing, or analyses. Damage is sufficient enough to cause concern regarding the continued operability or reliability of affected safety structure, system, or component. Example damage includes: deformation due to heat or impact, denting, penetration, rupture, cracking, and/or paint blistering. Surface blemishes (e.g., paint chipping, scratches) should NOT be included.

VITAL AREA: Is any area within the PROTECTED AREA which contains equipment, systems, devices, or material, the failure, destruction, or release of which could directly or indirectly endanger the public health and safety by exposure to radiation.

5.1 Earthquake		
	Mode	Initiating/Condition
GENERAL		Refer to "Fission Product Barrier Matrix"
		Refer to "Fission Product Barrier Matrix"
SITE		
ALERT	All	Earthquake detected by site seismic instrumentation (1 and 2) (a and b) - Ann.166 D indicates "OBE Spectra Exceeded" - Ann.166 E indicates "Seismic Recording Initiated" (a or b) - Ground motion sensed by Plant personnel - National Earthquake Information Center at 1-(303) 273-8500 can confirm the event.
	All	Earthquake detected by site seismic instrumentation (1 and 2) - Ann. 166 E indicator "Seismic Recording Initiated" (a or b) - Ground motion sensed by Plant personnel - National Earthquake Information Center at 1-(303) 273-8500 can confirm the event.
UNUSUAL EVENT		

5.2 Tornado	
	Initiating/Condition
	Refer to "Fission Product Barrier Matrix"
	Refer to "Fission Product Barrier Matrix"
All	Tornado or High Winds strikes any structure listed in Table 5-1 and results in VISIBLE DAMAGE (1 and 2) - Tornado or High Winds (Sustained >80 mph > one minute) strikes any structure listed in Table 5-1 (a or b) - Confirmed report of any VISIBLE DAMAGE - Control Room indications of degraded Safety System <u>or</u> component response due to event <i>Note: Site Met Data Instrumentation fails to 0 at >100 mph. National Weather Service Morristown 1-(423) 586-8400 can provide additional information if needed.</i>
All	Tornado within the SITE PERIMETER Plant personnel report a Tornado has been sighted within the SITE PERIMETER (Refer to Figure 5-A)

5.3 Aircraft/Projectile Crash		
	Mode	Initiating/Condition
GENERAL SITE		Refer to "Fission Product Barrier Matrix"
		Refer to "Fission Product Barrier Matrix"
ALERT UNUSUAL EVENT	All	Aircraft <u>or</u> PROJECTILE impacts (Strikes) any Plant structure listed in Table 5-1 resulting in VISIBLE DAMAGE (1 and 2) - Plant personnel report aircraft <u>or</u> PROJECTILE has impacted any structure listed in Table 5-1 (a or b) - Confirmed report of any VISIBLE DAMAGE - Control Room indications of degraded Safety System <u>or</u> component response due to the event within the specified areas
	All	Aircraft crash <u>or</u> PROJECTILE impact within the SITE PERIMETER Plant personnel report a Aircraft Crash <u>or</u> PROJECTILE impact within the SITE PERIMETER (Refer to Figure 5-A)

Table 5-1

Plant Structures Associated With
Tornado/Hi Wind and Aircraft EALs

Unit #1 and 2 Reactor Buildings
Auxiliary Building
Control Building
Diesel Generator Building
Additional Diesel Generator Building
Intake Pumping Station
Additional Equipment Buildings (Units 1 & 2)
CDWE Building
Turbine Building
RWST
CST

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5.4 River Level HIGH		
	Mode	Initiating/Condition
GENERAL SITE		Refer to "Fission Product Barrier Matrix"
		Refer to "Fission Product Barrier Matrix"
ALERT UNUSUAL EVENT	All	River Reservoir level is at Stage II Flood Warning (1 or 2) 1. River Reservoir level >727 Ft 2. Stage II Flood Warning (AOI-7) has been issued by River Systems Operations
	All	River Reservoir level is at Stage I Flood Warning (1 or 2 or 3) 1. River Reservoir level >726.5 Ft from April 16 thru September 30 2. River Reservoir level >714.5 Ft from October 1 thru April 15 3. Stage I Flood Warning (AOI-7) has been issued by River Systems Operations

5.5 River Level LOW	
Mode	Initiating/Condition
	Refer to "Fission Product Barrier Matrix"
	Refer to "Fission Product Barrier Matrix"
All	River Reservoir level is <668 Ft (AOI-22) as reported by River Systems Operations
All	River Reservoir level is ≤673 Ft (AOI-22) as reported by River Systems Operations

5.6 Watercraft Crash

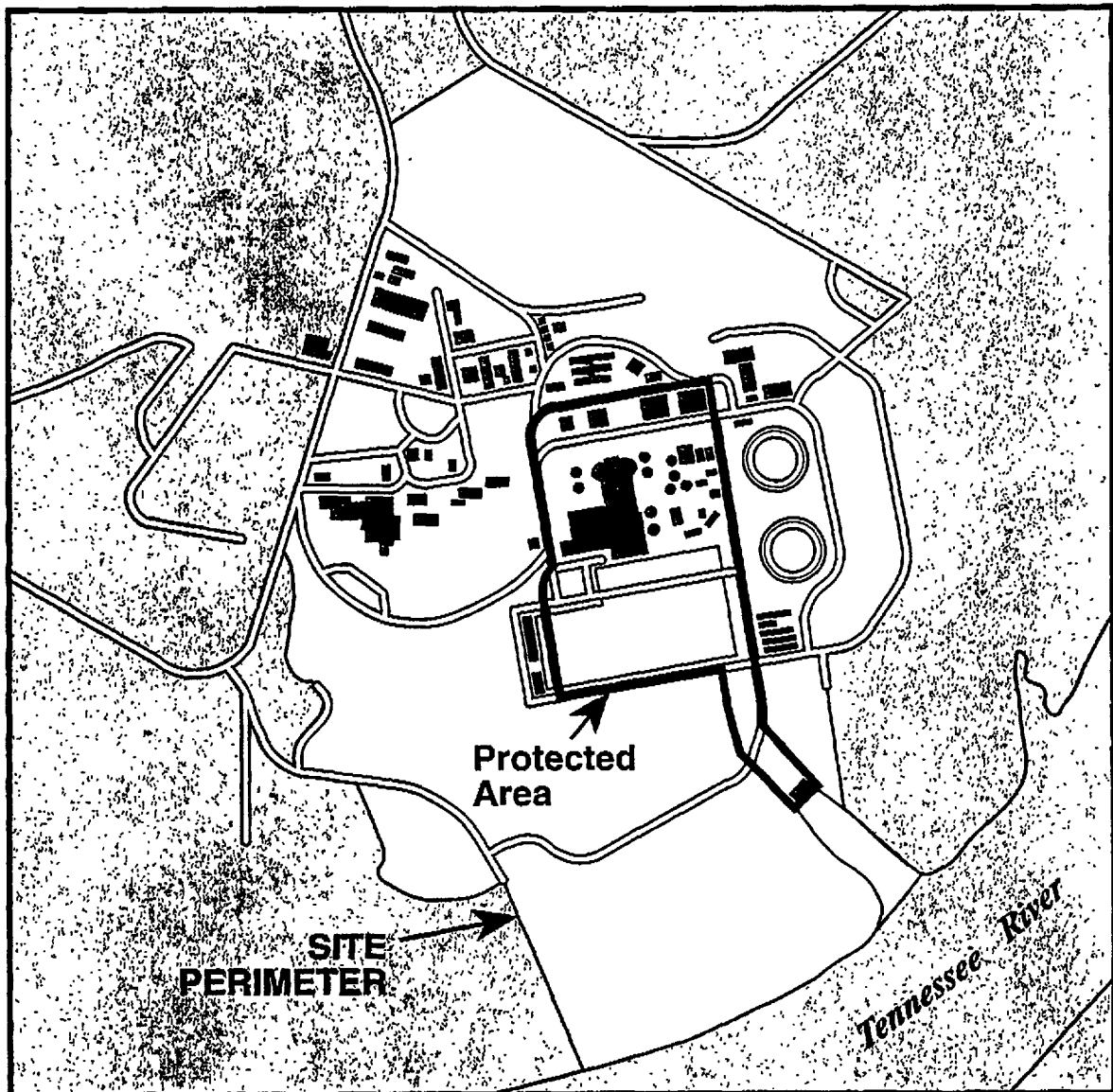
GENERAL SITE ALERT UNUSUAL EVENT	Mode	Initiating/Condition
		Refer to "Fission Product Barrier Matrix"
		Refer to "Fission Product Barrier Matrix"
		Refer to "Fission Product Barrier Matrix"
	All	Watercraft Strikes the Intake Pumping Station resulting in a reduction of Essential Raw Cooling Water (ERCW) or Raw Cooling Water (RCW) (1 and 2) - Plant personnel report a Watercraft has struck the Intake Pumping Station (a or b or c) - ERCW Supply Header Pressure Train A O-PI-67-18A is <15 psig - ERCW Supply Header Pressure Train B O-PI-67-17A is <15 psig - RCW Supply Header Pressure O-PI-24-22 is <15 psig

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Figure 5-A
PROTECTED AREA/SITE PERIMETER



FISSION PRODUCT BARRIER MATRIX (Modes 1-4)

- 1.1 Fuel Clad
- 1.2 RCS
- 1.3 Containment

1

SYSTEM DEGRADATION

- | | |
|------------------------------------|-----------------------------|
| 2.1 Loss of Instrumentation | 2.6 RCS Identified Leakage |
| 2.2 Loss of Function/Communication | 2.7 Uncontrolled Cool Down |
| 2.3 Failure of Reactor Protection | 2.8 Turbine Failure |
| 2.4 Fuel Clad Degradation | 2.9 Technical Specification |
| 2.5 RCS Unidentified Leakage | 2.10 Safety Limit |

2

LOSS OF POWER

- 3.1 Loss of AC (Power Ops)
- 3.2 Loss of AC (Shutdown)
- 3.3 Loss of DC

3

HAZARDS and SED JUDGMENT

- | | | |
|---------------|-------------------|-----------------------------|
| 4.1 Fire | 4.3 Flammable Gas | 4.5 Control Room Evacuation |
| 4.2 Explosion | 4.4 Toxic Gas | 4.6 Security |
| Table 4-1 | Table 4-2 | 4.7 SED Judgment |
| Figure 4-A | Figure 4-B | Table 4-3 |

4

DESTRUCTIVE PHENOMENON

- | | |
|----------------------------------|----------------------|
| 5.1 Earthquake | 5.4 River Level High |
| 5.2 Tornado | 5.5 River Level Low |
| 5.3 Aircraft/Projectile
Crash | 5.6 Watercraft Crash |
| Table 5-1 | Figure 5-A |

5

SHUTDOWN SYSTEM DEGRADATION

- 6.1 Loss of Shutdown Systems
- 6.2 Loss of AC (Shutdown)
- 6.3 Loss of DC (Shutdown)
- 6.4 Fuel Handling

6

RADIOLOGICAL

- | | |
|----------------------|----------------------|
| 7.1 Gaseous Effluent | 7.3 Radiation Levels |
| 7.2 Liquid Effluent | 7.4 Fuel Handling |
| Table 7-1 | Table 7-2 |
| Figure 7-A | |

7

DEFINITIONS/ACRONYMS

UNUSUAL EVENT, ALERT, SITE AREA EMERGENCY and GENERAL EMERGENCY: (see SED Judgment 4.7).

BOMB: An explosive device (See EXPLOSION).

CIVIL DISTURBANCE: A group of twenty (20) or more persons violently protesting station operations or activities at the site.

CRITICAL-SAFETY FUNCTION (CSFs): A plant safety function required to prevent significant release of core radioactivity to the environment. There are six CSFs: Sub-criticality, Core Cooling, Heat Sink, Pressurized Thermal Shock, Integrity (Containment) and Inventory (RCS).

EVENT: Assessment of an EVENT commences when recognition is made that one or more of the conditions associated with the event exist. Implicit in this definition is the need for timely assessment, i.e. within 15 minutes.

EXCLUSION AREA BOUNDARY (EAB): The demarcation of the area surrounding the WBN units in which postulated FSAR accidents will not result in population doses exceeding the criteria of 10 CFR Part 100. Refer to Figure 7-A.

EXPLOSION: A rapid, violent, unconfined combustion, or a catastrophic failure of pressurized equipment that imparts energy of sufficient force to potentially damage permanent structures required for safe operation.

EXTORTION: An attempt to cause an action at the station by threat of force.

FAULTED: (Steam Generator) Existence of secondary side leakage (i.e., steam or feed line break) that results in an uncontrolled decrease in steam generator pressure or the steam generator being completely depressurized.

FIRE: Combustion characterized by heat and light. Source of smoke such as slipping drive belts or overheated electrical components do not constitute fires. Observation of flame is preferred but is NOT required if large quantities of smoke and heat are observed.

FLAMMABLE GAS: Combustible gases maintained at concentrations less than the LOWER EXPLOSIVE LIMIT (LEL) will not explode due to ignition.

HOSTAGE: A person(s) held as leverage against the station to ensure that demands will be met by the station.

INEFFECTIVE: The specified restoration action(s) does not result in a reduction in the level of severity of the RED PATH condition within 15 minutes from identification of the Core Cooling CSF Status Tree RED PATH. A reduction in the level of severity is an improvement in the applicable parameters, e.g., Increasing Trend in Reactor Vessel Water Level (Full RVLIS) and/or Decreasing Trend on Core Thermocouple Temperatures.

INITIATING CONDITIONS: Plant Parameters, radiation monitor readings or personnel observations that identify an Event for purposes of Emergency Plan Classification.

INTRUSION/INTRUDER: Suspected hostile individual present in a protected area without authorization.

ODCM: Offsite Dose Calculation Manual.

ORANGE PATH: Monitoring of one or more CSFs by FR-0 which indicates that the CSF(s) is under severe challenge.

PROJECTILE: An object ejected, thrown, or launched towards a plant structure. The source of the projectile may be onsite or offsite. Damage is sufficient to cause concern regarding the integrity of the affected structure or the operability or reliability of safety equipment contained therein.

PROTECTED AREA: Encompasses all owner controlled areas within the security protected area fence as shown on Figure 4-A.

RED PATH: Monitoring of one or more CSFs by the FR-0 which indicates that the CSF(s) is under extreme challenge; prompt operator action is required.

RUPTURED: (Steam Generator) Existence of primary to secondary leakage of a magnitude greater than charging pump capacity.

SABOTAGE: Deliberate damage, misalignment, or mis-operation of plant equipment with the intent to render the equipment inoperable.

SIGNIFICANT TRANSIENT: An UNPLANNED event involving one or more of the following: (1) An automatic turbine runback > 15% thermal reactor power; (2) Electrical load rejection > 25% full electrical load; (3) Reactor Trip or (4) Safety Injection System Activation.

SITE PERIMETER (SP): Encompasses all owner controlled areas in the immediate site environs as shown on Figures 4-A and 7-A.

STRIKE ACTION: A work stoppage within the PROTECTED AREA by a body of workers to enforce compliance with demands made on TVA. The STRIKE ACTION must threaten to interrupt normal plant operations.

TOXIC GAS: A gas that is dangerous to life or limb by reason of inhalation or skin contact (e.g., chlorine).

UNPLANNED: An event or action that is not the expected result of normal operations, testing, or maintenance. Events that result in corrective or mitigative actions being taken in accordance with abnormal or emergency procedures are UNPLANNED.

UNPLANNED: (With specific regard to radioactivity releases) A release of radioactivity is UNPLANNED if the release has not been authorized by a Discharge Permit (DP). Implicit in this definition are unintentional releases, unmonitored releases, or planned releases that exceed a condition specified on the DP, e.g., alarm setpoints, minimum dilution flow, minimum release times, maximum release rates, and/or discharge of incorrect tank.

VALID: An indication or report or condition is considered to be VALID when it is conclusively verified by (1) an instrument channel check, or (2) indications on related or redundant indicators, or (3) by direct observation by plant personnel. Implicit in this definition is the need for timely assessment, i.e., within 15 minutes.

VISIBLE DAMAGE: Damage to equipment that is readily observable without measurements, testing, or analyses. Damage is sufficient enough to cause concern regarding the continued operability or reliability of affected safety structure, system, or component. Example damage includes: deformation due to heat or impact, denting, penetration, rupture, cracking, and/or paint blistering. Surface blemishes (e.g., paint chipping, scratches) should NOT be included.

VITAL AREA: Is any area within the PROTECTED AREA which contains equipment, systems, devices, or material, the failure, destruction, or release of which could directly or indirectly endanger the public health and safety by exposure to radiation.

6.1 Loss of Shutdown Systems		
	Mode	Initiating/Condition
GENERAL SITE ALERT UNUSUAL EVENT	5,6	Note: Additional information will be provided later pending NRC Guidance on Shutdown EALs Refer to "Gaseous Effluents" (7.1)
	5,6	Loss of water level in the Rx vessel that has <u>or</u> will uncover fuel in the Rx vessel with CNTMT closure established (1 and 2 and 3 and 4 and 5) 1. Loss of RHR capability 2. Rx vessel water level < el. 718' 3. Incore TCs (if available) indicate RCS temp. >200° F 4. RCS is vented/open to CNTMT 5. CNTMT closure is established Note: If CNTMT open, refer to "Gaseous Effluents" (7.1)
	5,6	Inability to maintain Unit in Cold Shutdown (1 and 2 and 3) 1. RHR capability is <u>not</u> available for RCS Cooling 2. Incore TCs (if available) indicate RCS temp. >200° F 3. CNTMT closure is established
	5,6	Note: Additional information will be provided later pending NRC Guidance on Shutdown EALs

6.2 Loss of AC (Shutdown)	
Mode	Initiating/Condition
	Not Applicable
	Not Applicable
5,6 or De-Fuel	UNPLANNED loss of Offsite <u>and</u> Onsite AC Power for >15 minutes 1. 1A <u>and</u> 1B 6.9 KV Shutdown Bds de-energized for >15 minutes
5,6 or De-Fuel	UNPLANNED loss of All Offsite Power for >15 minutes (1 and 2) 1. C <u>and</u> D CSSTS not available For >15 minutes. 2. Either Diesel Generator is supplying power to its respective Shutdown Board

6.3 Loss of DC (Shutdown)		
	Mode	Initiating/Condition
GENERAL SITE		Not Applicable
		Not Applicable
		Not Applicable
ALERT UNUSUAL EVENT		Not Applicable
	5,6 or De-fuel	UNPLANNED loss of the required Train of DC Power for >15 minutes (1 or 2) 1. Voltage <105V DC on 125V DC Vital Battery Buses 1-I <u>and</u> 1-III for >15 minutes 2. Voltage <105V DC on 125V DC Vital Battery Buses 1-II <u>and</u> 1-IV for >15 minutes.

6.4 Fuel Handling	
	Mode
	Initiating/Condition
	Refer to "Gaseous Effluents" (7.1)
	Refer to "Gaseous Effluents" (7.1)
	Major damage to Irradiated Fuel, <u>or</u> Loss of water level that has <u>or</u> will uncover Irradiated Fuel outside the Reactor Vessel (1 and 2) 1. VALID alarm on O-RE-90-101 <u>or</u> O-RE-90-102 <u>or</u> O-RE-90-103 <u>or</u> 1-RE-90-130/131 <u>or</u> 1-RE-90-112 <u>or</u> 1-RE-90-400 <u>or</u> 2-RE-90-400 2. (a or b) a. Plant personnel report damage of Irradiated Fuel sufficient to rupture Fuel Rods b. Plant personnel report water level drop has <u>or</u> will exceed makeup capability such that Irradiated Fuel will be uncovered
	UNPLANNED loss of water level in Spent Fuel Pool <u>or</u> Reactor Cavity <u>or</u> Transfer Canal with fuel remaining covered (1 and 2 and 3) 1. Plant personnel report water level drop in Spent Fuel Pool <u>or</u> Reactor Cavity, <u>or</u> Transfer Canal 2. VALID alarm on O-RE-90-102 <u>or</u> O-RE-90-103 <u>or</u> 1-RE-90-59 <u>or</u> 1-RE-90-60 3. Fuel remains covered with water

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FISSION PRODUCT BARRIER MATRIX (Modes 1-4)

- 1.1 Fuel Clad
- 1.2 RCS
- 1.3 Containment

1

SYSTEM DEGRADATION

- | | |
|------------------------------------|-----------------------------|
| 2.1 Loss of Instrumentation | 2.6 RCS Identified Leakage |
| 2.2 Loss of Function/Communication | 2.7 Uncontrolled Cool Down |
| 2.3 Failure of Reactor Protection | 2.8 Turbine Failure |
| 2.4 Fuel Clad Degradation | 2.9 Technical Specification |
| 2.5 RCS Unidentified Leakage | 2.10 Safety Limit |

2

LOSS OF POWER

- 3.1 Loss of AC (Power Ops)
- 3.2 Loss of AC (Shutdown)
- 3.3 Loss of DC

3

HAZARDS and SED JUDGMENT

- | | | |
|---------------|-------------------|-----------------------------|
| 4.1 Fire | 4.3 Flammable Gas | 4.5 Control Room Evacuation |
| 4.2 Explosion | 4.4 Toxic Gas | 4.6 Security |
| Table 4-1 | Table 4-2 | 4.7 SED Judgment |
| Figure 4-A | Figure 4-B | Table 4-3 |

4

DESTRUCTIVE PHENOMENON

- | | |
|-------------------------------|----------------------|
| 5.1 Earthquake | 5.4 River Level High |
| 5.2 Tornado | 5.5 River Level Low |
| 5.3 Aircraft/Projectile Crash | 5.6 Watercraft Crash |
| Table 5-1 | Figure 5-A |

5

SHUTDOWN SYSTEM DEGRADATION

- 6.1 Loss of Shutdown Systems
- 6.2 Loss of AC (Shutdown)
- 6.3 Loss of DC (Shutdown)
- 6.4 Fuel Handling

6

RADIOLOGICAL

- | | |
|----------------------|----------------------|
| 7.1 Gaseous Effluent | 7.3 Radiation Levels |
| 7.2 Liquid Effluent | 7.4 Fuel Handling |
| Table 7-1 | Table 7-2 |
| Figure 7-A | |

7

DEFINITIONS/ACRONYMS

UNUSUAL EVENT, ALERT, SITE AREA EMERGENCY and GENERAL EMERGENCY: (see SED Judgment 4.7).

BOMB: An explosive device (See EXPLOSION).

CIVIL DISTURBANCE: A group of twenty (20) or more persons violently protesting station operations or activities at the site.

CRITICAL-SAFETY FUNCTION (CSFs): A plant safety function required to prevent significant release of core radioactivity to the environment. There are six CSFs: Sub-criticality, Core Cooling, Heat Sink, Pressurized Thermal Shock, Integrity (Containment) and Inventory (RCS).

EVENT: Assessment of an EVENT commences when recognition is made that one or more of the conditions associated with the event exist. Implicit in this definition is the need for timely assessment, i.e. within 15 minutes.

EXCLUSION AREA BOUNDARY (EAB): The demarcation of the area surrounding the WBN units in which postulated FSAR accidents will not result in population doses exceeding the criteria of 10 CFR Part 100. Refer to Figure 7-A.

EXPLOSION: A rapid, violent, unconfined combustion, or a catastrophic failure of pressurized equipment that imparts energy of sufficient force to potentially damage permanent structures required for safe operation.

EXTORTION: An attempt to cause an action at the station by threat of force.

FAULTED: (Steam Generator) Existence of secondary side leakage (i.e., steam or feed line break) that results in an uncontrolled decrease in steam generator pressure or the steam generator being completely depressurized.

FIRE: Combustion characterized by heat and light. Source of smoke such as slipping drive belts or overheated electrical components do not constitute fires. Observation of flame is preferred but is NOT required if large quantities of smoke and heat are observed.

FLAMMABLE GAS: Combustible gases maintained at concentrations less than the LOWER EXPLOSIVE LIMIT (LEL) will not explode due to ignition.

HOSTAGE: A person(s) held as leverage against the station to ensure that demands will be met by the station.

INEFFECTIVE: The specified restoration action(s) does not result in a reduction in the level of severity of the RED PATH condition within 15 minutes from identification of the Core Cooling CSF Status Tree RED PATH. A reduction in the level of severity is an improvement in the applicable parameters, e.g., Increasing Trend in Reactor Vessel Water Level (Full RVLIS) and/or Decreasing Trend on Core Thermocouple Temperatures.

INITIATING CONDITIONS: Plant Parameters, radiation monitor readings or personnel observations that identify an Event for purposes of Emergency Plan Classification.

INTRUSION/INTRUDER: Suspected hostile individual present in a protected area without authorization.

ODCM: Offsite Dose Calculation Manual.

ORANGE PATH: Monitoring of one or more CSFs by FR-0 which indicates that the CSF(s) is under severe challenge.

PROJECTILE: An object ejected, thrown, or launched towards a plant structure. The source of the projectile may be onsite or offsite. Damage is sufficient to cause concern regarding the integrity of the affected structure or the operability or reliability of safety equipment contained therein.

PROTECTED AREA: Encompasses all owner controlled areas within the security protected area fence as shown on Figure 4-A.

RED PATH: Monitoring of one or more CSFs by the FR-0 which indicates that the CSF(s) is under extreme challenge; prompt operator action is required.

RUPTURED: (Steam Generator) Existence of primary to secondary leakage of a magnitude greater than charging pump capacity.

SABOTAGE: Deliberate damage, misalignment, or mis-operation of plant equipment with the intent to render the equipment inoperable.

SIGNIFICANT TRANSIENT: An UNPLANNED event involving one or more of the following: (1) An automatic turbine runback > 15% thermal reactor power; (2) Electrical load rejection > 25% full electrical load; (3) Reactor Trip or (4) Safety Injection System Activation.

SITE PERIMETER (SP): Encompasses all owner controlled areas in the immediate site environs as shown on Figures 4-A and 7-A.

STRIKE ACTION: A work stoppage within the PROTECTED AREA by a body of workers to enforce compliance with demands made on TVA. The STRIKE ACTION must threaten to interrupt normal plant operations.

TOXIC GAS: A gas that is dangerous to life or limb by reason of inhalation or skin contact (e.g., chlorine).

UNPLANNED: An event or action that is not the expected result of normal operations, testing, or maintenance. Events that result in corrective or mitigative actions being taken in accordance with abnormal or emergency procedures are UNPLANNED.

UNPLANNED: (With specific regard to radioactivity releases) A release of radioactivity is UNPLANNED if the release has not been authorized by a Discharge Permit (DP). Implicit in this definition are unintentional releases, unmonitored releases, or planned releases that exceed a condition specified on the DP, e.g., alarm setpoints, minimum dilution flow, minimum release times, maximum release rates, and/or discharge of incorrect tank.

VALID: An indication or report or condition is considered to be VALID when it is conclusively verified by (1) an instrument channel check, or (2) indications on related or redundant indicators, or (3) by direct observation by plant personnel. Implicit in this definition is the need for timely assessment, i.e., within 15 minutes.

VISIBLE DAMAGE: Damage to equipment that is readily observable without measurements, testing, or analyses. Damage is sufficient enough to cause concern regarding the continued operability or reliability of affected safety structure, system, or component. Example damage includes: deformation due to heat or impact, denting, penetration, rupture, cracking, and/or paint blistering. Surface blemishes (e.g., paint chipping, scratches) should NOT be included.

VITAL AREA: Is any area within the PROTECTED AREA which contains equipment, systems, devices, or material, the failure, destruction, or release of which could directly or indirectly endanger the public health and safety by exposure to radiation.

7.1 Gaseous Effluents		
	Mode	Initiating/Condition
GENERAL SITE ALERT UNUSUAL EVENT	All	EAB dose resulting from an actual <u>or</u> imminent release of Gaseous Radioactivity that exceeds 1000 mrem TEDE <u>or</u> 5000 mrem Thyroid CDE for the actual <u>or</u> projected duration of the release (1 or 2 or 3) 1. A VALID rad monitor reading exceeds the values under General in Table 7-1 for >15 minutes, unless assessment within this time period confirms that the Criterion is <u>Not</u> exceeded. 2. Field survey results indicate >1000 mrem/hr β-γ <u>or</u> an I-131 concentration of $3.9\text{E-}6 \mu\text{Ci/cc}$ at SP 3. EP dose assessment results indicate EAB dose >1000 mrem TEDE <u>or</u> >5000 mrem Thyroid CDE for the actual <u>or</u> projected duration of the release (Figure 7-A)
	All	EAB dose resulting from an actual <u>or</u> imminent release of Gaseous Radioactivity that exceeds 100 mrem TEDE <u>or</u> 500 mrem Thyroid CDE for the actual <u>or</u> projected duration of the release (1 or 2 or 3) 1. A VALID rad monitor reading exceeds the values under Site in Table 7-1 for >15 minutes, unless assessment within this time period confirms that the Criterion is <u>Not</u> exceeded 2. Field survey results indicate >100 mrem/hr β-γ <u>or</u> an I-131 concentration of $3.9\text{E-}7 \mu\text{Ci/cc}$ at SP 3. EP dose assessment results indicate EAB dose >100 mrem TEDE <u>or</u> >500 mrem Thyroid CDE for the actual <u>or</u> projected duration of the release (Figure 7-A)
	All	Any UNPLANNED release of Gaseous Radioactivity that exceeds 200 times the ODCM Limit for >15 minutes (1 or 2 or 3) 1. A VALID rad monitor reading exceeds the values under Alert in Table 7-1 for >15 minutes, unless assessment within this time period confirms that the Criterion is <u>Not</u> exceeded 2. Field survey results indicate >10 mrem/hr β-γ at SP >15 minutes 3. EP dose assessment results indicate EAB dose >10 mrem TEDE for the duration of the release (Figure 7-A)
	All	Any UNPLANNED release of Gaseous Radioactivity that exceeds 2 times the ODCM Limit for >60 minutes (1 or 2 or 3) 1. A VALID rad monitor reading exceeds the values under UE in Table 7-1 for >60 minutes, unless assessment within this time period confirms that the Criterion is <u>Not</u> exceeded 2. Field survey results indicate >0.1 mrem/hr β-γ at SP for >60 minutes 3. EP dose assessment results indicate EAB dose >0.1 mrem TEDE for the duration of the release (Figure 7-A)

7.2 Liquid Effluents	
Mode	Initiating/Condition
	Not Applicable
	Not Applicable
All	Any UNPLANNED release of Liquid Radioactivity that exceeds 200 times the ODCM Limit for >15 minutes (1 or 2) 1. A VALID rad monitor reading exceeds the values under Alert in Table 7-1 for >15 minutes, unless assessment within this time period confirms that the Criterion is <u>Not</u> exceeded. 2. Sample results exceed 200 times the ODCM limit value for an unmonitored release of liquid radioactivity >15 minutes in duration
All	Any UNPLANNED release of Liquid Radioactivity to the Environment that exceeds 2 times the ODCM Limit for >60 minutes (1 or 2) 1. A VALID rad monitor reading exceeds the values under UE in Table 7-1 for >60 minutes, unless assessment within this time period confirms that the Criterion is <u>Not</u> exceeded. 2. Sample results exceed 2 times the ODCM limit value for an unmonitored release of liquid radioactivity >60 minutes in duration

TABLE 7-1
EFFLUENT RADIATION MONITOR EALS⁽¹⁾

NOTE:

The values below, if **exceeded**, indicate the need to perform the specified assessment. If the assessment can not be completed within 15 minutes (60 minutes for UE), the declaration shall be made based on the **VALID** reading. As used here, the radiation monitor indications as displayed on ICS are the primary indicators. If ICS is unavailable, utilize the radiation monitor readings in the control room or local indication as necessary.

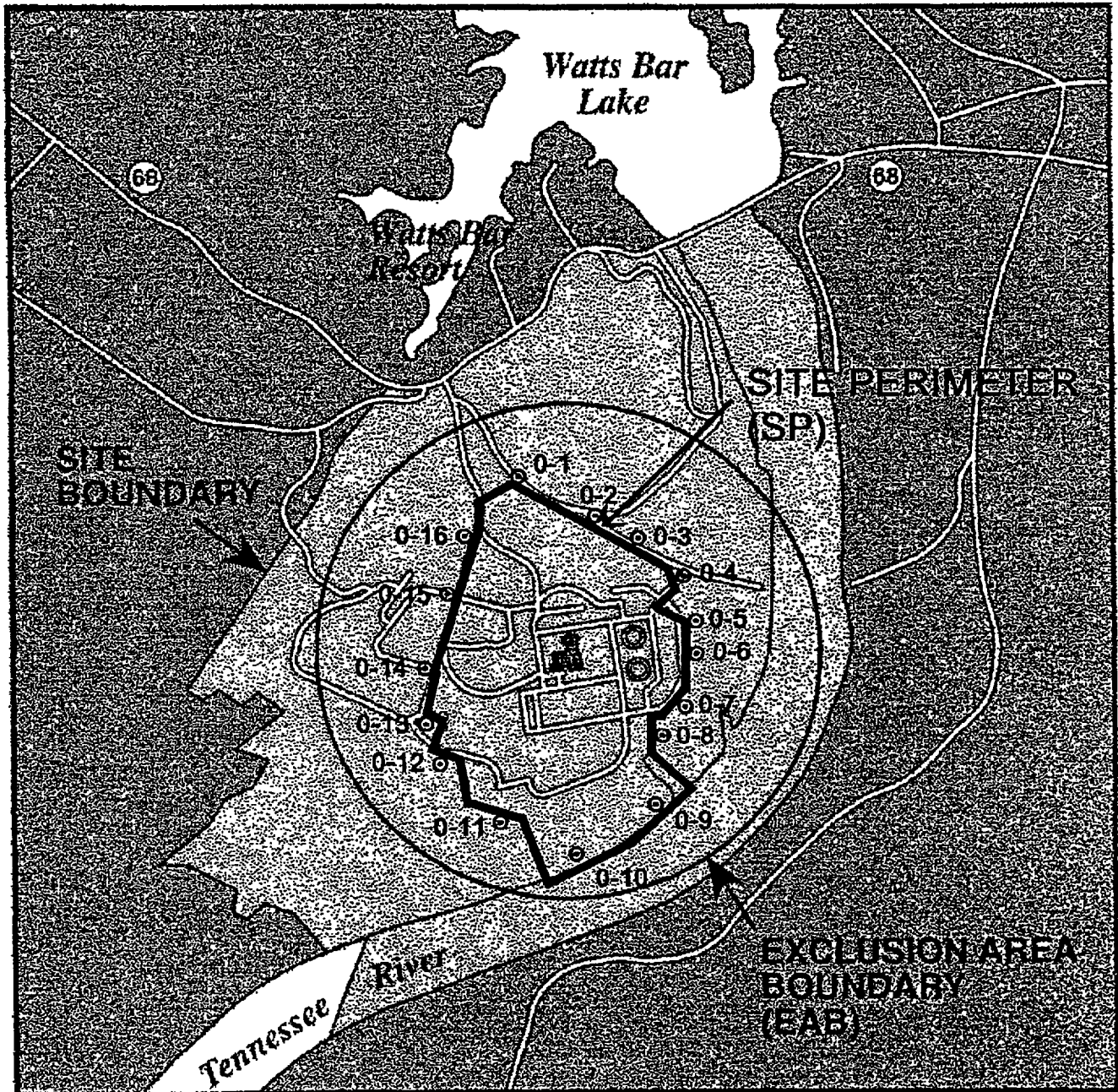
Monitor	ICS Screen	Units	UE	Alert	Site	General
Total Site	EFF1	μCi/s ⁽²⁾	1.5E+05	1.5E+07	2.5E+08	2.5E+09
U1 Shield Building 1-RE-90-400	EFF1	μCi/s	6.7E+04	6.7E+06	1.0E+08	1.0E+09
U2 Shield Building 2-RE-90-400	EFF1	μCi/s	1.5E+04	1.5E+06	2.5E+07	2.6E+08
Auxiliary Building 0-RE-90-101B	4RM1	cpm	1.2E+04	1.2E+06	***** ⁽¹⁾	***** ⁽¹⁾
Service Building 0-RE-90-132B	4RM1	cpm	4.3E+03	4.3E+05	9.8E+06	***** ⁽¹⁾
U1 Condenser Vacuum Exhaust 1-RE-90-404A 1-RE-90-404B	3PAM 3PAM	μCi/cc ⁽³⁾ μCi/cc	5.5E-02 5.5E-02	5.5E+00 5.5E+00	8.83E+01 8.83E+01	8.83E+02 8.83E+02
S/G Discharge Monitors 1-RE-90-421 thru 424 (B)	4RM2	mR/hr ⁽⁴⁾	NA	3.5E+02	3.5E+03	3.5E+04
Liquid Monitors 0-RE-90-122 1-RE-90-120,121 0-RE-90-225 0-RE-90-212	n/a 4RM2 4RM2 4RM2 4RM2	μCi/ml ⁽²⁾ cpm cpm cpm cpm	1.8E-05 1.1E+06 1.0E+06 9.2E+05 1.5E+04	1.8E-03 ***** ⁽¹⁾ ***** ⁽¹⁾ ***** ⁽¹⁾ 1.5E+06	N/A N/A N/A N/A N/A	N/A N/A N/A N/A N/A
RELEASE DURATION		minutes	60	15	15	15
ASSESSMENT METHOD: ICS or radiation monitor (RM) readings in the MCR or local indication as necessary						

Note: (1) Table values are calculated values. The ***** indicates the monitor is off scale.

- (2) These releases rate values in μCi/s and μCi/ml are provided on the gaseous and liquid release points for Information Only. Actual monitor readings are given in the table corresponding to the monitor for the four emergency classifications.
- (3) This eberline channel reads out in cpm in the MCR. Indications of a radioactivity release via this pathway would be S/G blowdown monitors or other indications of primary-to-secondary leakage such as S/G level increase or pressurizer level decrease. ICS calculates μCi/cc and has a visual indication of an alarm condition when the indications exceeds 5.5E-02μCi/cc. This channel was included in the table to provide a means to further assess a release detected by other indications and to provide a path for possible escalation.
- (4) These unit values are based on flow rates through one [1] PORV of 970,000 lb/hr at 1,185 psig, 600°F. Before using these values, ensure a release to the environment is ongoing (e.g. PORV).

Figure 7-A
EXCLUSION AREA, SITE BOUNDARY and SITE PERIMETER

NOTE: The Site Boundary used here is consistent with the definition in the Offsite Dose Calculation Manual. Do Not confuse this boundary with the SITE PERIMETER defined in these EALs, or with other definitions of "Site Boundary."



Note: Numbered points are [SP] radiological survey point for all sectors.

7.3 Radiation Levels		
	Mode	Initiating/Condition
GENERAL		Refer to "Fission Product Barrier Matrix" or "Gaseous Effluents" (7.1)
		Refer to "Fission Product Barrier Matrix" or "Gaseous Effluents" (7.1)
SITE		
ALERT	All	UNPLANNED increases in Radiation levels within the Facility that impedes Safe Operations or establishment or maintenance of Cold Shutdown (1 or 2) VALID area Radiation Monitor readings or survey results exceed 15 mrem/hr in the Control Room or CAS (a and b) VALID area radiation monitor readings exceed values listed in Table 7-2 - Access restrictions impede operation of systems necessary for Safe Operation or the ability to establish Cold Shutdown See UNUSUAL EVENT Note Below
	All	UNPLANNED increase in Radiation levels within the Facility VALID area Radiation Monitor readings increase by a factor 1000 over normal levels <i>Note: In Either the UE or ALERT EAL, the SED must determine the cause of Increase in Radiation Levels and Review Other INITIATING/CONDITIONS for Applicability (e.g., a dose rate of 15 mrem/hr in the Control Room could be caused by a release associated with a DBA).</i>
UNUSUAL EVENT		

7.4 Fuel Handling	
Mode	Initiating/Condition
	Refer to "Gaseous Effluents" (7.1)
	Refer to "Gaseous Effluents" (7.1)
All	Major damage to Irradiated Fuel, or Loss of water level that has or will uncover Irradiated Fuel outside the Reactor Vessel (1 and 2) - VALID alarm on 0-RE-90-101 or 0-RE-90-102 or 0-RE-90-103 or 1-RE-90-130/131 or 1-RE-90-112 or 1-RE-90-400 or 2-RE-90-400 (a or b) - Plant personnel report damage of Irradiated Fuel sufficient to rupture Fuel Rods - Plant personnel report water level drop has or will exceed makeup capacity such that Irradiated Fuel will be uncovered
All	UNPLANNED loss of water level in Spent Fuel Pool or Reactor Cavity or Transfer Canal with fuel remaining covered (1 and 2 and 3) - Plant personnel report water level drop in Spent Fuel Pool, or Reactor Cavity, or Transfer Canal VALID alarm on 0-RE-90-102 or 0-RE-90-103 or 1-RE-90-59 or 1-RE-90-60 - Fuel remains covered with water.

Table 7-2

ALERT - RADIATION LEVELS

Monitor No.	Location Building and Elevation	Monitor Reading *
1&2 RE-90-1	Auxiliary El. 757.0 (spent fuel pool)	2.5×10^3 mR/hr
1-RE-90-2	Auxiliary El. 757.0 (personnel air lock)	2.5×10^0 R/hr
0-RE-90-3	Auxiliary El. 729.0 (waste pac. area)	2.5×10^3 mR/hr
0-RE-90-4	Auxiliary El. 713.0 (decon room)	1.5×10^3 mR/hr
0-RE-90-5	Auxiliary El. 737.0 (spt. fuel pool pmp. ar.)	1.5×10^3 mR/hr
1&2-RE-90-6	Auxiliary El. 737.0 (comp. cl. wtr. ht. ex. ar.)	1.5×10^3 mR/hr
1&2-RE-90-7	Auxiliary El. 713.0 (sample room)	2×10^3 mR/hr
1&2-RE-90-8	Auxiliary El. 713.0 (aux. feed pump area)	1.5×10^3 mR/hr
0-RE-90-9	Auxiliary El. 692.0 (wst. cond. evap. tk. ar.)	1.5×10^3 mR/hr
1&2-RE-90-10	Auxiliary El. 692.0 (cvcs area)	1.5×10^3 mR/hr
0-RE-90-11	Auxiliary El. 676.0 (ctmt. spry. & rhr pmp ar.)	1.5×10^3 mR/hr
1-RE-90-61	Auxiliary El. 736.0 (RB low. cmpt. inst. rm.)	2.5×10^3 mR/hr
0-RE-90-230	Turbine El. 685.0 (conden. demin.)	1.5×10^3 mR/hr
0-RE-90-231	Turbine El. 685.0 (conden. demin.)	1.5×10^3 mR/hr

Note: *These monitors read out in mR/hr. It is assumed that this is equivalent to mrem/hr.

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SOURCE NOTES

Page 1 of 1

1. NIR-0551, DV-847100 F00012, and MC-850321 809004, MSC-00956, NCO 920030366. Monitor readings and challenges to barriers are provided in EPIP-1, Section 1 in (1.1 Fuel Clad 1.1.5 and 1.3 CNTMT Barrier 1.3.5), Section 7 (7.1 Gaseous Effluents, 7.2 Liquid Effluents, Table 7-1, 7.3 Radiation Levels, 7.4 Fuel Handling and Table 7-2). Barriers are covered in Section 1, Fission Product Barrier Matrix. Monitor readings are also provided in EPIP-5, App. B, Note 3.
2. MC-84 0827 005 035A, MCS-2400 SED duties that can not be delegated. Section 2.0 Responsibility.
3. MC-8407 1900 3003, MSC-00701, NCO-920030222 CNTMT Rad Monitors used in conjunction with a plant parameter to determine emergency classifications. Monitor readings are included with plant parameters for the purposes of emergency classifications. Section 1, Fission Product Barrier Matrix (1.1 Fuel Clad, 1.2 RCS, 1.3 Containment), Section 7 (7.1 Gaseous Effluent, 7.2 Liquid Effluent and 7.3 Radiation Levels and 7.4 Fuel Handling).
4. ANSI Standard N.18.7-1976 Subsection 5.3.9.3: 01 POI EIPs will contain the following elements.
5. MSC-02401, NCO-920030998 Chemistry detection of failed fuel.
6. EPPOS #2 Emergency Preparedness Position (EPPOS) on timeliness of classification of emergency conditions.

FILING INSTRUCTIONS

DOCUMENT NUMBER EPIP-5

REMOVE REVISION 16 INSERT REVISION 17
8/16/00

Comments _____

TENNESSEE VALLEY AUTHORITY

WATTS BAR NUCLEAR PLANT

**EMERGENCY PLAN IMPLEMENTING
PROCEDURES**

EPIP-5

GENERAL EMERGENCY

Revision 17

Unit 0

QUALITY RELATED

PREPARED BY: F. L. Pavlechko
(Type Name)

SPONSORING ORGANIZATION: Emergency Planning

APPROVED BY: Frank L. Pavlechko

EFFECTIVE DATE: 08/16/00

LEVEL OF USE: REFERENCE

WBN	GENERAL EMERGENCY	EPIP-5 Revision 17 Page 2 of 14
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REVISION LOG

Revision Number	Implementation Date	Description of Revision
0	04/13/90	Superseded IP-5.
1	04/01/91	Reflect revision to AI 2.8.11 concerning SM designees for certain tasks. Convert ODS information to Attachment. Revised ODS communication methods.
2	01/22/92	Improved human factoring and updated references.
3	02/10/93	Changed coversheet. Added Section 2, Responsibility. Removed Note concerning steps previously done. In Section 3.1 included words concerning independent evaluating of crew members. Included parenthesis and changed wording to aid operators in what to say. Changed order of steps. Removed Notes 1 and 2 in Section 2.1 because of redundancy. Changed TEMA telephone number. Changed title of Plant Duty Supervisor to Duty Plant Manager. Removed (red phone) from Section 2.2 due to FTS 2000 installations. Added Step 15 to ensure applicable notification.
4	08/16/93	Editorial (non-intent) and format changes. Source notes added to the procedure.
5	1/1/94	Changes made to the Protective Action Recommendation Guidance to incorporate new 10 CFR 20 changes and EPA-400. Added NRC Resident call as Step 14.
6	4/11/94	Included notifying Security (CAS) on Step 5 and changed Step 15 to initiate WBN EPIP-13. Added contingency county notifications to Step 6.
7	5/27/94	Followup Notification Form was added to the procedure. Phone numbers revised.
8	8/1/94	Initial Dose Assessment for Radiological Emergencies (EPIP-16) referenced and phone numbers to the NRC Response Center revised.
9	10/14/95	Revised McMinn County phone number.
10	4/21/95	Revised phone numbers. Editorial (non-intent) changes made.

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REVISION LOG

Revision Number	Implementation Date	Pages Affected	Description of Revision
CN-1	9-28-95	3, 5, 11	Revised phone numbers. Editorial (non-intent) changes made. All references to RM were changed to RE to make it consistent with site description documents.
11	7/5/96	4,5,6,7,8	Phone number and titles revised. Procedure replacement (TI-30) identified. All revisions were evaluated to be non-intent.
12	10/10/96	3,4,5,8,9	The following non-intent revisions were made: Shift Personnel replaced Shift Clerk to reflect additional personnel trained on the paging system, SM designee identified by title, a phone number was added, assembly and accountability instruction enhanced, a reference was added, and the non-QA record instructions were revised.
CN-1	3/27/97	3,5,6	TEMA additional back-up number added, counties changed phone numbers
CN-2	2/2/98	3,5,6,7,8	SSP-4.05 was replaced by SPP-3.5. Editorial changes were made.
13	6/30/98	All	Non-intent Changes. Incorporated Change Notices 1 and 2. Changed reference SSP 3.4 to SPP 3.1.
14	10/21/99	All	Non-intent change. Moved termination step from Appendix A to Appendix C. STD-3.2 reference canceled.
15	02/08/00	All	Non-intent change. Revised phone number.
16	6/14/00	All	Non Intent change. Revised phone number. Reference number revised. Added reference to the ODS, direct line for clarification. Added the work actions after notifications in Step 17 for clarification. This revision resolves problem identified in WBN PER, 006394.
17	08/16/00	All (Pg. 3, 11)	Intent change. Revised CNTMT Rad Monitors (1-RE-90-271, 272, 273, & 274) readings to correspond with the new TI-RPS-162, "Response of the Primary Containment High Range Monitors" readings (Reference EDC-50600). This analysis resulted in a revision to Table 2 on the PAR Chart. This revision resolves action items from CORP PER-99-000038-000. This revision was also determined not to reduce the level of effectiveness of the procedure or REP.

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1.0 PURPOSE

- 1.1 To provide a method for timely notification of appropriate individuals when the Shift Manager (SM) or Technical Support Center (TSC) Site Emergency Director (SED) has determined by WBN EPIP-1 that an incident has occurred which is classified as a GENERAL EMERGENCY.¹¹
- 1.2 To provide a method for periodic reanalysis of the current situation by the SED to determine whether the GENERAL EMERGENCY should be terminated or continued.

2.0 RESPONSIBILITY

The SED who is initially the SM (or other SM onsite during the emergency) or designee (Unit Supervisor, US) until properly relieved by the TSC SED, has the responsibility and authority for implementation of the actions in this instruction.^{10,11}

3.0 INSTRUCTIONS

- 3.1 Upon determining that existing conditions are classified as a GENERAL EMERGENCY according to WBN EPIP-1 (independent evaluations by crew members may be beneficial), the SED, or designee, will:¹¹

1. **DIRECT** Shift Personnel to activate the Emergency Paging System (EPS) to staff the TSC and Operations Support Center (OSC). Shift Personnel should confirm activation and provide the 20 minute printed report to the SM for review. ☐

NOTE 1 IF the EPS system fails, call the ODS, ringdown or (5-571-1700) and have him activate the EPS.

NOTE 2 IF the above methods of activating the EPS fail, Shift Personnel must use the Radiological Emergency Response Call Lists to staff the TSC and OSC. This list is located in the EPS Manual near the terminal.

2. **COMPLETE** Appendix A and B, Notification Information. ☐

3. **ANNOUNCE** to the crew: "A General Emergency is being declared based on _____." ☐
I will be the Site Emergency Director, all support and job assignments must be authorized through me."

WBN	GENERAL EMERGENCY	EPIP-5 Revision 17 Page 5 of 14
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3.0 INSTRUCTIONS (continued)

4. **IF** Assembly Alarm has not been activated, **NOTIFY** Security (CAS) that assembly and accountability is to be conducted. ☐
SOUND the assembly alarm **AND**
INITIATE WBN EPIP-8, "Personnel Accountability and Evacuation". ☐

5. **ANNOUNCE** to the plant: "ATTENTION ALL SITE PERSONNEL. ATTENTION ALL SITE PERSONNEL. A GENERAL EMERGENCY has been declared based on _____". ☐

All plant personnel report to assembly areas for accountability. Staff the TSC and OSC." (Repeat) ☐

6. **NOTIFY** the ODS direct by ODS Ringdown or 5-751-1700 or 5-751-2495 and **PROVIDE** the information from Appendix A. ☐

IF the ODS cannot be contacted within 10 minutes, then directly notify Rhea County, Meigs County, McMinn County, and the Tennessee Emergency Management Agency (TEMA) of the classification.

Rhea County EMA	9-775-2505	____(TIME)
(Alternate)	9-775-7828	____(TIME)
Meigs County EMA	9-1-423-334-3049	____(TIME)
(Alternate)	9-1-423-334-5268	____(TIME)
McMinn County EMA	9-1-423-744-2760	____(TIME)
(Alternate)	9-1-423-744-2721	____(TIME)
Tennessee EMA	9-1-800-262-3300	____(TIME)
(Alternate)	9-1-615-741-0001	____(TIME)
(Alternate)	9-1-800-262-3400	____(TIME)

7. **FAX** Appendix A to the ODS. ☐
(No. pre-programmed or 5-751-8620.)
8. **CALL** RADCON Lab and **SAY**: "We are in a General Emergency, implement WBN EPIP-14 and CECC EPIP-9." ☐
9. **IF** there are personnel injuries, **IMPLEMENT** EPIP-10, "Medical Emergency Response". ☐
10. **IF** there is a security threat, **IMPLEMENT** EPIP-11, "Security and Access Control". ☐

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3.0 INSTRUCTIONS (continued)

11. **NOTIFY** Duty Plant Manager, and **PROVIDE** the Appendix A information (**SEE** duty list for telephone numbers). The Duty Plant Manager will call the Plant Manager or his alternate. ☐
12. **EVALUATE** the need to implement EPIP-16, "Initial Dose Assessment for Radiological Emergencies," for a dose projection if radioactivity is being released through normal plant release paths. ☐
13. **NOTIFY** the NRC by the NRC designated phone (ENS) of plan activation. ☐

NOTE NRC notification should be made as soon as practicable, but within one hour of "GENERAL EMERGENCY" declaration. Whenever NRC requests, a qualified person must provide a continuous update to NRC Operations Center. The following commercial numbers for the NRC Operations Center can be used as backups if the designated line is unavailable:^{3,13}

9-1-301-816-5100 (MAIN)
9-1-301-951-0550 (BACKUP)
9-1-301-816-5151 (FAX)

14. **NOTIFY** NRC Resident Inspector by **CALLING** 1776 and **PROVIDING** the information on Appendix A. ☐
15. **REEVALUATE** conditions using WBN EPIP-1 as necessary. **IF** conditions are under control, **INITIATE** actions identified in WBN EPIP-13, "Termination of the Emergency and Recovery." ☐

A. **IF** other plant conditions warrant the need for followup information, **COMPLETE** the Followup Notification Form, Appendix C, and **NOTIFY** the TSC/CECC (if it is staffed) or

NOTIFY the ODS direct by ODS Ringdown or No. 5-751-1700 or 5-751-2495 and **PROVIDE** the information. **IF** the ODS cannot be contacted within 10 minutes, the Tennessee Emergency Management Agency is to be notified of the information by calling 9-1-800-262-3300 or 9-1-615-741-0001 or 9-1-800-262-3400.²

16. **FAX** Appendix C to the ODS. (No. pre-programmed or 5-751-8620.) ☐

WBN	GENERAL EMERGENCY	EPIP-5 Revision 17 Page 7 of 14
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CAUTION If there is any possibility of a radiological release, do not send personnel into areas of unknown radiological conditions without first contacting RADCON.

17. **ENSURE** applicable notifications/actions required by SPP-3.5 and SPP-3.1 have been made. ☐
18. **SEND** the completed WBN EPIP-5 and associated documentation to the Emergency Preparedness (EP) Manager. The EP Manager shall forward documentation to DCRM for storage as appropriate. ☐

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4.0 REFERENCES

4.1 Interfacing Documents

SPP-3.5 Regulatory Reporting Requirements

SPP-3.1 Corrective Action Program

WBN-EPIP-1 Emergency Plan Classification Flowchart

WBN-EPIP-2 Notification of Unusual Event

WBN-EPIP-3 Alert

WBN-EPIP-4 Site Area Emergency

WBN-EPIP-10 Medical Emergency Response

WBN-EPIP-11 Security and Access Control

WBN-EPIP-13 Termination of the Emergency and Recovery

WBN-EPIP-16 Initial Dose Assessment for Radiological Emergencies

CECC-EPIP-9 Emergency Environmental Radiological Monitoring Procedures

4.2 Other Documents

10 CFR 50.72 Immediate Notification Requirements for Operating Nuclear Power Reactors

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.

ANSI N18.7-1976

10 CFR 20, Standards for Protection From Radiation

EPA 400-R-92-001, Manual of Protective Action Guides and Protective Actions for Nuclear Incidents

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4.2 Other Documents (continued)

Implementation of New EAL Protective Action Guides and Protective Actions for Nuclear Incidents

CECC-EPIP-8 Dose Assessment Staff Activities During Nuclear Plant Radiological Emergencies

5.0 APPENDICES

Appendix A, Notification Information

Appendix B, Protective Action Recommendation Guidance

Appendix C, Followup Information Form

6.0 RECORDS

6.1 QA Record

Entire WBN EPIP-5, when the REP is activated, is a QA Record.

6.2 Non-QA Records

All EPIP-5 records generated during the course of a drill/exercise will be assembled by the EP Manager and stored appropriately.

APPENDIX B
(Page 1 of 1)

PROTECTIVE ACTION RECOMMENDATION GUIDANCE^{4,5,6,7,8,9,12}

Watts Bar Nuclear

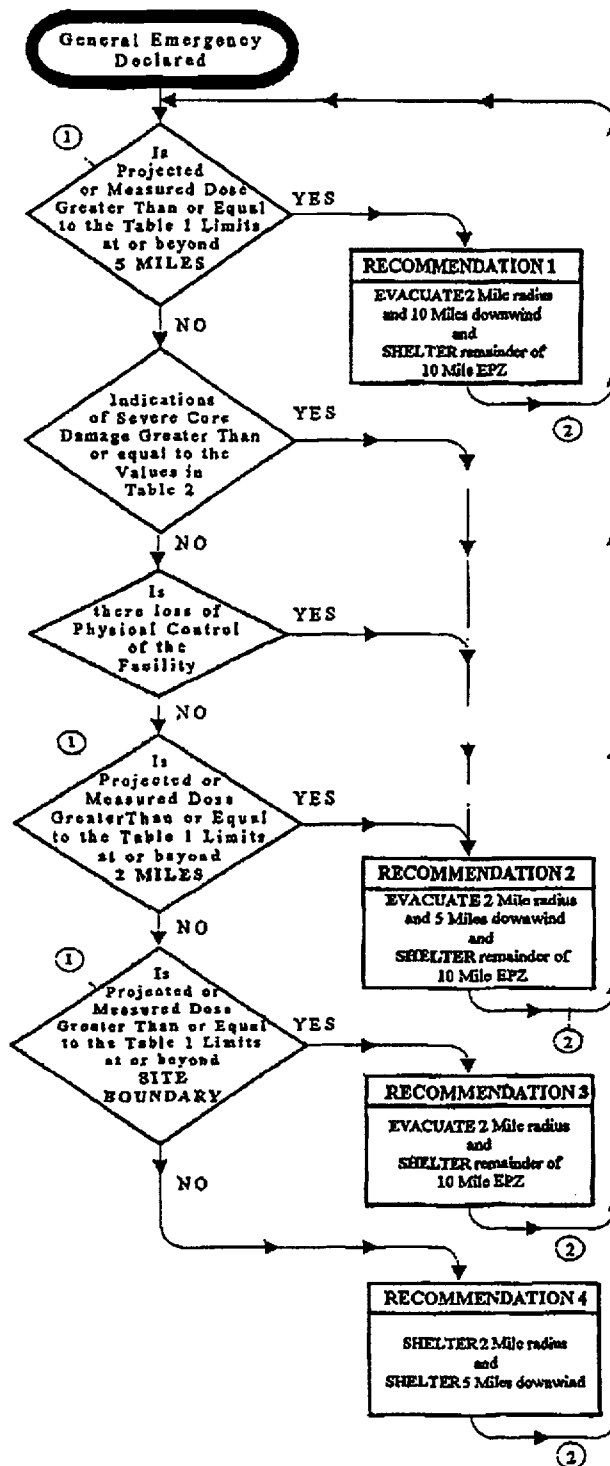
NOTES
① IF Conditions Are not known, Then Answer No. ② CONTINUE ASSESSMENT Modify protective actions based on available plant and field monitoring information. Locate and evacuate additional localized hot spots.

TABLE 1 RADIOACTIVITY RELEASE DOSE	
TYPE	LIMIT
Measured	3.9 E-6 μ CI/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 1-RE-90-271 and 272 equal to or greater than 74 R/hr or Containment radiation monitor reading * on 1-RE-90-273 and 274 equal to or greater than 59 R/hr	2. Reactor Coolant Activity of $\geq 300 \mu$ CI/gm Dose Equivalent Iodine-131. 3. Inadequate core cooling as indicated by "red" path from core cooling status tree. 4. Core exit TCs greater than 1200° F

cdp/designer/WBNPAG.DRW
August 28, 1995

* Revision



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APPENDIX C (Page 1 of 1)

WBN FOLLOWUP INFORMATION FORM
GENERAL EMERGENCY

1. ☐ "THIS IS A REAL EVENT" or ☐ "THIS IS A DRILL."
2. "This is _____ at the Watts Bar Nuclear Plant.
This is followup information regarding the General Emergency at Watts Bar:
Unit 1 ☐ Unit 2 ☐.
3. "Reactor: Shutdown ☐ At power ☐ "
4. "The Plant conditions are: Stable ☐ Deteriorating ☐ "
5. "Followup information: (e.g., key events, status changes) _____

_____ "
6. "Evacuation of nonessential site personnel is ongoing: Yes ☐ No ☐ "
7. "The radiological conditions are:

☐ No Abnormal Release Offsite ☐ Liquid Release Offsite
☐ Airborne Release Offsite ☐ Release Information Not Known."
8. "Additional Rad information: (e.g., release duration) _____

_____ "
9. "The meteorological conditions are: Wind speed: _____
Wind direction from: _____ "
10. "The following protective action recommendation is provided:"

☐ Recommendation 1 ☐ Recommendation 3
☐ Recommendation 2 ☐ Recommendation 4
11. "The event terminated at: _____ / _____."
Time Date
12. ☐ "Please repeat the information you have received to ensure accuracy."
13. _____ / _____
Signature Date

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SOURCE NOTES

Page 1 of 2

- | | |
|---|---|
| ¹ NRC IE Information Notice No. 89-89 | Event Notification Worksheets |
| ² NRC IE Information Notice No. 86-97 | Emergency Communications System |
| ³ NRC IE Information Notice No. 86-28 | Telephone Numbers to the NRC Operations Center and Regional Offices |
| ⁴ NRC IE Information Notice No. 83-28 | Criteria For Protective Action
Recommendations For General Emergencies |
| ⁵ MC-850321809004, MSC-00956,
NCO-920030366 | Monitor readings included in Logic Diagram for Protective Action
Recommendations App. B, Note 3. |
| ⁶ NIR-0588, DV-851601F 00001. | Include sheltering and immediate Protective Action. Appendix B (Page 1 of 1)
Recommendation 2 and Note 1 Initiating Conditions. |
| ⁷ MC-840827005037, MSC-02402. | Revision to Instructional Notes. Appendix B (Page 1 of 1) Notes 1 through 5. |
| ⁸ MC-840827005005, MSC-02376,
NCO-920030986 | Range of Protective Action
Recommendations by the Site Emergency Director. Appendix A (Page 1 of 1) Number 9.
Appendix B (Page 1 of 1) Protective Action Recommendation Guidance.
Recommendations 1 through 9. |

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SOURCE NOTES

Page 2 of 2

- | | | |
|----|--|--|
| 9 | MC-840719003003, MSC-00700,
NCO-920030221 | CNTMT Rad Monitor Levels used in Protective Action Recommendations. Appendix B (Page 1 of 1) Note 3. |
| 10 | MC-840827005035A, MSC-2400. | SED duties that can not be delegated. Section 2.0 responsibility. Also see EIPs 6 and 15. |
| 11 | ANSI N18.7-1976
Subsection 5.3.9.3: 01POI | EIPs will contain the following elements. |
| 12 | 390/93-64A | 10 CFR 20 revision made to the PAR chart. |
| 13 | NRC Administrative Letter 94-04 | Change of NRC Operations Center commercial telephone and facsimile numbers. |

FILING INSTRUCTIONS

DOCUMENT NUMBER EPIP-6

REMOVE REVISION 15 INSERT REVISION 16

Comments _____

TENNESSEE VALLEY AUTHORITY

WATTS BAR NUCLEAR PLANT

**EMERGENCY PLAN IMPLEMENTING
PROCEDURES**

EPIP-6

**ACTIVATION AND OPERATION OF THE
TECHNICAL SUPPORT CENTER (TSC)**

Revision 16

Unit 0

QUALITY RELATED

PREPARED BY: F. L. Pavlechko
(Type Name)

SPONSORING ORGANIZATION: Emergency Planning

APPROVED BY: Frank L. Pavlechko

EFFECTIVE DATE: 08/15/00

LEVEL OF USE: REFERENCE

WBN	ACTIVATION AND OPERATION OF THE TECHNICAL SUPPORT CENTER	EPIP-6 Revision 16 Page 2 of 72
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REVISION LOG

Revision Number	Implementation Date	Pages Affected	Description of Revision
8	6/23/95	67	Revised Appendix Z to include requirements for Auxiliary Building lighting guidance after a LOCA/MSLB inside primary containment.
CN-1	9/28/95	12, 13, 39, 60, 62, 63	(Non-intent) grammatical and numerical corrections made. Information was enhanced in Appendix X to provide additional contingency options for ERCW concerns.
CN-2	7/12/96	3, 67, 67(a), 71	Add page to Appendix Z (a), to cover the concerns of SOER-93.0001 for cleanup of the secondary side water and installing temporary hotwell indication if needed.
9	10/10/96	3, 4, 5, 6, 7, 8, 12, 13, 16, 17, 19, 22, 24, 25, 26, 28, 29, 30, 32, 34, 36, 37, 38, 39, 40, 42, 43, 44, 45, 46, 47, 49, 50, 54, 59, 61, 72	The following non-intent revisions were made: removed RC Mgr. from 3.3.4, per WBP960582, changed all references of SOS to SM, enhanced TSC activation instructions, added organizational title and work phone number to call list reference, replaced TI-30 with EPIP-16, enhanced headset instruction in App. G, added responsibility to App. I, added AUO announcement to App. M, App. N deleted due to repetitive instructions in APP. Q, editorial non-intent changes concerning when to card into TSC accountability card readers made, RE/RM reference note added to App. R, App. T revised to reflect utilization of ERFDS, Westinghouse Rep. added to note 2, repaginated to include page 2 of App. Z, and other minor grammatical changes to enhance human factoring.
CN-1	2/15/97	48	Operational responsibility added to Appendix P.
CN-2	2/10/98	3,5,8,11,21,24, 43, 51	Satellite phone added to communications loss statement, SSP-1.06 changed to SPP-1.2, App. M add resp. to call clerks. App. Q Fire Pro. changed to HVAC Sys. Eng
10	6/30/98	All	Non-Intent Changes. Made text alignment, typo corrected. Incorporated Change Notices 1 and 2.
11	12/28/98	All	Added the following non-intent changes: GL 96-06 to Sect. 4.1 & Source Notes, editorial changes, SAMG responsibilities to Apps. C, E & Q, Ops staffing considerations to App. D, PORC/50.54x evaluation to Apps. E & Q, considerations to security/ environmental hazards to App. H, provide rad data to OSC to App. I, confirm completion of EPIPs 2-5 to App. M. Added ERCW caution to App. X.
12	3/2/99	All	Non-intent change. Revised ERFDS to ICS. Duty added to TSC clerical staff in Appendix P.
13	10/21/99	All	Non-intent change. Enhancement to Appendix R on instrument IDs. Removed 1-XR-1-5 reference in Appendix R due to DCN-39911. Duty added to TSC clerical staff in Appendix P. Changed AUO requirement due to tech spec changes in Appendix D.
14	02/07/00	All	Non-intent change. Revised APP. C SED Turnover Data Sheet per corrective action for PER-00-000177-000. Enhanced operational responsibilities in APP. C and F.

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REVISION LOG

Revision Number	Implementation Date	Pages Affected	Description of Revision
15	06/14/00	All	Non-intent changes. SED, OPS Communicator, Radcon Mgr., and Site VP duties were enhanced to be consistent with REP Appendix C. REX replaced with HIS-20, TSC removed from Maint. Mgr. Position title, and SED duties revised to reflect Radcon Mgr. Responsibility for authorizing/issuing KI. This revision corrects problems from WBN PER006394.
16	08/15/00	All (Pg. 3, 60)	Intent change. Revised CNTMT Rad Monitors (1-RE-90-271, 272, 273, & 274) readings to correspond with the new TI-RPS-162, "Response of the Primary Containment High Range Monitors" readings (Reference EDC-50600). This analysis resulted in a revision to Appendix U on the PAR Chart. This revision resolves action items from CORP PER-99-000038-000. This revision was also determined not to reduce the level of effectiveness of the procedure or REP.

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1.0 PURPOSE^{8,11}

The purpose of this Procedure is to describe activation of Technical Support Center (TSC), describe the TSC organization, and provide for TSC operation once it has been staffed.

2.0 RESPONSIBILITY^{2,11}

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 Emergency Response Organization Call List, the SM will be relieved of the SED duties. The SED activates and operates the TSC (Appendix A) and oversees the operations of the Operations Support Center (OSC).

3.0 INSTRUCTION

3.1 General^{4,9}

The TSC will provide the following functions:

- 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.
- 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.

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3.0 INSTRUCTION (continued)

- 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 Initiating Conditions

This procedure shall be activated if an emergency has been declared and classified as ALERT, SITE AREA EMERGENCY, or GENERAL EMERGENCY.

This procedure may be activated at any other time at the discretion of the SED.

3.3 Activation of the TSC

3.3.1 The SED will activate the TSC and announce the emergency condition by one or more of the following methods depending on time of day, etc:

- A. Plant public address announcement.

NOTE: The Radiological Emergency Response Organization Call List is handled in accordance with the Fitness for Duty, (SPP-1.2).

- B. Shift personnel will normally activate the Emergency Paging System (EPS) or contact the persons designated on the Emergency Response Organization Call List.
- C. TSC personnel can also contact additional responders/replacements by phone using the Emergency Response Organization Call List available in the TSC and Appendix AA.
- D. Target activation time for Minimum TSC staffing is approximately 60 minutes.

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3.0 INSTRUCTIONS (continued)

3.3.2 Emergency Response Organization Call List ⁶

The Site Emergency Preparedness (EP) Manager **shall**:

1. MAINTAIN an Emergency Response Call List listing all TSC (and other emergency) personnel by organizational title, name, home and work telephone numbers, and pager numbers.
2. UPDATE the Emergency Response Organization Call List quarterly with input by the appropriate organizations. Current copies of the list will be maintained in the TSC, OSC, Main Control Room, SM Office, and Nuclear Security. Each page will be dated for revision control.

All TSC responders **shall** have unescorted protected area access and **shall** comply with fitness-for-duty policies while on-call.

3.3.3 Depending on the emergency conditions, personnel required for the TSC may vary. Listed below is the minimum staff required:

- Site Emergency Director
- Technical Assessment Manager (TAM) or Technical Assessment Team Leader
- RADCON Manager

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3.0 INSTRUCTIONS (continued)

3.3.4 In addition, the following personnel should report to the TSC, or assigned TSC support location, upon announcement of an ALERT or higher emergency or at the direction of the SED:¹⁶

- Site Vice President (optional)
- Operations Manager
- Operations Communicator
- TSC Maintenance Manager
- Control Room Communicator (report to Control Room)
- Nuclear Security Manager (can initially be the Nuclear Security Shift Supervisor)
- Technical Assessment Team
- Chemistry Manager
- NRC Coordinator
- Emergency Preparedness Manager
- Media Relations Specialist (optional)
- Westinghouse Representative
- TSC Boardwriters
- Emergency Response Team Boardwriter

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3.0 INSTRUCTIONS (continued)

3.4 Required Actions For Activation and Operation of the TSC

- 3.4.1 TSC staff actions and responsibilities are described in their checklists (Appendices B-Q).
- 3.4.2 TSC responders will complete all of the applicable steps contained in the appropriate Appendix/Checklist for their position.
- 3.4.3 The Site Emergency Director or designee shall declare the TSC activated and inform the SM of the final transfer of responsibilities. A formal activation announcement shall be made plant wide to indicate the transfer of responsibility from the SM to the TSC SED.

3.5 Contingencies

- 3.5.1 If there is a loss of onsite to offsite telephone communications, cellular phone, radios or the satellite phone described in SOI-100.01 will be used.¹⁷
- 3.5.2 If the TSC becomes uninhabitable, the SED will relocate the TSC to an alternate location based on RADCON/OPERATIONS advice.
- 3.5.3 Plant procedures should be followed whenever possible. Should a situation arise where normal procedures would be inappropriate, action will be performed as determined by the SED.

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3.0 INSTRUCTIONS (continued)

3.6 Long-Term Operation¹⁰

- 3.6.1 Long-term operation will be put into effect during emergencies which are projected to exist for more than 12 hours.
- 3.6.2 The SED will notify the Central Emergency Control Center (CECC) of the decision to begin long-term operation.
- 3.6.3 Meals and arrangements for sleeping facilities will be made at the request of the SED. These arrangements may be made by the CECC.
- 3.6.4 Additional personnel will be called in at the request of the SED to provide coverage or to ensure 12-hour or shorter shifts in the TSC. The SED will coordinate these call-ins with Nuclear Security to facilitate site access.
- 3.6.5 The SED, through the OSC Manager, will establish 12-hour (or shorter) shifts for craft personnel onsite and call in additional personnel as necessary.

3.7 Termination and Deactivation

- 3.7.1 **REFER TO WBN-EPIP-13, "Termination of the Emergency and Recovery,"** for activities associated with terminating emergencies, TSC deactivation, and post-accident recovery.
- 3.7.2 All equipment, supplies, and procedures will be replenished in the TSC following a drill, exercise or emergency by applicable groups as assigned in WBN, EPIP-12.

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3.0 INSTRUCTIONS (continued)

3.8 Records

3.8.1 QA Records

NONE

3.8.2 Non-QA Records

The Appendices and Checklists in this Procedure are necessary to demonstrate key actions during an emergency or annual NRC evaluated exercise and are considered Non-Quality Assurance (QA) records.

- 3.8.3** All original records generated during the course of a declared emergency or drill **shall** remain at each TSC responder's position after the emergency or drill is terminated. The EP Manager **shall** assemble all TSC records and ensure that they are stored appropriately.

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4.0 REFERENCES

4.1 Source Documents:

Tennessee Valley Authority Nuclear Power Radiological Emergency Plan (REP)

SPP-1.2, Fitness For Duty

Memo from J. B. Hosmer to R. J. Johnson dated 1/15/88
RIMS No. B25 88011 5028

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

NUREG 0696, Functional Criteria for Emergency Response Facilities, Final Report

ANSI Standard N 18.7-1976

10 CFR 20, Standards for Protection From Radiation

EPA 400-R-92-001, Manual of Protective Action Guides and Protective Actions for Nuclear Incidents

NRC Generic Letter 96-06, Assurance of Equipment Operability and Containment Integrity During Design Basis Accident Condition

4.2 Interface Documents

WBN-EPIP-1 Emergency Plan Classification Flowchart

WBN-EPIP-2 Notification of Unusual Event

WBN-EPIP-3 Alert

WBN-EPIP-4 Site Area Emergency

WBN-EPIP-5 General Emergency

WBN-EPIP-7 Activation and Operation of the Operations Support Center

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4.0 REFERENCES (continued)

4.2 Interface Documents (continued)

WBN-EPIP-8 Personnel Accountability and Evacuation

WBN-EPIP-11 Security and Access Control

WBN-EPIP-13 Termination of the Emergency and Recovery

WBN-EPIP-15 Emergency Exposure Guidelines

WBN-EPIP-16 Initial Dose Assessment for Radiological Emergencies

CECC-EPIP-9 Emergency Environmental Radiological Monitoring Procedures

WBN, FSAR

SOI-30.06 Auxiliary Building Gas Treatment System (ABGTS)

SOI-67.01 Essential Raw Cooling Water System

Chemistry Manual, Chapter 13 (PASS)

ICS User's Manual

Watts Bar Nuclear Plant, Plant Lighting, N3-228-4003

5.0 APPENDICES

Appendix A	Technical Support Center Facility Diagram and Organization Chart
Appendix B	Site Vice President Checklist
Appendix C	Site Emergency Director Checklist and SED Turnover Datasheet
Appendix D	Operations Manager Checklist
Appendix E	Technical Assessment Manager Checklist

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5.0 APPENDICES (continued)

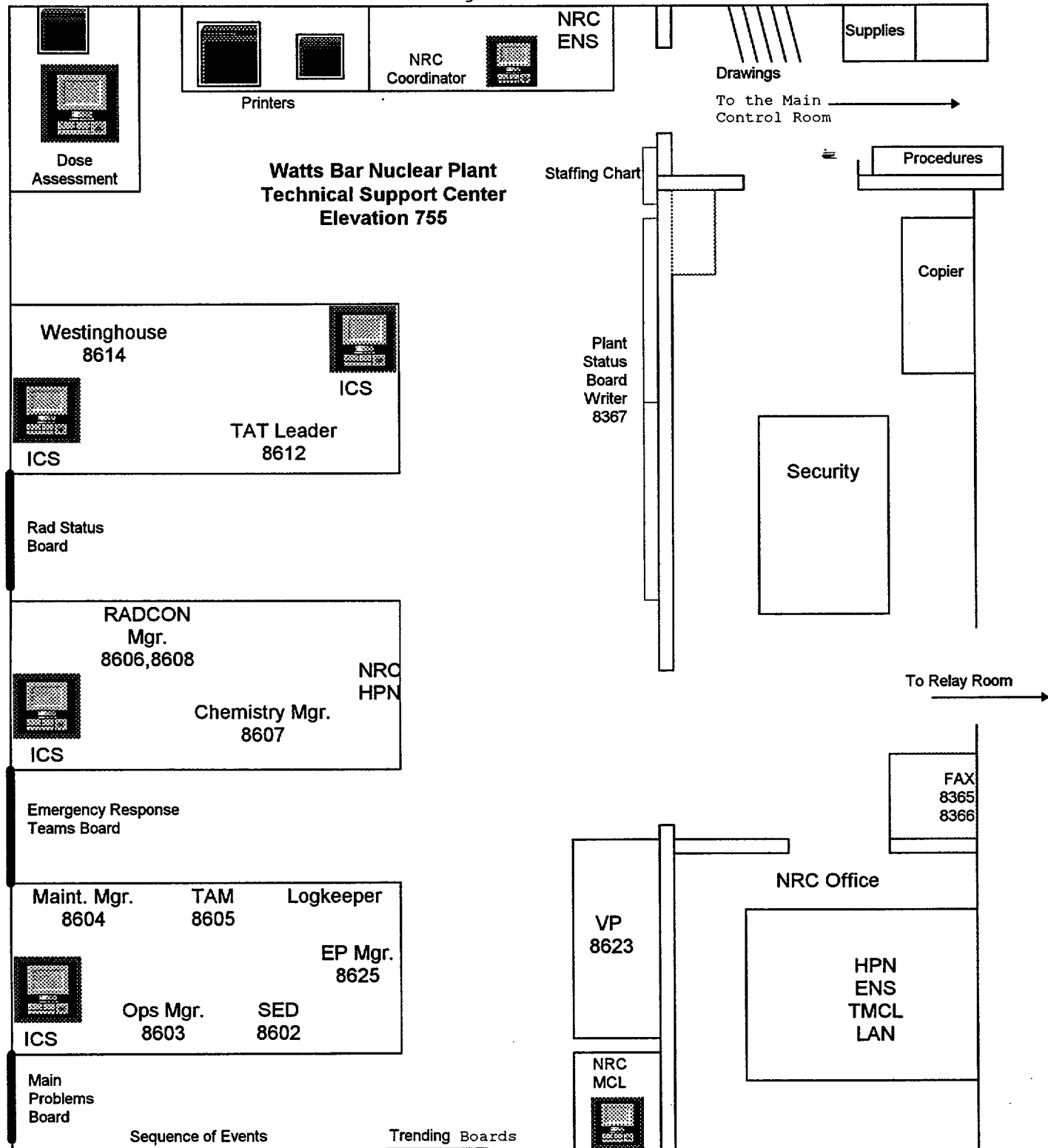
Appendix F	TSC Maintenance Manager Checklist
Appendix G	Operations Communicator Checklist
Appendix H	Nuclear Security Manager Checklist
Appendix I	RADCON Manager Checklist
Appendix J	Chemistry Manager Checklist
Appendix K	NRC Coordinator Checklist
Appendix L	Control Room Communicator Checklist
Appendix M	EP Manager Checklist
Appendix N	Nuclear Engineering Checklist (Intentionally Deleted)
Appendix O	TSC Logkeeper Checklist
Appendix P	TSC Clerical Staff Checklist
Appendix Q	Technical Assessment Team Checklist
Appendix R	Plant Parameter Data Sheets
Appendix S	Predictive Release Data Sheet
Appendix T	TSC Accident Assessment Summary Sheet
Appendix U	Protective Action Recommendation Guidance
Appendix V	Reference Materials and Equipment List
Appendix W	Containment Sump Operation and Level Guidance
Appendix X	ERCW Concerns for Technical Assessment Team

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5.0 APPENDICES (continued)

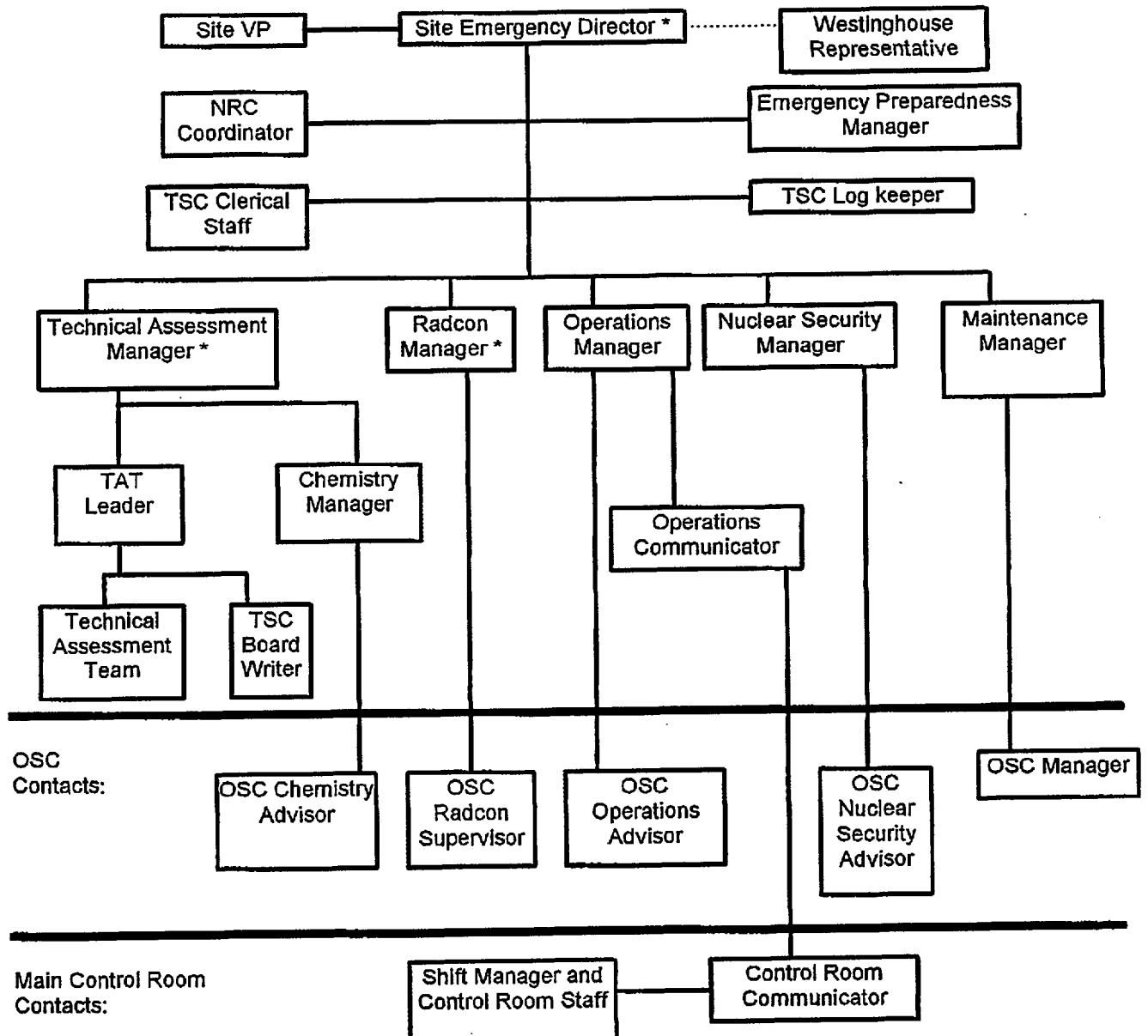
Appendix Y	Small Break LOCA Concerns
Appendix Z	Additional TAT Duties (Post Accident)
Appendix AA	Emergency Responder Notification Form
Appendix BB	WBN TSC Sign-in Roster

Appendix A, TSC Facility Layout Diagram⁴
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Technical Support Center (TSC)
WBN EMERGENCY RESPONSE ORGANIZATION



(*) Denotes minimum staffing position(s) per NUREG 0654.

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SITE VICE PRESIDENT

Initial TSC Activation Checklist

Date: _____
Inits/Time

- ___/___ **ENTER** badge into the TSC Accountability Card Reader.
- ___/___ **SIGN IN** on the Organizational/Staffing Chart **and PUT ON** position badge.
- ___/___ **NOTIFY** SED of arrival.
- ___/___ **ESTABLISH** a log of communications/events.
- ___/___ **ESTABLISH** contact with the Media Relations Specialist.
- ___/___ **ESTABLISH** contact with the CECC Director.
- ___/___ **CHECK** the status of emergency actions already in progress.
(Such as accountability, site evacuation or press inquiries.)

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SITE VICE PRESIDENT

Operational Responsibilities List

- Provides TVA policy direction to the SED.
- Provides support to other emergency centers as necessary.
- Serves as the primary site representative to function as a TVA Spokesperson in the Local News Center (LNC) at the WBN Training Center (if activated).
- Directs the site resources to support the SED in the accident mitigation activities.
- Provides direct interface on overall site response activities with NRC, FEMA, other Federal organizations, the CECC Director, and onsite media.
- Provides interfaces/briefings (as needed) at offsite locations on the overall site response activities with Federal, State and Local agencies.

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SITE EMERGENCY DIRECTOR

Initial Activation of the Technical Support Center Checklist

Date: _____
Inits/Time

- ___/___ **OBTAIN** turnover briefing from SM/SED. Pages 5, 6 and 7 of Appendix C, SED Turnover Data Sheet may be used as a guide.
- ___/___ **REPORT** to the TSC **and ENTER** badge into the TSC Accountability Card Reader.
- ___/___ **SIGN IN** on the staffing chart **and PUT ON** position badge.
- ___/___ **ESTABLISH** log of communications/events.
- ___/___ **ESTABLISH** initial contact with the CECC Director.
- ___/___ **CHECK** the status of emergency actions already in effect such as emergency notifications (NRC, State, etc.) and accountability or site evacuation.
- ___/___ **REQUEST** checklist completion status for required positions:
- ☐ Site Emergency Director (this checklist)
 - ☐ TAM or TAT Leader
 - ☐ RADCON Mgr.
- ___/___ **CONFIRM** TSC staffed and Operational.
- ___/___ **ASSUME** role of SED from SM (confirmatory phone call to the SM).

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SITE EMERGENCY DIRECTOR

Initial TSC Activation Checklist (continued)

- ___/___ **INFORM** the CECC Director and OSC Manager that TSC is operational and that you have assumed responsibility of the SED and provide initial briefing.
- ___/___ **MAKE** a general plant-wide announcement regarding plant condition similar to the following:
1. ACCESS the Public Address System by dialing 487.
 2. COVER the following points as a minimum:
 - a. "ATTENTION ALL SITE PERSONNEL. ATTENTION ALL SITE PERSONNEL.
 - b. ☐ "This is a drill, this is a drill." OR
 - c. ☐ "This is a real emergency. This is a real emergency."
 - d. This is _____ (name) Site Emergency Director. The TSC was activated at _____ hours. Due to _____ we have classified a _____ (NOUE, Alert, Site Area Emergency, General Emergency). Plant protective actions which we are implementing include: (Evacuations, assembly and accountability, etc.) _____
 - e. Radiological release points: _____
 - f. Our plan of action at this time is to _____
 - g. The OSC (is, is not) activated. All emergency response teams will be dispatched from the OSC.
 - h. ☐ "This is a drill, this is a drill." OR
☐ "This is a real emergency. This is a real emergency."

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Site Emergency Director

Operational Responsibilities^{3,5}

- Determines the emergency classification and periodically reevaluates the classification. Changes to the classification will be reported to the CECC Director and the NRC. THE CLASSIFICATION OF THE EVENT CANNOT BE DELEGATED. (See WBN EPIP-1)
- Approves or authorizes emergency doses that may exceed applicable NRC dose limits. THIS RESPONSIBILITY CANNOT BE DELEGATED. (See WBN EPIP-15)
- Prior to the CECC being staffed, makes recommendations for protective actions to State and Local agencies through the Operations Duty Specialist. THIS RESPONSIBILITY CANNOT BE DELEGATED EXCEPT TO THE CECC DIRECTOR. Use Appendix U, Protective Action Recommendation Guidance Flowchart as a guide. (See WBN EPIP-5)
- Directs onsite emergency accident mitigation activities and periodically briefs the TSC/OSC staff on the current plant situation.
- Ensures that general plant population is periodically briefed on the emergency conditions.
- Periodically reviews priority of work operations of the OSC with the OSC Manager. (See WBN EPIP-7)
- Directs activities of onsite emergency organizations.
- Consults with the CECC Director and Site VP on important decisions. Use the CECC Ring-down Line to the CECC Director.

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Site Emergency Director

Operational Responsibilities (continued)

- Coordinates emergency actions with onsite NRC.
- Initiates onsite protective actions. (See WBN EPIP-8)
- Verifies the administration of Potassium Iodine (KI) to TVA personnel based on RADCON Manager's advice. (See WBN EPIP-14)
- Establishes a RADCON checkpoint for site evacuation if conditions warrant. (See WBN EPIP-8 and WBN EPIP-14)
- Initiates long-term 24 Hour/day operation.
- Assumes responsibilities for the Severe Accident Management, when directed by the Main Control Room and the TSC is functional and the SAMG Evaluators are monitoring "TSC Diagnostic Flow Chart" (DFC). The TSC must have three SAMG Evaluators monitoring SAMGs to assume the accident responsibility.
- Evaluates conditions and determines if emergency procedures should be implemented.
 - a. Emergency Environmental Radiological Monitoring Procedures CECC-EPIP-9
 - b. Medical Emergency Response WBN-EPIP-10
 - c. Security Threat Physical Security Plan
 - d. Personnel Accountability and Evacuation WBN-EPIP-8
 - e. Initial Dose Assessment for Radiological Emergencies WBN-EPIP-16

DEACTIVATION RESPONSIBILITIES

Refer to WBN EPIP-13.

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SED Turnover Datasheet

1. Current Emergency Classification:

UE ☐ ALERT ☐ SAE ☐ GE ☐

Time/Date Declared ____/____

2. Event Description: _____

3. Equipment Problems: _____

4. Site Radiological Problems _____

5. Rad Release: Yes ☐ No ☐
 Filtered ☐ Unfiltered ☐
 Monitored ☐ Unmonitored ☐
 Controlled ☐ Uncontrolled ☐
 Projected Duration ____/____ (hrs./min.)

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SED TURNOVER DATASHEET (continued)

Wind Speed _____ mph Wind Direction FROM _____

Projected Whole Body Dose _____ mrem $\cong$ _____ miles

Projected Thyroid Dose _____ mrem $\cong$ _____ miles

6. Protective Action Recommendations to Offsite Officials (use PAR Flowchart in App. U):

None ☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐

7. Onsite Protective Actions Taken: _____

☐ SITE EVACUATION ☐ ACCOUNTABILITY ☐ SPECIFIC AREA EVACUATIONS

8. Field Monitoring Vans Activated: Yes ☐ No ☐

9. SM/SED Notifications Made:

Time ODS notified: _____ (State and other notifications)

Time NRC Notified _____

10. Injured or contaminated persons status: _____

☐ Rhea County Medical Center

☐ Athens Regional Medical Center

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SED TURNOVER DATASHEET (continued)

11. Status of personnel in the field:

NAME

LOCATION

12. SED Responsibility Transferred:

- ☐ Physically in the TSC
- ☐ TSC has minimum staffing
- ☐ Call SM to see if conditions have changed.
- ☐ Declares over the telephone, "The TSC is staffed and activated. This is
_____ and I am now assuming the role of Site
Emergency Director."

From: _____ to _____
SM TSC/SED

Time: _____ Date: _____

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OPERATIONS MANAGER

Initial Activation of The Technical Support Center Checklist

Date: ____

Initis/Time

- ___/___ **ENTER** badge into the TSC Accountability Card Reader.
- ___/___ **SIGN IN** on the Organizational/Staffing Chart **and PUT ON** position badge.
- ___/___ **ESTABLISH** log of communications/events.
- ___/___ **ESTABLISH** contact with the OSC Operations Advisor and the CR Communicator in the MCR.
- ___/___ **CHECK** the status of onsite emergency actions already in effect such as Accountability or Evacuations.
- ___/___ **REPORT** the status of inplant field activities (operations, repair, radiological, etc.) received from the OSC Operations Advisor, Maintenance Manager or SM.
- ___/___ **VERIFY** that notification of the NRC has been accomplished and inform SED and NRC Coordinator.
- ___/___ **DESIGNATES** a person knowledgeable of the event to establish and maintain communications with the NRC via the phone as needed. This will be the NRC Coordinator when present. **NOTIFY** the SM that responsibility for NRC contact has been transferred to the TSC.
- ___/___ **PROVIDE** this completed checklist to the SED or EP Manager.

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OPERATIONS MANAGER

Operational Responsibilities

- Directs operational activities.
- Informs the SED of plant status and operational problems.
- Recommends solutions and mitigating action for operational problems.
- Designates a SRO for the Technical Assessment Team, as needed.
- Provides advice regarding Technical Specifications, system response, safety limits, etc.
- Periodically reviews the emergency status with the control room. Reviews trended parameters, time history information, and status boards with the Control Room staff.
- Ensures that the Control Room is aware of TSC accident assessments and OSC repair and response activities and priorities.
- Ensures that adequate Operations staffing is currently in the Main Control Room and that oncoming control room staffing requirements are being met for the following positions (Appendix AA, Emergency Responder Notification Form, may be used to document):
 - ☐ Shift Manager
 - ☐ Unit Supervisor
 - ☐ Station Technical Advisor
 - ☐ 2 Reactor Operators
 - ☐ 5 AUOs (minimum tech specs staffing)

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TECHNICAL ASSESSMENT MANAGER

Initial Activation of The Technical Support Center Checklist

Date: ____

Inits/Time

- ____/____ **ENTER** badge into the TSC Accountability Badge Reader.
- ____/____ **SIGN IN** on the Organizational/Staffing Chart **and PUT ON** position badge.
- ____/____ **ESTABLISH** log of communications/events.
- ____/____ **CHECK** the status of emergency actions already in effect such as Accountability or Site Evacuation or Response Teams in the Plant.
- ____/____ **PROVIDE** this completed checklist to the SED or EP Manager.

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TECHNICAL ASSESSMENT MANAGER
Operational Responsibilities

- Designates Technical Assessment Team Leader (if necessary).
- Directs activities of the Technical Assessment Team.
- Directs onsite effluent assessment.
- 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.
- If ICS is not operable, ensures information on Appendices R, S and T is sent to the CECC to be used in the predictive release rate model.
- Coordinate with the Chemistry Manager to initiate a Post-Accident Sample (PASS) as needed for assessment of the containment atmosphere and/or fuel damage.
- Provides for trending of significant parameters.
- Evaluate procedures produced during an emergency to determine if they should be approved by the Plant Operations Review Committee (PORC) or implemented based on 10 CFR 50.54X.
- Assumes SAMG responsibilities, when directed by the SED. The TSC must be functional and 3 SAMG Evaluators must be monitoring the "TSC Diagnostic Flow Chart" (DFC) to assume SAMG responsibilities.

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MAINTENANCE MANAGER

Initial Activation of The Technical Support Center Checklist

Date: ____

Initis/Time

- ___/___ **ENTER** badge into the TSC Accountability Badge Reader.
- ___/___ **SIGN IN** on the Organizational/Staffing Chart **and PUT ON** position badge.
- ___/___ **ESTABLISH** log of communications/events.
- ___/___ **ESTABLISH** contact with the OSC Manager and Asst. OSC Manager.
- ___/___ **CHECK** the status of emergency actions already in effect
such as Accountability or Site Evacuation.
- ___/___ **CHECK** status of deployed emergency response teams (Operations,
Maintenance, Medical Emergency Response Teams, etc.)
- ___/___ **PROVIDE** this completed checklist to the SED or EP Manager.

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MAINTENANCE MANAGER

Operational Responsibilities

- Coordinates emergency response team assignment activities with the SED and the OSC.
- Maintains cognizance of deployed OSC teams purpose and status.
- Assists the SED and the OSC Manager in determining the relative priorities of maintenance/repair activities.
- Ensures that damage assessment and repair priorities are coordinated with the OSC.
- Maintains the Emergency Response Teams tracking board in the TSC.

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OPERATIONS COMMUNICATOR

Initial Activation of The Technical Support Center Checklist

Date: ____

Initis/Time

- ___/___ **ENTER** badge into the TSC Accountability Badge Reader.
- ___/___ **SIGN IN** on the Organizational/Staffing Chart **and PUT ON** position badge.
- ___/___ **OBTAIN** headset and dial 4101.
- ___/___ **CHECK** operability of the Integrated Computer System (ICS) system.
- ___/___ **PROVIDE** this completed checklist to the SED or EP Manager.

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OPERATIONS COMMUNICATOR

Operational Responsibilities

- Provides operational knowledge as needed to status evaluations of plant systems.
- Provides advise to the Operations Manager regarding Technical Specifications, Systems Response, and safety limits.
- Assist Operations Manager in development of operations recommendations to problems.
- Monitors the Control Room Communicator Party line.
- Operates TSC ICS to obtain plant status and parameters.
- Provides information from the Control Room to the Technical Support Center personnel.
- Completes portions of plant parameter data sheets (Appendices R and S) as needed.
- Monitors plant status boards.
- 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 the "Sequence of Events" board and "Main Problems" board.

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NUCLEAR SECURITY MANAGER

Initial Activation of The Technical Support Center Checklist

Date: ____

Initis/Time

- ___/___ **ENTER** badge into the TSC Accountability Badge Reader.
- ___/___ **SIGN IN** on the Organizational/Staffing Chart **and PUT ON** position badge.
- ___/___ **NOTIFY** SED of arrival.
- ___/___ **ESTABLISH** log of communications/events.
- ___/___ **ESTABLISH** contact with the Central Alarm Station (CAS) and the Secondary Alarm Station (SAS).
- ___/___ **CHECK** the status of emergency actions already in effect such as Accountability, Site Evacuation or site being closed to visitors.
- ___/___ **PROVIDE** this completed checklist to the SED or EP Manager.

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NUCLEAR SECURITY MANAGER

Operational Responsibilities

- Directs activities of Nuclear Security personnel and mobilizes additional personnel as needed.
- Reports on site accountability/evacuation as defined in WBN EPIP-8.
- Assists in establishing search teams, as required. (WBN EPIP-8)
- Provides status updates to Nuclear Security personnel.
- Reports status of Security related events to the SED.
- Controls access to the site and the Main Control Room.
- Advises incoming emergency response personnel at the gate house of any radiological, security, or environmental hazards enroute to the TSC/OSC.

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RADCON MANAGER

Initial Activation of The Technical Support Center Checklist

Date: ____

Inits/Time

- ___/___ **ENTER** badge into the TSC Accountability Card Reader.
- ___/___ **SIGN IN** on the Organizational/Staffing Chart **and PUT ON** position badge.
- ___/___ **NOTIFY** SED of arrival.
- ___/___ **ESTABLISH** log of communications/events.
- ___/___ **ESTABLISH** contact with the OSC RADCON Supervisor, the plant monitoring van (if dispatched), and the CECC Radiological Assessment Coordinator (RAC).
- ___/___ **CONTROL** eating and drinking in the TSC until habitability has been established.
- ___/___ **CHECK** the status of offsite/onsite radiological conditions and emergency actions already in effect such as Accountability or Site Evacuation.
- ___/___ **PROVIDE** this completed checklist to the SED or EP Manager.

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RADCON MANAGER
Operational Responsibilities

- Directs onsite Radcon activities.
- IF the CECC is not staffed, utilize WBN, EPIP-16 to perform dose assessment. REPORT results to the SED.
- Makes recommendations for protective actions for onsite personnel to the SED and for personnel entry into radiological hazardous environments.
- Obtains MET data as needed by using ICS or CECC computer.
- Directs the issue of KI by following WBN EPIP-14 guidelines to onsite personnel after notifying the SED.
- Remains cognizant of assessments of inplant and onsite radiological conditions from the OSC RADCON Supervisor.
- Directs the radiological monitoring vans until the CECC assumes control (CECC EPIP-9).
- Provides periodic status reports to the SED on radiological conditions.
- Keeps the CECC RAC informed on site radiological conditions and Coordinates supplemental RADCON support.
- Coordinates assessment of radiological conditions offsite with CECC RAM.
- Maintains status maps of offsite radiological conditions and inplant Radiological Conditions status board (ensuring times are posted next to radiological data).
- Provides RADCON surveillance through the OSC to MET station personnel, if required by environmental releases.
- Designates a qualified/knowledgeable person to provide inplant radiological data to the NRC via the Health Physics Network (HPN) upon request.¹³
- Ensures outlying emergency responders (i.e. line crews, warehouse) have dosimetry and are being protected during the emergency.
- Provide radiological data to the OSC that must be obtained from the Main Control Room.

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CHEMISTRY MANAGER

Initial Activation of The Technical Support Center Checklist

Date: ____

Initis/Time

- ___/___ **ENTER** badge into the TSC Accountability Card Reader.
- ___/___ **SIGN IN** on the Organizational/Staffing Chart **and PUT ON** position badge.
- ___/___ **NOTIFY** SED of arrival.
- ___/___ **ESTABLISH** log of communications/events.
- ___/___ **ESTABLISH** contact with the OSC Chemistry Advisor
and the CECC Radiological Assessment Coordinator (RAC).
- ___/___ **CHECK** the status of emergency actions already in effect
such as chemistry sampling.
- ___/___ **PROVIDE** this completed checklist to the SED or EP Manager.

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CHEMISTRY MANAGER

Operational Responsibilities

- Coordinates information and the assessment of radioactive effluents with the CECC.
- Directs and remains cognizant of OSC Chemistry Advisor's Post-Accident Sampling Activities.

NOTE: From the time a decision is made to take a PASS sample, the results must be obtained in three (3) hours. A PASS should not (normally) be requested until post-accident conditions are stable enough to provide for useful evaluation results.

- Determines the impact of the incident on radwaste and various effluent treatment systems.
- Assist the RADCON Manager in Dose Assessment Calculations using WBN EPIP-16.
- Maintains the release rate portion on the Chemistry Status Board.
- Completes portions of plant parameter data sheets (Appendices R and S) as needed.
- Provides assistance to the SED and Technical Assessment Manager as needed.

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NRC COORDINATOR

Initial Activation of The Technical Support Center Checklist

Date: ____

Initis/Time

- ___/___ **ENTER** badge into the TSC Accountability Card Reader.
- ___/___ **SIGN IN** on the Organizational/Staffing Chart **and PUT ON** position badge.
- ___/___ **NOTIFY** SED and OPS Manager of arrival.
- ___/___ **ESTABLISH** log of communications/events.
- ___/___ **CHECK** the status of plant conditions and emergency actions already in effect such as Accountability or Site Evacuation.
- ___/___ **RELIEVE** the Control Room of responsibility for maintaining contact with the NRC, (ENS).¹³
- ___/___ **CALL** NRC to inform them that you have assumed responsibility for contact from the Control Room.
- ___/___ **PROVIDE** this completed checklist to the SED or EP Manager.

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NRC COORDINATOR

Operational Responsibilities

- Acts as primary liaison with onsite NRC personnel.
- Remains fully cognizant of emergency and plant conditions.
- Updates NRC personnel on plant status (use Appendix T as a guide when ICS is unavailable).
- Provides information requests from NRC to TSC personnel.

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CONTROL ROOM COMMUNICATOR

Initial Activation of The Technical Support Center Checklist

Date: ____

Initis/Time

- ___/___ **ENTER** badge into the Accountability Card Reader.
- ___/___ **SIGN IN** on the Organizational/Staffing Chart **and PUT ON** position badge.
- ___/___ **NOTIFY** SED of arrival.
- ___/___ **REPORT** to the TSC to obtain headset.
- ___/___ **REPORT** to Control Room and establish the Main Control Room "party line". Obtain headset/transmitter and activate amplifier at SM console - Dial 4101 for contact.
- ___/___ **ESTABLISH** contact with the Operations Manager and the other party line receivers (Status Board Writer, OSC OPS Advisor, TSC OPS Communicator).
- ___/___ **PROVIDE** this completed checklist to the SED or EP Manager.

Operational Responsibilities

- Serves as the control room - operations communications interface.
- Provides key plant parameters and critical safety function conditions and other information as requested over the operations "party line" to various positions in the TSC, OSC, and CECC.
- Provides operational knowledge for status evaluation of plant systems.

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EP MANAGER

Initial Activation of The Technical Support Center Checklist

Date: ____

Initis/Time

- ___/___ **ENTER** badge into the TSC Accountability Card Reader.
- ___/___ **SIGN IN** on the Organizational/Staffing Chart **and PUT ON** position badge.
- ___/___ **NOTIFY** SED of arrival.
- ___/___ **ESTABLISH** log of communications/events.
- ___/___ **CHECK** the status of emergency actions already in effect such as Accountability or Site Evacuation.
- ___/___ **ENSURE** checklists are distributed and are being completed. **INFORM** SED when key staff are present.
- ___/___ **ENSURE** all essential positions are filled by qualified responders and checklists are returned.
- ___/___ **CALL** TSC Clerks to come to the TSC as necessary.
- ___/___ **ENSURE** all activation activities are proceeding normally.
- ___/___ **ENSURE** operability of backup communications.
- ___/___ **ENSURE** that initial conditions data are transmitted to the CECC. Data may include equipment status, core status, and a copy of the latest RCS coolant chemical analysis.
- ___/___ **ANNOUNCE** activation of the TSC and provide SED (name) on the Plant PA and instruct AUOs in the plant to report to the OSC staging area once they have completed previous missions assigned by the Main Control Room.

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EP MANAGER

Operational Responsibilities

- Advises the SED regarding the REP, use of EPIPs, emergency equipment use and availability, and coordination with the CECC.
- Confirm completion of action steps in EPIPS 2 - 5.
- Confirms TSC and OSC are operating properly.
- Provides assistance to the SED as requested.
- Coordinates food and lodging requirements for the ERO with the CECC.
- Assist the SED by making PA announcements to update plant personnel of emergency status.
- The EP Manager is authorized to activate the TSC if the incoming SED has been delayed. The SM/SED will be notified that Emergency classifications, Protective Action Recommendations and Emergency Dose Authorizations will remain with the SM/SED.

DEACTIVATION RESPONSIBILITIES

Refer to EPIP-13.

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APPENDIX N
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Intentionally Deleted

Nuclear Engineering personnel are available on the TAT Teams and do not require a separate and repetitive Activation Checklist.

This appendix will remain in its current state/position for future use.

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APPENDIX O
Page 1 of 1

TSC LOGKEEPER

Initial Activation of The Technical Support Center Checklist

Date: ____

Initis/Time

- ____/____ **ENTER** badge into the TSC Accountability Card Reader.
- ____/____ **SIGN IN** on the Organizational/Staffing Chart **and PUT ON** position badge.
- ____/____ **REPORT** to the SED and begin a log of his/her activities.
- ____/____ **RECORD** significant information on the TSC Sequence of Events board.
- ____/____ **PROVIDE** this completed checklist to the SED or EP Manager.

Operational Responsibilities

- Maintains official logs of the events and SED activities.
- Initiates the shift turnover list as directed by the SED.

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APPENDIX P
Page 1 of 2

TSC CLERICAL STAFF

Initial Activation of The Technical Support Center Checklist

Date: ____

Inits/Time

- ___/___ **ENTER** badge into the TSC Accountability Card Reader.
- ___/___ **SIGN IN** on the Organizational/Staffing Chart **and PUT ON** position badge.
- ___/___ **DISTRIBUTE** manuals and TSC supplies and operate equipment as requested.
- ___/___ **ENSURE** that EIPs are at the appropriate revision level.
- ___/___ **ASSIST** TSC personnel in obtaining their TLDs.

Deactivation of the TSC

- ___/___ **COLLECT** all logs, notes, and other materials from each TSC position and **PROVIDE** them to the EP Manager for documentation and storage.
- ___/___ **ASSIST** in the deactivation of the TSC by returning all equipment, supplies and manuals to the proper storage cabinets.
- ___/___ **PROVIDE** this completed checklist to the SED or EP Manager.

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APPENDIX P
Page 2 of 2

TSC CLERICAL STAFF

Operational Responsibilities

- Assist in the set up of the TSC.
- Maintains accountability of TSC personnel and staff organization board.
- In the event of a Site Wide Evacuation, notify the TSC RADCON Manager that this is a non-radiation worker position.
- Answers telephones.
- Distributes plant parameter data sheets (Appendices R, S, & T), if ICS is unavailable.
- Uses Emergency Response Call List to obtain staff for unfilled positions or replacement staff for shift turnover using Appendix AA, "Emergency Responder Notification Form". Ensure that the following directions relative to call-in for unscheduled work per the "Fitness For Duty" (SPP-1.2) are followed: ASK responder the following questions:
 1. "Have you consumed alcohol in the past five hours?"
 2. "Are you fit for duty?"

If the first question is answered in the affirmative, call the next person on the call list unless the individual indicates that he is fit for duty in which case you should refer the determination to a supervisor.
- Operates facsimile machines.
- Operates CECC computer.

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APPENDIX Q
Page 1 of 3

TECHNICAL ASSESSMENT TEAM

Initial Activation of The Technical Support Center Checklist

Date: ____

Initis/Time

- ___/___ **ENTER** badge into the TSC Accountability Card Reader.
- ___/___ **SIGN IN** on the Organizational/Staffing Chart and **PUT ON** position badge.
- ___/___ **ESTABLISH** log of communications/events.
- ___/___ **ESTABLISH** contact with the Technical Assessment Manager.
- ___/___ **CHECK** the status of emergency actions already in effect such as Accountability or Site Evacuation.
- ___/___ **PROVIDE** this completed checklist to the SED or EP Manager.

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APPENDIX Q
Page 2 of 3

TECHNICAL ASSESSMENT TEAM

*Operational Responsibilities*⁷

- Team Leader may designate TSC Logkeeper and Board Writer as directed by the TAM.
- 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 and recommendations to plant operations on mitigating the accident.
- Monitor containment sump level and consult Appendix W for guidance.
- 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 X.
- Determines the condition of the reactor and nuclear fuel.
- If ICS is unavailable, prepares accident assessment form (Appendix T) for the TAM and NRC Communicator as warranted.
- Provides Predictive Release Data Sheet (Appendix S) to the CECC as requested.
- Ensures actions in Additional TAT Duties (Post Accident), Appendix Z, are initiated as needed.
- Performs trending of key plant parameters using ICS.
- Assumes SAMG responsibilities, when directed by the TAM. The TSC must be functional and 3 SAMG Evaluators must be monitoring the "TSC Diagnostic Flow Chart" (DFC) to assume SAMG responsibilities.

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APPENDIX Q
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TECHNICAL ASSESSMENT TEAM

Operational Responsibilities (continued)

- Verifies that all Aux. Bldg. Secondary Containment Enclosures (ABSCE) doors are closed. (Contact MCR for SOI-30.06, Checklist 3 status file or Fire Protection)
- Identifies and tracks the status of current ABSCE breaches. (Contact HVAC System Engineer for Breaching Log status)
- Verifies that all Emergency Control Room Pressurization Boundary (ECRPB) doors are closed.
- Identifies and tracks the status of current ECRPB breaches.
- Evaluate procedures produced during an emergency to determine if they should be approved by the Plant Operations Review Committee (PORC) or implemented based on 10 CFR 50.54X.

11. CL TEMP: WR (1) (TI-68-18) (2) (TI-68-41) (3) (TI-68-60) (4) (TI-68-83) °F

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APPENDIX R
Page 2 of 6

Plant Parameter Data Sheets

DATE: _____ TIME: _____ UNIT: _____

12. RCS FLOW: RCP's RUNNING: ☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ NATURAL CIRC

13. ECCS STATUS: ☐ STANDBY ☐ INJECT ☐ RECIRC ☐ SPRAY

14. RWST LEVEL: (LI-63-50) _____ GAL (LI-63-51) _____ GAL

15. CNTMT SUMP LEVEL: (LI-63-176) _____ %

16. FLOWRATE: (FI-62-93) _____ GPM (FI-63-170) _____ GPM
CHARGING BIT

17. CNTMT PRESSURE: NR (PI-30-44) _____ (PI-30-45) _____ PSID

18. INCORE THERMOCOUPLES:

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: (N-131) _____ CPS (N-132) _____ CPS

20. SUB COOLING MARGIN _____ °F _____ °F
(TI-68-105) (TI-68-115)

21. STATUS TREE INDICATING:

RED ☐ REASON: _____

ORANGE ☐ REASON: _____

DATA BY: _____

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APPENDIX R

Page 3 of 6

Plant Parameter Data Sheets

DATE: _____ TIME: _____ UNIT: _____

RADIATION MONITORS

NOTE: UNIT STATUS UPDATE SHEETS (FOR USE WHEN TSC/ICS COMPUTER IS INOPERABLE)

1. LOWER CNTMT (1-RE-90-106)

☐ ISOLATED ☐ TO LOWER
☐ TO UPPER

(A) PARTICULATE _____ CPM
 (B) TOTAL GAS _____ CPM
 (C) IODINE _____ CPM

2. UPPER CNTMT (1-RE-90-112)

☐ ISOLATED ☐ TO UPPER
☐ TO LOWER

(A) PARTICULATE _____ CPM
 (B) TOTAL GAS _____ CPM
 (C) IODINE _____ CPM

3. SHIELD BLDG VENT
 (1&2-RE-90-400)

FLOW _____ CFM

TOTAL GAS U1 _____ U2 _____ μ Ci/cc

4. AUXILIARY BLDG VENT (0-RE-90-101)

☐ ISOLATED
 FLOW _____ CFM

(A) PARTICULATE _____ CPM
 (B) TOTAL GAS _____ CPM
 (C) IODINE _____ CPM

5. CONDENSER EXHAUST (LR) _____ CPM FLOW _____ CFM
 (1-RE-90-119) (FT-2-256)

NOTE: ICS radiation monitor(s) RE identifications may be referenced as RM in the MCR.

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APPENDIX R

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Plant Parameter Data Sheets

6. STEAM LINE RAD MONITORS: 1-RE-90-421 _____ mR/hr
1-RE-90-422 _____ mR/hr
1-RE-90-423 _____ mR/hr
1-RE-90-424 _____ mR/hr

STEAMFLOW (MCR)

1-FI-1-3A(3B) SG1 _____ 1bm/hr.
1-FI-1-10A(10B) SG2 _____ 1bm/hr.
1-FI-1-21A(21B) SG3 _____ 1bm/hr.
1-FI-1-28A(28B) SG4 _____ 1bm/hr.

7. SERVICE BLDG VENT _____ CPM FLOW _____ CFM
0-RE-90-132

8. SG BLOWDOWN: _____ CPM _____ CPM
1-RE-90-120 1-RE-90-121

9. ERCW DISCHARGE: HEADER A: _____ CPM _____ CPM
0-RE-90-133 0-RE-90-140

HEADER B: _____ CPM _____ CPM
0-RE-90-134 0-RE-90-141

10. Additional monitors in alarm (trend as needed).

DATA BY: _____

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APPENDIX R
Page 5 of 6

Plant Parameter Data Sheets

DATE: _____ TIME: _____ UNIT: _____

POST-ACCIDENT RADIATION MONITORS

NOTE UNIT STATUS UPDATE (FOR USE WHEN TSC/ICS COMPUTER IS INOPERABLE)

1. UPPER CNTMT: (TOP OF #2 & #3 SG) 1-RE-90-271: _____ R/hr
(TOP OF #1 & #4 SG) 1-RE-90-272: _____ R/hr

2. LOWER CNTMT: (BETWEEN #2 & #3 SG) 1-RE-90-273: _____ R/hr
(BETWEEN #1 & #4 SG) 1-RE-90-274: _____ R/hr

3. RHR PUMP A-A: (LR/1-RE-90-290) _____ (HR/1-RE-90-291) _____ mR/hr
ROOMS B-B: (LR/1-RE-90-292) _____ (HR/1-RE-90-293) _____ mR/hr

4. COND VAC EXHAUST: (mid.R/1-RE-90-404A) _____ (HR/1-RE-90-404B) _____ CPM

5. Additional monitors in alarm (trend as needed):

DATA BY: _____

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APPENDIX R
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Plant Parameter Data Sheets

NOTE: Unit status update sheets (for use when TSC/ICS computer is inoperable).

DATE: _____ TIME: _____ UNIT: _____

RADIOLOGICAL RELEASE DATA

1. RELEASE POINT: _____

2. RELEASE RATES: CIRCLE ONE: DECREASING STABLE INCREASING UNKNOWN

-----AIRBORNE-----LIQUID RELEASE -----

RELEASES μ Ci/SEC		ISO- TOPE	CONCENTRATION VALUE UNITS	FLOWRATE VALUE UNITS	TOTAL-RELEASE VALUE UNITS
NOBLE GAS	_____	_____	_____	_____	_____
IODINES	_____	_____	_____	_____	_____
PARTICULATE	_____	_____	_____	_____	_____
COMBINED RELEASE		_____	_____	_____	_____
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 DATALINK INOPERABLE)

DATE	TIME	WIND SPEED (MPH or METERS)	DIRECTION (DEGREES)	ELEVATION (METERS)	TEMPERATURE DIFFERENTIAL
____/____/____	____:____	_____	_____	_____	_____
____/____/____	____:____	_____	_____	_____	_____
____/____/____	____:____	_____	_____	_____	_____

5. REMARKS/COMMENTS:

DATA BY: _____

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APPENDIX S
Page 1 of 1
Predictive Release Data Sheet⁷

DATE: _____ TIME: _____ UNIT: _____

DATA NEEDED FOR CECC TO PERFORM PREDICTIVE RELEASE METHODOLOGY

1. PRIMARY COOLANT CONCENTRATION

ISOTOPE	IN GAS	IN LIQ	SAMPLE DATA	
	μCi/cc	μCi/ml		
I-131	_____	_____	DATE: _____	TIME: _____
I-132	_____	_____	LOCATION: _____	
I-133	_____	_____		
I-134	_____	_____	TEMPERATURE: _____ °F	
I-135	_____	_____		
CS-137	_____	_____	PRESSURE _____ PSIA	
CS-138	_____	_____		
KR-85m	_____	_____	GAS VOLUME: _____ CC	
KR-85	_____	_____		
KR-87	_____	_____	WATER MASS: _____ GRAM	
KR-88	_____	_____		
XE-133	_____	_____	WATER LEVEL: _____	
XE-135	_____	_____		

2. CONCENTRATION OF HYDROGEN IN CONTAINMENT ATMOSPHERE

H₂ CONC (MOLE %): _____ DATE: _____
 CNTMT TEMP: _____ °F TIME: _____
 CNTMT PRESS _____ PSI LOCATION: _____

3. OPERATING POWER HISTORY (IF CECC/ICS DATALINK INOPERABLE)

DATE/TIME OF SHUTDOWN: _____

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

4. CORE EXIT THERMOCOUPLE READINGS (IF CECC/ICS DATALINK INOPERABLE)

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

5. REACTOR WATER LEVEL HISTORY (IF CECC/ICS DATALINK INOPERABLE)

DATE	TIME	READING (UNITS)	RCS VOL (CU FT)	NOTES:
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____

Send to: CECC Core Damage & CECC RAC.

DATA BY _____

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APPENDIX T
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*TSC Accident Assessment Summary Sheet*⁷

NOTE: This Status Update Sheet is for use when the TSC ICS/ERDS data systems are inoperable.

TO: Tech. Assmt. Mgr. & NRC Coordinator and CECC Plant Assessment Team
FROM: WBN Tech. Assmt. Team

I. HEAT REMOVAL CAPABILITY (Core Cooling, Heat Sink, RSC Inventory):
Status Tree: _____

II. FUEL INTEGRITY (Subcriticality, RCS Radionuclide):

III. RADIOACTIVITY IN CONTAINMENT;

IV. CONTAINMENT INTEGRITY:
Status Tree: _____

V. OVERALL ASSESSMENT & RECOMMENDATIONS:

Prepared by _____ WBN /EXT _____

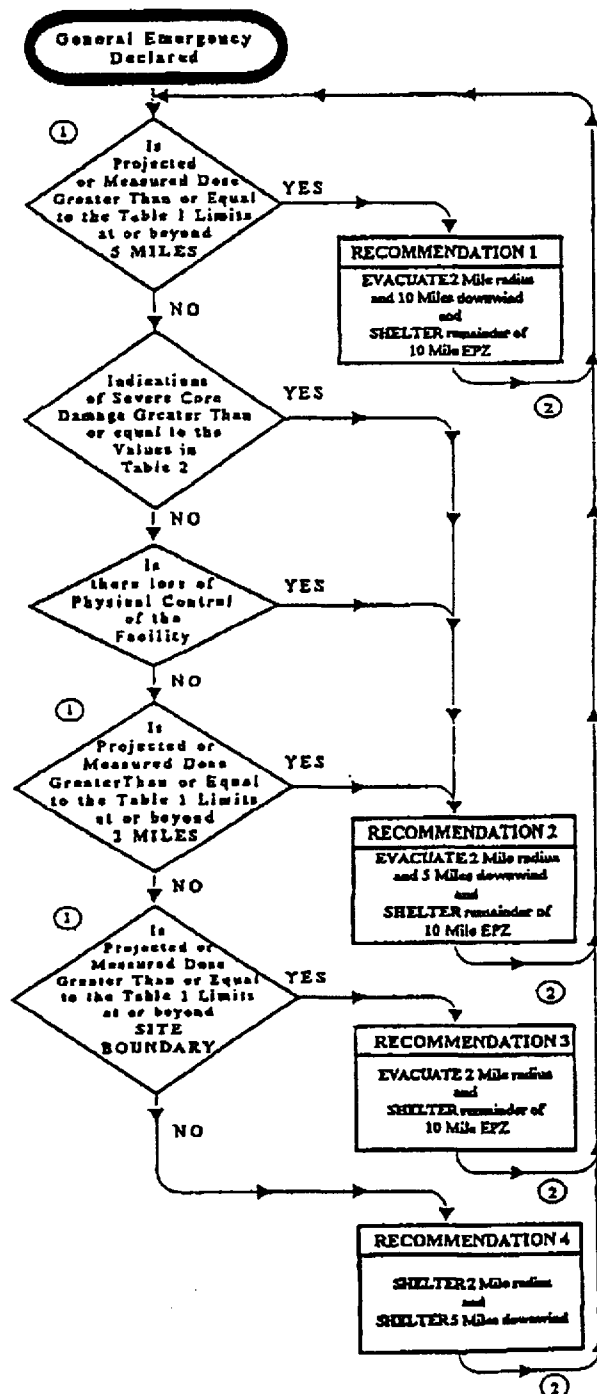
Time _____

APPENDIX U
Page 1 of 1Protective Action Recommendation Guidance^{5,12}*Watts Bar Nuclear*

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 hot spots.

TABLE 1 RADIOACTIVITY RELEASE DOSE	
TYPE	LIMIT
Measured	3.9 E-6 $\mu\text{Ci/cc}$ of Iodine-131 1 REM/hr External Dose
Projected	1 REM TEDE 1 REM Thyroid CDE

TABLE 2 Severe Core Damage	
INDICATIONS	
1. Containment radiation monitor reading • on I-RE-90-271 and 272 equal to or greater than 74 R/hr or Containment radiation monitor reading • on I-RE-90-273 and 274 equal to or greater than 59 R/hr	
2. Reactor Coolant Activity of $\geq 300 \mu\text{Ci/gm}$ Dose Equivalent Iodine-131.	
3. Inadequate core cooling as indicated by "red" path from core cooling status tree.	
4. Core exit TCs greater than 1200° F	



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APPENDIX V
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Reference Materials and Equipment List

The following reference materials are provided in the TSC:

1. Watts Bar Nuclear Plant FSAR.
2. Watts Bar Nuclear Plant Technical Specifications (Unit 1).
3. Surveillance Instructions (Selected). (Note ¹ Below)
4. Technical Instructions (Selected). (Note ¹ Below)
5. Radiological Control Instructions.
6. System Operating Instructions.
7. General Operating Instructions.
8. REP and WBN and CECC Emergency Plan Implementing Procedures
9. Plant Functional Drawings.
10. Abnormal Operating Instructions.
11. Emergency Operating Procedures.
12. Westinghouse Emergency Response Guidelines. (Note ² Below)
13. Hand-held calculators.
14. Office supplies for use in the TSC.

NOTE: ¹Selection to be made by Technical Assessment Team Leader(s) or Technical Assessment Manager(s) and approved by the Emergency Preparedness Manager.

²Obtain copy from Site Westinghouse Representative or Master Files.

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APPENDIX W
Page 1 of 1

Containment Sump Operation and Level Guidance¹

NOTE: Revised Engineering Analysis on the WBN Containment Sump Operation and Level Guidance has made the information previously provided in this Appendix no longer applicable.

Information on the Containment Sump Operation and Level Guidance can be gained through the following sources:

- FSAR 6.3 Emergency Core Cooling System
- System Description N3-63-4001 Safety Injection Systems
- ES-1.3 Transfer to RHR Containment Sump

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APPENDIX X
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ERCW Concerns for Technical Assessment^{1, 18}

MSLB and LOCA Events:

The LCC fans will be operated throughout all events except LOCA and MSLB. Following a MSLB, the LCC fans (four total - 2 Train A and 2 Train B) are started between 1.5 and 4 hours after event initiation. Within 2 hours of event initiation, contingent upon no ERCW available to operating LCC units, operators will initiate plant cooldown at a minimum rate of 19°F per hour in the RCS and 25°F per hour in the Pressurizer, to at least 350°F in the RCS and 450°F in the Pressurizer.

CAUTION: Prior to reinitiating ERCW flow to the LCC coils, the potential for waterhammer and two phase flow must be considered. Parameters to be considered are containment temperature which can cause boiling within the coils, available system pressure to prevent boiling, and maintenance of system integrity after reinitiating ERCW flow.

If ERCW is supplied to operating units, the cooldown specified here is not required, if containment temperature is maintained below 120°F.

Non-LOCA Events:

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 degrees F within 12 hours and continue as conditions allow.
 - b. In case of failure of the normal RHR suction valves to open, continue cooldown using the steam generators.
 - 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. Preferable, all lower containment coolers should be placed in service.
 - (1) If A-train power is lost, A-train valves FCV-67-104 and FCV-67-112, located in the annulus (approx. el 713) 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 X, page 3 of 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, located in the annulus (approx. el 713) 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 X, page 3 of 3 for the specific location of these valves.
 - d. Evaluate containment heat loads. If a reactor coolant pump is running, then at least three lower containment coolers should be in service.
 - e. Evaluate ERCW flow to the lower containment coolers and, if required, consider reducing flow to other equipment such as the containment spray heat exchangers.
 - 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.

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APPENDIX X

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ERCW Concerns for Technical Assessment Team (continued)

2. Monitor ERCW screens and strainers. Within 3 hours after operating basis earthquake ($\geq 1/2$ 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.

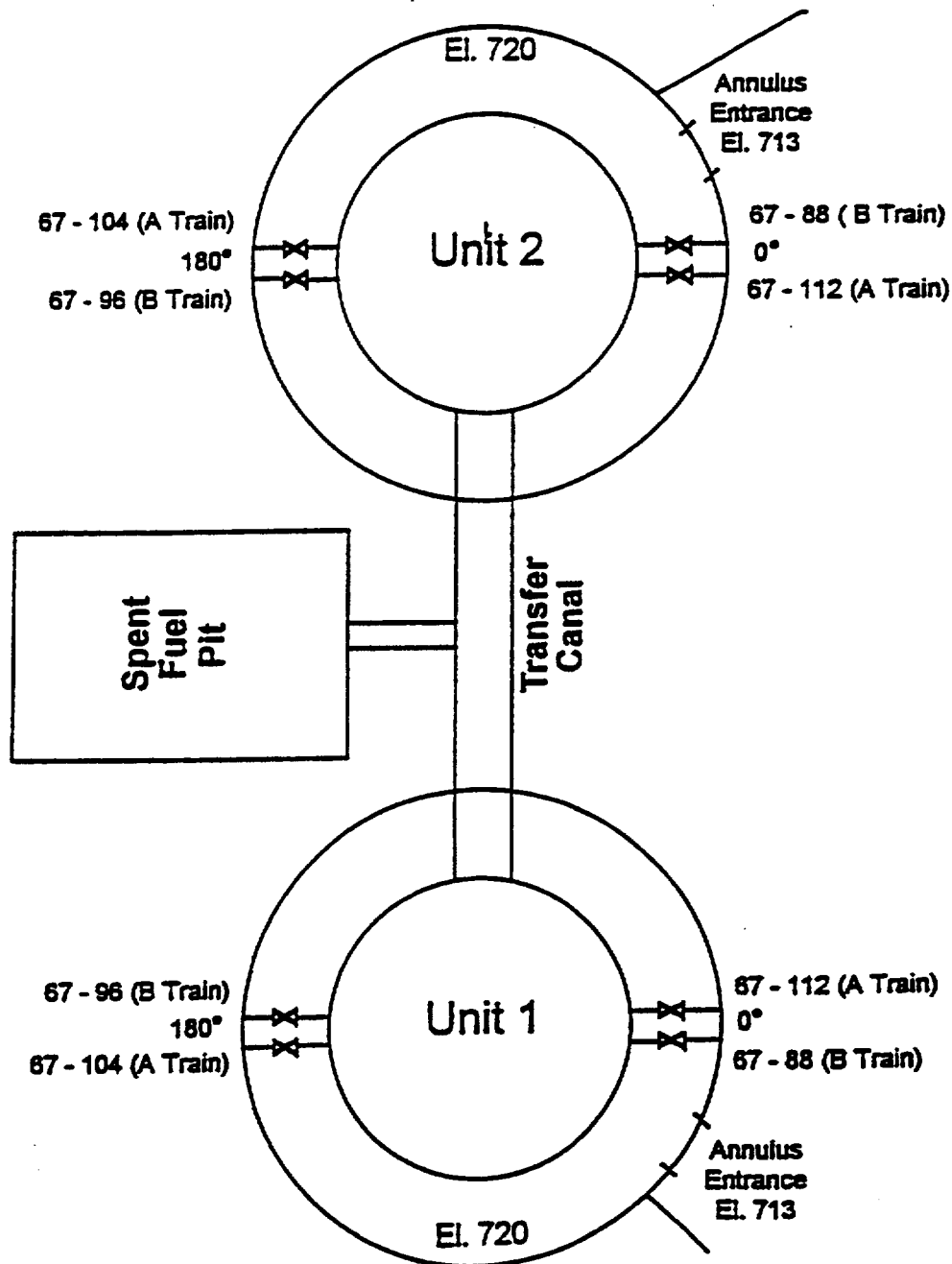
3. For events other than those listed in previous step, then maintain the normal monitoring and cleaning frequency of the ERCW screens and strainers per SOI-67.01.

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APPENDIX X

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ERCW Concerns for Technical Assessment Team (continued)



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APPENDIX Y
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SMALL BREAK LOCA CONCERNS²

As a result of a review of Sequoyah II-91-094, Nuclear Experience Review, it has been noted that the potential exists to have a loss of containment sump inventory as a result of lifting the relief (SRV-62-649) on the CCP miniflow recirculation line which would divert sump water inventory to the VCT/HUT. This scenario is potentially valid whenever the RHR pumps are providing makeup to the charging pumps in the recirculation mode.

Evaluate the conditions to determine if:

- A RCS Loss of Coolant accident is in progress.
- The unit is to the point of going on RHR Recirculation and RWST inventory is depleted and inventory for suction of the CCPs is from the containment sump.

If these conditions exist, then consider:

- Monitoring VCT level (this is the relief point of SRV-62-649)
- Determine if miniflow valve FCV-62-98 or FCV-62-99 should be closed to preclude loss of inventory to the VCT.
- If entry into Auxiliary Building is required to manually close the miniflow valve, have RADCON evaluate potential dose for performing this function.
- If loss of containment sump inventory to the HUT is occurring, actions must be taken to add water to RWST.

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APPENDIX Z

Page 1 of 2

ADDITIONAL TAT DUTIES (POST ACCIDENT)

Auxiliary Building Lighting Guidance¹⁴

In order to support the results of the Auxiliary Building temperature heat-up calculation (reference 7.2.21), normal lighting in the following rooms should be turned off within 12 hours of an Auxiliary Building isolation (ABI) resulting from a LOCA/MSLB inside primary containment, if temperatures in these rooms cannot be maintained below 128°F:

Elevation 757.0

A10 (Old Reverse Osmosis Rm)
A11 (U1 Reactor Bldg. Equip Hatch)
A12 (U1 Reactor Bldg. Access Rm)

Elevation 782.0

A1 (U1 MG Set Rm)
A2 (PZR Header Xfmr Rm-Train A)

Lights must be turned off via the wall switch in the rooms and not at the circuit breaker in the lighting cabinet. Room 757.0-A11 has one 1500 watt light located at A5-A6 and W-X that is not switched and should not be turned off at LC156 (breaker 13) as this breaker also controls an emergency battery pack.

NOTE: Should emergency repair work be conducted in any of these rooms, repair teams should be instructed to turn the lights off upon departure.

Control Room Chiller Guidance

Operator Action will be required following a LOCA/HELB (inside containment) to assure that temperatures in the Main Control Room and in the Shut Down Board Rooms remain below the Maximum Limits.

The Technical Assessment Team will assure the following actions are taken.

Within 24 hours of the start of the LOCA/HELB, switch from the operating Train to the Standby train on the following systems:

- Main Control Room AHU
- Shut Down Board Room A & B Chiller

Continue to alternate trains every 24 hours.

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APPENDIX Z
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Steam Generator Tube Rupture (SGTR) Recovery¹⁵

Operator action will be required to dispose of contaminated water on the plant's secondary side after a SGTR.

To assist Plant Operations the Technical Assessment Team will assure the following actions are taken.

- Ensure the station sump is aligned to the unlined pond (in accordance with AOI-33, E-3 or ECA-3 series) and unlined pond releases are performed in accordance with the Offsite Dose Calculation Manual (ODCM).

NOTE: Hotwell level indication may be inadequate if the hotwell level is high.

- Evaluate having temporary level indication installed to provide accurate indication of hotwell level.
- The hotwell may be processed (cleaned up) in accordance with SOI-14.03, Condensate Demineralizer Waste Disposal.
- The A Condensate Storage Tank (CST) may be processed (cleaned up) in accordance with SOI-2&3.01, Condensate and Feedwater System.
- Any contaminated Steam Generator may be processed in accordance with SOI-15.01, Steam Generator Blowdown System.

APPENDIX BB

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WBN TSC Sign-In Roster

NAME (Print)	Social Security Number	Signature	Replacement within 12 hours Yes/No	Replacement notified Yes/No

Date of TSC Activation

WBN EP Records Coordinator

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| 1 | NRC IE Notice 87-52-02,
Weakness No. 1, NCO-870324038 | Operation of ERCW
screens/strainers to be consistent with NE
USQD (Appendix W) |
| 2 | NER Item 910949 | Small Break LOCA Concerns (Appendix Y) |
| 3 | DV-847100 F00021, NIR-0560. | SEDs Responsibilities. Section 2.0
Responsibility, 3.3 Activation of the TSC,
Appendix C (Pages 1 through 7). |
| 4 | MC-840827005041A, MSC-02407. | Physical TSC Layout and Communications.
Section 3.0 Instruction, 3.1 General. Appendix
A (pages 1 and 2). |
| 5 | MC-840827055035A, MSC-2400. | SED duties that cannot be delegated Appendix
C (page 3 of 7) Also see EIPs 5 and 15. |
| 6 | MC-840827005055, MSC-02419,
NCO-920042076. | Quarterly Update of WBN Emergency
Organization. Section 3.0 Instructions,
Section 3.3.2 Emergency Response Call List. |
| 7 | GR-823300000006, GLT-0015,
NCO-920033014. | Plant Parameters Essential to EOF (CECC)
Function. Appendix Q, R, S, T. |
| 8 | GLT-0011, NCO-920053011. | Activation and Operation of the TSC. All
Sections and Appendices. |
| 9 | MC-810914022080, MSC-04144.
NCO-920042275 | TSC will be operational by Fuel Load
(NUREG 0737 Upgrade). Entire procedure
supports the upgrade requirements. Also see
ERFDS Users Manual. |

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| 10 | FRS-06-293. | The MCRHS area is designed for long term occupation by personnel required during emergency operation. Section 3.6 Long Term Operation, 3.6.3. Also see EPIP-12. |
| 11. | ANSI Standard N.18.7-1976
Subsection 5.3.9.3: 01 POI | EIPs will contain the following elements. |
| 12. | 390/93-64A | 10 CFR 20 Revisions |
| 13. | MSC-02859, NCO 920042546 | Radiological Emergency Plan Site Procedures shall designate site personnel who shall staff the ENS and HPN communication systems. |
| 14. | WBPER 950118 | Turn off lights in key Auxiliary Building rooms after a LOCA/MSLB inside containment. |
| 15. | SOER-93.0001 | Cleanup secondary side following a SGTR. Add temporary Hotwell Level Indication due to high level in Hotwell. |
| 16. | WB PER960582
requirements of RC Mgr. | Remove statement concerning reportability |
| 17. | NRC Information Notice 97-05 | Offsite Notification Capabilities when site communication capabilities are lost |
| 18. | NRC Generic Letter (GL) 96-06 | MSLB/LOCA: Prior to reinitiating ERCW flow to LCC Coils, potential for waterhammer and two phase flow must be considered. |