Tennessee Valley Authority, 1101 Market Street, Chattanooga, Tennessee 37402-2801

April 28, 2003

10 CFR 50,
Appendix E
Section V

U.S. Nuclear Regulatory Commission
ATTN: Document Control Desk
Washington, D.C. 20555-0001

Gentlemen:

| | | | | |
|---|---|---|---|---|
| In the Matter of | ) | Docket Nos. | 50-259 | 50-390 |
| Tennessee Valley Authority | ) | | 50-260 | 50-391 |
| | | | 50-296 | 50-327 |
| | | | | 50-328 |

TVA CENTRAL EMERGENCY CONTROL CENTER (CECC) - EMERGENCY PLAN IMPLEMENTING PROCEDURE (EPIP) REVISIONS

In accordance with the requirements of 10 CFR Part 50, Appendix E, Section V, enclosed are copies of the Effective Page Listing and revisions to CECC EPIPs.

| PROCEDURE | | EFFECTIVE DATE |
|---|---|---|
| EPIP | EPL | 3/31/03 |
| EPIP-1 | Rev. 37 | 3/31/03 |
| EPIP-2 | Rev. 30 | 3/31/03 |
| EPIP-3 | Rev. 31 | 3/31/03 |
| EPIP-4 | Rev. 32 | 3/31/03 |
| EPIP-5 | Rev. 34 | 3/31/03 |

If you have any questions, please contact Terry Knuettel at (423) 751-6673.

Sincerely,

Mark J. Burzynski

Mark J. Burzynski
Manager
Nuclear Licensing

Enclosures
cc: See page 2

A045

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NRC Senior Resident Inspector [Enclosures provided
Sequoyah Nuclear Plant by site DCRM]
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Soddy Daisy, Tennessee 37379-3624

NRC Senior Resident Inspector [No enclosures, by request
Watts Bar Nuclear Plant of site resident]
1260 Nuclear Plant Road
Spring City, Tennessee 37381

## DOCUMENT RELEASE AND FILING INSTRUCTIONS

Page 1 of 2
Release No.

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Prepared By: Gail White
Extension: 751-2108
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| DOCUMENT NUMBER | REV | NO. PAGES | REC ACCPT Y | REC ACCPT N | DATE | REMOVE PAGES | INSERT PAGES |
|---|---|---|---|---|---|---|---|
| CECC-EPIP | | | | | | | |
| List of Effective Pages | | 9 | ✓ | | ~~3-31-03~~ ~~3/31/02~~ | 3-19-03 1 - 9 | 1 - 9 |
| CECC EPIP-1, cover sheet | 37 | 1 | ✓ | | 3-31-03 | R36 cover sheet | cover sheet |
| CECC EPIP-1, rev. log | 37 | ~~1~~ 3 | ✓ | | 3-31-03 | R36 rev. log | rev. log |
| CECC EPIP-1 | 37 | 33 | ✓ | | | All | 1 - 33 |
| CECC EPIP-2, cover sheet | 30 | 1 | ✓ | | 3-31-03 | R29 cover sheet | cover sheet |
| CECC EPIP-2, rev. log | 30 | +2 | ✓ | | 3-31-03 | rev. log | rev. log |
| CECC EPIP-2 | 30 | 5 | ✓ | | | All | 1 - 5 |
| CECC EPIP-3, cover sheet | 31 | 1 | ✓ | | 3-31-03 | R30 cover sheet | cover sheet |
| CECC EPIP-3, rev. log | 31 | +2 | ✓ | | 3-31-03 | rev. log | rev. log |
| CECC EPIP-3 | 31 | 8 | ✓ | | | All | 1 - 8 |
| CECC EPIP-4, cover sheet | 32 | 1 | ✓ | | 3-31-03 | R31 cover sheet | cover sheet |
| CECC EPIP-4, rev. log | 32 | +2 | ✓ | | 3-31-03 | rev. log | rev. log |
| CECC EPIP-4 | 32 | 8 | ✓ | | | All | 1 - 8 |
| CECC EPIP-5, cover sheet | 34 | 1 | ✓ | | 3-31-03 | R33 cover sheet | cover sheet |
| CECC EPIP-5, rev. log | 34 | +2 | ✓ | | 3-31-03 | rev. log | rev. log |
| CECC EPIP-5 | 34 | 10 | ✓ | | | All | 1 - 10 |
| | | | | | | | |

*Date*

*Contact* _____ *Ext* _____

Acceptance:
Lana L. Farmer 3-28-03
*Signature* *Date*

| NP | DOCUMENT RELEASE AND FILING INSTRUCTIONS *Continuation Sheet* | PAGE 2 OF 2<br>RELEASE NO. _____ |
|---|---|---|

| DOCUMENT NUMBER | REV. | NO. PAGES | REC ACCPT Y | REC ACCPT N | DATE | REMOVE PAGES | INSERT PAGES |
|---|---|---|---|---|---|---|---|
| CECC EPIP-8, cover sheet | 24 | 1 | ✓ | | 3-31-03 | R23 cover sheet | cover sheet |
| CECC EPIP-8, rev. log | 24 | 2 | ✓ | | | rev. log | rev. log |
| CECC EPIP-8 | 24 | 32 | ✓ | | | All | 1 – 32 |
| | | | | | | | |
| | | | | | | | |
| | | | | | | |

TENNESSEE VALLEY AUTHORITY
CENTRAL EMERGENCY CONTROL CENTER EMERGENCY PLAN
IMPLEMENTING PROCEDURES
LIST OF EFFECTIVE PAGES

This list of effective pages must be retained with the CECC-EPIPs.

| Procedure No. | Subdivision | Page No. | Rev. No. |
|---|---|---|---|
| | List of Effective Pages | 1 of 9 | 03/31/03 |
| | | 2 of 9 | 03/31/03 |
| | | 3 of 9 | 03/31/03 |
| | | 4 of 9 | 03/31/03 |
| | | 5 of 9 | 03/31/03 |
| | | 6 of 9 | 03/31/03 |
| | | 7 of 9 | 03/31/03 |
| | | 8 of 9 | 03/31/03 |
| | | 9 of 9 | |
| Table of Contents | | 1 of 2 | 10/17/02 |
| | | 2 of 2 | 10/17/02 |
| EPIP-1 | | Cover Sheet | 37 |
| | | Rev. Log | 37 |
| | | 1 of 33 | 37 |
| | | 2 of 33 | 37 |
| | | 3 of 33 | 37 |
| | | 4 of 33 | 37 |
| | | 5 of 33 | 37 |
| | Appendix A | 6 of 33 | 37 |
| | Appendix B | 7 of 33 | 37 |
| | | 8 of 33 | 37 |
| | Appendix C | 9 of 33 | 37 |
| | Appendix D | 10 of 33 | 37 |
| | Appendix E | 11 of 33 | 37 |
| | Appendix F | 12 of 33 | 37 |
| | Appendix G | 13 of 33 | 37 |
| | | 14 of 33 | 37 |
| | Appendix H | 15 of 33 | 37 |
| | Appendix I | 16 of 33 | 37 |
| | | 17 of 33 | 37 |
| | | 18 of 33 | 37 |
| | | 19 of 33 | 37 |
| | Appendix J | 20 of 33 | 37 |
| | | 21 of 33 | 37 |
| | | 22 of 33 | 37 |
| | | 23 of 33 | 37 |
| | Appendix K | 24 of 33 | 37 |
| | | 25 of 33 | 37 |
| | | 26 of 33 | 37 |
| | Appendix L | 27 of 33 | 37 |
| | Appendix M | 28 of 33 | 37 |
| | Appendix N | 29 of 33 | 37 |
| | | 30 of 33 | 37 |

List of Effective Pages (Continued)

| Procedure No. | Subdivision | Page No. | Rev. No. |
|---|---|---|---|
| EPIP-1 (Continued) | | 31 of 33 | 37 |
| | | 32 of 33 | 37 |
| | | 33 of 33 | 37 |
| EPIP-2 | | Cover Sheet | 30 |
| | | Rev. Log | 30 |
| | | 1 of 5 | 30 |
| | | 2 of 5 | 30 |
| | | 3 of 5 | 30 |
| | Appendix A | 4 of 5 | 30 |
| | Appendix B | 5 of 5 | 30 |
| EPIP-3 | | Cover Sheet | 31 |
| | | Rev. Log | 31 |
| | | 1 of 8 | 31 |
| | | 2 of 8 | 31 |
| | | 3 of 8 | 31 |
| | | 4 of 8 | 31 |
| | | 5 of 8 | 31 |
| | Appendix A | 6 of 8 | 31 |
| | Appendix B | 7 of 8 | 31 |
| | Appendix C | 8 of 8 | 31 |
| EPIP-4 | | Cover Sheet | 32 |
| | | Rev. Log | 32 |
| | | 1 of 8 | 32 |
| | | 2 of 8 | 32 |
| | | 3 of 8 | 32 |
| | | 4 of 8 | 32 |
| | | 5 of 8 | 32 |
| | Appendix A | 6 of 8 | 32 |
| | Appendix B | 7 of 8 | 32 |
| | Appendix C | 8 of 8 | 32 |
| EPIP-5 | | Cover Sheet | 34 |
| | | Rev. Log | 34 |
| | | 1 of 10 | 34 |
| | | 2 of 10 | 34 |
| | | 3 of 10 | 34 |
| | | 4 of 10 | 34 |
| | | 5 of 10 | 34 |
| | Appendix A | 6 of 10 | 34 |
| | | 7 of 10 | 34 |
| | | 8 of 10 | 34 |
| | Appendix B | 9 of 10 | 34 |
| | Appendix C | 10 of 10 | 34 |
| EPIP-6 | | Cover Sheet | 23 |
| | | Rev. Log | 23 |
| | | 1 of 23 | 23 |
| | | 2 of 23 | 23 |
| | | 3 of 23 | 23 |
| | | 4 of 23 | 23 |

List of Effective Pages (Continued)

| Procedure No. | Subdivision | Page No. | Rev. No. |
|---|---|---|---|
| EPIP-6 (Continued) | Appendix A | 5 of 23 | 23 |
| | | 6 of 23 | 23 |
| | | 7 of 23 | 23 |
| | Appendix B | 8 of 23 | 23 |
| | Appendix C | 9 of 23 | 23 |
| | Appendix D | 10 of 23 | 23 |
| | | 11 of 23 | 23 |
| | Appendix E | 12 of 23 | 23 |
| | | 13 of 23 | 23 |
| | | 14 of 23 | 23 |
| | Appendix F | 15 of 23 | 23 |
| | Appendix G | 16 of 23 | 23 |
| | | 17 of 23 | 23 |
| | Appendix H | 18 of 23 | 23 |
| | | 19 of 23 | 23 |
| | Appendix I | 20 of 23 | 23 |
| | | 21 of 23 | 23 |
| | Appendix J | 22 of 23 | 23 |
| | Appendix K | 23 of 23 | 23 |
| EPIP-7 | | Cover Sheet | 28 |
| | | Rev. Log | 28 |
| | | 1 of 15 | 28 |
| | | 2 of 15 | 28 |
| | | 3 of 15 | 28 |
| | | 4 of 15 | 28 |
| | | 5 of 15 | 28 |
| | | 6 of 15 | 28 |
| | | 7 of 15 | 28 |
| | | 8 of 15 | 28 |
| | Appendix A | 9 of 15 | 28 |
| | Appendix B | 10 of 15 | 28 |
| | Appendix C | 11 of 15 | 28 |
| | Appendix D | 12 of 15 | 28 |
| | | 13 of 15 | 28 |
| | Appendix E | 14 of 15 | 28 |
| | Appendix F | 15 of 15 | 28 |
| EPIP-8 | | Cover Sheet | 24 |
| | | Rev. Log | 24 |
| | | 1 of 32 | 24 |
| | | 2 of 32 | 24 |
| | | 3 of 32 | 24 |
| | | 4 of 32 | 24 |
| | | 5 of 32 | 24 |
| | | 6 of 32 | 24 |
| | Appendix A | 7 of 32 | 24 |
| | Appendix B | 8 of 32 | 24 |
| | Appendix C | 9 of 32 | 24 |
| | | 10 of 32 | 24 |
| | Appendix D | 11 of 32 | 24 |

List of Effective Pages (Continued)

| Procedure No. | Subdivision | Page No. | Rev. No. |
|---|---|---|---|
| EPIP-8 (Continued) | | 12 of 32 | 24 |
| | Appendix E | 13 of 32 | 24 |
| | | 14 of 32 | 24 |
| | Appendix F | 15 of 32 | 24 |
| | | 16 of 32 | 24 |
| | | 17 of 32 | 24 |
| | | 18 of 32 | 24 |
| | | 19 of 32 | 24 |
| | | 20 of 32 | 24 |
| | | 21 of 32 | 24 |
| | | 22 of 32 | 24 |
| | Appendix G | 23 of 32 | 24 |
| | Appendix H | 24 of 32 | 24 |
| | Appendix I | 25 of 32 | 24 |
| | | 26 of 32 | 24 |
| | | 27 of 32 | 24 |
| | | 28 of 32 | 24 |
| | | 29 of 32 | 24 |
| | Appendix J | 30 of 32 | 24 |
| | | 31 of 32 | 24 |
| | | 32 of 32 | 24 |
| EPIP-9 | | Cover Sheet | 26 |
| | | Rev. Log | 26 |
| | | 1 of 47 | 26 |
| | | 2 of 47 | 26 |
| | | 3 of 47 | 26 |
| | | 4 of 47 | 26 |
| | | 5 of 47 | 26 |
| | | 6 of 47 | 26 |
| | | 7 of 47 | 26 |
| | | 8 of 47 | 26 |
| | | 9 of 47 | 26 |
| | | 10 of 47 | 26 |
| | | 11 of 47 | 26 |
| | | 12 of 47 | 26 |
| | | 13 of 47 | 26 |
| | | 14 of 47 | 26 |
| | | 15 of 47 | 26 |
| | | 16 of 47 | 26 |
| | | 17 of 47 | 26 |
| | | 18 of 47 | 26 |
| | | 19 of 47 | 26 |
| | | 20 of 47 | 26 |
| | | 21 of 47 | 26 |
| | Appendix A | 22 of 47 | 26 |
| | Appendix B | 23 of 47 | 26 |
| | Appendix C | 24 of 47 | 26 |
| | | 25 of 47 | 26 |
| | Appendix D | 26 of 47 | 26 |
| | Appendix E | 27 of 47 | 26 |

List of Effective Pages (Continued)

| Procedure No. | Subdivision | Page No. | Rev. No. |
|---|---|---|---|
| EPIP-9 (Continued) | | 28 of 47 | 26 |
| | Appendix F | 29 of 47 | 26 |
| | Appendix G | 30 of 47 | 26 |
| | Appendix H | 31 of 47 | 26 |
| | Appendix I | 32 of 47 | 26 |
| | | 33 of 47 | 26 |
| | Appendix J | 34 of 47 | 26 |
| | | 35 of 47 | 26 |
| | | 36 of 47 | 26 |
| | | 37 of 47 | 26 |
| | Appendix K | 38 of 47 | 26 |
| | | 39 of 47 | 26 |
| | | 40 of 47 | 26 |
| | | 41 of 47 | 26 |
| | Appendix L | 42 of 47 | 26 |
| | Appendix M | 43 of 47 | 26 |
| | Appendix N | 44 of 47 | 26 |
| | | 45 of 47 | 26 |
| | | 46 of 47 | 26 |
| | | 47 of 47 | 26 |
| EPIP-11 | | Cover Sheet | 12 |
| | | Rev. Log | 12 |
| | | 1 of 17 | 12 |
| | | 2 of 17 | 12 |
| | Appendix A | 3 of 17 | 12 |
| | Appendix B | 4 of 17 | 12 |
| | Appendix C | 5 of 17 | 12 |
| | | 6 of 17 | 12 |
| | Appendix D | 7 of 17 | 12 |
| | Appendix E | 8 of 17 | 12 |
| | | 9 of 17 | 12 |
| | | 10 of 17 | 12 |
| | Appendix F | 11 of 17 | 12 |
| | Appendix G | 12 of 17 | 12 |
| | Appendix H | 13 of 17 | 12 |
| | Appendix I | 14 of 17 | 12 |
| | Appendix J | 15 of 17 | 12 |
| | | 16 of 17 | 12 |
| | | 17 of 17 | 12 |
| EPIP-12 | | Cover Sheet | 18 |
| | | Rev. Log | 18 |
| | | 1 of 19 | 18 |
| | | 2 of 19 | 18 |
| | Attachment 1 | 3 of 19 | 18 |
| | Attachment 2 | 4 of 19 | 18 |
| | Attachment 3 | 5 of 19 | 18 |
| | Attachment 3 | 6 of 19 | 18 |
| | Attachment 3 | 7 of 19 | 18 |
| | Attachment 3 | 8 of 19 | 18 |

List of Effective Pages (Continued)

| Procedure No. | Subdivision | Page No. | Rev. No. |
|---|---|---|---|
| EPIP-12 (Continued) | Attachment 3 | 9 of 19 | 18 |
| | Attachment 4 | 10 of 19 | 18 |
| | Attachment 5 | 11 of 19 | 18 |
| | Attachment 6 | 12 of 19 | 18 |
| | Attachment 7 | 13 of 19 | 18 |
| | Attachment 7 | 14 of 19 | 18 |
| | Attachment 8 | 15 of 19 | 18 |
| | Attachment 9 | 16 of 19 | 18 |
| | Attachment 9 | 17 of 19 | 18 |
| | Attachment 10 | 18 of 19 | 18 |
| | Attachment 10 | 19 of 19 | 18 |
| EPIP-13 | | Cover Sheet | 9 |
| | | Rev. Log | 9 |
| | | 1 of 10 | 9 |
| | | 2 of 10 | 9 |
| | | 3 of 10 | 9 |
| | | 4 of 10 | 9 |
| | Appendix A | 5 of 10 | 9 |
| | Appendix B | 6 of 10 | 9 |
| | Appendix C | 7 of 10 | 9 |
| | | 8 of 10 | 9 |
| | | 9 of 10 | 9 |
| | | 10 of 10 | 9 |
| EPIP-14 | | Cover Sheet | 24 |
| | | Rev. Log | 24 |
| | | 1 of 25 | 24 |
| | | 2 of 25 | 24 |
| | | 3 of 25 | 24 |
| | | 4 of 25 | 24 |
| | | 5 of 25 | 24 |
| | | 6 of 25 | 24 |
| | Appendix A | 7 of 25 | 24 |
| | | 8 of 25 | 24 |
| | | 9 of 25 | 24 |
| | Appendix B | 10 of 25 | 24 |
| | | 11 of 25 | 24 |
| | | 12 of 25 | 24 |
| | | 13 of 25 | 24 |
| | | 14 of 25 | 24 |
| | Appendix C | 15 of 25 | 24 |
| | | 16 of 25 | 24 |
| | | 17 of 25 | 24 |
| | | 18 of 25 | 24 |
| | | 19 of 25 | 24 |
| | | 20 of 25 | 24 |
| | Appendix D | 21 of 25 | 24 |
| | Appendix E | 22 of 25 | 24 |
| | Appendix F | 23 of 25 | 24 |
| | Appendix G | 24 of 25 | 24 |

List of Effective Pages (Continued)

| Procedure No. | Subdivision | Page No. | Rev. No. |
|---|---|---|---|
| EPIP-14 (Continued) | Appendix H | 25 of 25 | 24 |
| EPIP-15 | | Cover Sheet | 0 |
| | | Rev. Log | 0 |
| | | 1 of 5 | 0 |
| | | 2 of 5 | 0 |
| | | 3 of 5 | 0 |
| | Appendix A | 4 of 5 | 0 |
| | Appendix B | 5 of 5 | 0 |
| EPIP-17 | | Cover Sheet | 17 |
| | | Rev. Log | 17 |
| | | 1 of 27 | 17 |
| | | 2 of 27 | 17 |
| | | 3 of 27 | 17 |
| | | 4 of 27 | 17 |
| | | 5 of 27 | 17 |
| | Appendix A | 6 of 27 | 17 |
| | Appendix B | 7 of 27 | 17 |
| | Appendix C | 8 of 27 | 17 |
| | | 9 of 27 | 17 |
| | | 10 of 27 | 17 |
| | Appendix D | 11 of 27 | 17 |
| | Appendix E | 12 of 27 | 17 |
| | Appendix F | 13 of 27 | 17 |
| | Appendix G | 14 of 27 | 17 |
| | | 15 of 27 | 17 |
| | | 16 of 27 | 17 |
| | | 17 of 27 | 17 |
| | | 18 of 27 | 17 |
| | Appendix H | 19 of 27 | 17 |
| | Appendix I | 20 of 27 | 17 |
| | Appendix J | 21 of 27 | 17 |
| | Appendix K | 22 of 27 | 17 |
| | Appendix L | 23 of 27 | 17 |
| | Appendix M | 24 of 27 | 17 |
| | | 25 of 27 | 17 |
| | | 26 of 27 | 17 |
| | Appendix N | 27 of 27 | 17 |
| EPIP-18 | | Cover Sheet | 9 |
| | | Rev. Log | 9 |
| | | 1 of 6 | 9 |
| | | 2 of 6 | 9 |
| | | 3 of 6 | 9 |
| | | 4 of 6 | 9 |
| | Appendix A | 5 of 6 | 9 |
| | Appendix B | 6 of 6 | 9 |
| EPIP-19 | | Cover Sheet | 12 |
| | | Rev. Log | 12 |

List of Effective Pages (Continued)

| Procedure No. | Subdivision | Page No. | Rev. No. |
|---|---|---|---|
| EPIP-19 (Continued) | | 1 of 11 | 12 |
| | | 2 of 11 | 12 |
| | | 3 of 11 | 12 |
| | | 4 of 11 | 12 |
| | | 5 of 11 | 12 |
| | Appendix A | 6 of 11 | 12 |
| | | 7 of 11 | 12 |
| | Appendix B | 8 of 11 | 12 |
| | | 9 of 11 | 12 |
| | | 10 of 11 | 12 |
| | | 11 of 11 | 12 |
| EPIP-21 | | Cover Sheet | 13 |
| | | Rev. Log | 13 |
| | | 1 of 4 | 13 |
| | | 2 of 4 | 13 |
| | Appendix A | 3 of 4 | 13 |
| | Appendix B | 4 of 4 | 13 |
| EPIP-22 | | Cover Sheet | 19 |
| | | Rev. Log | 19 |
| | | 1 of 7 | 19 |
| | | 2 of 7 | 19 |
| | Attachment A | 3 of 7 | 19 |
| | Attachment B | 4 of 7 | 19 |
| | | 5 of 7 | 19 |
| | | 6 of 7 | 19 |
| | | 7 of 7 | 19 |
| EPIP-23 | | Cover Sheet | 18 |
| | | Rev. Log | 18 |
| | | 1 of 24 | 18 |
| | | 2 of 24 | 18 |
| | | 3 of 24 | 18 |
| | | 4 of 24 | 18 |
| | Attachment A | 5 of 24 | 18 |
| | Attachment B | 6 of 24 | 18 |
| | | 7 of 24 | 18 |
| | | 8 of 24 | 18 |
| | | 9 of 24 | 18 |
| | | 10 of 24 | 18 |
| | | 11 of 24 | 18 |
| | Attachment C | 12 of 24 | 18 |
| | Attachment D | 13 of 24 | 18 |
| | Attachment E | 14 of 24 | 18 |
| | | 15 of 24 | 18 |
| | Attachment F | 16 of 24 | 18 |
| | | 17 of 24 | 18 |
| | | 18 of 24 | 18 |
| | | 19 of 24 | 18 |
| | | 20 of 24 | 18 |

List of Effective Pages (Continued)

| Procedure No. | Subdivision | Page No. | Rev. No. |
|---|---|---|---|
| EPIP-23 (Continued) | Attachment G | 21 of 24 | 18 |
| | | 22 of 24 | 18 |
| | Attachment H | 23 of 24 | 18 |
| | Attachment I | 24 of 24 | 18 |

CECC EPIP Coversheet

| Tennessee Valley Authority<br><br>CENTRAL EMERGENCY CONTROL CENTER EMERGENCY PLAN IMPLEMENTING PROCEDURES | Title<br><br>CENTRAL EMERGENCY CONTROL CENTER (CECC) OPERATIONS | CECC EPIP-1<br>REV. 37<br><br>Effective Date:<br>3/31/03 |
|---|---|---|

WRITTEN BY: Thomas E. Adkins (Signature) REVIEWED BY: John J. Chenkusky (Signature) 3/6/03 (Date)

PLAN EFFECTIVENESS DETERMINATION: Thomas E. Adkins (Signature) 3/5/03 (Date)

**CONCURRENCES**

| Concurrence Signature | Date |
|---|---|
| ☒ Manager, EP Program Planning and Implementation<br>David Pond | 3/25/2003 |
| ☒ Manager, Emergency Preparedness<br>B K Marks | 3/26/03 |
| ☒ Manager, Radiological and Chemistry Services<br>Chandram | 3/27/03 |
| ☐ | |

**APPROVAL**

APPROVED BY: Marty Burzynski for JEW (Signature) Vice President, E&TS (Title) (Organization) 3/27/03 (Date)

CECC-EPIP-1
CENTRAL EMERGENCY CONTROL CENTER
OPERATIONS

REVISION LOG

| Rev. No. | Date | Revised Pages |
|---|---|---|
| 0 | 3/22/88 | All (Formerly IP-18. Changed from IPD to EPIP) |
| 1 | 11/18/88 | 1, Appendix A |
| 2 | 4/26/89 | All |
| 3 | 7/13/89 | Appendix A |
| 4 | 10/26/89 | 2, Appendix A |
| 5 | 5/23/90 | All (formerly EPIP-5) |
| 6 | 7/2/90 | Appendix C, Pg. 1 (only) |
| 7 | 9/14/90 | Pg. 5; App. D, Pg. 3; App. G, Pg. 1; App I, Pg 1 |
| 8 | 5/21/91 | App. A, Pg. 1,5; App. C, Pg. 1, App. D, Pgs. 1-3; App. G, Pgs. 3-4; App. H, Pgs. 1-2; App. I, Pg. 2 |
| 9 | 10/17/91 | App. C, Pg. 1; App. D, Pg. 2; App. G, Pg. 1. |
| 10 | 05/15/92 | App. E, Pg. 2 revised; new coversheet & rev. log added. All pages issued. |
| 11 | 05/26/92 | Page 5 |
| 12 | 11/25/92 | App. B, Pg. 1; App. G, Page 1 of 4 |
| 13 | 03/08/93 | App. I, Pages 1-2 |
| 14 | 05/17/93 | 2-5, App. A, Pg. 1; App. B, Pg. 1; App. D, Pgs. 1-4; App. H deleted. |
| 15 | 07/19/93 | Appendix D, Pgs. 1-5. All pages issued. |
| 16 | 09/13/93 | Appendix C, Pg. 1; Appendix G, Pg. 2. All pages issued. |
| 17 | 11/30/93 | Pgs. 1 & 5; App. A, Pg. 3; App. C, Pgs. 2 & 3; App. D, Pgs. 1-3; App. E deleted; App. I changed to App. H; App. J changed to App. I. |
| 18 | 04/19/94 | Pgs. 1-5; App. A, Pgs. 1-5; App. B; App. C, Pgs 1-3; App. D, Pgs. 1-2; App. F; App. G, Pgs. 1-4; App. H, Pgs. 1-2; App. I |
| 19 | 6/26/95 | Pgs. 1 and 5; App. A, Pgs. 2 and 4; App. E; all pages issued. |
| 20 | 11/01/95 | Revised PAR Diagram. All pages issued. |

CECC-EPIP-1
CENTRAL EMERGENCY CONTROL CENTER
OPERATIONS

REVISION LOG (Continued)

| Rev. No. | Date | Revised Pages |
|---|---|---|
| 21 | 10/30/96 | Revised PAR Diagram, revise State Update Form, revise CECC Dir. Checklist, add telephone suspended rate activation/deactivation information. Put EPIP in new format. All pages issued. |
| 22 | 4/7/97 | Annual review, editorial changes, revise CECC Director checklist. Identify positions that can fill TVA spokesperson position. All pages issued. |
| 23 | 3/6/98 | Annual review, remove old appendix B and relabel app. C - H as app. B - G. On page 1 of old app. F clarify order of CECC Dir Notifications. All pages issued. |
| 24 | 11/20/98 | Add instruction for CECC Director to inform SED where the State has been notified of an emergency classification change. Add EAL designator to State Update Form, update Alabama telephone area code prefix. All pages issued. |
| 25 | 2/22/99 | Revise PAR diagram, add CECC Director duty to request federal assistance through the NRC. Annual review. All pages issued. |
| 26 | 5/1/99 | Revise PAR diagram. All pages issued. |
| 27 | 5/20/99 | Revise instructions for suspended rate telephone line activation. All pages issued. |
| 28 | 7/16/99 | Pages 6, 16, and 26 were revised to ensure complete PAR information is provided to the State. On page 19 an editorial correction was made. All pages issued. |
| 29 | 11/15/99 | Changes made to make forms easier to use (App. B, E. F and H) and for clarity. Phone numbers updated in Appendix G. Added reference to ITSC, editorial changes. All pages issued. |
| 30 | 8/17/00 | Annual review. Revise PAR diagram. All pages issued. |
| 31 | 10/2/00 | Add listing of all evaluation sectors for each plant to Appendix H. Add step to CECC Director checklist to announce classification changes to the CECC staff and to the TVA spokesperson. All pages issued. |
| 32 | 11/13/00 | Clarify responsibilities of the CECC Director and the State Communicator concerning transmittal of hard copy information related to classifications and PARs to the State. |

CECC-EPIP-1
CENTRAL EMERGENCY CONTROL CENTER
OPERATIONS

REVISION LOG (Continued)

| Rev. No. | Date | Revised Pages |
|---|---|---|
| 33 | 2/5/01 | Correct PAR diagram. All pages issued. |
| 34 | 3/30/01 | Annual review. Add new PAR diagram. Add CECC Director briefing instruction. Add instruction for RAM to monitor rad. EAL trigger point. Editorial changes. All pages issued. |
| 35 | 9/7/01 | Revise Appendix H. All pages issued. |
| 36 | 6/13/02 | Annual review. Add Agency Control Center information, add TPS notification, revise State Update Form, update State Communicator Checklist, revise suspended rate telephone information, revise CECC Directors PAR Form to incorporate elements from the RAD Assessment PAR Form which was combined with this form. All Pages issued. |
| 37 | 3/31/03 | Procedure put in new format. Annual review comments incorporated. Position checklists updated. KI recommendation added to Appendix I. All pages issued. |

# Table of Contents

1.0 PURPOSE ..... 2

2.0 SCOPE ..... 2

3.0 STAFFING ..... 2
- 3.1 Activation and Notifications ..... 2
- 3.2 Emergency Duty Officer (EDO) ..... 2
- 3.3 CECC Director ..... 2
- 3.4 Plant Assessment Manager ..... 3
- 3.5 Radiological Assessment Manager ..... 3
- 3.6 Public Information Manager ..... 3
- 3.7 State Communicator ..... 3
- 3.8 TVA Liaison to the State ..... 3
- 3.9 Technical Advisors ..... 3
- 3.10 Management Services Supervisor ..... 3
- 3.11 State Liaison (State Government Representative) ..... 4
- 3.12 Provisions for NRC ..... 4

4.0 CECC RESPONSIBILITIES ..... 4
- 4.1 Evaluation of Conditions ..... 4
- 4.2 Interface with the State ..... 4
- 4.3 Protective Action Recommendations ..... 4
- 4.4 Public Information ..... 4
- 4.5 Regulatory Interface ..... 4
- 4.6 Termination of the Emergency ..... 5

5.0 REFERENCES ..... 5

6.0 ABBREVIATIONS AND DEFINITIONS ..... 5

Appendices

- A EMERGENCY DUTY OFFICER (EDO) AND EP STAFF CHECKLIST
- B CECC DIRECTOR RESPONSIBILITIES FOR CECC ACTIVATION
- C EMERGENCY CLASSIFICATION UPGRADE FORM
- D CECC DIRECTOR RESPONSIBILITIES FOR NOUE
- E CECC DIRECTOR RESPONSIBILITIES FOR ALERT
- F CECC DIRECTOR RESPONSIBILITIES FOR SITE AREA EMERGENCY
- G CECC DIRECTOR RESPONSIBILITIES FOR GENERAL EMERGENCY
- H PROTECTIVE ACTION RECOMMENDATIONS
- I CECC DIRECTOR'S PROTECTIVE ACTION RECOMMENDATION
- J STATE COMMUNICATOR RESPONSIBILITIES
- K STATE UPDATE FORM
- L ADMINISTRATIVE STAFF RESPONSIBILITES
- M FITNESS FOR DUTY PROGRAM ADMINISTRATION
- N ACTIVATION AND DEACTIVATION OF SUSPENDED RATE TELEPHONE LINES IN TVA AND STATE EMERGENCY CENTERS

Entire Procedure Revised

# CENTRAL EMERGENCY CONTROL CENTER (CECC) OPERATIONS

## 1.0 PURPOSE

This procedure is designed to direct the CECC Director and staff to ensure consistent, accurate, and timely response to the events of an accident. This procedure further serves to identify the necessary information to provide for prompt, accurate, public protective action recommendations to appropriate State authorities.

## 2.0 SCOPE

This procedure covers anticipated requirements of the CECC Director and staff during an emergency classification of Notification of Unusual Event (if it is decided to staff or partially staff the CECC), Alert, Site Area Emergency, or General Emergency

## 3.0 STAFFING

Responsibilities for CECC staff are contained in Attachments to this procedure as well as in other CECC EPIPs. The CECC Director may also obtain assistance from other organizations within TVA. Representatives from these organizations may report to the CECC if requested by the CECC Director Representatives and notification information are provided in the REND.

### 3.1 Activation and Notification

The initial notification of an event comes from the ODS via the Emergency Paging System, or by manual call out. Activation of non-duty personnel for unscheduled work shall meet FFD criteria and be documented using Appendix M.

### 3.2 Emergency Duty Officer (EDO)

The EDO is responsible for establishing initial operability of the CECC upon activation of the center This position will obtain information from the ODS pertinent to the event and make this information available to key CECC positions. The EP Staff will advise the CECC Director on the REP, notification requirements and operation of the CECC A checklist for this position is provided in Appendix A

### 3.3 CECC Director

The CECC Director is responsible for directing TVA's overall response to the emergency The CECC Director ensures that Federal, State, and local agencies are notified in accordance with established procedures and that they are kept fully informed of all aspects of the emergency The Director reviews with the Plant Assessment and Radiological Assessment Managers the onsite and offsite consequences of the accident and assesses the adequacy and need for measures taken for protection of the public. The Director coordinates TVA's efforts with State and Federal agencies involved in the offsite aspects of the emergency and requests any required federal assistance through the NRC Checklists for the CECC Director are provided in Appendices B through G After the appropriate level of CECC activation the CECC Director is responsible for the following:

- Approves all press releases developed in the CECC
- Notifies the appropriate state authority of any emergency classification upgrades.
- Makes any required Protective Action Recommendations (PARs) to the appropriate state authority using Appendix I

**3.4 Plant Assessment Manager**

Plant Assessment Manager Responsibilities are contained in CECC EPIP-6.

**3.5 Radiological Assessment Manager**

Radiological Assessment Manager responsibilities are contained in CECC EPIP-7.

**3.6 Public Information Manager**

Public Information Manager responsibilities are contained in CECC EPIP-14.

**3.7 State Communicator**

The State Communicator shall ensure that all information required by State authorities to perform their assessment function and carry out necessary protective actions is being provided to them in a timely and accurate manner (see Appendix K). The CECC Director shall review for accuracy and approve all information being transmitted to the State in hardcopy form. (This excludes the automatic transmittal of the radiological assessment working information such as met data, dose code runs, plume plots, and field measurements sent to the State Radiological Health Assessors.) Checklists for this position are provided in Appendix J.

**3.8 TVA Liaison to the State**

For a classification of SITE AREA EMERGENCY OR GENERAL EMERGENCY, the CECC Director will coordinate with the REP staff representative the selection of a TVA liaison to the State Emergency Operations Center (EOC) in Tennessee or the SRMAC in Alabama. The CECC Director will authorize travel to the State facilities for the purpose of providing technical information, advice, and interpretation to State personnel. The TVA Liaison will also ensure that the State is getting all required information from the CECC.

Primary duties of the TVA Liaison to the State facilities are as follows:

- Technical explanations and clarification on plant status.
- Assist the State by keeping them informed of available TVA resources.
- Assist the State in describing/clarifying TVA's response to the emergency, understanding TVA's emergency organization, key TVA staff positions, etc.
- Maintains contact with the CECC State Communicator to ensure that all required information is being provided by the CECC.

**3.9 Technical Advisors**

The CECC Director will coordinate with the Plant Assessment Manager the selection of people to serve as a technical advisor to the Public Information Manager and staff and also to the State Communicator in the CECC. RADCON and/or Plant Operations advisors may also be selected to be sent to the appropriate State Emergency Operations Center. The advisors will be responsible for providing a nontechnical interpretation of the event for the CECC Public Information Staff.

If the JIC is to be staffed, the CECC Director will coordinate with the Plant Assessment and Radiological Assessment Managers the selection of radiological health and plant operations advisors to serve as technical advisors to the TVA spokesperson located there. These people will be responsible for assisting the TVA spokesperson in interpreting the approved press releases and events taking place.

Entire Procedure Revised.

**3.10 Management Services Supervisor**

The Management Services Supervisor oversees clerical and administrative support to the CECC. A checklist for this position is provided in Appendix L

**3.11 State Liaison (State Government Representative)**

The State Liaison role in the CECC is to observe events taking place, licensee response actions, and advise the State agencies appropriately throughout the emergency. He will receive assistance as necessary from the State Communicator. The State Liaison can also coordinate State support for TVA.

**3.12 Provisions for NRC**

Provisions have been made to provide workspace for a contingent of NRC staff in the CECC. These provisions include the NRC's FTS 2000 Emergency Telecommunications System. The following dedicated circuits are available: Health Physics Network (HPN), Reactor Safety Counterpart Link (RSCL), Protective Measures Counterpart Link (PMCL), Management Counterpart Link (MCL), Emergency Notification System (ENS), Local Area Network (LAN). HPN and ENS extensions are provided for TVA use as required.

## 4.0 CECC RESPONSIBILITIES

**4.1 Evaluation of Conditions**

The CECC staff maintains an awareness of plant conditions to assess the impact on the environment, the site, and to provide technical and logistical support to the site.

**4.2 Interface with the State**

The CECC provides the State with information on the emergency classification, plant conditions, offsite radiological conditions and Protective Action Recommendations (PARs). The State provides the CECC with information concerning State activities in response to the emergency.

**4.3 Protective Action Recommendations**

The CECC evaluates plant and radiological conditions and develops Protective Action Recommendations to be provided to the State to assist with decision making for the protection of the health and safety of the public.

**4.4 Public Information**

The CECC ensures timely and accurate information is provided to the public. The CECC will coordinate efforts with offsite authorities.

**4.5 Regulatory Interface**

The NRC role in the CECC is to observe and advise as appropriate with licensee decisions and actions.

The CECC Director may request that the Federal Radiological Emergency Response Plan (FRERP) be activated via the NRC.

**4.6 Termination of the Emergency**

The CECC Director will inform each emergency center when the SED has terminated the emergency and planning for the recovery phase has begun.

Upon termination of the emergency, the CECC Director and staff will make themselves available to the TVA, NRC, and other official event reviewers for review of the accident.

Appropriate recovery efforts shall be initiated upon termination of the emergency. The Senior Vice President, Nuclear Operations, or his designee, will direct the overall recovery efforts for response to an emergency in accordance with the general guidelines provided in the REP and CECC-EPIP-13. As judgment and events determine, additional resources outside of TVA may be required to mitigate the consequences of an emergency.

**5.0 REFERENCES**

Radiological Emergency Plan (REP)

**6.0 ABBREVIATIONS AND DEFINITIONS**

ACC - Agency Control Center
AEMA - Alabama Emergency Management Agency
CECC - Central Emergency Control Center
EDO - Emergency Duty Officer
FCC - Field Coordination Center
FRERP – Federal Radiological Emergency Response Plan
JIC - Joint Information Center
NCO - Nuclear Central Office
NRC - Nuclear Regulatory Commission
ODS - Operations Duty Specialist
R/H - Radiological Health
RMCC - Radiological Monitoring Control Center
SRMAC - State Radiological Monitoring and Assessment Center
TEMA - Tennessee Emergency Management Agency
TSC - Technical Support Center
ITSC - Information Technical Service Center

APPENDIX A
(Page 1 of 1)
EMERGENCY DUTY OFFICER (EDO) AND EP STAFF CHECKLIST

| | Check box when action complete | Action |
|---|---|---|
| 1 | | Upon reporting to the CECC review with the ODS the status of the following items and ensure any required actions are performed:<br><br>☐ State notification of the event<br>☐ CECC staffing response<br>☐ Security established for the CECC<br>☐ Event forms copied<br>☐ SED informed of State notification |
| 2 | ☐ | Activate the CECC PA located in the room behind the ODS console. |
| 3 | ☐ | Turn on the 8 video projectors. |
| 4 | ☐ | Place proper EPZ maps on the walls. |
| 5 | ☐ | Check the telephone recorder in the computer room and place new tapes in the recorder if necessary. |
| 6 | ☐ | Call Facilities at 751-3775 or the TVA Operator to have light points E16018 & E16019 in the CECC turned on during non-business hours. |
| 7 | ☐ | Establish contact with the CECC Director. |

| Completed by | Name: | Date: |
|---|---|---|
| | | |

GENERAL OPERATIONS

1. Advises the CECC Director regarding all aspects of the REP and operation of the CECC. Confirms the CECC is set up and operating properly.
2. Assists the CECC Director in operating the CECC by evaluating, compiling, documenting, and posting data concerning the emergency situation.
3. Assists the CECC Director in ensuring that all required State notifications are made for emergency classifications and PARs.

APPENDIX B
(Page 2 of 2)
CECC DIRECTOR RESPONSIBILITIES FOR CECC ACTIVATION AND OPERATION

| | | |
|---|---|---|
| 7 | ☐ | If the Agency Command Center (ACC) is activated then assign an Assistant CECC Director (from the pool of Primary or Assistant CECC Directors) as the TVAN representative. |
| 8 | ☐ | Notify the Senior Nuclear Executive and review event information. |
| 9 | ☐ | Ensure the ODS has informed the Senior Management Executive of the CECC activation. |
| 10 | ☐ | Conduct initial CECC briefing (see position notebook). |
| 11 | ☐ | When the event terminates refer to checklist (see EPIP-13) |

| Completed by: | Name: | Date: |
|---|---|---|

GENERAL OPERATIONS

1. Log key events and major actions taken. Maintains accurate records of decisions made and actions started and completed.

2. Consult with SED on EALs, major site actions, and plant conditions.

3. Conduct briefings. The CECC Director should initially and periodically (approximately hourly) remind the CECC staff of the need for accuracy and consistency in the development and review of technical information, news releases, PARs, and State Update forms. The CECC staff should be reminded of the effect of various distractions (such as time restraints, noise, stress, and attention to competing tasks) can have on accuracy and efficiency. The Director should stress the need for the staff to manage distractions in a manner to prevent negative impacts on the accuracy of written, oral, and electronic communication from the CECC.

4. Coordinate with the JIC Spokesperson times of anticipated JIC briefings and provide status updates prior to the JIC briefings.

5. Ensures that Federal, State, and local agencies are notified in accordance with established procedures and that they are kept fully informed of all aspects of the emergency. Review anticipated state actions and discuss with State.

6. The CECC Director is authorized to request Federal assistance through the Federal Radiological Emergency Response Plan (FRERP) via the NRC.

7. Commits TVA resources and provides necessary information to assist the State, Federal, and local agencies to the extent possible.

8. Coordinates TVA's efforts with State and Federal agencies involved in the offsite aspects of the emergency.

9. Should operations be expected to last for an extended period, the CECC Director originates a schedule for relief. The duties of CECC staff should only pass to individuals identified as alternates for those positions. The Management Services Supervisor may be used to perform notifications of relief personnel.

10. When possible have CECC Staff monitor TSC briefings via telephone.

APPENDIX C
(Page 1 of 1)
EMERGENCY CLASSIFICATION UPGRADE FORM

1. ☐ NOUE ☐ ALERT ☐ SITE AREA EMERGENCY ☐ GENERAL EMERGENCY

2. Affected Units: BFN U-2 ☐, U-3 ☐; SQN U-1 ☐, U-2 ☐; WBN U-1 ☐

3. EAL Designator: _____

4. Event Declared: Time: _____ Date: _____

5. Protective Action Recommendation
☐ None ☐ CECC Director's Protective Action Recommendation. (Attach EPIP-1, Appendix I)

6. Call State and provide this information

| | Name | Time State Notified | Date |
|---|---|---|---|
| CECC Director | | | |

7. Please repeat the information you have received to ensure accuracy.

8. Fax this form to the State as soon as possible.

Entire Procedure Revised.

**APPENDIX D**
**(Page 1 of 1)**
**CECC DIRECTOR RESPONSIBILITIES FOR NOUE**
**WHEN CECC IS STAFFED**

NOUE

| | Check box when action complete | Action |
|---|---|---|
| 1 | Record Time<br>---------- | Verify that the State or local emergency response agencies have been notified of the emergency classification. If not, provide verbal notification to the appropriate State Agency of any emergency classification within 15 minutes of its declaration by the SED.<br><br>Fax Appendix C to the State as soon as possible. |
| 2 | ☐ | Verify that the time of the State notification has been provided to the to the SED. |
| 3 | ☐ | Approve State Update Form (as prepared by State Communicator). |
| 4 | ☐ | Coordinate with Public Information concerning activities related to the event. |
| 5 | ☐ | Establish staffing requirements for the CECC for response to the NOUE. |
| 6 | ☐ | When the event terminates refer to checklist (see EPIP-13) |

| Completed by | Name: | Date: |
|---|---|---|

Entire Procedure Revised.

**APPENDIX E**
**(Page 1 of 1)**
**CECC DIRECTOR RESPONSIBILITIES FOR ALERT**

ALERT

| | Check box when action complete | Action |
|---|---|---|
| 1 | ☐ | Record classification change information on Appendix C, Emergency Classification Upgrade Form if CECC is staffed when the event is declared. |
| 2 | Record Time<br>---------- | **Provide verbal notification to the appropriate State Agency of any emergency classification upgrade within 15 minutes of its declaration by the SED**<br><br>Fax Appendix C to the State as soon as possible. |
| 3 | ☐ | Conduct CECC briefing. |
| 4 | ☐ | Notify the SED of the time that the State or local emergency response agencies was notified of the emergency classification upgrade. |
| 5 | ☐ | Approve State Update Form (as prepared by State Communicator). |
| 6 | ☐ | Coordinate Public Information activities. If activation of JIC is required complete steps 7 and 8 below. |
| 7 | ☐ | Coordinate staffing of the JIC with Public Information and State per EPIP-14. |
| 8 | ☐ | Identify TVAN spokesperson (CECC Director, Site Vice President, or Site Emergency Director) and place on standby for JIC activation. Use Appendix M to document FFD. |
| 9 | ☐ | Approve any CECC News Releases. |
| 10 | ☐ | Evaluate assigning TVA Liaison to State EOC (Coordinate with EP Staff). |
| 11 | ☐ | Obtain Site Accountability status:<br><br>Time Accountability initiated: _____<br>Time Accountability competed: _____<br><br>All personnel accounted for: ☐ yes ☐ no |
| 12 | ☐ | When the event terminates refer to checklist (see EPIP-13) |

| Completed by | Name: | Date: |
|---|---|---|
| | | |

Entire Procedure Revised.

**APPENDIX F**
**(Page 1 of 1)**
**CECC DIRECTOR RESPONSIBILITIES FOR SITE AREA EMERGENCY**

**SITE AREA EMERGENCY**

| | Check box when action complete | Action |
|---|---|---|
| 1 | ☐ | Record classification change information on Appendix C, Emergency Classification Upgrade Form if CECC is staffed when the event is declared. |
| 2 | Record Time<br>---------- | **Provide verbal notification to the appropriate State Agency of any emergency classification upgrade within 15 minutes of its declaration by the SED**<br><br>Fax Appendix C to the State as soon as possible. |
| 3 | ☐ | Notify the SED of the time that the State or local emergency response agencies was notified of the emergency classification upgrade. |
| 4 | ☐ | Announce classification to the CECC and inform TVA Spokesperson (if JIC staffed). |
| 5 | ☐ | Approve State Update Form (as prepared by State Communicator). |
| 6 | ☐ | Coordinate staffing of the JIC with Public Information and State per EPIP-14. |
| 7 | ☐ | Assign TVA Liaison to State EOC (Coordinate with EP Staff). |
| 8 | ☐ | Periodically review PARs with Plant and Rad Assessment Teams in the event of upgrading to a General Emergency. Appendix H provides a logic diagram to assist in development of PARs. |
| 9 | ☐ | Approve any CECC news release. |
| 10 | ☐ | Assign the Radiological Assessment Manager to contact the TPS Transmission Dispatcher (via the ODS) to coordinate protective measures necessary for any TPS crews within the 10-mile EPZ. |
| 11 | ☐ | Assign TVAN spokesperson (CECC Director, Site Vice President, or Site Emergency Director). Use Appendix M to document FFD. |
| 12 | ☐ | Obtain Site Accountability status:<br><br>Time Accountability initiated: _____<br>Time Accountability competed: _____<br><br>All personnel accounted for: ☐ yes ☐ no |
| 13 | | Provide the State Director with an estimated time for evacuation of non-essential site personnel:<br>Time State Director notified: _____<br>Time evacuation initiated: _____<br>Time Evacuation completed: _____ |
| 14 | ☐ | When the event terminates refer to checklist (see EPIP-13) |

| Completed by | Name: | Date: |
|---|---|---|
| | | |

Entire Procedure Revised.

APPENDIX G
(Page 1 of 2)
CECC DIRECTOR RESPONSIBILITIES
FOR CECC GENERAL EMERGENCY

GENERAL EMERGENCY

| | Check box when action complete | Action |
|---|---|---|
| 1 | ☐ | Record classification change information on Appendix C, Emergency Classification Upgrade Form if CECC is staffed when the event is declared. |
| 2 | ☐ | Review PARs with Plant and Rad Assessment teams and complete PAR Appendix I. (Appendix H provides a logic diagram to assist in development of PARs.) |
| 3 | Record Time<br>---------- | **Provide verbal notification to the appropriate State Agency of the emergency classification upgrade and PAR within 15 minutes after its declaration by the SED.**<br><br>Fax Appendixes C and I (PAR) to the State as soon as possible. |
| 4 | ☐ | Notify the SED of the time that the State or local emergency response agencies was notified of the emergency classification upgrade. |
| 5 | ☐ | Announce classification to the CECC and inform TVA Spokesperson (when JIC staffed). |
| 6 | ☐ | Approve State Update Form (as prepared by State Communicator) with hard copy of PAR Recommendation (Appendix I) attached. |
| 7 | ☐ | Assign the RAM to contact the TPS Transmission Dispatcher (via the ODS) to coordinate protective measures necessary for any TPS crews within the 10-mile EPZ. |
| 8 | ☐ | Approve any CECC news release. |
| 9 | ☐ | Coordinate staffing of the JIC with Public Information and State per EPIP-14. |
| 10 | ☐ | Assign TVAN spokesperson (CECC Director, Site Vice President, or Site Emergency Director). Use Appendix M to document FFD. |
| 11 | | Coordinate with the JIC Spokesperson times of anticipated JIC briefings and provide status updates prior to the JIC briefings. Record time of updates in log. |
| 12 | ☐ | Assign TVA Liaison to State EOC (Coordinate with EP Staff). Use Appendix M to document FFD. |
| 13 | | Obtain Site Accountability status:<br><br>Time Accountability initiated: _____<br>Time Accountability competed: _____<br><br>All personnel accounted for: ☐ yes ☐ no |
| 14 | | Provide the State Director with an estimated time for evacuation of non-essential site personnel:<br>Time State Director notified: _____<br>Time evacuation initiated: _____<br>Time Evacuation completed: _____ |
| 15 | ☐ | When the event terminates refer to checklist (see EPIP-13) |

| Completed by | Name: | Date: |
|---|---|---|
| | | |

Entire Procedure Revised.

APPENDIX G
(Page 2 of 2)
CECC DIRECTOR RESPONSIBILITIES
FOR GENERAL EMERGENCY

PAR CHANGE

**IF PAR IS CHANGED**

| | Check box when action complete | Action |
|---|---|---|
| 1 | ☐ | Review PARs with Plant and Rad Assessment teams and complete PAR Appendix I. (Appendix H provides a logic diagram to assist in development of PARs.) |
| 2 | Record Time<br>---------- | **Provide verbal notification to the appropriate State Agency of PAR change within 15 minutes.**<br><br>Fax Appendix I to the State as soon as possible. |
| 3 | ☐ | Confer with SED for site actions. |
| 4 | ☐ | Approve any CECC news release. |
| 5 | ☐ | Approve State Update Form (as prepared by State Communicator) ) with hard copy of PAR Recommendation (Appendix I) attached. |
| 6 | ☐ | Direct the RAM to contact the TPS Transmission Dispatcher (via the ODS) to coordinate protective measures necessary for any TPS crews within the 10-mile EPZ. |

| Completed by | Name: | Date: |
|---|---|---|

Entire Procedure Revised.

## APPENDIX H
(Page 1 of 1)
## PROTECTIVE ACTION RECOMMENDATIONS LOGIC DIAGRAM

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

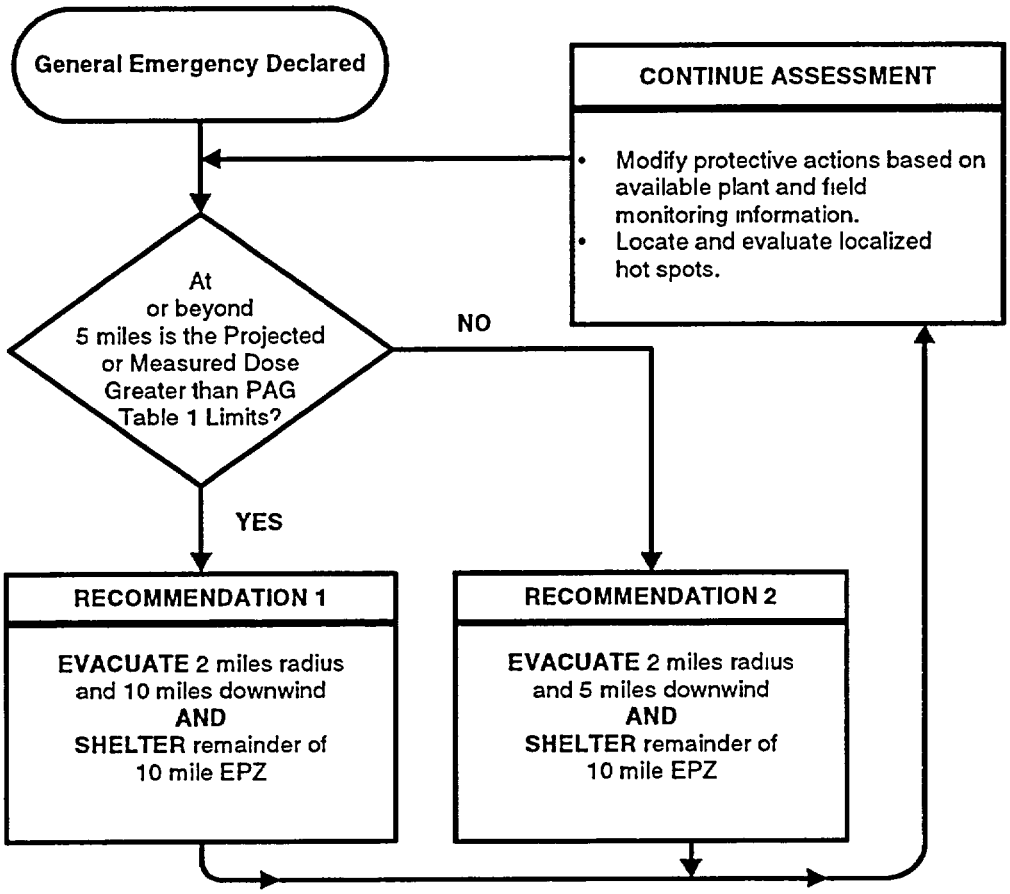


**TABLE 1**
**Protective Action Guides (PAG)**

| 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 |

Entire Procedure Revised.

**APPENDIX I**
**(Page 1 of 4)**
**CECC Director's Protective Action Recommendation**

TO:
- ☐ AEMA, Clanton, AL
- ☐ Alabama Radiation Control Agency, Montgomery, AL
- ☐ Alabama Radiation Control Agency, Decatur, AL (Director, TVA Liaison & AEMA Rep)
- ☐ TEMA, Nashville, TN (SEOC Director, TVA Liaison & Radiological Health)

Plant: ☐ **Browns Ferry** ☐ **Sequoyah** ☐ **Watts Bar**

**Recommendation: (Completed by CECC Director)**

| √ | PAR # | Action |
|---|---|---|
| | 1 | ▶ Evacuate 2 mile radius and 10 miles downwind<br>▶ Shelter remainder of 10 mile EPZ. |
| | 2 | ▶ Evacuate 2 mile radius and 5 miles downwind<br>▶ Shelter remainder of 10 mile EPZ. |
| | | ▶ Consider issuance of Potassium Iodide (KI) in accordance with the State Plan. |
| | Other | |

**Basis:**

| | |
|---|---|
| | Actual or measured radiation readings |
| | Dose projection |
| | Severe core damage |
| | Loss of physical control of the facility |

---

**Affected Sectors: (Completed by Radiological Assessment Staff)**

| |
|---|
| Sectors identified as affected include the sectors in their entirety.<br>Attach appropriate page of this Appendix for the affected plant. |

| | Approval | Time/Date |
|---|---|---|
| Dose Assessor | | |
| RAM | | |

| | Name | Time/Date |
|---|---|---|
| CECC Director Approval | | |
| State Notified of PAR | | |

**(Transmit this form to the State as soon as possible after providing verbal recommendation)**

Entire Procedure Revised.

APPENDIX I
Page (2 of 4)
CECC Director's Protective Action Recommendation

BROWNS FERRY SECTORS

BROWNS FERRY
Affected Sectors (Completed by Radiological Assessment Staff)

**Provide Protective Action Recommendation:** (Check either 1 or 2, and mark wind direction.)

| ❑ Recommendation 1<br>► EVACUATE LISTED SECTORS (2 mile Radius & 10 miles downwind)<br>► SHELTER all non-listed sectors.<br>► Consider issuance of POTASSIUM IODIDE in accordance with State Plan. | | WIND FROM ° (Mark) | | ❑ Recommendation 2<br>► EVACUATE LISTED SECTORS (2 mile radius & 5 mile downwind)<br>► SHELTER all other non-listed sectors.<br>► Consider issuance of POTASSIUM IODIDE in accordance with State Plan. |
|---|---|---|---|---|
| A-2, B-2, F-2, G-2<br>E-5, -10, F-5, -10, G-5, -10 | | 4 - 40 | | A-2, B-2, F-2, G-2<br>E-5, F-5, G-5 |
| A-2, B-2, F-2, G-2<br>F-5, -10, G-5, -10, H-10 | | 41- 73 | | A-2, B-2, F-2, G-2<br>F-5, G-5 |
| A-2, B-2, F-2, G-2<br>G-5, -10, H-10, I-10 | | 74 - 92 | | A-2, B-2, F-2, G-2<br>G-5 |
| A-2, B-2, F-2, G-2<br>A-5, G-5, H-10, I-10, J-10, K-10 | | 93 - 137 | | A-2, B-2, F-2, G-2<br>A-5, G-5 |
| A-2, B-2, F-2, G-2<br>A-5, -10, I-10, J-10, K-10 | | 138 - 203 | | A-2, B-2, F-2, G-2<br>A-5 |
| A-2, B-2, F-2, G-2<br>A-5, -10, B-5, -10, | | 204 - 282 | | A-2, B-2, F-2, G-2<br>A-5, B-5 |
| A-2, B-2, F-2, G-2<br>B-5, -10, C-10, D-10, E-5, -10 | | 283 - 326 | | A-2, B-2, F-2, G-2<br>B-5, E-5 |
| A-2, B-2, F-2, G-2<br>C-10, D-10, E-5,-10, F-5,-10 | | 327 - 3 | | A-2, B-2, F-2, G-2<br>E-5, F-5 |

| Other: |
|---|
| |

| | Approval | Time/Date |
|---|---|---|
| Dose Assessor | | |
| RAM | | |

Entire Procedure Revised.

**APPENDIX I**
**(Page 3 of 4)**
**CECC Director's Protective Action Recommendation**

SEQUOYAH SECTORS

**SEQUOYAH**
**Affected Sectors (Completed by Radiological Assessment Staff)**

**Provide Protective Action Recommendation:** (Check either 1 or 2, and mark wind direction.)

| ❑ **Recommendation 1**<br>► EVACUATE LISTED SECTORS (2 mile Radius and 10 miles downwind)<br>► SHELTER all other non-listed sectors.<br>► Consider issuance of POTASSIUM IODIDE in accordance with State Plan. | | WIND FROM ° (Mark) | | ❑ **Recommendation 2**<br>► EVACUATE LISTED SECTORS (2 mile radius and 5 mile downwind)<br>► SHELTER all other non-listed sectors.<br>► Consider issuance of POTASSIUM IODIDE in accordance with State Plan. |
|---|---|---|---|---|
| A-1, B-1, C-1, D-1<br>C-2, -6, -7, -8, D-2, -3, -5, -6 | | 12 - 49 | | A-1, B-1, C-1, D-1,<br>C-2, D-2 |
| A-1, B-1, C-1, D-1<br>D-2, -3, -4, -5, -6 | | 50 - 70 | | A-1, B-1, C-1, D-1<br>D-2 |
| A-1, B-1, C-1, D-1<br>A-3, -4, D-2, -3, -4, -5 | | 71 - 112 | | A-1, B-1, C-1, D-1<br>A-3, D-2 |
| A-1, B-1, C-1, D-1<br>A-2, -3, -4, -5, -6, D-4 | | 113 - 146 | | A-1, B-1, C-1, D-1<br>A-2, A-3 |
| A-1, B-1, C-1, D-1<br>A-2, -3, -4, -5, -6, B-2 | | 147 - 173 | | A-1, B-1, C-1, D-1,<br>A-2, A-3, B-2 |
| A-1, B-1, C-1, D-1<br>A-2, -5, -6, B-2, -3, -4 | | 174 - 214 | | A-1, B-1, C-1, D-1<br>A-2, B-2 |
| A-1, B-1, C-1, D-1<br>B-2, -3, -4, -5, -6, -7, -8 | | 215 - 258 | | A-1, B-1, C-1, D-1<br>B-2, B-5 |
| A-1, B-1, C-1, D-1<br>B-2, -3, -5, -6, -7, -8, C-2, -3, -4, -5, -6 | | 259 - 331 | | A-1, B-1, C-1, D-1<br>B-2, B-5, C-2 |
| A-1, B-1, C-1, D-1<br>B-5, C-2, -3, -4, -5, -6, -7, -8 | | 332 - 11 | | A-1, B-1, C-1, D-1<br>B-5, C-2 |

Other:

| | Approval | Time/Date |
|---|---|---|
| Dose Assessor | | |
| RAM | | |

Entire Procedure Revised.

**APPENDIX I**
**(Page 4 of 4)**
**CECC Director's Protective Action Recommendation**

**WATTS BAR**
**Affected Sectors (Completed by Radiological Assessment Staff)**

WATTS BAR SECTORS

**Provide Protective Action Recommendation:** (Check either 1 or 2, and mark wind direction.)

| ❑ **Recommendation 1**<br>► EVACUATE LISTED SECTORS (2 mile Radius and 10 miles downwind)<br>► SHELTER all other non-listed sectors.<br>► Consider issuance of POTASSIUM IODIDE in accordance with State Plan. | | **WIND FROM ° (Mark)** | | ❑ **Recommendation 2**<br>► EVACUATE LISTED SECTORS (2 mile radius and 5 mile downwind)<br>► SHELTER all other non-listed sectors.<br>► Consider issuance of POTASSIUM IODIDE in accordance with State Plan. |
|---|---|---|---|---|
| A-1, B-1, C-1, D-1<br>**C**-7, -9, **D**-2, -4, -5, -6, -7, -8, -9 | | 26-68 | | A-1, B-1, C-1, D-1<br>**C**-7, **D**-2, -4, -5 |
| A-1, B-1, C-1, D-1<br>**A**-3, -4, **D**-2, -3, -4, -5, -6, -7, -8, -9 | | 69-110 | | A-1, B-1, C-1, D-1<br>**A**-3, **D**-2, -4, -5 |
| A-1, B-1, C-1, D-1<br>**A**-2, -3, -4, -5, -6, -7, **D**-2, -3, -5, -6 | | 111-170 | | A-1, B-1, C-1, D-1<br>**A**-2, -3, **D**-2, -5 |
| A-1, B-1, C-1, D-1<br>**A**-2, -3, -5, -6, -7, **B**-2, -3, -4, -5, **C**-2 | | 171-230 | | A-1, B-1, C-1, D-1<br>**A**-2, -3, **B**-2, -4, **C**-2 |
| A-1, B-1, C-1, D-<br>**B**-2, -3, -4, -5, **C**-2, -3 | | 231-270 | | A-1, B-1, C-1, D-<br>**B**-2, -4, **C**-2 |
| A-1, B-1, C-1, D-<br>**B**-2, -3, **C**-2, -3, -4, -5, -6, -11 | | 271-325 | | A-1, B-1, C-1, D-1<br>**B**-2, **C**-2, -4, -5 |
| A-1, B-1, C-1, D-1<br>**C**-2, -4, -5, -6, -7, -8, -9, -10, -11, **D**-4, -9 | | 326-25 | | A-1, B-1, C-1, D-<br>**C**-2, -4, -5, -7, -8, **D**-4 |

| Other: |
|---|
| |

| | Approval | Time/Date |
|---|---|---|
| Dose Assessor | | |
| RAM | | |

Entire Procedure Revised.

**APPENDIX J**
**(Page 1 of 4)**
**STATE COMMUNICATOR CHECKLIST**

CECC ACTIVATION

| | Check box when action complete | Action |
|---|---|---|
| 1 | ☐ | Verify with the CECC Director that initial communication has been established with the appropriate State Agency (SQN & WBN - TEMA; BFN - Alabama Radiation Control, see REND). |
| 2 | ☐ | If the decision is made to activate the TEMA Forward Control Center/Radiological Monitoring Control Center (FCC/RMCC) or Alabama State Radiological Monitoring and Assessment Center (SRMAC) the CECC State Communicator will activate suspended rate telephones in accordance with Appendix N. |
| 3 | ☐ | Coordinate the completion of the staffing report with the Switchboard Operator and send to State when CECC becomes operational. |
| 4 | ☐ | Initiate first State Update Form. |
| 5 | ☐ | Coordinate with the CECC Director to identify the TVA Liaison to the State. |

| Completed by | Name: | Date: |
|---|---|---|

NOUE

UNUSUAL EVENT

| | Check box when action complete | Action |
|---|---|---|
| 1 | ☐ | Verify that the State is notified within 15 minutes of the classification declaration. |
| 2 | ☐ | Refer to duties under "General Operations" (page 4 of 4). |

| Completed by | Name: | Date: |
|---|---|---|

Entire Procedure Revised.

APPENDIX J
(Page 2 of 4)
STATE COMMUNICATOR CHECKLIST

ALERT

ALERT

| | Check box when action complete | Action |
|---|---|---|
| 1 | ☐ | Verify that the State is notified within 15 minutes of the classification declaration |
| 2 | ☐ | Verify Appendix C has been faxed to the State. |
| 3 | ☐ | Notify the TVA Liaison of the change in conditions (if staffed). |
| 4 | ☐ | Refer to duties under "General Operations" (page 4 of 4). |

| Completed by | Name: | Date: |
|---|---|---|

SITE AREA EMERGENCY

SITE AREA EMERGENCY

| | Check box when action complete | Action |
|---|---|---|
| 1 | ☐ | Verify that the State is notified within 15 minutes of the classification declaration. |
| 2 | ☐ | Verify Appendix C has been faxed to the State. |
| 3 | ☐ | Notify the TVA Liaison of the change in conditions (if staffed). |
| 4 | ☐ | Refer to duties under "General Operations" (page 4 of 4). |

| Completed by | Name: | Date: |
|---|---|---|

APPENDIX J
(Page 3 of 4)
STATE COMMUNICATOR CHECKLIST

GENERAL EMERGENCY

GENERAL EMERGENCY

| | Check box when action complete | Action |
|---|---|---|
| 1 | ☐ | Verify that the State is notified within 15 minutes of the classification declaration or PAR. |
| 2 | ☐ | Verify Appendixes C and I have been faxed to the State. |
| 3 | ☐ | Notify the TVA Liaison of the change in conditions (if staffed). |
| 4 | ☐ | Refer to duties under "General Operations" (page 4 of 4). |

| Completed by | Name: | Date: |
|---|---|---|

UPDATED PAR

UPDATED PAR

| | Check box when action complete | Action |
|---|---|---|
| 1 | ☐ | Verify that the State is notified within 15 minutes of the PAR declaration. |
| 2 | ☐ | Verify Appendix I has been faxed to the State. |
| 3 | ☐ | Notify the TVA Liaison of the change in conditions (if staffed). |

| Completed by | Name: | Date: |
|---|---|---|

Entire Procedure Revised.

APPENDIX J
(Page 4 of 4)
STATE COMMUNICATOR CHECKLIST

GENERAL OPERATIONS

1. Complete page 1 of CECC-EPIP-1, Appendix K, and send to State at least hourly. Note in position log.

2. Verify that Dose Assessment is sending (via computer or telecopy) pages 2 and 3 of Appendix K to their counterparts at least hourly. Note in position log.

3. Acts as contact for the State to clarify any discrepancies between information supplied from the CECC and any other TVA or non-TVA organization as they pertain to TVA-related activities.

4. Responsible for ensuring pertinent information related to emergency classifications, PARs, plant status, onsite responses, and TVA's dose/environs assessment activities are being provided to the State.

5. Assists the State as requested in providing TVA resource assistance to the State.

6. Assists the State Liaison (State government representative) as necessary to keep him briefed on the plan situation and coordinating responses to State inquiries, etc.

7. Acts as contact for the State to clarify any discrepancies between information supplied from the CECC and any other TVA or non-TVA organization as they pertain to TVA-related activities.

8. Maintain an awareness of key State activities and provide report in CECC briefings (until arrival of State Liaison to the CECC).

Message Number _____

**APPENDIX K**
**(Page 1 of 3)**
**STATE UPDATE FORM**

TO: ☐ AEMA, Clanton, AL
☐ Alabama Radiation Control Agency, Montgomery, AL
☐ Alabama Radiation Control Agency, Decatur, AL (Director, TVA Liaison & AEMA Rep)
☐ TEMA, Nashville, TN (SEOC Director, TVA Liaison & Radiological Health)

FROM: **CECC State Communicator at (423) 751-1613**

**REASON FOR REPORT:** ☐ **Periodic** ☐ **Significant Change of Status (min. items 1-5)**

1. Affected Units: **BFN** U-2 ☐, U-3 ☐; **SQN** U-1 ☐, U-2 ☐; **WBN** U-1 ☐

2. Emergency Classification: ☐ NOUE ☐ Alert ☐ Site Area Emergency ☐ General Emergency

   EAL Designator: _____ Declared at: _____ (local time at site), on: _____ (date)

3. Protective Action Recommendation ☐ None ☐ No change in existing PAR

   ☐ CECC Director's Protective Action Recommendation. (Attach EPIP-1, Appendix I)

4. Offsite dose projections are: ☐ N/A ☐ Stable ☐ Improving ☐ Deteriorating

5. Radiological Release: ☐ No Abnormal ☐ Projected ☐ Actual

| Estimated duration or Impact Times | ☐ Airborne (see p. 2 of 3) [1] | ☐ Waterborne (see p. 3 of 3) [1] | ☐ Surface Spill |
|---|---|---|---|

[1] May be generated and transmitted by computer

Estimate of surface spill contamination: _____

6. Actions to reduce/terminate radioactive release: _____

7. Emergency Actions underway at plant site:
   ☐ Site Accountability: Initiated (time) _____ Completed (time) _____
   ☐ Non-essential personnel released from site (time) _____
   ☐ Other: _____

8. Onsite support needed or requested from State/local organizations: _____
   _____

9. Plant conditions: See CECC EPIP-6, PLANT SYSTEMS ASSESSMENT Appendix - Time of Assessment: _____

| Approval | Name | Time | Date |
|---|---|---|---|
| **CECC Director** | | | |

Entire Procedure Revised.

**APPENDIX K**
**(Page 2 of 3)**
**STATE UPDATE FORM**

**PROJECTED AIRBORNE RELEASES**
**RADIOLOGICAL DOSE ASSESSMENT - PERIODIC STATE INFORMATION**

Time: _____ (local)

15. The release being assessed began/begins at _____ local time and is estimated to continue for _____ hr.

16. Release Rate:

| | | |
|---|---|---|
| Noble Gas | _____ | µCi/s |
| Iodine-131 | _____ | µCi/s |
| Particulates | _____ | µCi/s |
| Gross Activity | _____ | µCi/s |

17. Release Path: _____ Effective Release Height (O meters = ground level) _____ m

18. Meteorological Conditions: Wind Speed: _____ meters/sec
_____ miles/hr

Wind Direction (From) _____ (degrees/sector)

| | | |
|---|---|---|
| Stability Class | _____ | |
| Precipitation | _____ | mm |
| Affected Sector | _____ | degrees/sector |

19. Projected Doses (rem) (Does not include previously received dose)

| Distance | TEDE | Thyroid CDE | Cow Milk |
|---|---|---|---|
| 0.62 mi | _____ | _____ | _____ |
| 2 mi | _____ | _____ | _____ |
| 5 mi | _____ | _____ | _____ |
| 10 mi | _____ | _____ | _____ |

20. Comments

_____
_____
_____

**APPENDIX K**
**(Page 3 of 3)**
**STATE UPDATE FORM**

**ACTUAL/PROJECTED LIQUID RELEASES**
**RADIOLOGICAL DOSE ASSESSMENT - PERIODIC STATE INFORMATION**

21 Time: _____ (local)

22. The release being assessed began/begins at _____ local time and is estimated to continue for _____ hr.

23. Release:

| Nuclide | Concentration |
|---|---|
| _____ | _____ µCi/mL |
| _____ | _____ µCi/mL |
| _____ | _____ µCi/mL |
| _____ | _____ µCi/mL |
| _____ | _____ µCi/mL |

24. Release Point: ☐ Shoreline ☐ Diffuser

25. Total Release Volume: _____ $ft^3$ (1 gallon = 0.134 $ft^3$)

26. RIVER FLOW at the plant _____ $ft^3/s$

27. DOWNSTREAM MAXIMUM ORGAN DOSE RATE TO HYPOTHETICAL INDIVIDUAL ON THE SHORELINE DUE TO DRINKING THE WATER

| LOCATION (TRM) | ARRIVAL TIME (DAY) | CONCENTRATION (microCi/mL) | | DOSE RATE (D) (rem/d) | |
|---|---|---|---|---|---|
| | | Plant Side | Opposite Side | Plant Side | Opposite Side |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |

28. COMMENTS: _____

_____

_____

Entire Procedure Revised.

APPENDIX L
(Page 1 of 1)
MANAGEMENT SERVICES SUPERVISOR CHECKLIST

| | Check box when action complete | Action |
|---|---|---|
| 1 | ☐ | Contact clerical personnel to staff CECC positions as listed in the Management Services Supervisor position notebook. Use Appendix M to document FFD. |
| 2 | ☐ | If RMCC is being staffed contact clerical support for that location. Use Appendix M to document FFD. List positions. |
| 3 | ☐ | If JIC is being staffed contact clerical support for that location. Use Appendix M to document FFD. List positions. |
| 4 | ☐ | Set emergency classification and site inputs on electronic clocks (see workbook for details). |
| 5 | ☐ | Brief clerical staff on roles and responsibilities. |

| Completed by | Name: | Date: |
|---|---|---|

GENERAL OPERATIONS

1. Monitor and allocate CECC clerical personnel where needed (avoid fax backlogs, etc.).
2. Obtains needed documents and drawings from DCRM.
3. Updates Emergency Classification on electronic clocks.
4. Coordinates meals and lodging.
5. Maintains position log.
6. Schedules relief for clerical positions.

**APPENDIX M**
**Page 1 of 1**

**FITNESS FOR DUTY**
**PROGRAM ADMINISTRATION**

**TVA NUCLEAR**
**CALL-IN SHEET**

Person Calling: _____ Date: _____

| Name | Time Called | Time Needed to Report | Alcohol 5 Hrs. Prior to Report (Y/N) | Fit for Duty (Y/N) | Duty Official Comments |
|---|---|---|---|---|---|
| | | | | | |
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| | | | | | |

Entire Procedure Revised.

**APPENDIX N**
**(Page 1 of 5)**

**ACTIVATION AND DEACTIVATION OF SUSPENDED RATE TELEPHONE LINES IN TVA AND STATE EMERGENCY FACILITIES**

Date: _____

TIME/INITIAL

Activation

_____/_____ Notify TVA Information Technical Service Center (ITSC) at (423) 751-4357 and request suspended rate lines in the facilities identified for activation be removed from suspended rate status. Refer to attachment for identified facility to be activated and request ITSC implement their procedure to activate suspended rate telephone lines.

**Browns Ferry JIC - Refer to Section 1.0 of this Appendix.**

**Browns Ferry SRMAC/AEMA Liaison - Refer to Section 2.0 of this Appendix.**

**Sequoyah/Watts Bar JIC - Refer to Section 3.0 of this Appendix.**

**Sequoyah FCC/RMCC - Refer to Section 4.0 of this Appendix.**

Follow instructions in the applicable attachment to return lines to suspended rate status.

_____/_____ TVA ITSC confirmed action has been completed to remove lines from suspended rate status.

Deactivation

_____/_____ ITSC and Telecommunications Support Services contacted at (423) 751-2228 to request the telephone lines be placed back in suspended rate status.

_____/_____ Notify Manager, Emergency Preparedness, State and Local Programs to follow up on request to return lines to suspended rate status.

Entire Procedure Revised.

**APPENDIX N**
**(Page 2 of 5)**

**1.0 ACTIVATION/DEACTIVATION REQUIREMENTS FOR BROWNS FERRY JIC**

a. All telephones in the assigned rooms of the Fine Arts Building of John C. Calhoun State Community College must be removed from suspended rate status when the decision is made to staff the JIC.

b. To activate the telephone lines on suspended rates, the EDO/State Communicator will contact the TVA Information Technical Service Center (ITSC) at (751-4357) and request the following lines be activated by using the lead telephone numbers to activate the blocks of lines.

**BFN LEAD TELEPHONE NUMBERS (EARNING NUMBERS): 256-340-0092 & 256-355-4823**

After the above is requested, the following lines will be activated:

LEAD NUMBER FOR THE SEVEN AREAS OF JIC IMMEDIATELY FOLLOWING: 256-340-0092. This lead number activates these 54 phones.

| | | | | |
|---|---|---|---|---|
| TVA Staff Room | 256-350-0092 | 256-350-5942 | 256-355-7643 | 256-355-2783 |
| (19 phones) | 256-350-5943 | 256-355-2782 | 256-350-5956 | 256-350-5957 |
| | 256-355-8073 | 256-340-0096 | 256-350-5953 | 256-355-8041 |
| | 256-355-8055 | 256-350-6089 | 256-350-5952 | 256-350-3895 |
| | 256-353-8347 | 256-340-0093 | 256-340-0094 | |
| NRC/FEMA Staff Room | 256-355-8002 | 256-353-1033 | | |
| (4 phones) | 256-350-3893 | 256-353-1049 | | |
| AEMA Workroom | 256-355-8036 | 256-350-5958 | 256-355-0730 | 256-355-8012 |
| (21 phones) | 256-350-6128 | 256-350-6129 | 256-355-0713 | 256-355-0714 |
| | 256-355-0705 | 256-353-6124 | 256-353-1059 | 256-350-6126 |
| | 256-350-6127 | 256-350-6120 | 256-350-6125 | 256-350-6122 |
| | 256-350-6123 | 256-350-6121 | 256-350-5944 | 256-350-3894 |
| | 256-350-5951 | | | |
| Media Monitoring | 256-355-7644 | 256-350-6481 | 256-355-8043 (Trouble Shooting) | |
| Broadcast Space (3 phones) | | | | |
| Media Work Space | 256-355-4858 | 256-355-7916 | 256-355-4824 | 256-355-4828 |
| First Floor (5 phones) | 256-355-7915 | | | |
| JIC Security | 256-350-5941 | | | |
| (1 phone) | | | | |
| Update Desk | 256-355-2712 | | | |
| (1 phone) | | | | |

LEAD NUMBER FOR THE AREA OF JIC IMMEDIATELY FOLLOWING: 256-355-4823. This lead number activates these 15 phones.

| | | | | |
|---|---|---|---|---|
| Media Work Space | 256-355-4823 | 256-355-4829 | 256-355-4941 | 256-355-4942 |
| Second Floor | 256-355-4943 | 256-355-4944 | 256-355-4951 | 256-355-4952 |
| (15 phones) | 256-355-4953 | 256-355-4954 | 256-355-4998 | 256-355-7701 |
| | 256-355-7702 | 256-355-7913 | 256-355-7914 | |

APPENDIX N
(Page 3 of 5)

c. The ITSC will contact the EDO/State Communicator and confirm action has been completed to remove lines from suspended rate status.

d. When the JIC is deactivated, the EDO/State Communicator will contact ITSC and Telecommunications Support Services at 751-2228 and request the above listed numbers be placed back in suspended rate status. The EDO/State Communicator will then request that the Manager, Emergency Preparedness, State and Local Programs follow up this request within 5 days and confirm this action has been completed.

## 2.0 ACTIVATION/DEACTIVATION REQUIREMENTS FOR STATE SRMAC FOR BROWNS FERRY

a. There are a limited number of suspended rate telephone lines in the State RMCC for Browns Ferry. These lines are located in the basement of the SRMAC/FCC portion of the Morgan County Emergency Operations Center in the basement of the Morgan County Courthouse. These lines must be removed from suspended rate status when the Director of the State Radiation Control Agency determines the RMCC is to be staffed in order to direct the activities of the field monitoring teams.

b. To activate the telephone lines on suspended rates, the EDO/State Communicator will contact the TVA Information Technical Service Center (ITSC) at 751-4357 and request the following lines be activated using the lead telephone number.

LEAD TELEPHONE NUMBER (EARNING NUMBER): 256-350-9362

After the above is requested, the following lines will be activated:

| | | | | |
|---|---|---|---|---|
| Rm. B-31 | 256-350-9362 | | | |
| Rm. B-33 | 256-355-9520 | 256-355-9076 | 256-350-6580 | 256-351-6024 |
| | 256-355-9158 | 256-351-0441 | 256-301-8931 | |

c. The ITSC Center will contact the EDO/State Communicator and confirm action has been completed to remove lines from suspended rate status.

d. When the SRMAC is deactivated, the EDO/State Communicator will contact ITSC and Telecommunications Support Services at 751-2228 and request the above listed numbers be placed back in suspended rate status. The EDO/State Communicator will then request that the Manager, Emergency Preparedness, State and Local Programs follow up this request within 5 days and confirm this action has been completed.

APPENDIX N
(Page 4 of 5)

## 3.0 ACTIVATION/DEACTIVATION REQUIREMENTS FOR SEQUOYAH/WATTS BAR JIC

a. There are 20 telephone lines in the Sequoyah/Watts Bar JIC that are on suspended rate status. These lines are assigned to the Media Work area which is located in the hallway outside of the basement auditorium in Missionary Ridge Place in the Chattanooga Office Complex. These lines must be removed from suspended rate status when the decision is made to staff the JIC.

b. To activate telephone lines on suspended rates, the EDO/State Communicator will contact the TVA Information Technical Service Center (ITSC) at 751-4357 and request the following lines be activated using the lead telephone numbers.

**LEAD TELEPHONE NUMBERS (EARNING NUMBERS): 423-265-0300 & 423-265-0333**

After the above is requested the following lines will be activated:

| | | | | |
|---|---|---|---|---|
| Media Work Area: | 423-265-0300 | 423-265-0312 | 423-265-0314 | 423-265-0319 |
| Lead Number | 423-265-0325 | | | |
| (Basic 5) | | | | |
| Lead Number | 423-265-0333 | 423-265-0336 | 423-265-0345 | 423-265-0350 |
| (Additional 15) | 423-265-0370 | 423-265-0400 | 423-265-0401 | 423-265-0418 |
| | 423-265-0611 | 423-265-0613 | 423-265-0642 | 423-265-0645 |
| | 423-265-0650 | 423-265-0652 | 423-265-0655 | |

c. The ITSC will contact the EDO/State Communicator and confirm action has been completed to remove lines from suspended rate status.

d. When the JIC is deactivated, the EDO/State Communicator will contact the ITSC and Telecommunications Support Services at 751-2228 and request the above listed numbers be placed back in suspended rate status. The EDO/State Communicator will then request that the Manager, Emergency Preparedness, State and Local Programs follow up this request within 5 days and confirm this action has been completed.

APPENDIX N
(Page 5 of 5)

4.0 ACTIVATION/DEACTIVATION REQUIREMENTS FOR STATE FCC/RMCC FOR SEQUOYAH/WATTS BAR

a. All telephone lines in the State FCC/RMCC located in the Air National Guard Armory at Lovell Field in Chattanooga must be removed from suspended rate status when the Tennessee Emergency Management Agency makes the decision to staff that facility.

b. To activate the telephone lines on suspended rates, the EDO/State Communicator will contact the Information Technical Service Center (ITSC) at 751-4357 and request the following lines be activated using the lead telephone numbers to activate the blocks of lines.

LEAD TELEPHONE NUMBER (EARNING NUMBER): 423-899-9858

After the above is requested, the following lines will be activated:

| | | | | | |
|---|---|---|---|---|---|
| RMCC (5 lines) | 423-899-9858 | 423-894-6843 | 423-855-0190 | 423-899-7086 | 423-855-3765 |
| FCC (21 lines) | 423-899-9433 | 423-894-6799 | 423-899-6795 | 423-899-9374 | |
| | 423-899-9623 | 423-899-9621 | 423-899-9023 | 423-899-9129 | |
| | 423-899-0826 | 423-899-9709 | 423-899-9389 | 423-899-9279 | |
| | 423-899-6595 | 423-899-9599 | 423-899-9071 | 423-899-9771 | |
| | 423-899-6980 | 423-899-6982 | 423-899-9025 | 423-899-9597 | |
| | 423-855-3768 | | | | |

c. The ITSC will contact the EDO/State Communicator and confirm that action has been completed to remove the lines from suspended rate status.

d. When the FCC/RMCC is deactivated, the EDO/State Communicator will contact the ITSC and Telecommunications Support Services at 751-2228 and request the above listed numbers be placed back in suspended rate status. The EDO/State Communicator will then request that the Manager, Emergency Preparedness, State and Local Programs follow up this request within 5 days and confirm this action has been completed.

CECC EPIP Coversheet

| Tennessee Valley Authority<br>CENTRAL EMERGENCY CONTROL CENTER EMERGENCY PLAN IMPLEMENTING PROCEDURES | Title<br>OPERATIONS DUTY SPECIALIST PROCEDURE FOR NOTIFICATION OF UNUSUAL EVENT | CECC EPIP-2<br>REV. 30<br><br>Effective Date:<br>3/31/03 |
|---|---|---|

WRITTEN BY: Thomas E. Aldrin (Signature) REVIEWED BY: [signature] (Signature) 3/24/2003 (Date)

PLAN EFFECTIVENESS DETERMINATION: Thomas E Aldrin (Signature) 3/24/03 (Date)

**CONCURRENCES**

| Concurrence Signature | Date |
|---|---|
| ☒ Manager, EP Program Planning and Implementation<br>David Bond | 3/25/2003 |
| ☒ Manager, Emergency Preparedness<br>BK Marks | 3/25/03 |
| ☒ Manager, Radiological and Chemistry Services<br>Chandrasen | 3/27/03 |
| ☐ | |

**APPROVAL**

APPROVED BY: Mark J Burzynski (Signature) Vice President, E&TS (Title / Organization) 3/27/03 (Date)

CECC-EPIP-2
OPERATIONS DUTY SPECIALIST
PROCEDURE FOR NOTIFICATION OF UNUSUAL EVENT

REVISION LOG

| Rev. No. | Date | Revised Pages |
|---|---|---|
| 0 | 3/22/88 | All (Changed from IPD to EPIP) |
| 1 | 4/27/88 | 3 |
| 2 | 11/18/88 | 3 |
| 3 | 4/26/89 | All |
| 4 | 7/13/89 | 3 |
| 5 | 9/19/89 | All |
| 6 | 10/26/89 | 1,2, App. A (pg.2), App. B (p.2) |
| 7 | 5/23/90 | App. A (p.2), App. B (p.2) |
| 8 | 5/21/91 | Page 2 of 2, App. A, Pgs. 1 and 2, App. B, Pgs. 1 and 2 |
| 9 | 5/31/91 | Page 2 of 2; App. B, Pgs. 1 and 2 |
| 10 | 12/12/91 | Pages 1-2; App. A, pgs. 1-2; App. B, Pgs. 1-2 |
| 11 | 12/23/92 | New coversheet and rev log added; pgs. 1-3; App. A, Appendix B deleted |
| 12 | 06/18/93 | Page 3; all pages issued. |
| 13 | 06/28/94 | All |
| 14 | 2/17/95 | Page 3 Name removal from notification list |
| 15 | 7/13/95 | Page 3 change Al. Area code; All pages issued. |
| 16 | 3/20/96 | Page 3 change M. O. Medford to J. P Maciejewski; all pages issued. |
| 17 | 10/30/96 | Change SOS to SM, add SNE to call list, add M. O. Medford to call list, correct telephone area code. |
| 18 | 12/12/96 | Page 3 change M. O. Medford to O. J. Zeringue; all pages issued. |
| 19 | 4/7/97 | Annual review. Add notification completed step to procedure. All pages issued |
| 20 | 7/16/97 | Modify notification list. All pages issued. |
| 21 | 9/24/98 | Add Mr. Scalice to notification list and remove Mr. Zeringue. All pages issued. |

CECC-EPIP-2
OPERATIONS DUTY SPECIALIST
PROCEDURE FOR NOTIFICATION OF UNUSUAL EVENT

REVISION LOG (Continued)

| Rev. No. | Date | Revised Pages |
|---|---|---|
| 22 | 11/13/00 | Add Public Information Manager to OPS notification list. Remove reference to notification board. |
| 23 | 3/30/01 | Annual review. Revise initial State Notification Form. All pages issued. |
| 24 | 8/23/01 | Update notification list. All pages issued. |
| 25 | 11/7/01 | Update notification list. All pages issued. |
| 26 | 6/13/02 | Annual review, add TPS notification, add credible threat NOUE activation of CECC, update notification list, add time to Initial State Notification Form. All pages issued. |
| 27 | 7/24/02 | Change "credible threat" terminology and update notification list. All pages issued. |
| 28 | 9/3/02 | Update organization names. Add Load Coordinator and TPS Transmission Dispatcher phone numbers. |
| 29 | 10/30/02 | Remove statement to activate CECC at a credible threat EAL. Move the procedure step for the ODS to notify the SED of the State notification of the event to a point earlier in the procedure. |
| 30 | 3/31/03 | Annual review, new release terminology added to Initial Notification Form. All pages issued. |

# OPERATIONS DUTY SPECIALIST PROCEDURE FOR NOTIFICATION OF UNUSUAL EVENT

## 1.0 PURPOSE

This procedure is designed to direct the ODS during a Notification of Unusual Event to ensure consistent, accurate, and timely response in the event of an emergency.

## 2.0 SCOPE

This procedure covers anticipated requirements of the ODS during a Notification of Unusual Event.

## 3.0 REFERENCES

Radiological Emergency Plan

## 4.0 ABBREVIATIONS AND DEFINITIONS

EDO - Emergency Duty Officer
ODS - Operations Duty Specialist
CECC - Central Emergency Control Center
NP - Nuclear Power
SNE - Senior Nuclear Executive

## 5.0 RESPONSIBILITIES

5.1 Upon notification by the Site Emergency Director that a Notification of Unusual Event exists, the ODS is responsible for recording the preliminary report of information concerning the incident on Appendix A.

5.2 The ODS is responsible for notifying the appropriate State agency, CECC EDO, key NP emergency response personnel, the Load Coordinator, and the TPS Transmission Dispatcher.

5.3 * The ODS is responsible for recording any follow-up information on Appendix B and notifying the appropriate State, CECC EDO, and CECC Director.

*Revision

## 6.0 PROCEDURE REQUIREMENTS

### 6.1 Actions to be Taken for a Notification of Unusual Event

The ODS performs the following tasks.

NOTE: When making notifications of an emergency situation, provide only the information contained on the attachment. Avoid any unnecessary explanation or elaboration of the information. Timeliness and accuracy is of the utmost importance. If additional information/explanation is required by any party, provide the name and phone number of the EDO and request they contact him or patch them through to him.

(TIME/INITIALS)

____/___ 6.1.1 Upon receiving a call from the Site Emergency Director:

Turn on Recording Equipment and enter the following information.

Current Date: _____
Current Time: _____

____/___ 6.1 2 Refer to the form in Appendix A and log information to be provided to the State.

6.1.3 Make notification call to the appropriate State (not to exceed 15 minutes from the time of the declaration of the event).

Tennessee

TEMA Duty Officer: _____ Time: _____
(Use the ringdown telephone as the primary means to contact TEMA. If this does not work, then use numbers programmed on phones.)

Alabama

Alabama Office of Radiation Control Duty Officer: _____ Time: _____

AFTER HOURS NOTIFY

Montgomery State Trooper Post to have the Office of Radiation Control Duty Officer

call the ODS _____ Time: _____
(See numbers programmed on phones )

(TIME/INITIALS)

____/___ 6.1.4 Inform the Site Emergency Director that the respective State has been notified.

6.1.5 Notify the following by phone or pager.

____/___ CECC EDO (See REPTRACK Duty List)

____/___ CECC Director (See REPTRACK Duty List)

____/___ J. A. Scalice (See REND Call-Out List - SNE)

____/___ J. E. Maddox (See REND Call-Out List - SNE)

____/___ B. K. Marks (See REND Call-Out List - CECC Director)

____/___ SNE (See REPTRACK Duty List or REND Call-Out List - SNE)

____/___ Nuclear Emergency Public Information Duty Officer (See REPTRACK Duty List)

____/___ 6.1.6 Notify the Load Coordinator of the condition (751-7547).

____/___ 6.1.7 Notify the TPS Transmission Dispatcher of the condition.
BFN: SW Dispatch 751-4203
SQN: SE Dispatch 751-4208
WBN: NE Dispatch 751-4204

____/___ 6.1.8 Upon receiving telecopy of the Site Emergency Director event form verify the information recorded on Appendix A of this procedure is correct.

* / 6.1.9 Telecopy Appendix A of this procedure to the affected State.

| | |
|---|---|
| AL. Office of Radiation Control | (334) 206-5387 |
| TEMA | (615) 242-9635 |

____/___ 6.1.10 Verify that the telecopy to the State has been received. (Only during normal working hours for AL. Office of Radiation Control.) Use programmed telephone number for the affected State.

____/___ 6.1.11 Refer to the form in Appendix B, log follow-up information regarding the event in progress, and provide to the appropriate State, CECC EDO, and CECC Director. *

6.2 **Actions To Be Taken When the Condition Is Terminated**

6.2.1 Upon notification of the termination of the Notification of Unusual Event, the ODS has the responsibility of notifying all parties informed in section 6.1 of this procedure.

____/___ Notifications completed

Exceptions: _____

_____

*Revision

**APPENDIX A**
**Page 1 of 1**

**TVA INITIAL NOTIFICATION FORM FOR UNUSUAL EVENT**

1. ☐ This is a Drill ☐ This is an Actual Event - Repeat - This is an Actual Event

2. This is _____, ☐ Browns Ferry ☐ Sequoyah ☐ Watts Bar has declared an **UNUSUAL EVENT**
TVA Operations Duty Specialist
At telephone number (423) 751-1700

affecting: ☐ Unit 1 ☐ Unit 2 ☐ Unit 3 ☐ Common

3. **EAL Designator(s):** _____

4. **Brief Description of the Event:** _____

_____

_____

_____

_____

5. **Radiological Conditions:** (Check one under both Airborne and Liquid column.)

| Airborne Releases Offsite | Liquid Releases Offsite |
|---|---|
| ☐ Minor releases within federally approved limits[1] | ☐ Minor releases within federally approved limits[1] |
| ☐ Releases above federally approved limits[1] | ☐ Releases above federally approved limits[1] |
| ☐ Release information not known | ☐ Release information not known |
| ([1]Tech Specs) | ([1]Tech Specs) |

6. **Event Declared:** Time: _____ Date: _____

7. **Provide Protective Action Recommendation:** ☐ None

8. Please repeat the information you have received to ensure accuracy.

9. Time and Date this information was provided _____/_____

**Action: When completed, telecopy this information.**

Entire Page Revised

**APPENDIX B Page 1 of 1**

## FOLLOW-UP INFORMATION FORM NOTIFICATION OF UNUSUAL EVENT

1. "This is a Real Emergency. This is a Real Emergency." ☐
   or
   "This is a Drill. This is a Drill." ☐

2. Time _____

3. The following significant changes in Plant Conditions have occurred.

_____

_____

_____

_____

4. The following significant changes in Radiological Conditions have occurred._____

_____

_____

_____

_____

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

6. Time information provided to State. _____

7. Name _____ Date _____

Note: When completed telecopy this Form to the State.

CECC EPIP Coversheet

| Tennessee Valley Authority<br>CENTRAL EMERGENCY CONTROL CENTER EMERGENCY PLAN IMPLEMENTING PROCEDURES | Title<br>OPERATIONS DUTY SPECIALIST PROCEDURE FOR ALERT | CECC EPIP-3<br>REV. 31<br><br>Effective Date:<br>3/31/03 |
|---|---|---|

WRITTEN BY: Thomas E Addison *Signature* REVIEWED BY: *Signature* 3/24/2003 *Date*

PLAN EFFECTIVENESS DETERMINATION: Thomas E. Addison *Signature* 3/24/03 *Date*

**CONCURRENCES**

| Concurrence Signature | Date |
|---|---|
| ☒ Manager, EP Program Planning and Implementation<br>David Bond | 3/25/2003 |
| ☒ Manager, Emergency Preparedness<br>J K Mabry | 3/25/03 |
| ☒ Manager, Radiological and Chemistry Services<br>Chandran | 3/27/03 |
| ☐ | |

**APPROVAL**

APPROVED BY: Mark J Burzynski *Signature* Vice President, E&TS *Title* *Organization* 3/27/03 *Date*

CECC-EPIP-3
OPERATIONS DUTY SPECIALIST
PROCEDURE FOR ALERT

REVISION LOG

| Rev. No. | Date | Revised Pages |
|---|---|---|
| 0 | 3/22/88 | All (Changed from IPD to EPIP) |
| 1 | 04/27/88 | 3 |
| 2 | 11/18/88 | 3, 4 |
| 3 | 4/26/89 | All |
| 4 | 7/13/89 | 3, 4 |
| 5 | 9/19/89 | All |
| 6 | 10/26/89 | 2, App A (p. 2), App. B (p.2) Title changed (pgs. 1-2) |
| 7 | 5/23/90 | "Site Area Emergency" section moved to EPIP-4. App. A (pg2), App. B (p.2). App. C added (p.1) |
| 8 | 5/21/91 | Pages 2 and 3, App. A, Pgs. 1 & 2, App. B, Pgs 1 & 2 |
| 9 | 05/31/91 | Page 2 of 3; Appendix B, pages 1 and 2 |
| 10 | 12/12/91 | Pages 1-3/ App. A, pgs. 1-2; App B, pgs. 1-2 |
| 11 | 05/15/92 | Page 2 revised; new coversheet and rev. log added; All pages issued. |
| 12 | 12/23/92 | Pages 1-4; App. A, Pg. 1; App. B, Pg. 1; App. C deleted. |
| 13 | 01/25/93 | Pages 1, 3 & 4; added activation of ERDS system. All pages issued. |
| 14 | 06/18/93 | Page 3; all pages issued. |
| 15 | 06/24/94 | Pages 1-4; App B, Former App. B changes to App. C. |
| 16 | 2/17/95 | Page 3 Name removal from notification list. |
| 17 | 7/13/95 | Page 4 Changed AL. area code. All pages issued. |
| 18 | 3/20/96 | Page 3 Change M. O. Medford to J. P. Maciejewski; all pages issued. |
| 19 | 10/30/96 | Removed references to SOS, add M. O. Medford to call list, rearrange order of call list, telephone number updates, add statement to clarify CECC security setup instructions. Procedure put in new format. All pages issued. |
| 20 | 12/12/96 | Page 3 remove M. O. Medford. Page 4 add O. J. Zeringue; all pages issued. |
| 21 | 4/7/97 | Annual review. Update State of AL. fax number. All pages issued. |
| 22 | 7/16/97 | Correct telephone number. Modify notification list. All pages issued. |
| 23 | 9/24/98 | Update manual callout list and instructions. All pages issued |

REVISION LOG (Continued)

| Rev. No. | Date | Revised Pages |
|---|---|---|
| 24 | 11/13/00 | Add section to cover ODS relocation, editorial changes |
| 25 | 3/30/01 | Annual review. Revise initial State Notification Form. All pages issued. |
| 26 | 8/23/01 | Update notification list. All pages issued. |
| 27 | 6/13/02 | Annual review. Add TPS notification, update notification list, add time to to Initial State Notification Form, editorial changes. All pages issued. |
| 28 | 7/24/02 | Update notification list. Change Automated Paging System to Emergency Paging System. Change CECC Notification Board to REND. All pages issued. |
| 29 | 9/3/02 | Update organizational names. Add Load Coordinator and TPS Transmission Dispatcher phone numbers. |
| 30 | 10/30/02 | Move the procedure step for the ODS to notify the SED of the State notification of the event to a point earlier in the procedure. |
| 31 | 3/31/03 | Annual review, new release terminology added to Initial Notification Form. All pages issued. |

# OPERATIONS DUTY SPECIALIST PROCEDURE FOR ALERT

## 1.0 PURPOSE

This procedure is designed to direct the ODS during an Alert to ensure consistent, accurate, and timely response in the event of an emergency.

## 2.0 SCOPE

This procedure covers anticipated requirements of the ODS during an Alert. This procedure should not be used after the CECC has assumed responsibility for communications with the State under CECC EPIP-1.

## 3.0 REFERENCES

Radiological Emergency Plan

## 4.0 ABBREVIATIONS AND DEFINITIONS

EDO - Emergency Duty Officer
ERDS - Emergency Response Data System
ODS - Operations Duty Specialist
CECC - Central Emergency Control Center

## 5.0 RESPONSIBILITIES

5.1 Upon notification by the Site Emergency Director that an Alert exists, the ODS is responsible for recording the preliminary report of information concerning the incident on Appendix A.

5.2 The ODS is responsible for notifying the appropriate State agency, CECC EDO, CECC Director, Plant Assessment Manager, Radiological Assessment Manager, Load Coordinator, TPS Transmission Dispatcher, and key CECC staff. The ODS is also responsible for notifying technical support personnel as requested.

5.3 The ODS is responsible for recording any follow-up information on Appendix B and notifying the appropriate State.

## 6.0 PROCEDURE REQUIREMENTS

6.1 Actions to be Taken for an Alert

The ODS performs the following tasks:

NOTE: When making notifications of an emergency situation, provide only the information contained on the attachment. Avoid any unnecessary explanation, interpretation, or elaboration of the information. Timeliness and accuracy is of the utmost importance.

(TIME/INITIALS)

____/____ 6.1.1 Upon receiving a call from the Site Emergency Director:

**Turn on Recording Equipment** and enter the following information.

Current Date: _____
Current Time: _____

____/____ 6.1.2 Refer to the form in Appendix A and log information to be provided to the State.

6.1.3 Make notification call to the appropriate State (not to exceed 15 minutes from the time of the declaration of the event).

Tennessee

TEMA Duty Officer: _____ Time: _____
(Use the ringdown telephone as the primary means to contact TEMA. If this does not work, then use numbers programmed on phones.)

Alabama

Alabama Office of Radiation Control Duty Officer: _____ Time: _____

AFTER HOURS NOTIFY

Montgomery State Trooper Post to have the Office of Radiation Control Duty Officer

call the ODS _____ Time: _____
(See numbers programmed on phones.)

(TIME/INITIALS)

____/___ 6.1.4 If event **has been terminated** refer to CECC-EPIP-2 and perform Sections 6.1.4 through 6.1.10 of that procedure for notification and receive further guidance from the EDO.

____/___ 6.1.5 If event **has not been terminated**, activate Emergency Paging System. Monitor the Emergency Paging System screen. If any critical positions do not respond within 15 minutes or indicate they cannot respond, then use the REND or REP duty list to contact duty or backup staff for those positions. Appendix C will be used to document Fitness for Duty for positions contacted by telephone. Steps 6.1.6 through 6.1.26 of this procedure should be done in parallel with these actions as time permits.

-OR-

**If Emergency Paging System is not operable,** notify the following and have them report to the center (see the REPTRACK Duty List or REND). Initial attempts to fill critical positions should be performed before moving on to non-critical positions and steps 6.1.6 through 6.1.26 of this procedure. Appendix C will be used to document fitness for duty.

| Critical Positions |
|---|
| ____/___ CECC EDO |
| ____/___ CECC Director |
| ____/___ Radiological Assessment Manager |
| ____/___ Plant Assessment Manager |
| ____/___ Dose Assessor |
| ____/___ Plant Assessment Team Leader |
| ____/___ Plant Assessment Coordinator |
| ____/___ Nuclear Emergency Public Information Duty Officer |

____/___ Environs Assessor
____/___ Management Services Supervisor
____/___ Resource Support Coordinator
____/___ Core Damage
____/___ Engineering Representative
____/___ Meteorologist
____/___ Communications Support Personnel (Telephones)
____/___ Computer Support Personnel
____/___ B. K. Marks

*Revision

____/____ 6.1.6 If event has not been terminated, activate the ERDS system (not to exceed 1 hour after the declaration of the event). If the ERDS system fails to activate, continue with the next step (6.1.7) of this procedure

____/____ 6 1.7 Inform the Site Emergency Director that the respective state has been notified.

____/____ 6 1.8 Notify the CECC EDO.

____/____ 6.1.9 Notify COC Security (751-3783) and request that security be established and key card access be initiated.

If the ODS is located in the Power Business Center and conditions allow relocation to the CECC continue with step 6.1.10 of this procedure, if the ODS is located in the CECC or is not relocating to the CECC proceed to section 6.1.17 of this procedure.

____/____ 6.1.10 Transfer 751-1700 to the cellular phone.

____/____ 6 1.11 Notify TEMA (for SQN and WBN events) that the ODS will be in transit to the CECC and that all calls should be made to 423-751-1700 until further notice.

____/____ 6.1.12 Relocate to the CECC.

Upon arrival in the CECC perform the following:

____/____ 6.1.13 Follow up on any calls received during transit to the CECC.

____/____ 6.1.14 Place the "A-B" switches for the Paging, ERDS and Alarm Notification Systems to the "A" position

____/____ 6.1.15 Transfer 751-1700 and the three site ringdown phones from the cellular phone back to the desktop phone.

____/____ 6.1.16 Notify TEMA (for SQN and WBN events) that the ODS is in the CECC and can now use the ringdown phone for communications.

____/____ 6.1.17 Notify J. E. Maddox (See REND Call-Out List-SNE).

____/____ 6 1.18 Notify J. A. Scalice (See REND Call-Out List-SNE).

____/____ 6 1.19 Notify the Load Coordinator of the condition (751-7547).

____/____ 6.1.20 Notify the TPS Transmission Dispatcher of the condition
BFN: SW Dispatch 751-4203
SQN: SE Dispatch 751-4208
WBN: NE Dispatch 751-4204

____/____ 6.1.21 Upon receiving telecopy of the Site Emergency Director event form, verify the information recorded on Appendix A of this procedure is correct.

* ____/____ 6.1.22 Telecopy Appendix A of this procedure to the affected State.

| | |
|---|---|
| AL. Office of Radiation Control | (334) 206-5387 |
| TEMA | (615) 242-9635 |

____/____ 6.1.23 Verify that the telecopy to the State has been received (only during normal working hours for Al. Office of Radiation Control). Use programmed telephone number for the affected State.

____/____ 6.1.24 If the ERDS system failed to activate in step 6.1.6 of this procedure, notify the computer support duty officer and the NRC duty officer at telephone number (301) 816-5100.

____/____ 6.1.25 Refer to the form in Appendix B, log follow-up information, and provide to the appropriate State.

____/____ 6.1.26 Continue attempts to contact any critical or non-critical positions in Section 6.1.5 of this procedure that have not responded.

*Revision

**APPENDIX A**
**Page 1 of 1**

**TVA INITIAL NOTIFICATION FORM FOR ALERT**

1. ☐ This is a Drill ☐ This is an Actual Event - Repeat - This is an Actual Event

2. This is _____, ☐ Browns Ferry ☐ Sequoyah ☐ Watts Bar has declared an **ALERT**
TVA Operations Duty Specialist
At telephone number (423) 751-1700

affecting: ☐ Unit 1 ☐ Unit 2 ☐ Unit 3 ☐ Common

3. **EAL Designator(s):** _____

4. **Brief Description of the Event:** _____

_____

_____

_____

_____

5. **Radiological Conditions:** (Check one under both Airborne and Liquid column.)

| **Airborne** Releases Offsite | **Liquid** Releases Offsite |
|---|---|
| ☐ Minor releases within federally approved limits[1] | ☐ Minor releases within federally approved limits[1] |
| ☐ Releases above federally approved limits[1] | ☐ Releases above federally approved limits[1] |
| ☐ Release information not known | ☐ Release information not known |
| ([1]Tech Specs) | ([1]Tech Specs) |

6. **Event Declared:** Time: _____ Date: _____

7. **Provide Protective Action Recommendation:** ☐ None

8. Please repeat the information you have received to ensure accuracy.

9. Time and Date this information was provided _____/_____

**Action: When completed, telecopy this information.**

Entire Page Revised

**APPENDIX B Page 1 of 1**

## FOLLOW-UP INFORMATION FORM
## ALERT

1. "This is a Real Emergency. This is a Real Emergency." ☐
   or
   "This is a Drill. This is a Drill." ☐
2. Time _____
3. The following significant changes in Plant Conditions have occurred.

_____

_____

_____

_____

4. The following significant changes in Radiological Conditions have occurred. _____

_____

_____

_____

_____

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

6. Time information provided to State. _____

7. Name _____ Date _____

Note: When completed telecopy this Form to the State.

**APPENDIX C Page 1 of 1**

FITNESS FOR DUTY
PROGRAM ADMINISTRATION

TVA NUCLEAR
CALL-IN SHEET

Person Calling: _____ Date: _____

| Name | Time Called | Time Needed to Report | Alcohol 5 Hrs. Prior to Report (Y/N) | Fit for Duty (Y/N) | Duty Official Comments |
|---|---|---|---|---|---|
| | | | | | |
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CECC EPIP Coversheet

| Tennessee Valley Authority<br>CENTRAL EMERGENCY CONTROL CENTER EMERGENCY PLAN IMPLEMENTING PROCEDURES | Title<br>OPERATIONS DUTY SPECIALIST PROCEDURE FOR SITE AREA EMERGENCY | CECC EPIP-4<br>REV. 32<br><br>Effective Date:<br>3/31/03 |
|---|---|---|

WRITTEN BY: Thomas E. Addis (Signature) REVIEWED BY: [signature] (Signature) 3/24/2003 (Date)

PLAN EFFECTIVENESS DETERMINATION: Thomas E. Addis (Signature) 3/24/03 (Date)

**CONCURRENCES**

| Concurrence Signature | Date |
|---|---|
| ☒ Manager, EP Program Planning and Implementation<br>Edward Bond | 3/25/2003 |
| ☒ Manager, Emergency Preparedness<br>B K Marks | 3/25/03 |
| ☒ Manager, Radiological and Chemistry Services<br>Chandran | 3/27/03 |
| ☐ | |

**APPROVAL**

APPROVED BY: Mark Burzynski (Signature) Vice President, E&TS (Title / Organization) 3/27/03 (Date)

CECC-EPIP-4
OPERATIONS DUTY SPECIALIST
PROCEDURE FOR SITE AREA EMERGENCY

REVISION LOG

| Rev. No. | Date | Revised Pages |
|---|---|---|
| 0 | 3/22/88 | All (changed from IPD to EPIP) |
| 1 | 4/27/88 | 4 |
| 2 | 7/8/88 | Pages 3 & 4, Page 2 of App. B |
| 3 | 11/18/88 | 3, 4 |
| 4 | 4/26/89 | All |
| 5 | 7/13/89 | 3, 4 |
| 6 | 9/19/89 | All |
| 7 | 10/26/89 | 2, App. A (pg. 2), App. B (p. 2) |
| 8 | 5/23/90 | "General Emergency" moved to EPIP-5, App. A (p. 2), App. B (p.2), App. C added (p.1). |
| 9 | 5/21/91 | Pages 2 & 3, App. A, Pgs. 1 & 2, App. B, Pgs. 1 & 2 |
| 10 | 5/31/91 | Page 2 of 3; Appendix B, Pages 1 & 2 |
| 11 | 12/12/91 | Pages 1-3; App. A, pgs. 1-2, App. B, pgs. 1-2. |
| 12 | 05/15/92 | Page 2 revised; new coversheet and rev. log added; all pages issued. |
| 13 | 12/23/92 | All |
| 14 | 01/25/93 | Pages 1, 3-4, add activation of ERDS system. All pages issued. |
| 15 | 06/18/93 | Page 3; all pages issued. |
| 16 | 06/24/94 | Pages 1-4; App B; Former App B changed to App. C. |
| 17 | 2/17/95 | Page 3 Name removal from notification list. |
| 18 | 7/13/95 | Page 4 Change AL. Area code. All pages issued. |
| 19 | 3/20/96 | Page 3 Change M. O. Medford to J. P Maciejewski; All pages issued. |
| 20 | 10/30/96 | Remove references to SOS, add M. O. Medford to call list, telephone number updates; add statement to clarify CECC security setup instructions. Procedures put in new format. All pages issued. |
| 21 | 12/12/96 | Page 3 removed M. O Medford: Page 4 add O. J. Zeringue; All pages issued. |
| 22 | 4/7/97 | Annual review, update State of AL. fax number. All pages issued. |

CECC-EPIP-4
OPERATIONS DUTY SPECIALIST
PROCEDURE FOR SITE AREA EMERGENCY

REVISION LOG (Continued)

| Rev. No. | Date | Revised Pages |
|---|---|---|
| 23 | 7/16/97 | Correct telephone number. Modify notification list. All pages issued. |
| 24 | 9/24/98 | Annual review. Update manual callout list. All pages issued. |
| 25 | 11/13/00 | Add section to cover ODS relocation, editorial changes. |
| 26 | 3/30/01 | Annual review. Revise initial State Notification Form. All pages issued. |
| 27 | 8/23/01 | Update notification list. All pages issued. |
| 28 | 6/13/02 | Annual review. Add TPS notification, update notification list, add time to Initial State Notification Form, editorial changes. All pages issued. |
| 29 | 7/24/02 | Update notification list. Change Automated Paging to Emergency Paging System. Change CECC Notification Board to REND. All pages issued. |
| 30 | 9/3/02 | Update organization names. Add Load Coordinator and TPS Transmission Dispatcher phone numbers. |
| 31 | 10/30/02 | Move the procedure step for the ODS to notify the SED of the State notification of the event to a point earlier in the procedure. |
| 32 | 3/31/03 | Annual review, new release terminology added to Initial Notification Form. All pages issued. |

# OPERATIONS DUTY SPECIALIST PROCEDURE FOR SITE AREA EMERGENCY

## 1.0 PURPOSE

This procedure is designed to direct the ODS during a Site Area Emergency to ensure consistent, accurate, and timely response in the event of an emergency.

## 2.0 SCOPE

This procedure covers anticipated requirements of the ODS during a Site Area Emergency. This procedure should not be used after the CECC has assumed responsibility for communication with the State under CECC-EPIP-1.

## 3.0 REFERENCES

Radiological Emergency Plan

## 4.0 ABBREVIATIONS AND DEFINITIONS

EDO - Emergency Duty Officer
ERDS - Emergency Response Data System
ODS - Operations Duty Specialist
CECC - Central Emergency Control Center

## 5.0 RESPONSIBILITIES

5.1 Upon notification by the Site Emergency Director that a Site Area Emergency exists, the ODS is responsible for recording the preliminary report of information concerning the incident on Appendix A.

5.2 The ODS is responsible for notifying the appropriate State agency, CECC EDO, CECC Director, Plant Assessment Manager, Radiological Assessment Manager, Load Coordinator, TPS Transmission D-is patcher, and key CECC staff. The ODS is also responsible for notifying technical support personnel as requested.

5.3 The ODS is responsible for recording any follow-up information on Appendix B and notifying the appropriate State.

## 6.0 PROCEDURE REQUIREMENTS

6.1 Actions to be Taken for a Site Area Emergency

The ODS performs the following tasks:

NOTE: When making notifications of an emergency situation, provide only the information contained on the attachment. Avoid any unnecessary explanation, interpretation, or elaboration of the information. Timeliness and accuracy is of the utmost importance.

(TIME/INITIALS)

____/____ 6.1.1 Upon receiving a call from the Site Emergency Director:

**Turn on Recording Equipment** and enter the following information.

Current Date: _____
Current Time: _____

____/____ 6.1.2 Refer to the form in Appendix A and log information to be provided to the State.

6.1.3 Make notification call to the appropriate State (not to exceed 15 minutes from the time of the declaration of the event).

Tennessee

TEMA Duty Officer: _____ Time: _____
(Use the ringdown telephone as the primary means to contact TEMA. If this does not work, then use numbers programmed on phones.)

Alabama

Alabama Office of Radiation Control Duty Officer: _____ Time: _____

AFTER HOURS NOTIFY

Montgomery State Trooper Post to have the Office of Radiation Control Duty Officer call the ODS _____ Time: _____
(See numbers programmed on phones.)

(TIME/INITIALS)

____/____ 6.1.4 If event **has been terminated** refer to CECC-EPIP-2 and perform Sections 6.1.4 through of that procedure 6.1.10 for notification and receive further guidance from the EDO.

____/____ 6.1.5 If the event **has not been terminated**, activate Emergency Paging System. Monitor the Emergency Paging System screen. If any critical positions do not respond within 15 minutes or indicate they cannot respond, then use the REND or REP duty list to contact duty or backup staff for those positions. Appendix C will be used to document Fitness for Duty for positions contacted by telephone. Steps 6.1.6 through 6.1.26 of this procedure should be done in parallel with these actions as time permits.

-OR-

**If Emergency Paging System is not operable**, notify the following and have them report to the center (see the REPTRACK Duty List or REND). Initial attempts to fill critical positions should be performed before moving on to non-critical positions and steps 6.1.6 through 6.1.26 of this procedure. Appendix C will be used to document fitness for duty.

| | Critical Positions |
|---|---|
| ____/____ | CECC EDO |
| ____/____ | CECC Director |
| ____/____ | Radiological Assessment Manager |
| ____/____ | Plant Assessment Manager |
| ____/____ | Dose Assessor |
| ____/____ | Plant Assessment Team Leader |
| ____/____ | Plant Assessment Coordinator |
| ____/____ | Nuclear Emergency Public Information Duty Officer |

____/____ Environs Assessor
____/____ Management Services Supervisor
____/____ Resource Support Coordinator
____/____ Core Damage
____/____ Engineering Representative
____/____ Meteorologist
____/____ Communications Support Personnel (Telephones)
____/____ Computer Support Personnel
____/____ B. K. Marks

____/____ 6.1.6 If event has not been terminated, activate the ERDS system (not to exceed 1 hour after the declaration of the event). If the ERDS system fails to activate continue with the next step (6.1.7) of this procedure.

____/____ 6.1.7 Inform the Site Emergency Director that the respective state has been notified.

____/____ 6.1.8 Notify the CECC EDO.

____/____ 6.1.9 Notify COC Security (751-3783) and request that security be established and key card access be initiated.

If the ODS is located in the Power Business Center and conditions allow relocation to the CECC continue with step 6.1.10 of this procedure, if the ODS is located in the CECC or is not relocating to the CECC proceed to section 6.1.17 of this procedure.

____/____ 6.1.10 Transfer 751-1700 to the cellular phone.

____/____ 6.1.11 Notify TEMA (for SQN and WBN events) that the ODS will be in transit to the CECC and that all calls should be made to 423-751-1700 until further notice.

____/____ 6.1.12 Relocate to the CECC.

Upon arrival in the CECC perform the following:

____/____ 6.1.13 Follow up on any calls received during transit to the CECC.

____/____ 6.1.14 Place the "A-B" switches for the Paging, ERDS and Alarm Notification Systems to the "A" position.

____/____ 6.1.15 Transfer 751-1700 and the three site ringdown phones from the cellular phone back to the desktop phone.

____/____ 6.1.16 Notify TEMA (for SQN and WBN events) that the ODS is in the CECC and can now use the ringdown phone for communications.

____/____ 6.1.17 Notify J. E. Maddox (See REND Call-Out List-SNE).

____/____ 6.1.18 Notify J. A. Scalice (See REND Call-Out List-SNE).

____/____ 6.1.19 Notify the Load Coordinator of the condition (751-7547).

____/____ 6.1.20 Notify the TPS Transmission Dispatcher of the condition.
BFN: SW Dispatch 751-4203
SQN: SE Dispatch 751-4208
WBN: NE Dispatch 751-4204

____/____ 6.1.21 Upon receiving telecopy of the Site Emergency Director event form, verify the information recorded on Appendix A of this procedure is correct.

* ____/____ 6.1.22 Telecopy Appendix A of this procedure to the affected State.

| | |
|---|---|
| AL. Office of Radiation Control | (334) 206-5387 |
| TEMA | (615) 242-9635 |

*Revision

____/____ 6.1.23 Verify that the telecopy to the State has been received (only during normal working hours for AL. Office of Radiation Control). Use programmed telephone number for the affected State.

____/____ 6.1.24 If the ERDS system failed to activate in step 6.1.6 of this procedure, notify the computer support duty officer and the NRC duty officer at telephone number (301) 816-5100.

____/____ 6.1.25 Refer to the form in Appendix B, log follow-up information, and provide to the appropriate State.

____/____ 6.1.26 Continue attempts to contact any critical or non-critical positions in section 6.1.5 of this procedure that have not responded.

**APPENDIX A**
**Page 1 of 1**

**TVA INITIAL NOTIFICATION FORM FOR SITE AREA EMERGENCY**

1. ☐ This is a Drill ☐ This is an Actual Event - Repeat - This is an Actual Event

2. This is _____, ☐ Browns Ferry ☐ Sequoyah ☐ Watts Bar has declared a **SITE AREA EMERGENCY**
TVA Operations Duty Specialist
At telephone number (423) 751-1700

affecting: ☐ Unit 1 ☐ Unit 2 ☐ Unit 3 ☐ Common

3. **EAL Designator(s):** _____

4. **Brief Description of the Event:** _____

_____

_____

_____

_____

5. **Radiological Conditions:** (Check one under both Airborne and Liquid column.)

| **Airborne** Releases Offsite | **Liquid** Releases Offsite |
|---|---|
| ☐ Minor releases within federally approved limits[1] | ☐ Minor releases within federally approved limits[1] |
| ☐ Releases above federally approved limits[1] | ☐ Releases above federally approved limits[1] |
| ☐ Release information not known | ☐ Release information not known |
| ([1]Tech Specs) | ([1]Tech Specs) |

6. **Event Declared:** Time: _____ Date: _____

7. **Provide Protective Action Recommendation:** ☐ None

8. Please repeat the information you have received to ensure accuracy.

9. Time and Date this information was provided _____/_____

**Action: When completed, telecopy this information.**

Entire Page Revised

**APPENDIX B Page 1of 1**

## FOLLOW-UP INFORMATION FORM SITE AREA EMERGENCY

1. "This is a Real Emergency. This is a Real Emergency." ☐
   or
   "This is a Drill. This is a Drill." ☐

2. Time _____

3. The following significant changes in Plant Conditions have occurred.

_____

_____

_____

_____

4. The following significant changes in Radiological Conditions have occurred._____

_____

_____

_____

_____

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

6. Time information provided to State. _____

7. Name _____ Date _____

Note: When completed telecopy this Form to the State.

**APPENDIX C Page 1 of 1**

FITNESS FOR DUTY
PROGRAM ADMINISTRATION

TVA NUCLEAR
CALL-IN SHEET

Person Calling: _____ Date: _____

| Name | Time Called | Time Needed to Report | Alcohol 5 Hrs. Prior to Report (Y/N) | Fit for Duty (Y/N) | Duty Official Comments |
|---|---|---|---|---|---|
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CECC EPIP Coversheet

| Tennessee Valley Authority<br>CENTRAL EMERGENCY CONTROL CENTER EMERGENCY PLAN IMPLEMENTING PROCEDURES | Title<br>OPERATIONS DUTY SPECIALIST PROCEDURE FOR GENERAL EMERGENCY | CECC EPIP-5<br>REV. 34<br><br>Effective Date:<br>3/31/03 |
|---|---|---|

WRITTEN BY: Thomas E. Aldrin REVIEWED BY: _____ 3/24/2003
*Signature* *Signature* *Date*

PLAN EFFECTIVENESS DETERMINATION: Thomas E. Aldrin 3/27/03
*Signature* *Date*

**CONCURRENCES**

| Concurrence Signature | Date |
|---|---|
| ☒ Manager, EP Program Planning and Implementation<br>David Bond | 3/25/2003 |
| ☒ Manager, Emergency Preparedness<br>B K Marks | 3/26/03 |
| ☒ Manager, Radiological and Chemistry Services<br>Chauhan | 3/27/03 |
| ☐ | |

**APPROVAL**

APPROVED BY: Mark Burzynski Vice President, E&TS 3/27/03
*Signature* *Title* *Organization* *Date*

CECC-EPIP-5
OPERATIONS DUTY SPECIALIST
PROCEDURE FOR GENERAL EMERGENCY

REVISION LOG

| Rev. No. | Date | Revised Pages |
|---|---|---|
| 0 | 3/22/88 | All (Changed from IPD to EPIP) |
| 1 | 7/8/88 | App. B |
| 2 | 11/18/88 | App. B |
| 3 | 4/26/89 | All |
| 4 | 7/13/89 | App. A (pgs. 2, 3, 4), App. B |
| 5 | 9/19/89 | App. D (pg. 2) |
| 6 | 10/26/89 | 3-5, App. A (1, 3-4), App. B, App. D, App. G-I |
| 7 | 5/23/90 | All (Formerly issued as EPIP-4) |
| 8 | 5/21/91 | Pages 2 & 3, App. A, Pgs. 1 & 2, App. B, Pgs. 1 & 2 |
| 9 | 5/31/91 | Page 2 of 3; Appendix B, pages 1 and 2 |
| 10 | 12/12/91 | Pages 1-3; App. A, pgs. 1-2; App. B, pgs. 1-2. |
| 11 | 05/15/92 | Page 2 revised; new coversheet & rev. log added. All pages issued. |
| 12 | 12/23/92 | All |
| 13 | 01/25/93 | Page 1, 4, add activation of ERDS system. All pages issued. |
| 14 | 06/18/93 | Pages 2 and 3; all pages issued. |
| 15 | 03/17/94 | Pages 1-4; all pages issued. |
| 16 | 04/19/94 | Pages 1-4; all pages issued. |
| 17 | 06/24/94 | Pages 1-4; all pages issued. |
| 18 | 07/25/94 | Page 2 (new Hamilton Co. telephone number). All pages issued. |
| 19 | 2/17/95 | Page 3 Name removal from notification list. |
| 20 | 7/13/95 | Page 4 change AL. area code. All pages issued. |
| 21 | 3/20/96 | Page 2 change to new telephone area code, page 3 change M. O. Medford to J. P. Maciejewski; all pages issued. |
| 22 | 10/30/96 | Remove references to SOS, add M. O. Medford to call list, rearrange order of call list, telephone number updates, add statement to clarify CECC security setup instructions. Procedure put in new format. All pages issued. |

CECC-EPIP-5
OPERATIONS DUTY SPECIALIST
PROCEDURE FOR GENERAL EMERGENCY

REVISION LOG (Continued)

| Rev. No. | Date | Revised Pages |
|---|---|---|
| 23 | 12/12/96 | Page 3 remove M. O. Medford; Page 4 add O. J. Zeringue; All pages issued. |
| 24 | 4/7/97 | Annual review, update county emergency telephone numbers, correct typographical error in Appendix A. All pages issued. |
| 25 | 7/16/97 | Correct telephone number. Modify notification list. All pages issued. |
| 26 | 9/24/98 | Annual review. Update telephone area code and manual callout list. All pages issued. |
| 27 | 11/13/00 | Add section to cover ODS relocation, editorial changes. |
| 28 | 3/30/01 | Annual review. Revise initial State Notification Form. Update Morgan County after hours telephone number. All pages issued. |
| 29 | 8/23/01 | Updated telephone numbers and notification list. All pages issued. |
| 30 | 6/13/02 | Annual review. Add TPS notification, update notification list, add time to Initial State Notification Form, editorial changes. All pages issued. |
| 31 | 7/24/02 | Update notification list. Change Automated Paging System to Emergency Paging System. Change CECC Notification Board to REND. All pages issued. |
| 32 | 9/3/02 | Update organization names. Add Load Coordinator and TPS Transmission Dispatcher phone numbers. |
| 33 | 10/30/02 | Move the procedure step for the ODS to notify the SED of the State notification of the event to a point earlier in the procedure. |
| 34 | 3/31/03 | Annual review. New release terminology, Potassium Iodide recommendation, and identification of impacted sectors based on a range of wind directions added to Appendix A. All pages issued. |

# OPERATIONS DUTY SPECIALIST PROCEDURE FOR GENERAL EMERGENCY

## 1.0 PURPOSE

This procedure is designed to direct the ODS during a General Emergency to ensure consistent, accurate, and timely response in the event of an emergency.

## 2.0 SCOPE

This procedure covers the action of the ODS during a General Emergency. This procedure should not be used after the CECC has assumed responsibility for communications with the State under EPIP-1.

## 3.0 REFERENCES

Radiological Emergency Plan

## 4.0 ABBREVIATIONS AND DEFINITIONS

EDO - Emergency Duty Officer
EMA - Emergency Management Agency
ERDS - Emergency Response Data System
ODS - Operations Duty Specialist
CECC - Central Emergency Control Center

## 5.0 RESPONSIBILITIES

5.1 Upon notification by the Site Emergency Director that a General Emergency exists, the ODS is
* responsible for recording the preliminary report of information concerning the incident
* including the Protective Action Recommendation (PAR) on Appendix A.

5.2 The ODS is responsible for notifying the appropriate state and local agencies, CECC EDO, CECC Director, Plant Assessment Manager, Radiological Assessment Manager, Load Coordinator, TPS Transmission Dispatcher, and key CECC staff. The ODS is responsible for notifying technical support personnel as requested.

5.3 The ODS is responsible for recording any follow-up information on Appendix B and notifying the appropriate state.

## 6.0 PROCEDURE REQUIREMENTS

6.1 Action to be Taken for a General Emergency

The ODS performs the following tasks:

NOTE: When making notifications of an emergency situation, provide only the information contained on the attachment. Avoid any unnecessary explanation, interpretation, or elaboration of the information. Timeliness and accuracy is of the utmost importance.

*Revision

(TIME/INITIALS)

____/___ 6.1.1 Upon receiving a call from the Site Emergency Director:

**Turn on Recording Equipment.**

Current Date: _____
Current Time: _____

* ____/___ 6.1.2 Refer to the form in Appendix A for the affected plant and log information including the Protective Action Recommendation (PAR) to be provided to the local counties/State.

____/___ 6.1.3 Activate the emergency paging system. (If emergency paging system fails, go to 6.1.4.)

6.1.4 Make notification call to the appropriate counties (initiation of notifications not to exceed 15 minutes from the time of the declaration of the event):

Browns Ferry

| | | |
|---|---|---|
| Limestone County:<br>(After hrs) | (256) 232-2631<br>(256) 232-0111 | Time: _____ |
| Morgan County<br>(After hrs) | (256) 351-4620<br>(256) 353-2515 opt 0 | Time: _____ |
| Lawrence County<br>(After hrs) | (256) 974-7641<br>(256) 974-7911 | Time: _____ |
| Lauderdale County<br>(After hrs) | (256) 766-4201<br>(256) 760-9117 | Time: _____ |

Sequoyah

| | | |
|---|---|---|
| Hamilton County<br>(After hrs) | (423) 209-6900<br>(423) 622-7777 or 622-0022 | Time: _____ |
| Bradley County<br>(After hrs) | (423) 476-0606<br>(423) 476-7511 | Time: _____ |

Watts Bar

| | | |
|---|---|---|
| Rhea County<br>(After hrs) | (423) 775-2505<br>(423) 775-7828 | Time: _____ |
| Meigs County<br>(After hrs) | (423) 334-3211<br>(423) 334-5268 | Time: _____ |
| McMinn County<br>(After hrs) | (423) 744-2715<br>(423) 745-3140 | Time: _____ |

*Revision

(TIME/INITIALS)

6.1.5 Make notification call to the appropriate State.

Tennessee

TEMA Duty Officer: _____ Time: _____

(Use the ringdown telephone as the primary means to contact TEMA. If this does not work, then use numbers programmed on phones.)

Alabama

Alabama Office of Radiological Control Duty Officer: _____ Time: _____

AFTER HOURS NOTIFY

Montgomery State Trooper Post to have Office of Radiological Control Duty Officer call the ODS _____ Time: _____

(See numbers programmed on phones.)

6.1.6 Monitor the Emergency Paging System screen. If any critical positions do not respond within 15 minutes or indicate they cannot respond, then use the REPTRACK Duty List or REND to contact duty or backup staff for those positions. Appendix C will be used to document Fitness for Duty for positions contacted by telephone. Steps 6.1.7 through 6.1.27 of this procedure should be done in parallel with these actions as time permits.

Or

If the Emergency Paging System is not operable, notify the following and have them report to the CECC. (See REPTRACK Duty List or REND for names and phone numbers). Initial attempts to fill critical positions should be performed before moving on to non-critical positions and steps 6.1.7 through 6.1.27 of this procedure. Appendix C will be used to document fitness for duty.

| | Critical Positions |
|---|---|
| ____/____ | CECC EDO |
| ____/____ | CECC Director |
| ____/____ | Radiological Assessment Manager |
| ____/____ | Plant Assessment Manager |
| ____/____ | Dose Assessor |
| ____/____ | Plant Assessment Team Leader |
| ____/____ | Plant Assessment Coordinator |
| ____/____ | Nuclear Emergency Public Information Duty Officer |

____/____ Environs Assessor
____/____ Management Services Supervisor
____/____ Resource Support Coordinator
____/____ Core Damage
____/____ Engineering Representative
____/____ Meteorologist
____/____ Communications Support Personnel (Telephones)
____/____ Computer Support Personnel
____/____ B. K. Marks

____/____ 6.1.7 Activate the ERDS system (not to exceed 1 hour after the declaration of the event). If the ERDS system fails to activate, continue with the next step (6.1.8) of this procedure.

____/____ 6.1.8 Inform the Site Emergency Director that the State and appropriate local Emergency Management Agencies have been notified.

____/____ 6.1.9 Notify the CECC EDO.

____/____ 6.1.10 Notify COC Security (751-3783) and request that security be established and key card access be initiated.

If the ODS is located in the Power Business Center and conditions allow relocation to the CECC continue with step 6.1.11 of this procedure, if the ODS is located in the CECC or is not relocating to the CECC proceed to section 6.1.18 of this procedure.

____/____ 6.1.11 Transfer 751-1700 to the cellular phone.

____/____ 6.1.12 Notify TEMA (for SQN and WBN events) that the ODS will be in transit to the CECC and that all calls should be made to 423-751-1700 until further notice.

____/____ 6.1.13 Relocate to the CECC.

Upon arrival in the CECC perform the following:

____/____ 6.1.14 Follow up on any calls received during transit to the CECC.

____/____ 6.1.15 Place the "A-B" switches for the Paging, ERDS and Alarm Notification Systems to the "A" position.

____/____ 6.1.16 Transfer 751-1700 and the three site ringdown phones from the cellular phone back to the desktop phone.

____/____ 6.1.17 Notify TEMA (for SQN and WBN events) that the ODS is in the CECC and can now use the ringdown phone for communications.

____/____ 6.1.18 Notify J. E. Maddox (See REND Call-Out List-SNE).

____/____ 6.1.19 Notify J. A. Scalice (See REND Call-Out List-SNE).

____/____ 6.1.20 Notify the Load Coordinator of the condition (751-7547).

____/____ 6.1.21 Notify the TPS Transmission Dispatcher of the condition.
BFN: SW Dispatch 751-4203
SQN: SE Dispatch 751-4208
WBN: NE Dispatch 751-4204

____/____ 6.1.22 Upon receiving telecopy of the Site Emergency Director event form, verify the information recorded on Appendix A of this procedure is correct.

* _____/___ 6.1.23 Telecopy the affected plant page of Appendix A of this procedure to the affected State.

| | |
|---|---|
| AL Office of Radiological Control | (334) 206-5387 |
| TEMA | (615) 242-9635 |

_____/___ 6.1.24 Verify that the telecopy to the State has been received (only during normal working hours for AL Office Radiological Control). Use programmed telephone number for the affected State.

_____/___ 6.1.25 If the ERDS system failed to activate in step 6.1.7 of this procedure, notify the computer support duty officer and the NRC duty officer at telephone number (301) 816-5100.

_____/___ 6.1.26 Refer to the form in Appendix B, log follow-up information, and provide to the appropriate state.

_____/___ 6.1.27 Continue attempts to contact any critical or non-critical positions in section 6.1.6 of this procedure that have not responded.

*Revision

**APPENDIX A Page 1 of 3 BROWNS FERRY**

1. ☐ This is a Drill ☐ This is an Actual Event - Repeat - This is an Actual Event

2. This is _____, TVA Operations Duty Specialist at (423) 751-1700 **Browns Ferry** has declared a **GENERAL EMERGENCY**

affecting: ☐ Unit 1 ☐ Unit 2 ☐ Unit 3 ☐ Common

3. **EAL Designator(s):** _____

4. **Brief Description of the Event:** _____

_____

_____

5. **Radiological Conditions:** (Check one under both Airborne and Liquid column.)

| **Airborne** Releases Offsite | **Liquid** Releases Offsite |
|---|---|
| ☐ Minor releases within federally approved limits[1] | ☐ Minor releases within federally approved limits[1] |
| ☐ Releases above federally approved limits[1] | ☐ Releases above federally approved limits[1] |
| ☐ Release information not known | ☐ Release information not known |
| ([1]Tech Specs) | ([1]Tech Specs) |

6. **Event Declared:** Time: _____ Date: _____

7. **The Meteorological Conditions are:** (Use 90 meter data from the Met Tower)

Wind Direction is FROM: _____degrees Wind Speed: _____ m.p.h

8. **Provide Protective Action Recommendation:** (Check either 1 or 2, and mark wind direction.)

| ☐ **Recommendation 1** ► EVACUATE LISTED SECTORS (2 mile Radius & 10 miles downwind) ► SHELTER all non-listed sectors. ► CONSIDER issuance of Potassium Iodide in accordance with the State Plan. | | **WIND FROM ° (Mark)** | | ☐ **Recommendation 2** ► EVACUATE LISTED SECTORS (2 mile radius & 5 mile downwind) ► SHELTER all other non-listed sectors. ► CONSIDER issuance of Potassium Iodide in accordance with the State Plan. |
|---|---|---|---|---|
| A-2, B-2, F-2, G-2, **E**-5, -10, **F**-5, -10, **G**-5, -10 | | 4 - 40 | | A-2, B-2, F-2, G-2, E-5, F-5, G-5 |
| A-2, B-2, F-2, G-2, **F**-5, -10, **G**-5, -10, H-10 | | 41- 73 | | A-2, B-2, F-2, G-2, F-5, G-5 |
| A-2, B-2, F-2, G-2, **G**-5, -10, H-10, I-10 | | 74 - 92 | | A-2, B-2, F-2, G-2, G-5 |
| A-2, B-2, F-2, G-2, A-5, G-5, H-10, I-10, J-10, K-10 | | 93 - 137 | | A-2, B-2, F-2, G-2, A-5, G-5, |
| A-2, B-2, F-2, G-2, **A**-5, -10, I-10, J-10, K-10 | | 138 - 203 | | A-2, B-2, F-2, G-2, A-5 |
| A-2, B-2, F-2, G-2, **A**-5, -10, **B**-5, -10, | | 204 - 282 | | A-2, B-2, F-2, G-2, A-5, B-5 |
| A-2, B-2, F-2, G-2, **B**-5, -10, C-10, D-10, E-5, -10 | | 283 - 326 | | A-2, B-2, F-2, G-2, B-5, E-5 |
| A-2, B-2, F-2, G-2, C-10, D-10, **E**-5,-10, **F**-5,-10 | | 327 - 3 | | A-2, B-2, F-2, G-2, E-5, F-5 |

9. Please repeat the information you have received to ensure accuracy.

10. Time and Date this information was provided _____/_____

**Action: When completed, telecopy this information.**

New Page

**APPENDIX A Page 2 of 3** **SEQUOYAH**

1. ☐ This is a Drill ☐ This is an Actual Event - Repeat - This is an Actual Event

2. This is _____, TVA Operations Duty Specialist at (423) 751-1700. **Sequoyah** has declared a **GENERAL EMERGENCY**

affecting: ☐ Unit 1 ☐ Unit 2 ☐ Both Unit 1 and Unit 2

3. **EAL Designator(s):** _____

4. **Brief Description of the Event:** _____

_____

_____

5. **Radiological Conditions:** (Check one under both Airborne and Liquid column.)

| **Airborne** Releases Offsite | **Liquid** Releases Offsite |
|---|---|
| ☐ Minor releases within federally approved limits[1] | ☐ Minor releases within federally approved limits[1] |
| ☐ Releases above federally approved limits[1] | ☐ Releases above federally approved limits[1] |
| ☐ Release information not known | ☐ Release information not known |
| ([1]Tech Specs) | ([1]Tech Specs) |

6. **Event Declared:** Time: _____ Date: _____

7. **The Meteorological Conditions are:** (Use 46 meter data from the Met Tower)

Wind Direction is FROM: _____degrees Wind Speed: _____ m.p.h

8. **Provide Protective Action Recommendation:** (Check either 1 or 2, and mark wind direction.)

| ☐ **Recommendation 1**<br>► EVACUATE LISTED SECTORS (2 mile Radius and 10 miles downwind)<br>► SHELTER all other non-listed sectors.<br>► CONSIDER issuance of Potassium Iodide in accordance with the State Plan. | | **WIND FROM ° (Mark)** | | ☐ **Recommendation 2**<br>► EVACUATE LISTED SECTORS (2 mile radius and 5 mile downwind)<br>► SHELTER all other non-listed sectors.<br>► CONSIDER issuance of Potassium Iodide in accordance with the State Plan. |
|---|---|---|---|---|
| A-1, B-1, C-1, D-1, **C**-2, -6, -7, -8, **D**-2, -3, -5, -6, | | 12 - 49 | | A-1, B-1, C-1, D-1, C-2, D-2 |
| A-1, B-1, C-1, D-1, **D**-2, -3, -4, -5, -6 | | 50 - 70 | | A-1, B-1, C-1, D-1, D-2 |
| A-1, B-1, C-1, D-1, **A**-3, -4, **D**-2, -3, -4, -5 | | 71 - 112 | | A-1, B-1, C-1, D-1, A-3, D-2 |
| A-1, B-1, C-1, D-1, **A**-2, -3, -4, -5, -6, **D**-4, | | 113 - 146 | | A-1, B-1, C-1, D-1, A-2, A-3, |
| A-1, B-1, C-1, D-1, **A**-2, -3, -4, -5, -6, **B**-2, | | 147 - 173 | | A-1, B-1, C-1, D-1, A-2, A-3, B-2 |
| A-1, B-1, C-1, D-1, **A**-2, -5, -6, **B**-2, -3, -4, | | 174 - 214 | | A-1, B-1, C-1, D-1, A-2, B-2, |
| A-1, B-1, C-1, D-1, **B**-2, -3, -4, -5, -6, -7, -8 | | 215 - 258 | | A-1, B-1, C-1, D-1, B-2, B-5, |
| A-1, B-1, C-1, D-1, **B**-2, -3, -5, -6, -7, -8, **C**-2, -3, -4, -5, -6, | | 259 - 331 | | A-1, B-1, C-1, D-1, B-2, B-5, C-2 |
| A-1, B-1, C-1, D-1, **B**-5, **C**-2, -3, -4, -5, -6, -7, -8 | | 332 - 11 | | A-1, B-1, C-1, D-1, B-5, C-2 |

9. Please repeat the information you have received to ensure accuracy.

10. Time and Date this information was provided _____/_____

**Action: When completed, telecopy this information.**

New Page

**APPENDIX A Page 3 of 3** **WATTS BAR**

1. ☐ This is a Drill ☐ This is an Actual Event - Repeat - This is an Actual Event

2. This is _____, TVA Operations Duty Specialist at (423) 751-1700 **Watts Bar** has declared a **GENERAL EMERGENCY**

affecting: ☐ Unit 1 ☐ Unit 2 ☐ Both Unit 1 and Unit 2

3. **EAL Designator(s):** _____

4. **Brief Description of the Event:** _____

_____

_____

5. **Radiological Conditions:** (Check one under both Airborne and Liquid column.)

| **Airborne** Releases Offsite | **Liquid** Releases Offsite |
|---|---|
| ☐ Minor releases within federally approved limits[1] | ☐ Minor releases within federally approved limits[1] |
| ☐ Releases above federally approved limits[1] | ☐ Releases above federally approved limits[1] |
| ☐ Release information not known | ☐ Release information not known |
| ([1]Tech Specs) | ([1]Tech Specs) |

6. **Event Declared:** Time: _____ Date: _____

7. **The Meteorological Conditions are:** (Use 46 meter data from the Met Tower)

Wind Direction is FROM: _____degrees Wind Speed: _____ m.p.h

8. **Provide Protective Action Recommendation:** (Check either 1 or 2, and mark wind direction.)

| ☐ **Recommendation 1**<br>► EVACUATE LISTED SECTORS (2 mile Radius and 10 miles downwind)<br>► SHELTER all other non-listed sectors.<br>► CONSIDER issuance of Potassium Iodide in accordance with the State Plan. | **WIND FROM ° (Mark)** | ☐ **Recommendation 2**<br>► EVACUATE LISTED SECTORS (2 mile radius and 5 mile downwind)<br>► SHELTER all other non-listed sectors.<br>► CONSIDER issuance of Potassium Iodide in accordance with the State Plan. |
|---|---|---|
| A-1, B-1, C-1, D-1,<br>**C**-7, -9, **D**-2, -4, -5, -6, -7, -8, -9 | 26-68 | A-1, B-1, C-1, D-1,<br>**C**-7, **D**-2, -4, -5 |
| A-1, B-1, C-1, D-1,<br>**A**-3, -4, **D**-2, -3, -4, -5, -6, -7, -8, -9 | 69-110 | A-1, B-1, C-1, D-1,<br>**A**-3, **D**-2, -4, -5 |
| A-1, B-1, C-1, D-1,<br>**A**-2, -3, -4, -5, -6, -7, **D**-2, -3, -5, -6 | 111-170 | A-1, B-1, C-1, D-1,<br>**A**-2, -3, **D**-2, -5 |
| A-1, B-1, C-1, D-1,<br>**A**-2, -3, -5, -6, -7, **B**-2, -3, -4, -5, **C**-2 | 171-230 | A-1, B-1, C-1, D-1,<br>**A**-2, -3, **B**-2, -4, **C**-2 |
| A-1, B-1, C-1, D-1,<br>**B**-2, -3, -4, -5, **C**-2, -3, | 231-270 | A-1, B-1, C-1, D-1,<br>**B**-2, -4, **C**-2 |
| A-1, B-1, C-1, D-1,<br>**B**-2, -3, **C**-2, -3, -4, -5, -6, -11 | 271-325 | A-1, B-1, C-1, D-1,<br>**B**-2, **C**-2, -4, -5, |
| A-1, B-1, C-1, D-1,<br>**C**-2, -4, -5, -6, -7, -8, -9, -10, -11, **D**-4, -9 | 326-25 | A-1, B-1, C-1, D-1,<br>**C**-2, -4, -5, -7, -8, **D**-4 |

9. Please repeat the information you have received to ensure accuracy.

10. Time and Date this information was provided _____/_____

**Action: When completed, telecopy this information.**

New Page

APPENDIX B Page 1 of 1

## FOLLOW-UP INFORMATION FORM GENERAL EMERGENCY

1. "This is a Real Emergency. This is a Real Emergency." ☐
   or
   "This is a Drill. This is a Drill." ☐

2. Time _____

3. The following significant changes in Plant Conditions have occurred.

_____

_____

_____

_____

4. The following significant changes in Radiological Conditions have occurred._____

_____

_____

_____

_____

5. The following changes to Protective Action Recommendations have occurred.

_____

_____

_____

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

7. Time information provided to State. _____

8. Name _____ Date _____

Note: When completed telecopy this Form to the State.

**APPENDIX C Page 1 of 1**

FITNESS FOR DUTY
PROGRAM ADMINISTRATION

TVA NUCLEAR
CALL-IN SHEET

Person Calling: _____ Date: _____

| Name | Time Called | Time Needed to Report | Alcohol 5 Hrs. Prior to Report (Y/N) | Fit for Duty (Y/N) | Duty Official Comments |
|---|---|---|---|---|---|
| | | | | | |
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CECC EPIP Coversheet

| Tennessee Valley Authority<br>CENTRAL EMERGENCY CONTROL CENTER EMERGENCY PLAN IMPLEMENTING PROCEDURES | Title<br>DOSE ASSESSMENT STAFF ACTIVITIES DURING NUCLEAR PLANT RADIOLOGICAL EMERGENCIES | CECC EPIP-8<br>REV. 24<br><br>Effective Date:<br>3/31/03 |
|---|---|---|

WRITTEN BY: Thomas E. Adkins (Signature) REVIEWED BY: Doyle E. Patton (Signature) 3/25/03 (Date)

PLAN EFFECTIVENESS DETERMINATION: Thomas E. Adkins (Signature) 3/24/03 (Date)

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|---|---|
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| ☐ | |

**APPROVAL**

APPROVED BY: Mark J Burzynski (Signature) VP Eng & Tech Svcs (Title Organization) 3/27/03 (Date)

CECC-EPIP-8
DOSE ASSESSMENT STAFF ACTIVITIES
DURING NUCLEAR PLANT RADIOLOGICAL EMERGENCIES
REVISION LOG

| Rev. No. | Date | Revised Pages |
|---|---|---|
| 0 | 3/22/88 | All (Changed from IPD to EPIP) |
| 1 | 11/18/88 | 2-7, Apps. A, B, C, & D |
| 2 | 12/12/88 | Appendix A |
| 3 | 4/26/89 | All |
| 4 | 9/19/89 | App. C |
| 5 | 10/26/89 | All |
| 6 | 5/21/91 | App. B, pgs. 1-4; Appendix C, pgs. 1-2; App. D, pg. 1 |
| 7 | 10/17/91 | App. B, pgs. 2-4; App. C, pg. 1. |
| 8 | 05/13/93 | 1-4; App. A; App. B, pg. 1, 3, & 4; and App. G; App. C deleted. All pages issued. |
| 9 | 11/22/93 | Pg. 4; App. B, pgs. 1&4; App. D changed to App. C; App. E changed to App. D; App. F changed to App. E; and App. G changed to App. F. |
| 10 | 11/30/93 | 1, 3, 4; App. A, pg. 1; App. B, pgs. 1-2; App. C, pg. 1-5; App. D, pg. 1; App. E, pg. 1; App. F, pg. 1; App. G, pgs. 1-6. |
| 11 | 06/24/94 | App. B, pg. 1; App. D, pgs. 2-5; App. F; App. J added. All pages issued. |
| 12 | 6/27/95 | Pg. 1; App. A; App. B, p 3; App. C, p. 5; App. D, p. 2; App. G, pgs. 4 and 6 |
| 13 | 1/17/96 | App. B, pg. 2, editorial changes, add table for BFN stack release; App. C, pgs. 1 & 3, Add new criteria for Type I and Type II releases; App. D, pgs. 2-5, add nonogram alignment checks |
| 14 | 5/30/96 | Pg. 3, App. A, App. B, App. C, App. D, App. F, App. G; annual review; ground level release tables and nomograms made generic to all three sites; all pages issued. |
| 15 | 10/30/96 | Pg. 3, App. B, and App. D; Add reference to App. I of CECC EPIP-7, remove deleted pages, make correction to Nomogram Alignment Check Table. |
| 16 | 5/30/97 | Editorial changes, update manual dose assessment methodology, update preliminary assessment table, revise river miles on tables in Appendix G, annual review. All pages issued. |
| 17 | 8/8/97 | Revise default river flow rate for BFN, revise responsibilities of Norris Lab, add water intake tables. All pages issued. |

CECC-EPIP-8
DOSE ASSESSMENT STAFF ACTIVITIES
DURING NUCLEAR PLANT RADIOLOGICAL EMERGENCIES

REVISION LOG (Continued)

| Rev. No. | Date | Revised Pages |
|---|---|---|
| 18 | 6/9/98<br>~~6/4/98~~<br>*RR* | Annual review. Organization title changes. In Appendix D clarify Type I and Type II formulas. Remove Tennessee River miles from tables. All pages issued. |
| 19 | 10/27/98 | Correct reference to CECC EPIP-1 Appendix on Appendix J. |
| 20 | 5/20/99 | Annual review. Editorial and clarification changes, revise public water use tables. All pages issued. |
| 21 | 9/8/00 | Annual review. Editorial changes. All pages issued. |
| 22 | 3/30/01 | Revised to incorporate the new source term methodology in the RED suite of codes revision |
| 23 | 11/22/02 | Revised all pages to reflect human factor improvements in REP codes and manual Included changes due to code revision necessary for H-3 project. |
| 24 | 3/31/03 | Added sections to Appendix F to provide instructions for manual method of calculating TEDE and thyroid CDE doses at Site Boundary (0.62 miles). All pages issued. |

## Table of Contents

**1.0 PURPOSE** ..... 2

**2.0 SCOPE** ..... 2

**3.0 STAFFING**
- 3.1 Activation and Notification ..... 2
- 3.2 Shift Change ..... 2
- 3.3 Termination ..... 2

**4.0 DOSE ASSESSOR INTERFACES**
- 4.1 Radiological Assessment Manager / Coordinator ..... 3
- 4.2 Meteorologist ..... 3
- 4.3 Environs Assessor / Field Coordinator ..... 3
- 4.4 Core Damage Assessor ..... 4
- 4.5 Technical Support Center ..... 4
- 4.6 River Operations ..... 4
- 4.7 State (Radiological) ..... 4

**5.0 PERFORMING DOSE ASSESSEMENTS**
- 5.1 Data Verification ..... 4
- 5.2 Preliminary Assessments ..... 4
- 5.3 Criteria for Significant Change in Conditions ..... 5
- 5.4 **FRED** or **RED** Assessments - Collection of Data ..... 5
- 5.5 Preparing a Protective Action Recommendation (PAR) ..... 5
- 5.6 Changes in Conditions for a PAR ..... 5
- 5.7 **BRED** Assessment - Back Calculation of Release Rate from Field Data ..... 5
- 5.8 Comparison of Measured Field Data to Dose Projections ..... 6
- 5.9 **WATERDOSE** Assessments ..... 6
- 5.10 Manual Methodologies for Dose Assessments ..... 6

**6.0 REFERENCES** ..... 6

**7.0 ABBREVIATIONS** ..... 6

**Appendixes**

- A. Dose Assessor Initial Reporting Checklist ..... 7
- B. Shift Change and Termination Checklist ..... 8
- C. FRED / RED Data Inputs ..... 9
- D. FRED / RED Assessment of Airborne Releases ..... 11
- E. BRED Assessment of Airborne Release Field Data ..... 13
- F. Manual Methodology for Assessing Airborne Releases ..... 15
- G. Comparison of Measured Field Data to Dose Projection Models ..... 20
- H WATER DOSE Data Inputs ..... 21
- I. Manual Methodology for Assessing Liquid Releases to the River ..... 22
- J. Public and Industrial Surface Water Supplies ..... 28

# DOSE ASSESSMENT STAFF ACTIVITIES DURING NUCLEAR PLANT RADIOLOGICAL EMERGENCIES

## 1.0 PURPOSE

To guide Dose Assessment in obtaining necessary information, calculating dose rates and doses, and communicating assessment results used in responding to radiological emergencies at nuclear power plants.

## 2.0 SCOPE

This procedure applies to activities of Dose Assessment in actual and hypothetical radiological emergency situations. While the activities of the Dose Assessment staff are expected to follow this procedure, it is expected that circumstances may arise during an event which will void portions of this procedure. Therefore, this procedure is a guide for the operation of the Dose Assessment staff under the ideal conditions.

## 3.0 STAFFING

### 3.1 Activation and Notification

The Initial notification of an event comes from the Operations Duty Specialist via the Emergency Paging System (EPS) or manual callout. Additional Dose Assessor support is contacted in accordance with Appendix A. The Dose Assessor is a position required for the CECC to make Protective Action Recommendations and to meet minimum staffing levels.

| |
|---|
| Upon reporting to the CECC, perform initial activities in accordance with the checklist provided as **Appendix A.** |

### 3.2 Shift Change

Shift change notification and transition and transfer of responsibilities should be conducted in accordance with the Dose Assessment Shift Change and Termination Checklist (Appendix B).

### 3.3 Termination

Termination of an event should include the following actions and follow the Dose Assessment Shift Change and Event Termination Checklist (Appendix B).

## 4.0 DOSE ASSESSOR INTERFACES

### 4.1 Radiological Assessment Manager / Coordinator (RAM/RAC)

The Dose Assessor should interface directly with the Radiological Assessment Coordinator (RAC). In the absence of the RAC, communication is provided directly to the RAM. Requests for any special-case assessments should come to Dose Assessment through the RAC/RAM or be cleared by the RAC/RAM prior to their performance.

Dose Assessment is responsible for performing the offsite dose assessment activities of the CECC in order to determine Protective Action Recommendations using the appropriate appendix in CECC EPIP-1. Dose assessment results are also evaluated against criteria for declaration of Emergency Classification levels, and evaluations are communicated to the RAM/RAC.

Dose Assessment should provide results of all dose assessments and plume plots from FRED to the RAC/RAM, who will approve them and distribute them to CECC staffs. Initial dose assessments (those made at the start of an event or when the conditions have changed significantly as defined in this procedure) will receive the approval of the RAC/RAM and then are transmitted to the TSC and the State. Under most other conditions, the results are directly transmitted to the TSC and the State on the State Update form via computer spooling. However, if the computer spooling is unavailable, then the Dose Assessor shall prepare a State Update form manually as defined in EPIP-1. CECC Clerical staff have instructions for distribution.

Dose Assessment should provide to the RAC/RAM copies of plume plots from RED for ongoing releases or plots of estimated centerline location (if there is not a known release but potential exists for one to occur). This information should be transmitted by the RAC/RAM to the CECC, TSC, and State. Dose assessment will also support post event recovery efforts.

### 4.2 Meteorologist (MET)

The CECC Meteorologist is responsible for providing to Dose Assessment the real time and forecast meteorological data and associated advice on atmospheric dispersion and transport. If a meteorologist is not initially available for response to the CECC, support can be obtained from Muscle Shoals. Telephone and pager numbers for the Muscle Shoals response personnel are available in the REND.

Meteorological data is provided to the CECC by computer inputs and by the CECC meteorologist. In the event of a monitored airborne release, the 15-minute meteorological data is automatically accessed by the RED and FRED codes. This data should be verified against the distributed meteorological data or by the meteorologist. The meteorologist is also available to convert flow rates to exit velocities for use in the codes. The meteorologists will also provide forecast information for use in the FRED code.

### 4.3 Environs Assessor/Field Coordinator

Dose Assessors provide plume plots to the CECC Environs Assessor and to the Field Coordinator at the Radiological Monitoring Control Center (RMCC) via the RAC. These plume plots are used to assist with decisions on field team deployments. Real time plume plots from the RED code are to be distributed to the EA/FC and the State for that purpose.

Field data is also shared to assist with comparison of dose projections with field measurements. This comparison can assist with evaluations if field teams are at maximum centerline locations, or if reported plant release rates coincide with actual field measurements.

In the event of an unmonitored release from a site, field team data can be used in the BRED code to assist with determination of a release rate.

### 4.4 Core Damage Assessors

The CECC Core Damage group (in Plant Assessment) is responsible for supplying Dose Assessment with projections of potential, anticipated, and/or worst-case release rates and pathways.

### 4.5 Technical Support Center (TSC)

The TSC is a source of information for radioactivity release rates, pathways, flow rates, and information on plant status and prognosis. The primary point of contact is TSC Chemistry. Release information is also available via the Integrated Computer System (ISC) using the CECC computers.

### 4.6 River Operations

River Operations may assist in providing Dose Assessment information on water dispersion characteristics for releases to the river. This information may be used in running the WATERDOSE code, or for use of the manual methodology if the dose code is unavailable.

### 4.7 State (Radiological)

Dose Assessment shall ensure that communication with the State Dose Assessment Team is established and maintained. The State should be given hourly updates, as a minimum. These updates should include discussions of all technical information relative to dose assessments being made (incoming release rates, assumptions used, problems with information flow). The State should also be contacted if the conditions have changed significantly as defined in this procedure. DO NOT discuss protective action recommendations with the State.

## 5.0 PERFORMING DOSE ASSESSMENTS

### 5.1 Data Verification

All dose assessment results (computer generated or hand calculated) involving data input will be verified by a second party verifier. The verifier may be a Dose Assessor or the RAM/RAC. The verifier will verify the accuracy and appropriateness of data input and reasonableness of the results. Both preparer and verifier will initial and date the results page of the assessment (e.g., State Update Form for FRED assessments).

### 5.2 Preliminary Assessments

Dose Assessors should provide results of all preliminary assessments to the RAC/RAM. Preliminary Assessments are provided as part of a FRED run. Preliminary assessments will be performed at the start of an event or when the conditions have changed significantly as defined in this procedure.

## 5.3 Criteria for a Significant Change in Conditions

Criteria for a significant change which will require a new dose assessment run are:

- the release type / path has changed,
- the release rates have changed by a factor of 10
- the stability class has changed by 2 classes,
- or the wind speed has changed by a factor of 2.

## 5.4 FRED or RED Assessments - Collection of Data

Gather information as provided on Appendix C. Sources of information may include the Technical Support Center (Chemistry), ICS, CECC Meteorologist or CECC Core Damage Assessors. Refer to Appendix C for instructions on running the dose codes.

## 5.5 Preparing a Protective Action Recommendation (PAR)

TVA must satisfy regulatory requirements to provide State Authorities a PAR within 15 minutes of the declaration of a General Emergency. Therefore, Dose Assessors should anticipate and initiate development of a PAR to allow ample time for review, approval and transmittal to State Authorities.

A Protective Action Recommendation for airborne releases is determined based upon results of a FRED run. If the FRED program is unavailable, then the manual methodology should be utilized as provided in this procedure. A PAR form contained in CECC EPIP-1 should be completed, with attention to identification of affected sectors as page 2 of that document..

Dose Assessment should provide technical guidance to the RAC/RAM in the preparation of protective action recommendations based on dose assessments. The RAC is responsible for written preparation of recommendations to the RAM.

## 5.6 Changes in Conditions for a PAR

Changes to a PAR must be communicated to the State by the CECC Director within 15 minutes of determination. Criteria for a changes which will require evaluation a new PAR are:

- the release type / path has changed,
- the release rates have changed by a factor of 10
- the stability class has changed by 2 classes,
- or the wind speed has changed by a factor of 2.
- a wind direction change resulting in a change of an affected sector

## 5.7 BRED Assessment - Back Calculation of Release Rate from Measured Field Data

Measured field data (consisting of dose rates in mrem/hr and I-131/H-3 concentrations) are assessed in several ways. If there is a monitored release ongoing, the field data are compared to the results of the most applicable data produced by the RED or FRED computer models.

However, in cases where the release is unknown or questionable, the field data are then input into the BRED computer model to determine the applicable release rates. These calculated release rates are then input into the RED/FRED codes, as applicable, which can be used to perform dose assessments and any applicable Protective Action Recommendation (PAR).

## 5.8 Comparison of Measured Field Data to Dose Projections

Field data is compared with dose projections to assist with evaluations if field teams are at maximum centerline locations, or if reported plant release rates coincide with actual field measurements. Appendix G is provided as a reference to perform comparisons.

## 5.9 WATERDOSE Assessments

Liquid releases to the River are assessed using the WATER DOSE code as provided on Appendix H. If the WATER DOSE code is unavailable, a manual methodology is provided as Appendix I.

## 5.10 Manual Methodologies for Dose Assessments

In the event that the FRED, RED or WATERDOSE computer codes are unavailable, instructions are provided in the Appendixes of this procedure for manual calculation methods. In consideration that the computer programs also normally spool data outputs directly to the State, the Dose Assessor will need to ensure that the applicable pages of the State Update Form, contained in CECC EPIP-1, are also manually completed and transmitted accordingly.

## 6.0 REFERENCES

FRED User's Manual
RED/FRED/BRED Documentation
FRED User's Manual
WATERDOSE User's Manual
BRED User's Manual
Model Comparison
REP CODE Revision 2, Specifications and Documentation, August 2002, L61 020814 800

## 7.0 ABBREVIATIONS AND DEFINITIONS

CECC - Central Emergency Control Center
CTM - Containment building
SGTR (above) - Steam Generator Tube Rupture above the steam generator water level
SGTR (below) - Steam Generator Tube Rupture below the steam generator water level
MSLB - Main Steam Line Break
TSC - Technical Support Center
EPS - Emergency Paging System
RED - Radiological Emergency Dose Code
RO - River Operations
FRED - Forecast Radiological Emergency Dose Code
BRED - Back-calculation Radiological Emergency Dose Code
TRM - Tennessee River Mile
ICS - Integrated Computer System
WGDT - Waste Gas Decay Tank (as in rupture event)
RAM/RAC -Radiological Assessment Manager or Radiological Assessment Coordinator

**APPENDIX A**
**Dose Assessor Initial Reporting Checklist**
(steps do not need to be performed in sequential order)

1. **SIGN IN** on the CECC staffing board and don your CECC position tag.

2. **START** logkeeping of key activities and notifications in the position logbook.

3. **ENSURE** that the following support staffs are notified and/or staffed. Refer to the REND call out list for contact information.
   - Second Dose Assessor, if needed.
   - Muscle Shoals Meteorologist (if serving as CECC pager duty person).

4. **CONFIRM** position notebook procedures match revision levels in controlled copies.

5. **ESTABLISH** contact with the TSC Chemistry (programmed on phone and in REND section B). Ascertain if a release has been, or is occurring. **IF YES, INITIATE** a dose assessment as noted below.

6. Perform preliminary assessments and dose projections.

7. **ESTABLISH** initial contact with the State Radiological Dose Assessment staff (programmed on phone and in REND section B).

8. **OBTAIN** a briefing from the RAC/RAM and **INFORM** the RAC/RAM when the activities above are completed. Report/request if a radiological release has been, or is occurring.

NOTES: **COMPARE** dose assessment results against the levels for the declared REP class and advise the RAC/RAM to advise the TSC if an upgrade is indicated.

For Preliminary Assessments and Dose Projections use the **FRED** Code (Appendix C and D).

For Plume Plots to track actual releases in current time, use the **RED** Code (Appendix C and D).

When the plant release rate is unmonitored or questionable, use the **BRED** code to arrive at a plant release rate based upon Field Team data. (Appendix E).

For releases to the River, use the **WATERDOSE** Code (Appendix H)

***If computer problems are encountered, immediately contact Computer Support***

If the FRED computer code is inoperative, use the **MANUAL METHODOLOGY** to assess airborne radioactivity releases (Appendix F).

If the WATERDOSE computer code is inoperative, use the **MANUAL METHODOLOGY** to assess liquid releases to the river (Appendix I and J).

**APPENDIX B**

**Dose Assessor Shift Change and Termination Checklist**

## 1. The following should be discussed between staff for Shift Turnover.

- Current release data and projections.
- Current met data and projections.
- Current plant status and projections.
- Current environs data and projections.
- Pertinent historical data/plant conditions
- Status of any Protective Action Recommendations made and the rationale for these
- Status of any (incoming or outgoing) unfulfilled requests for information.
- Dose methodologies being used.
- Identification of problems in response capability.
- Identification of contacts at the TSC, State, Core Damage staff and RO
- Time for next periodic update to the State
- Time for next periodic update of the RED plume plot
- Identify individuals external to CECC who were activated or placed on standby

## 2. Transfer of Shift Change Responsibility

- Obtain approval from the RAC for the transfer of responsibility
- The on duty Dose Assessment Staff should remain available or at least respond in case transfer problems are identified

## 3. Termination

- Log off CECC computer system/turn off plotters.
- Notify all on-call staff of event termination, such as:
  - Meteorologist (if staffed in Muscle Shoals)
  - Additional Dose Assessment staff on standby
  - River Operations
- Collect and turn in all records to the EP staff

FRED
RED
Data Inputs

**FRED / RED Data Inputs**

**NOTE:** The source for this information may be the site Technical Support Center or from ICS.

1. **Plant:** ☐ BFN ☐ SQN ☐ WBN

2. **Meteorological data** will be: ☐ **ACTUAL** or ☐ **EXERCISE** (confirm with drill controller).

3. **Release start time:** _____ ☐ Eastern ☐ Central

4. **Elapsed Time from reactor shutdown to start of release:** _____ (hours) (enter 0 if Rx under power)

5. **Release Vent Type** (this is used by the code to calculate effective plume height):

| ***SQN/WBN*** | ***BFN*** |
|---|---|
| ☐ Shield Bldg | ☐ Stack |
| ☐ Near ground | ☐ Radwaste Zone (of Rx Bldg) |
| | ☐ Refueling Bldg zone (of Rx Bldg) |
| | ☐ Reactor Bldg zone (of Rx Bldg) |
| | ☐ Turbine Bldg zone (of Rx Bldg) |
| | ☐ Near ground |

6. **Effluent flow rate (exit speed)** (if measured and available): _____ cfm.

**NOTE:** Consult with the meteorologist as to whether the default Exit Velocity based on this flow rate should be over-ridden. Code defaults can be used for conservatism or if flow data is unavailable.

7. **Release Type:**

| | | |
|---|---|---|
| ☐RCS | ☐Core Damage | ☐User Specified |
| ☐Gap ***(default)*** | ☐Fuel Melt | (for noble gas and Tritium only) |

**NOTE:** **Initially, a GAP Release Type should be used** unless otherwise specified by the Core Damage Assessment team. Alternately, particulate-to-$I^{131}$ field team air concentration data can be used as follows:

$$\frac{\text{Field Team Data Particulate microCi/cc}}{\text{Field Team Data Iodine}^{131}\text{ microCi/cc}} = \text{Ratio}$$

| Ratio = Release Type: | *Gap* | *Core Damage* | *Fuel Melt* |
|---|---|---|---|
| | ≥ 0.18 | ≥ 2.0 | ≥ 3.5 |

8. **Release Path:**

***SQN/WBN***

☐ **Filtered** via containment (CTM)
☐ **Unfiltered** via containment (CTM)
☐ SGTR with rupture located **BELOW** water level
☐ Steam Generator Tube Rupture with rupture located **ABOVE** water level
☐ Turbine Bldg
☐ Reactor Bldg
☐ Auxiliary Bldg.

***BFN***

☐ Stack (filtered)
☐ Stack (unfiltered)
☐ Turbine Bldg, Reactor Bldg
☐ Main Steam Line Break (MSLB)

9. **Release rates:**

**Basis for rates:** ☐ Monitor reading ☐ Plant personnel ☐ BRED estimate

_____ µCi/s Noble Gas

_____ µCi/s I-131 (pre-treatment value only, if available)

_____ µCi/s Total Particulate (pre-treatment value only, if available)

_____ µCi/s H-3 (if applicable see note below)

**NOTE:**

- For a TPBAR handling accident, the H-3 release can be estimated as:

**H-3 Release Rate** _____ = $\frac{\text{µCi/cc H-3} \times \text{cfm} \times 28320 \text{ cc/cf}}{60 \text{ min/sec}}$

{ H-3 release (µCi/s) = #µCi/cc H-3 x building exhaust flow rate (cfm) x 28320 cc/cf x 1/60 min/s }

- For a WGDT Rupture accident, the default H-3 release is 2500 Ci over one hr or 6.94E+05 µCi/s for 1 hr

FRED
RED
Code Runs

**Appendix D** **Page 1 of 2**

**FRED or RED Assessment of Airborne Releases**

1. **DOUBLE CLICK** on the "CECC VAX" icon if the VAX User Window is not displayed on computer screen. Depress **[RETURN]** until prompted for the user name.

2. **ENTER** user name and password: ☐ **RED** and CECC or ☐ **FRED** and CECC

3. **FOLLOW** computer prompts to begin or exit program.

**NOTE: TYPE** CTRL Z any time to exit or re-start program.

When executing the RED code you will be asked whether this is a "new run." **ANSWER** "Y" and **ENTER** "NEW RUN," unless you desire to modify or append to a current run.

4. **INPUT** data as collected on Appendix C.

For a user-specified release (for noble gas and/or tritium releases only), **ENTER** the nuclide number below (as applicable) and the associated nuclide-specific release rates.

| Nuclide # | Nuclide | Nuclide # | Nuclide |
|---|---|---|---|
| 1 | H-3 | 28 | XE-131M |
| 6 | KR-85 | 29 | XE-133 |
| 7 | KR-85M | 30 | XE-133M |
| 8 | KR-87 | 31 | XE-135 |
| 9 | KR-88 | 32 | XE-138 |

5. **CONFIRM** whether the release rate data is correct, (Y/N). Edit as necessary.

6 **CONFIRM** whether the calculated release rate data is correct, (Y/N). Edit as necessary.

7. **RUN the code** for the expected event duration:

- For FRED Preliminary Assessments use 1 hour;
- For FRED Dose Projections use a 4-hour duration unless known otherwise.
- For RED assessments run once per 15-min during ongoing releases.

8. **OBTAIN** code outputs by as follows:

   a. **ANSWER** "Y" to the prompt to "Print dose charts or plume plots."
   b. **SELECT** State Update Form (SUF) and plume plot as minimum outputs
   c. **SELECT** scale to be used:
      **[1]** for 10 mile, **[2]** for 50 mile, **[3]** to exit code or go to next time segment)
   d. For plume plot, **CLICK** print button at bottom of screen to perform a screen print of plot. Be sure that the pop-up dialog box has the Graphic Image set to "Swap Black/White."
   e. For Preliminary Assessments, **OBTAIN** the Protective Action Guide (PAG) release rates from the FRED output and the actual/projected release rates from the State Update Form.
   f. The Preparer and Verifier shall **INITIAL and DATE** the results.

9. **COMPARE** the declared REP class with that indicated in the FRED output. Notify the RAC/RAM (to advise the TSC) of the need for REP class changes based on radiological conditions.

10. **GIVE** PAG and actual/projected release rates to the Board Writer.

11. **GIVE** the FRED results (SUF, PAG Release Rates, plume plot, and REP class information) to the RAC for distribution. (The SUF may be sent directly through the computer to the State and the TSC.)

12. At the request of the RAC/RAM, **PREPARE** a PAR using the CECC Protective Action Logic Diagram and the PAR form found in EPIP-7 and give to the RAM with the results of the FRED run.

13. **REQUEST** that the RAC distribute the SUF, and any plume plots to all standard distribution locations, via CECC Clerical instructions.

14. Preferably once every 15-min (at least once per hour) during an actual release,

   a. **ENTER** the release data into the RED code for use in tracking the plume
   b. **COMPARE** the estimated impacts to measured field data.
   c. **GIVE** the results (plume plot only) to the RAC for distribution to the CECC, the State, and the TSC.

15. **TYPE** CTRL Z any time to exit or re-start program.

BRED Code Run

**Appendix E Page 1 of 2**
**BRED Evaluation of Airborne Field Data**

1. Log on to BRED. **DOUBLE CLICK** on the "CECC VAX" icon. PRESS return until prompted for username. **ENTER** username (BRED) and password (CECC).

2. **OBTAIN** the following field data from Environs Assessment.

   **NOTE:** As a minimum, only need one of the following measurements:
   Dose Rate **OR** Iodine-131 **OR** Tritium (H-3)

| Distance (miles) | Direction (sector) | Time Taken | Dose Rate mrem/hr (1 meter w/c) |
|---|---|---|---|
| | | | |

| Iodine-131 µCi/cc | $^{3}H$ Concentration µCi/cc |
|---|---|
| | |

3. **Elapsed Time from reactor shutdown to time of field measurement:** _____ (hours) (enter 0 if Rx under power)

4. **DETERMINE the Release Path:**

***SQN/WBN***

- ☐ **Filtered** via containment (CTM)
- ☐ **Unfiltered** via containment (CTM)
- ☐ SGTR with rupture located **BELOW** water level
- ☐ Steam Generator Tube Rupture with rupture located **ABOVE** water level
- ☐ Turbine Bldg
- ☐ Reactor Bldg
- ☐ Auxiliary Bldg.

***BFN***

- ☐ Stack (filtered)
- ☐ Stack (unfiltered)
- ☐ Turbine Bldg, Reactor Bldg
- ☐ Main Steam Line Break (MSLB)

5. **DETERMINE the Release Type:** ☐RCS ☐Core Damage ☐Gap ***(default)*** ☐Fuel Melt

**NOTE: Initially, a GAP Release Type should be used** unless otherwise specified by the Core Damage Assessment team. Alternately, particulate-to-$I^{131}$ field team air concentration data can be used as follows:

Field Team Data Particulate microCi/cc / Field Team Data Iodine$^{131}$ microCi/cc = Ratio

| | *Gap* | *Core Damage* | *Fuel Melt* |
|---|---|---|---|
| Ratio = Release Type: | ≥ 0.18 | ≥ 2.0 | ≥ 3.5 |

**BRED Evaluation of Airborne Field Data**

6. **RUN** the BRED computer model and follow prompts using the information from sections 2-5. **TYPE** CTRL Z any time to exit or re-start program.

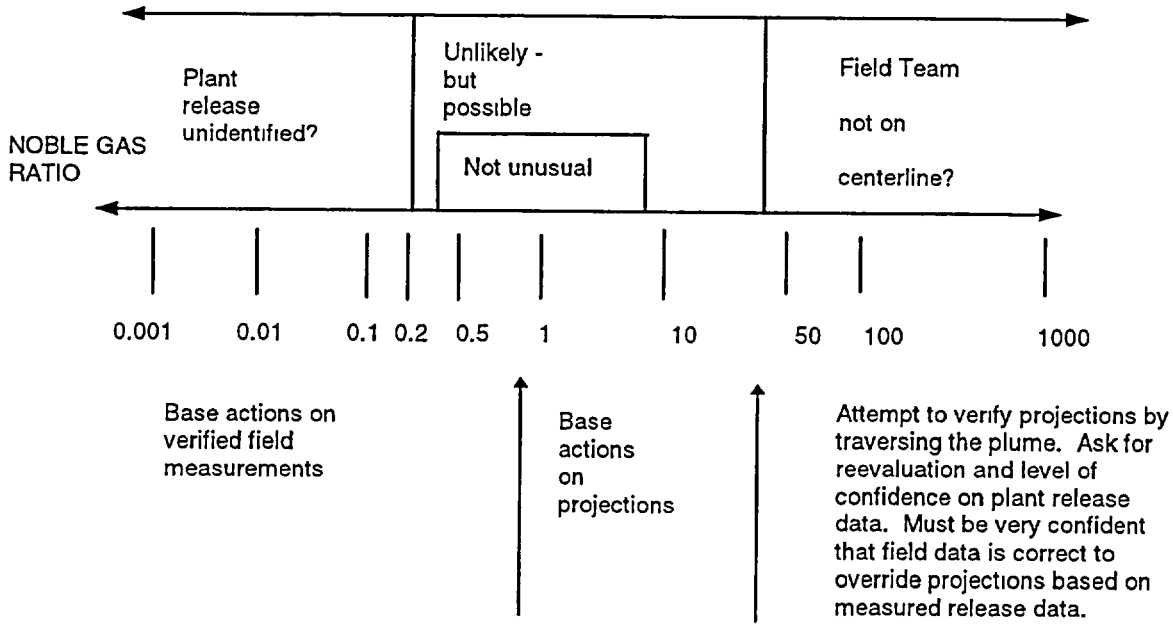
7. **RECORD** the printed Release Rate output (as applicable) and **INPUT into the FRED code.**

| Noble Gas (µCi/s) | Iodine 131 (pre-treatment) µCi/s | Tritium ($^3$H) µCi/s |
|---|---|---|
| | | |

8. **COMPARE** the new FRED run dose rate output to the previous RED/FRED computer model by **CALCULATING** a data ratio as follows:

FRED or RED Centerline Dose Rate ***divided by*** the FIELD DATA Centerline Dose Rate

_____ divided by _____ = _____ RATIO




9. **PROVIDE** feedback to the Environs Assessor and RAC/RAM. **UPDATE** dose projections as necessary and give the results to the RAC for use in preparing Protective Action Recommendations (PAR), or prepare a PAR in accordance with CECC EPIP-1.

*Appendix F Page 1 of 8

**Manual Method for Assessing Airborne Releases**

**MANUAL AIR**
SB TEDE PAG

**A. Calculating TEDE PAG Release Rate at SITE BOUNDARY (0.62 miles)**

1. **DETERMINE:** **Plant:** ☐ BFN ☐ SQN ☐ WBN

**Wind Speed:** _____ (m/s)

**Stability Class:** (circle) A B C D E F G

**Release Type:** ☐RCS ☐Gap *(default)* ☐Core Damage ☐Fuel Melt ☐User Specified (for noble gas and Tritium only)

**Release Path:**

**SQN/WBN**
- ☐ **Filtered** via CTM
- ☐ **Unfiltered** via CTM
- ☐ SGTR with rupture **BELOW** water
- ☐ SGTR with rupture **ABOVE** water
- ☐ Turbine, Reactor, Auxiliary Building

**BFN**
- ☐ filtered via stack
- ☐ unfiltered via stack
- ☐ Turbine, Reactor Bldg
- ☐ Main Steam Line Break

2. **CIRCLE** the **TEDE PAG FACTOR** (μCi/m) below, based on the stability class and release level.

**NOTE:** USE ground level for all cases except for BFN stack.

| | A | B | C | D | E | F | G |
|---|---|---|---|---|---|---|---|
| **Ground** | 1.7E+09 | 4.8E+08 | 2.2E+08 | 1.1E+08 | 7.4E+07 | 4.9E+07 | 2.9E+07 |
| **Stack** | 1.8E+09 | 9.1E+08 | 9.1E+08 | 8.3E+08 | 8.3E+08 | 8.0E+08 | 9.1E+08 |

3. **CIRCLE** the appropriate **TEDE Ratio** below, based on release type/path:

| TEDE Ratio (for 0.62 mi) | BWR RCS | PWR RCS | Gap | Core Damage | Fuel Melt | User Spec |
|---|---|---|---|---|---|---|
| *Stack (unfiltered* | 2.0 | N/A | 1.8 | 1.3 | 2.0 | 1.0 |
| *Stack (filtered)* | 1.9 | N/A | 1.0 | 1.0 | 1.0 | 1.0 |
| *CTM (unfiltered) or SGTR (below)* | N/A | 7.4 | 9.5 | 5.3 | 11 | 1.0 |
| *CTM (filtered)* | N/A | 3.7 | 1.0 | 0.9 | 1.0 | 1.0 |
| *SGTR (above water)* | N/A | 95 | 221 | 111 | 263 | 1.0 |
| *MSLB (BFN)* | 8.1 | N/A | 84 | 44 | 100 | 1.0 |
| *Turbine, Reactor or Aux Bldg* | 4.8 | 17 | 32 | 16 | 37 | 1.0 |

4. **CALCULATE** the **TEDE PAG Release Rate** (0.62 mi) as follows:

| _____ | X | _____ | / | _____ | = | _____ |
|---|---|---|---|---|---|---|
| TEDE PAG FACTOR (μCi/m, item 2) | | wind speed (m/s, item 1) | | TEDE Ratio (item 3) | | TEDE NGPAG Release Rate SB 0.62 mi (μCi/s) |

*Revision

*Appendix F Page 2 of 8
Manual Method for Assessing Airborne Releases

MANUAL AIR
SB TEDE PAG

5. **OBTAIN** the actual/projected Noble Gas Release Rate _____ µCi/s.

6. **IF** noble gas release rate (item 5) ≥ TEDE PAG Release Rate (item 4), **THEN** radiological conditions indicate a **General Emergency.**

**For Tritium Accidents** (e.g., TPBAR handling or WGDT rupture),

7. **CIRCLE** the **Tritium PAG FACTOR** (µCi/m) below, based on the stability class.

| A | B | C | D | E | F | G |
|---|---|---|---|---|---|---|
| 4.0E+09 | 8.7E+08 | 2.9E+08 | 1.0E+08 | 5.9E+07 | 3.1E+07 | 1.4E+07 |

8. **CALCULATE** the **Tritium PAG Release Rate** as follows:

_____ (Tritium PAG FACTOR (µCi/m, item 7)) X _____ (wind speed (m/s item 1)) = _____ (TEDE Tritium PAG Release Rate SB 0.62 MI (µCi/s))

9. **OBTAIN** the actual/projected Tritium Release Rate (see below) _____ µCi/s.

**NOTE:**
- For a TPBAR handling accident, the H-3 release can be estimated as:

**H-3 Release Rate** _____ = _____ µCi/cc H-3 **x** _____ cfm x 28320 cc/cf / 60 min/sec

{ H-3 release (µCi/s) = #µCi/cc H-3 x building exhaust flow rate (cfm) x 28320 cc/cf x 1/60 min/s }

- For a WGDT Rupture accident, the default H-3 release is 2500 Ci over one hr or 6.94E+05 µCi/s for 1 hr

10. **IF** tritium release rate (item 9) ≥ TEDE PAG Release Rate (item 8), **THEN** radiological conditions indicate a **General Emergency.**

11. **IF tritium accident also involves noble gases, THEN perform the following calculation:**

$$\frac{\text{NG Release Rate}}{\text{TEDE NG PAG Release Rate}} + \frac{\text{Tritium Release Rate}}{\text{TEDE Tritium PAG Release Rate}}$$

$$\frac{\text{(item 5)}}{\text{(item 4)}} + \frac{\text{(item 9)}}{\text{(item 8)}} = \text{Ratio}$$

12. **IF the value in item 11 ≥ 1.0, THEN** radiological conditions indicate a **General Emergency.**

*Revision

## B. Calculating THYROID CDE PAG Release Rate at SITE BOUNDARY (0.62 MILES)

1. **USE** the data from section A.1

2. **CIRCLE** the **CDE PAG FACTOR** (µCi/m), based on the stability class and release level.

   **NOTE:** USE ground level for all cases except for BFN stack.

| | A | B | C | D | E | F | G |
|---|---|---|---|---|---|---|---|
| Ground | 4.1E+05 | 8.6E+04 | 3.0E+04 | 1.0E+04 | 6.0E+03 | 3.1E+03 | 1.4E+03 |
| Stack | 4.1E+05 | 2.3E+05 | 3.7E+05 | 6.5E+05 | 1.4E+06 | 2.1E+07 | 4.9E+11 |

3. **CALCULATE** the CDE PAG Release Rate as follows:

   _____ (CDE PAG FACTOR (µCi/m, item 2)) X _____ (wind speed (m/s)) = _____ **CDE PAG Release Rate** SB 0.62 mi (µCi/s)

4. a. If known, **RECORD** the actual/projected I-131 release rate _____ µCi/s and **go to Step 5.**

   If unknown, **CIRCLE** the I-131 to NG ratio below, based on release type and path and continue with step 4 b.

| | I-131 to Noble Gas Ratio | | | |
|---|---|---|---|---|
| | RCS | Gap | Core Damage | Fuel Melt |
| CTM filtered | 1.7E-06 | 3.0E-05 | 1.2E-05 | 2.2E-05 |
| Stack filtered | 4.6E-07 | 3.0E-05 | 1.2E-05 | 2.2E-05 |
| CTM (unfiltered) or SGTR (below) | 1.7E-04 | 3.0E-03 | 1.2E-03 | 2.2E-03 |
| Stack (unfiltered) | 4.6E-05 | 3.0E-03 | 1.2E-03 | 2.2E-03 |
| TB, AuxB, RxB | 5.8E-04 | 1.0E-02 | 4.1E-03 | 7.7E-03 |
| SGTR (above) | 4.2E-03 | 8.0E-02 | 3.0E-02 | 5.5E-02 |
| MSLB (BFN) | 4.6E-04 | 3.0E-02 | 1.2E-02 | 2.2E-02 |

4.b. **CALCULATE** actual/projected iodine-131 release rate as follows:

   _____ (Actual/Projected NG release rate (item A.5)) X _____ (I-131 to NG ratio (item 4a)) = _____ (Actual/proj. I-131 release rate (µCi/s))

5. **IF** I-131 release rate (item 4a or b) ≥ CDE PAG Release Rate (item 3), **THEN** radiological conditions indicate a **General Emergency.**

*Revision

## C. Calculating TEDE Dose Rate at SITE BOUNDARY (0.62 miles)

1. **DETERMINE:** **Plant:** ☐ BFN ☐ SQN ☐ WBN

**Wind Speed:** _____ (m/s)

**Stability Class:** (circle) A B C D E F G

**Release Type:** ☐RCS ☐Core Damage ☐User Specified (for noble gas and Tritum only)
☐Gap ***(default)*** ☐Fuel Melt

**Release Path:** **SQN/WBN** **BFN**

☐ **Filtered** via CTM ☐ filtered via stack
☐ **Unfiltered** via CTM ☐ unfiltered via stack
☐ SGTR with rupture **BELOW** water ☐ Turbine, Reactor Bldg
☐ SGTR with rupture **ABOVE** water ☐ Main Steam Line Break
☐ Turbine, Reactor, Auxiliary Building

**Noble Gas Release Rate :** _____ (µCi/s)

2. **CIRCLE** the **TEDE FACTOR** (rem/h per µCi/m) below, based on the stability class and release level.

**NOTE:** USE ground level for all cases except for BFN stack.

| | A | B | C | D | E | F | G |
|---|---|---|---|---|---|---|---|
| **Ground** | 6.0E-10 | 2.1E-09 | 4.6E-09 | 9.5E-09 | 1.4E-08 | 2.1E-08 | 3.5E-08 |
| **Stack** | 5.5E-10 | 1.1E-09 | 1.1E-09 | 1.2E-09 | 1.2E-09 | 1.3E-09 | 1.1E-09 |

3. **CIRCLE** the appropriate TEDE Ratio below, based on release type/path:

| | **TEDE Ratio (at 0.62 mi)** | | | | | |
|---|---|---|---|---|---|---|
| | **BWR RCS** | **PWR RCS** | **GAP** | **Core Damage** | **Fuel Melt** | **User Spec** |
| *Stack (unfiltered)* | 2.0 | N/A | 1.8 | 1.3 | 2.0 | 1.0 |
| *Stack (filtered)* | 1.9 | N/A | 1.0 | 1.0 | 1.0 | 1.0 |
| *CTM (unfiltered) or SGTR (below)* | N/A | 7.4 | 9 | 5.3 | 11 | 1.0 |
| *CTM (filtered)* | N/A | 3.7 | **1.0** | 0.9 | 1.0 | 1.0 |
| *SGTR (above water)* | N/A | 95 | 221 | 111 | 263 | 1.0 |
| *MSLB (BFN)* | 7.4 | N/A | 84 | 44 | 100 | 1.0 |
| *TB, RxB, AB* | 4.4 | 17 | 32 | 16 | 37 | 1.0 |

4. **CALCULATE** the **TEDE Dose** as follows:

_____ X _____ X _____ / _____ = _____

NG release rate (µCi/s) (item 1) | TEDE FACTOR (item 2) | TEDE Ratio (item 3) | wind sp. (m/s) (item 1) | **TEDE (rem/h) 0.62 mile**

**For Tritium Accidents** (e.g., TPBAR handling or WGDT rupture),

5. **CIRCLE** the **Tritium TEDE FACTOR** (rem/h per µCi/m) below, based on the stability class.

| A | B | C | D | E | F | G |
|---|---|---|---|---|---|---|
| 2.5E-10 | 1.2E-09 | 3.5E-09 | 1.0E-08 | 1.7E-08 | 3.3E-08 | 7.0E-08 |

New Page

MANUAL AIR
**5 mi TEDE RATE**
**5 mi THY CDE RATE**

6. **CALCULATE** the **Tritium TEDE** as follows:

| _____ | X | _____ | / | _____ | = | _____ |
|---|---|---|---|---|---|---|
| Tritium Release Rate* (µCi/s) | | Tritium TEDE FACTOR (item 5) | | wind speed (m/s) (item 1) | | Tritium TEDE (rem/h) |

***NOTE:**
- For a TPBAR handling accident, the H-3 release can be estimated as:

**H-3 Release Rate** _____ = _____ µCi/cc H-3 **x** _____ cfm x 28320 cc/cf / 60 min/sec

{ H-3 release (µCi/s) = #µCi/cc H-3 x building exhaust flow rate (cfm) x 28320 cc/cf x 1/60 min/s }

- For a WGDT Rupture accident, the default H-3 release is 2500 Ci over one hr or 6.94E+05 µCi/s for 1 hr

7. **IF tritium accident also involves noble gases, THEN CALCULATE Total TEDE rate as follows:**

| _____ | + | _____ | = | _____ |
|---|---|---|---|---|
| TEDE (rem/h) | | Tritium TEDE (rem/h) | | **Total TEDE (rem/h) 0.62 mile** |

## D. Calculating SB THYROID CDE Dose Rate

1. **CIRCLE** the Thyroid **CDE FACTOR** (rem/h per µCi/m), based on the stability class and release level.

**NOTE:** USE ground level for all cases except for BFN stack.

| | A | B | C | D | E | F | G |
|---|---|---|---|---|---|---|---|
| Ground | 1.2E-05 | 5.8E-05 | 1.7E-04 | 4.8E-04 | 8.3E-04 | 1.6E-03 | 3.5E-03 |
| Stack | 1.2E-05 | 2.2E-05 | 1.4E-05 | 7.7E-06 | 3.5E-06 | 2.3E-07 | 1.0E-11 |

2 a. If known, **RECORD** the I-131 release rate _____ µCi/s and **go to Step 3.**

If unknown, **CIRCLE** the I-131 to NG ratio below, based on release type and path and continue with step 2b.

| I-131 to Noble Gas Ratio | | | | |
|---|---|---|---|---|
| | RCS | Gap | Core Damage | Fuel Melt |
| CTM filtered | 1.7E-06 | 3.0E-05 | 1.2E-05 | 2.2E-05 |
| Stack filtered | 4.6E-07 | 3.0E-05 | 1.2E-05 | 2.2E-05 |
| CTM (unfiltered) or SGTR (below) | 1.7E-04 | 3.0E-03 | 1.2E-03 | 2.2E-03 |
| Stack (unfiltered) | 4.6E-05 | 3.0E-03 | 1.2E-03 | 2.2E-03 |
| TB, AuxB, RxB | 5.8E-04 | 1.0E-02 | 4.1E-03 | 7.7E-03 |
| SGTR (above) | 4.2E-03 | 8.0E-02 | 3.0E-02 | 5.5E-02 |
| MSLB (BFN) | 4.6E-04 | 3.0E-02 | 1.2E-02 | 2.2E-02 |

2b. **CALCULATE** actual/projected iodine-131 release rate as follows:

| _____ | X | _____ | = | _____ |
|---|---|---|---|---|
| NG release rate (item A.1) | | I-131 to NG ratio (item 2a) | | I-131 release rate (µCi/s) |

Entire Page Revised

**Manual Method for Assessing Airborne Releases**

3. **CALCULATE** Thyroid CDE Dose Rate as follows:

_____ X _____ / _____ = **Thyroid CDE (rem/h) 0.62 mile**

I-131 release rate (µCi/s) (item 2) | Thyroid CDE FACTOR (item 1) | wind speed (m/s)

MANUAL AIR **5 mi TEDE DOSE**

***E. Calculating 5 mile TEDE**

**USE** the data from section A.1, **THEN**

1. **OBTAIN** an estimate of the release duration (t) _____ hours. Use 4 (four) hours unless known otherwise.

2. **CIRCLE** the **TEDE FACTOR** (rem/h per per µCi/m) below, based on the stability class and release level.

**NOTE:** USE ground level for all cases except for BFN stack.

| | A | B | C | D | E | F | G |
|---|---|---|---|---|---|---|---|
| **Ground** | 9 5E-11 | 1.5E-10 | 2.8E-10 | 9.5E-10 | 1.8E-09 | 3.5E-09 | 6.5E-09 |
| **Stack** | 9.0E-11 | 1.5E-10 | 2.6E-10 | 7.5E-10 | 1.1E-09 | 1.3E-09 | 1.1E-09 |

3. **CIRCLE** the appropriate TEDE Ratio below, based on release type/path:

**TEDE Ratio (at 5 mi)**

| | BWR RCS | PWR RCS | GAP | Core Damage | Fuel Melt | User Spec |
|---|---|---|---|---|---|---|
| *Stack (unfiltered)* | 2.1 | N/A | 2.8 | 1.9 | 3.1 | 1.0 |
| *Stack (filtered)* | 2.1 | N/A | 1.0 | 0.9 | 1.0 | 1.0 |
| *CTM (unfiltered) or SGTR (below)* | N/A | 3.5 | 4.9 | 2.9 | 5.8 | 1.0 |
| *CTM (filtered)* | N/A | 1.8 | 1.0 | 1.0 | 1.0 | 1.0 |
| *SGTR (above water)* | N/A | 43 | 100 | 51 | 116 | 1.0 |
| *MSLB (BFN)* | 4.5 | N/A | 40 | 21 | 47 | 1.0 |
| *TB, RxB, AB* | 3.1 | 7.4 | 15 | 7.9 | 17 | 1.0 |

4. **CALCULATE** the **TEDE Dose** as follows:

_____ X _____ X _____ X _____ / _____ = **TEDE (rem) 5 mile**

NG release rate (µCi/s) (item A.1) | TEDE FACTOR (item 2) | TEDE Ratio (item 3) | Duration (hrs) (item 1) | wind sp. (m/s) (item 1)

**For Tritium Accidents** (e.g., TPBAR handling or WGDT rupture),

5. **CIRCLE** the **Tritium TEDE FACTOR** (rem/h per µCi/m) below, based on the stability class.

| A | B | C | D | E | F | G |
|---|---|---|---|---|---|---|
| 4.0E-11 | 5.0E-11 | 1.1E-10 | 4.4E-10 | 9.5E-10 | 2.4E-09 | 5.5E-09 |

*Revision

MANUAL AIR
**5 mi TEDE DOSE**
**5 mi THY CDE DOSE**

6. **CALCULATE** the **Tritium TEDE** as follows:

| Tritium Release Rate (µCi/s) | X | Tritium TEDE FACTOR (item 5) | X | Duration (hrs) (item A.1) | / | wind speed (m/s) (item A.1) | = | Tritium TEDE (rem) |
|---|---|---|---|---|---|---|---|---|

**NOTE:**
- For a TPBAR handling accident, the H-3 release can be estimated as:

**H-3 Release Rate** _____ = $\frac{\text{µCi/cc H-3} \times \text{cfm} \times 28320 \text{ cc/cf}}{60 \text{ min/sec}}$

{ H-3 release (µCi/s) = #µCi/cc H-3 x building exhaust flow rate (cfm) x 28320 cc/cf x 1/60 min/s }

- For a WGDT Rupture accident, the default H-3 release is 2500 Ci over one hr or 6.94E+05 µCi/s for 1 hr

7) **IF tritium accident also involves noble gases, THEN CALCULATE Total TEDE as follows:**

| TEDE (rem) | + | Tritium TEDE (rem) | = | **Total TEDE (rem) 5 mile** |
|---|---|---|---|---|

## *F. Calculating 5 mi THYROID CDE Doses

1. **CIRCLE** the Thyroid **CDE FACTOR** (rem/h per µCi/m), based on the stability class and release level.

**NOTE:** USE ground level for all cases except for BFN stack.

| | A | B | C | D | E | F | G |
|---|---|---|---|---|---|---|---|
| Ground | 2.0E-06 | 2.5E-06 | 5.0E-06 | 2.2E-05 | 4.7E-05 | 1.2E-04 | 2.7E-04 |
| Stack | 2.0E-06 | 2.5E-06 | 4.5E-06 | 7.7E-06 | 3.5E-06 | 2.3E-07 | 1.0E-11 |

2. **OBTAIN** the I-131 release rate from B.2 _____ (µCi/s).

3. **CALCULATE** Thyroid CDE Dose as follows:

| I-131 release rate (µCi/s) (item 2) | X | Thyroid CDE FACTOR (item 1) | X | duration (hrs) (item C.1) | / | wind speed (m/s) (item A.1) | = | **Thyroid CDE (rem) 5 mile** |
|---|---|---|---|---|---|---|---|---|

*Revision

*Appendix F Page 8 of 8
Manual Method for Assessing Airborne Releases

Summary

*G. Summary of Results

**Site Boundary TEDE Rates**

1. Total TEDE Rate (item C.7) _____ rem/h

2. Cirlce REP Emergency class based on TEDE rate above:

| For 0.62 mi TEDE dose rate ≥ | REP Emergency Class |
|---|---|
| 1E-04 rem/h | NOUE |
| 1E-02 rem/h | ALERT |
| 1E-01 rem/h | SAE |
| 1E+00 rem/h | GE |

**Site Boundary Thyroid CDE Dose Rate**

3. CDE Dose Rate (section D.3) _____ rem/h

4. Cirlce REP Emergency class based on CDE rate above:

| For 0.62 mi CDE dose rate ≥ | REP Emergency Class |
|---|---|
| NA | --- |
| NA | --- |
| 0.5 rem/h | SAE |
| 5 rem/h | GE |

**5 Mile TEDE**

5. TEDE without Tritium (section E.4) _____ rem.

6. Total TEDE with Tritium (section E.7) _____ rem.

**5 Mile Thyroid CDE**

7. Thyroid CDE (section F.3) _____ rem.

**Emergency Class**

8. Circle the most restrictive REP class from items 2 and 4: NOUE Alert SAE GE

**END OF MANUAL ASSESSMENT DATA VERIFICATION**

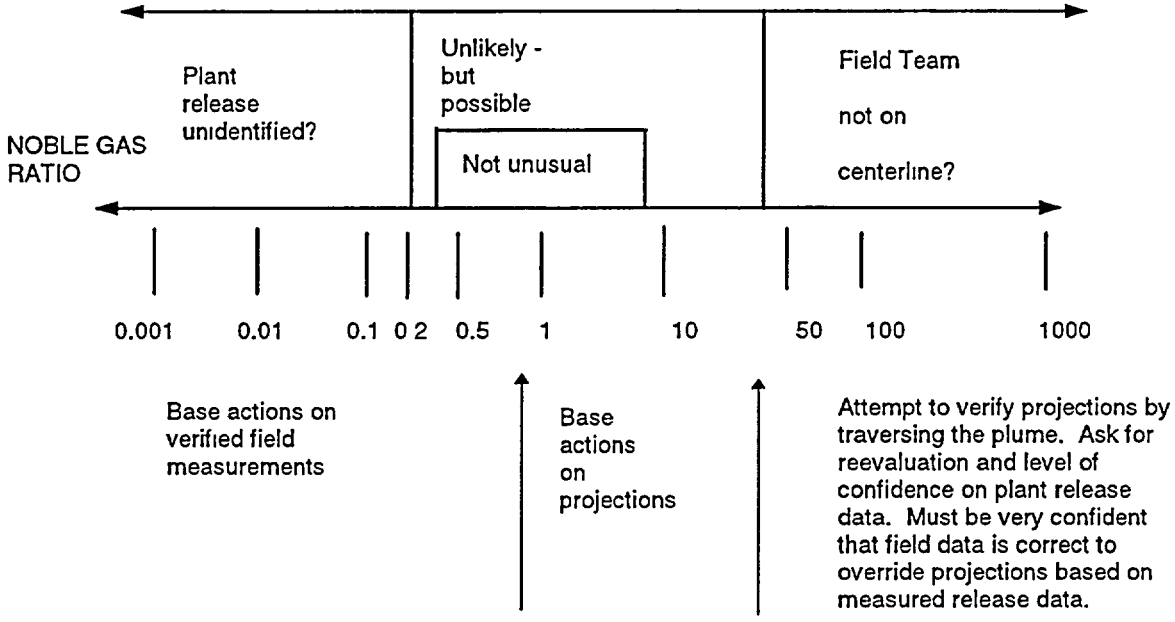
Calculated by: (initial / date) _____/_____

Verified by: (initial / date) _____/_____

Entire Page Revised

## APPENDIX G
## COMPARISON OF MEASURED FIELD DATA TO DOSE PROJECTION MODELS

$$\text{Ratio} = \frac{\text{PROJECTED centerline dose rate}}{\text{MEASURED centerline dose rate}}$$



**WATERDOSE**
Code Run

**APPENDIX H**
**WATERDOSE Evaluation of Liquid Release to the River**

1. Log on to **WATERDOSE. DOUBLE CLICK** on the "CECC VAX" icon. PRESS return until prompted for username. **ENTER** username (WATERDOSE) and password (CECC).

2. **OBTAIN** the following information for input to WATERDOSE and **FOLLOW** code prompts.

**NOTE: TYPE** CTRL Z any time to exit or re-start program.

**Plant:** ☐ BFN ☐ SQN ☐ WBN

a. **Determine Release Point::** ☐ Diffuser ☐ Shoreline

b. **Length of release:** _____ Hours

c. **Volume of release:** _____ ($ft^3$)

d. **Release Mix (nuclides and concentrations)**

| Nuclide | Concentration (μCi/ml) |
|---|---|
| | |
| | |
| | |
| | |
| | |

3. **RUN** the WATERDOSE code using the available (or default below) information to obtain an estimate of the dose impact. (If the computer code is not operational, the dose calculation methodology contained in Appendix I can be used.)
**BFN-33000 cfs** **SQN - 29000 cfs** **WBN - 2700 cfs**

**NOTE: TYPE** CTRL Z any time to exit or re-start program.

4. **OBTAIN** the State Update Form (SUF). The Preparer and Verifier shall **initial and date** the results.

5. **TRANSMIT** (by spooling through the computer) the SUF to the TSC and State if approval to do so has been given by the RAC/RAM.

6. **TYPE** CTRL Z any time to exit or re-start program.

MANUAL
RIVER

**APPENDIX I Page 1 of 5**

**Manual Evaluation of Liquid Releases to the River**

1. **Plant:** ☐ BFN ☐ SQN ☐ WBN

2. **Release Point:** ☐Diffuser ☐Shoreline

3. **Release Time:** Start _____ End _____ ☐Eastern ☐Central

4. **Release Volume (V)** _____ $ft^3$ (1 gal = 0.134 $ft^3$)

5. **Calculation of Hazard Index (HI):**

| Nuclide | Concentration (µCi/ml) | Dose (rem/day per µCi/ml) | Hazard Index (rem/day) |
|---|---|---|---|
| | **C** | **DF- Table 3** | **HI=C * DF** |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |
| | | **Total Hazard Index** | |

6. **Riverflow at the plant** _____ $ft^3/s$ (cfs). This can be obtained from the ICS (for SQN and WBN) or River Operations. If flow data is not available use the following default values:
**BFN-33000 cfs SQN - 29000 cfs WBN - 2700 cfs**

7. **Calculate** the downstream dose rate to hypothetical individual **at first downstream** Public Water Supply and then other locations of interest. Refer to Appendix J.

| | (table 2) | (table 1) | (item 5) | (item 4) | |
|---|---|---|---|---|---|
| Location TRM | Arrival Time Hours | Dilution Factor ($1/ft^3$) **D** | Hazard Index (rem/day) **HI** | Release Volume ($ft^3$) **V** | Dose Rate (rem/day) **D*H*V** |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |

8. **Record** the applicable data on the State Update Form in CECC EPIP-1 and distribute.

Comments: _____
_____

| | | |
|---|---|---|
| **END OF MANUAL ASSESSMENT** | Calculated by: (initial / date) | _____/_____ |
| **DATA VERIFICATION** | Calculated by: (initial / date) | _____/_____ |

TABLE 1
DILUTION FACTOR
( D )

**APPENDIX I** **Page 2 of 5**

**Manual Evaluation of Liquid Releases to the River**

RELATIVE CONCENTRATION FACTORS-PER CUBIC FOOT RELEASED

**BROWNS FERRY NUCLEAR PLANT**

| | SHORELINE RELEASE | | DIFFUSER PIPE RELEASE | |
|---|---|---|---|---|
| Tennessee River Mile (TRM) | Plant Side Shoreline D | Opposite Shoreline D | Centerline D | Shoreline D |
| 294.00 Plant | | | | |
| 293.00 | 2.8E-08 | .00E+00 | 1.4E-08 | .00E+00 |
| 292.00 | 1.4E-08 | .00E+00 | 6.9E-09 | .00E+00 |
| 291.00 | 9.2E-09 | .00E+00 | 4.6E-09 | 1.2E-36 |
| 290.00 | 6.9E-09 | .00E+00 | 3.4E-09 | 8.2E-30 |
| 289.00 | 5.5E-09 | .00E+00 | 2.8E-09 | 1.0E-25 |
| 288.00 | 4.6E-09 | .00E+00 | 2.3E-09 | 5.1E-23 |
| 287.00 | 3.9E-09 | .00E+00 | 2.0E-09 | 4.3E-21 |
| 286.00 | 3.4E-09 | .00E+00 | 1.7E-09 | 1.2E-19 |
| 285.00 | 3.1E-09 | .00E+00 | 1.5E-09 | 1.5E-18 |
| 284.00 | 2.8E-09 | 1.8E-42 | 1.4E-09 | 1.2E-17 |
| 283.00 | 2.5E-09 | 1.8E-39 | 1.3E-09 | 6.2E-17 |
| 282.00 | 2.3E-09 | 5.8E-37 | 1.1E-09 | 2.4E-16 |
| 281.00 | 2.1E-09 | 7.4E-35 | 1.1E-09 | 7.7E-16 |
| 280.00 | 2.0E-09 | 4.8E-33 | 9.8E-10 | 2.1E-15 |
| 279.00 | 1.8E-09 | 1.8E-31 | 9.2E-10 | 4.8E-15 |
| 278.00 | 1.7E-09 | 4.1E-30 | 8.6E-10 | 1.0E-14 |
| 274.90 Downstream Dam | | | | |

**SEQUOYAH NUCLEAR PLANT**

| | SHORELINE RELEASE | | DIFFUSER PIPE RELEASE | |
|---|---|---|---|---|
| TRM | Plant Side Shoreline D | Opposite Shoreline D | Centerline D | Shoreline D |
| 484.50 Plant | | | | |
| 484.00 | 3.5E-08 | 5.9E-34 | 1.8E-08 | 1.1E-14 |
| 483.00 | 1.4E-08 | 5.3E-19 | 7.2E-09 | 3.0E-11 |
| 482.00 | 9.1E-09 | 3.2E-15 | 4.6E-09 | 1.9E-10 |
| 481.00 | 6.6E-09 | 1.5E-13 | 3.3E-09 | 3.9E-10 |
| 480.00 | 5.2E-09 | 1.4E-12 | 2.6E-09 | 5.6E-10 |
| 479.00 | 4.3E-09 | 5.4E-12 | 2.2E-09 | 6.8E-10 |
| 478.00 | 3.7E-09 | 1.4E-11 | 1.8E-09 | 7.6E-10 |
| 477.00 | 3.2E-09 | 2.7E-11 | 1.6E-09 | 8.2E-10 |
| 476.00 | 2.8E-09 | 4.5E-11 | 1.4E-09 | 8.4E-10 |
| 475.00 | 2.5E-09 | 6.6E-11 | 1.3E-09 | 8.6E-10 |
| 474.00 | 2.3E-09 | 9.0E-11 | 1.2E-09 | 8.6E-10 |
| 473.00 | 2.1E-09 | 1.2E-10 | 1.1E-09 | 8.6E-10 |
| 472.00 | 1.9E-09 | 1.4E-10 | 1.0E-09 | 8.5E-10 |
| 471.00 | 1.8E-09 | 1.7E-10 | 9.8E-10 | 8.3E-10 |
| 471.00 Downstream Dam | | | | |

TABLE 1
DILUTION
FACTOR
( D )

APPENDIX I Page 3 of 5

Manual Evaluation of Liquid Releases to the River

RELATIVE CONCENTRATION FACTORS-PER CUBIC FOOT RELEASED

**WATTS BAR NUCLEAR PLANT**

| | SHORELINE RELEASE | | DIFFUSER PIPE RELEASE | |
|---|---|---|---|---|
| TRM | Plant Side Shoreline D | Opposite Shoreline D | Centerline D | Shoreline D |
| 528.00 Plant | | | | |
| 527.00 | 3.7E-08 | 1.2E-20 | 1.8E-08 | 2.3E-11 |
| 526.00 | 1.8E-08 | 1.5E-14 | 9.1E-09 | 4.1E-09 |
| 525.00 | 1.2E-08 | 1.3E-12 | 6.1E-09 | 1.0E-09 |
| 524.00 | 9.1E-09 | 1.2E-11 | 4.6E-09 | 1.4E-09 |
| 523.00 | 7.3E-09 | 4.0E-11 | 3.7E-09 | 1.7E-09 |
| 522.00 | 6.1E-09 | 9.0E-11 | 3.1E-09 | 1.8E-09 |
| 521.00 | 5.2E-09 | 1.6E-10 | 2.7E-09 | 1.8E-09 |
| 520.00 | 4.6E-09 | 2.3E-10 | 2.4E-09 | 1.8E-09 |
| 519.00 | 4.1E-09 | 3.1E-10 | 2.2E-09 | 1.8E-09 |
| 518.00 | 3.7E-09 | 3.8E-10 | 2.0E-09 | 1.8E-09 |
| 517.00 | 3.3E-09 | 4.6E-10 | 1.9E-09 | 1.7E-09 |
| 516.00 | 3.0E-09 | 5.2E-10 | 1.8E-09 | 1.7E-09 |
| 515.00 | 2.8E-09 | 5.8E-10 | 1.7E-09 | 1.6E-09 |
| 514.00 | 2.6E-09 | 6.4E-10 | 1.6E-09 | 1.6E-09 |
| 513.00 | 2.4E-09 | 6.8E-10 | 1.6E-09 | 1.5E-09 |
| 512.00 | 2.3E-09 | 7.2E-10 | 1.5E-09 | 1.5E-09 |
| 511.00 | 2.2E-09 | 7.6E-10 | 1.5E-09 | 1.4E-09 |
| 510.00 | 2.0E-09 | 7.9E-10 | 1.4E-09 | 1.4E-09 |
| 510.00 | 1.9E-09 | 8.2E-10 | 1.4E-09 | 1.4E-09 |
| 508.00 | 1.8E-09 | 8.4E-10 | 1.3E-09 | 1.3E-09 |
| 507.00 | 1.8E-09 | 8.6E-10 | 1.3E-09 | 1.3E-09 |
| 506.00 | 1.7E-09 | 8.7E-10 | 1.3E-09 | 1.3E-09 |
| 505.00 | 1.6E-09 | 8.8E-10 | 1.2E-09 | 1.2E-09 |
| 504.00 | 1.5E-09 | 8.9E-10 | 1.2E-09 | 1.2E-09 |
| 503.00 | 1.5E-09 | 9.0E-10 | 1.2E-09 | 1.2E-09 |
| 502.00 | 1.4E-09 | 9.1E-10 | 1.2E-09 | 1.2E-09 |
| 501.00 | 1.4E-09 | 9.1E-10 | 1.1E-09 | 1.1E-09 |
| 500.00 | 1.3E-09 | 9.1E-10 | 1.1E-09 | 1.1E-09 |
| 471.00 Downstream Dam | | | | |

**APPENDIX I** Page 4 of 5

**Manual Evaluation of Liquid Releases to the River**

APPROXIMATE TRAVEL TIME TO MAXIMUM CONCENTRATION - HOURS

**TABLE 2**
ARRIVAL TIME
( HRS )

**BROWNS FERRY NUCLEAR PLANT**

TRM — RIVER FLOW IN CUBIC FEET/SECOND

| | 25000 | 30000 | 33000 | 35000 | 37000 | 39000 |
|---|---|---|---|---|---|---|
| 294.00 Plant | | | | | | |
| 292.00 | 25 | 21 | 19 | 18 | 17 | 16 |
| 290.00 | 49 | 41 | 37 | 35 | 33 | 31 |
| 288.00 | 74 | 62 | 56 | 53 | 50 | 47 |
| 286.00 | 99 | 82 | 75 | 71 | 67 | 63 |
| 284.00 | 124 | 103 | 92 | 88 | 84 | 80 |
| 282.00 | 148 | 124 | 112 | 106 | 100 | 94 |
| 280.00 | 173 | 144 | 131 | 124 | 117 | 110 |
| 278.00 | 198 | 165 | 150 | 141 | 134 | 128 |
| 276.00 | 222 | 185 | 169 | 159 | 150 | 142 |
| 274.90 Downstream Dam | | | | | | |

**SEQUOYAH NUCLEAR PLANT**

| | 21000 | 25000 | 29000 | 30000 | 33000 |
|---|---|---|---|---|---|
| 484.50 Plant | | | | | |
| 483.00 | 5 | 4 | 4 | 3 | 3 |
| 481.00 | 12 | 10 | 8 | 8 | 7 |
| 479.00 | 18 | 15 | 13 | 13 | 12 |
| 477.00 | 25 | 21 | 18 | 17 | 16 |
| 475.00 | 32 | 26 | 23 | 22 | 20 |
| 473.00 | 38 | 32 | 28 | 27 | 24 |
| 471.00 | 45 | 38 | 32 | 31 | 28 |
| 471.00 Downstream Dam | | | | | |

**WATTS BAR NUCLEAR PLANT**

| | 19000 | 20000 | 25000 | 30000 | 35000 |
|---|---|---|---|---|---|
| 528.00 Plant | | | | | |
| 526.00 | 5 | 4 | 3 | 3 | 3 |
| 524.00 | 10 | 9 | 7 | 6 | 6 |
| 522.00 | 15 | 14 | 11 | 9 | 9 |
| 520.00 | 20 | 19 | 15 | 12 | 12 |
| 518.00 | 25 | 24 | 19 | 16 | 15 |
| 516.00 | 30 | 29 | 23 | 19 | 18 |
| 514.00 | 35 | 33 | 27 | 22 | 21 |
| 512.00 | 40 | 38 | 30 | 25 | 24 |
| 510.00 | 45 | 43 | 34 | 29 | 28 |
| 508.00 | 50 | 48 | 38 | 32 | 31 |
| 506.00 | 56 | 53 | 42 | 35 | 34 |
| 504.00 | 61 | 58 | 46 | 38 | 37 |
| 502.00 | 66 | 62 | 50 | 41 | 40 |
| 500.00 | 71 | 67 | 54 | 45 | 43 |
| 471.00 Downstream Dam | | | | | |

**TABLE 3**
DOSE
FACTORS
( DF )

**APPENDIX I Page 5 of 5**
**Manual Evaluation of Liquid Releases to the River**

Critical Ingestion Dose Rate Factors
(Derived from Regulatory Guide 1.109)
Rem/day per µCi/ml

| Nuclide | Dose Factor | Organ[1] | Age[2] | Nuclide | Dose Factor | Organ[1] | Age[2] |
|---|---|---|---|---|---|---|---|
| H-3 | 0.28 | TB | C | Ru-103 | 43.2 | GIT | A |
| C-14 | 16.9 | B | C | Ru-105 | 58.9 | GIT | C |
| Na-24 | 8.12 | TB | C | Ru-106 | 356 | GIT | A |
| P-32 | 1155 | B | C | Ag-110m | 121 | GIT | A |
| Cr-51 | 1.34 | GIT | A | Te-125m | 21.8 | K | A |
| Mn-54 | 28 | GIT | A | Te-127m | 55 | K | A |
| Mn-56 | 67.8 | GIT | C | Te-127 | 25.8 | GIT | C |
| Fe-55 | 16.1 | B | C | Te-129m | 96 | K | C |
| Fe-59 | 68 | GIT | A | Te-129 | 20.4 | GIT | I |
| Co-58 | 30 | GIT | A | Te-131 | 168 | GIT | A |
| Co-60 | 80.4 | GIT | A | Te-131 | 6.4 | GIT | I |
| Ni-63 | 753 | B | C | Te-132 | 154 | GIT | A |
| Ni-65 | 35.8 | GIT | C | I-130 | 1332 | THY | I |
| Cu-64 | 14.2 | GIT | A | I-131 | 12500 | THY | I |
| Zn-65 | 51.1 | L | C | I-132 | 142 | THY | I |
| Zn-69 | 12.33 | GIT | I | I-133 | 2980 | THY | I |
| Br-83 | 0.24 | TB | C | I-134 | 37.4 | THY | I |
| Br-84 | 0.28 | TB | C | I-135 | 584 | THY | I |
| Br-85 | 0.013 | TB | C | Cs-134 | 538 | L | C |
| Rb-86 | 153 | L | I | Cs-136 | 90.4 | L | C |
| Rb-88 | 0.45 | L | I | Cs-137 | 438 | B | I |
| Rb-89 | 0.26 | L | I | Cs-138 | 1.13 | GIT | I |
| Sr-89 | 1850 | B | C | Ba-139 | 50.2 | GIT | I |
| Sr-90 | 23800 | B | C | Ba-140 | 116 | B | C |
| Sr-91 | 74.2 | GIT | C | Ba-141 | 7.27 | GIT | I |
| Sr-92 | 239 | GIT | C | Ba-142 | 1.06 | GIT | I |
| Y-90 | 204 | GIT | A | La-140 | 185 | GIT | A |
| Y-91m | 2.43 | GIT | I | La-142 | 46.3 | GIT | C |
| Y-91 | 155 | GIT | A | Ce-141 | 48.4 | GIT | A |
| Y-92 | 146 | GIT | C | Ce-143 | 91.2 | GIT | A |
| Y-93 | 238 | GIT | C | Ce-144 | 330 | GIT | A |
| Zr-95 | 61.8 | GIT | A | Pr-143 | 80.6 | GIT | A |
| Zr-97 | 210 | GIT | A | Pr-144 | 4.44 | GIT | I |
| Nb-95 | 42 | GIT | A | Nd-147 | 69.8 | GIT | A |
| Mo-99 | 39.8 | K | C | W-187 | 56.4 | GIT | A |
| Tc-99m | 1.44 | GIT | C | Np-239 | 48 | GIT | A |

1. THY = thyroid, GIT = Gastrointestinal Tract, K = Kidney, L = Liver, TB = Total Body, B = Bone

2. A = Adult, C = Child, I = Infant

**APPENDIX J Page 1 of 3**

## BFN - PUBLIC AND INDUSTRIAL SURFACE WATER SUPPLIES

| County-State | Plant Name | Water Source | Type of Water Supply | Notification Advise State or Local Authorities listed in the REND |
|---|---|---|---|---|
| 10-Mile Radius | | | | |
| Limestone-Alabama | Browns Ferry Nuclear Plant | Tennessee River | Industrial | |
| Lawrence-Alabama | W. Morgan, E. Lawrence Water Authority | Tennessee River | Municipal | |
| Lawrence-Alabama | Champion International (Courtland Plant) | Tennessee River | Industrial & Potable | |
| 25-Mile Radius | | | | |
| State of Alabama | Joe Wheeler State Park | Tennessee River | Municipal | |
| Lawrence-Alabama | TVA-Wheeler Dam[1] | Tennessee River | Industrial | |
| 50-Mile Radius | | | | |
| Lauderdale-Alabama | Florence City-Wilson Plant | Tennessee River | Municipal | |
| Colbert-Alabama | Reynolds Metals Company | Tennessee River | Industrial | |
| Colbert-Alabama | Muscle Shoals | Tennessee River Fleet Hollow Embayment | Municipal | |
| Colbert-Alabama | TVA ERL | Fleet Hollow Embayment | Industrial & Potable | |
| Colbert-Alabama | TVA-Wilson Dam | Tennessee River | Industrial | |
| Colbert-Alabama | Occidental Chemical Company | Tennessee River | Industrial | |
| Colbert-Alabama | Sheffield | Tennessee River | Municipal | |
| Colbert-Alabama | Sheffield Police | | | |
| Colbert-Alabama | TVA Colbert Fossil Plant | Tennessee River | Industrial | |
| Colbert-Alabama | Cherokee Water Works & Gas | Tennessee River | Municipal | |
| Colbert-Alabama | Cherokee Police (Day) | | | |
| Colbert-Alabama | Cherokee Police (Night) | | | |
| Colbert-Alabama | Laroche Industries | Tennessee River | Industrial | |

[1]Potable water obtained from East Lauderdale County Water District.

**APPENDIX J Page 2 of 3**

**SQN - PUBLIC AND INDUSTRIAL SURFACE WATER SUPPLIES**

| County-State | Plant Name | Water Source | Type of Water Supply | Notification Advise State or Local Authorities listed in the REND |
|---|---|---|---|---|
| 10-Mile Radius | | | | |
| Hamilton-Tennessee | Sequoyah Nuclear Plant | Tennessee River | Industrial | |
| | Gold Point Marina | Tennessee River | | |
| | East Side Utility | Tennessee River | Industrial | |
| | | Tennessee River | Industrial | |
| | Chickamauga Dam (Power Service Center) | Tennessee River | Industrial | |
| | Chickamauga Dam | Tennessee River | | |
| 25-Mile Radius | | | | |
| | E. I. Dupont Co. | Tennessee River | Industrial and Potable | |
| | Tennessee American Water Co. | Tennessee River | Municipal | |
| | Rock-Tennessee Mill[1] | Tennessee River | Industrial | |
| | Vulcan Sand & Gravel[1] | Tennessee River | Industrial | |
| | Signal Mountain Cement[1] | Tennessee River | Industrial | |
| | Medusa Cement Co. | Tennessee River | Industrial | |
| 50-Mile Radius | Signal Mountain Cement (Plant) | Tennessee River | Industrial | |
| Marion-Tennessee | Signal Mountain Cement (Quarry) | Tennessee River | Industrial | |
| | South Pittsburg | Tennessee River | Municipal | |
| | Nickajack Dam | Tennessee River | Industrial | |
| Jackson-Alabama | Bridgeport | Tennessee River and Spring | Municipal | |
| Jackson-Alabama | Bridgeport Police | Tennessee River and Spring | | |
| | *Widows Creek Fossil Plant[2] | Tennessee River | Industrial | |
| | Mead Corporation | Tennessee River | Industrial | |

[1]Obtains potable water from Tennessee-American Water Company.

*[2]Obtains potable water supply from Bridgeport - physically removed potable water intake in November 1986.

APPENDIX J Page 3 of 3

## WBN - PUBLIC AND INDUSTRIAL SURFACE WATER SUPPLIES ON THE TENNESSEE RIVER

| County-State | Plant Name | Water Source | Type of Water Supply | Notification Advise State or Local Authorities listed in the REND |
|---|---|---|---|---|
| 10-Mile Radius | | | | |
| Rhea-Tennessee | Watts Bar Fossil & Hydro Plant[1] | Tennessee River | Industrial[2,3] | |
| | Watts Bar Nuclear Plant | Tennessee River | *Industrial[3,4] | |
| 25-Mile Radius | | | | |
| Rhea-Tennessee | City of Dayton | Tennessee River | Municipal | |
| | Dayton Police | | | |
| 50-Mile Radius | | | | |
| Hamilton-Tennessee | TVA Sequoyah Nuclear Plant | Tennessee River | Industrial | |
| | East Side Utility | Tennessee River | Industrial | |
| | E. I. Dupont | Tennessee River | Industrial and Potable | |
| | Chickamauga Dam | Tennessee River | Industrial | |
| | Tennessee American Water Co. | Tennessee River | Municipal | |
| | Rock-Tennessee Mill[5] | Tennessee River | Industrial | |
| | Vulcan Sand and Gravel[5] | Tennessee River | Industrial | |
| | Signal Mountain Cement[5] | Tennessee River | Industrial | |

[1]On layby status - water use when activated is about 445 MGD.
[2]Cooling water.
[3]Potable water to nuclear plant, steam plant, hydro plant, and resort area, provided through Watts Bar Reservation System (wells).
[4]Cooling water and cooling tower makeup.
[5]Obtains potable water supply from Tennessee-American Water Company.