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APR 11 2001

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

10 CFR 50, App E.

Gentlemen:

In the Matter of)
Tennessee Valley Authority)

Docket No. 50-390

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 the EIPs as listed below.
EPIP-12, revision 15, submitted on February 7, 2001, is being
reissued due to a format change.

<u>EPIP</u>	<u>Rev</u>	<u>Title</u>	<u>Effective Date</u>
EPIP-1	16	Emergency Plan Classification Flowchart	3-30-2001
EPIP-2	14	Notification of Unusual Event	3-30-2001
EPIP-3	17	Alert	3-30-2001
EPIP-4	18	Site Area Emergency	3-30-2001
EPIP-5	19	General Emergency	3-30-2001
EPIP-6	18	Activation and Operation of the Technical Support Center	3-30-2001
EPIP-7	13	Activation and Operation of the Operations Support Center	3-30-2001
EPIP-12	15	Emergency Equipment and Supplies	1-24-2001

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FILING INSTRUCTIONS

DOCUMENT NUMBER EPIP-1

REMOVE REVISION 15 INSERT REVISION 16
3/30/01

Comments _____

TENNESSEE VALLEY AUTHORITY

WATTS BAR NUCLEAR PLANT

**EMERGENCY PLAN IMPLEMENTATING
PROCEDURES**

EPIP-1

EMERGENCY PLAN CLASSIFICATION FLOWCHART

Revision 16

Unit 0

QUALITY RELATED

PREPARED BY: Frank L. Pavlechko
(Type Name)

SPONSORING ORGANIZATION: Emergency Planning

APPROVED BY: Frank L. Pavlechko

EFFECTIVE DATE: 3/30/01

LEVEL OF USE: REFERENCE

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.

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 EPIP-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.

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.
16	3/30/01	All (Pg. 11 & 14)	Plan effectiveness determinations reviews indicate the following revisions do not reduce the level of effectiveness of the procedure or REP: Intent change. Revised CNTMT Rad Monitors readings in the Barrier Matrix (1.3) to support new dose assessment methodology. Non intent change. Revised reference from annunciator alarm printer to annunciator monitor per DCN D-50301.

WBN	EMERGENCY PLAN CLASSIFICATION FLOWCHART	EPIP-1 Revision 16 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 EPIP-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.

WBN	EMERGENCY PLAN CLASSIFICATION FLOWCHART	EPIP-1 Revision 16 Page 6 of 49
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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 16 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
- 2.2 Loss of Function/Communication
- 2.3 Failure of Reactor Protection
- 2.4 Fuel Clad Degradation
- 2.5 RCS Unidentified Leakage
- 2.6 RCS Identified Leakage
- 2.7 Uncontrolled Cool Down
- 2.8 Turbine Failure
- 2.9 Technical Specification
- 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
- 4.2 Explosion
- 4.3 Flammable Gas
- 4.4 Toxic Gas
- 4.5 Control Room Evacuation
- 4.6 Security
- 4.7 SED Judgment
- Table 4-1
- Figure 4-A
- Table 4-2
- Figure 4-B
- Table 4-3

4

DESTRUCTIVE PHENOMENON

- 5.1 Earthquake
- 5.2 Tornado
- 5.3 Aircraft/Projectile Crash
- 5.4 River Level High
- 5.5 River Level Low
- 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
- 7.2 Liquid Effluent
- 7.3 Radiation Levels
- 7.4 Fuel Handling
- Table 7-1
- Figure 7-A
- Table 7-2

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 <u>OR</u> Heat Sink Red (RHR Not in Service)

-OR-

2. Primary Coolant Activity Level

LOSS	Potential LOSS
RCS sample activity is Greater Than 300 μ Ci/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 <u>OR</u> 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 <u>OR</u> 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 <u>One</u> Charging Pump (CCP) in the Normal Charging Alignment. <u>OR</u> 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 <u>OR</u> 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 <u>Not</u> 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 <u>AND</u> 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: 108 R/hr on 1-RE-90-271 and 1-RE-90-272 OR 86 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 a 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.

F
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1

EVENTS

<u>UNUSUAL EVENT</u>	<u>ALERT</u>
Loss <u>or</u> Potential LOSS of Containment Barrier	Any LOSS <u>or</u> Potential LOSS of Fuel Clad barrier OR Any LOSS <u>or</u> Potential LOSS of RCS barrier
<u>SITE AREA EMERGENCY</u>	<u>GENERAL EMERGENCY</u>
LOSS <u>or</u> Potential LOSS of any two barriers	LOSS of any two barriers <u>and</u> Potential LOSS of third barrier

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 Undetected 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.

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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 ALERT UNUSUAL EVENT			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 (<u>and</u> Annunciator Monitor) <u>or</u> indications 2. SIGNIFICANT TRANSIENT in progress 3. Loss of ICS Computer <u>and</u> 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 <u>or</u> maintain Hot Shutdown (1 or 2) 1. CSF status tree indicates Core Cooling Red 2. CSF status tree indicates Heat Sink Red (RHR <u>not</u> in service) <i>Note: Also Refer to "Failure of Rx Protection" (2.3) and "Fission Product Barrier Matrix"</i>
	1,2 3,4		UNPLANNED loss of most (>75%) MCR annunciators (<u>and</u> Annunciator Printer) or indications for >15 minutes with either a SIGNIFICANT TRANSIENT in progress <u>or</u> ICS computer and SPDS Unavailable (1 and 2 and 3) 1. UNPLANNED loss of most (>75%) MCR annunciators (<u>and</u> Annunciator Monitor) <u>or</u> 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 <u>and</u> 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 <u>or</u> All Safety System annunciators <u>or</u> indications in the Control Room for >15 Minutes (1 and 2 and 3) 1. UNPLANNED loss of most (>75%) MCR annunciators (<u>and</u> Annunciator Monitor) <u>or</u> indications for >15 minutes. 2. SM/SED Judgment that increased surveillance is required to Safely operate the unit (beyond Shift compliment) 3. ICS Computer <u>or</u> 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

GENERAL
SITE
ALERT
UNUSUAL
EVENT

2.3 Failure of Rx Protection

Mode	Initiating/Condition
1,2	<p>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)</p> <ol style="list-style-type: none"> (a or b) <ol style="list-style-type: none"> CSF status tree indicates Core Cooling Red CSF status tree indicates Heat Sink Red FR-S.1 entered and subsequent actions <u>Did Not</u> result in a Rx Power of <5% and decreasing
1,2	<p>Rx power <u>Not</u> <5% and decreasing after VALID Auto and Manual trip signals (1 and 2 and 3)</p> <ol style="list-style-type: none"> 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	<p>Automatic Rx trip did not occur after VALID Trip signal and manual trip from MCR was successful (1 and 2)</p> <ol style="list-style-type: none"> 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

2.4 Fuel Clad Degradation

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	<p>Reactor Coolant System specific activity exceeds LCO (Refer to WBN Tech. Spec. 3.4.16)</p> <ol style="list-style-type: none"> Radiochemistry analysis indicates (a or b) <ol style="list-style-type: none"> Dose equivalent iodine (1-131) >1.0 μCi/gm for >48 Hours <u>or</u> in excess of T/S Figure 3.4.16-1 Specific activity >100/E μCi/gm

SYSTEM
DEGRADATION
UNIT

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

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

2.8 Turbine Failure	
Mode	Initiating/Condition
SYSTEM DEGRADATION U1	Refer to "Fission Product Barrier Matrix"
	Refer to "Fission Product Barrier Matrix"
	Turbine Failure has generated PROJECTILES that cause VISIBLE DAMAGE to any area containing Safety Related equipment 1,2,3 1. Turbine PROJECTILES has resulted in VISIBLE DAMAGE in any of the following areas: Control Building Diesel Generator Bldg. Auxiliary Building RWST Unit #1 Containment Intake Pumping Station CST
	Turbine Failure results in Casing penetration 1,2,3 1. Turbine Failure which results in penetration of the Turbine Casing <u>or</u> Damage to Main Generator Seals

2.9 Technical Specification

		Mode	Initiating/Condition
GENERAL SITE ALERT UNUSUAL EVENT			<i>Not Applicable</i>
			<i>Not Applicable</i>
			<i>Not Applicable</i>
	1,2 3,4		<p>Inability to reach required Shutdown within Tech. Spec. limits (1 and 2)</p> <ol style="list-style-type: none"> 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
			<i>Not Applicable</i>
			<i>Not Applicable</i>
			<i>Not Applicable</i>
	1,2 3,4 5		<p>Safety Limits have been Exceeded (1 or 2)</p> <ol style="list-style-type: none"> 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
- 2.2 Loss of Function/Communication
- 2.3 Failure of Reactor Protection
- 2.4 Fuel Clad Degradation
- 2.5 RCS Unidentified Leakage
- 2.6 RCS Identified Leakage
- 2.7 Uncontrolled Cool Down
- 2.8 Turbine Failure
- 2.9 Technical Specification
- 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
- 4.2 Explosion
- 4.3 Flammable Gas
- 4.4 Toxic Gas
- 4.5 Control Room Evacuation
- 4.6 Security
- 4.7 SED Judgment
- Table 4-1
- Figure 4-A
- Table 4-2
- Figure 4-B
- Table 4-3

4

DESTRUCTIVE PHENOMENON

- 5.1 Earthquake
- 5.2 Tornado
- 5.3 Aircraft/Projectile Crash
- 5.4 River Level High
- 5.5 River Level Low
- 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
- 7.2 Liquid Effluent
- 7.3 Radiation Levels
- 7.4 Fuel Handling
- Table 7-1
- Figure 7-A
- Table 7-2

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).

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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.

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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) 1. 1A <u>and</u> 1B 6.9KV Shutdown Bds de-energized for >15 minutes 2. (a or b) a. Core Cooling Red <u>or</u> Orange b. 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 1. 1A and 1B 6.9KV Shutdown Bds de-energized for >15 minutes
	ALERT	1,2, 3,4	Loss of Offsite Power for >15 minutes (1 and 2) 1. C <u>and</u> D CSSTs not available for >15 minutes 2. 1A <u>or</u> 1B Diesel Generator not available
		1,2 3,4	Loss of Offsite Power for >15 minutes (1 and 2) 1. C <u>and</u> D CSSTs not available for >15 minutes 2. Each Diesel Generator is supplying power to its respective Shutdown Board

3.2 Loss of AC (Shutdown)

		Mode	Initiating/Condition
GENERAL	SITE		<i>Not Applicable</i>
			<i>Not Applicable</i>
	ALERT	5,6, or De-fuel	UNPLANNED loss of Offsite <u>and</u> Onsite AC power for >15 minutes 1. 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) 1. C <u>and</u> D CSSTs not available for >15 minutes 2. Either Diesel Generator is supplying power to its respective Shutdown Board

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3.3 Loss of DC Power	
Mode	Initiating/Condition
G E N E R A L	<p><i>Refer to "Fission Product Barrier Matrix" and "Loss of Function" (2.2)</i></p>
S I T E	<p>1,2, 3,4</p> <p>Loss of All Vital DC Power for >15 minutes</p> <p>1. Voltage <105V DC on 125V DC Vital Battery Buses 1-I and 1-II and 1-III and 1-IV for >15 minutes</p> <p><i>Also Refer to "Fission Product Barrier Matrix", "Loss of Function" (2.2), and "Loss of Instrumentation" (2.1)</i></p>
L E R T	<p><i>Also Refer to "Fission Product Barrier Matrix", "Loss of Function" (2.2), and "Loss of Instrumentation" (2.1)</i></p>
U N U S U A L E V E N T	<p>UNPLANNED Loss of the Required Train of DC power for >15 minutes (1 or 2)</p> <p>5,6, or De-fuel</p> <p>1. Voltage <105V DC on 125V DC Vital Battery Buses 1-I and 1-III for >15 minutes</p> <p>2. Voltage <105V DC on 125V DC Vital Battery Buses 1-II and 1-IV for >15 minutes</p>

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

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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.

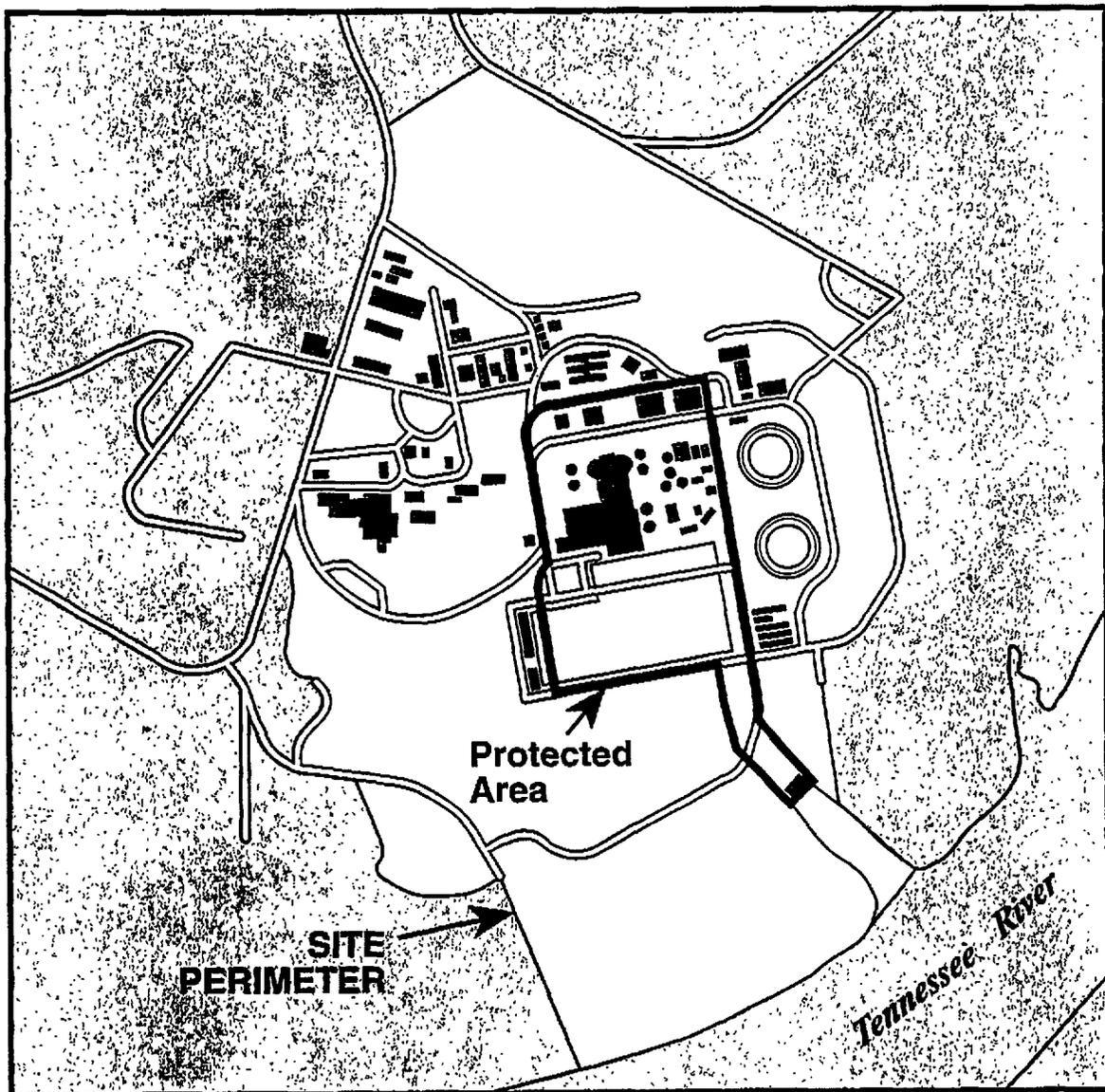
4.1 FIRE	
Mode	Initiating/Condition
GENERAL SITE	Refer to "Fission Product Barrier Matrix"
	Refer to "Control Room Evacuation," (4.5) or Fission Product Barrier Matrix"
ALERT	<p>FIRE in any of the areas listed in Table 4-1 that is affecting Safety Related equipment (1 and 2)</p> <ol style="list-style-type: none"> 1. FIRE in any of the areas listed in Table 4-1 2. (a or b) <ol style="list-style-type: none"> 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
UNUSUAL EVENT	<p>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)</p>

4.2 Explosions	
Mode	Initiating/Condition
GENERAL SITE	Refer to "Fission Product Barrier Matrix"
	Refer to "Fission Product Barrier Matrix"
ALERT	<p>EXPLOSION in any of the areas listed in Table 4-1 that is affecting Safety Related equipment (1 and 2)</p> <ol style="list-style-type: none"> 1. EXPLOSION in any of the areas listed in Table 4-1 2. (a or b) <ol style="list-style-type: none"> 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 <p>Refer to "Security" (4.6)</p>
UNUSUAL EVENT	<p>UNPLANNED EXPLOSION within the PROTECTED AREA resulting in VISIBLE DAMAGE to any permanent structure <u>or</u> equipment (Figure 4-A)</p> <p>Refer to "Security" (4.6)</p>

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

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

**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 UNUSUAL EVENT	<p>UNPLANNED release of Flammable Gas within a facility structure containing Safety Related equipment <u>or</u> associated with Power production</p> <p>All</p> <p>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.</p>
	<p>A. UNPLANNED release of Flammable Gas within the SITE PERIMETER</p> <p>All</p> <p>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)</p> <p style="text-align: center;"><u>OR</u></p> <p>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)</p>

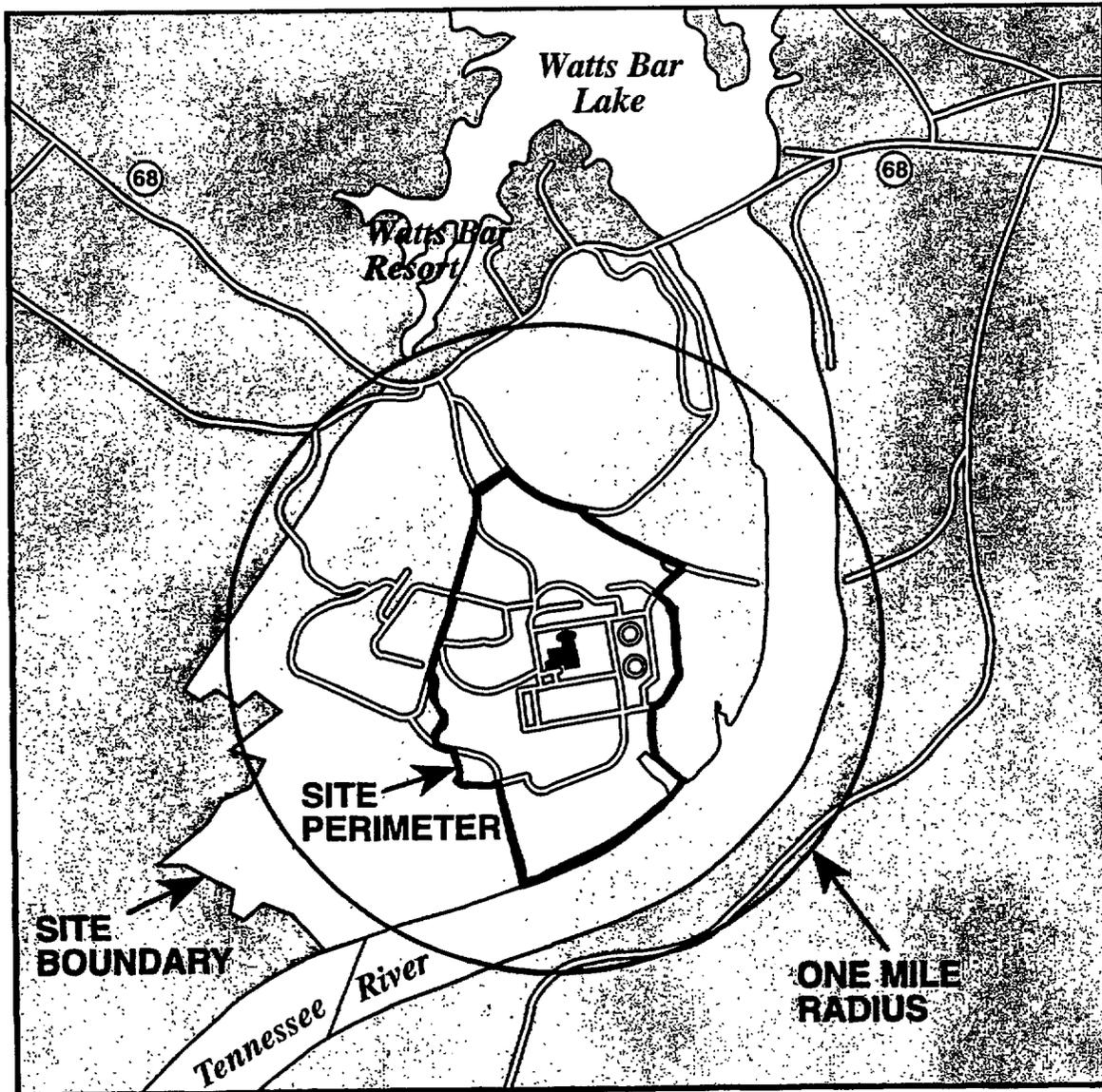
4.4 Toxic Gas	
Mode	Initiating/Condition
GENERAL SITE	Refer to "Fission Product Barrier Matrix"
	Refer to "Fission Product Barrier Matrix"
ALERT UNUSUAL EVENT	<p>Release of TOXIC GAS within a facility structure which Prohibits Safe Operation of systems required to establish <u>or</u> maintain Cold S/D (1 and 2 and 3)</p> <p>All</p> <p>1. Plant personnel report TOXIC GAS within any building listed in Table 4-2</p> <p>2. (a or b)</p> <p>a. Plant personnel report Severe Adverse Health Reactions due to TOXIC GAS (i.e., burning eyes, nose, throat, dizziness)</p> <p>b. Sampling indications > (PEL) Permissible Exposure Limit</p> <p>3. Plant personnel would be unable to perform actions necessary to establish and maintain Cold Shutdown while utilizing appropriate personnel protection equipment.</p>
	<p>A. Normal Operations impeded due to access restrictions caused by TOXIC GAS concentrations within a Facility Structure listed in Table 4-2</p> <p>All</p> <p style="text-align: center;"><u>OR</u></p> <p>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)</p>

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

		Mode	Initiating/Condition
GENERAL SITE ALERT UNUSUAL EVENT			<i>Refer to "Fission Product Barrier Matrix"</i>
	All		<p>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)</p> <ol style="list-style-type: none"> 1. (a or b) <ol style="list-style-type: none"> 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		<p>Evacuation of the Control Room is Required (1 and 2)</p> <ol style="list-style-type: none"> 1. (a or b) <ol style="list-style-type: none"> a. AOI-30.2 "Fire Safe Shutdown" entered b. AOI-27 "Main Control Room Inaccessibility" entered 2. SM/SED Orders Control Room evacuation

4.6 Security

		Mode	Initiating/Condition
	All		<p>Security Event resulting in loss of Control of the Plant</p> <ol style="list-style-type: none"> 1. Hostile Armed Force has taken Control of the Plant, Control Room, <u>or</u> Remote shutdown capability
	All		<p>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</p> <ol style="list-style-type: none"> 1. VITAL AREA, other than the Control Room, has been penetrated by a Hostile Armed Force
	All		<p>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)</p> <ol style="list-style-type: none"> 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 <p><i>Refer to Figure 4-A For a Drawing of Protected Area and Site Perimeter</i></p>
	All		<p>Confirmed Security Event which indicates a Potential Degradation in the level of Safety of the Plant (1 or 2)</p> <ol style="list-style-type: none"> 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)

HAZARDS / SEVERITY JUDGMENT U1

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

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

5.2 Tornado	
Mode	Initiating/Condition
GENERAL	Refer to "Fission Product Barrier Matrix"
	Refer to "Fission Product Barrier Matrix"
SITE	Refer to "Fission Product Barrier Matrix"
	Refer to "Fission Product Barrier Matrix"
ALERT	Tornado or High Winds strikes any structure listed in Table 5-1 and results in VISIBLE DAMAGE (1 and 2) All 1. Tornado or High Winds (Sustained >80 mph > one minute) strikes any structure listed in Table 5-1 2. (a or b) a. Confirmed report of any VISIBLE DAMAGE b. 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>
	Tornado within the SITE PERIMETER All 1. Plant personnel report a Tornado has been sighted within the SITE PERIMETER (Refer to Figure 5-A)
UNUSUAL	Tornado within the SITE PERIMETER All 1. Plant personnel report a Tornado has been sighted within the SITE PERIMETER (Refer to Figure 5-A)
	Tornado within the SITE PERIMETER All 1. Plant personnel report a Tornado has been sighted within the SITE PERIMETER (Refer to Figure 5-A)
EVENT	Tornado within the SITE PERIMETER All 1. Plant personnel report a Tornado has been sighted within the SITE PERIMETER (Refer to Figure 5-A)
	Tornado within the SITE PERIMETER All 1. Plant personnel report a Tornado has been sighted within the SITE PERIMETER (Refer to Figure 5-A)

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5.3 Aircraft/Projectile Crash	
Mode	Initiating/Condition
GENERAL	Refer to "Fission Product Barrier Matrix"
SITE	Refer to "Fission Product Barrier Matrix"
ALERT	<p>All</p> <p>Aircraft or PROJECTILE impacts (Strikes) any Plant structure listed in Table 5-1 resulting in VISIBLE DAMAGE (1 and 2)</p> <ol style="list-style-type: none"> Plant personnel report aircraft or PROJECTILE has impacted any structure listed in Table 5-1 (a or b) <ol style="list-style-type: none"> Confirmed report of any VISIBLE DAMAGE Control Room indications of degraded Safety System or component response due to the event within the specified areas
UNUSUAL EVENT	<p>All</p> <p>Aircraft crash or PROJECTILE impact within the SITE PERIMETER</p> <ol style="list-style-type: none"> Plant personnel report a Aircraft Crash or 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

5.4 River Level HIGH		
	Mode	Initiating/Condition
GENERAL		Refer to "Fission Product Barrier Matrix"
		Refer to "Fission Product Barrier Matrix"
SITE		Refer to "Fission Product Barrier Matrix"
		Refer to "Fission Product Barrier Matrix"
ALERT	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
UNUSUAL		
EVENT		

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

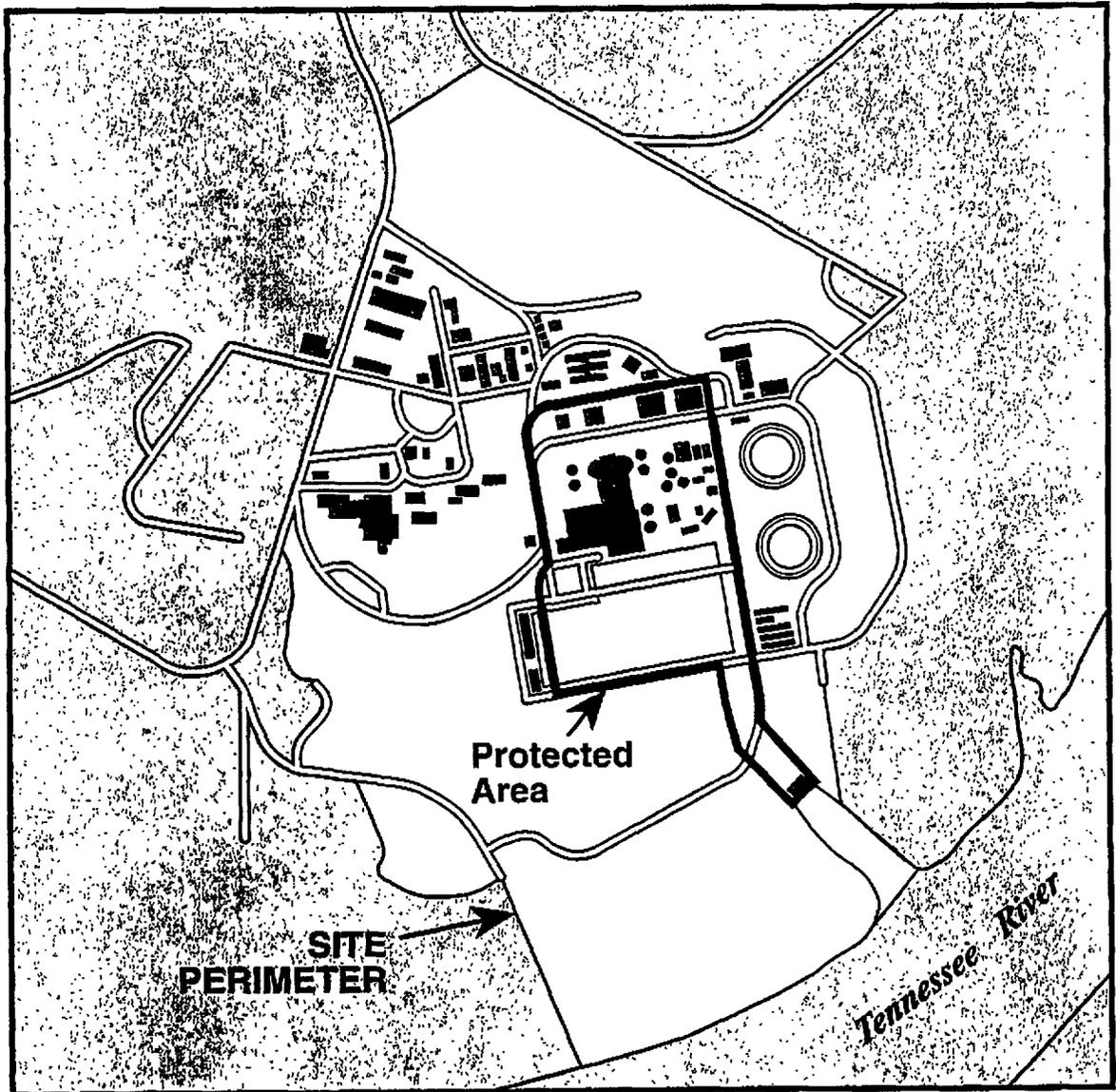
	Mode	Initiating/Condition
GENERAL SITE		Refer to "Fission Product Barrier Matrix"
		Refer to "Fission Product Barrier Matrix"
		Refer to "Fission Product Barrier Matrix"
ALERT UNUSUAL EVENT	All	<p>Watercraft Strikes the Intake Pumping Station resulting in a reduction of Essential Raw Cooling Water (ERCW) or Raw Cooling Water (RCW) (1 and 2)</p> <ol style="list-style-type: none"> 1. Plant personnel report a Watercraft has struck the Intake Pumping Station 2. (a or b or c) <ol style="list-style-type: none"> a. ERCW Supply Header Pressure Train A O-PI-67-18A is <15 psig b. ERCW Supply Header Pressure Train B O-PI-67-17A is <15 psig c. 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
- 2.2 Loss of Function/Communication
- 2.3 Failure of Reactor Protection
- 2.4 Fuel Clad Degradation
- 2.5 RCS Unidentified Leakage
- 2.6 RCS Identified Leakage
- 2.7 Uncontrolled Cool Down
- 2.8 Turbine Failure
- 2.9 Technical Specification
- 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
- 4.2 Explosion
- 4.3 Flammable Gas
- 4.4 Toxic Gas
- 4.5 Control Room Evacuation
- 4.6 Security
- 4.7 SED Judgment
- Table 4-1
- Figure 4-A
- Table 4-2
- Figure 4-B
- Table 4-3

4

DESTRUCTIVE PHENOMENON

- 5.1 Earthquake
- 5.2 Tornado
- 5.3 Aircraft/Projectile Crash
- 5.4 River Level High
- 5.5 River Level Low
- 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
- 7.2 Liquid Effluent
- 7.3 Radiation Levels
- 7.4 Fuel Handling
- Table 7-1
- Figure 7-A
- Table 7-2

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	<p>Note: Additional information will be provided later pending NRC Guidance on Shutdown EALs</p> <p><i>Refer to "Gaseous Effluents" (7.1)</i></p>
	5,6	<p>Loss of water level in the Rx vessel that has or will uncover fuel in the Rx vessel with CNTMT closure established (1 and 2 and 3 and 4 and 5)</p> <ol style="list-style-type: none"> 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 <p><i>Note: If CNTMT open, refer to "Gaseous Effluents" (7.1)</i></p>
	5,6	<p>Inability to maintain Unit in Cold Shutdown (1 and 2 and 3)</p> <ol style="list-style-type: none"> 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	<p>Note: Additional information will be provided later pending NRC Guidance on Shutdown EALs</p>

6.2 Loss of AC (Shutdown)	
Mode	Initiating/Condition
	<i>Not Applicable</i>
	<i>Not Applicable</i>
5,6 or De-Fuel	<p>UNPLANNED loss of Offsite <u>and</u> Onsite AC Power for >15 minutes</p> <ol style="list-style-type: none"> 1. 1A <u>and</u> 1B 6.9 KV Shutdown Bds de-energized for >15 minutes
5,6 or De-Fuel	<p>UNPLANNED loss of All Offsite Power for >15 minutes (1 and 2)</p> <ol style="list-style-type: none"> 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	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 and 1-III for >15 minutes 2. Voltage <105V DC on 125V DC Vital Battery Buses 1-II and 1-IV for >15 minutes.

6.4 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) 1. VALID alarm on O-RE-90-101 or O-RE-90-102 or O-RE-90-103 or 1-RE-90-130/131 or 1-RE-90-112 or 1-RE-90-400 or 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 or will exceed makeup capability 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) 1. Plant personnel report water level drop in Spent Fuel Pool or Reactor Cavity, or Transfer Canal 2. VALID alarm on O-RE-90-102 or O-RE-90-103 or 1-RE-90-59 or 1-RE-90-60 3. Fuel remains covered with water

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FISSION PRODUCT BARRIER MATRIX (Modes 1-4)

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|-----------------|---|
| 1.1 Fuel Clad | 1 |
| 1.2 RCS | |
| 1.3 Containment | |
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SYSTEM DEGRADATION

- | | | |
|------------------------------------|-----------------------------|---|
| 2.1 Loss of Instrumentation | 2.6 RCS Identified Leakage | 2 |
| 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 | |
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LOSS OF POWER

- | | |
|----------------------------|---|
| 3.1 Loss of AC (Power Ops) | 3 |
| 3.2 Loss of AC (Shutdown) | |
| 3.3 Loss of DC | |
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HAZARDS and SED JUDGMENT

- | | | | |
|---------------|-------------------|-----------------------------|---|
| 4.1 Fire | 4.3 Flammable Gas | 4.5 Control Room Evacuation | 4 |
| 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 | |
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DESTRUCTIVE PHENOMENON

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

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|------------------------------|---|
| 6.1 Loss of Shutdown Systems | 6 |
| 6.2 Loss of AC (Shutdown) | |
| 6.3 Loss of DC (Shutdown) | |
| 6.4 Fuel Handling | |
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RADIOLOGICAL

- | | | |
|----------------------|----------------------|---|
| 7.1 Gaseous Effluent | 7.3 Radiation Levels | 7 |
| 7.2 Liquid Effluent | 7.4 Fuel Handling | |
| Table 7-1 | Table 7-2 | |
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DEFINITIONS/ACRONYMS

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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.

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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	<p>EAB dose resulting from an actual or imminent release of Gaseous Radioactivity that exceeds 1000 mrem TEDE or 5000 mrem Thyroid CDE for the actual or projected duration of the release (1 or 2 or 3)</p> <p>All</p> <ol style="list-style-type: none"> 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 or an I-131 concentration of $3.9E-6 \mu Ci/cc$ at SP 3. EP dose assessment results indicate EAB dose >1000 mrem TEDE or >5000 mrem Thyroid CDE for the actual or projected duration of the release (Figure 7-A)
	<p>EAB dose resulting from an actual or imminent release of Gaseous Radioactivity that exceeds 100 mrem TEDE or 500 mrem Thyroid CDE for the actual or projected duration of the release (1 or 2 or 3)</p> <p>All</p> <ol style="list-style-type: none"> 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 or an I-131 concentration of $3.9E-7 \mu Ci/cc$ at SP 3. EP dose assessment results indicate EAB dose >100 mrem TEDE or >500 mrem Thyroid CDE for the actual or projected duration of the release (Figure 7-A)
	<p>Any UNPLANNED release of Gaseous Radioactivity that exceeds 200 times the ODCM Limit for >15 minutes (1 or 2 or 3)</p> <p>All</p> <ol style="list-style-type: none"> 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)
	<p>Any UNPLANNED release of Gaseous Radioactivity that exceeds 2 times the ODCM Limit for >60 minutes (1 or 2 or 3)</p> <p>All</p> <ol style="list-style-type: none"> 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	<p>Any UNPLANNED release of Liquid Radioactivity that exceeds 200 times the ODCM Limit for >15 minutes (1 or 2)</p> <ol style="list-style-type: none"> 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	<p>Any UNPLANNED release of Liquid Radioactivity to the Environment that exceeds 2 times the ODCM Limit for >60 minutes (1 or 2)</p> <ol style="list-style-type: none"> 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	3PAM	μCi/cc ⁽³⁾	5.5E-02	5.5E+00	8.83E+01	8.83E+02
1-RE-90-404B	3PAM	μCi/cc	5.5E-02	5.5E+00	8.83E+01	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	n/a 4RM2	μCi/ml ⁽²⁾ cpm	1.8E-05 1.1E+06	1.8E-03 ****(1)	N/A N/A	N/A N/A
1-RE-90-120,121	4RM2	cpm	1.0E+06	****(1)	N/A	N/A
0-RE-90-225	4RM2	cpm	9.2E+05	****(1)	N/A	N/A
0-RE-90-212	4RM2	cpm	1.5E+04	1.5E+06	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).

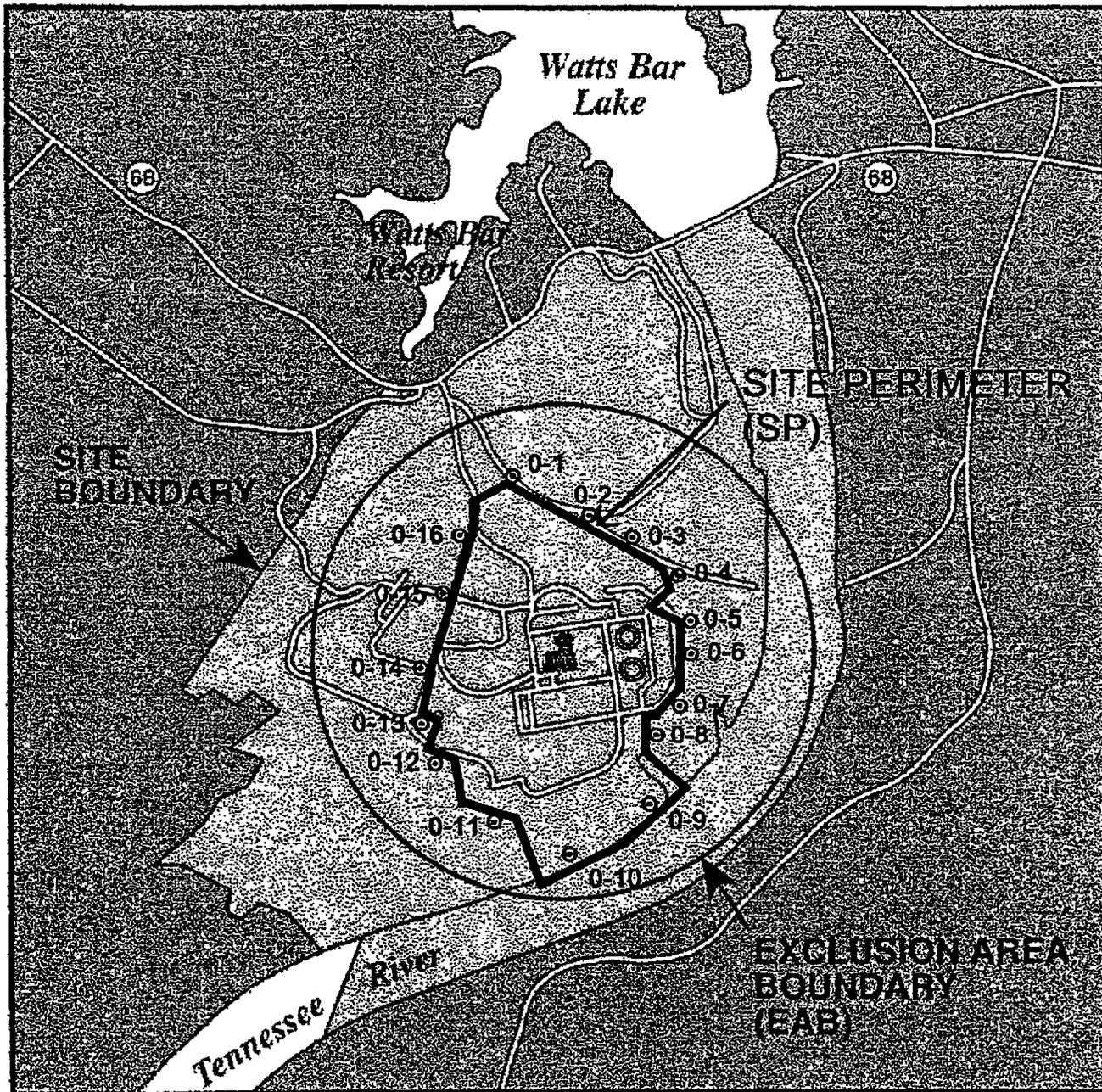
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Figure 7-A
EXCLUSION AREA, SITE BOUNDARY and SITE PERIMETER

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		Refer to "Fission Product Barrier Matrix" or "Gaseous Effluents" (7.1)
		Refer to "Fission Product Barrier Matrix" or "Gaseous Effluents" (7.1)
ALERT	All	<p>UNPLANNED increases in Radiation levels within the Facility that impedes Safe Operations or establishment or maintenance of Cold Shutdown (1 or 2)</p> <ol style="list-style-type: none"> VALID area Radiation Monitor readings or survey results exceed 15 mrem/hr in the Control Room or CAS (a and b) <ol style="list-style-type: none"> 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 <p>See UNUSUAL EVENT Note Below</p>
	All	<p>UNPLANNED increase in Radiation levels within the Facility</p> <ol style="list-style-type: none"> VALID area Radiation Monitor readings increase by a factor 1000 over normal levels <p>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).</p>
UNUSUAL EVENT		Refer to "Fission Product Barrier Matrix" or "Gaseous Effluents" (7.1)
		Refer to "Fission Product Barrier Matrix" or "Gaseous Effluents" (7.1)

7.4 Fuel Handling		
	Mode	Initiating/Condition
GENERAL		Refer to "Gaseous Effluents" (7.1)
		Refer to "Gaseous Effluents" (7.1)
SITE		Refer to "Gaseous Effluents" (7.1)
		Refer to "Gaseous Effluents" (7.1)
ALERT	All	<p>Major damage to Irradiated Fuel, or Loss of water level that has or will uncover Irradiated Fuel outside the Reactor Vessel (1 and 2)</p> <ol style="list-style-type: none"> 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) <ol style="list-style-type: none"> Plant personnel report damage of Irradiated Fuel sufficient to rupture Fuel Rods Plant personnel report water level drop has or will exceed make-up capacity such that Irradiated Fuel will be uncovered
	All	<p>UNPLANNED loss of water level in Spent Fuel Pool or Reactor Cavity or Transfer Canal with fuel remaining covered (1 and 2 and 3)</p> <ol style="list-style-type: none"> 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.
UNUSUAL EVENT		Refer to "Gaseous Effluents" (7.1)
		Refer to "Gaseous Effluents" (7.1)

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 x 10 ³ mR/hr
1-RE-90-2	Auxiliary El. 757.0 (personnel air lock)	2.5 x 10 ⁰ R/hr
0-RE-90-3	Auxiliary El. 729.0 (waste pac. area)	2.5 x 10 ³ mR/hr
0-RE-90-4	Auxiliary El. 713.0 (decon room)	1.5 x 10 ³ mR/hr
0-RE-90-5	Auxiliary El. 737.0 (spt. fuel pool pmp. ar.)	1.5 x 10 ³ mR/hr
1&2-RE-90-6	Auxiliary El. 737.0 (comp. cl. wtr. ht. ex. ar.)	1.5 x 10 ³ mR/hr
1&2-RE-90-7	Auxiliary El. 713.0 (sample room)	2 x 10 ³ mR/hr
1&2-RE-90-8	Auxiliary El. 713.0 (aux. feed pump area)	1.5 x 10 ³ mR/hr
0-RE-90-9	Auxiliary El. 692.0 (wst. cond. evap. tk. ar.)	1.5 x 10 ³ mR/hr
1&2-RE-90-10	Auxiliary El. 692.0 (cvcs area)	1.5 x 10 ³ mR/hr
0-RE-90-11	Auxiliary El. 676.0 (ctmt. spry. & rhr pmp ar.)	1.5 x 10 ³ mR/hr
1-RE-90-61	Auxiliary El. 736.0 (RB low. cmpt. inst. rm.)	2.5 x 10 ³ mR/hr
0-RE-90-230	Turbine El. 685.0 (conden. demin.)	1.5 x 10 ³ mR/hr
0-RE-90-231	Turbine El. 685.0 (conden. demin.)	1.5 x 10 ³ mR/hr

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

WBN	EMERGENCY PLAN CLASSIFICATION FLOWCHART	EPIP-1 Revision 16 Page 49 of 49
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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 | EPIPs 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-2

REMOVE REVISION 13 INSERT REVISION 14
3/30/01

Comments _____

TENNESSEE VALLEY AUTHORITY

WATTS BAR NUCLEAR PLANT

**EMERGENCY PLAN IMPLEMENTING
PROCEDURES**

EPIP-2

NOTIFICATION OF UNUSUAL EVENT

Revision 14

Unit 0

QUALITY RELATED

PREPARED BY: Frank L. Pavlechko
(Type Name)

SPONSORING ORGANIZATION: Emergency Planning

APPROVED BY Frank L. Pavlechko

EFFECTIVE DATE: 3/30/01

LEVEL OF USE: REFERENCE

REVISION LOG

Revision Number	Implementation Date	Description of Revision	
0	04/13/90	Superseded IP-2	
1	04/01/91	Editorial and format changes	
2	01/22/92	Editorial and format changes	
3	02/10/93	Add Section 2.0 Responsibility. Add Site Emergency Director announcements to Section 3.0. Change Section 3.0 to reflect removal of red Emergency Notification System ring-down phones which are being replaced by NRC designated phones which will require dialing a number. Add 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.	
4	08/16/93	Editorial (non-intent) and format changes. Source notes added to the procedure.	
5	05/27/94	Follow-up notification form added to the procedure. Phone numbers revised.	
6	08/01/94	Initial Dose Assessment for Radiological Emergencies (EPIP-16) referenced and phone numbers to the NRC Response Center revised.	
7	04/21/95	Phone number revised. Editorial (non-intent) changes made.	
Revision Number	Implementation Date	Pages Affected	Description of Revision
CN-1	09/28/95	4, 5	Phone numbers revised (new area code). Editorial (non-intent) changes made.
8	7/5/96	4,5,6,7,8	Phone number and titles revised. Procedure (TI-30) replacement identified. All revisions were evaluated to be non-intent.
9	10/10/96	3,4,5, 8,9	The following non-intent revisions were made: SM designee identified by title, OSC and TSC support personnel instruction added, a reference was added and the non-QA record instructions revised.
CN-1	3/27/97	3,5,6	TEMA additional back-up number added.

WBN	NOTIFICATION OF UNUSUAL EVENT	EPIP-2 Revision 14 Page 3 of 12
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Revision Number	Implementation Date	Pages Affected	Description of Revision
CN-2	2/2/98	3,5,7,8	SSP-4.05 was replaced by SPP-3.5 in new procedure system. Editorial.
10	6/30/98	All	Non-Intent Change. Incorporated Change Notices 1 and 2. Changed reference SSP 3.4 to SPP 3.1.
11	10/21/99	All	Non Intent Change. Moved termination of emergency step from Appendix A to Appendix B. STD-3.2 reference canceled.
12	6/14/00	All	Non Intent Change. Revised reference number. Added backup call to the ODS should the EPS fail to operate. Added the word actions after notifications in Step 4 for clarification.
13	10/31/00	All pg. 5	Non-Intent change. Revised NRC dedicated phones from FTS-2000 to TVA phone circuits per (RIS) 2000-11 "NRC Emergency Telecommunications Systems".
14	3/30/01	All Page 6,10	Plan effectiveness determinations revisions indicate the following revisions do not reduce the level of effectiveness of the procedure or REP: Non-Intent change. Revised phone number. Revised initial notification form to standardize within TVAN and meet new NEI PI requirements to the NRC.

WBN	NOTIFICATION OF UNUSUAL EVENT	EPIP-2 Revision 14 Page 4 of 12
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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 Site Emergency Director (SED), Technical Support Center (TSC) has determined by WBN, EPIP-1 that an incident has occurred which is classified as a **NOTIFICATION OF UNUSUAL EVENT.**⁵
- 1.2 To provide a method for periodic reanalysis of the current situation by the SED to determine whether the **NOTIFICATION OF UNUSUAL EVENT** action(s) should be terminated, continued or upgraded to another classification.

2.0 RESPONSIBILITY

The SED who is initially the SM (or other SM on-site during the emergency) or designee (Unit Supervisor, US) until properly relieved by the TSC SED, has the responsibility and authority for implementation of the action(s) in this instruction.⁵

3.0 INSTRUCTIONS

3.1 Upon determining that existing conditions are classified as a **NOTIFICATION OF UNUSUAL EVENT** according to EPIP-1 (independent evaluations by crew members may be beneficial), the SED, or designee, will:^{4,5}

- 1. **IF** there are personnel injuries, **IMPLEMENT** EPIP-10, "Medical Emergency Response."
- 2. **COMPLETE** Appendix A, Notification Information
- 3. **ANNOUNCE** to the crew: "A Notification of Unusual Event is being declared based on _____. I will be the Site Emergency Director."

WBN	NOTIFICATION OF UNUSUAL EVENT	EPIP-2 Revision 14 Page 5 of 12
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4. **NOTIFY** the ODS direct by ODS Ringdown or No. 5-751-1700 or 5-751-2495 and **PROVIDE** the information from Appendix A. **IF** the ODS cannot be contacted within 10 minutes, the Tennessee Emergency Management Agency is to be notified of the Radiological Emergency Plan activation by calling:
9-1-800-262-3300 or 9-1-615-741-0001 or 9-1-800-262-3400.²
5. **FAX** Appendix A to the ODS. (# pre-programmed or 5-751-8620.)
6. **ANNOUNCE** to the plant, "ATTENTION ALL SITE PERSONNEL. ATTENTION ALL SITE PERSONNEL. A Notification of Unusual Event is being declared based on _____ conditions." (Repeat)
7. **NOTIFY** Duty Plant Manager, and **PROVIDE** Appendix A information (**SEE** duty list for telephone numbers). The Duty Plant Manager will call the Plant Manager or alternate.
8. **IF** TSC and OSC support is needed, **ACTIVATE** the emergency paging system (EPS).

NOTE If the EPS system fails, call the ODS ringdown or (5-751-1700) and have him activate the EPS.

9. **NOTIFY** NRC, using the designated NRC phone (ENS), of plan activation.

NOTE NRC notification should be made as soon as practicable, within one hour of "NOTIFICATION OF UNUSUAL EVENT" declaration. Whenever NRC requests, a qualified person must provide a continuous update to the NRC Operations Center. The following commercial numbers are for the NRC Operations Center:^{3, 6}

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

10. **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.

WBN	NOTIFICATION OF UNUSUAL EVENT	EPIP-2 Revision 14 Page 6 of 12
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3.0 INSTRUCTIONS (continued)

11. **NOTIFY** WBN Emergency Preparedness. □

NOTE Notification to Emergency Preparedness should be made as soon as practicable, but only when notification does not interfere with emergency actions or notifications in progress.

Work - 3232	or	Work - 8004 or 1838
Home - 9-1-423-337-2911		Home - 9-1-865-376-4691
Pager - 30374		Pager - 70215

12. **REEVALUATE** the event using WBN EPIP-1 as necessary to determine if conditions warrant reclassification. □

A. **IF** the situation no longer exists, **TERMINATE** the emergency by informing the ODS and the Duty Plant Manager.

B. **IF** the condition warrants upgrading to a higher classification, **INITIATE** the appropriate steps of WBN EIPs 3, 4, or 5.

C. **IF** other plant conditions warrant the need for follow-up information, **COMPLETE** the Follow-up Notification Form, Appendix B 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 □

WBN	NOTIFICATION OF UNUSUAL EVENT	EPIP-2 Revision 14 Page 7 of 12
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3.0 INSTRUCTIONS (continued)

13. **FAX** Appendix B to the ODS.
(# pre-programmed or 5-751-8620.)

CAUTION If there is any possibility of a radiological release, do not send personnel into areas of unknown radiological conditions without first contacting Radiological Control.

14. **ENSURE** applicable notifications/actions required by SPP-3.5 and SPP-3.1 have been made.
15. **NOTIFY** the NRC Resident Inspector by calling 1776 and **PROVIDING** the information on Appendix A.
16. After the event is terminated, **SEND** the completed WBN EPIP-2 and associated documentation to WBN Emergency Preparedness (EP) Manager. The EP Manager shall forward documentation to DCRM for storage as appropriate.

WBN	NOTIFICATION OF UNUSUAL EVENT	EPIP-2 Revision 14 Page 8 of 12
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4.0 REFERENCES

4.1 Interfacing Documents

SPP-3.1 Corrective Action Program

SPP-3.5 Regulatory Reporting Requirements

WBN-EPIP-1 Emergency Plan Classification Flowchart

WBN-EPIP-3 Alert

WBN-EPIP-4 Site Area Emergency

WBN-EPIP-5 General Emergency

WBN-EPIP-10 Medical Emergency Response

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

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 N 18.7 - 1976

WBN	NOTIFICATION OF UNUSUAL EVENT	EPIP-2 Revision 14 Page 9 of 12
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5.0 APPENDIX

Appendix A, Notification Information

Appendix B, Follow-up Notification Form

6.0 RECORDS

6.1 QA Records

Entire EPIP-2, when the REP is activated, is a QA Record.

6.2 Non QA Records

All EPIP-2 records generated during the course of a drill/exercise will be assembled by the EP Manager and stored appropriately.

ATTACHMENT A (Page 1 of 1)
INITIAL NOTIFICATION FORM
NOTIFICATION OF UNUSUAL EVENT ^{1,4}

THIS IS AN ACTUAL EVENT THIS IS AN EXERCISE

This is _____
NAME

A NOTIFICATION OF UNUSUAL EVENT has been declared at Watts Bar Nuclear Plant affecting:

Unit 1 Unit 2

Event Declared: Time: _____ Date: _____

EAL Designator (e.g., Fire 4.1): _____

Brief Description of the Event:

Radiological Conditions:

- No Abnormal Releases Offsite
- Airborne Release Offsite
- Liquid Release Offsite
- Release Information Not Known at this time

There is no Protective Action Recommendation at this time.

Ask, "Please repeat the information you have received to ensure accuracy."

WBN	NOTIFICATION OF UNUSUAL EVENT	EPIP-2 Revision 14 Page 12 of 12
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SOURCE NOTES

Page 1 of 1

- | | | |
|---|---|--|
| 1 | NRC IE Information Notice 89-89 | Event Notification Worksheets |
| 2 | NRC IE Information Notice 86-97 | Emergency Communications System |
| 3 | NRC IE Information Notice 86-28 | Telephone Numbers to the NRC Operations Center and Regional Offices. |
| 4 | MC 840827 00500 4A, MSC-02375, NCO 9200 30985 | Section 3.0 Instructions, 3.1, and Appendix A (Page 1 of 1). |
| 5 | ANSI N18.7-1976
Subsection 5.3.9.3: 01POR | EIPs will contain the following elements. |
| 6 | NRC Administrative Letter 94-04 | Change of NRC Operation Center commercial telephone and facsimile numbers. |

FILING INSTRUCTIONS

DOCUMENT NUMBER EPIP-3

REMOVE REVISION 16 INSERT REVISION 17
3/30/01

Comments _____

TENNESSEE VALLEY AUTHORITY
WATTS BAR NUCLEAR PLANT
EMERGENCY PLAN IMPLEMENTING
PROCEDURES

EPIP-3

ALERT

Revision 17

Unit 0

QUALITY RELATED

PREPARED BY: Frank L. Pavlechko
(Type Name)

SPONSORING ORGANIZATION: Emergency Planning

APPROVED BY: Frank L. Pavlechko

EFFECTIVE DATE: 3/30/01

LEVEL OF USE: REFERENCE

WBN	ALERT	EPIP-3 Revision 17 Page 2 of 12
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REVISION LOG

Revision Number	Implementation Date	Description of Revision	
0	04/13/90	Superseded IP-3	
1	04/01/91	Editorial and format changes.	
2	01/22/92	Enhanced with human factor editorial changes and updated references.	
3	02/10/93	Insert Section 2.0 Responsibility. Add Site Emergency Director announcements to Section 3.0. Change title of Plant Duty Supervisor to Duty Plant Manager. Change Section 3.0 to reflect removal of red Emergency Notification System ring-down phones which are being replaced by NRC designated phones which will require dialing a number. Modify Appendix A so that when faxed or copied, last few lines will not be excluded. Removed notes which addressed steps that have already been performed. NUREG 0654, FEMA-REP-1, Rev. 1, <i>Criteria for Preparation and Evaluation of Radiological Emergency Response Plans and Preparedness in support of Nuclear Power Plants.</i>	
4	8/16/93	Editorial (non-intent) and format changes. Source notes added to the procedure.	
5	1/1/94	Added NRC Resident call as Step 16.	
6	01/11/94	Included notifying Security (CAS) on Step 9. changed wording on Step 17 to initiate WBN EPIP-13.	
7	05/27/94	Followup Notification Form 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	10/14/94	Revised phone number.	
10	04/21/95	Revised phone numbers. Editorial (non-intent) changes made.	
Revision Number	Implementation Date	Pages Affected	Description of Revision
1	7/5/96	4,5,7,8	Phone number and titles revised. Procedure replacement (TI-30) identified. All revisions were evaluated to be non-intent
2	10/10/96	3,4,8,9	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 added, a reference was added and the non-QA record instructions were revised.

WBN	ALERT	EPIP-3 Revision 17 Page 3 of 12
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Revision Number	Implementation Date	Pages Affected	Description of Revision
CN-1	3/27/97	3,5,7	TEMA added alternate phone number.
CN-2	2/2/98	3, 5, 7, 8	SSP-4.05 was replaced by SPP-3.5 in new procedure system. Editorial changes.
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 of emergency step from Appendix A to Appendix B. STD-3.2 referenced canceled.
15	06/14/00	All	Non Intent Change. Revised reference number. Added reference to the direct line to the ODS for clarification. Added the word actions after notifications in Step 19 for clarification.
16	10/31/00	All pg. 6	Non-Intent change. Revised NRC dedicated phones from FTS-2000 to TVA phone circuits per (RIS) 2000-11 "NRC Emergency Telecommunications Systems".
17	3/30/01	All Page 10	Plan effectiveness determinations revisions indicate the following revisions do not reduce the level of effectiveness of the procedure or REP: Non-Intent change. Revised initial notification form to standardize within TVAN and meet new NEI PI requirements to the NRC.

WBN	ALERT	EPIP-3 Revision 17 Page 4 of 12
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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 an ALERT.⁴
- 1.2 To provide a method for periodic reanalysis of the current situation by the SED to determine whether the ALERT should be terminated, continued or upgraded to another classification.

2.0 RESPONSIBILITY⁴

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.

3.0 INSTRUCTIONS⁴

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

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 systems fails, call the ODS, ringdown or (5-751-1700) and have him activate the EPS.

NOTE 2 IF the above methods of activating the EPS fail, the 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, Notification Information.
3. **ANNOUNCE** to the crew: "An Alert is being declared based on _____ . I will be the Site Emergency Director."

WBN	ALERT	EPIP-3 Revision 17 Page 5 of 12
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3.0 INSTRUCTIONS (continued)

4. **NOTIFY** the ODS direct by ODS Ringdown or No. 5-751-1700 or 5-751-2495 and **PROVIDE** the information from Appendix A. **If** the ODS cannot be contacted within 10 minutes, the Tennessee Emergency Management Agency is to be notified of the Radiological Emergency Plan activation by calling 9-1-800-262-3300 or 9-1-615-741-0001 or 9-1-800-262-3400.²
5. **FAX** Appendix A to the ODS.
(No. pre-programmed or 5-751-8620.)
6. **ANNOUNCE** to the plant: "ATTENTION ALL SITE PERSONNEL. ATTENTION ALL SITE PERSONNEL. An ALERT emergency has been declared based on _____ Staff the TSC and OSC." (Repeat)
7. **EVALUATE** plant conditions, and **IF** conditions warrant, **INITIATE** assembly and accountability by completing steps 8 and 9. (For additional details, go to WBN EPIP-8, "Personnel Accountability and Evacuation"). **IF** you are not going to initiate assembly and accountability, **GO TO** step 10.
8. **NOTIFY** Security (CAS) that assembly and accountability is to be conducted.

CAUTION **If there is any possibility of a radiological release, do not send personnel into areas of unknown radiological conditions without first contacting Radiological Control (RADCON).**

9. **ANNOUNCE** to the plant: "ATTENTION ALL SITE PERSONNEL. ATTENTION ALL SITE PERSONNEL. Report to your assembly areas for accountability" (Repeat) **AND ACTIVATE** assembly alarm for personnel assembly and accountability. **INITIATE** WBN EPIP-8, "Personnel Accountability and Evacuation."¹
10. **CALL** RADCON Lab and **SAY**: "We are in an Alert, implement WBN EPIP-14 and CECC EPIP-9."

3.0 INSTRUCTIONS (continued)

- 11. **IF** there are personnel injuries, **IMPLEMENT** WBN EPIP-10, "Medical Emergency Response."
- 12. **IF** there is a security threat, **IMPLEMENT** WBN EPIP-11, "Security and Access Control."
- 13. **NOTIFY** Duty Plant Manager, **and PROVIDE** Appendix A information (**SEE** duty list for telephone numbers). The Duty Plant Manager will call the Plant Manager or his alternate.
- 14. **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.
- 15. **NOTIFY** the NRC, using designated NRC phone (ENS), of plan activation.

NOTE NRC notification should be made as soon as practicable but within one hour of "ALERT" declaration. Whenever NRC requests, a qualified person must provide a continuous update to NRC Operations Center. The following commercial numbers are for the NRC Operations Center:^{3,5}

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

- 16. **NOTIFY** the NRC Resident Inspector by calling 1776 and **PROVIDING** the information on Appendix A.

3.0 INSTRUCTIONS (continued)

17. **REEVALUATE** conditions using WBN EPIP-1 as necessary.
- A. **IF** the conditions are under control, **INITIATE** actions identified in WBN EPIP-13, "Termination of the Emergency and Recovery."
- B. **IF** the conditions warrant upgrading to a higher classification, **INITIATE** the appropriate steps of WBN EPIP-4 or EPIP-5.
- C. **IF** other plant conditions warrant the need for followup information, **COMPLETE** the Followup Notification Form, Appendix B, 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
9-1-800-262-3400²
18. **FAX** Appendix B to the ODS.
(No. pre-programmed or 5-751-8620.)
19. **ENSURE** applicable notifications/actions required by SPP-3.5 and SPP-3.1 have been made.
20. **SEND** the completed WBN EPIP-3 and associated documentation to the Emergency Preparedness (EP) Manager. The EP Manager shall forward documentation to DCRM for storage as appropriate.

WBN	ALERT	EPIP-3 Revision 17 Page 8 of 12
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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-4 Site Area Emergency

WBN-EPIP-5 General 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

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

WBN	ALERT	EPIP-3 Revision 17 Page 9 of 12
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5.0 APPENDIX

Appendix A, Notification Information

Appendix B, Followup Notification Form

6.0 RECORDS

6.1 QA Records

Entire WBN EPIP-3, when the REP is activated, is a QA Record.

6.2 Non-QA Records

All EPIP-3 records generated during the course of a drill/exercise will be assembled by the EP Manager and stored appropriately.

WBN	ALERT	EPIP-3 Revision 17 Page 12 of 12
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SOURCE NOTES
Page 1 of 1

- 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 ANSI N18.7-1976
Subsection 5.3.9.3: 01POI *EIPs will contain the following elements.*
- 5 NRC Administrative Letter 94-04 *Change of NRC Operations Center commercial telephone and facsimile numbers.*

TENNESSEE VALLEY AUTHORITY
WATTS BAR NUCLEAR PLANT
EMERGENCY PLAN IMPLEMENTING
PROCEDURES

EPIP-3

ALERT

Revision 17

Unit 0

QUALITY RELATED

PREPARED BY: Frank L. Pavlechko
(Type Name)

SPONSORING ORGANIZATION: Emergency Planning

APPROVED BY: Frank L. Pavlechko

EFFECTIVE DATE: 3/30/01

LEVEL OF USE: REFERENCE

WBN	ALERT	EPIP-3 Revision 17 Page 2 of 12
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REVISION LOG

Revision Number	Implementation Date	Description of Revision	
0	04/13/90	Superseded IP-3	
1	04/01/91	Editorial and format changes.	
2	01/22/92	Enhanced with human factor editorial changes and updated references.	
3	02/10/93	Insert Section 2.0 Responsibility. Add Site Emergency Director announcements to Section 3.0. Change title of Plant Duty Supervisor to Duty Plant Manager. Change Section 3.0 to reflect removal of red Emergency Notification System ring-down phones which are being replaced by NRC designated phones which will require dialing a number. Modify Appendix A so that when faxed or copied, last few lines will not be excluded. Removed notes which addressed steps that have already been performed. NUREG 0654, FEMA-REP-1, Rev. 1, <i>Criteria for Preparation and Evaluation of Radiological Emergency Response Plans and Preparedness in support of Nuclear Power Plants</i> .	
4	8/16/93	Editorial (non-intent) and format changes. Source notes added to the procedure.	
5	1/1/94	Added NRC Resident call as Step 16.	
6	01/11/94	Included notifying Security (CAS) on Step 9. changed wording on Step 17 to initiate WBN EPIP-13.	
7	05/27/94	Followup Notification Form 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	10/14/94	Revised phone number.	
10	04/21/95	Revised phone numbers. Editorial (non-intent) changes made.	
Revision Number	Implementation Date	Pages Affected	Description of Revision
1	7/5/96	4,5,7,8	Phone number and titles revised. Procedure replacement (TI-30) identified. All revisions were evaluated to be non-intent
2	10/10/96	3,4,8,9	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 added, a reference was added and the non-QA record instructions were revised.

WBN	ALERT	EPIP-3 Revision 17 Page 3 of 12
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Revision Number	Implementation Date	Pages Affected	Description of Revision
CN-1	3/27/97	3,5,7	TEMA added alternate phone number.
CN-2	2/2/98	3, 5, 7, 8	SSP-4.05 was replaced by SPP-3.5 in new procedure system. Editorial changes.
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 of emergency step from Appendix A to Appendix B. STD-3.2 referenced canceled.
15	06/14/00	All	Non Intent Change. Revised reference number. Added reference to the direct line to the ODS for clarification. Added the word actions after notifications in Step 19 for clarification.
16	10/31/00	All pg. 6	Non-Intent change. Revised NRC dedicated phones from FTS-2000 to TVA phone circuits per (RIS) 2000-11 "NRC Emergency Telecommunications Systems".
17	3/30/01	All Page 10	Plan effectiveness determinations revisions indicate the following revisions do not reduce the level of effectiveness of the procedure or REP: Non-Intent change. Revised initial notification form to standardize within TVAN and meet new NEI PI requirements to the NRC.

WBN	ALERT	EPIP-3 Revision 17 Page 4 of 12
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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 an ALERT.⁴
- 1.2 To provide a method for periodic reanalysis of the current situation by the SED to determine whether the ALERT should be terminated, continued or upgraded to another classification.

2.0 RESPONSIBILITY⁴

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.

3.0 INSTRUCTIONS⁴

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

- 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 systems fails, call the ODS, ringdown or (5-751-1700) and have him activate the EPS.

NOTE 2 IF the above methods of activating the EPS fail, the 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, Notification Information.
- 3. **ANNOUNCE** to the crew: "An Alert is being declared based on _____ . I will be the Site Emergency Director."

WBN	ALERT	EPIP-3 Revision 17 Page 5 of 12
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3.0 INSTRUCTIONS (continued)

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

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

6. **ANNOUNCE** to the plant: "ATTENTION ALL SITE PERSONNEL. ATTENTION ALL SITE PERSONNEL. An ALERT emergency has been declared based on _____ Staff the TSC and OSC." (Repeat)

7. **EVALUATE** plant conditions, and **IF** conditions warrant, **INITIATE** assembly and accountability by completing steps 8 and 9. (For additional details, go to WBN EPIP-8, "Personnel Accountability and Evacuation"). **IF** you are not going to initiate assembly and accountability, **GO TO** step 10.

8. **NOTIFY** Security (CAS) that assembly and accountability is to be conducted.

CAUTION **If there is any possibility of a radiological release, do not send personnel into areas of unknown radiological conditions without first contacting Radiological Control (RADCON).**

9. **ANNOUNCE** to the plant: "ATTENTION ALL SITE PERSONNEL. ATTENTION ALL SITE PERSONNEL. Report to your assembly areas for accountability" (Repeat) **AND ACTIVATE** assembly alarm for personnel assembly and accountability. **INITIATE** WBN EPIP-8, "Personnel Accountability and Evacuation."¹

10. **CALL** RADCON Lab and **SAY**: "We are in an Alert, implement WBN EPIP-14 and CECC EPIP-9."

WBN	ALERT	EPIP-3 Revision 17 Page 6 of 12
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3.0 INSTRUCTIONS (continued)

- 11. **IF** there are personnel injuries, **IMPLEMENT** WBN EPIP-10, "Medical Emergency Response."
- 12. **IF** there is a security threat, **IMPLEMENT** WBN EPIP-11, "Security and Access Control."
- 13. **NOTIFY** Duty Plant Manager, and **PROVIDE** Appendix A information (**SEE** duty list for telephone numbers). The Duty Plant Manager will call the Plant Manager or his alternate.
- 14. **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.
- 15. **NOTIFY** the NRC, using designated NRC phone (ENS), of plan activation.

NOTE NRC notification should be made as soon as practicable but within one hour of "ALERT" declaration. Whenever NRC requests, a qualified person must provide a continuous update to NRC Operations Center. The following commercial numbers are for the NRC Operations Center:^{3,5}

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

- 16. **NOTIFY** the NRC Resident Inspector by calling 1776 and **PROVIDING** the information on Appendix A.

WBN	ALERT	EPIP-3 Revision 17 Page 7 of 12
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3.0 INSTRUCTIONS (continued)

- 17. **REEVALUATE** conditions using WBN EPIP-1 as necessary.
 - A. **IF** the conditions are under control, **INITIATE** actions identified in WBN EPIP-13, "Termination of the Emergency and Recovery."
 - B. **IF** the conditions warrant upgrading to a higher classification, **INITIATE** the appropriate steps of WBN EPIP-4 or EPIP-5.
 - C. **IF** other plant conditions warrant the need for followup information, **COMPLETE** the Followup Notification Form, Appendix B, 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
9-1-800-262-3400²

- 18. **FAX** Appendix B to the ODS.
(No. pre-programmed or 5-751-8620.)

- 19. **ENSURE** applicable notifications/actions required by SPP-3.5 and SPP-3.1 have been made.

- 20. **SEND** the completed WBN EPIP-3 and associated documentation to the Emergency Preparedness (EP) Manager. The EP Manager shall forward documentation to DCRM for storage as appropriate.

WBN	ALERT	EPIP-3 Revision 17 Page 8 of 12
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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-4 Site Area Emergency

WBN-EPIP-5 General 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

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

WBN	ALERT	EPIP-3 Revision 17 Page 9 of 12
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5.0 APPENDIX

Appendix A, Notification Information

Appendix B, Followup Notification Form

6.0 RECORDS

6.1 QA Records

Entire WBN EPIP-3, when the REP is activated, is a QA Record.

6.2 Non-QA Records

All EPIP-3 records generated during the course of a drill/exercise will be assembled by the EP Manager and stored appropriately.

WBN	ALERT	EPIP-3 Revision 17 Page 12 of 12
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SOURCE NOTES
Page 1 of 1

- | | | |
|---|--|---|
| 1 | NRC IE Information Notice No. 89-89 | <i>Event Notification Worksheets</i> |
| 2 | NRC IE Information Notice No. 86-97 | <i>Emergency Communications System</i> |
| 3 | NRC IE Information Notice No. 86-28 | <i>Telephone Numbers to the NRC Operations Center and Regional Offices</i> |
| 4 | ANSI N18.7-1976
Subsection 5.3.9.3: 01POI | <i>EIPs will contain the following elements.</i> |
| 5 | NRC Administrative Letter 94-04 | Change of NRC Operations Center commercial telephone and facsimile numbers. |

FILING INSTRUCTIONS

DOCUMENT NUMBER

EPD-4

REMOVE-REVISION

17

INSERT REVISION

18

3/30/01

Comments

Three horizontal lines for handwritten comments.

TENNESSEE VALLEY AUTHORITY

WATTS BAR NUCLEAR PLANT

**EMERGENCY PLAN IMPLEMENTING
PROCEDURES**

EPIP-4

SITE AREA EMERGENCY

Revision 18

Unit 0

QUALITY RELATED

PREPARED BY: Frank L. Pavlechko
(Type Name)

SPONSORING ORGANIZATION: Emergency Planning

APPROVED BY: Frank L. Pavlechko

EFFECTIVE DATE: 3/30/01

LEVEL OF USE: REFERENCE

WBN	SITE AREA EMERGENCY	EPIP-4 Revision 18 Page 2 of 12
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REVISION DESCRIPTION

Revision Number	Implementation Date	Description of Revision	
0	04/13/90	Superseded IP-4.	
1	04/01/91	Editorial and format changes.	
2	01/22/92	Improved human factoring (pages 2-4) and updated references. Add a step for SM Clerk to provide EPS activation confirmation to SM. Specify EAL unique identifier in event description (Attachment 1).	
3	02/10/93	Add Section 2.0 Responsibility. Add Site Emergency Director announcements to Section 3.0. Change title of Plant Duty Supervisor to Duty Plant Manager. Change Section 3.0 to reflect removal of red Emergency Notification System ring-down phones which are being replaced by NRC designated phones which will require dialing a number. Modify Appendix A so that when faxed or copied, last few lines will not be excluded. Removed notes which addressed steps that have already been performed. NUREG 0654, FEMA-REP-1, Rev.1, <i>Criteria for Preparation and Evaluation of Radiological Emergency Response Plans and Preparedness in support of Nuclear Power Plants</i> .	
4	8/16/93	Editorial (non-intent) and format changes. Source notes added to the procedure.	
5	1/1/94	Added NRC Resident Call as Step 14.	
6	4/11/94	Included notifying Security (CAS) on Step 7 and changed Step 15 to initiate WBN EPIP-13. Added county contingency notifications to Step 4.	
7	5/27/94	Followup Information Form 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	10/14/94	Revised phone number to McMinn County.	
10	4/21/95	Revised a phone number. Editorial (non-intent) change made.	
Revision Number	Implementation Date	Pages Affected	Description of Revision
CN-1	9/28/95	5	Revised phone numbers. Editorial (non-intent) changes made.
11	7/5/96	4,5,7,8	Phone number and titles revised. Procedure replacement (TI-30) identified. All revisions were evaluated to be non-intent.

WBN	SITE AREA EMERGENCY	EPIP-4 Revision 18 Page 3 of 12
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Revision Number	Implementation Date	Pages Affected	Description of Revision
12	10/10/96	3,4,5,8,9, 10	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, the non-QA record instructions were revised, and wind speed and direction were added to the initial notification form per TEMA request.
CN-1	3/27/97	3,5,6,7	TEMA additional back-up number added, changed county primary and back-up numbers
CN-2	7/31/97	3,5	Phone number change.
CN-3	2/2/98	3,5,7,8	SSP-4.05 was replaced by SPP-3.5. Editorial change.
13	6/30/98	All	Non-intent changes. Incorporated Changes Notices 1, 2 and 3. Changed reference SSP 3.4 to SPP 3.1.
14	10/21/99	All	Non-intent change. Moved termination of emergency step from Appendix A to Appendix B. STD-3.2 reference canceled.
15	02/08/00	ALL	Non- Intent change. Phone numbers revised.
16	06/14/00	All	Non Intent change. Reference number revised. Phone number revised. Added the word actions after notifications in Step 17 for clarification. Added reference to the ODS, direct line for clarification. This revision resolves problem identified in WBN PER, 006394.
17	10/31/00	All pg. 6	Non-Intent change. Revised NRC dedicated phones from FTS-2000 to TVA phone circuits per (RIS) 2000-11 "NRC Emergency Telecommunications Systems".
18	3/30/01	All Page 5,10	Plan effectiveness determinations revisions indicate the following revisions do not reduce the level of effectiveness of the procedure or REP: Non-Intent change. Revised phone numbers. Revised initial notification form to standardize within TVAN and meet new NEI PI requirements to the NRC.

WBN	SITE AREA EMERGENCY	EPIP-4 Revision 18 Page 4 of 12
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1.0 PURPOSE⁴

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

2.0 RESPONSIBILITY⁴

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.

3.0 INSTRUCTIONS

- 3.1 Upon determining that existing conditions are classified as a SITE AREA EMERGENCY according to WBN EPIP-1 (independent evaluations by crew members may be beneficial), the SED, or designee, will:⁴
 1. **DIRECT** the 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 (5-751-1700) 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.

3.0 INSTRUCTIONS (continued)

- 2. **COMPLETE** Appendix A Notification Information.
- 3. **ANNOUNCE** to the crew: "A Site Area Emergency is being declared based on _____. I will be the Site Emergency Director, all support and job assignments must be authorized through me."
- 4. **NOTIFY** the ODS direct by ODS Ringdown or No. 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	9-1-423-334-3211	____(TIME)
(Alternate)	9-1-423-334-5268	____(TIME)
McMinn County	9-1-423-744-2724	____(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)

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

CAUTION If there is any possibility of a radiological release, do not send personnel into areas of unknown radiological conditions without first contacting Radiological Control (RADCON).

- 6. **NOTIFY** Security (CAS) that assembly and accountability is to be conducted.

WBN	SITE AREA EMERGENCY	EPIP-4 Revision 18 Page 6 of 12
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3.0 INSTRUCTIONS (continued)

7. **ANNOUNCE** to the plant: "ATTENTION ALL SITE PERSONNEL. ATTENTION ALL SITE PERSONNEL. A SITE AREA EMERGENCY has been declared based on _____. All personnel report to your assembly areas for accountability. Staff the TSC and OSC." (Repeat)
SOUND assembly alarm **AND**
INITIATE WBN EPIP-8, "Personnel Accountability and Evacuation."
8. **CALL** RADCON Lab and **SAY**: "We are in a Site Area Emergency, implement WBN EPIP-14 and CECC EPIP-9."
9. **IF** there are personnel injuries, **IMPLEMENT** WBN EPIP-10, "Medical Emergency Response".
10. **IF** there is a security threat, **IMPLEMENT** WBN EPIP-11, "Security and Access Control".
11. **NOTIFY** Duty Plant Manager, and **PROVIDE** Appendix A information (SEE duty list for telephone numbers). The Duty Plant Manager will call the Plant Manager or 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, using designated NRC phone (ENS), of plan activation.

NOTE

NRC notification should be made as soon as practicable, within one hour of "SITE AREA EMERGENCY" declaration. Whenever NRC requests, a qualified person must provide a continuous update to NRC Operations Center. The following commercial numbers are for the NRC Operations Center:^{3,5}

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

WBN	SITE AREA EMERGENCY	EPIP-4 Revision 18 Page 7 of 12
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3.0 INSTRUCTIONS (continued)

14. **NOTIFY** the NRC Resident Inspector by calling 1776 and **PROVIDING** the information on Appendix A.
15. **REEVALUATE** conditions using WBN EPIP-1 as necessary.
- A. **IF** the conditions are under control, **INITIATE** actions identified in WBN EPIP-13, "Termination of the Emergency and Recovery."
- B. **IF** conditions warrant upgrading to a higher classification, **INITIATE** the appropriate steps of WBN EPIP-5.
- C. **IF** other plant conditions warrant the need for followup information, **COMPLETE** the Followup Notification Form, Appendix B, 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 9-1-800-262-3400²
16. **FAX** Appendix B to the ODS. (No. pre-programmed or 5-751-8620.)
17. **ENSURE** applicable notifications/actions required by SPP-3.5 and SPP-3.1 have been made.
18. **SEND** the completed WBN EPIP-4 and associated documentation to the Emergency Preparedness (EP) Manager. The EP Manager shall forward documentation to DCRM for storage as appropriate.

WBN	SITE AREA EMERGENCY	EPIP-4 Revision 18 Page 8 of 12
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4.0 REFERENCES

4.1 Interfacing Documents

SPP-3.1 Corrective Action Program

SPP-3.5 Regulatory Reporting Requirements

WBN-EPIP-1 Emergency Plan Classification Flowchart

WBN-EPIP-2 Notification of Unusual Event

WBN-EPIP-3 Alert

WBN-EPIP-5 General 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 18.7-1976

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

WBN	SITE AREA EMERGENCY	EPIP-4 Revision 18 Page 9 of 12
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5.0 APPENDIX

Appendix A, Notification Information

Appendix B, Followup Notification Form

6.0 RECORDS

6.1 QA Records

Entire WBN EPIP-4, when the REP is activated, is a QA Record.

6.2 Non-QA Records

All EPIP-4 records generated during the course of a drill/exercise will be assembled by the EP Manager and stored appropriately.

WBN	SITE AREA EMERGENCY	EPIP-4 Revision 18 Page 12 of 12
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SOURCE NOTES
Page 1 of 1

- 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 ANSI 18.7-1976,
Subsection, 5.3.9.3: 01POI EIPs will contain the following elements.
- 5 NRC Administrative Letter 94-04 Change of NRC Operations Center commercial telephone and facsimile numbers.

FILING INSTRUCTIONS

DOCUMENT NUMBER

ETP-5

REMOVE REVISION

18

INSERT REVISION

19

3/30/01

Comments

TENNESSEE VALLEY AUTHORITY

WATTS BAR NUCLEAR PLANT

**EMERGENCY PLAN IMPLEMENTING
PROCEDURES**

EPIP-5

GENERAL EMERGENCY

Revision 19

Unit 0

QUALITY RELATED

PREPARED BY: Frank L. Pavlechko
(Type Name)

SPONSORING ORGANIZATION: Emergency Planning

APPROVED BY: Frank L. Pavlechko

EFFECTIVE DATE: 3/30/01

LEVEL OF USE: REFERENCE

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.	
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

WBN	GENERAL EMERGENCY	EPIP-5 Revision 19 Page 3 of 12
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Revision Number	Implementation Date	Pages Affected	Description of Revision
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.
18	10/31/00	All pg. 6	Non-Intent change. Revised NRC dedicated phones from FTS-2000 to TVA phone circuits per (RIS) 2000-11 "NRC Emergency Telecommunications Systems".
19	3/30/01	All	Plan effectiveness determinations revisions indicate the following revisions do not reduce the level of effectiveness of the procedure or REP: Intent change. Re-paginated. Revised phone numbers. Revised initial notification form to standardize within TVAN and meet new NEI PI requirements to the NRC. Revised PAR chart to meet requirements of RTM 96 Vol. 1 Rev. 4. Revised follow-up form to reflect changes in PAR chart.

WBN	GENERAL EMERGENCY	EPIP-5 Revision 19 Page 4 of 12
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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."

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	9-1-423-334-3211	_____(TIME)
(Alternate)	9-1-423-334-5268	_____(TIME)
McMinn County EMA	9-1-423-744-2724	_____(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".
- 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.

WBN	GENERAL EMERGENCY	EPIP-5 Revision 19 Page 6 of 12
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3.0 INSTRUCTIONS (continued)

- 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 are for the NRC Operations Center:^{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."
- 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.)

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.

WBN	GENERAL EMERGENCY	EPIP-5 Revision 19 Page 7 of 12
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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

Response Technical Manual (RTM) 96 Vol. 1, Rev. 4

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

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

WBN	GENERAL EMERGENCY	EPIP-5 Revision 19 Page 8 of 12
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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 ^{4,5,6,7,8,9,12}

Note 1: If conditions are unknown utilizing the flowchart, then answer NO.

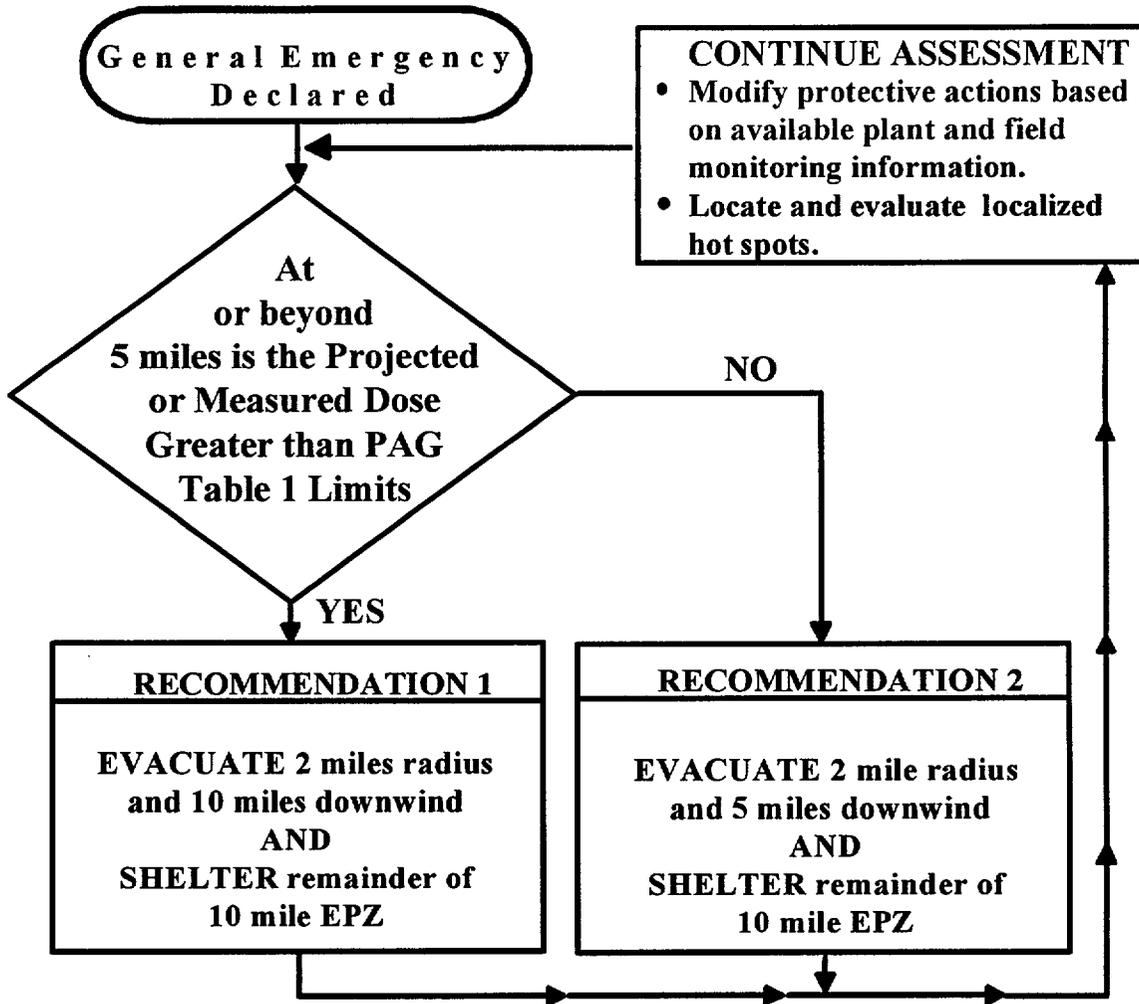


TABLE 1	
Protective Action Guides	
TYPE	LIMIT
Measured	3.9E-6 microCi/cc of Iodine 131 or 1 REM/hr External Dose
Projected	1 REM TEDE or 5 REM Thyroid CDE

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. |
| 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 | EIPs will contain the following elements. Subsection 5.3.9.3: 01POI |
| 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 fax numbers. |

FILING INSTRUCTIONS

DOCUMENT NUMBER EPIC 6

REMOVE REVISION 17 INSERT REVISION 18
3/30/01

Comments _____

TENNESSEE VALLEY AUTHORITY

WATTS BAR NUCLEAR PLANT

**EMERGENCY PLAN IMPLEMENTING
PROCEDURES**

EPIP-6

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

Revision 18

Unit 0

QUALITY RELATED

PREPARED BY: Frank L. Pavlechko
(Type Name)

SPONSORING ORGANIZATION: Emergency Planning

APPROVED BY: Frank L. Pavlechko

EFFECTIVE DATE: 3/30/01

LEVEL OF USE: REFERENCE

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 WBPER960582, 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.

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Revision Number	Implementation Date	Pages Affected	Description of Revision
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.
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.
17	01/24/01	All (Pg.7,29,51,54,56)	Plan effectiveness determinations revisions indicate the following revisions do not reduce the level of effectiveness of the procedure or REP: Added additional positions to TSC minimum staffing to support REP actions and standardize staffing across TVAN (App. C). Eliminated TAM/TAT responsibility associated with procedural development and 50.54.X. This information is located in other TVAN Standards and Departmental Procedures. This revision standardizes EP response within TVAN (App. E & Q). Clarified RADCON Managers authority to issue KI (App. C). Deleted RE-90-106 (iodine channel) and RE 90-290-293 per direction of DCN 50482-A and SA WBP LEE-00-052 (App. R). Non-intent change.
18	3/30/01	All Page 11, 60	Plan effectiveness determinations revisions indicate the following revisions do not reduce the level of effectiveness of the procedure or REP: Intent change. Revised PAR chart to meet requirements of RTM 96 Vol. 1 Rev. 4.

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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.

WBN	ACTIVATION AND OPERATION OF THE TECHNICAL SUPPORT CENTER	EPIP6 Revision 18 Page 5 of 72
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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 List⁶

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
- Operations Manager or Operations Communicator
- Technical Assessment Manager (TAM) or Technical Assessment Team Leader or TAT Team (Thermal Hydraulics, Mechanical, and Electrical) Members
- 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.

WBN	ACTIVATION AND OPERATION OF THE TECHNICAL SUPPORT CENTER	EPIP6 Revision 18 Page 11 of 72
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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

Response Technical Manual (RTM) 96 Vol. 1 Rev. 4.

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

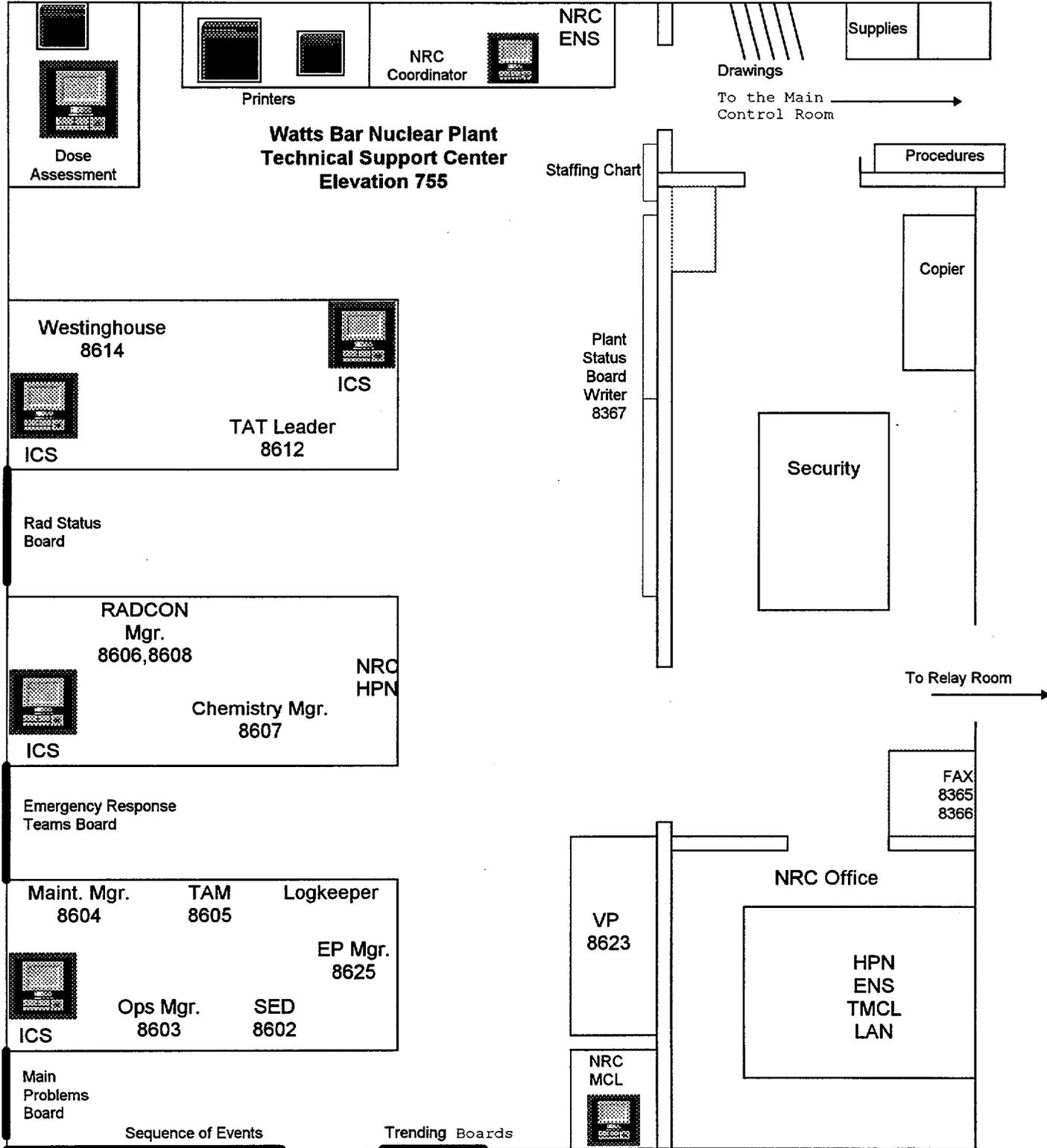
5.0 APPENDICES (continued)

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

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

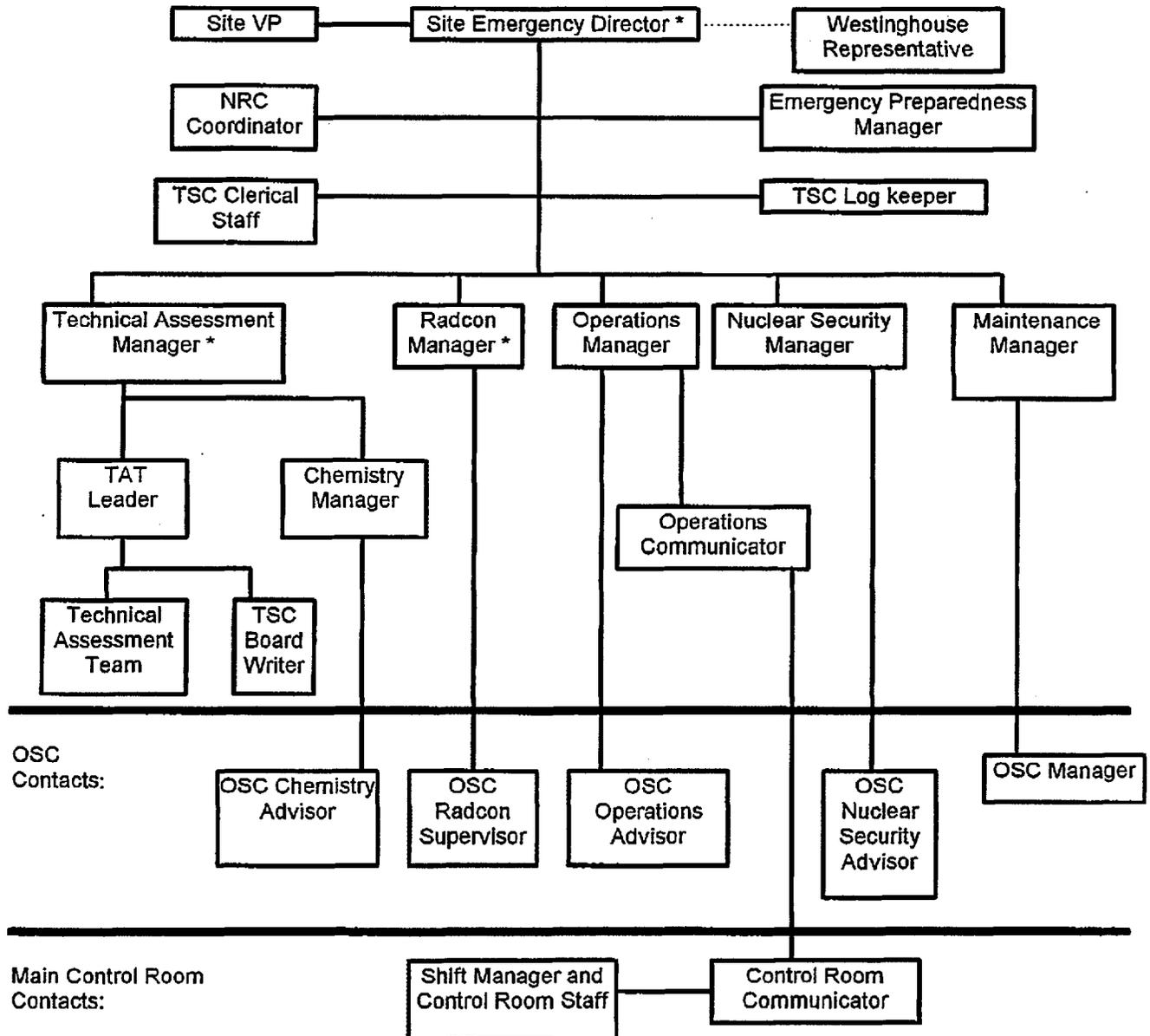
Appendix A, TSC Facility Layout Diagram⁴
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APPENDIX A
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Technical Support Center (TSC)

WBN EMERGENCY RESPONSE ORGANIZATION



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

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APPENDIX B
Page 1 of 2

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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APPENDIX B

Page 2 of 2

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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APPENDIX C
Page 1 of 7

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
 - Operations Manager or Operations Communicator
 - TAM or TAT Leader or TAT Team (Thermal Hydraulics, Mechanical, and Electrical) members
 - RADCON Manager
- ___/___ **CONFIRM** TSC staffed and Operational.
- ___/___ **ASSUME** role of SED from SM (confirmatory phone call to the SM).

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.

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/direction. (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.

APPENDIX C
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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.)

APPENDIX C
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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

SED TURNOVER DATASHEET (continued)

11. Status of personnel in the field:

<u>NAME</u>	<u>LOCATION</u>
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____

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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APPENDIX D

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OPERATIONS 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.
- ___/___ **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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APPENDIX D
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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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APPENDIX E
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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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APPENDIX E

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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.
- 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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APPENDIX F
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MAINTENANCE 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.
- ___/___ **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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APPENDIX F
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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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APPENDIX G
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OPERATIONS COMMUNICATOR

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.
- ___/___ **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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APPENDIX H
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NUCLEAR SECURITY 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.
- ___/___ **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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APPENDIX I
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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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APPENDIX J

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CHEMISTRY 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 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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APPENDIX K
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NRC COORDINATOR

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 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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APPENDIX L
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CONTROL ROOM COMMUNICATOR

Initial Activation of The Technical Support Center Checklist

Date: _____

Inits/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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APPENDIX M
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EP 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.
- ___/___ **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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APPENDIX M
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EP MANAGER

Operational Responsibilities

- Advises the SED regarding the REP, use of EIPs, emergency equipment use and availability, and coordination with the CECC.
- Confirm completion of action steps in EIPs 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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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
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TSC LOGKEEPER

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.
- ___/___ **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
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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

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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
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TECHNICAL ASSESSMENT TEAM

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.
- ___/___ **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
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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
Page 3 of 3

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.

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: _____

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) (A) PARTICULATE _____ CPM
 ISOLATED TO LOWER (B) TOTAL GAS _____ CPM
 TO UPPER

2. UPPER CNTMT (1-RE-90-112) (A) PARTICULATE _____ CPM
 ISOLATED TO UPPER (B) TOTAL GAS _____ CPM
 TO LOWER (C) IODINE _____ CPM

3. SHIELD BLDG VENT (1&2-RE-90-400) TOTAL GAS U1 _____ U2 _____ μ Ci/cc
FLOW _____ CFM

4. AUXILIARY BLDG VENT (0-RE-90-101) (A) PARTICULATE _____ CPM
 ISOLATED (B) TOTAL GAS _____ CPM
FLOW _____ CFM (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.

APPENDIX R

Page 4 of 6

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: _____

APPENDIX R
Page 6 of 6

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: _____

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

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

Page 1 of 1

*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 1

Protective Action Recommendation ^{5,12}

Note 1: If conditions are unknown utilizing the flowchart, then answer NO.

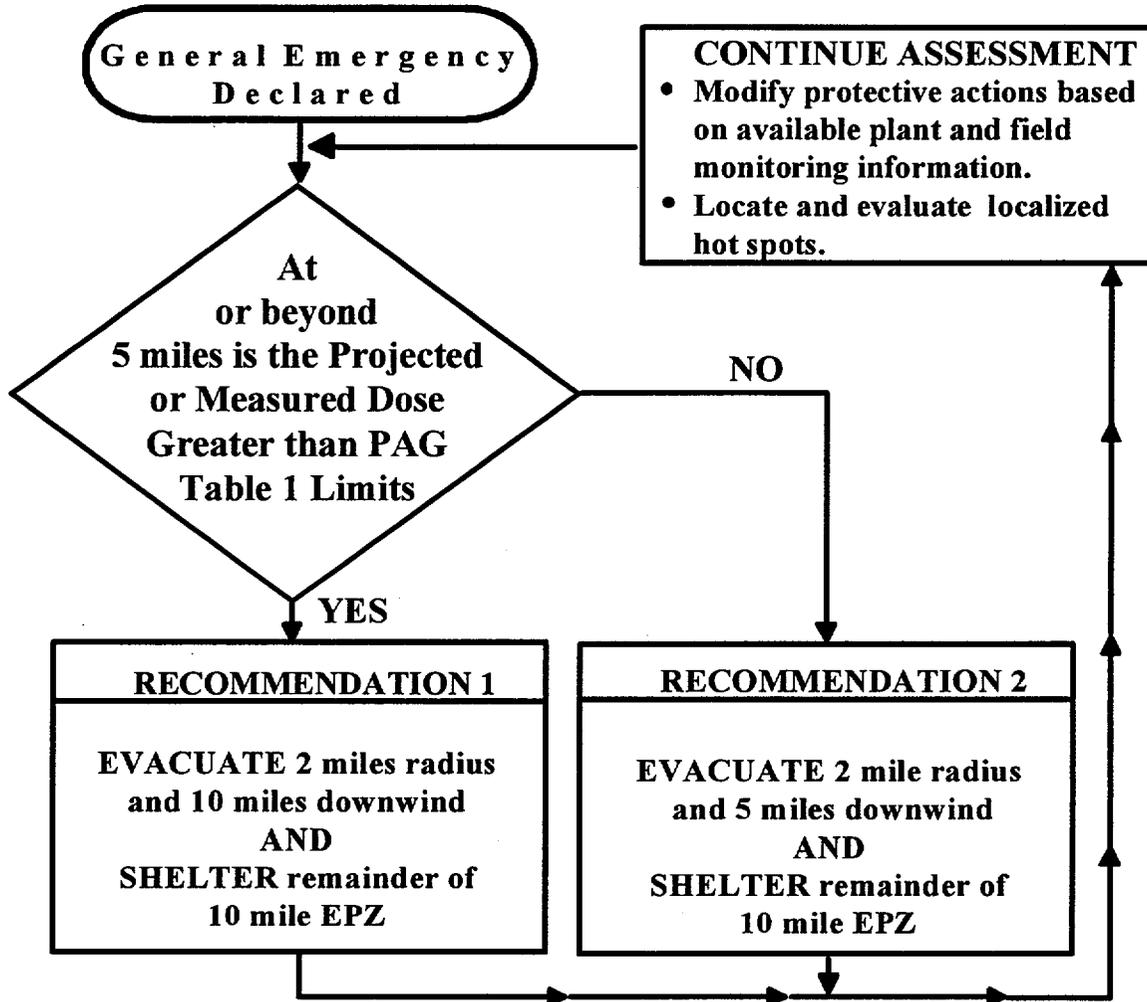


TABLE 1 Protective Action Guides	
TYPE	LIMIT
Measured	3.9E-6 microCi/cc of Iodine 131 or 1 REM/hr External Dose
Projected	1 REM TEDE or 5 REM Thyroid CDE

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APPENDIX V
Page 1 of 1

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
Page 1 of 3

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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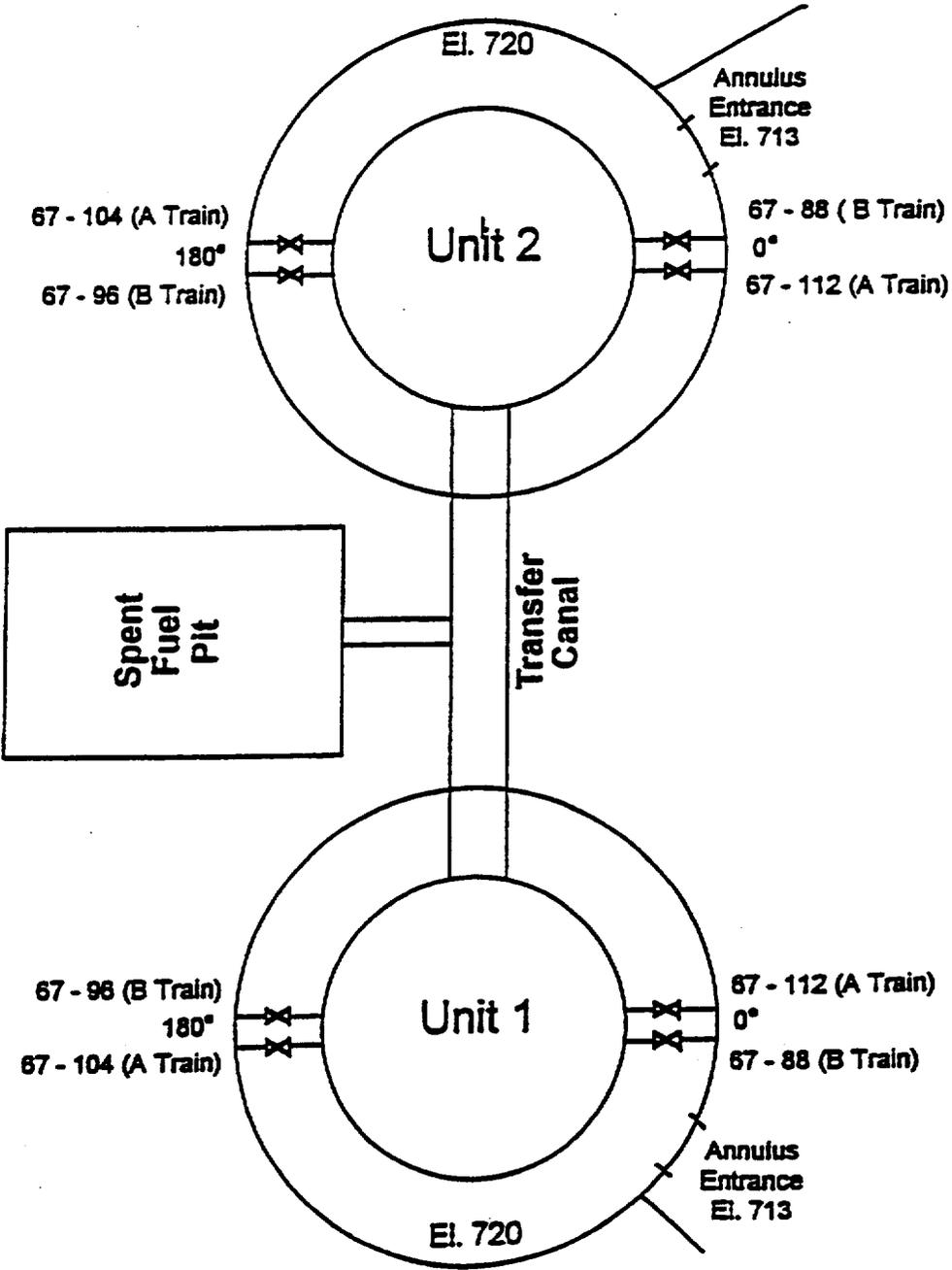
ERCW Concerns for Technical Assessment Team (continued)

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.

APPENDIX X

Page 3 of 3

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
Page 2 of 2

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.

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SOURCE NOTES

Page 1 of 2

- | | | |
|---|--|--|
| 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. |

SOURCE NOTES

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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. |

FILING INSTRUCTIONS

DOCUMENT NUMBER

EPIP-1

REMOVE REVISION

12

INSERT REVISION

13

3/30/01

Comments

TENNESSEE VALLEY AUTHORITY

WATTS BAR NUCLEAR PLANT

**EMERGENCY PLAN IMPLEMENTING
PROCEDURES**

EPIP-7

**ACTIVATION AND OPERATION OF THE
OPERATIONS SUPPORT CENTER (OSC)**

Revision 13
Unit 0

QUALITY RELATED

PREPARED BY: Frank L. Pavlechko
(Type Name)

SPONSORING ORGANIZATION: Emergency Planning

APPROVED BY: Frank L. Pavlechko

EFFECTIVE DATE: 3/30/01

LEVEL OF USE: REFERENCE

WBN	ACTIVATION AND OPERATION OF THE OPERATIONS SUPPORT CENTER (OSC)	EPIP-7 Revision 13 Page 2 of 57
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REVISION LOG
(Page 1 of 3)

Revision Number	Effective Date	Pages Affected	Description of Revision
0	N/A	New WBN EPIP	Supersedes IP-7.
1	02/10/93	4 4 5 6 8 11 18,19 17,22,28,31,3 3,35,37,39,40 47	<p>Added OSC Teams Coordinator, OSC Power Stores Coordinator, DCRM Representative, TSC Coordinator to response organization. Removed note about RADCON staffing issues.</p> <p>Added 3.5 section on call out list.</p> <p>Added OSC Teams Coordinator Personnel Pool Log.</p> <p>Added NUREG 0654 and NUREG 0696 and 10 CFR 50, App. E references.</p> <p>Added page 2 to Appendix A, Alt. OSC Layout. Changed all Attachments to Appendices.</p> <p>Added OSC Mgr Briefing items to Appendix D.</p> <p>Added deactivation responsibilities to checklists.</p> <p>Added Appendix Q, OSC Personnel Coordinator Checklists.</p> <p>Added OSC Power Stores Coordinator Checklists.</p> <p>Added Work Control Boardwriter Checklists.</p> <p>Added RADCON Boardwriters Checklists.</p> <p>Added DCRM Coordinator checklists.</p>
2	08/16/93	All	Editorial (non-intent) and format changes. Repetitive non-used information removed. New OSC Team Briefing/Debriefing Form added. Source notes added to the procedure. Revised RADCON Briefers' responsibilities. Non-pager contacts for Asst. OSC Manager reduced. TSC Coordinator position discontinued due to lack of need for the position. OSC Logkeeper Appendix was repeated twice, one of the Appendix was removed. Contact information for Maintenance personnel added to the OSC Teams Coordinator position. Nuclear Stores duties enhanced.
3	10/04/93	6 21,22,23	<p>OSC equip., supplies, and procedures will be replenished following a drill, exercise or emergency.</p> <p>Change Briefing Form to dispatch teams out of OSC.</p>
4	09/02/94	All	Added Fitness For Duty note in Section 3.2.3, A. Added WBN EPIPs 12, 15, and 16 to the references section. Changed briefing form, Appendix F, to move OSC Manager's signature to front of the form. Added responsibilities to Appendices G, K, N, and O. Other editorial changes were made. Added optional OSC RADCON Briefer's Emergency Response Teams Staging Area orientation to Appendix H. Added responsibility of faxing Emergency Response Teams board status to Main Control Room to Appendix L.
CN-1	1/17/95	7,55	Source note referencing the capabilities of the OSC was added to the text.

REVISION LOG
(Page 2 of 3)

Revision Number	Effective Date	Pages Affected	Description of Revision
5	4/21/96	3,11,19,20,22,24,46,52,54	Minor editorial changes concerning eating and drinking in the OSC, notification of non-pager wearing responders, changes to OSC roster and additions to OSC Teams Coordinator's responsibilities. Phone number revisions.
6	10/10/96	3, 4, 5, 6, 7, 9, 13, 14, 19, 24, 26, 27, 31, 33, 35, 37, 38, 39, 40, 41, 42, 44, 45, 48, 49, 51, 53, 55	The following non-intent and editorial revisions were made: Shift Clerk revised to Shift Personnel to reflect additional trained responders on shift, enhanced OSC activation instructions, added pager number to ERO call list, revised organizational title as needed, when to card in on the assembly card readers revised, and staffing of the OSC, redundant material/information removed, typographical errors corrected, fitness for duty instructions enhanced, activation time for minimum staffing of the OSC included, SM replaced SOS, non-QA records instructions enhanced, additional duty added to App. G, App. V added to the procedure, mainframe computer reference replaced with Curator, and editorial and grammatical enhancements made to assist human factoring.
CN-1	2/15/97	9, 38, 53	Operational responsibility added to Appendix L and T. Typographic error corrected on appendix list.
CN-2	2/10/98	3,5, 8,15, 22, 34	Satellite phone, NP-STD-1.6 changed to SPP-1.2 for FFD, key check-off for briefers , App. J removed "initiate" fire response.
7	6/30/98	All	Non-intent Changes. Incorporated Change Notices 1 & 2. SM FAX # changed. Alternate OSC number revised.
8	2/28/99	All	Non-intent change. Revised ERFDS to ICS and referenced OSC alternate locations in Appendix C.
9	10/21/99	All	Non-intent change. Developed new landscape tables for App L and P to replace scanned tables. Added step to OSC clerk's responsibilities (App L) to ensure all sign roster.
10	02/07/00	All	Non-intent changes. Revised APP. F OSC Team Briefing/Debriefing Form per corrective actions for PER-00-000177-000. Added steps to Appendix I, Initial Activation Checklist and Operational Responsibilities. Corrected typo on Appendix L. Added step to Appendix M, Operational Responsibilities. Revised Appendix P pg. 3 of 3 to enhance OSC Teams Dispatch.
11	06/14/00	All	Non-intent changes. Removed REX references and replaced it with HIS-20. Added wording to OSC Mgr., Assistant OSC Mgr., OPS Advisor and Nuclear Stores Coordinator responsibilities/titles to reflect wording in the REP. Corrected one typo and text alignments. Identified removal of QA records from MDB to EQB to resolve problems identified in PER980610. This revision also corrects problems from WBN PER006394.

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REVISION LOG
(Page 3 of 3)

Revision Number	Effective Date	Pages Affected	Description of Revision
12	01/24/01	All Pg. 11,13,42	<p>Plan effectiveness determination reviews indicate the following revisions do not reduce the level of effectiveness of the procedure or REP:</p> <p>Revised locations of alternate OSC to Team Room (App. A). Added additional position to OSC minimum staffing to support REP activities and standardize staffing across TVAN (App. C). Added ARW column to OSC team coordinator's checklist (App. P). Non-intent change.</p>
13	3/30/01	All Pg. 9, 13,14,48	<p>Plan effectiveness determination reviews indicate the following revisions do not reduce the level of effectiveness of the procedure or REP:</p> <p>Intent change. Revised minimum staffing requirements in the OSC to include the chemistry advisor. Non-intent change. Corrected number sequence on page 9. Non-intent change. Added organization column to OSC team coordinator's checklist (App. P) -</p>

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1.0 PURPOSE^{1,2,3}

This procedure provides instructions for the Operations Support Center (OSC) activation, organization, operation, termination, and deactivation.

2.0 RESPONSIBILITY^{1,2}

The OSC Manager and OSC staff are responsible for activation, operation and deactivation of the OSC.

3.0 INSTRUCTION^{1,2}

3.1 General

At ALERT, SITE AREA EMERGENCY, or GENERAL EMERGENCY classifications, the OSC Manager **will report** directly to the OSC and **shall** be responsible for implementing this Procedure.

3.2 Initiating Conditions

- 3.2.1 The OSC is to be activated and operated when an emergency is declared and classified as an ALERT, a SITE AREA EMERGENCY, or a GENERAL EMERGENCY.
- 3.2.2 This Procedure may be activated at any other time as deemed necessary by the Site Emergency Director.
- 3.2.3 The Shift Manager (SM) will activate the OSC by announcing the emergency condition by one or more of the following methods.
 - A. Plant Public Address (PA) announcement.

NOTE: The Radiological Emergency Response Organization Call List is handled in accordance with the TVA Fitness For Duty Program.

- B. Shift personnel will normally activate the Emergency Paging System (EPS) or contact the persons designated on the Radiological Emergency Response Organization Call List.

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3.0 INSTRUCTION (CONTINUED)

- C. OSC personnel can also contact additional responders/replacements by phone utilizing the Emergency Response Organization Call List available in the OSC and Appendix V.
- D. Target activation time for minimum OSC staffing is approximately 60 minutes.
- E. IF the normal phone system and radio systems are not functioning, the satellite phone system will be used as described in SOI-100.01.

3.3 Activation of the OSC

- 3.3.1 The OSC Manager **shall** assume responsibility for implementing this Procedure and directing OSC personnel and activities.
- 3.3.2 Personnel with OSC Emergency Preparedness assignments **REPORT** to their response positions, (**SEE** Appendix A, OSC Layout, and Appendix B, Alternate OSC Layout). Activation of the facility is required at the **ALERT OR** higher emergency classification or at the discretion of the Site Emergency Director.
- 3.3.3 Other plant staff the OSC Manager determines to be necessary to support OSC functions will be called:
 - (1) OSC Clerk
 - (2) Maintenance/Craft personnel as needed
 - (3) Operations personnel as needed
 - (4) RADCON personnel as needed
 - (5) Transmission/Power Supply Group personnel as needed
 - (6) Others, as needed.

3.4 Required OSC Actions

- 3.4.1 OSC organization (Appendix B), staff actions and responsibilities are provided in Appendices C-T.
- 3.4.2 OSC responders will complete all of the applicable steps contained in the appropriate Appendices.

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3.0 INSTRUCTION (CONTINUED)

3.4.3 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 OSC Manager. Nonconformance with plant procedures should be documented and action/steps taken. Also, deviations may warrant initiation of a Problem Evaluation Report (PER) or other Corrective Action Plan (CAP).

3.5 Emergency Response Organization Call List

The WBN Emergency Preparedness Manager shall maintain the Emergency Response organization call list listing key OSC personnel by Emergency Response Organization Title, name, home and work telephone numbers and pager numbers. The call list will be updated at least quarterly with input by the appropriate section/group supervisors. The list will be available to shift personnel to use in case of the failure of the Emergency Paging System.

3.6 Long-Term Operation

Additional personnel will be called in at the request of the OSC Manager to provide coverage or to ensure 12-hour or shorter shifts in the OSC. The OSC Manager will coordinate these call-ins with Nuclear Security to facilitate site access.

3.7 Termination and Deactivation

- 3.7.1 Deactivation will be implemented using WBN EPIP-13, "Termination of the Emergency and Recovery," when plant conditions are such that: (1) the emergency has been terminated; (2) the OSC has been deactivated; and (3) OSC personnel have been relieved of emergency response duties.
- 3.7.2 All records generated during the operation of the OSC will be reviewed by the OSC Manager and forwarded to the Emergency Preparedness Manager.
- 3.7.3 All equipment and usable supplies will be returned to their storage locations.
- 3.7.4 All equipment, supplies and procedures will be replenished in the OSC following a drill, exercise or emergency by applicable groups as assigned in WBN EPIP-12, "Emergency Equipment and Supplies."

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3.0 INSTRUCTION (CONTINUED)

3.8 Records

3.8.1 QA Records

NONE

3.8.2 Non-QA Records

- The appendices and checklist in this procedure are necessary to demonstrate key actions during an emergency or NRC evaluated exercise(s) and are considered Non-Quality Assurance (QA) records.
- All original records generated during the course of an emergency drill/exercise will be assembled by the Emergency Preparedness Manager and stored appropriately.

4.0 REFERENCES

- 4.1 *TVA Nuclear Power Radiological Emergency Plan (NP REP)*
- 4.2 WBN-EPIP-6 *Activation and Operation of the Technical Support Center*
- 4.3 WBN-EPIP-8 *Personnel Accountability and Evacuation*
- 4.4 WBN-EPIP-10 *Medical Emergency Response*
- 4.5 WBN-EPIP-12 *Emergency Equipment and Supplies*
- 4.6 WBN-EPIP-13 *Termination of the Emergency and Recovery*
- 4.7 WBN-EPIP-14 *Radiological Control Response*
- 4.8 WBN-EPIP-15 *Emergency Exposure Guidelines*
- 4.9 WBN-EPIP-16 *Initial Dose Assessment for Radiological Emergencies*

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4.0 REFERENCES

- 4.10 *Tennessee Valley Authority Nuclear Power Radiological Emergency Plan (REP)*
- 4.11 SPP-1.2, *Fitness For Duty*
- 4.12 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*
- 4.13 NUREG 0696, *Functional Criteria for Emergency Response Facilities, Final Report*
- 4.14 Title 10 Code of Federal Regulations, Part 50, Appendix E
- 4.15 ANSI Standard N 18.7-1976
- 4.16 SOI-100.01 Communications Systems

5.0 APPENDICES

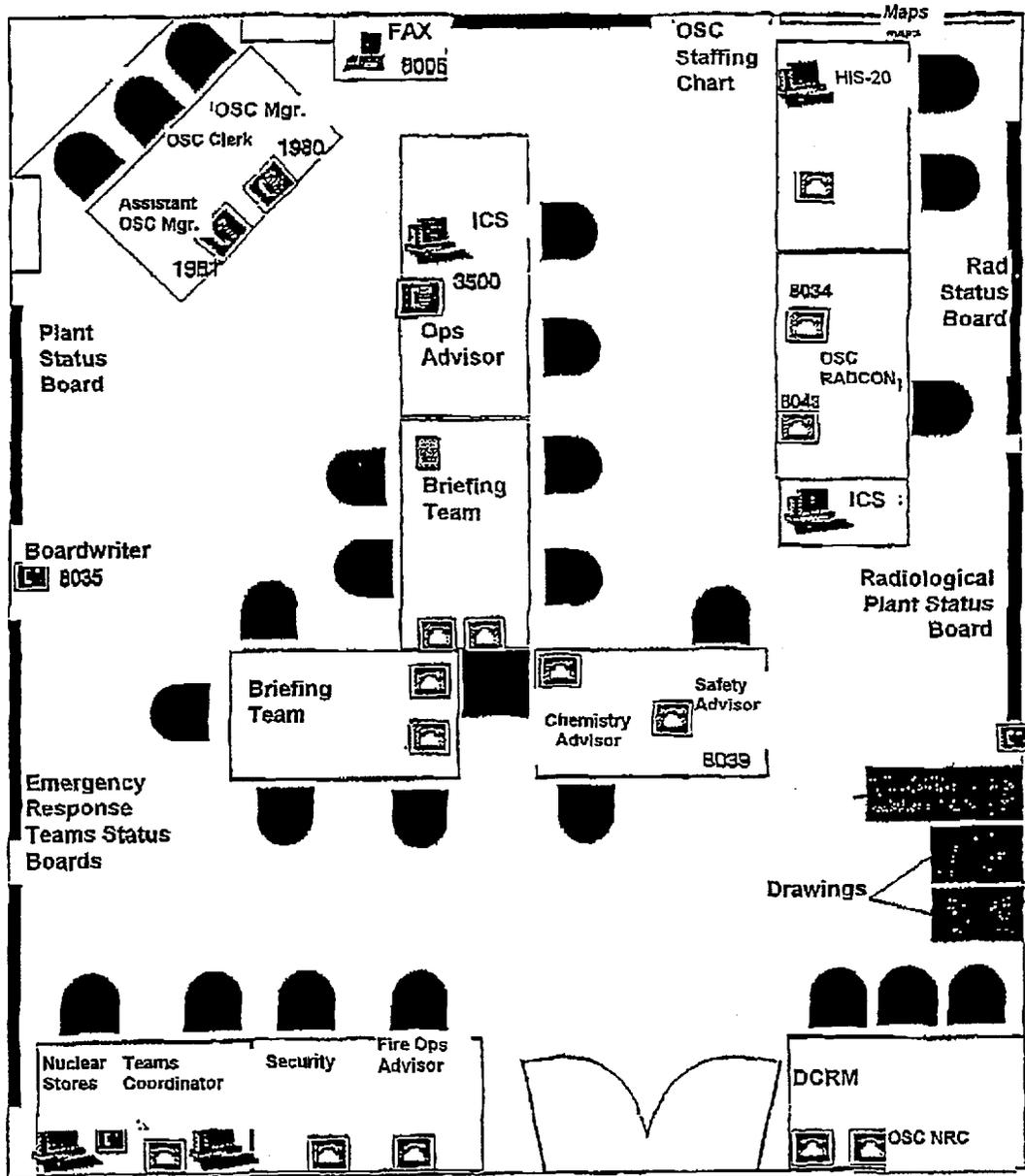
- Appendix A OSC Layout
- Appendix B OSC Organization Chart
- Appendix C OSC Manager Checklist
- Appendix D OSC Manager Briefing Outline
- Appendix E Assistant OSC Manager Checklist
- Appendix F OSC Team Tracking/Debriefing Form
- Appendix G OSC RADCON Supervisor Checklist
- Appendix H OSC RADCON Briefer Checklist
- Appendix I OSC Operations Advisor Checklist
- Appendix J OSC Fire Protection Advisor Checklist

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5.0 APPENDICES (continued)

- Appendix K OSC Chemistry Advisor Checklist
- Appendix L OSC Clerk Checklist
- Appendix M OSC Briefing Team Checklist
- Appendix N OSC Industrial Safety Advisor Checklist
- Appendix O OSC Nuclear Security Advisor Checklist
- Appendix P OSC Teams Coordinator Checklist
- Appendix Q OSC Nuclear Stores Coordinator Checklist
- Appendix R Work Control Boardwriter Checklist
- Appendix S RADCON Boardwriter Checklist
- Appendix T DCRM Coordinator Checklist
- Appendix U WBN OSC Roster
- Appendix V Emergency Responder Notification Form

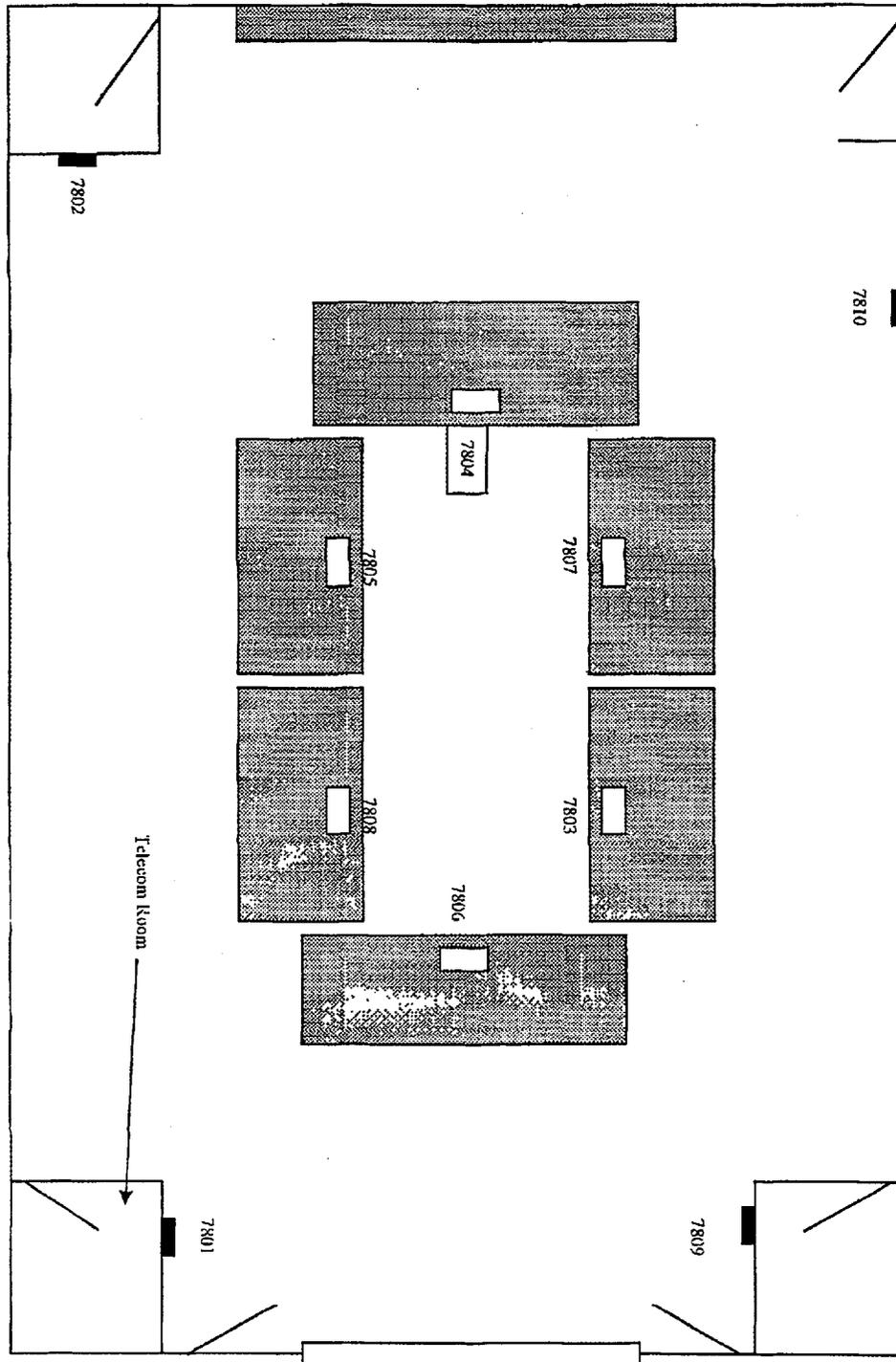
APPENDIX A
(Page 1 of 2)
OPERATIONS SUPPORT CENTER LAYOUT
Elevation 713 Radcon Lab Area



APPENDIX A

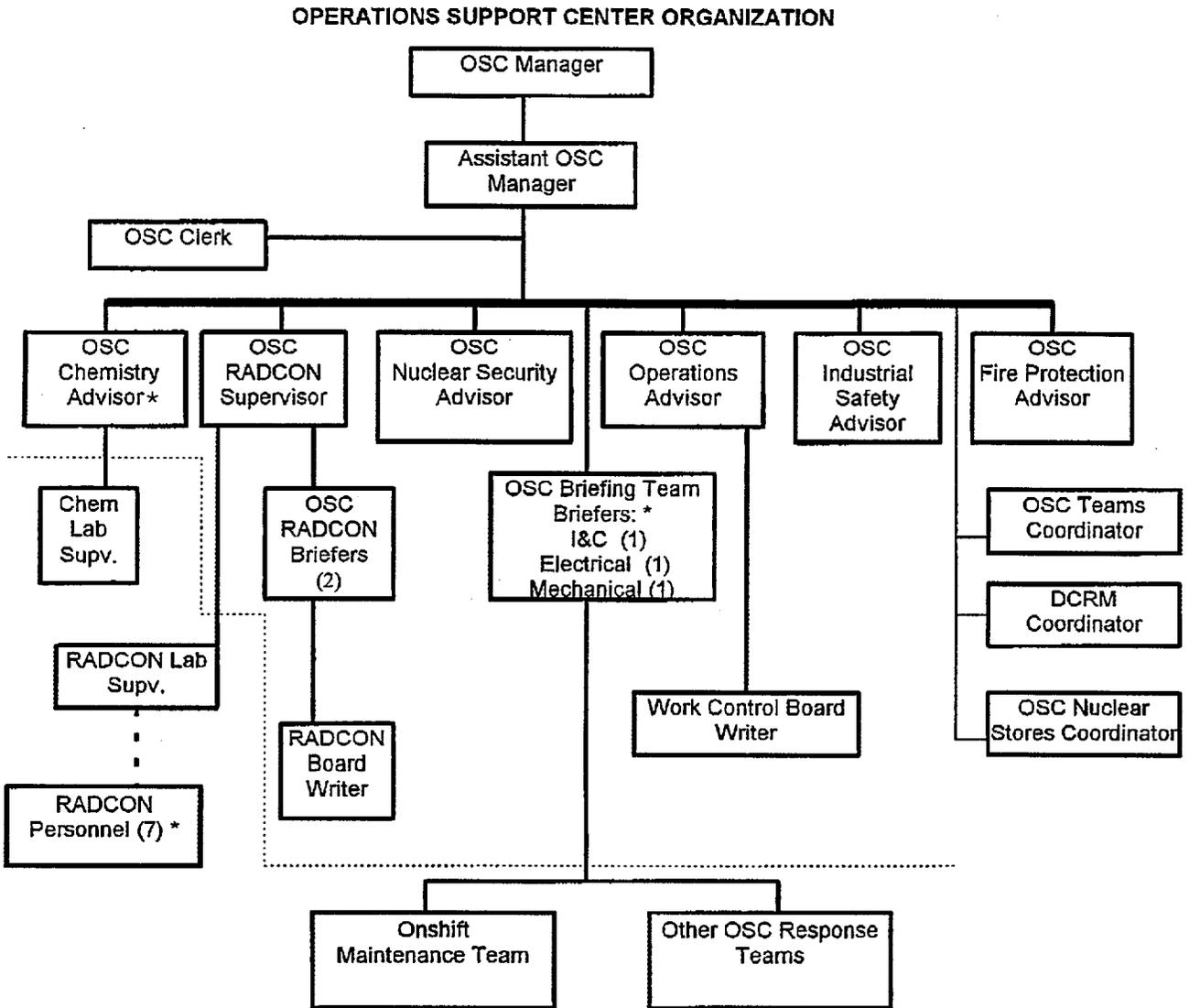
(Page 2 of 2)

WBN ALTERNATE OPERATIONS SUPPORT CENTER LAYOUT
Elevation 729, Plant Team Conference Room



APPENDIX B
(Page 1 of 1)

OPERATIONS SUPPORT CENTER ORGANIZATION



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

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APPENDIX C
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OSC MANAGER

INITIAL OSC ACTIVATION CHECKLIST

Date: _____

Inits/Time

___/___

ENTER keycard into the Accountability Badge Reader.

___/___

SIGN in OSC on the staffing chart and put on position badge.

___/___

SIGN the OSC Roster. (Appendix U)

___/___

ESTABLISH a log of activities and communications.

___/___

CALL the SED in the TSC and **OBTAIN** an update of emergency conditions.

___/___

RELOCATE to OSC Alternate location (Main Office Building Team Conference room) if OSC is not habitable.

NOTE: The location of the Alternate OSC/RADCON Lab will depend on inplant radiological conditions. The TSC RADCON Manager, after consultation with the SED, will make the decision on location transfer. Possible locations that will be considered are the **Alternate** OSC in the Main Office Building and the **Relay Room** 755' level next to the Control Room and the TSC or the WBN Training Center.⁴

___/___

ENSURE minimum staffing requirements for the OSC are met.

- ___ OSC Manager
- ___ RADCON Supervisor (onshift)
- ___ Chemistry Advisor
- ___ Mechanical Maintenance Supervisor or Briefer
- ___ Electrical Maintenance Supervisor or Briefer
- ___ I&C Maintenance Supervisor or Briefer

___/___

ENSURE OSC support personnel are notified as needed. This includes anyone who is needed to mitigate the incident. SED can authorize personnel onsite who have not been REP trained.

___/___

BRIEF OSC on personnel, radiological and plant conditions and expected actions. Use Appendix D as a guide.

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APPENDIX C
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OSC MANAGER

INITIAL OSC ACTIVATION CHECKLIST

- / **BRIEF** the OSC regarding the OSC and initial information.
- / **INFORM** the TSC of encountered plant conditions and the status of any emergency actions already in progress.
- / **CONFIRM** that the OSC is staffed with qualified personnel and operational. (Will be up to discretion of OSC Manager. Minimum staffing positions must be met.)
- / **INFORM** the SED that the OSC is operational.
- / **REQUIRE** OSC personnel to use WBN EPIP-7 checklists to perform their assigned duties.
- / **DETERMINE** the location and function of persons/teams currently and previously tasked by the TSC/Main Control Room and ensure assignment of Team Tracking Letters.
- / **ESTABLISH** shift rotations to fill the OSC positions IF duration is expected to exceed 12 hours.

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APPENDIX C
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OSC MANAGER

OPERATIONAL RESPONSIBILITIES

- Demonstrate command and control of the OSC throughout the emergency.
- Brief the OSC staff on current conditions, as needed.
- Update the SED and TSC Maintenance Manager as needed.
- Authorize OSC personnel to form emergency response teams.
- Direct the dispatching of emergency response teams (Medical Emergency Response Teams, emergency repair teams, search and rescue teams, fire protection teams, Post Accident Sampling Teams, radiological monitoring teams, damage assessment teams, and others as necessary.)
- Brief, track and coordinate Emergency Response teams which are being dispatched by the Control Room.
- Ensure that team activities are continually prioritized and synchronized with the TSC.
- Coordinate with the SED, TSC RADCON Manager, and OSC RADCON Supervisor authorizing exposures in excess of occupational limits. (Use WBN EPIP-15).
- Coordinates maintenance teams and ensures they have received proper briefings and are all accompanied by a Radcon Technician (as necessary).

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OSC MANAGER

OPERATIONAL RESPONSIBILITIES

- Coordinate with the SED, TSC RADCON Manager, and OSC RADCON Supervisor in the issuance of KI. (Use WBN EPIP-14).
- Provide supplemental staffing for the OSC as needed.
- Initiate long-term 24 hour/day operation.
- Relocate the OSC as habitability conditions dictate.
- Deactivate the OSC when directed by the SED.
(Ensure that all assigned tasks have been completed or terminated as needed, and all emergency response teams have been properly debriefed.)
- Review OSC records to ensure completeness and accuracy prior to collection by the WBN Emergency Preparedness Manager.
- Maintain log of communications and activities.
- Provide adequate turnover when a shift change occurs.

DEACTIVATION RESPONSIBILITIES

- Terminate in accordance with WBN EPIP-13, "Termination of the Emergency and Recovery."
- Ensures all teams are accounted for and properly debriefed.
- Ensures all logs and team briefing forms are completed and signed.
- Assists in forming re-entry and recovery plans.
- Leave all papers at your station which will be collected and properly stored by WBN Emergency Preparedness.

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APPENDIX D
(Page 1 of 2)

OSC MANAGER BRIEFING OUTLINE

The following may be used as a guide for OSC Manager briefings:

1. "This is a real emergency. This is a real emergency." **OR**
"This is a drill. This is a drill. We need to treat this exercise as if it were a real emergency."

2. "This is _____. I am the OSC Manager."
"The OSC was activated at _____ hours."
"The TSC (is/is not) activated. _____ is the Site Emergency Director."

3. "The following is a summary of conditions at this time:

Emergency Classification:							
Date _____	Time Updated _____	PZR Level _____					
<input type="checkbox"/> Notification of Unusual Event	RCS Pres. _____	ESF STATUS _____					
<input type="checkbox"/> Alert	RCS Temp. _____						
<input type="checkbox"/> Site Area Emergency							
<input type="checkbox"/> General Emergency							
Event Description: _____							
Status--Unit 1 _____							
Status--Unit 2 _____							
Time Event Started: _____							
Primary Plant Condition: _____							
Mode:	1	2	3	4	5	6	
	(circle one)						
Electrical Lineup: _____							
Description of any abnormal lineup							
<u>YES</u>	<u>NO</u>	<u>YES</u>	<u>NO</u>	<u>YES</u>	<u>NO</u>	<u>YES</u>	<u>NO</u>
DG1A Operating?	DG2A Operating?	DG1B Operating?	DG2B Operating?	Offsite Pwr Avail.?			
Major Mechanical Problems: _____							
Major Electrical Problems: _____							

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OSC MANAGER BRIEFING OUTLINE

4. "We are analyzing the work that was in progress at the time of the incident to determine if work should be continued, escalated, postponed or discontinued."
5. "Our plan of action at this time is to _____."
6. "Please maintain an orderly atmosphere in the OSC. Listen to briefings and make information flow to the appropriate organizations."
7. "The status of Emergency Response teams in the field is _____:
(Examples: Fire, Medical, damages, repairs. . . .) More information will be provided as it becomes available."
8. "This is a real emergency. This is a real emergency." **OR**
"This is a drill. This is a drill."

Recorded by: _____
Time: _____
Date: _____

Major Instrument and Control Problems: _____

Environmental Problems High Rad Areas: _____

Toxic Gas: _____

High Press. Steam: _____

Other: _____

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APPENDIX E
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ASSISTANT OSC MANAGER

INITIAL OSC ACTIVATION CHECKLIST

Date: _____

Inits/Time:

- ___/___ **ENTER** keycard into the Accountability Badge Reader.
- ___/___ **SIGN** OSC Staffing Chart and PUT ON position badge.
- ___/___ **SIGN** the OSC Roster (Appendix U).
- ___/___ **ENSURE** Plant Status Board is initially completed.
- ___/___ **ESTABLISH** logbook and communications.
- ___/___ **ENSURE** that qualified (properly trained) OSC personnel are "signed-in" on the OSC Staffing Chart and the OSC Roster.
- ___/___ **REQUEST** checklist completion status from OSC personnel. (Checklists are not optional.)
- ___/___ **CONTACT** the following non-pager carrying OSC Support personnel:
1. OSC Clerk/Logkeeper
 2. Communications Support (as needed)
 3. Computer Support (as needed)

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APPENDIX E
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ASSISTANT OSC MANAGER

OPERATIONAL RESPONSIBILITIES

- Assist the OSC Manager in providing direction and control in the OSC.
- Maintain communications with the TSC.
- Oversee the operations of the OSC Teams and coordinate supporting activities.
- Assign TSC developed task(s) to the team briefer(s) and ensure emergency teams are properly briefed using Appendix F, OSC Team Briefing/Debriefing Form.
- Authorize the dispatching of emergency response teams (includes signing briefing form, Appendix F).
- Ensure emergency teams are properly debriefed, in a timely manner, using Appendix F, OSC Team Briefing/Debriefing Form.
- Ensure the Plant Status Board, Emergency Response Team Tracking Boards, and OSC Staffing Chart are kept current.
- Coordinate with OSC RADCON Supervisor and Operations Advisor as needed regarding OSC Team activities (determine if teams need RADCON or Operations support).
- Authorize issuance of equipment and document issuance as necessary.
- Assist in authorizing emergency exposures and the issuance of KI for emergency response teams.
- Maintain log of communications and activities.
- Provide adequate turnover when a shift change occurs.
- Assist the OSC Manager in coordinating shift changes and 24 hour/day OSC operations as needed.

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ASSISTANT OSC MANAGER

DEACTIVATION RESPONSIBILITIES

- Ensures all teams are accounted for.
- Ensures all logs and team briefing forms are completed and signed.
- Leave all papers at your station which will be collected and properly stored by WBN Emergency Preparedness.
- Assists in forming re-entry and recovery plans.

APPENDIX F
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WATTS BAR NUCLEAR PLANT OSC TEAM BRIEFING/DEBRIEFING FORM

TEAM: _____ Assistant OSC Mgr / _____ init/time	Task Description: Describe problem or task, drawings, known facts, precautions, etc. _____ _____ _____ _____ _____ Task Location _____ <input type="checkbox"/> Inform OSC Manager of Team Request From TSC <input type="checkbox"/> Assign to Briefing Team: Lead Briefer: _____ <input type="checkbox"/> Heads-up to Briefer(s): <input type="checkbox"/> Ops <input type="checkbox"/> RADCON <input type="checkbox"/> Safety <input type="checkbox"/> Other <input type="checkbox"/> Enter Team Information on OSC Team Tracking Board																																																			
Lead Briefer _____ / _____ _____ init/time	<table style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 20%;"></th> <th style="width: 30%;">Task Team</th> <th style="width: 20%;">Members</th> <th style="width: 15%;">SSN</th> <th style="width: 15%;">Discipline (IM, MM, etc.)</th> </tr> </thead> <tbody> <tr> <td>Team Leader</td> <td>_____</td> <td>_____</td> <td>_____</td> <td>_____</td> </tr> <tr> <td></td> <td>_____</td> <td>_____</td> <td>_____</td> <td>_____</td> </tr> <tr> <td></td> <td>_____</td> <td>_____</td> <td>_____</td> <td>_____</td> </tr> <tr> <td></td> <td>_____</td> <td>_____</td> <td>_____</td> <td>_____</td> </tr> <tr> <td>Operations</td> <td>_____</td> <td>_____</td> <td>_____</td> <td>_____</td> </tr> <tr> <td>RADCON</td> <td>_____</td> <td>_____</td> <td>_____</td> <td>_____</td> </tr> </tbody> </table> <p>Briefing By: Lead Briefer: Init _____ RADCON Init _____</p> <table style="width: 100%;"> <tr> <td><input type="checkbox"/> Description of Problems</td> <td><input type="checkbox"/> Radiation Work Permit (RWP)</td> </tr> <tr> <td><input type="checkbox"/> Procedures to be Used</td> <td><input type="checkbox"/> RADCON Support</td> </tr> <tr> <td><input type="checkbox"/> Tools Needed</td> <td><input type="checkbox"/> Hazards Between OSC and Work Location</td> </tr> <tr> <td><input type="checkbox"/> Equipment Needed</td> <td><input type="checkbox"/> Route to/from Work Area</td> </tr> <tr> <td><input type="checkbox"/> Clearance Required (Hold Orders)</td> <td><input type="checkbox"/> Contact Briefer prior to returning from field</td> </tr> <tr> <td><input type="checkbox"/> Ops Support</td> <td><input type="checkbox"/> List (Read) debriefing questions to be asked</td> </tr> <tr> <td><input type="checkbox"/> Safety Evaluation of Job</td> <td><input type="checkbox"/> Copy of Briefing Form given to team with Tele #s</td> </tr> <tr> <td><input type="checkbox"/> Key(s) needed for job</td> <td></td> </tr> </table> <p><input type="checkbox"/> Maintain routine contact with team while in the field.</p> <p>Method of Communication: _____ TSC Results Hotline (x8611) _____ Messenger _____ Pager # _____ Phone # _____ <input type="checkbox"/> Radio (Channel: _____) Radio Sensitive Area? <input type="checkbox"/> Yes <input type="checkbox"/> No (BP-364)</p>		Task Team	Members	SSN	Discipline (IM, MM, etc.)	Team Leader	_____	_____	_____	_____		_____	_____	_____	_____		_____	_____	_____	_____		_____	_____	_____	_____	Operations	_____	_____	_____	_____	RADCON	_____	_____	_____	_____	<input type="checkbox"/> Description of Problems	<input type="checkbox"/> Radiation Work Permit (RWP)	<input type="checkbox"/> Procedures to be Used	<input type="checkbox"/> RADCON Support	<input type="checkbox"/> Tools Needed	<input type="checkbox"/> Hazards Between OSC and Work Location	<input type="checkbox"/> Equipment Needed	<input type="checkbox"/> Route to/from Work Area	<input type="checkbox"/> Clearance Required (Hold Orders)	<input type="checkbox"/> Contact Briefer prior to returning from field	<input type="checkbox"/> Ops Support	<input type="checkbox"/> List (Read) debriefing questions to be asked	<input type="checkbox"/> Safety Evaluation of Job	<input type="checkbox"/> Copy of Briefing Form given to team with Tele #s	<input type="checkbox"/> Key(s) needed for job	
	Task Team	Members	SSN	Discipline (IM, MM, etc.)																																																
Team Leader	_____	_____	_____	_____																																																
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Operations	_____	_____	_____	_____																																																
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<input type="checkbox"/> Safety Evaluation of Job	<input type="checkbox"/> Copy of Briefing Form given to team with Tele #s																																																			
<input type="checkbox"/> Key(s) needed for job																																																				
RADCON _____ / _____ _____ init/time	RADCON Requirements: RWP Required: <input type="checkbox"/> Yes <input type="checkbox"/> No If yes, RWP # _____ SCBA _____ Respirator _____ Dressout _____ Other _____ Emerg Exposure Apprl. (EPIP-15 by SED) Yes _____ (_____ REM) No _____ N/A _____ KI Approval (By TSC RADCON Manager or designee) Yes _____ No _____ N/A _____																																																			
OSC Mgr _____ / _____ _____ init/time	FINAL APPROVAL to release team <input type="checkbox"/> Team Necessary <input type="checkbox"/> Radiological Conditions have not changed since briefing <input type="checkbox"/> Announce to OSC areas: "Is there any reason that we should not dispatch this team at this time?"																																																			

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APPENDIX G
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OSC RADCON SUPERVISOR

INITIAL OSC ACTIVATION CHECKLIST

Date: _____

Inits/Time

___/___

ENTER keycard into the Accountability Badge Reader.

___/___

SIGN in on the OSC Staffing Chart and PUT ON position badge.

___/___

SIGN the OSC Roster. (Appendix U)

___/___

ESTABLISH a log of communications and activities.

___/___

ESTABLISH communications with the TSC RADCON Manager.

___/___

ESTABLISH communications with the RADCON Lab Supervisor.

___/___

ENSURE adequate RADCON staffing available for emergency response (dosimetry support, RWP support, boardwriter, clerical).

___/___

CONTROL eating and drinking in the OSC until habitability has been established.

___/___

ENSURE habitability surveys are current for the OSC areas, TSC, and Control Room and assembly areas as listed in WBN EPIP-8.

___/___

ASSIGN HIS-20 computer operator.

___/___

ENSURE that RADCON Techs are called in from home to provide staffing as required by WBN EPIP-14.

___/___

LOCATE all RADCON persons/teams currently and previously tasked and ensure they are tracked on the Emergency Response Teams Board.

WBN	ACTIVATION AND OPERATION OF THE OPERATIONS SUPPORT CENTER (OSC)	EPIP-7 Revision 13 Page 26 of 57
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APPENDIX G
(Page 2 of 3)

OSC RADCON SUPERVISOR

OPERATIONAL RESPONSIBILITIES

- Provide and coordinate RADCON resources as necessary.
- Provide direction to the RADCON Lab.
- Ensure RADCON Teams are dispatched through the OSC. (Tracked on Emergency Response Teams Board.)
- Ensure emergency response teams have adequate RADCON/dosimetry coverage.
- Brief the OSC Manager and OSC Staff of radiological conditions as needed.
- Provide immediate radiological information to OSC staff as conditions change.
- Brief the TSC RADCON Manager of the RADCON resources and radiological conditions as needed.
- Ensure "Environmental Problems" segment of Plant Status Board is correct.
- Ensure that all predressed OSC staging area teams are issued proper dosimetry and have been evaluated for radiological access.
- Provide assistance to the OSC Manager as needed.
- Periodically check habitability of TSC, OSC, and Control Room, if radiological conditions warrant.
- Administer KI to emergency response teams according to WBN EPIP-14. (Forward Potassium Iodine Issue Report, to the TSC RADCON Manager.)
- Maintain log of communications and activities.
- Provide adequate turnover when a shift change occurs.
- Log-on to Integrated Computer System (ICS).

WBN	ACTIVATION AND OPERATION OF THE OPERATIONS SUPPORT CENTER (OSC)	EPIP-7 Revision 13 Page 27 of 57
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APPENDIX G
(Page 3 of 3)

OSC RADCON SUPERVISOR

DEACTIVATION RESPONSIBILITIES

- Ensures all teams are accounted for and properly debriefed.
- Ensures all logs and team briefing forms are completed and signed.
- Leave all papers at your station which will be collected and properly stored by WBN Emergency Preparedness.
- Assists in forming re-entry and recovery plans.
- Ensures outlining emergency response groups (i.e., line crews, warehouse) have dosimetry and are being protected throughout the emergency.

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**APPENDIX H
(Page 1 of 4)**

OSC RADCON BRIEFER

INITIAL OSC ACTIVATION CHECKLIST

Date: _____

Inits/Time

___/___

ENTER keycard into the Accountability Badge Reader.

___/___

SIGN in OSC on the Staffing Chart.

___/___

SIGN the OSC Roster. (Appendix U)

___/___

ESTABLISH a log of communications and activities.

___/___

NOTIFY the OSC RADCON Supervisor of arrival.

___/___

ACCESS RADCON Party Line (4103) as necessary.

___/___

ENSURE that personnel reporting to the OSC teams staging area are briefed as time allows using page 3 of 4 of Appendix H as an orientation for responders.

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**APPENDIX H
(Page 2 of 4)**

OSC RADCON BRIEFER

OPERATIONAL RESPONSIBILITIES

- Provide radiological technical assistance to the Briefing Teams.
- Provide radiological conditions analysis of the job assigned to the emergency response teams.
- Assist with portions of the OSC Team Briefings.
- Complete applicable portions of Appendix F, the OSC Team Tracking/Briefing/Debriefing Form.
- Ensure radiological data is collected and reported back to the OSC in an expeditious manner for planning and prioritizing further emergency response activities.
- Ensure TLDs are collected and processed from returning team members.
- Assist in the administration of KI according to WBN-EPIP 14.
- Maintain log of communications and activities.
- Provide adequate turnover when a shift change occurs.
- Ensures that the radiological information on the OSC status board is accurate.
- Ensures that personnel reporting to the OSC Teams Staging Area are briefed as time allows using page 3 of 4 of Appendix H as an orientation for responders.

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APPENDIX H
(Page 3 of 4)

OSC RADCON BRIEFER

EMERGENCY RESPONSE TEAMS STAGING AREA ORIENTATION

(RADCON will brief responders as conditions allow on the contents of this list.)

- Stay continuously aware of REP status and in plant conditions.
- Plan contingencies when assigned a team (anticipate needs and hazards) prior to entering accident area.
- Communicate with briefers on a regular basis. Be aware of radio dead spots in the Plant (e.g., El. 676, RHR pump rooms). Perform functional check of radio and equipment prior to entering Auxiliary Building or accident area. Use repeat-backs for effective transfer of information. BP-364 lists radio sensitive areas of the plant.
- Perform applicable pathway surveys to and from work location.
- Relay data promptly and frequently to the OSC! This information is critical in assessing plant conditions and protection of personnel. Consideration should be given to designating a runner to telephone data if necessary.
- If on pathway the team encounters a field of >1000 mrem/HR advise the OSC.
- If when arriving to destination team encounters a field of >1000 mrem/HR, return to lower dose area and advise OSC.
- Stay together as a team for accountability.
- In-plant conditions are dynamic, OSC will continually advise the team of any changes while in the field.
- If for some reason the scope of the job changes while in the field, notify the OSC.
- Note any unusual plant conditions (frisker increases, liquid leaks, poor visibility, etc.), advise OSC.
- Use appropriate techniques to reduce exposure and maximize safety.
- When in the field, use available supplies in RADCON cabinets if needed.
- Contact RADCON briefer upon completion of task.
- Primary accident condition RWPS are available; please familiarize yourself with them, RADCON will brief the team on the RWP.
- If possible, keep a written log of team activities while in the field.
- Contact RADCON or OSC for return route in the event of change of event conditions, etc.

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**APPENDIX H
(Page 4 of 4)**

OSC RADCON BRIEFER

DEACTIVATION RESPONSIBILITIES

- Ensures all teams are accounted for and properly debriefed.
- Ensures all logs and team briefing forms are completed and signed.
- Leave all papers at your station which will be collected and properly stored by WBN Emergency Preparedness.
- Assists in forming re-entry and recovery plans.

WBN	ACTIVATION AND OPERATION OF THE OPERATIONS SUPPORT CENTER (OSC)	EPIP-7 Revision 13 Page 32 of 57
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**Appendix I
(Page 1 of 2)**

OSC OPERATIONS ADVISOR

INITIAL OSC ACTIVATION CHECKLIST

Date: _____

Inits/Time

___/___

ENTER into the Accountability Badge Reader.

___/___

SIGN in on the OSC Staffing Chart.

___/___

SIGN the OSC Roster. (Appendix U)

___/___

ESTABLISH a log of activities and communications.

___/___

ESTABLISH communications with the TSC Operations Manager for updates and to obtain Operations support.

___/___

CALL-IN AUOs\Operations personnel from offshift to support OSC activities (Minimum of 3 AUOs is usually needed in the OSC).

___/___

ESTABLISH communications with the Control Room Communicator via the Control Room party-line.

___/___

LOG ON to Integrated Computer System (ICS) terminal.

___/___

ANNOUNCE on the portable radio: "AUO's report to the OSC." (repeat)

WBN	ACTIVATION AND OPERATION OF THE OPERATIONS SUPPORT CENTER (OSC)	EPIP-7 Revision 13 Page 33 of 57
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**Appendix I
(Page 2 of 2)**

OSC OPERATIONS ADVISOR CHECKLIST

OPERATIONAL RESPONSIBILITIES

- Direct AUO's to maintain a log, and listen to the Operations Party Line to remain current on Plant Status.
- Provide plant operations advice to support the OSC Manager.
- Provide Operational advice to support the entire OSC, including Briefing Teams as needed. (Additional AUOs can be used to assist in briefing teams.)
- Provide personnel for any operations actions that may be required while in the field.
- Keep the TSC Operations Manager, and Operations Communicator apprised of the OSC Team activities while in the field.
- Operate ICS terminal in the OSC as needed.
- Ensure the OSC Plant Status Board is correct.
- Maintain log of communications and activities.
- Provide adequate turnover when a shift change occurs.

DEACTIVATION RESPONSIBILITIES

- Ensures all teams are accounted for and properly debriefed.
- Ensures all logs and team briefing forms are completed and signed.
- Leave all papers at your station which will be collected and properly stored by WBN Emergency Preparedness.
- Assists in forming re-entry and recovery plans.

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APPENDIX J
(Page 1 of 2)

OSC FIRE PROTECTION ADVISOR

INITIAL OSC ACTIVATION CHECKLIST

Date: _____

Inits/Time

- ___/___ **ENTER** keycard into the Accountability Badge Reader.
- ___/___ **SIGN** in on the OSC Staffing Chart.
- ___/___ **SIGN** OSC Roster. (Appendix U)
- ___/___ **ESTABLISH** a log of activities and communications.
- ___/___ **ESTABLISH** communications with the Fire Operations Unit or the Fire Station to provide plant status updates.

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**APPENDIX J
(Page 2 of 2)**

OSC FIRE PROTECTION ADVISOR

OPERATIONAL RESPONSIBILITIES

- Monitor plant status and fire response.
- Support WBN-EPIP-10, Medical Emergency Response, as needed.
- Initiate and provide first response for hazardous material containment.
- Initiate personnel search and rescue in hazardous areas.
- Maintain log of communications and activities.
- Provide adequate turnover when a shift change occurs.

DEACTIVATION RESPONSIBILITIES

- Ensures all teams are accounted for and properly debriefed.
- Ensures all logs and team briefing forms are completed and signed.
- Leave all papers at your station which will be collected and properly stored by WBN Emergency Preparedness.
- Assists in forming re-entry and recovery plans.

WBN	ACTIVATION AND OPERATION OF THE OPERATIONS SUPPORT CENTER (OSC)	EPIP-7 Revision 13 Page 36 of 57
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**APPENDIX K
(Page 1 of 2)**

OSC CHEMISTRY ADVISOR

INITIAL OSC ACTIVATION CHECKLIST

Date: _____

Inits/Time

- ___/___ **ENTER** keycard into the Accountability Badge Reader.
- ___/___ **SIGN** in on the OSC Staffing Chart.
- ___/___ **SIGN** OSC Roster. (Appendix U)
- ___/___ **ESTABLISH** a log of activities and communications.
- ___/___ **ESTABLISH** communications with the TSC Chemistry Manager.
- ___/___ **ESTABLISH** communications with Chemistry Lab staff.
- ___/___ **CALL** the assigned Chemistry Engineer to support OSC operations.

WBN	ACTIVATION AND OPERATION OF THE OPERATIONS SUPPORT CENTER (OSC)	EPIP-7 Revision 13 Page 37 of 57
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**APPENDIX K
(Page 2 of 2)**

OSC CHEMISTRY ADVISOR

OPERATIONAL RESPONSIBILITIES

- Provide and coordinate Chemistry personnel needed to support the OSC.
- Provide Chemistry technical content in emergency team briefings as necessary.
- Dispatch the Post-Accident Sampling (PAS) team as directed by the TSC.
- Maintain a communications link with the TSC Chemistry Manager.
- Maintain log of communications and activities.
- Provide adequate turnover when a shift change occurs.
- Provide/assist in obtaining Release/Pathway information as needed.
- Provide Chemistry data (primary and secondary) of initiating conditions and provide ongoing Chemistry information.

DEACTIVATION RESPONSIBILITIES

- Ensures all teams are accounted for and properly debriefed.
- Ensures all logs and team briefing forms are completed and signed.
- Leave all papers at your station which will be collected and properly stored by WBN Emergency Preparedness.
- Assists in forming re-entry and recovery plans.

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APPENDIX L
(Page 1 of 3)

OSC CLERK

INITIAL OSC ACTIVATION CHECKLIST

Date: _____

Inits/Time

- ___/___ **ENTER** keycard into the Accountability Badge Reader.
- ___/___ **SIGN** in on the OSC Staffing Chart.
- ___/___ **SIGN** the OSC Roster. (Appendix U)
- ___/___ **ESTABLISH** a log of activities and communications.
- ___/___ **NOTIFY** other staff to report to the OSC as determined by the OSC Manager.

WBN	ACTIVATION AND OPERATION OF THE OPERATIONS SUPPORT CENTER (OSC)	EPIP-7 Revision 13 Page 39 of 57
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APPENDIX L
(Page 2 of 3)

OSC CLERK

OPERATIONAL RESPONSIBILITIES

- Ensure the OSC Status Boards are continuously updated to reflect current plant conditions.
- Ensure OSC responders have signed the OSC roster.
- Ensure a log is maintained of all important OSC activities.
- In the event of a Site Wide Evacuation, notify the OSC RADCON Supervisor that this is a non-radiation worker position.
- Collect and maintain all original copies of OSC generated records.
- Provide records to the WBN Emergency Preparedness (EP) Manager when the OSC is deactivated.
- Maintain log of communications and activities.
- Provide OSC team status reports to the control room on a periodic basis.
- Provide adequate turnover when a shift change occurs, and utilizes Appendix V to activate additional OSC responders.
- Assist OSC responders in obtaining their TLDs.

DEACTIVATION RESPONSIBILITIES

- Ensures all teams are accounted for and properly debriefed.
- Ensures all logs and team briefing forms are completed and signed.
- Leave all papers at your station which will be collected and properly stored by WBN Emergency Preparedness.
- Assists in forming re-entry and recovery plans.

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**APPENDIX M
(Page 1 of 2)**

OSC BRIEFING TEAM

INITIAL OSC ACTIVATION CHECKLIST

Date: _____

Inits/Time

- ___/___ **ENTER** keycard into the Accountability Badge Reader.
- ___/___ **SIGN** in on the OSC Staffing Chart.
- ___/___ **SIGN** the OSC Roster. (Appendix U)
- ___/___ **ESTABLISH** a log of communications and activities.
- ___/___ **REPORT** any conditions in the plant which may be related to the emergency condition.

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APPENDIX M
(Page 2 of 2)

OSC BRIEFING TEAM

OPERATIONAL RESPONSIBILITIES

- Provide Mechanical, Electrical, and Instrument technical expertise.
- Notify Mechanical, Electrical, Instrument Foremen to report with crews to the OSC Staging Area.
- Evaluate job conditions (including RADCON, Fire Operations, and Operational aspects of the task) and analyze the necessary precautions and methods best suited to safe performance of the task.
- Brief the OSC Teams based on the analysis of the job.
- Track, communicate and monitor safety of the OSC Teams while in the field.
- Debrief the OSC Teams after completion of the task.
- Complete applicable portions of Appendix F, OSC Team Briefing/Debriefing Form.
- Operates Curator computer as needed to provide OSC team briefing information.
- Maintain log of communications and activities.
- Provide adequate turnover when a shift change occurs.

DEACTIVATION RESPONSIBILITIES

- Ensures all teams are accounted for and properly debriefed.
- Ensures all logs and team briefing forms are completed and signed.
- Leave all papers at your station which will be collected and properly stored by WBN Emergency Preparedness.

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**APPENDIX N
(Page 1 of 2)**

OSC INDUSTRIAL SAFETY ADVISOR

INITIAL OSC ACTIVATION CHECKLIST

Date: _____

Inits/Time

___/___ **ENTER** keycard into the accountability card reader.

___/___ **SIGN** the OSC Staffing Chart.

___/___ **SIGN** the OSC Roster. (Appendix U)

___/___ **ESTABLISH** a log of communications and activities.

WBN	ACTIVATION AND OPERATION OF THE OPERATIONS SUPPORT CENTER (OSC)	EPIP-7 Revision 13 Page 44 of 57
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APPENDIX N
(page 2 of 2)

OSC INDUSTRIAL SAFETY ADVISOR

OPERATIONAL RESPONSIBILITIES

- Ensure the OSC Manager/OSC Staff are aware of safety hazards that could affect emergency response activities.
- Assist Briefing Teams in preparing applicable portions of Appendix F, OSC Team Tracking/Debriefing Form.
- Assist Briefing Teams in briefing process. Ensure teams have adequate safety apparel and equipment to complete emergency team assignments.
- Assist in obtaining/procuring adequate safety equipment.
- Assist in the team debriefing process as needed.
- Ensure safety hazard information obtained from returning teams flows back into the OSC in a timely expeditious manner. Incorporate significant information into the prioritizing and emergency team briefing process.
- Maintain log of communications and activities.
- Provide adequate turnover when a shift change occurs.

DEACTIVATION RESPONSIBILITIES

- Ensures all teams are accounted for and properly debriefed.
- Ensures all logs and team briefing forms are completed and signed.
- Leave all papers at your station which will be collected and properly stored by WBN Emergency Preparedness.

WBN	ACTIVATION AND OPERATION OF THE OPERATIONS SUPPORT CENTER (OSC)	EPIP-7 Revision 13 Page 45 of 57
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APPENDIX O
(Page 1 of 1)

OSC NUCLEAR SECURITY ADVISOR
INITIAL OSC ACTIVATION CHECKLIST

Date: _____

Inits/Time

___/___ **ENTER** keycard into the Accountability Badge Reader.

___/___ **SIGN** in on the OSC Staffing Chart.

___/___ **SIGN** the OSC Roster. (Appendix U)

___/___ **ESTABLISH** a log of communications and activities.

OPERATIONAL RESPONSIBILITIES

- Ensure the OSC Manager/OSC Staff are aware of security hazards that could affect emergency response activities.
- Provide assistance to briefing teams as needed.
- Ensure security provides expeditious emergency entries and exits for teams dispatched from the OSC.
- Ensure adequate staffing is available to support WBN EPIP-8, "Personnel Accountability and Evacuation," when implementing assembly and accountability or evacuations.
- Provide Security support for search and rescue operations and other necessary emergency response actions.
- Maintain log of communications and activities.
- Provide adequate turnover when a shift change occurs.

DEACTIVATION RESPONSIBILITIES

- Ensures all teams are accounted for and properly debriefed.
- Ensures all logs and team briefing forms are completed and signed.
- Leave all papers at your station which will be collected and properly stored by WBN Emergency Preparedness.

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**APPENDIX P
(Page 1 of 3)**

OSC TEAMS COORDINATOR

INITIAL OSC ACTIVATION CHECKLIST

Date: _____

Inits/Time

___/___

ENTER keycard into the Accountability Badge Reader.

___/___

SIGN in on the OSC Staffing Chart.

___/___

SIGN the OSC Roster. (Appendix U)

___/___

ESTABLISH a log of communications and activities.

___/___

USE Page 3 of 3 of this Appendix to organize an OSC Teams Staging Area.

___/___

ENSURE OSC tool kits have been moved from the Toolroom in the Maintenance Shop to the OSC Teams Staging Area.

___/___

ENSURE the following minimum number of personnel come to the prestaging area (these numbers are approximate depending on plant conditions):

4 Electrical Maintenance

6 Mechanical Maintenance

2 I&C Maintenance

3 AUOs from Main Control Room Kitchen (or from home)

NOTE: This is not a comprehensive list. The emergency may or may not require all of these positions to be prestaged. This is only a suggested list.

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APPENDIX P
(Page 2 of 3)

OSC TEAMS COORDINATOR

OPERATIONAL RESPONSIBILITIES

- Maintain contact with Assistant OSC Manager.
- Manage the Emergency Response Team staging area by:
 1. Directing responders (potential OSC teams) to check-in with the HIS-20 Operator.
 2. Requiring all potential OSC team members to dress out.
 3. Prepare emergency responders to be dispatched.
- Ensure that OSC briefers know who is available in the OSC Teams Staging Area by periodically distributing lists of personnel awaiting assignments.
- Ensure that every team is debriefed upon returning.

DEACTIVATION RESPONSIBILITIES

- Ensures all teams are accounted for and properly debriefed.
- Ensures all logs and team briefing forms are completed and signed.
- Leave all papers at your station which will be collected and properly stored by WBN Emergency Preparedness.

WBN	ACTIVATION AND OPERATION OF THE OPERATIONS SUPPORT CENTER (OSC)	EPIP-7 Revision 13 Page 49 of 57
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**APPENDIX Q
(Page 1 of 1)**

OSC NUCLEAR STORES COORDINATOR

INITIAL OSC ACTIVATION CHECKLIST

Date: _____

Inits/Time

___/___

ENTER keycard into the Accountability Badge Reader.

___/___

SIGN in on the OSC Staffing Chart.

___/___

SIGN OSC Roster. (Appendix U)

___/___

ESTABLISH a log of communications and activities.

OPERATIONAL RESPONSIBILITIES

- Provides coordination between Power Stores and the OSC.
- Provides materials as expeditiously as possible for emergency response activities.
- Operates mainframe computer to determine materials availability.

DEACTIVATION RESPONSIBILITIES

- Ensures all records (anything written down during the OSC activation) are completed and signed.
- Leave all papers at your station which will be collected and properly stored by WBN Emergency Preparedness.

WBN	ACTIVATION AND OPERATION OF THE OPERATIONS SUPPORT CENTER (OSC)	EPIP-7 Revision 13 Page 50 of 57
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**APPENDIX R
(Page 1 of 2)**

WORK CONTROL BOARDWRITER

INITIAL OSC ACTIVATION CHECKLIST

Date: _____

Inits/Time

___/___

ENTER keycard into the Accountability Badge Reader.

___/___

SIGN in on the OSC Staffing Chart.

___/___

SIGN the OSC Roster. (Appendix U)

___/___

ESTABLISH a log of communications and activities.

___/___

PROVIDE a status of current work control plant activities to the OSC for immediate analysis to:

- Determine if any ongoing work is related to the emergency.
- Determine if current jobs should be continued, expedited or stopped.

WBN	ACTIVATION AND OPERATION OF THE OPERATIONS SUPPORT CENTER (OSC)	EPIP-7 Revision 13 Page 51 of 57
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APPENDIX R
(Page 2 of 2)

WORK CONTROL BOARDWRITER

OPERATIONAL RESPONSIBILITIES

- Maintain contact on control room party line on x4102.
- Maintain OSC status boards.

DEACTIVATION RESPONSIBILITIES

- Ensures all records (anything written down during the OSC activation) are complete and signed.
- Leave all papers at work station which will be collected and properly stored by WBN Emergency Preparedness.

WBN	ACTIVATION AND OPERATION OF THE OPERATIONS SUPPORT CENTER (OSC)	EPIP-7 Revision 13 Page 52 of 57
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**APPENDIX S
(Page 1 of 2)**

RADCON BOARDWRITER

INITIAL OSC ACTIVATION CHECKLIST

Date: _____

Inits/Time

___/___

ENTER keycard into the Accountability Badge Reader.

___/___

SIGN in on the OSC Staffing Chart.

___/___

SIGN the OSC Roster. (Appendix U)

___/___

ESTABLISH a log of communications and activities.

___/___

ESTABLISH contact on the RADCON Party-line by dialing 4103.

WBN	ACTIVATION AND OPERATION OF THE OPERATIONS SUPPORT CENTER (OSC)	EPIP-7 Revision 13 Page 53 of 57
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APPENDIX S
(Page 2 of 2)

RADCON BOARDWRITER

OPERATIONAL RESPONSIBILITIES

- Maintains the radiological status boards by providing a radiological sequence of events.
- Maintains copies of radiological status board as conditions change.
- Notifies the OSC RADCON Supervisor of changes in radiological conditions.
- Maintains contact on RADCON Party Line (4103).
- Maintains radiological status elevation maps to provide a clear status of radiological conditions at all times.
- Maintains a clear status of eating and drinking in the OSC areas on the Radiological Status Board.

DEACTIVATION RESPONSIBILITIES

- Ensures all records (anything written down during the OSC activation) are complete and signed.
- Leaves all papers at work station which will be collected and properly stored by WBN Emergency Preparedness.

WBN	ACTIVATION AND OPERATION OF THE OPERATIONS SUPPORT CENTER (OSC)	EPIP-7 Revision 13 Page 54 of 57
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APPENDIX T
(Page 1 of 1)
DCRM COORDINATOR

INITIAL OSC ACTIVATION CHECKLIST

Date: _____

Inits/Time

___/___

ENTER keycard into the Accountability Badge Reader.

___/___

SIGN in on the OSC Staffing Chart.

___/___

SIGN the OSC Roster (Appendix U).

___/___

ENSURES that current WBN EPIP-7 copies are available for all OSC responders.

___/___

ESTABLISH a log of communications and activities.

___/___

ENSURE OSC Manager has a controlled copy of the WBN-EIPs on his desk.

OPERATIONAL RESPONSIBILITIES

- Provides DCRM expertise as needed.
- Provides drawings, documents, vendors manuals as requested by OSC.
- In the event of a station flood, ensure that designated QA records located in the MDB vault are removed to the second floor of EQB.
- In the event of a Site Wide Evacuation, notify the OSC RADCON Supervisor that this is a non-radiation worker position.
- Assists in OSC logistics as requested.

DEACTIVATION RESPONSIBILITIES

- Ensures all records (anything written down during the OSC activation) are complete and signed.
- Leaves all papers at work station which will be collected and properly stored by WBN Emergency Preparedness.

WBN	ACTIVATION AND OPERATION OF THE OPERATIONS SUPPORT CENTER (OSC)	EPIP-7 Revision 13 Page 57 of 57
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SOURCE NOTES

Page 1 of 1

1. MC-840827005001, MSC-02371. Revise OSC procedure duties and responsibilities. See entire procedure with all appendices.
2. ANSI N18.7-1976
Subsection 5.3.9.3: 01 POI Implementing procedures will include the following elements.
3. MSC-02853, NCO-920042521 Each site will have an OSC. Communications will be available to the TSC. The OSC will establish and maintain appropriate communications with any team that may enter the plant for assessment or repair.
4. WBPER 98016506 Alternate OSC locations.

FILING INSTRUCTIONS

DOCUMENT NUMBER EP1P-12

REMOVE REVISION 15 INSERT REVISION 15

Comments Format change only - no
content change

TENNESSEE VALLEY AUTHORITY

WATTS BAR NUCLEAR PLANT

**EMERGENCY PLAN IMPLEMENTING
PROCEDURES**

EPIP-12

EMERGENCY EQUIPMENT AND SUPPLIES

Revision 15

Unit 0

QUALITY RELATED

PREPARED BY: Benjamin F. McNew, Jr.
(Type Name)

SPONSORING ORGANIZATION: Emergency Planning

APPROVED BY: Frank L. Pavlechko

EFFECTIVE DATE: 01/24/2001

LEVEL OF USE: REFERENCE

WBN	EMERGENCY EQUIPMENT AND SUPPLIES	EPIP-12 Revision 15 Page 2 of 22
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REVISION DESCRIPTION:

Revision Number	Effective Date	Pages Affected	Description of Revision
0	12/04/90		New WBN EPIP, Supersedes IP-17.
1	02/10/93		General Revision.
2	8/16/93		Editorial (non-intent) and format changes. Additional equipment/documents added to key inventory check offs. Non needed equipment/documents removed from inventory check offs. New location of SCBA equipment identified OSC Inventory revised to reflect the new facility. Source notes added to the procedure.
3	01/01/94		Added EOIs, AOIs, SOIs, Es, ECAs to Appendix G. Changed "Appendix" to "Attachment" on Appendix D to concur with CECC EPIP-9, and made some editorial changes.
4	04/11/94		Added specific numbers for required kits and spare bottles, deleted number of SCBAs required in RADCON Lab, corrected referenced procedure to O-FPS-510-SCBA, and change from Signature and Review Sheet to Required Emergency SCBA Inventory Sheet. These changes made to Appendix C and Section 4.2. Added OSC medical supplies cabinet to Appendix G. Added RCI-109 references to Appendix E. Added Section 2.2.4 to use PMI to check facility communications and equipment.
5	10/14/94		Inventory supplies revised to reflect current equipment and references maintained in the TSC, OSC, and RADCON Lab area. Decon supplies added to Appendix A.
CN-1	1/17/95		Source note referencing the PM communication test was added to the text.
6	2/23/95		Reference added. Non-intent format changes made. Additions to inventories in TSC and OSC added. OSC staging area equipment identified.
CN-1	4/1/95		Source note referencing Operator protective clothing.
7	7/21/95	6,10,12,13, 14,17	Minor editorial changes (all non-intent) made to the procedure. Athens Hospital name revised. Locations of MCR SCBAs enhanced. Electric dosimeters at support hospitals referenced to replace pocket chambers. Ten TLDs (emergency use only) added to TSC inventory.
CN-1	8/15/95	11	Revised Appendix D to reflect CECC EPIP-9 revision.
8	2/29/96	3, 10, 18, 21	Minor (non-intent) changes made to the procedure. Fire Services (FPS) numbers revised to reflect current PMs. Additions to OSC inventory made. NRC plan removed from the TSC at their direction.

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REVISION DESCRIPTION:

Revision Number	Effective Date	Pages Affected	Description of Revision
9	10/10/96	3, 5, 7, 10, 12, 16, 17, 18, 19, 20, 21, 23	The following non-intent revisions were made: App. H deleted and included in section 2.2 of this procedure, section 3.0 Records, added to the procedure, cellular phone(s) were added to TSC and OSC inventories, FPS-510 SCBA title was revised, sign offs were added to App. F, EP Manager address revised .
CN-1	2/10/98	3, 10, 16, 18, 19, 20, 21	App. F- added satellite phone to TSC inventory, added ref. PAI-4.01, App.G-removed Spectralink phones in OSC and added Unidens, other editorials as needed.
10	6/30/98	All	Non-intent Changes. Incorporated Change Notice 1. Added references to the TSC and OSC.
11	09/16/98	All	The following non-intent changes were made: combined EPIP-12 and 14 RADCON inventory list's items to Appendix A of this procedure; revised RCI-109 to RCDP-8; clarified the use of EP equipment identified in Appendix A; identified DCRM/EP responsibilities to maintain latest revision's of procedures in the emergency facilities. Removed MSPL due to procedure cancellation.
12	2/28/99	All	Non-intent change. Revised ERFDS to ICS.
13	10/22/99	All	<p>The following intent change was made: The medical supplies stored at the two support hospitals were reduced for the following reasons 1) patient handling processes were improved to reduce unneeded materials; 2) the hospitals requested the unnecessary supplies be removed to enhance storage space in the emergency cabinets; 3) the hospitals have sufficient supplies available due to blood born pathogen prevention programs to provide additional supplies as needed.</p> <p>The following non-intent changes were made: Enhanced titles on two OSC toolboxes and cell phones in the TSC/OSC can be utilized by EP personnel while on duty. ESIs and PAI-13.01 PCP were removed from the TSC inventory as no longer needed for REP response. Added SAMGs to TSC/OSC inventory.</p>
14	6/14/00	All	Non Intent changes. Revised reference to REX to HIS-20. Revised monthly to calendar monthly to match wording in the REP. Fire Operations inspection monthly/quarterly cycle added for clarification. App. A, five (5) calculators moved to OSC from lab for security purposes. App. E, numbers added to hospital set for clarification. App. F, three (3) titles revised on referenced documents and added referenced to the inventory. App. G, titles of two references revised. New KI packets identified. This resolves problems identified in WBN PER, 006394.

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REVISION DESCRIPTION:

Revision n Number	Effective Date	Pages Affected	Description of Revision
15	01/24/01	All Pg. 5,17,18,20	<p>Plan effectiveness determination revisions indicate the following revisions do not reduce the level of effectiveness of the procedures or REP:</p> <p>Revised communications/equipment inspection(s) into calendar monthly and quarterly requirements to support REP activities and standardize these tests across TVAN. This revision also brings these tests in line with requirements in NUREG 0654 (Section 2.2).</p> <p>Removed INPO Resource Manual from TSC. It is online and no longer issued in hard copy (App. F).</p> <p>Revised office and dry board supplies descriptions to standardize across TVAN (App. F & G).</p> <p>Revised fire protection PM retention information to provide the WID number for easier tracking on EMPAC (App. B). Non-intent change.</p>

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1.0 PURPOSE

This Emergency Plan Implementing Procedure (EPIP) provides instructions for required periodic inspections/inventories and maintenance of emergency equipment and supplies.

2.0 RESPONSIBILITIES³

2.1.1 Responsible organizations shall establish programs/procedures to ensure the inventories for which they are responsible are scheduled and conducted at specified frequencies.

2.1.2 Organizations performing inventory and/or inspection shall ensure the following upon completion:

- A. Seals or break-away locking devices are in place on cabinets which are not routinely used to provide a means of determining if a cabinet has been opened.
- B. Signatures of persons performing inventory and/or inspection are obtained.
- C. Deficiencies noted in the inventory are corrected.
- D. Completed inventory lists are submitted to the Emergency Preparedness (EP) Manager.

2.1.3 Radiological Control (RADCON) shall be responsible for inventory or inspection of equipment listed in Appendices A and D.

NOTE: Radiological equipment identified in Appendix A is considered available for use and not dedicated equipment. This equipment can also be utilized for routine plant operations.

2.1.4 Medical Services is responsible for providing supplies and shall assist Fire Protection (FP) in the inventory or inspection of equipment listed in Appendix B.

2.1.5 Fire Protection shall be responsible for the inventory or inspection of equipment and supplies listed in Appendices B and C.

2.1.6 EP shall be responsible for inventory or inspection of equipment and supplies listed in Appendices E, F and G.

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2.0 RESPONSIBILITIES (continued)

2.1.7 The WBN EP Manager shall review completed inventory lists (Appendices), investigate deficiencies, provide signature (if required) and maintain file copies.

2.2 Inventory/Inspection Frequency

2.2.1 Emergency Preparedness shall ensure that the contents of emergency equipment and supply cabinets are inventoried, inspected, and checked for operability and/or material condition each calendar quarter unless otherwise specified. After drills, exercises, or real emergencies, equipment and supplies will be replenished as soon as possible by WBN Emergency Preparedness.²

2.2.2 Portable radiation monitoring instruments shall be inventoried and calibrated routinely in accordance with RCDP-8. Instruments should be replaced if they require service/calibration prior to the date of the next inventory.² These instruments are inventoried on a calendar monthly basis.

2.2.3 Self-Contained Breathing Apparatus (SCBA) units shall be inventoried monthly in accordance with applicable plant procedures and more often as needed.²

2.2.4 Medical/Emergency supplies shall be inventoried monthly/quarterly with applicable plant procedures or more if needed.

NOTE: Fire Operations monthly inventories follow a 28 day cycle and
Fire Operations quarterly inventories follow a 12 week cycle.

2.2.5 Emergency facilities communications and equipment inspections will be conducted on a calendar monthly and calendar quarterly basis by WBN Emergency Preparedness using Preventive Maintenance Instruction, WBN O-TEL-250-0001, File # 01 and WBN O-TEL-250-0002, File #02.⁴

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**RESPONSIBILITIES FOR EMERGENCY EQUIPMENT AND SUPPLIES
INVENTORY AND MAINTENANCE SUMMARY**

<u>APPENDICES A, B, C, D, E, F, & G</u>	<u>FREQUENCY</u>	<u>RESPONSIBLE</u>
A. Radiological Control Lab	Monthly	Radiological Control
B. Medical/Emergency Supplies	Monthly/Quarterly	Fire Protection/Medical
C. Self-Contained Respiratory Equipment	Monthly	Fire Protection
D. Emergency Van	Quarterly	Radiological Control
E. Hospital Emergency Room Cabinet	Quarterly	EP Program Manager
F. Technical Support Center Cabinets References & Supplies	Quarterly	EP Program Manager
G. Operations Support Center Cabinets References & Supplies	Quarterly	EP Program Manager

2.3 Inventory/Inspection Instructions³

- 2.3.1 Emergency response facility cabinets shall be inventoried against the list of required items (see Appendices).
- 2.3.2 Special checks of certain material(s) in the cabinets shall be performed as follows:
- A. Copies of procedures maintained at the emergency response facilities (see Appendices) shall be checked/maintained by DCRM to verify latest revisions.
 - B. TSC and OSC position activity books are maintained/verified by EP.
 - C. SCBA units and spare bottles shall be verified ready for use.
 - D. Protective clothing and heat or moisture-sensitive items shall be checked for deterioration.
 - E. Flashlights shall be checked for power/operability.
 - F. Potassium Iodide (KI) in the OSC medical supply cabinet shall be checked for expiration date as indicated on Appendix G. Stock should be replaced if it expires prior to next projected inventory.

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2.3.2 Continued

- G. As necessary, replace batteries with fresh batteries from Power Stores.
(Do not discard batteries. Return them to the Toolroom.)

2.3.3 Emergency response facility cabinet inventory lists (Appendices) shall be completed as follows:

- A. If items are present, in sufficient quantities, and in good working condition, check YES column.
- B. If a deficiency is noted, check the NO column. Make appropriate corrections and describe the corrective action in the REMARKS column.
- C. Deficiencies should be corrected immediately. If circumstances do not allow immediate correction, the EP Manager shall be notified. When deficiencies are corrected, the list (Appendix) is initialed and dated.
- D. Forward completed signature and review list (Appendix) to the EP Manager for confirmation and records management. Original documentation of inventories of medical supplies in the fire emergency equipment cage and ambulance and SCBA equipment will be retained by Fire Protection or Document Control.
- E. Sealed cabinets or kits do not have to be inventoried unless they contain items which require periodic replacement or pressure checks (for example, batteries and SCBA bottle pressure) or calibration.

3.0 Records

3.1 QA Records None

3.2 Non-QA-records The inventory(s)/inspection(s) in this instruction are Non-QA documents and will be retained by the WBN Emergency Planning Manager for at least two years.

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4.0 REFERENCES

4.1 Interfacing Documents

RCDP-8, Radiological Control Departmental Procedure: "Radiological Instrumentation and Equipment Controls"

NP Radiological Emergency Plan (REP)

ANSI Standard N18.7-1976

WBN FSAR Chapter Six

4.2 Other Documents

NUREG 0654, Revision 1, Criteria for Preparation and Evaluation of Radiological Emergency Response Plans and Preparedness in Support of Nuclear Power Plants

Preventive Maintenance Instruction (PMI) 0-FPS-510-SCBA, Cleaning/Sanitizing, Maintenance, Inspection, Storage and Inventory of Positive Pressure MSA, SCBAs.²

FPS-510-AMB, FPS-777 - Fire Equip, FPS-510-005 Stretcher, FPS-510-0010 Fire Truck

5.0 APPENDICES

Appendix A, RADCON Emergency Equipment

Appendix B, Medical Emergency Supplies

Appendix C, Emergency Use Pressure Demand Self-Contained Respiratory Equipment

Appendix D, Radiological Monitoring Van Emergency Equipment

Appendix E, Rhea County Medical Center and Athens Regional Medical Center Emergency Cabinet Inventory

Appendix F, Technical Support Center Emergency Supplies

Appendix G, Operations Support Center Emergency Supplies

Appendix A
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**RESPONSIBILITY - RADCON
RADCON EMERGENCY EQUIPMENT**

Date: _____

Location: Radiological Control Laboratory and support areas - Service Building, EI 713'

<u>QUANTITY</u>	<u>DESCRIPTION</u>	<u>YES</u>	<u>NO</u>	<u>REMARKS</u>
1	Alpha Survey Meter (500,000 cpm)	—	—	_____
1	Neutron dose rate survey meter (0.025 eV - 10 MeV) (5,000 mrem)	—	—	_____
2	Teletector or equivalent (1,000 rem/hr. with 13-foot extendable probe)	—	—	_____
6	ION Chamber Survey Meter (50 rem/hr.)	—	—	_____
1	ION Chamber Survey Meter (20,000 rem/hr.)	—	—	_____
5	High Volume Air Sampler (and support equipment)	—	—	_____
10	Frisker Type Survey Meters (0-50,000 cpm)	—	—	_____
5	Low-Volume Air Sampler (and support equipment)	—	—	_____
1	Portable Mini Scaler	—	—	_____
5	Calculators (hand-held) (in OSC cabinet)	—	—	_____
5	Marinelli beakers	—	—	_____
1	Shielded detector pig	—	—	_____
10	Silver zeolite cartridges	—	—	_____

Appendix A
(Page 2 of 2)

RESPONSIBILITY - RADCON

Date _____ **RADCON EMERGENCY EQUIPMENT (continued)**

Decontamination Supplies:

Location: Radiological Control Laboratory - Service Building, EI 713'

<u>QUANTITY</u>	<u>DESCRIPTION</u>	<u>YES</u>	<u>NO</u>	<u>REMARKS</u>
2 boxes	Surgeon Gloves	___	___	_____
1, 60 cc	Syringe	___	___	_____
2 boxes	Gauze Pads	___	___	_____
1 box	Cotton Q-Tips	___	___	_____
2 bottles	Saline Solution	___	___	_____
5	Surgical Brushes	___	___	_____
1 bottle	Shampoo	___	___	_____
5 bars	Soap	___	___	_____
1 bottle	Soap (liquid abrasive)	___	___	_____
1 can	Mechanic's Hand Cleaner	___	___	_____
1 can	Shaving Cream	___	___	_____
5	Razors	___	___	_____
3 bags	Commeal	___	___	_____
1 box	Paper Bath Towels	___	___	_____
25	Towels	___	___	_____
1 pair	Scissors	___	___	_____
1	Catch Containment w/drain tubing	___	___	_____
2 gallon	Poly Bottle	___	___	_____
5	Petri Dishes	___	___	_____
1	Radcon Spill Kit	___	___	_____
1	Frisker w/wound probe	___	___	_____
2 rolls	Duct Tape	___	___	_____
1 box	Facial Tissue	___	___	_____
10	Paper Coveralls	___	___	_____

Inspection performed by:

RADCON Representative _____ Date _____

Reviewed by:

EP Manager _____ Date _____

Send completed Appendix A to WBN EP Manager, WTC 1P, WBN.

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Appendix B
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RESPONSIBILITY - MEDICAL SERVICES/FIRE PROTECTION

MEDICAL EMERGENCY SUPPLIES¹

1. A sealed trauma kit and other medical supplies for exclusive use by the Medical Emergency Response Team (MERT) shall be located in both the fire emergency equipment cage and ambulance maintained by Fire Protection (FP). Medical Services (MS) identifies and provides the minimum necessary materials to be kept in the kits. FP performs a inventory/inspection of the kits quarterly or after each use of the kit with assistance from MS. FP provides documentation of those inspections. FP will restock kits as necessary. (See PM-0-FPS-510-AMB and FPS-777 Fire Equip., Fire Truck FPS-510-0010.)

2. Stretchers are placed at strategic locations throughout the plant for use by MERT for transportation of seriously ill or injured persons. FP will perform and document quarterly inspections of stretcher locations and their associated equipment. (See PM-0-FPS-510-005, Stretcher).

3. Equipment located in the fire emergency cage and ambulance shall be available for use by MERT.

4. Work Implementing Document (WID) number for the following completed packages shall be sent to WBN EP Manager, WTC 1P-WBN: PM-O-FPS-510-AMB, PM-O-FPS-510-005-Stretcher Cabinets and FPS-777-Fire Equipment..

5. WID numbers for completed PM's received and filed.

Signature

Date

WBN	EMERGENCY EQUIPMENT AND SUPPLIES	EPIP-12 Revision 15 Page 13 of 22
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Appendix C
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RESPONSIBILITY - FIRE PROTECTION

EMERGENCY USE PRESSURE DEMAND SELF-CONTAINED RESPIRATORY EQUIPMENT

Self-contained Breathing Apparatus (SCBA) equipment used for radiological emergency conditions are stored at the following locations:²

<u>LOCATION</u>	<u>REQUIRED SCBA KITS</u>	<u>NUMBER SPARE BOTTLES</u>
1. Main Control Room (located in El. 755 Relay Room)	10	0
2. Auxiliary Building, El 757', Fire Cage	6	6
3. Service Building, El 729', Fire Cage	6	6
4. Service Building, El 713', Racks	20	20
5. Fire Truck and other Response Vehicles (fire protection)	5	4
6. SCBA equipment is inspected and inventoried in accordance with 0-FPS-510-SCBA, Cleaning/Sanitizing, Maintenance, Inspection, Storage and Inventory of Positive Pressure MSA, SCBAs.		
7. Send completed copy of Required Emergency SCBA Inventory Sheet to WBN EP Manager. One copy will be maintained in WBN EP files.		
8. Required Emergency SCBA Inventory Sheet received and filed.		

Signature

Date

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Appendix D
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RESPONSIBILITY - RADCON

RAD MONITORING VAN EMERGENCY EQUIPMENT

1. See CECC-EPIP-9, Attachment J.
2. A copy of Attachment J (completed) will be forwarded to the WBN EP Manager, WTC 1P-WBN, for review and retention in the WBN EP files.
3. CECC Attachment J reviewed and filed.

Signature

Date

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Appendix E
RESPONSIBILITY - EP
RHEA MEDICAL CENTER AND ATHENS REGIONAL MEDICAL CENTER
EMERGENCY CABINET INVENTORY ⁷

SAT	Quantity	Description	Remarks
Protective Clothing			
	10 pair	Shoe covers	
	10	Dress out packages (coveralls, booties, gloves)	
	3	Surgical gowns	
	2 boxes	Surgical gloves	
	4 rolls	Surgical tape for dressout	
Facility Preparation			
	1 set	Floor coverings (see hospital specific booklet)	
	20 ft	3 ft approx. wide paper	
	2 rolls	2 inch approx. duct tape	
	2 roll	Radiation Warning symbol tape (2")	
	2	Step off pads	
	1 set	Radiological barrier posting signs (5 in set)	
	1 set	Radiological barrier rope or ribbon	
	1 set	Traffic cones (5 in set)	
	10	Large rad waste plastic bags (trash can size)	
	10	Medium rad waste plastic bags	
	2 copies	Hospital specific booklet	
	1	Radioactive material label tape	
Decontamination Supplies			
	1	Decontamination table, backboard and bottles (min. total capacity of 10 gallons)	
	1	Flexible funnel with drain hose	
	1	Decontamination media /soap product	
	1	NCRP # 65 Reference Handbook	
	12	Cotton swabs	
	20	Zip lock bags for sample collection	
	10	Labels for sample bags	
	2	Scissors	
	1	Wall poster with decontamination steps	
Health Physics Supplies			(Serial # and cal due)
	1	Bicron ISM (RSO-5 or 50)	
	2	Bicron Surveyor 50	
	1	Wound probe with cable	
	10	TLDs	
	10	Electronic dosimeters and tray	
	200	Smears	
	12	Radioactive Material tags	
	1	Masslin mop and 20 cloths	

Inspected by: _____

Date: _____

* A copy of completed Appendix E will be retained in the WBN EP files.

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Appendix F
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RESPONSIBILITY - EP

**EMERGENCY SUPPLIES
TECHNICAL SUPPORT CENTER (TSC)²**

<u>DOCUMENTS</u>	(TSC Reference Areas) (Checkoff)		<u>REMARKS</u>
	<u>YES</u>	<u>NO</u>	
Plant Drawings (verify existence only)	_____	_____	_____
DCRM Controls Listing	_____	_____	_____
1 ASME Steam tables	_____	_____	_____
1 FRED Users Manual	_____	_____	_____
2 Meteorological Data Display Programs User's Manual	_____	_____	_____
1 Meteorological Data Print Program User's Manual	_____	_____	_____
1 WBN Environmental Data Station Manual	_____	_____	_____
3 Emergency Paging System User's Manual (1 in MCR)	_____	_____	_____
3 NP REP (Radiological Emergency Plan)	_____	_____	_____
2 REND (Radiological Emergency Notification Directory)	_____	_____	_____
2 CECC EIPs	_____	_____	_____
4 WBN EIPs	_____	_____	_____
1 set Position Activity Books (latest Procedure Rev.)	_____	_____	_____
1 set SOIs (System Operating Instructions)	_____	_____	_____
3 copies Unit 1 Technical Specifications	_____	_____	_____
1 copy Function Restoration Instructions	_____	_____	_____
2 copy Emergency Instructions	_____	_____	_____
1 copy Emergency Contingency Actions	_____	_____	_____
1 Safety and Health Manual	_____	_____	_____

Retain completed Appendix F in WBN EP file. _____
Inspection Performed By Date

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RESPONSIBILITY - EP

**EMERGENCY SUPPLIES
TECHNICAL SUPPORT CENTER (TSC)**

<u>DOCUMENTS</u>	(TSC Reference Areas) (Checkoff)		<u>REMARKS</u>
	<u>YES</u>	<u>NO</u>	
10 WBN Phone Directories (latest edition)	_____	_____	_____
10 TVA Phone Directories (latest edition)	_____	_____	_____
1 WBN FSAR (Updated)	_____	_____	_____
1 State of Tennessee Multijurisdictional REP Response Plan	_____	_____	_____
1 WBN ODCM	_____	_____	_____
2 set AOIs (Abnormal Operating Instructions)	_____	_____	_____
1 set TIs (Technical Instructions) (Index/EPP Selected)	_____	_____	_____
1 set GOIs (General Operating Instructions)	_____	_____	_____
1 Master Fuse List, Vol. 1 & 2	_____	_____	_____
1 (set) System Description Manual	_____	_____	_____
3 ICS System User's Guide	_____	_____	_____
1 (set) Annunciator Response Instructions	_____	_____	_____

Retain completed Appendix F in WBN EP file.

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Date

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RESPONSIBILITY - EP

**EMERGENCY SUPPLIES
TECHNICAL SUPPORT CENTER (TSC)**

<u>DOCUMENTS</u> (continued)	(TSC Reference Areas) (Checkoff)		<u>REMARKS</u>
	<u>YES</u>	<u>NO</u>	
RCIs (Radiological Control Instructions) 2 books	_____	_____	_____
1 ECIs Environmental Control Instructions (EPP Selected)	_____	_____	_____
1 Chemistry Manual (EPP Selected)	_____	_____	_____
1 Periodic Instructions (EPP Selected)	_____	_____	_____
7 SAMGs	_____	_____	_____
3 SAMG Set Point and Comp Aid Basis	_____	_____	_____
1 copy Chattanooga Phone Directory (current edition)	_____	_____	_____
1 copy Knoxville Phone Directory (current edition)	_____	_____	_____
<u>Communications Equipment & Calculators</u>			
3 Communications Head Sets	_____	_____	_____
1 Telephone (Cordless) (ac power)	_____	_____	_____
6 TI-55 Calculators (or equivalent)	_____	_____	_____
1 Spectralink Phone System	_____	_____	_____
1 Video Recorder	_____	_____	_____
10 Emergency TLDs	_____	_____	<u>Expiration Date:</u> _____
1 Satellite Phone and Accessories	_____	_____	_____

Retain completed Appendix F in WBN EP file.

Inspection Performed By _____

Date _____

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RESPONSIBILITY - EP

**EMERGENCY SUPPLIES
TECHNICAL SUPPORT CENTER (TSC)**

(TSC Reference Areas)			
<u>SUPPLIES</u>	(Checkoff)		<u>REMARKS</u>
	<u>YES</u>	<u>NO</u>	
Assorted Dryboard Supplies	_____	_____	_____
2 rolls Thermal Paper	_____	_____	_____
Assorted Desk Top Supplies	_____	_____	_____
Assorted Office Supplies	_____	_____	_____
Keys to TSC in Main Control Room	_____	_____	_____
Cellular Telephone ⁶ (available for facility/EP use)	_____	_____	_____
Inspection Performed By: _____		Date _____	
Reviewed by: _____ WBN EP Manager		Date _____	

Retain completed Appendix F in WBN EP file.

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Appendix G
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**RESPONSIBILITY - EP
EMERGENCY SUPPLIES
OPERATIONS SUPPORT CENTER**

<u>DOCUMENTS</u>	OSC Areas (CHECKOFF)		<u>REMARKS</u>
	<u>YES</u>	<u>NO</u>	
1 set Position Activity Books (latest revision)	---	---	_____
Plant Drawings (verify existence only DCRM controls listing)	---	---	_____
1 WBN EIPs	---	---	_____
10 WBN Telephone Book (latest edition)	---	---	_____
5 TVA Telephone Book (latest edition)	---	---	_____
1 Nuclear Power Safety and Health Manual (NPSHM)	---	---	_____
1 set Vendor Manual Cross References	---	---	_____
1 set Maintenance Instructions (MIs) (selected, see EPP)	---	---	_____
1 set Emergency Contingency Actions (ECAs)	---	---	_____
1 set Abnormal Operating Instructions (AOIs)	---	---	_____
1 set System Operating Instructions (SOIs)	---	---	_____
1 set Emergency Instructions (EIs)	---	---	_____
2 ICS System User's Guide	---	---	_____
1 Functional Restorations Instructions	---	---	_____
Master Fuse List Vol. 1 & 2	---	---	_____
BP-364, Control of Portable Two-way Radios	---	---	_____
CHEM 13.0 & 13.15	---	---	_____
1 SAMG	---	---	_____
<u>Communications Equipment</u>			
3 Auto dial telephones	---	---	_____
1 Fax machine	---	---	_____
2 ICS Terminals	---	---	_____
3 Computer Terminals	---	---	_____
1 LaserJet V Printer	---	---	_____
4 Portable Phones	---	---	_____
1 HIS-20 Terminal	---	---	_____
1 Cellular Telephone ⁶ (available for facility/EP use)	---	---	_____

Retain completed Appendix G in WBN EP file.

Inspection Performed By _____

Date _____

Appendix G
(Page 2 of 2)

RESPONSIBILITY - EP

**EMERGENCY SUPPLIES
OPERATIONS SUPPORT CENTER**

<u>Supplies</u>	OSC Areas (Checkoff)			<u>REMARKS</u>
	<u>YES</u>	<u>NO</u>		
Keys to OSC in Main Control Room	—	—		_____
2 Easels	—	—		_____
Assorted desktop supplies for all positions	—	—		_____
6 Status Boards	—	—		_____
Assorted Dryboard Supplies	—	—		_____
Assorted Office Supplies	—	—		_____
1 Book of Current OSC Briefing/Debriefing Forms	—	—		_____
5 Calculators	—	—		_____
	<u>Tool Room</u>			
<u>EQUIPMENT</u>				
OSC (Tool Kits)				
Boilermakers	—	—		_____
Limitorque	—	—		_____
Mechanical/Machinist	—	—		_____
Instrument	—	—		_____
Electrical	—	—		_____
Steam Fitters	—	—		_____
Safety equipment	—	—		_____
Medical Supply Cabinet	—	—		_____
First Aid Kit	—	—		_____
2,000 tablets of KI	—	—		_____
KI Issuance Instructions Inserts	—	—		_____
OSC Staging Area(s)				
Tables and chairs	—	—		_____
Rex Terminal	—	—		_____
Anti C clothing/supplies ⁵	—	—		_____
Speaker System	—	—		_____
Overnight Cots & Sleeping Bags	—	—		_____
Inspection Performed By: _____		Date: _____		
Reviewed By: _____		Date: _____		
EP Manager				

WBN	EMERGENCY EQUIPMENT AND SUPPLIES	EPIP-12 Revision 15 Page 22 of 22
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SOURCE NOTES

Page 1 of 1

- | | | |
|---|--|---|
| 1 | MC-840427005015, MSC-02387,
NCO-920042683. | Onsite Ambulance complete and in service. Section Appendix B (page 1 of 1). Also see EPIP-10. |
| 2 | FSR-06-293 FSR-06-294.
NCO-920110809
FSR-06-294
NCO-920057401 | The MCRHS area is designed for long-term occupation by personnel required during emergency operations. Supplies and equipment are provided Section 2.2 Inventory/Inspection Frequency, 2.2.3, also see Section 4.2. Other documents Appendix C Emergency Use Pressure Demand S.C.B.A.s and Appendix F, Technical Support Center Emergency Supplies. Also see EPIP-6 Section 3.6 Long Term Operations 3.6.3. |
| 3 | ANSI Standard N18.7-1976
Subsection 5.3.9.3: 01 POI | Contents of EIPs that support the REP will contain the following elements. |
| 4 | MSC-00590, LIC COND 21 Resp
NCO 920030105 | In reference to Licensing Condition 21, communication system required by the Facility Emergency Plan are tested once per year during an emergency drill. |
| 5 | HEO 219 | Operator protective clothing maintained in the OSC. |
| 6 | PERWB960582 | Added cellular phone to OSC and TSC inventories. |
| 7 | NCRP #9 | "Management of Persons Accidentally Contaminated with Radionuclides" |

FILING INSTRUCTIONS

DOCUMENT NUMBER EPLP-16

REMOVE REVISION 11 INSERT REVISION 12
3/30/01

Comments Remove Tabs From Rev. 11 Do not
insert in Rev 12.

TENNESSEE VALLEY AUTHORITY

WATTS BAR NUCLEAR PLANT

**EMERGENCY PLAN IMPLEMENTING
PROCEDURES**

EPIP-16

**INITIAL DOSE ASSESSMENT
FOR
RADIOLOGICAL EMERGENCIES**

Revision 12

Unit 0

QUALITY RELATED

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

SPONSORING ORGANIZATION: Emergency Planning

APPROVED BY: F. L. Pavlechko

EFFECTIVE DATE: 3/30/01

LEVEL OF USE: REFERENCE

REVISION LOG

Revision Number	Implementation Date	Pages Affected	Description of Revision
0	8/1/94		New WBN-EPIP.
1	2/23/95		Source Notes added to the procedure. Two additional steps added to Appendix B (FRED) for user clarification. New map developed to enhance site perimeter monitor locations. Intermediate (MET Tower instrument) added to wind speed determination in Appendix A for user assistance.
2	4/21/95		Stability class work sheet added to the procedure. Editorial (non-intent) changes made. Enhanced FRED users directions, to improve clarity of instructions.
3	6/17/96	3,4,5,6,7,8,9,10,11, 12,13,14, 15,18, 22-29	Unmonitored Release Nomogram added to the procedure. References associated with new nomogram added to the procedure. Stability class work sheet included in both nomograms. Page renumbering initiated due to changes. TI-30 incorporated into the procedure as Appendix E. Two and five mile conversion tables added to the nomograms as backup methods to FRED.
4	2/15/97	6,7,8,9	New dose assessment computer (ERFDS) added to the procedure to take the place of FRED. Appendixes realigned to support ERFDS model. Appendix D, Site Perimeter Map, incorporated into Appendix A. All changes considered non-intent. Pages realigned to support the enhancements. Incorporated CNs 1,2 and 3.
5	09/12/97	2-4,7,9,10-12,14-16, 18,21,22,29.	Incorporate CN-1. Add Appendix A and B Note 2, Human factoring changes and definitions for clarification. Added DCN W-39536-A changes.
CN-1	02/10/98	2,5	Include SPP-2.6 as a reference and other editorial changes.
6	6/30/98	All	Non-Intent Change. Incorporated Change Notice 1. Corrected typographical errors. Eliminated non-utilized definitions (Plume EDD). Added reference to SM/SED to responsibility. Changed total to site boundary on page 1 of Appendix B. Other enhancements. Removed unnecessary RAD monitor reference to Appendix D and removed reference to Unit 2 condenser vacuum exhaust. Added notes to data sheet E-6 to transmit data to CECC.
7	10/9/98	2,21,25	Non-intent Change. Added minimum flow rates (used in ERFDS release rate calculations) to manual calculations for release rates.
8	02/25/99	All	Non-intent change. Changed Aux Bldg flow rate on O-RM-90-101B.
9	2/28/99	All	Non-intent change. Revised EFRDS/P2500 to ICS.
10	6/14/00	All	Non-intent change. Revised RE/RM definitions to include ICS.
11	03/02/01	2, 7, 10, 21, 25 & 27	Intent change. Interim corrective action for PER 01-002916

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REVISION LOG

Revision Number	Implementation Date	Pages Affected	Description of Revision
12	3/30/01	All	<p>Intent change. Plan effectiveness determination reviews indicate the following revisions do not reduce the level of effectiveness of the procedure or REP:</p> <p>This is a general revision to EPIP-16, regarding the methods for projecting total effective dose equivalent (TEDE) and thyroid committed dose equivalent for airborne radioactive releases at WBN. The revision is being issued to update the ICS software and manual methods with new calculation data and NUREG 1465 mixes and remove calculations that are no longer valid. In addition, the manual methodology has incorporated this data into standardized tables versus nomograms. Interim corrective action for PER 01-002916 remains in effect.</p>

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1.0 PURPOSE^{1,2,3}

This Procedure provides initial guidance to support site activities concerning dose assessment for airborne release situation(s).

2.0 RESPONSIBILITY

The onshift Radiological Control Group (RADCON) is responsible for completing this procedure should the CECC/TSC not be activated. This procedure will be performed as directed by the SED/SM when a dose assessment is necessary.

3.0 DEFINITIONS/ACRONYMS

- 3.1 **AIRBORNE RELEASE:** Release of airborne radioactive material from the site into the environment.
- 3.2 **CECC:** Central Emergency Control Center.
- 3.3 **EXCLUSION AREA BOUNDARY:** The demarcation of the area (.62 mile) surrounding the WBN units in which postulated FSAR accidents will not result in population doses exceeding the criteria of 10CFR Part 100. (See Appendix A of this procedure).
- 3.4 **ICS:** Integrated Computer System.
- 3.5 **PAG:** Protective Action Guide. Specific levels of radiation dose control established by the Environment Protection Agency, (i.e., 1 REM TEDE, 5 REM Thyroid CDE).
- 3.6 **RE/RM ICS** references radiological elements (RE). The control room also has radiological monitors (RM) connected to these elements. For the purposes of this procedure these acronyms can be used interchangeably.
- 3.7 **SITE BOUNDARY:** The Site Boundary used here is consistent with the definition in the Offsite Dose Calculation Manual. (See Appendix A of this procedure). The appropriate boundary between "onsite" and "offsite".

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3.0 DEFINITIONS/ACRONYMS (continued)

- 3.8 **SITE PERIMETER (SP):** An area encompassing owner controlled areas in the immediate site environment. Measurements are taken at the 16 identified radiological monitoring points along the Site Perimeter. (See Appendix A of this procedure).
- 3.9 **STABILITY CLASS:** An index (A-G) to represent the degree of mixing in the atmosphere.
- 3.10 **TEDE:** Total Effective Dose Equivalent. The TEDE dose is equivalent to the sum of the plume EDE, the inhalation EDE, and the ground EDE.
- 3.11 **THYROID CDE:** Thyroid Committed Dose Equivalent.
- 3.12 **X/Q:** The release dilution ratio between concentrations (X) at reception point (e.g., SP) to the source strength (Q) at a given release point. This dilution ratio is incorporated into the tables for Appendix B.

4.0 GENERAL INSTRUCTIONS

- 4.1 For initial dose assessment activities, COMPLETE the instructions found in Appendix A, "ICS, Dose Assessment."
- 4.2 Should ICS dose assessment be unavailable use the backup calculation method(s) in Appendix B or C or D for the Site Boundary and five mile zones.

5.0 REFERENCES

5.1 Interfacing Documents

- CECC EPIP-8, "Dose Assessment Staff Activities During Nuclear Plant Radiological Emergencies"
- WBN FSAR
- ICS User's Manual
- WBN EPIP-1, "Emergency Plan Classification Flowchart"

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5.0 REFERENCES (continued)

5.2 Other Documents

- TVA NP Radiological Emergency Plan
- NUREG-0654/FEMA REP-1, "Criteria for Preparation and Evaluation of Radiological Emergency Response Plans and Preparedness in Support of Nuclear Power Plants"
- NUREG 1465, Accident Source Terms for Light-Water Nuclear Power Plants
- NUREG 1228, Source Terms Estimated During Incident Response to Severe Nuclear Power Plant Accidents
- Title 10, Code of Federal Regulations, Part 50, Appendix E
- DCN 37910-A
- EPA-400
- Title 10, Code of Federal Regulations, Part 20
- Letter, Eberline Instrument Co., to TVA (EEB820919007), 9/19/83 on (High Range Monitor Efficiencies)
- WBN EPIP-6, Activation and Operation of the Technical Support Center (TSC)
- WBN EPIP-9, Loss of Meteorological Data
- ODCM
- NE Calculation Package, WBN TSR-008, WBNTSR-009, TI-RPS-162, WBN NAL 3-003R1, WBN APS 3-084
- SPP-2.6, Computer Software Control

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6.0 APPENDIXES

Appendix A, "ICS Dose Assessment"

Appendix B, "Manual Worksheet For The Assessment Of Monitored Airborne Radioactivity Releases"

Appendix C, " WBN Unmonitored Releases Based on Accident Types "

Appendix D, "Radiological Gaseous Effluent Evaluation (Manual Calculation)"

7.0 RECORDS

7.1 QA RECORDS

None.

7.2 NON-QA RECORDS

Output generated through use of all appendices will be retained for real emergencies and the NRC Graded Exercises by the WBN EP Manager.

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**APPENDIX A
(Page 1 of 3)**

**"ICS"
DOSE ASSESSMENT**

1. **ACCESS** the main WBN menu screen from an ICS terminal.
2. **ACCESS** the TSC menu from the main WBN menu screen.
3. **ACCESS** the Dose Assessment screen (DOSE) from the TSC menu.
4. **RECALCULATE** the Dose Assessment and print the worksheet.

NOTE 1: The correction factor of 1.34 may be disregarded if it is known that there is no release in progress through the ABGTS.

5. As an interim corrective action to PER 01-002916,
MULTIPLY the doses by 1.34 and
RECORD on the ICS worksheet.
6. **PROVIDE** Dose Assessment information to the SM.

NOTE 2: METDATA, wind direction, and EFF1 information are also available from the Dose Assessment screen.

NOTE 3: If ICS Dose Assessment is unavailable, refer to the worksheets in Appendixes B, C, and D of this procedure.

SELECT FUNC. KEY OR TURN-ON CODE DOSE >

CHPZ I

WBN - DOSE ASSESSMENT

DATE: 0 / 0 / 0
TIME: 0 : 0 : 0

RECALCULATE

INPUTS:		VALUE	UNITS	QUALITY
MET46A15	- EDS METDATA 46M 15MIN AVG WIND SPEED		MI/HR	
MET46D15	- EDS METDATA 46M 15MIN AVG WIND DIRECTION (FROM)		DEG	
METSTCS2	- EDS 15MIN STABILITY CLASS			
RAD025	- ICS CALCULATED TOTAL NOBLE GAS RELEASE RATE	0.00e+00	uCi/s	GOOD
IODINE	- .001 * TOTAL NOBLE GAS RELEASE RATE	0.00e+00	uCi/s	GOOD
OUTPUT:		TEDE (Rem)	THYROID CDE (Rem)	
SITE BOUNDARY		0.0e+00	0.0e+00	
2 MILE:		0.0e+00	0.0e+00	
5 MILE:		0.0e+00	0.0e+00	

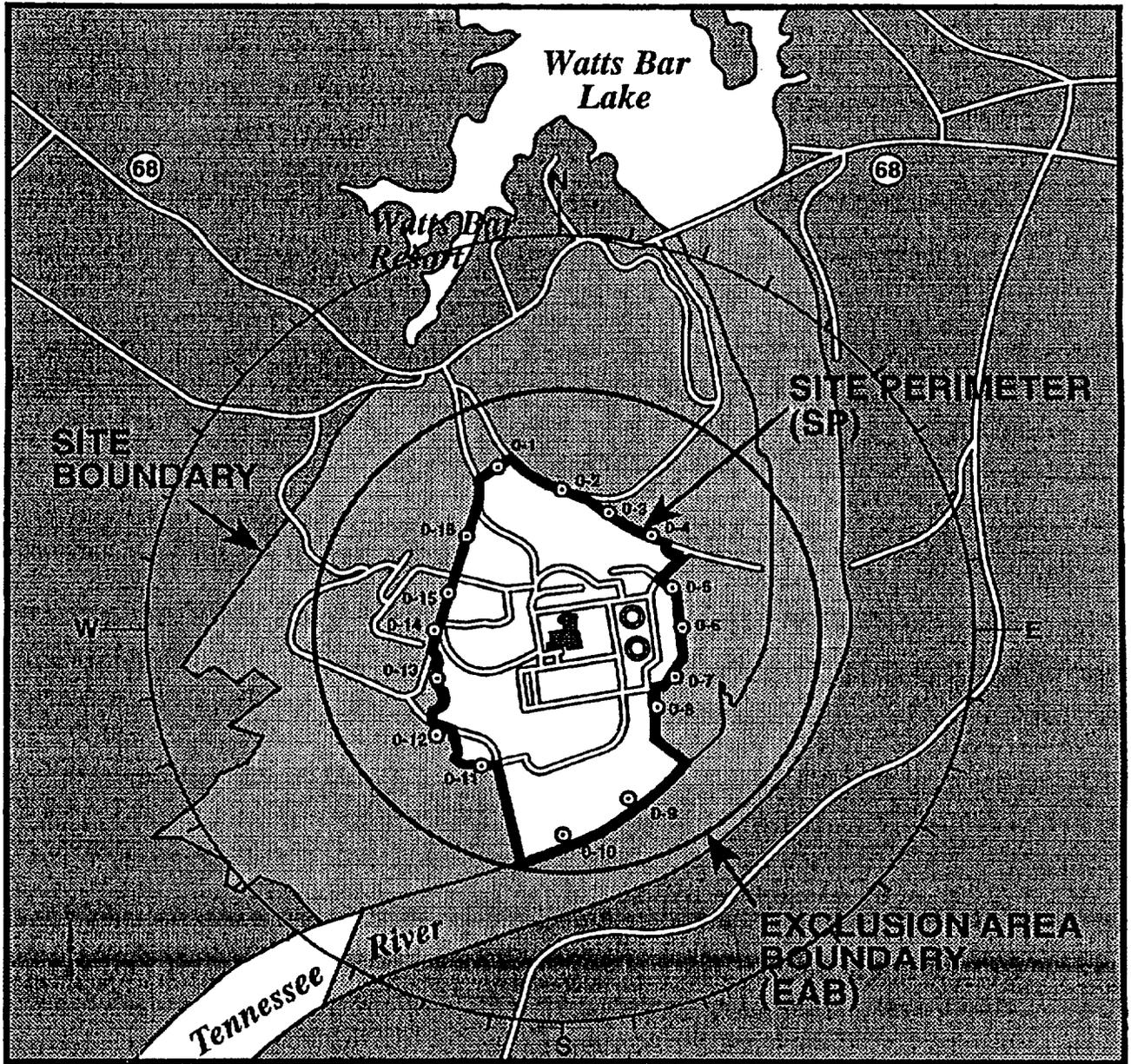
MET DATA EFF1

APPENDIX A
(Page 2 of 3)
ICS Dose Assessment Example

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PREVIOUS (F7) CANCEL (ESC) F1-CLEAR F2- F3- F4- F5- F6-

APPENDIX A
SITE MAP
(Page 3 of 3)



APPENDIX B

(Page 1 of 4)

**MANUAL WORKSHEET FOR THE ASSESSMENT OF MONITORED
AIRBORNE RADIOACTIVITY RELEASES**

1. **REMOVE** this work sheet from this appendix.
2. **OBTAIN** appropriate meteorological data and enter below.
 - a) **Stability Class*** _____
 - b) **Wind speed(m/s)** _____. Wind Speed in mph* is from the 46 meter height (I - Intermediate, Average). Divide mph by 2.2 to obtain meters per second.

NOTE 1: The correction factor of 1.34 may be disregarded if it is known that there is no release in progress through the ABGTS.

3. **OBTAIN** the Noble Gas(NG) release rate [use ICS (EFF1) if available]. **MULTIPLY** the release rate by 1.34 and **RECORD** in _____ $\mu\text{Ci/second}$.

NOTE 2: If ICS is unavailable, notify the SM that Appendix D must be performed by RADCON/Chemistry personnel in TSC.

NOTE 3: If Radiation Monitor data is unavailable or the release is not monitored then use the table on page 1 of Appendix C to determine the noble gas release rate.

4. **Determine** the default TEDE factor from the tables on page 2 of this Appendix based on the meteorological data from step 2 above. Enter the appropriate default TEDE factor for each distance.

TEDE Factor for .62 mile _____ Rem/hour per $\mu\text{Ci/second}$
 TEDE Factor for 5 miles _____ Rem/hour per $\mu\text{Ci/second}$

5. **Determine** the TEDE ratio from the shaded tables on page 3 of this Appendix based on the release path and type of fuel damage. If you are unable to decide, then use **Type 1**.
RECORD the TEDE ratio (.62) _____ TEDE ratio (5) _____.
6. **OBTAIN** an estimate of the release duration time (t) in hours from the SM. If unknown assume a duration of four (4) hours.
RECORD the duration _____ hour(s).

7. **CALCULATE** the TEDE dose at the various distances (.62 & 5) by multiplying:
 NG release rate (step 3) x TEDE factor (step 4) X TEDE ratio (step 5) x duration (step 6) = TEDE dose.

(dist)	NG Release Rate	X	TEDE factor	X	TEDE Ratio	X	Duration (hrs.)	=	TEDE Dose (REM)
(.62)	_____	X	_____	X	_____	X	_____	=	_____
(5)	_____	X	_____	X	_____	X	_____	=	_____

8. **CALCULATE** the Thyroid CDE dose at the various distances (.62 & 5) by multiplying:
 TEDE dose by the Thyroid CDE/TEDE ratio from the Table on page 3 of Appendix B.

(dist)	TEDE Dose	X	Thyroid CDE/TEDE Ratio	=	Thyroid CDE (REM)
(.62)	_____	X	_____	=	_____
(5)	_____	X	_____	=	_____

9. **PROVIDE** this dose assessment to the SM as soon as possible. NG release rates are also used for event classification in WBN EPIP-1.

Prepared by: _____ Date: _____ Time: _____

APPENDIX B
(Page 2 of 4)

TEDE FACTOR (rem/hr per $\mu\text{Ci/s}$) FROM A GROUND-LEVEL RELEASE

Stability A

		wind speed									
miles	1 m/s	2 m/s	3 m/s	4 m/s	5 m/s	6 m/s	7 m/s	8 m/s	9 m/s	10 m/s	
0.62 mi	1.6E-09	8.0E-10	6.4E-10	4.8E-10	3.2E-10	2.9E-10	2.5E-10	2.2E-10	1.9E-10	1.6E-10	
5 mi	7.5E-11	5.2E-11	5.2E-11	5.1E-11	5.1E-11	4.6E-11	4.0E-11	3.5E-11	3.0E-11	2.5E-11	

Stability B

		wind speed									
miles	1 m/s	2 m/s	3 m/s	4 m/s	5 m/s	6 m/s	7 m/s	8 m/s	9 m/s	10 m/s	
0.62	7.5E-09	3.7E-09	3.0E-09	2.2E-09	1.4E-09	1.3E-09	1.2E-09	1.0E-09	8.9E-10	7.5E-10	
5	9.9E-11	6.8E-11	6.7E-11	6.7E-11	6.6E-11	6.0E-11	5.3E-11	4.6E-11	4.0E-11	3.3E-11	

Stability C

		wind speed									
miles	1 m/s	2 m/s	3 m/s	4 m/s	5 m/s	6 m/s	7 m/s	8 m/s	9 m/s	10 m/s	
0.62	2.2E-08	1.1E-08	9.0E-09	6.7E-09	4.3E-09	3.9E-09	3.5E-09	3.0E-09	2.6E-09	2.2E-09	
5	1.9E-10	1.3E-10	1.3E-10	1.3E-10	1.3E-10	1.2E-10	1.1E-10	9.3E-11	7.9E-11	6.5E-11	

Stability D

		wind speed									
miles	1 m/s	2 m/s	3 m/s	4 m/s	5 m/s	6 m/s	7 m/s	8 m/s	9 m/s	10 m/s	
0.62	6.3E-08	3.2E-08	2.6E-08	1.9E-08	1.2E-08	1.1E-08	1.0E-08	8.8E-09	7.5E-09	6.3E-09	
5	8.3E-10	5.8E-10	5.7E-10	5.6E-10	5.6E-10	5.0E-10	4.5E-10	3.9E-10	3.4E-10	2.8E-10	

Stability E

		wind speed									
miles	1 m/s	2 m/s	3 m/s	4 m/s	5 m/s	6 m/s	7 m/s	8 m/s	9 m/s	10 m/s	
0.62	1.1E-07	5.5E-08	4.4E-08	3.3E-08	2.2E-08	2.0E-08	1.8E-08	1.6E-08	1.3E-08	1.1E-08	
5	1.8E-09	1.2E-09	1.2E-09	1.2E-09	1.2E-09	1.1E-09	9.8E-10	8.6E-10	7.3E-10	6.0E-10	

Stability F

		wind speed									
miles	1 m/s	2 m/s	3 m/s	4 m/s	5 m/s	6 m/s	7 m/s	8 m/s	9 m/s	10 m/s	
0.62	2.2E-07	1.0E-07	8.3E-08	6.3E-08	4.2E-08	3.8E-08	3.4E-08	3.0E-08	2.6E-08	2.2E-08	
5	4.6E-09	3.2E-09	3.1E-09	3.1E-09	3.0E-09	2.7E-09	2.4E-09	2.1E-09	1.8E-09	1.5E-09	

Stability G

		wind speed									
miles	1 m/s	2 m/s	3 m/s	4 m/s	5 m/s	6 m/s	7 m/s	8 m/s	9 m/s	10 m/s	
0.62	4.8E-07	2.3E-07	1.8E-07	1.4E-07	9.0E-08	8.1E-08	7.2E-08	6.3E-08	5.4E-08	4.6E-08	
5	1.1E-08	7.5E-09	7.3E-09	7.2E-09	7.0E-09	6.3E-09	5.6E-09	4.9E-09	4.1E-09	3.4E-09	

APPENDIX B
(Page 3 of 4)

NOTE: Type 1 is normal Reactor Coolant. Type 2 is fuel clad gap. Type 3 is Core damage(fuel over temperature). Type 4 is fuel melt. The choices for release paths are Containment leak unfiltered or filtered, SG Tube Rupture above or below the water, Containment Bypass(e.g. RHR on shutdown cooling leaking in Aux. Bldg.). The SM may be able to assist in determining these.

TEDE RATIOS FOR VARIOUS PATHS AND RELEASE TYPES TO THE DEFAULT RELEASE*									
CNTMT (Filtered)/ Default*					CNTMT (unfiltered) or SGTR (below)]/ Default				
mi	Type 1	Type 2	Type 3	Type 4	mi	Type 1	Type 2	Type 3	Type 4
0.62	0.5	1.0	1.0	1.2	0.62	23	4.4	7.0	20
5	1.1	1.0	1.1	1.4	5	55	9.1	16	49
SGTR (above)/ Default					CNTMT Bypass/ Default				
mi	Type 1	Type 2	Type 3	Type 4	mi	Type 1	Type 2	Type 3	Type 4
0.62	24	22	13	32	0.62	23	5.9	7.6	22
5	58	48	29	75	5	55	13	17	52

* DEFAULT RELEASE IS A TYPE 2 VIA THE CNTMT (FILTERED)

THYROID CDE/TEDE RATIOS FOR VARIOUS ACCIDENTS AND RELEASE TYPES				
(To be used for all distances)				
(GROUND release)				
	Type 1	Type 2	Type 3	Type 4
CNTMT (Filtered)	1.4E-02	1.1E-01	4.3E-02	7.2E-02
CNTMT (unfiltered) or SGTR (below)	3.3E-02	2.6E+00	6.4E-01	4.1E-01
SGTR (above)	7.8E-01	1.3E+01	8.3E+00	6.4E+00
CNTMT Bypass	1.1E-01	6.2E+00	2.0E+00	1.4E+00

APPENDIX B
(Page 4 of 4)

STABILITY CLASS WORKSHEET

If the stability class cannot be obtained from the MET DATA screen on ICS or from the CECC utilize this worksheet. The stability class is based on the 46 meter minus (-) 10 meter temperature.

Stability Class	Temperature Differences (F) I-L = difference in temperature
A	≤ -1.24
B	-1.11 to -1.23
C	-.98 to -1.10
D	-.33 to -.97
E	.97 to -.32
F	2.59 to .98
G	≥ 2.6

IF there is a loss of Meteorological data, refer to WBN EPIP-9 for additional help.

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**APPENDIX C
(Page 1 of 1)**

WBN Unmonitored Releases Based on Accident Types

Summary of Accident Types (Consult with SM to determine the Accident type to use.)	Duration of the Release Hours	Noble Gas Release Rates <i>microCi/sec</i>
---	----------------------------------	---

LOCA - 100% Fuel Melt(>1200F) RCS		
Containment Tech Spec allowed leakage (0.25%/24 hours)	24	1.16E+07
Containment Failure(100%/4 hours)	4	2.79E+10

LOCA - 100% Gap Activity RCS		
Containment Tech Spec allowed leakage(0.25%/24 hours)	24	6.34E+03
Containment Failure(100%/4 hours)	4	1.52E+07

LOCA - Normal RCS		
Containment Tech Spec allowed leakage(0.25%/24 hours)	24	3.40E+01
Containment Failure(100%/4 hours)	4	8.15E+04

SG Tube Rupture		
0-2 hours after the beginning of the release	2	3.87E+06
2-8 hours after the beginning of the release	6	2.14E+00

Fuel Handling - One Bundle Damaged		
Accident inside Containment with Purge fans on	2	1.89E+05
Accident outside Containment with ABGTS on	0.25	1.51E+06

Waste Gas Decay Tank Rupture		
Reg. guide 1.24 analysis	1	2.09E+07

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**Appendix D
(Page 1 of 10)**

Radiological Gaseous Effluent Evaluation (Manual Calculation)

1. Check the ICS (BOP RRR) screen prior to initiating the manual method for determination of gaseous effluent release rates.

2. IF the ICS total noble gas release rate is displayed and is valid, THEN

RECORD the data on the Appendix B worksheet and perform the dose assessment.

NOTE: If ICS is not functional and time is not available due to the ongoing emergency event, wait for the TSC to activate prior to proceeding in this appendix.

3. IF the ICS total noble gas release rate is not available OR is invalid, and

IF time allows, THEN

a) **OBTAIN** and **RECORD** the noble gas monitor readings on Data Sheet E1.

b) **OBTAIN** and **RECORD** the flow rates on Data Sheet E1.

c) **CALCULATE** the noble gas release rates on Data Sheet E1.

d) **SUM** the noble gas release rates, and

RECORD on Data Sheets E1 and E4.

e) **OBTAIN** and **RECORD** the steam line radiation monitor readings on Data Sheet E2.

f) **DETERMINE** the calibration factor from the table on Data Sheet E2, and

RECORD the value on Data Sheet E2.

g) **OBTAIN** and **RECORD** the steam mass flow rates on Data Sheet E2.

h) **CALCULATE** the steam line release rates on Data Sheet E2.

i) **SUM** the release rates for the steam lines, and
RECORD the total on Data Sheets E2 and E4.

j) **SUM** the values on Data Sheet E4 to obtain the total site noble gas release rate

k) **RECORD** the Total Noble Gas Release Rate on Data Sheet E4.

l) **RECORD** the data on the Appendix B worksheet and **COMPLETE** the dose projection.

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**Radiological Gaseous Effluent Evaluation (Manual Calculation)
(continued)**

4. IF manual sampling analysis is required to determine the site release rates, THEN
- a) **RECORD** sample date(s) and time(s) for applicable release point(s) on Data Sheet E3.
 - b) **RECORD** the effluent flow rate(s) on Data Sheet E3.
 - c) **RECORD** the total noble gas concentration for applicable release point(s) on Data Sheet E3.
 - d) **CALCULATE** the total noble gas release rate as indicated on Data Sheet E3.
 - e) **SUM** the noble gas release rates, and
RECORD the total on Data Sheets E3 and E4.
 - f) **OBTAIN** and **RECORD** the steam line radiation monitor readings on Data Sheet E2.
 - g) **DETERMINE** the calibration factor from the table on Data Sheet E2, and
RECORD the value on Data Sheet E2.
 - h) **OBTAIN** and **RECORD** the steam mass flow rates on Data Sheet E2.
 - i) **CALCULATE** the steam line noble gas release rates on Data Sheet E2.
 - j) **SUM** the noble gas release rates for the steam lines, and
RECORD the total on Data Sheets E2 and E4.
 - k) **SUM** the values listed on Data Sheet E4 to obtain the total site noble gas release rate, and
RECORD this on Data Sheet E4.
 - l) **RECORD** the data on the Appendix B worksheet and **COMPLETE** the dose projection.
 - m) **DETERMINE CECC** need for data sheet E-6. Transmit data as needed.

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Radiological Gaseous Effluent Evaluation (Manual Calculation)
DATA SHEET E1**

NOTE: In columns A and B of this data sheet, the radiation monitor and panel number, along with the ICS or Eberline computer points necessary to obtain the data, are listed. Monitors indicating "offscale" ($>10^6$ cpm is offscale for monitors reading out on panels 1 or 2-M-30) should be indicated as such. Flow rates that are less than the minimum value indicated should be reported as the minimum value.

Release Point	Effluent Noble Gas Monitor Reading	Effluent Flow Rate ¹ (cfm)	Monitor Conversion Factor	Noble Gas Release Rate (μ Ci/s)	Monitor Read Date/Time
	A	B	C	D = AxBxC	
Aux. Bldg. Vent (0-M-12)	_____ cpm 0-RM-90-101B R0020A	_____ ⁴ 0-PNL-90-L397 F2704A (Min. 141,000 cfm)	1.82E-05 ²		____/____
Service Building Vent (0-M-12)	_____ cpm 0-RM-90-132B R0011A	_____ ⁴ 0-PNL-90-L399 F2702A (Min. 3,000 cfm)	1.82E-05 ²		____/____
U1 Shield Building Vent (1-M-30)	_____ μ Ci/cc 1-RI-90-400 (EFF)	_____ ⁴ 1-FI-90-400 (1-M-9) 1-PNL-90-L398 F2203A (Min. 3300 cfm)	633 ³	_____ μ Ci/s 1-RI-90-400 (Low, Mid, High)	____/____
U2 Shield Building Vent (2-M-30)	_____ μ Ci/cc 2-RI-90-400 (EFF)	_____ ⁴ 2-FI-90-400 (2-M-9) 2-PNL-90-L398 F2203A (Min. 3300 cfm)	524 ³	_____ μ Ci/s 2-RI-90-400 (Low, Mid, High)	____/____
U1 Condenser Vacuum Exhaust (CVE) (0-M-12)	_____ cpm 1-RM-90-119 R0001A (low rng)	_____ ⁴ 1-FE-2-256 F2260A (Min. 21 cfm)	1.82E-05 ²		____/____
NOTE: If 1-RM-90-119 is onscale, stop here. If monitor is offscale, proceed to next row.					
U1 Condenser Vacuum Exhaust (CVE) (1-M-31)	_____ cpm 1-RM-90-450 (Data) Channel 13-01	_____ ⁴ 1-FE-2-256 F2260A (Min. 21 cfm)	From table on next page		____/____
NOTE: If Channel 13-01 is onscale, stop here. If channel is offscale, proceed to next row.					
U1 Condenser Vacuum Exhaust (CVE) (1-M-31)	_____ cpm 1-RM-90-450 (Data) Channel 13-03	_____ ⁴ 1-FE-2-256 F2260A (Min. 21 cfm)	From table on next page		____/____
Total					

¹ If the effluent flow instrumentation is inoperable, use Data Sheet E5 to estimate the flow.

² The monitor Xe-133 efficiency multiplied by a conversion factor (472 cc/sec/scfm).

³ Conversion factor of 472 cc/sec/scfm. (As interim corrective action to PER 01-002916, additional correction factors are included). 472 may be used if it is known that no release is in progress through the ABGTS.

⁴ No MCR indication (local indication only).

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Radiological Gaseous Effluent Evaluation (Manual Calculation)
DATA SHEET E1⁴

CVE Accident Monitor Calibration Factors x 472 cc/s/cfm for Various Times (T) Post-Accident.

T = Hours	T=0	T=1	T=8	T=16	T=24	T=48	T=168
1-RM-90-450 (Channel 13-01)	5.48E-04	1.04E-03	2.75E-03	4.77E-03	1.60E-02	1.23E-02	1.81E-02
1-RM-90-450 (Channel 13-03)	9.44E-01	2.02	5.33	9.16	1.23E+01	2.23E+01	3.14E+01

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**Radiological Gaseous Effluent Evaluation (Manual Calculation)
DATA SHEET E2**

	Steam Line Radiation Monitor Reading	Calibration Factor (from table on next page)	Steam Mass Flow Rate ¹	Conversion Factor ²	Release Rate
	(mR/hr)	(μCi/cc per mR/hr)	(lbm/hr)		(μCi/s)
	A	B	C	D	AxBxCxD
Steam Generator 1	RM-90-421A (1-M-30) Recorder RR-90-268 Pt.01 (1-M-31)			4.45	
Steam Generator 2	RM-90-422A (1-M-30) Recorder RR-90-268 Pt.02 (1-M-31)			4.45	
Steam Generator 3	RM-90-423A (1-M-30) Recorder RR-90-268 Pt.03 (1-M-31)			4.45	
Steam Generator 4	RM-90-424A (1-M-30) Recorder RR-90-268 Pt.04 (1-M-31)			4.45	
Auxiliary Feedwater Pump Turbine	RM-90-421A (1-M-30) or RM-90-424A (1-M-30)			4.45	
				Total	

¹ This data is found on the data logger 1-XR1-5, located in the auxiliary instrument room.

² 4.45 = [cc(steam)/0.0283 g] x g/2.205E-3 lbm x hr/3600 sec

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Radiological Gaseous Effluent Evaluation (Manual Calculation)
DATA SHEET E2
 (continued)

Main Steam Line Radiation Monitor Calibration Factors (CF)

Time After Shutdown (hrs)	Normal Spectrum Monitor Reading < 1000 mR/hr ($\mu\text{Ci/cc}$ per mR/hr)	DBA Spectrum Monitor Reading > 1000 mR/hr or Suspected Fuel Damage ($\mu\text{Ci/cc}$ per mR/hr)
0	3.00E-3	9.88E-5
1	5.13E-3	7.79E-4
2	6.11E-3	5.41E-3
4	7.76E-3	6.86E-3
8	1.09E-2	9.63E-3

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Radiological Gaseous Effluent Evaluation (Manual Calculation)
DATA SHEET E3**

Release Point	Noble Gas Sample Date/Time	Flow Rates ⁶ , cfm ^{1,2}	Total Noble Gas Concentration ($\mu\text{Ci/cc}$)	C ⁵	Total Noble Gas Release Rate ($\mu\text{Ci/s}$)
		A	B		D = A x B x C
Auxiliary Building	____/____	_____ 0-PNL-90-L397 EL 786, A8-V (Min. 141,000 cfm)		472	
Service Building	____/____	_____ 0-PNL-90-L399 SN EL 751, S-5 (Min. 3000 cfm)		472	
U1 Shield Building^{3,5}	____/____	_____ 1-FI-90-400 1-PNL-90-L398 EL 729, AE-5 (Min. 3,300 cfm)		633	
U2 Shield Building^{3,5}	____/____	_____ 2-FI-90-400 2-PNL-90-L398 EL 727, AE-11 (Min. 3,300 cfm)		524	
U1 Condenser Vacuum Exhaust	____/____	_____ 4 (Min. 21 cfm)		472	
Total					

¹ If an effluent vent has no flow, it is not necessary to sample the vent.
² If flow instrumentation is inoperable, obtain flow estimates using Data Sheet E5.
³ RE-90-402 is used for high radiation sampling.
⁴ Request flowrate from Operations for 1-FE-2-256, U1 Condenser Vacuum Exhaust.
⁵ Conversion factor: 472 cc/sec/SCFM. (As interim corrective action to PER 01-002916, additional correction factors are included for the Shield Bldgs.). 472 may be used if it is known that no release is in progress through the ABGTS.
⁶ Flow rates that are less than the minimum value indicated should be reported as the minimum value.

performed by: _____ Date: _____

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**Radiological Gaseous Effluent Evaluation (Manual Calculation)
DATA SHEET E4**

1. Total Release Rate from Plant Building Vents (Total from E1 or E3).	_____ $\mu\text{Ci/s}$
2. Steam Generator Relief Valve and Auxiliary Feedwater Pump Turbine Noble Gas Release Rate (Total from E2)	_____ $\mu\text{Ci/s}$
3. Total Noble Gas Release Rate (Sum of 1. and 2. Above)	_____ $\mu\text{Ci/s}$

Performed by _____ Date _____

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Radiological Gaseous Effluent Evaluation (Manual Calculation)
DATA SHEET E5**

NOTE If ventilation flow data is not readily obtainable, the maximum values in cfm from Appendix C of the REP or from DBA analysis (shown in parentheses below) may be used in the Total Flow Rate Column below. These values will be conservative.

Shield Building - Unit 1 (If 1-FI-90-400 [1-M-9] and 1-PNL-90-L398 are inoperable)		
Containment Purge air flow	(Record 14,000 per operating fan)	cfm
EGTS air flow	(Record 8,000 if operating)	cfm
ABGTS Fan A-A in operation.	(Record 9,900 if operating)	cfm
PASF Ventilation	(Record 2200 if operating)	cfm
Total		cfm (Maximum 44,100)

Shield Building - Unit 2 (If 2-FI-90-400 [2-M-9] and 2-PNL-90-L398 are inoperable)		
ABGTS Fan B-B in operation	(Record 9,900 if operating)	cfm
Total		cfm (Maximum 9,900)

Auxiliary Building (If 0-PNL-90-L397 [no MCR indication] is inoperable)		
No. of Auxiliary Building Exhaust Fans Operating x 84,000 [1-M-9]		cfm
No. of Fuel Handling Area Exhaust Fans Operating x 60,000 [1-M-9]		cfm
Total		cfm (Maximum 228,000)

Condenser Vacuum Exhaust - Unit 1 (If 1-FE-2-256 [no MCR indication] is inoperable)		
Obtain an estimate from Operations personnel (rotometer on pump)		cfm (Maximum 100)

Service Building Exhaust (If 0-PNL-L399 [no MCR indication] is inoperable)		
Enter 10,500 SCFM for Service Building Exhaust		cfm (Maximum 10,500)

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Radiological Gaseous Effluent Evaluation (Manual Calculation)
DATA SHEET E6

NOTE: This data to be transmitted to the CECC for long term dose assessment.

Iodine and Particulate Release Fractions

	Auxiliary Building	Service Building	U1 Shield Building	U2 Shield Building	U1 Condenser Vacuum Exhaust	Total
I-131 Concentration (μCi/cc) A						
Particulate Concentration (μCi/cc) B						
Flow Rate (cfm) C						
					I-131 Release Rate (μCi/s) D = A * C * 472	
					Particulate Release Rate (μCi/s) E = B * C * 472	
					Noble Gas Release Rate (from Data Sheet E4) (μCi/s) F	
					I-131 Fraction D / F	
					Particulate Fraction E / F	

Performed by: _____ Date: _____

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SOURCE NOTES

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1. NRC Inspection
Item 390/84-22-16 Provide the primary methodology for classification of an accident based on radiological effluents.

2. NCO 920054476
SER-0474 Provide a description of procedures or calculational methods used for converting instrument readings to release rates per unit time based on exhaust air flow and considering radionuclide spectrum as a function of time after shutdown.

3. MSC-02411
Item 390/84-22-16 Calculating release rates for assistance in determining classification of a REP accident.

4. DCN W-39536-A Revised CVE Accident Monitor due to 18 month fuel cycle.

5. DCN D-50122 Adjust flow rate for Aux. Bldg Radiation Monitor, 0-RM-90-101B.