

REVISION LOG SHEET

Revision Date: PORC 6-22-83 (Issued 7-22-83)

This log sheet must be retained as the last page of the Browns Ferry Nuclear Plant Implementing Procedures Document.

Inserted by: _____

Date Inserted: _____

<u>Pages to be Removed</u>			<u>New Pages to be Inserted</u>		
<u>Part</u>	<u>Page Number</u>	<u>Revision</u>	<u>Part</u>	<u>Page Number</u>	<u>Revision</u>
List of	1 of 8	6-21-83	List of	1 of 8	7-22-83
Effective	2 of 8	6-21-83	Effective	2 of 8	7-22-83
Pages			Pages		
IP-7			IP-7		
Attachment 1	1 of 2	2-23-83	Attachment 1	1 of 2	6-22-83
	2 of 2	12-21-82		2 of 2	6-22-83

8309140321 830907
PDR ADOCK 05000259
F PDR

TENNESSEE VALLEY AUTHORITY

BROWNS FERRY NUCLEAR PLANT IMPLEMENTING PROCEDURES DOCUMENT

LIST OF EFFECTIVE PAGES

This List of Effective Pages must be retained with the Browns Ferry Nuclear Plant Implementing Procedures Documents.

Part	Procedure Number	Subdivision	Page Number	Date/Rev. No.
BFN		List of Effective Pages	1 of 8	07/22/83
			2 of 8	07/22/83
			3 of 8	06/17/83
			4 of 8	06/21/83
			5 of 8	06/17/83
			6 of 8	06/21/83
			7 of 8	06/17/83
			8 of 8	06/17/83
		Table of Contents	1 of 1	06/02/83
	IP-1	Preface	Coversheet	10/19/82
			1 of 1	10/19/82
	IP-1		1 of 11	04/07/83
			2 of 11	10/19/82
			3 of 11	10/19/82
			4 of 11	10/19/82
			5 of 11	10/19/82
			6 of 11	10/19/82
			7 of 11	10/19/82
			8 of 11	10/19/82
			9 of 11	10/19/82
			10 of 11	12/06/82
			11 of 11	04/07/83
	IP-2		Coversheet	06/15/82
			1 of 3	06/02/83
			2 of 3	06/02/83
			3 of 3	02/04/83
	IP-3		Coversheet	06/29/82
			1 of 2	06/02/83
			2 of 2	06/02/83

LIST OF EFFECTIVE PAGES (Con't)

Part	Procedure Number	Subdivision	Page Number	Date/Rev. No.
BFN (Cont'd)	IP-3	Table 1	1 of 1	10/19/82
		Table 2	1 of 1	10/19/82
	IP-4		Coversheet	10/19/82
			1 of 3	06/02/83
			2 of 3	06/02/83
			3 of 3	04/07/83
		Table 1	1 of 1	10/19/82
		Table 2	1 of 1	10/19/82
	IP-5		Coversheet	06/29/82
			1 of 3	06/02/83
			2 of 3	06/02/83
			3 of 3	04/07/83
		Table 1	1 of 1	10/19/82
		Table 2	1 of 1	10/19/82
	IP-6		Coversheet	06/29/82
			1 of 1	04/22/82
		Attachment 1	1 of 4	03/25/83
			2 of 4	06/02/83
			3 of 4	06/02/83
			4 of 4	02/14/83
	IP-7		Coversheet	06/29/82
			1 of 1	12/21/81
		Attachment 1	1 of 2	06/22/83
			2 of 2	06/22/83
	IP-8		Coversheet	06/15/82
			1 of 3	04/07/83
			2 of 3	04/07/83
			3 of 3	04/07/83
		Attachment 1	1 of 1	06/06/83
	IP-9		Coversheet	06/15/82
			1 of 1	12/21/82

ATTACHMENT 1

Contact as many people in each group as noted.

Message: "We have a/an (ALERT) (SITE AREA EMERGENCY) (GENERAL EMERGENCY) condition existing at the plant. Please report to the Operations Support Center immediately."

<u>Initials</u>	<u>Time Contacted</u>	<u>Name</u>	<u>PAY</u>	<u>DIM</u>	<u>HOME</u>
<u>INSTRUMENT MAINTENANCE (CONTACT 3)</u>					
*	_____	Alton McCaleb	168/418	872	Athens 232-6155
	_____	Gene Hartsfield	234/243	841	Athens 232-7394
	_____	J. D. Thompson	234/243	841	Decatur 355-7709
	_____	Guy V. Thompson	234/243	841	Decatur 355-9470
	_____	Ken Montgomery	234/243	841	Rogersville 247-0859
	_____	Ron Turberville	234/243	841	Rogersville 247-1705
<u>ELECTRICAL MAINTENANCE (CONTACT 4)</u>					
	_____	Jim Fowler	411/211	843/612	Lexington 757-4733
	_____	Mike Jackson	235/207 216	799	Athens 233-2995
	_____	John Killen	307/145 407	619/612	Florence 766-4432
	_____	Julian Bass	407/307 145	619/612	Rogersville 247-0381
	_____	Pete McLemore	407/307 145	619/612	Rogersville 247-5317
	_____	Billy Tompkins	307/145	619/612	Tuscumbia 383-6011
	_____	Dennis White	307/145	619/612	Killen 757-3414

*Revision *[Signature]*

ATTACHMENT 1 (Continued)

<u>Initials</u>	<u>Time Contacted</u>	<u>Name</u>	<u>PAX</u>	<u>DIM</u>	<u>HOME</u>
<u>MECHANICAL MAINTENANCE (CONTACT 4)</u>					
_____	_____	John Whitt	310/301	620	Athens 233-0740
_____	_____	Carlos Jones	114/310	620	Athens 232-1837
_____	_____	Bobby Laurence	308/310	620	Lexington 229-5933
* _____	_____	John Beck	301/310	620	Town Creek 685-2793
* _____	_____	Tom Marshall	301/310	857	Hartselle 773-2815
_____	_____	Dale Taylor	206	618	Decatur 353-4005
<u>PSO (Contact 1)</u>					
_____	_____	Jim Thompson	394	820	Decatur 355-9666
_____	_____	Duncan Massey	394	820	Huntsville 852-8446

*Revision jac

RADIOLOGICAL EMERGENCY PLAN

Revision Date: PORC 7-6-83 (Issued 8-3-83)

This log sheet must be retained as the last page of the Browns Ferry Nuclear Plant Implementing Procedures Document.

Reason for revision: See reasons given on each coversheet.

Inserted by: _____

Date Inserted: _____

<u>Pages to be Removed</u>			<u>New Pages to be Inserted</u>		
Part	Page Number	Revision	Part	Page Number	Revision
Effective Page Listing	1 of 8	7-22-83	Effective Page Listing	1 of 8	8-3-83
	2 of 8	7-22-83		2 of 8	8-3-83
	3 of 8	6-17-83		3 of 8	8-3-83
	8 of 8	6-17-83		8 of 8	8-3-83
Table of Contents	1	6-2-83	Table of Contents	Coversheet	7-6-83
				1	7-6-83
IP-1	Coversheet	10-19-82	IP-1	Coversheet	7-6-83
	10 of 11	12-6-82		10 of 11	7-6-83
IP-2	Coversheet	6-15-82	IP-2	Coversheet	7-6-83
	2 of 3	6-2-83		2 of 3	7-6-83
IP-6 Att. 1	Coversheet	6-29-82	IP-6 Att. 1	Coversheet	7-6-83
	1 of 4	3-25-83		1 of 6	7-6-83
	2 of 4	6-2-83		2 of 6	7-6-83
	3 of 4	6-2-83		3 of 6	7-6-83
	4 of 4	2-14-83		4 of 6	7-6-83
				5 of 6	7-6-83
				6 of 6	7-6-83

RADIOLOGICAL EMERGENCY PLAN
Revision Log Sheet (Continued)
Manual: BFN-IPD
Revision Date: PORC 7-6-83 (Issued 8-3-83)

Inserted by: _____

Date Inserted: _____

<u>Pages to be Removed</u>			<u>New Pages to be Inserted</u>		
Part	Page Number	Revision	Part	Page Number	Revision
IP-7	Coversheet	6-29-82	IP-7	Coversheet	7-6-83
Att. 1	1 of 2	6-22-83	Att. 1	1 of 2	7-6-83
	2 of 2	6-22-83		2 of 2	7-6-83
IP-10	Coversheet	6-29-82	IP-10	Coversheet	7-6-83
	1 of 6	6-30-81		1 of 3	7-6-83
	2 of 6	2-8-83		2 of 3	7-6-83
	3 of 6	4-22-82		3 of 3	7-6-83
	3a of 6	4-22-82			
	4 of 6	6-30-81			
	5 of 6	12-21-81			
	6 of 6	6-30-81			
Att. 1	1 of 2	6-29-82	Att. 1	1 of 2	7-6-83
	2 of 2	6-29-82		2 of 2	7-6-83
Att. 2A	1 of 1	6-30-81	Att. 2	1 of 1	7-6-83
Att. 2B	1 of 1	Rev. 0	-	-	-
Att. 3	1 of 1	Rev. 0	Att. 3	1 of 2	7-6-83
Att. 4	1 of 1	Rev. 0	Att. 4	2 of 2	7-6-83
				1 of 2	7-6-83
Att. 5	1 of 1	4-22-82		2 of 2	7-6-83
Att. 6	1 of 1	Rev. 0	Att. 5	1 of 1	7-6-83
Att. 7	1 of 2	6-30-81	Att. 6	1 of 1	7-6-83
	2 of 2	6-30-81	Att. 7	1 of 1	7-6-83
Att. 8	1 of 2	6-30-81	Att. 8	1 of 2	7-6-83
	2 of 2	6-30-81		2 of 2	7-6-83
-	-	-	Att. 9	1 of 2	7-6-83
				2 of 2	7-6-83
			IP-26	Coversheet	7-6-83
				1 of 4	7-6-83
				2 of 4	7-6-83
				3 of 4	7-6-83
				4 of 4	7-6-83

TENNESSEE VALLEY AUTHORITY

BROWNS FERRY NUCLEAR PLANT IMPLEMENTING PROCEDURES DOCUMENT

LIST OF EFFECTIVE PAGES

This List of Effective Pages must be retained with the Browns Ferry Nuclear Plant Implementing Procedures Documents.

Part	Procedure Number	Subdivision	Page Number	Date/Rev. No.
BFN		List of Effective Pages	1 of 8	08/03/83
			2 of 8	08/03/83
			3 of 8	08/03/83
			4 of 8	06/21/83
			5 of 8	06/17/83
			6 of 8	06/21/83
			7 of 8	06/17/83
			8 of 8	08/03/83
		Table of Contents	Coversheet	07/06/83
			1 of 1	07/06/83
	IP-1	Preface	Coversheet	07/06/83
			1 of 1	10/19/82
	IP-1		1 of 11	04/07/83
			2 of 11	10/19/82
			3 of 11	10/19/82
			4 of 11	10/19/82
			5 of 11	10/19/82
			6 of 11	10/19/82
			7 of 11	10/19/82
			8 of 11	10/19/82
			9 of 11	10/19/82
			10 of 11	07/06/83
			11 of 11	04/07/83
	IP-2		Coversheet	07/06/83
			1 of 3	06/02/83
			2 of 3	07/06/83
			3 of 3	02/04/83
	IP-3		Coversheet	06/29/82
			1 of 2	06/02/83
			2 of 2	06/02/83

LIST OF EFFECTIVE PAGES (Con't)

Part	Procedure Number	Subdivision	Page Number	Date/Rev. No.
BFN (Cont'd)	IP-3	Table 1	1 of 1	10/19/82
		Table 2	1 of 1	10/19/82
	IP-4		Coversheet	10/19/82
			1 of 3	06/02/83
			2 of 3	06/02/83
			3 of 3	04/07/83
		Table 1	1 of 1	10/19/82
		Table 2	1 of 1	10/19/82
	IP-5		Coversheet	06/29/82
			1 of 3	06/02/83
			2 of 3	06/02/83
			3 of 3	04/07/83
		Table 1	1 of 1	10/19/82
		Table 2	1 of 1	10/19/82
	IP-6		Coversheet	07/06/83
			1 of 1	04/22/82
		Attachment 1	1 of 6	07/06/83
			2 of 6	07/06/83
			3 of 6	07/06/83
			4 of 6	07/06/83
			5 of 6	07/06/83
			6 of 6	07/06/83
	IP-7		Coversheet	07/06/83
			1 of 1	12/21/81
		Attachment 1	1 of 2	07/06/83
			2 of 2	07/06/83
	IP-8		Coversheet	06/15/82
			1 of 3	04/07/83
			2 of 3	04/07/83
			3 of 3	04/07/83
		Attachment 1	1 of 1	06/06/83
	IP-9		Coversheet	06/15/82
			1 of 1	12/21/82

LIST OF EFFECTIVE PAGES (Con't)

Part	Procedure Number	Subdivision	Page Number	Date/Rev. No.
BFN	IP-10		Coversheet	07/06/83
			1 of 3	07/06/83
			2 of 3	07/06/83
			3 of 3	07/06/83
		Attachment 1	1 of 2	07/06/83
			2 of 2	07/06/83
		Attachment 2	1 of 1	07/06/83
		Attachment 3	1 of 2	07/06/83
			2 of 2	07/06/83
		Attachment 4	1 of 2	07/06/83
			2 of 2	07/06/83
		Attachment 5	1 of 1	07/06/83
		Attachment 6	1 of 1	07/06/83
		Attachment 7	1 of 1	07/06/83
		Attachment 8	1 of 2	07/06/83
			2 of 2	07/06/83
		Attachment 9	1 of 2	07/06/83
			2 of 2	07/06/83
	IP-11		Coversheet	06/15/82
			1 of 2	04/07/83
			2 of 2	04/07/83
	IP-12		Coversheet	02/08/83
			1 of 1	02/08/83
	IP-13		1 of 2	06/16/81
			2 of 2	06/16/81

LIST OF EFFECTIVE PAGES (Con't)

Part	Procedure Number	Subdivision	Page Number	Date/Rev. No.
BFN (Cont'd)	IP-24	Attachment A (Cont'd)	29 of 36	02/23/82
			30 of 36	02/23/82
			31 of 36	02/23/82
			32 of 36	02/23/82
			33 of 36	02/23/82
			34 of 36	02/23/82
			35 of 36	02/23/82
			36 of 36	02/23/82
BFN	IP-25		Coversheet	04/07/83
			1 of 2	04/07/83
			2 of 2	04/07/83
BFN	IP-26		Coversheet	07/06/83
			1 of 4	07/06/83
			2 of 4	07/06/83
			3 of 4	07/06/83
			4 of 4	07/06/83

ATTACHMENT B

SAMPLE COVER SHEET FOR PLANT PROCEDURES

TENNESSEE VALLEY AUTHORITY
BROWNS FERRY NUCLEAR PLANT

REP

3FN-IPD

PROCEDURE TYPE AND NUMBER

Table of Contents

PROCEDURE TITLE

Total Plant

AFFECTED UNIT

History of Revisions

Revision Date/Affected Pages

JUL 6 1983 / Table of Contents

PREPARED/REVISED BY:

William A. Roberts, Jr.

SUBMITTED BY:

A. Chinn

Supervisor

FORC REVIEW DATE:

J. R. Pittman 7-6-83

APPROVED:

J. A. Lippert
Plant Superintendent

REASON FOR CURRENT REVISION:

Add Tornado Emergency
Procedure

*Addendum:

Joe

BROWNS FERRY NUCLEAR PLANT

JUL 6 1983

RADIOLOGICAL EMERGENCY PROCEDURES

IP-1	Emergency Plant Classification Logic
IP-2	Notification of Unusual Event
IP-3	Alert
IP-4	Site Area Emergency
IP-5	General Emergency
IP-6	Activation of the Technical Support Center
IP-7	Activation of the Operations Support Center
IP-8	Personnel Accountability and Evacuation
IP-9	Evacuation of Construction Services Personnel
IP-10	Medical Emergency Procedures
IP-11	Security and Access Control
IP-12	Local Recovery Center
IP-13	Deleted
IP-14	Health Physics Procedures
IP-15	Emergency Exposure
IP-16	Recovery Procedure
IP-17	Emergency Equipment and Supplies
IP-18	Deleted
IP-19	Operation of the Emergency Data Information System
IP-20	Technical Support Center (TSC) Operation
IP-21	Operations Support Center (OSC) Operation
IP-22	Long Term Operation
IP-23	Communication System
IP-24	Earthquake Emergency Plan
IP-25	Radiochemical Laboratory Procedure
* IP-26	Tornado Emergency Procedure

*Revision

ATTACHMENT B

SAMPLE COVER SHEET FOR PLANT PROCEDURES

TENNESSEE VALLEY AUTHORITY
BROWNS FERRY NUCLEAR PLANT

REP, BFW, IP-1

PROCEDURE TYPE AND NUMBER
Emergency Plan Classification Logic
PROCEDURE TITLE
Unit 1, 2, 3
AFFECTED UNIT

History of Revisions

Revision Date/Affected Pages

JUL 6 1983 / 10

PREPARED/REVISED BY:

William A. Roberts, Jr.

SUBMITTED BY:

[Signature]
Supervisor

PORC REVIEW DATE:

J.R. Patton 7-6-83

APPROVED:

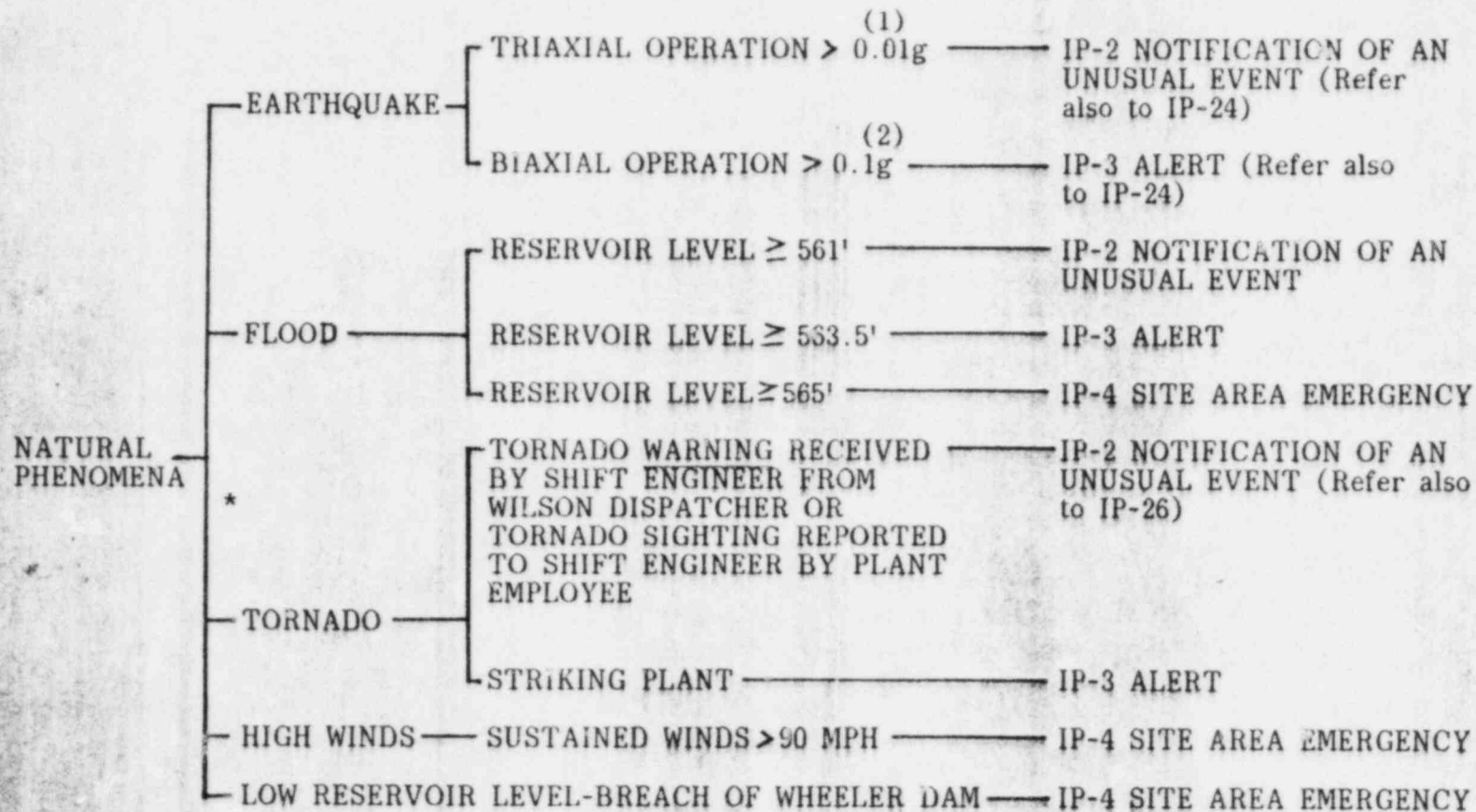
J. A. Loggins
Plant Superintendent

REASON FOR CURRENT REVISION:

*Incorporate IP-26,
Tornado Emergency
Procedure*

*Addendum:

ju



(1) Before initiating IP-2, confirm by noticeable building movement and/or call National Earthquake Information Center at (303) 234-3994. See FSAR Figure 2.5-7, Modified Mercalli Intensity IV.

(2) Before initiating IP-3, confirm by building movement, some damage to non-seismic structures. Call National Earthquake Information Center at (303) 234-3994. See FSAR Figure 2.5-7, Modified Mercalli Intensity VII.

*Revision

Page 10 of 11
 BFN - IPD
 BFN, IP-1
 JUL 6 1983

ATTACHMENT B

SAMPLE COVER SHEET FOR PLANT PROCEDURE

TENNESSEE VALLEY AUTHORITY
BROWNS FERRY NUCLEAR PLANT

REP, BEN, IP-2

PROCEDURE TYPE AND NUMBER

Notification of Unusual Event

PROCEDURE TITLE

1, 2, 3
AFFECTED UNIT

PREPARED/REVISED BY:

William A. Roberts, Jr.

SUBMITTED BY:

[Signature]
Supervisor

PORC REVIEW DATE:

J. R. Pittman 7-6-83

APPROVED:

J. A. Lippy
Plant Superintendent

REASON FOR CURRENT REVISION:

To Correct Phone Numbers

*Addendum:

jue

History of Revisions

Revision Date/Affected Pages

JUL 6 1983 / 2

JUL 6 1983

INITIALS TIME

2.2 Operations Duty Specialist will return call to verify authenticity.

2.3 Shift Engineer will notify the following of the event:

a. Other Shift Engineer. (When assigned)

b. STA (Code Call 544)

c. Operations Section Supervisor R. Hunkapillar 214/205
Decatur 355-5667

OR

Operations Supervisor Tommy Jordan 205/214
Muscle Shoals 383-5868

OR

Operations Supervisor A. Burnette 430/429
Florence 766-1929

d. Plant Superintendent J. A. Coffey 212/221
Decatur 350-6596

OR

Assistant Plant Superintendent J. E. Swindell 221/212
Decatur 355-7277

OR

Assistant Plant Superintendent J. R. Pittman 221/212
Decatur 355-0230

e. Public Information Officer R. C. Boyer 413
Decatur 350-3820

2.4 Shift Engineer will notify the NRC of NOTIFICATION OF UNUSUAL EVENT by red phone. Give a brief description. Maintain an open line until released by NRC.

*Revision

ATTACHMENT B

SAMPLE COVER SHEET FOR PLANT PROCEDURES

TENNESSEE VALLEY AUTHORITY
BROWNS FERRY NUCLEAR PLANT

REP, IP-6

PROCEDURE TYPE AND NUMBER
Activation Of The Technical Support Center
PROCEDURE TITLE
1, 2, 3
AFFECTED UNIT

History of Revisions

Revision Date/Affected Pages

JUL 6 1983 *1, 2, 3, 4, 5, 6 (Att. 1)*

PREPARED/REVISED BY:

William A. Roberts, Sr.

SUBMITTED BY:

TLC -

[Signature]
Supervisor

PORC REVIEW DATE:

J. R. Pittman *7-6-83*

APPROVED:

J. A. Loper
Plant Superintendent

REASON FOR CURRENT REVISION:

*To add pager numbers
to the call out listing.*

*Addendum:

Joe

ATTACHMENT 1

Contact one or more AS NOTED.

Message: "We have a/an (ALERT) (SITE EMERGENCY) (GENERAL EMERGENCY) condition existing at the plant. This is not a drill. Please report to the Technical Support Center immediately as the (Job Title)."

SITE EMERGENCY DIRECTOR (CONTACT 1)

<u>Initials</u>	<u>Time Contacted</u>	<u>Name</u>	<u>PAX</u>	<u>Dim</u>	<u>Home</u>	<u>Pager</u>
_____	_____	Jim Coffey	212/221	701	Decatur - 350-6596	212
_____	_____	Jim Swindell	221/212	701	Decatur - 355-7277	103
_____	_____	John Pittman	221/212	701	Decatur - 355-0230	221
_____	_____	Ray Hunkapillar	205/214	794	Decatur - 355-5667	204

OPERATIONS MANAGER (CONTACT 1)

_____	_____	Ray Hunkapillar	205/214	794	Decatur - 355-5667	204
_____	_____	Tommy Jordan	205/214	793	Muscle Shoals - 383-5868	129
_____	_____	A. L. Burnette	429/430	861	Florence - 766-1929	130

TECHNICAL ASSESSMENT MANAGER (CONTACT 1)

_____	_____	J. E. Swindell	221/212	701	Decatur - 355-7277	103
_____	_____	W. C. Thomison	208	784	Decatur - 355-5443	208
_____	_____	Dwight Mims	171/272	834	Decatur - 350-9659	272

*Revision

*Page 1 of 6
BFN-IPD
BFN, IP-6
Attachment 1
JUL 6 1983

ATTACHMENT 1 (Continued)

MAINTENANCE MANAGER (CONTACT 1)

<u>Initial</u>	<u>Time Contacted</u>	<u>Name</u>	<u>PAX</u>	<u>Dir</u>	<u>Home</u>	<u>Pager</u>
_____	_____	John Pittman	221/212	701	Decatur - 355-0230	221
_____	_____	John Miller	701/715	712	Decatur - 355-4375	_____
_____	_____	Tom Cosby	207/235	797	Florence - 767-4463	235

REP COMMUNICATOR (CONTACT 1)

_____	_____	Terry Chinn	405/406	786	Athens - 729-8505	141
_____	_____	Bill Roberts	405/406	788	Athens - 232-7027	142
_____	_____	Carroll Rozear	405/406	788	Decatur - 355-4721	143

SECRETARY (CONTACT 3)

_____	_____	Glenda Harrison	212/221	701	Athens - 729-6573	_____
_____	_____	Betty Riley	221/212	701	Athens - 232-5602	_____
_____	_____	Cathy McChristian	245/210/440	840	Athens - 232-6517	_____
_____	_____	Bonnie Ferguson	241	790	Florence - 766-6003	_____
_____	_____	Sandra Strickland	100/106	832	Athens - 233-2862	_____
_____	_____	Jacque Garner	221/212	701	Athens - 233-0576	_____

*Revision

*Page 2 of 6
BEN-IPD
BEN, IP-6
Attachment 1
JUL 6 1983

ATTACHMENT 1 (Continued)

<u>Initials</u>	<u>Time Contacted</u>	<u>Name</u>	<u>PAX</u>	<u>Dim</u>	<u>Home</u>	<u>Pager</u>
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TSC COMMUNICATOR (CONTACT 1)

_____	_____	Bob Metke	179	783	Athens - 232-8596	_____
_____	_____	Dwight Mims	171/272	834	Decatur - 350-9659	272
_____	_____	Roger McPherson	171/272	834	Decatur - 355-6518	_____

NRC COMMUNICATOR (CONTACT 1)

_____	_____	Bill Roberts	405/406	788	Athens - 232-7027	142
_____	_____	Terry Chinn	405/406	786	Athens - 729-8505	141
_____	_____	Carroll Rozear	405/406	788	Decatur - 355-4721	143

OPERATIONS SPECIALIST (CONTACT 1)

_____	_____	A. L. Burnette	429/430	861	Florence - 766-1929	130
_____	_____	Tommy Jordan	205/214	793	Muscle Shoals - 358-5868	129
_____	_____	Roy Smallwood	429/430	861	Killen - 757-3992	_____

*Revision

*Page 3 of 6
BFD-IPD
IP-6
Attachment 1
JUL 6 1983

ATTACHMENT 1 (Continued)

<u>Initials</u>	<u>Time Contacted</u>	<u>Name</u>	<u>PAX</u>	<u>Dim</u>	<u>Home</u>	<u>Pager</u>
<u>HEALTH PHYSICS (CONTACT 2)</u>						
_____	_____	Allen Sorrell	209/274	757	Florence - 767-6045	274
_____	_____	Ed Cargill	274/209	758	Athens - 232-0643	209
_____	_____	Wayne Simpkins	457/458	759	Athens - 232-7973	_____
_____	_____	Herman Crowson	335/334	876	Florence - 764-1381	334

RADIOCHEMICAL ENGINEER (CONTACT 1)

_____	_____	Bill Thomison	208/215	785	Decatur - 355-5443	208
_____	_____	Ausie Clement	101/107	802	Athens - 232-0300	101
_____	_____	Weaver Burton	443/436	621	Decatur - 355-8772	320
_____	_____	Jim Clark	443/436	621	Huntsville - 533-2120	_____
_____	_____	Hung Le	443/436	621	Decatur - 350-9555	_____

REACTOR ENGINEER (CONTACT 1)

_____	_____	Earl Nave	353/396	845	Huntsville - 881-6810	184
_____	_____	Mike Wingo	455/456	845	Decatur - 350-3170	_____
_____	_____	Bill Williamson	455/446	845	Killen - 757-5903	_____

*Revision

*Page 4 of 6
BEN-IPJ
BEN, IP-6
Attachment 1
JUL 6 1983

ATTACHMENT 1 (Continued)

<u>Initials</u>	<u>Time Contacted</u>	<u>Name</u>	<u>PAX</u>	<u>Dim</u>	<u>Home</u>	<u>Pager</u>
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ELECTRICAL ENGINEER (CONTACT 1)

_____	_____	Tom Cosby	207/235	797	Florence - 767-4463	235
_____	_____	Dwight Tompson	207/235	890	Athens - 233-1773	216
_____	_____	Stan Solley	207/235	891	Rogersville - 247-0256	_____
_____	_____	Howard Vail	207/235	891	Huntsville - 881-6553	_____

INSTRUMENT & CONTROLS ENGINEER (CONTACT 1)

_____	_____	Ron Burns	168	781	Decatur - 353-4992	168
_____	_____	Bob Irby	234	841	Athens - 729-1439	161

PSO ENGINEER (CONTACT 1)

_____	_____	Leonard Bynum	394/395	819	Huntsville - 539-5454	256
_____	_____	Lee Haygood	394/395	820	Killen - 757-5794	_____
_____	_____	Elmer Todd	394/395	820	Athens - 232-7978	258

PUBLIC SAFETY SERVICE SUPERVISION (CONTACT 1)

_____	_____	Ralph Jackson	266/246	822	Killen - 757-3509	246
_____	_____	James Brazell	266/246	822	Athens - 232-6003	178
_____	_____	Glenn Lard	266/246	822	Florence - 766-8557	_____

*Addendum

*Page 5 of 6
 BFN-IPD
 BFN, IP-6
 Attachment 1
 JUL 6 1983

ATTACHMENT 1 (Continued)

<u>Initials</u>	<u>Time Contacted</u>	<u>Name</u>	<u>PAX</u>	<u>Dim</u>	<u>Home</u>	<u>Pager</u>
<u>SYSTEMS & TEST ENGINEER (CONTACT 1)</u>						
_____	_____	Dwight Mims	171/272	834	Decatur - 350-9659	272
_____	_____	R. McPherson	171/272	834	Decatur - 355-6518	_____
_____	_____	Paul Romine	171/272	834	Florence - 766-2550	_____
<u>MECHANICAL ENGINEER (CONTACT 1)</u>						
_____	_____	Tink Haney	206/241	790	Athers - 233-0834	241
_____	_____	Charlie Wages	206/241	881	Sheffield - 383-8878	202
_____	_____	Jim Walker	206/241	791	Athens - 729-6032	_____
<u>COMPUTER SPECIALIST (CONTACT 1)</u>						
_____	_____	Larry Johnson	418	782	Athens - 233-0417	264
_____	_____	Russ McNutt	264	856	Athens - 232-2359	_____
_____	_____	Barry Lenox	264	856	Athens - 232-9576	_____
_____	_____	Wayne Lynch	264	856	Athens - 233-0998	_____
<u>QUALITY ENGINEERING (CONTACT 1)</u>						
_____	_____	Larry Jones	100/106	831	Decatur - 350-6020	106
_____	_____	Larry Parvin	309/409	801	Athens - 232-9570	107
_____	_____	Russell Perry	100/106	623	Athens - 729-8823	109/112
<u>PUBLIC INFORMATION OFFICER (CONTACT 1)</u>						
_____	_____	Bob Boyer	413	839	Decatur - 350-3820 Beeper - 552-8781	_____

*Addendum

*Page 6 of 6
BPN-IPD
BPN, IP-6
Attachment 1
JUL 6 1983

ATTACHMENT B

SAMPLE COVER SHEET FOR PLANT PROCEDURES

TENNESSEE VALLEY AUTHORITY
BROWNS FERRY NUCLEAR PLANT

History of Revisions

Revision Date/Affected Pages

REP, IP-7

PROCEDURE TYPE AND NUMBER
Activation Of The Operations Support Center

JUL 6 1983 1, 2 (Att. 1)

PROCEDURE TITLE

Unit 1, 2, 3

AFFECTED UNIT

PREPARED/REVISED BY:

William A. Roberts, Jr.

SUBMITTED BY

TLC-

Supervisor

PORC REVIEW DATE:

J. R. Pittman 7-6-83

APPROVED:

J. A. Loney
Plant Superintendent

REASON FOR CURRENT REVISION:

*To add pager numbers
to the call out listing.*

*Addendum:

Joe

ATTACHMENT 1

Contact as many people in each group as noted.

Message: "We have a/an (ALERT) (SITE AREA EMERGENCY) (GENERAL EMERGENCY) condition existing at the plant. Please report to the Operations Support Center immediately."

<u>Initials</u>	<u>Time Contacted</u>	<u>Name</u>	<u>PAX</u>	<u>Dim</u>	<u>Home</u>	<u>Pager</u>
<u>INSTRUMENT MAINTENANCE (CONTACT 3)</u>						
_____	_____	Alton McCaleb	168/418	782	Athens - 232-6155	160
_____	_____	Gene Hartsfield	234/243	841	Athens - 232-7394	342
_____	_____	J. D. Thompson	234/243	841	Decatur - 355-7709	234
_____	_____	Guy V. Thompson	234/243	841	Decatur - 355-9470	172
_____	_____	Ken Montgomery	234/243	841	Rogersville - 247-0859	174
_____	_____	Ron Turberville	234/243	841	Athens - 232-9047	175

ELECTRICAL MAINTENANCE (CONTACT 4)

_____	_____	Jim Fowler	411/211	843/612	Lexington - 757-4733	153
_____	_____	Mike Jackson	235/207/216	799	Athens - 233-2995	207
_____	_____	John Killen	307/145/407	619/612	Florence - 766-4432	307
_____	_____	Julian Bass	407/307/145	619/612	Rogersville - 247-0381	154

*Revision

*Page 1 of 2
BEN-IPD
BEN, IP-7
Attachment 1
JUL 6 1983

ATTACHMENT 1 (Continued)

<u>Initials</u>	<u>Time Contacted</u>	<u>Name</u>	<u>PAX</u>	<u>Dim</u>	<u>Home</u>	<u>Pager</u>
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ELECTRICAL MAINTENANCE (Continued)

_____	_____	Pete McLemore	407/307/145	619/612	Rogersville - 247-5317	146
_____	_____	Billy Tompkins	307/145	619/612	Tuscumbia - 383-6011	150
_____	_____	Dennis White	307/145	619/612	Killen - 757-3414	147

MECHANICAL MAINTENANCE (CONTACT 4)

_____	_____	John Whitt	310/301	620	Athens - 233-0740	310
_____	_____	Carlos Jones	114/310	620	Athens - 232-1837	201
_____	_____	Bobby Laurence	308/310	620	Lexington - 229-5933	186
_____	_____	John Beck	102/310	620	Town Creek - 685-2793	_____
_____	_____	Tom Marshall	310/301	620	Hartselle - 773-2815	206
_____	_____	Dale Taylor	206	618	Decatur - 353-4005	214

PSO (CONTACT 1)

_____	_____	Jim Thompson	394	820	Decatur - 355-9666	_____
_____	_____	Duncan Massey	394	820	Huntsville - 852-8446	_____

*Revision

Page 2 of 2
BPN-IPD
BPN, IP-7
Attachment 1
JUL 6 1983

ATTACHMENT B

SAMPLE COVER SHEET FOR PLANT PROCEDURES

TENNESSEE VALLEY AUTHORITY
BROWNS FERRY NUCLEAR PLANT

History of Revisions

Revision Date/Affected Pages

PROCEDURE TYPE AND NUMBER

BFN REP - IP-10

PROCEDURE TITLE

Medical Emergency Procedure

AFFECTED UNIT

Units 1, 2, and 3

7/6/83 / All

PREPARED/REVISED BY:

T. L. Chinn

SUBMITTED BY:

T. L. Chinn

Supervisor

PORC REVIEW DATE:

7/6/83

APPROVED:

J. A. Copen
Plant Superintendent

REASON FOR CURRENT REVISION:

Correction and to improve usefulness

*Addendum:

jmc

MEDICAL EMERGENCY PROCEDURE

1.0 PURPOSE

This procedure outlines the action to be followed during medical emergencies.

2.0 INITIAL REPORTING

2.1 Administer aid for any life threatening situation if trained.

2.2 Summon any available personnel in the area for assistance.

2.3 Notify the control room on PAX 202 and state, "This is a medical emergency and not a fire."

2.4 Operator will obtain:

- a. Name of caller
- b. Location (building, elev., column)
- c. Type of medical emergency
- d. Number of personnel involved
- e. PAX number

3.0 ACTIVATION OF MEDICAL EMERGENCY RESPONSE TEAM

3.1 The control room operator will:

- a. Announce over PA the medical emergency and direct the team to the location.
- b. Notify the shift engineer of the emergency.

3.2 The shift engineer will notify the nurse on duty who will proceed, if necessary, to the emergency site.

3.3 Medical Emergency Response Team will proceed to the emergency. Team will consist of:

- a. Unit 1 ASE (Team Leader)
- b. HP Technician
- c. Public Safety Officer (EMT-trained if available - Others respond if available).
- d. Radiochemical Laboratory Analyst
- e. AUCs as available
- f. Nurse (Notified in 3.2 above)

MEDICAL EMERGENCY PROCEDURE (continued)

4.0 INITIAL RESPONSE

4.1 Team leader will:

- a. Lead team in/out by best route.
- b. Direct overall effort.
- c. Keep shift engineer advised of situation.
- d. Request shift engineer to obtain ambulance from Public Safety.

4.2 Public Safety Officer will:

- a. Perform crowd control.
- b. Provide emergency care if EMT or first responder trained.
- c. Provide other assistance as required.

4.3 Radiochemical Laboratory Analyst will:

- a. Obtain medical list from Medical Services Office.
- b. Assist as required.

4.4 HP Technician will:

- a. Monitor patient and area as needed.
- b. Advise team concerning radiological protection.
- c. Advise team concerning protective measures and decontamination for patient.
- d. Control contamination spread.

4.5 Nurse will:

- a. Administer emergency care as required.
- b. Determine, in coordination with HP as required, where further emergency care will be performed (see Attachment 3).

4.6 Stretcher Locations - See Attachment 8.

4.7 Patient Care Guidelines - See Attachment 3
(Covers General Guidelines and Radiological Problems)

4.8 Special Plant Areas - See Attachment 9.

4.9 Transport offsite - See section 5.0.

MEDICAL EMERGENCY PROCEDURE (continued)

5.0 TRANSPORT OFFSITE (IF REQUIRED)

- 5.1 Shift Engineer request ambulance from Public Safety. If TVA ambulance is not available from Public Safety see Attachment 1 for outside ambulance.
- 5.2 Team Leader give ambulance driver plant phone numbers.
- 5.3 Team Leader obtain from ambulance driver method for communicating while in route (normally radio frequency).
- 5.4 Shift Engineer complete part I of Attachment 2 and provide information to receiving hospital (see Attachment 1).
- 5.5 Attachments 5, 6, and 7 give directions to various hospitals.
- 5.6 If contamination/irradiation is suspected, Health Physics personnel will accompany ambulance, and furnish radiological services as requested.
- 6.0 FOLLOW-UP
- 6.1 Nurse/HP makes follow-up call to hospital from Shift Engineer's office to give/receive additional information concerning patient's condition - see part II of Attachment 2. Nurse retains Attachment 2 for records.
- 6.2 Shift Engineer is responsible for any further notifications per IP-2 through IP-5, or BF 12.14.
- 6.3 The area medical chief, or his designee, or the area nursing supervisor, or her designee, should be notified by the plant nurse, if someone is ill or injured to the extent they require ambulance transportation to a hospital receiving facility.
- 6.4 Health Physics should notify the Area Medical Chief anytime TVA personnel are suspected of receiving radiation exposure in excess of the recommended TVA occupational exposure limits.

JUL 6 1983

NOTIFICATION LIST

Browns Ferry

Medical Emergency - PAX 299
Public Safety - PAX 273
Shift Engineer - PAX 213
TVA Ambulance - PAX 273
Health Physics - PAX 300 or 116

Local Ambulance Service

Metro Shoals Emergency Medical Services
Florence, Alabama - (205) 766-8500

Athens Limestone Hospital Ambulance Service
Athens, Alabama - (205) 232-2525

Hospitals

Decatur General Hospital
Decatur, Alabama - (205) 552-0174 or (205) 552-0175
- (205) 552-0055 (Use only if other numbers are busy)

Colonial Manor Hospital
Florence, Alabama - (205) 766-5091

REAC/TS, Oak Ridge, Tennessee

Commercial - (615) 626-3131
FTS - 50-128-615-626-3131

24-Hour Hospital Disaster Network - Commercial - (615) 482-2441 (Beeper: 241)
- FTS - 50-128-615-626-1005

<u>Area Medical Chief</u>	<u>Work Phone</u>	<u>Home Phone</u>
Louie L. Coker, M.D. Muscle Shoals, Alabama	(205) 386-2271 FTS 872-8271	(601) 423-9238 Iuka, Mississippi
J. B. Drueke, M.D. Muscle Shoals, Alabama	(205) 386-2271 FTS 872-8271	(205) 381-6794 Sheffield, Alabama
J. W. Caden, M.D. Muscle Shoals, Alabama	(205) 386-2271 FTS 872-8271	(205) 383-5332 Sheffield, Alabama

NOTIFICATION LIST (continued)

<u>Area Nursing Supervisor</u>	<u>Work Phone</u>	<u>Home Phone</u>
• Mildred L. Higgs, R.N. Muscle Shoals, Alabama	(205) 386-2271 FTS 872-8271	(205) 383-6588 Sheffield, Alabama
Christine S. Shelton, R.N. Muscle Shoals, Alabama	(205) 386-2271 FTS 872-8271	(205) 764-1106 Florence, Alabama

MEDICAL EMERGENCY NOTIFICATION REPORT

PART I

To be used by Shift Engineer to provide data to receiving hospital.

Shift Engineer _____ Date _____ Time _____

Hospital _____ Individual Contacted _____

Patients To Be Admitted

	<u>Name (If Available)</u>	<u>Description of Injuries/Condition</u>
1.	_____	_____
2.	_____	_____
3.	_____	_____

Expected Time of Arrival at Hospital _____

PART II

To Be Used For Followup Call By Nurse/HP From Shift Engineer's Office

Patients To Be Admitted:

Name	Injury but no Radiation or Contamination	Radiation Exposure	Internal Contamination	External Contamination	Contaminated Wounds
1.	_____	_____	_____	_____	_____
2.	_____	_____	_____	_____	_____
3.	_____	_____	_____	_____	_____

	<u>Name</u>	<u>Injuries/Condition</u>	<u>Treatment Provided</u>
1.	_____	_____	_____
2.	_____	_____	_____
3.	_____	_____	_____

PATIENT CARE GUIDELINES

1.0 GENERAL

- 1.1 First aid and emergency medical care should be provided for onsite to preserve life and to minimize injury and suffering.
- 1.2 The medical emergency response team will take appropriate action as directed by the nurse.
- 1.3 A doctor should be consulted, when in the nurse's judgment, further professional attention is needed.
- 1.4 The care of persons known or suspected to be associated with radiation exposure or contamination will be coordinated with the health physics representative. The essential aims of the medical-health physics team are:
 - a. Minimize injury and further radiation exposure to the victim.
 - b. Protect attending personnel from excessive and unnecessary radiation exposure.
 - c. Control spread of radioactivity contamination.
 - d. Assess and document the patient's radiological exposure.
 - e. Immediate lifesaving and disability limiting procedures will take precedence over noncritical decontamination and dosimetry assessment procedures.

2.0 IRRADIATED-NONCONTAMINATED

- 2.1 Remove the victim from further exposure providing only essential first aid in the process, then direct attention to medical care of other physical injuries.
- 2.2 Medical care of the radiation exposure is governed by the medical status of the patient and the findings of the health physicist. In most cases the treatment of illness or physical injury takes precedence over treatment for radiation exposure.
- 2.3 Individuals who have received an acute total body dose of less than 5 rem usually require no medical examination or treatment for the radiation exposure.
- 2.4 Individuals who have received an acute total body dose of between 5 and 75 rem radiation should have hematological studies performed to detect chromosomal aberrations and other changes in other blood constituents. Attachment 4 gives laboratory directions for drawing blood samples for chromosomal and hematological studies.

PATIENT CARE GUIDELINES

2.0 IRRADIATED-NONCONTAMINATED (continued)

2.5 For individuals who have received an acute total body dose greater than 75 rem, hospitalization should be considered and arrangements made for evaluation by a nuclear medicine specialist regardless of physical injuries or illnesses. Blood studies should be drawn per directions (Attachment 4). If the patient is ill or injured, he should be transported to Colonial Manor or Decatur General Hospital with the information that this patient has received an acute total body dose greater than 75 rem. It is recommended that the attending physician consult REAC/TS. If the patient is not seriously ill or injured enough to require hospitalization for physical illness or injury, consultation with REAC/TS should be obtained through a TVA medical office. At the recommendation of REAC/TS, referral may be made to Oak Ridge Hospital of the United Methodist Church where the patient could be observed and treated by the physicians on the REAC/TS team.

3.0 CONTAMINATED PATIENTS

3.1 The patient should be given initial emergency care by the medical emergency response team. All decontamination that the medical status of the patient will allow should be accomplished. The appropriate sequence of care must be determined on an individual basis by the medical-health physics team. The injured person will be transported and treated in one of two ways:

- a. If the person is severely injured, they may be transported directly to Colonial Manor or Decatur General Hospital. Every reasonable effort should be made to reduce the radioactive contamination level to less than .5 R per hour at one foot. Spread of contamination may be minimized by removing the patient's excess clothing and wrapping him in a sheet, as his injuries permit.
- b. If cases of less severe injuries, the patient will be sent to the personnel decontamination facility in the service building (or radwaste building, if stretcher-bound) treated in the emergency treatment area or transferred to Colonial Manor or Decatur General Hospital.

3.2 The health physicist will collect, identify, label, and analyze all biological specimens as required and deemed necessary. He will obtain the injured person's personal dosimetry and replace with equivalent dosimetry if appropriate.

3.3 The health physics group will control contamination during transportation to the receiving hospital.

INSTRUCTION FOR LYMPHOCYTE CULTURING FOR CYTOGENETIC
DOSE ESTIMATION OF LOW-LEVEL WHOLE BODY ACUTE
OVER EXPOSURE TO IONIZING RADIATION

TVA has an agreement with the Oak Ridge Associated Universities Cytogenetics Laboratory (ORAU) to perform lymphocyte culturing to provide cytogenetic estimate of radiation dose.

Upon the order of a responsible physician and after arrangements have been coordinated with ORAU/REAC/TS, concerning the transport and arrival time of the specimen, the following procedure should be followed: The blood should be collected in a red top vacutainer (Cat No. 2-657-3, BD No. 4671) to which has been added 0.1 ml of sodium heparin (Upjohn 1000 units). Mix by inversion 30 times in 30 seconds immediately after collection.

Blood samples must be kept cool (not frozen) during shipping and storage. The vacutainers should be packed in Styrofoam chips, packing straw, etc. Surround packing material with a coolant and ship in a well-insulated container. Do not put the tubes directly on any coolant that may freeze the samples.

Identify the samples with the patient's name, birthdate, social security number, date, and location.

Samples should be shipped by the fastest available carrier, such as TVA courier, air or commercial carrier to:

ORAU/REAC/TS
Cytogenetics Laboratory
Attn: Gayle Littlefield or Gene Joiner
Medical and Health Sciences Division
Oak Ridge, Tennessee 37380
(615) 576-3261

LYMPHOCYTE CULTURING

Collection Method

Type Container

Blood _____
Serum _____
Plasma _____
Urine _____
Sputum _____
Other _____

Red top vacutainer #4671 to
which has been added 0.1 ml
of sodium heparin. (Upjohn
1000 units)

When: Upon order of responsible TVA M.D. in coordination with REAC/TS, after
confirmed exposure exceeding 5 rem of total body ionizing radiation.

Frequency: Once, unless otherwise directed by responsible medical authority.

Special Instructions: Refrigerate, but do not freeze in shipping containers
provided for this purpose. See attached memorandum.

Where To Send: ORAU/REAC/TS Cytogenetics Laboratory
Attn: Gayle Littlefield or Gene Joiner
Medical and Health Sciences Division
Oak Ridge, Tennessee 37380

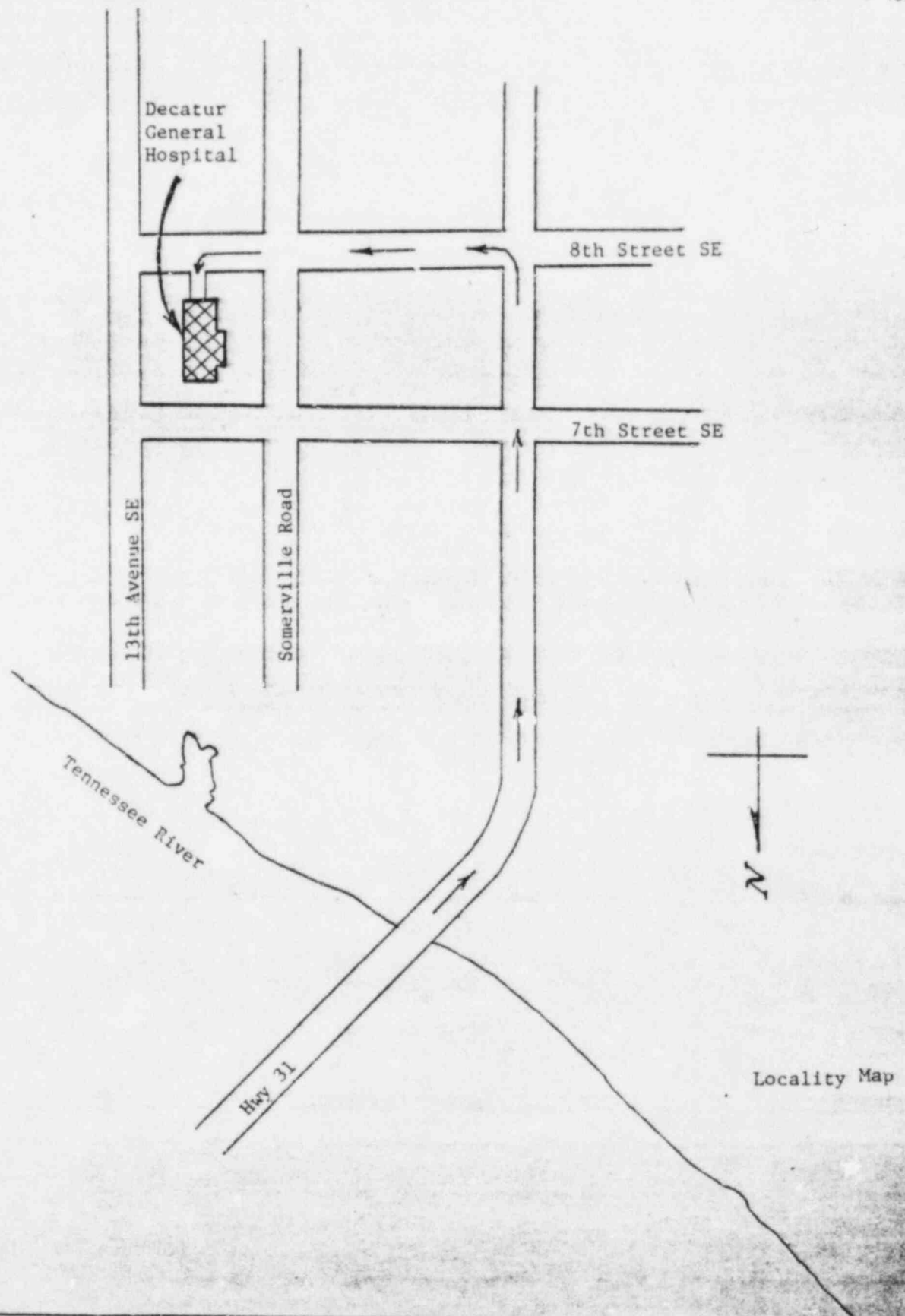
Special Notice: Notify Earl Jordan at extension 2853, Chattanooga.

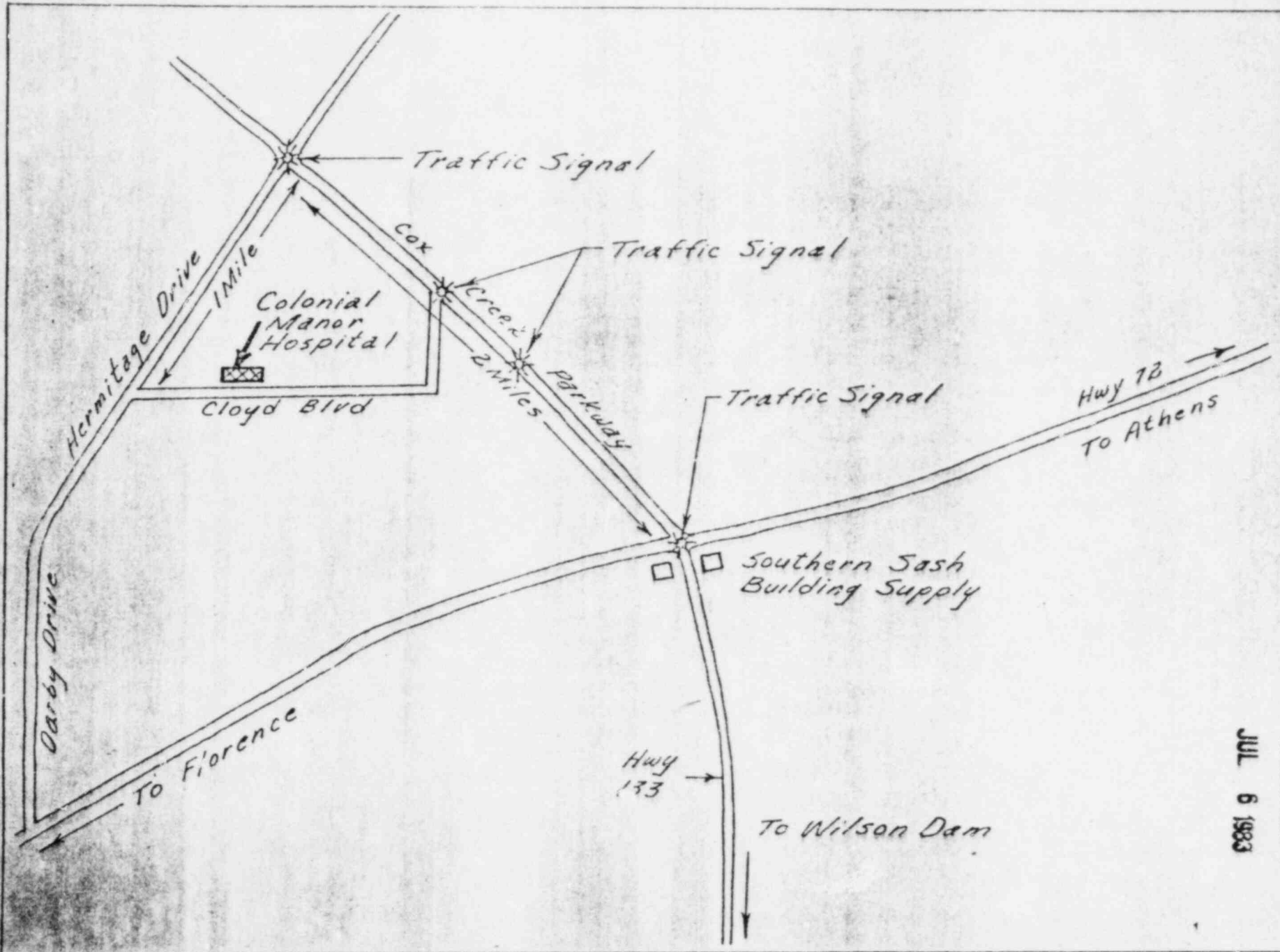
Report Results To: Robert L. Craig, M.D.
Medical Director
320 Edney Building
Chattanooga, Tennessee 37401
(615) 751-2091

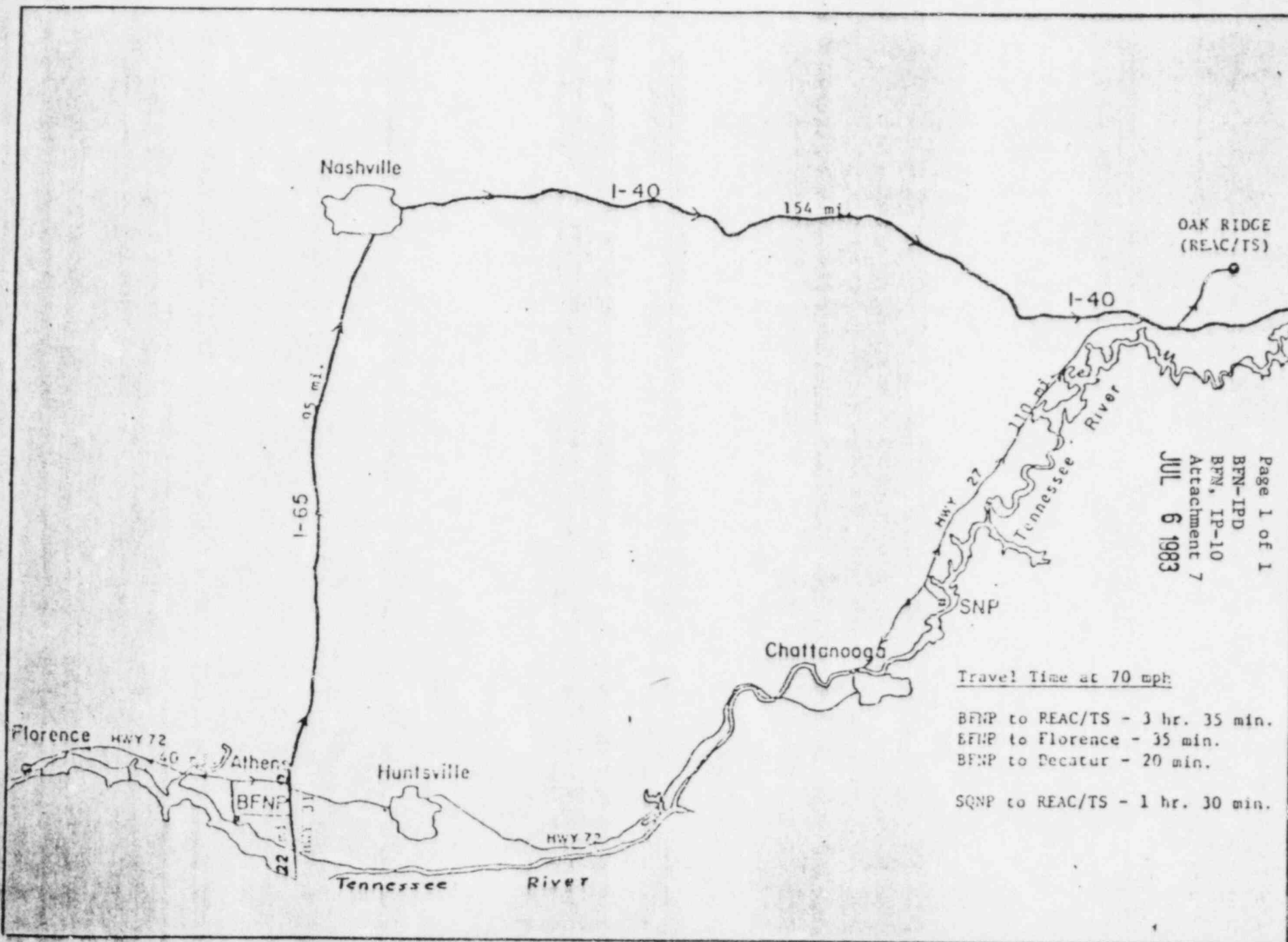
Label Information:

_____ Yes _____
SS Number Name
_____ No _____
Birthdate Race Sex Loc. No. Time Code

LYMPHOCYTE CULTURING







Page 1 of 1
BFN-IPD
BFN, IP-10
Attachment 7
JUL 6 1983

AREA	Stretcher With Straps	Lifting Bridle	Lifting Rope	Backboard With Straps	Blanket	Special Stretcher	Stretcher Cabinet Condition
REACTOR BUILDING	x	x	x	x	No	No	No Cabinet
Cabinet No. 1 U-1 Control Rm. Fan Rm.	x	x	x	x	No	No	No Cabinet
Cabinet No. 2 U-3 Reactor Roof Bldg.	x	x	x	x	x	No	
Cabinet No. 3 El. 664 Refuel Floor	x	x	x	x	x	No	
Cabinet No. 4 El. 664 Elevator U-1	x	x	x	x	x	No	
Cabinet No. 5 El. 639 Elevator U-1	x	x	x	x	x	No	
Cabinet No. 6 El. 639 Elevator U-2	x	x	x	x	x	No	
Cabinet No. 7 El. 621 Elevator U-1	x	x	x	x	x	No	
Cabinet No. 8 El. 621 Elevator U-2	x	x	x	x	x	No	
Cabinet No. 9 El. 593 Elevator U-1	x	x	x	x	x	No	
Cabinet No. 10 El. 593 Elevator U-2	x	x	x	x	x	No	
Cabinet No. 11 El. 565 Elevator U-2	x	x	x	x	x	No	
Cabinet No. 12 El. 565 U-2 Drywell	x	x	x	x	x	No	
Cabinet No. 13 El. 565 Elevator U-1	x	x	x	x	x	No	
Cabinet No. 14 El. 519 Elevator U-1	x	x	x	x	x	No	
TURBINE BUILDING							
Cabinet No. 15 El. 617 Elevator	x	x	x	x	x	No	
Cabinet No. 16 El. 526 Elevator	x	x	x	x	x	No	
Cabinet No. 17 El. 565 U-1 Airlock	x	x	x	x	x	No	
Cabinet No. 18 El. 565 Elevator C-Bay	x	x	x	x	x	No	
Cabinet No. 19 El. 565 U-2 Airlock	x	x	x	x	x	No	
Cabinet No. 20 El. 565 T9 5-Line	x	x	x	x	x	No	
OTHER LOCATIONS							
Cabinet No. 21 El. 565 Radwaste W26	x	x	x	x	x	No	
Cabinet No. 22 El. 565 DPP Shop	x	x	x	x	x	No	
Cabinet No. 24 U-1 3C Control Bay	x	x	x	x	x	No	
Cabinet No. 25 Communication Room 1C	x	No	No	x	x	No	
Cabinet No. 26 El. 557 U-1 Fire Equip Cage	No	No	No	No	No	Pol&Alum	No Cabinet
Cabinet No. 27 DGB-1 CO ² Tank	x	No	No	x	x	No	
Cabinet No. 28 Intake El. 550	x	x	x	x	x	No	
Cabinet No. 29 Power Stores El. 580	x	No	No	x	x	No	
Cabinet No. 30 Gatehouse C.A.S.	x	No	No	x	x	No	No Cabinet
Cabinet No. 31 Radwaste El. 546	x	No	No	x	No	No	No Cabinet

BFNP STRETCHER LOCATION AND TYPE

<u>Location</u>	Stretcher With Straps	Lifting Bridle	Lifting Rope 50 Feet	Backboard With Straps	Blankets	Descent Device	25 Foot Section Rope	Respirators With Canisters	Cabinet Condition
Cabinet No. 1 El. 565 U1 Torus & Drywell - Emergency Cabinet	x	x	x	x	3	x	2	6	
Cabinet No. 2 El. 565 U2 Torus & Drywell Emergency Cabinet	x	x	x	x	3	x	2	6	
Cabinet No. 3 El. 565 U3 Torus & Drywell Emergency Cabinet	x	x	x	x	3	x	2	6	

EQUIPMENT FOR TORUS AND DRYWELL EVACUATION

Following equipment shall be located in cabinet between drywell and torus entrance (elevation 565):

- . Stokes vertical stretcher with straps
- . Backboard
- . Two 25-foot sections of rope (guide rope)
- . Descent device
- . Three blankets
- . Six respirators (full face mask with canisters)
- . 50-foot safety rope

INSTRUCTIONS FOR TORUS

Upon entry to torus, before work begins:

- . Install hoisting device above personnel hatch and verify that the hoist is in proper working order.
- . Locate a vertical stretcher and backboard on the catwalk near the personnel hatch.
- . Install and check the phone line at the catwalk to assure direct communication with the hoist operator.

EVACUATION ROUTE FROM TORUS

- . Obtain a qualified person to operate hoist.
- . Lower hook over catwalk handrail to bottom of torus.
- . Transport injured employee to area under personnel hatch.
- . Attach stretcher to hook.
- . Establish communications with hoist operator.
- . Lift stretcher up to catwalk and out the personnel hatch using hoist.

EVACUATION ROUTES FROM DRYWELL

Third, Fourth, and Fifth Elevations

- . Transport injured employee to opening around reactor vessel (330° - 340°).
- . Attach stretcher to electric hoist (or substitute descent device) attached to pipe above opening (330° - 340° on fifth elevation).
- . Lower to second elevation.

Second Elevation

- . Transport stretcher down handrails of ships ladder using electric hoist.

EVACUATION ROUTES FROM DRYWELL (continued)

First Elevation

- . Transport stretcher to personnel hatch.
- . Remove injured from drywell through hatch.

Basement

- . Transport injured employee to ship's ladder.
- . Transport stretcher up handrails of ship's ladder to first elevation using electric hoist.

ATTACHMENT B

SAMPLE COVER SHEET FOR PLANT PROCEDURES

TENNESSEE VALLEY AUTHORITY
BROWNS FERRY NUCLEAR PLANT

REP, BFN, IP-26

PROCEDURE TYPE AND NUMBER
TORNADO EMERGENCY PROCEDURE
PROCEDURE TITLE
TOTAL PLANT
AFFECTED UNIT

History of Revisions

Revision Date Affected Pages

7/6/83

1 ALL

PREPARED/REVISED BY:

William A. Rohrer, Jr.

SUBMITTED BY:

[Signature]
Supervisor

FOR REVIEW DATE:

J. R. Pittman 7-6-83

APPROVED:

J. A. Lipp
Plant Superintendent

REASON FOR CURRENT REVISION:

New procedure.

*Addendum:

jmc

TORNADO EMERGENCY PROCEDURE

1.0 PURPOSE

- 1.1 To prescribe the actions to be taken during a tornado watch and tornado warning.

2.0 PROCEDURE

2.1 Notification

Notification may be by any of the following:

- (a) Wilson Dispatcher
- (b) Plant personnel (verify by TV/weather radio)
- (c) National Weather Service (weather radio)
- (d) Other sources (verify by TV/weather radio)

NOTE: Possible "Wind Speed High" at 45 mph (panel 9-20)

2.2 Tornado Watch

NOTE: A tornado watch is a precautionary condition indicating a tornado is a possibility.

- 2.2.1 Shift engineer notifies public safety service of tornado watch and makes every effort to have an additional shift engineer on site whose duties will be to help coordinate electrical switching and other plant activities.
- 2.2.2 Shift engineer reviews appropriate abnormal operating instructions (OI-57) for implementation in case of building or electrical distribution system damage. Particular attention is to be given to possible loss of off-site power.
- 2.2.3 Shift engineer will have reactor building crane, bridge, and trolley secured against bumpers using tie-downs.
- 2.2.4 Shift engineer to notify refuel floor personnel to suspend fuel handling operations.
- 2.2.5 Public safety service to be alert for conditions to become worse and be prepared to implement tornado warning actions.

2.3 Tornado Warning

NOTE: A tornado warning condition indicates that a tornado has been sighted in the area, (within approximately 35 mile radius of BFN).

2.3.1 Shift engineer immediate actions:

NOTE: The duty shift engineer has primary responsibility for implementation and coordination of this procedure and may exercise the authority to request needed assistance from other sections, as deemed necessary, in the initiation and implementation of this procedure.

(INITIALS)

- ___ Initiate IP-2.
- ___ Notify public safety service of tornado warning. Request they activate their portion of this procedure.
- ___ Notify plant superintendent's office to clear office building.
- ___ Evacuate all personnel from refuel floor operations except personnel required to perform tie-down of reactor building crane, bridge, and trolley. Tie-down crew to evacuate refuel floor when crane is secured.
- ___ Notify all control room operating personnel of the tornado warning.
- ___ Position personnel for emergency switching on electrical distribution system.
- ___ Notify water treatment plant personnel of tornado warning. Request they stay inside until further notice.
- ___ Notify Hypochlorite (Operations Training) Building personnel of tornado warning. Request they seek shelter in turbine building until further notice.

2.3.2 Public safety service immediate actions:

- ___ Notify motor patrol of tornado warning. They should direct all workers in the yard, cooling tower area, and outside the protected area back inside the fence and then to designated tornado shelter areas.
- ___ Notify PSS field personnel of specific actions to be taken per PSSIL 17.33.
- ___ Evacuate all personnel from the following list of external buildings by dispatching officers, and direct them to the service building and turbine bay, 565 elevation.
 - ___ Trailers on west side of powerhouse
 - ___ Plant shop building 3 (north side of office building)
 - ___ Firing range (contact by radio if available)

(INITIALS)

— Notify the following by telephone to evacuate to tornado shelter areas:

	<u>Pax</u>	<u>DIM or Bell</u>
— . Public safety chief in administrative office building outside security fence (when building is occupied)	---	---
— . Field services section supervisor or assistants	701/715	714
— . Construction Services supervisors or foremen at Warehouse 14 (direct them to Biotherm Facility)	267/378	(Bell 729-6204)
— . Biotherm research facility supervisor or personnel (direct them to remain in facility)	341	(Bell 729-8574)
— . Personnel in Warehouse 12 (east side of powerhouse)	793/794/789	748
— . Personnel in greenhouse (direct them to Biotherm)	---	(Bell 729-6102)
— . Low level radwaste facility	449	---

2.4 All Clear - Following Tornado Watch

— Shift engineer notify public safety and all other personnel notified in step 2.2.

2.5 All Clear - Following Tornado Watch

- 2.5.1 Shift engineer to announce "All Clear" on plant public address system. Cancel IP-2, if appropriate.
- 2.5.2 Shift engineer to notify public safety by phone.
- 2.5.3 Public safety service shall notify all personnel notified in step 2.3.2 and those gathered in tornado shelter areas of the "All Clear" condition.

2.6 Operator Action Following Tornado or High Wind

2.6.1 Inspections by shift engineer/site emergency director.

Make inspection of switchyard and transformer yard for damage.

Make inspection of site area for any damage.

2.6.2 Based on results of damage inspections, the shift engineer/site emergency director will initiate maintenance and restoration actions. When conditions permit, resume normal activities. Log events and actions in daily journal.

Revision Log Sheet

Revision Date: JUL 07 1983

This log sheet must be retained as the last page of the Central Emergency Control Center Implementing Procedures Document.

Inserted by: _____ Date Inserted: _____

Pages to be Removed

New Pages to be Inserted

<u>Part</u>	<u>Page Number</u>	<u>Revision</u>	<u>Part</u>	<u>Page Number</u>	<u>Revision</u>
Table of Contents	1 of 1	1	Table of Contents	1 of 1	2
IP-3	Cover Page	3	IP-3	Cover Page	4
Att. 1	1 of 1	3	Att. 1	1 of 1	4
IP-9	Cover Page	1	IP-9	Cover Page	Deletion
	1 of 10	1			
	2 of 10	1	IP-15	Cover Page	0
	3 of 10	1			
	4 of 10	1		Index	0
	5 of 10	1			
	6 of 10	1		1 of 12	0
	7 of 10	1		2 of 12	0
	8 of 10	1		3 of 12	0
	9 of 10	1		4 of 12	0
	10 of 10	1		5 of 12	0
				6 of 12	0
				7 of 12	0
				8 of 12	0
				9 of 12	0
				10 of 12	0
				11 of 12	0
				12 of 12	0
			Appendix A	1 of 1	0
			Appendix B	1 of 1	0
			Appendix C	1 of 1	0
			Appendix D	1 of 1	0
			Appendix E	1 of 1	0

CENTRAL EMERGENCY CONTROL CENTER PROCEDURES

- IP-1 CECC - Transportation Accident Involving a Shipment of Radioactive Materials from a TVA Facility
- IP-2 DNP Emergency Duty Officer/CECC Director/DNPEC Director - Notification of Unusual Event
- IP-3 CECC - Alert, Site Area Emergency, and General Emergency
- IP-4 CECC - Site Emergency--procedure deleted October 1982 (see IP-3)
- IP-5 CECC - General Emergency--procedure deleted October 1982 (see IP-3)
- IP-6 Division of Purchasing Radiological Emergency Procedure
- IP-7 Division of Medical Services Radiological Emergency Procedure
- IP-8 Office of the General Counsel Radiological Emergency Procedure
- IP-9 *(Deleted June 1983--Information Office Procedures for Abnormal Occurrences at Nuclear Power Plants)
- IP-10 Emergency Financial Support Procedures
- IP-11 CECC Training Requirements
- IP-12 CECC/DNPEC Security
- IP-13 Inclement Weather Procedure
- IP-14 TVA Board and General Manager Notification Procedure for All Classes of Radiological Emergencies
- ***IP-15 Information Office Procedures for Abnormal Events at Nuclear Plants

Attachment 1
Notification Check Sheet

1. Power Information Duty Officer (DNP)
2. Nuclear Security (DNP)
3. H. J. Green (DNP)
4. Hugh Parris (DNP)
5. J. A. Coffey (DNP)
6. H. L. Abercrombie (DNP)
7. NSRS Duty Engineer^{1,2}
8. Power Nuclear Safety Staff (DNP)¹
9. NSSS Vendor (REND)¹
10. INPO (REND)¹
11. DOE (REND)¹

☆☆

- *12. South Central Bell (REND)¹

NOTE: DNP--Indicates appropriate contact and number is located on the Division of Nuclear Power Notification Board.

REND--Indicates appropriate contact and number is located in the TVA Radiological Emergency Notification Directory.

¹Response to the emergency takes top priority. These notifications shall be made when there is time and staff to do so.

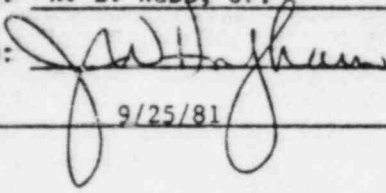
²Contact the Knoxville TVA operator, identify yourself and provide telephone number. Request that the operator page the NSRS duty officer and have him return your call.

REP-IPD

CECC - IP - 9

INFORMATION OFFICE OPERATING PROCEDURES
FOR
ABNORMAL OCCURRENCES AT NUCLEAR POWER PLANTS

Prepared By: W. E. Webb, Jr.

Approved By: 

Date: 9/25/81

<u>Rev. No.</u>	<u>Date</u>	<u>Revised Pages</u>	<u>Rev. No.</u>	<u>Date</u>	<u>Revised Pages</u>
<u>0</u>	<u>9/25/81</u>	<u>All</u>	<u> </u>	<u> </u>	<u> </u>
<u>1</u>	<u>OCT 26 1982</u>	<u>All</u>	<u> </u>	<u> </u>	<u> </u>
<u>PROCEDURE DELETED JULY 1983</u>			<u> </u>	<u> </u>	<u> </u>

Information Office Procedures for Abnormal Events
at Nuclear Plants

INDEX

	<u>Section</u>
Purpose	1.0
Scope	2.0
References	3.0
Abbreviations and Definitions	4.0
Responsibilities and Staffing	5.0
Procedures - Occurrences That Do Not Require Activation of Near Site Press Center	6.0
Procedures - Occurrences That Require Activation of Near Site Media Center	7.0
Telephone Listings	8.0
Letters of Agreement, Contracts, Supporting Documentation and Lists of Equipment	Appendix A
Diagram CECC Information Staff	Appendix B
Diagram BFNP NSMC	Appendix C
Diagram SNP NSMC	Appendix D
Diagram WBNP NSMC	Appendix E

Information Office Procedures for Abnormal
Events at Nuclear Plants

1.0 PURPOSE

These procedures are designed as guidance for Information Office personnel and support personnel during an abnormal event at a TVA nuclear plant to ensure timely and accurate release of information to the public.

2.0 SCOPE

These procedures cover anticipated requirements for the Information Office and support personnel during abnormal conditions at TVA nuclear plants and supplement the REP and IPDs of NUC PR. Because of the character of news and of media/public interest, it is impossible to include procedures for every event that might occur. In that respect, these procedures do not cover all actions that should be taken before, during, and after an incident, but rather are designed to serve as a general guideline to provide consistency to Information Office practices during an abnormal event at a TVA nuclear plant.

Much flexibility is built into these procedures. The procedures need not be followed exactly as long as the spirit and purpose are met. It is noted that media interest--not necessarily the seriousness of the event--may dictate actions by the Information Office.

3.0 REFERENCES

REP and all IPDs.

4.0 ABBREVIATIONS AND DEFINITIONS

CECC - Central Emergency Control Center (Chattanooga)

CECC Information Staff - The staff stationed in the CECC that works under the direction of the Director of Information during a nuclear event. It consists mostly of members of the Power Information Staff with support from employees of the Office of Power and NUC PR.

DNPEC - Division of Nuclear Power Emergency Center

EOC - The Emergency Operations Center for the State in which the nuclear plant is located.

FEMA - Federal Emergency Management Agency

IPD - Implementing Procedures Document

KEC - Knoxville Emergency Center

NSMC - Near Site Media Center

News Desk - The office of the Knoxville Information Office that serves on a day-to-day basis as the primary contact point for the news media.

NUC PR - Division of Nuclear Power

NRC - Nuclear Regulatory Commission

ODS - Operations Duty Specialist

Q & A - Question and Answer

REP - Radiological Emergency Plan

5.0 RESPONSIBILITIES AND STAFFING

- 5.1 The overall responsibility for handling information requirements for any nuclear event rests with the Director of Information. He may use his own discretion to determine the responsibilities for individual employees and their duties described in the REP and in the procedures in this document.
- 5.2 The TVA Information Office has the responsibility for providing the public and the news media with timely, accurate information on the event. The appropriate State Information Office, working with TVA, has the overall responsibility for public information regarding State activities, including such items as citizen evacuation and radiation monitoring away from the plant site.
- 5.3 At the direction of the Director of Information, the Assistant Director of Information has overall supervisory responsibility over the information staffs involved in a nuclear event.
- 5.4 The Manager of Power serves as chief spokesman for TVA at media briefings. In his absence, the Deputy Manager of Power is the spokesman. In his absence, the Director of Information shall designate an appropriate spokesman.
- 5.5 When the CECC is activated, the Director of the CECC has overall responsibility for handling the nuclear emergency for TVA. He consults with the Director of Information on information matters, such as activation of the NSMC and appropriate times to conduct media briefings. He also has sole responsibility within the CECC for reviewing TVA news statements prepared by the CECC Information Staff.
- 5.6 The Power Information Staff, with additional support provided by the Office of Power, is responsible for monitoring the situation from the Office of Power and the CECC. The staff writes all news statements and secures approval of the statements from the Office

of Power, or when the CECC is activated, from the Director of the CECC. In addition, at the direction of the Director of Information, the Power Information Staff releases written statements to the news media and assists the Chattanooga media in covering the nuclear event.

- 5.7 The Knoxville Information Office is responsible for the initial notification of the General Manager, Board of Directors, the Washington Office, the district administrator in whose area the plant is located, and other top TVA officials as required. The staff is also responsible for manning the News Desk and handling media inquiries during a nuclear incident. If the NSMC is activated, the staff will provide primary staffing for it.
- 5.8 The Broadcast Staff acts under the direction of the Director of Information and provides appropriate services to the news media. If the NSMC is activated, the staff is in charge of setting up, manning, and monitoring all audiovisual and broadcast equipment.
- 5.9 The Communication Services Staff provides, at the direction of the Director of Information, information to TVA employees about the event and assists the News Desk Staff.
- 5.10 The Citizen Action Office Staff serves as rumor control, handling nonmedia calls from the public and relaying information provided by the News Desk.
- 5.11 The Manager of Nuclear Information shall be responsible for reviewing and updating these procedures. Such reviews shall be made no less than annually. He is also responsible for ensuring the needed materials are available for the staffing of the CECC Information Staff office.
- 5.12 The Information Office Field Spokesman for the Office of Agricultural and Chemical Development, is responsible for monitoring the situation from the MSEC, and reports to that facility if the Director of Information decides it is necessary.
- 5.13 The Information Office Field Spokesman for the Office of Engineering Design and Construction, is responsible for monitoring the situation from the KEC and reports to that facility if the Director of Information decides it is necessary.
- 5.14 The Plant Information Officer is responsible for providing information to the Power Information Staff and the Information Office as required. During the initial hours of an emergency, he reports to the plant if the plant's emergency response plan is activated. He is responsible for notifying the appropriate State agencies of any

planned news release. At the direction of the Director of Information, he takes action to activate the NSMC and provides assistance to the local media until the News Desk Staff from Knoxville arrives on the scene. He also is responsible for ensuring the needed materials and equipment are available for the staffing of the plant NSMC and for updating emergency media kits and other emergency information material at least annually.

- 5.14.1 Once the NSMC is in operation and the CECC fully activated, the Plant Information Officer reports to the following location:
 - 5.14.1.1 The Browns Ferry Information Officer reports to the Alabama EOC to serve as a liason between the Information Office and the State officials. He works under the supervision of the Director of the NSMC. In the event of an emergency at Sequoyah or Watts Bar, he may be directed to report to the Tennessee EOC in Nashville.
 - 5.14.1.2 The Sequoyah Information Officer reports to the CECC and joins the CECC Information Staff in preparing written news statements of the event.
 - 5.14.1.3 The Watts Bar Information Officer reports to the NSMC and assists the Director of the NSMC.
- 5.15 If the NSMC is fully activated, the Director of the CECC shall designate two persons to provide technical information and advice to the Manager of Power and the Director of Information. These persons shall be designated Technical Advisor--Plant Operations and Technical Advisor--Radiological Health. They shall be stationed at the NSMC.
- 5.16 If the CECC is activated, the CECC Director shall designate one person to serve as a technical advisor to the CECC Information Staff. That person shall ensure the timely flow of information from the CECC/DNPEC to the CECC Information Staff, advise the Information Staff writers, and be available for telephone consultations with the Manager of Power and other NSMC personnel to offer advice when requested.
- 5.17 Depending on the severity of the incident, the Information Office may have to provide coverage on a 24-hour basis for an extended period. The Director of Information, in consultation with the Assistant Director of Information for Media Relations, will designate the specific assignments for Information Office personnel and their shifts. As a rule, during the emergency, persons will work 12-hour shifts.
- 5.18 Assistance from other offices and divisions will be requested as needed.
- 6.0 PROCEDURES - Occurrences that do not require activation of the NSMC.
- 6.1 TVA Nuclear Information Policy is to fully inform the news media and the public as soon as possible of any unusual happenings at nuclear plants. Events that may not be included in the REP could be considered newsworthy and, therefore, fall within these procedures.

6.2 Initial Notification

- 6.2.1 The Plant Information Officer is kept apprised by the Plant Superintendent or his designee of any unusual happenings at the plant. In addition, NUC PR keeps the Manager of Nuclear Information and the Manager of Power Information informed on a day-to-day basis of happenings at the plant. The ODS of the Office of Power also notifies the Power Information Duty Officer of any major change in status of the plant.
- 6.2.2 The Plant Information Officer notifies the Manager of Nuclear Information, the Manager of Power Information, or the Power Information Duty Officer, in that order, who in turn notifies the Knoxville Information Office. The order for notifying the Knoxville Information Office is as follows:
1. Assistant Director of Information, Media Relations
 2. Director of Information
 3. Manager of Media Relations
 4. Manager of News Desk
 5. Information Office Duty Officer
- 6.2.3 Depending on the nature of the event, those notified will decide if immediate notification of the General Manager, Board of Directors, and the news media is necessary.
- 6.2.4 If immediate notification of the news media is determined to be necessary, the Power Information Staff will prepare a statement that will be reviewed, if at all possible, by NUC PR and the Manager of Power. Then it will be transmitted to Knoxville for release in a manner determined appropriate by the Director of Information. If review is not possible or practical, the Manager of Power Information shall assume responsibility for approving the release for the Office of Power.
- 6.2.5 In the event of a radiological emergency away from the plant site, the Director of Information will designate an Information Office Staff member to go to the scene, if that is deemed necessary.

6.3 CECC

If the CECC is activated, the Power Information Staff will activate the CECC Information Staff and generate news statements there. Once prepared, the news statements will be reviewed and approved by the Director of the CECC, and transmitted to Knoxville for release. The following staffing is recommended for full activation of the CECC Information Staff (lesser levels of staffing should be made at the determination of the CECC Information Director). Staffing for each 12-hour shift is as follows:

- 6.3.1 CECC Information Director--Stationed in the CECC near the Director of the CECC. He has overall responsibility for public information matters in the CECC and supervises the CECC information staff. He consults with the CECC Director, the Manager of Power and the Director of Information to make sure information is released in an accurate, objective, and timely manner.

- 6.3.2 Supervisor--At the direction of the CECC Information Director, he oversees activities of the CECC Information Office. Works closely with the Director of the CECC and the Director of the DNPEC to monitor the accident. In consultation with the Director of the NSMC, determines when to prepare news statements and supervises and approves their writing. Obtains clearance from the Director of the CECC of all written statements. Schedules staff assignments for around-the-clock staffing. Consults with NSMC management to schedule briefings, etc.
- 6.3.3 Technical Advisor--Provided by NUC PR, he acts as liaison between the CECC Information Office and the CECC managers. Provides technical assistance to writers working on news statements and keeps the CECC Information Office apprised of all developments concerning the accident.
- 6.3.4 Writers (2)--As assigned by the CECC Information Office Supervisor, gather information from the CECC officers and the technical advisor and prepare written statements based on that information. May be called upon to perform other duties as necessary.
- 6.3.5 NRC-State Coordinator--Once news statements have been approved by the Director of the CECC, the NRC-State Coordinator ensures their prompt transmittal to the proper State and NRC officials for review. When questions or changes are called for, he relates that information to the writers and supervisors. He also works with the State and NRC to receive information about public information announcements those agencies are preparing. These duties may, if necessary, be divided among two people.
- 6.3.6 Local Media Coordinator--Before activation of the NSMC, works with local news media to keep them apprised of developments at the plant and the CECC. Also serves to answer media questions about operations of the CECC once the NSMC is activated and performs other duties as necessary.
- 6.3.7 Q & A Editor/NSMC Coordinator--Interfaces with NSMC information officers to gather any questions raised by the media about developments that can't be answered at the NSMC and relays those questions back to the proper person. Monitors the flow and adequacy of information between the NSMC and the CECC Information Office.
- 6.3.8 Clerks/Secretaries--The number of clerks and secretaries needed in the CECC Information Office will be determined by the CECC Information Office Supervisor. At maximum levels they include:
 - 6.3.8.1 Jacquard Clerks (2)--They type into a Jacquard all news releases and follow their transmittal to the proper sources.
 - 6.3.8.2 Telecopier Clerk--Handles all telecopier transmittals from the office.
 - 6.3.8.3 Telephone Clerk--Answers incoming telephone calls and performs other jobs as directed by the supervisor.

- 6.3.8.4 Q & A Clerk--Assists the Q & A Editor/NSMC Coordinator in answering questions and coordinating activities with the NSMC.
- 6.4 For non-REP items that are being announced to the media by the Information Office, the Plant Information Officer has initial responsibility to inform the appropriate State officials, as outlined in the letters of agreement in the appendix. If the Plant Information Officer is not available, the Manager of Nuclear Information will assume that duty; in his absence, the Manager of Power Information; and in his absence, the Power Information Staff Duty Officer. Once the CECC is activated, responsibility for keeping the State Information Officer informed shifts to the CECC Information Staff State Coordinator.
- 6.5 The Assistant Director of Information, Media Relations, or his designee on the Knoxville News Desk, has the responsibility of coordinating news releases with the NRC public affairs office until such time as the CECC is activated. Once the CECC is activated, responsibility for keeping the NRC informed shifts to the CECC Information Staff NRC Coordinator.
- 6.6 The News Desk shall serve as the central control center for Information Office activities. Depending on the severity of the event and the number of media calls, it will be staffed as necessary, with the determination being made by the Director of Information and the Assistant Director of Information. The News Desk shall notify at a minimum the following:
1. The TVA Board and General Manager.
 2. Any senior Information Office employee not already notified.
 3. The NRC public affairs office (until such time as the CECC is activated).
 4. The major wire services, and media in the vicinity of the affected plant.
 5. Any others deemed necessary by the Director of Information.
- 6.6.1 As a general rule, the News Desk should be activated whenever an Alert or higher classification of event is declared, and when the CECC is activated. The first statement prepared by the Power Information Staff and issued by the News Desk should be brief and should be released with all possible speed. It should acknowledge that an event has occurred, and that additional information will be forthcoming.
- 6.7 Neither in print nor orally will Information Office personnel speculate on the cause or consequences of the incident.
- 6.8 Upon notification that the News Desk has been activated, the Chief of the Broadcast Staff will begin notifying his staff. The staff will begin making preparations to transport audiovisual equipment and personnel to the NSMC in the event its activation is ordered. The staff also will provide assistance to the News Desk in handling broadcast media requests.

- 6.9 Based on the severity of the incident, the Director of Information may order the staffing of the KEC and the MSEC. However, such staffing is not necessary for the Information Office to perform its duties. The Director of Information may also deem it necessary to request assistance from the Employee Communications Staff and from the Citizen Action Office to provide employee information and rumor control.
- 6.10 As calls come into the News Desk, they will be handled by News Desk personnel in the normal manner. Details will be provided from the prereleased news statements. If the caller wants additional information, efforts will be made to provide that information. The CECC Information Staff can be contacted by the News Desk for those additional details. Inquiries regarding offsite evacuation or other State matters will be referred to the appropriate State agencies.
- 6.11 Updated news statements shall be issued periodically as needed. At a minimum, statements should be updated at least every two hours, if only to report that "no change" has occurred since the last statement.
- 6.12 The nuclear plant status report tape and news line tapes should be updated by News Desk personnel each time a new statement is released. All new statements should be given to the Citizen Action Office for rumor control purposes.
- 6.13 Requests by the media for personal interviews or for tours of TVA facilities will be handled through the News Desk. The requests will be coordinated with the Director of the CECC and Plant Superintendent.
- 7.0 PROCEDURES - Occurrences that require activation of the NSMC.
- 7.1 The procedures listed in the previous section will continue as long as necessary. However, if the condition of the plant worsens, or if media interest becomes so intense that, in the judgment of the Director of Information, it cannot be properly handled from the News Desk, the NSMC will be ordered activated.
- 7.2 The NSMC for Browns Ferry Nuclear Plant is the Calhoun Community College on U.S. 31 North near Decatur; the NSMC for the Sequoyah Nuclear Plant is the downtown Chattanooga YMCA; the NSMC for the Watts Bar Nuclear Plant is the Sweetwater Quality Inn on I-75.
- 7.3 As a general goal, the NSMC at Sequoyah and Watts Bar should be operational no less than four hours after the Director of Information orders them activated. The Browns Ferry NSMC should be operational no less than six hours after its activation is ordered.
- 7.4 Prior to ordering activation of the NSMC, the Director of Information will consult with the Director of the CECC and appropriate State information officers, if feasible.

- 7.5 Equipment for the NSMC will be preboxed and ready for shipment. It is stored in Knoxville and Chattanooga. An inventory is listed in the appendix.
- 7.6 Each State affected by the accident has agreed to participate with TVA in the NSMC, as has the NRC. Once the Director of Information orders activation of the NSMC, the Information Office person who at that time is coordinating information releases with those agencies shall notify those agencies that the NSMC is being activated and invite them to dispatch personnel to staff it.
- 7.7 The Plant Information Officer shall notify the owners/operators of the building of the NSMC to make arrangements for its use. Contracts with the owners are included in the appendix. He shall also ensure that South Central Bell is notified to activate telephone lines to the NSMC.
- 7.8 The Assistant Director of Information will determine who will report to the NSMC. He will make arrangements to have all the equipment that is stored in Knoxville shipped immediately to the center. The following is a listing of the maximum expected staffing of the NSMC. It is anticipated that in all but the most severe case, less staffing will be acceptable. Staffing levels will be determined by the Assistant Director of Information, who is in charge of the NSMC.
- 7.8.1 Chief Spokesman--The Director of Power or, in his absence, an Assistant Director of Power or another designee. This person serves as the Chief Spokesman for TVA during all news briefings. He consults with officials in the CECC and the TVA Director of Information to coordinate all statements and provide correct information. He is available to answer specific media questions when formal briefings are not being held.
- 7.8.2 Director of Information--The Director of Information has the responsibility for all information activities involving a nuclear emergency. He provides directions to both the Director of the NSMC and the CECC Information Office. He apprises the General Manager and the Board of Directors on all information matters. He consults with the Chief Spokesman before all briefings, and participates in those briefings, when necessary, with the Chief Spokesman.
- 7.8.3 Director of the NSMC--Is in charge of all activities at the NSMC. He supervises all Information Office personnel and support personnel assigned to the center. He chairs all staff meetings at the NSMC, and ensures that the needs of the State, NRC, and FEMA are met. He serves as the chief point of contact between the NSMC and the CECC Information Office.
- 7.8.4 Audiovisual Coordinator--The Chief of the Broadcast Staff or his designee. This person is responsible for ensuring the media briefing room is adequately equipped to accommodate the needs of broadcast media and the recording of all news briefings.

The Audiovisual Coordinator will see to it that an adequate number of personnel from the Broadcast Staff are available to perform the duties described.

- 7.8.5 Associate Director of the NSMC--Serves at the instruction of the Director of the NSMC, with primary responsibility in handling media needs and making sure proper arrangements are made for timely, comprehensive media briefings. Is in charge of building arrangements for the NSMC and coordinates activities of the TVA Broadcast Staff to meet media needs. Coordinates schedules of personnel assigned to NSMC and acts as NSMC "historian," keeping a log of all major events at the center.
- 7.8.6 Intergovernmental Affairs Coordinator--Serves at the instruction of the Director of the NSMC, with primary duties to coordinate NSMC operations with TEMA, NRC, and FEMA. Is responsible for ensuring that representatives from those agencies at the NSMC are kept abreast of all developments, shown copies of all written TVA news releases, and that TVA is shown copies of all written news releases of those agencies. Coordinates joint conferences of all agencies prior to formal briefings.
- 7.8.7 Technical Advisor--Plant Operations--Serves at the direction of the Director of the NSMC and acts as an assistant to the Chief Spokesman. In both staff conferences and formal briefings, advises the Chief Spokesman on technical matters dealing with the design and operation of the affected nuclear plant. At the direction of the Chief Spokesman and Director of Information, answers media questions dealing with technical matters. Is available for informal background briefing sessions with the media.
- 7.8.8 Technical Advisor--Radiological Health--Serves at the direction of the Director of the NSMC and acts as an assistant to the Chief Spokesman. In both staff conferences and formal briefings, advises the Chief Spokesman on technical matters dealing with the health and safety aspects of radiation. Works closely with State representatives to give out information on radiation releases from the plant. At the direction of the Chief Spokesman and Director of Information, answers media questions dealing with technical matters. Is available for informal background briefings with the media.
- 7.8.9 Information Officers (4 Positions)--Serve at the direction of the NSMC Director. Handle telephone calls from the media to the NSMC. Relay information to Knoxville and Washington. Answer questions from members of the media present. Assist in writing and distributing news releases; coordinating information with the Citizen Action Line, which will serve as the public "rumor control"; and assisting in other activities as instructed by the Director of the NSMC.

- 7.8.10. Q & A Coordinator--Coordinates questions from the media that cannot be answered by the information officers, technical advisors, or Chief Spokesman. Dispatches those questions to the CECC Information Office and makes sure answers are provided and distributed to the reporter.
- 7.8.11 Artist--Serves the Chief Spokesman and the technical advisors by providing sketches that might be needed during media briefings.
- 7.8.12 Logistics Coordinator--In charge of all logistics arrangements for the NSMC, including staff transportation and lodging, equipment movement and procurement, media shuttle service between the NSMC and the plant, supplying meals for all persons in the NSMC, getting cash advances for personnel who have to stay overnight, etc. Also works with the media to ensure that out-of-town reporters have adequate accommodations.
- 7.8.13 Receptionist--Works at the entrance to the NSMC. Registers members of the media who arrive and issues credentials. Records the telephone numbers of the reporters on printed forms so they can be located in case of an emergency. Distributes press packages.
- 7.8.14 Clerks-Secretaries--The number of clerks and secretaries needed at the NSMC will be determined by the Director of the NSMC. They will include:
1. One secretary to operate the Jacquard computer and printer.
 2. One secretary to operate the fastfax telecopier machine.
 3. One clerk to assist the Q & A Coordinator.
 4. Two clerks to answer telephones, take messages, and route calls.
 5. One chief clerk assigned to the Director of Information and the Director of the NSMC.
- 7.8.15 Transportation Coordinator--Works with Logistics Coordinator to provide media transportation to and from the plant. Also provides staff transportation as needed.
- 7.9 The Director of the NSMC may call upon support personnel from other TVA offices and divisions as necessary to ensure adequate staffing of the NSMC.
- 7.10 Throughout the activation of the NSMC, the News Desk in Knoxville will continue to be operated, as will all auxiliary operations, such as the Citizen Action Line. The Director of Information shall determine the necessary staffing levels of these operations.
- 7.11 The Director of Information may dispatch an Information Office representative to the plant site. That person would be stationed at or near Public Safety Service roadblocks to the plant to meet with any media that attempts to gain access to the plant area.

- 7.12 The NSMC Transportation Coordinator will, at the direction of the Director of the NSMC, provide van shuttle service for the media between the NSMC and the plant. Such service shall be under control of the Information Office and shall allow the media to make pictures and conduct live news spots from the plant area.
- 7.13 Briefings at the NSMC will be conducted whenever necessary, but at a minimum of 2 every 24 hours. State, NRC, and FEMA representatives shall participate fully in the briefings, if they so desire. News releases shall be distributed at the NSMC whenever necessary.
- 7.14 The NSMC shall operate for the duration of the emergency, or until it is determined by the Director of Information that media interest has waned to such an extent that operation of the center is no longer necessary. It is possible that because of continuing media interest after the emergency, the NSMC could be kept open for several days after the specific emergency has ended.

8.0

TELEPHONE LISTINGS

CECC Information Office Staff

Information Supv.	751-0235
Clerk/Secretary	751-0230
State Coordinator	751-0231
NRC Coordinator	757-0236
Writer	751-0233
Clerk/Secretary	751-0202
Local Media Coordinator	751-0209
QA Coordinator	751-0224
Operations Duty Specialist	751-0200
NSMC (SNP)	266-3766
NSMC (BFNP)	(Later)

CECC-IPD
IP-15
Appendix A
Page 1 of 1
Rev. 0

APPENDIX A

(later)

APPENDIX B

(later)

APPENDIX C

(later)

APPENDIX D

(later)

APPENDIX E

(later)

Revision Log Sheet

Revision Date: JUL 25 1983

This log sheet must be retained as the last page of the Central Emergency Control Center Implementing Procedures Document.

Inserted by: _____			Date Inserted: _____		
Pages to be Removed			New Pages to be Inserted		
Part	Page Number	Revision	Part	Page Number	Revision
IP-3	Cover Page	4	IP-3	Cover Page	5
	1 of 10	3		1 of 11	5
	2 of 10	3		2 of 11	5
	3 of 10	3		3 of 11	5
	4 of 10	3		4 of 11	5
	5 of 10	3		5 of 11	5
	6 of 10	3		6 of 11	5
	7 of 10	3		7 of 11	5
	8 of 10	3		8 of 11	5
	9 of 10	3		9 of 11	5
	10 of 10	3		10 of 11	5
				11 of 11	5

CENTRAL EMERGENCY CONTROL CENTER
ALERT, SITE AREA EMERGENCY, AND GENERAL EMERGENCY

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 Alert, Site Area Emergency, or General Emergency.

3.0 REFERENCES

Radiological Emergency Plan.

4.0 ABBREVIATIONS AND DEFINITIONS

CECC - Central Emergency Control Center
DNPEC - Division of Nuclear Power Emergency Center
EDO - Emergency Duty Officer
KEC - Knoxville Emergency Center
ODS - Operations Duty Specialist
MSEC - Muscle Shoals Emergency Center
NCO - Nuclear Central Office
NMC - Nearsite Media Center
NRC - Nuclear Regulatory Commission
TSC - Technical Support Center

5.0 RESPONSIBILITIES

5.1 Upon notification by the TVA Operations Duty Specialist (ODS) that an emergency condition exists, the DNP EDO is responsible for establishing initial operation of the CECC. The EDO is relieved by the designated CECC Director upon arrival. The CECC Director has general responsibility for verification of notification and overall accident assessment during an emergency condition.

5.2 To assist the CECC Director in carrying out the responsibilities of the Director's position, a CECC staff is available.

*Revision

Responsibilities of positions in the CECC are listed below:

5.2.1 CECC Director

1. Directs and coordinates overall TVA activities associated with the emergency.
2. Ensures that appropriate measures have been taken to terminate the condition causing the emergency, protects employees and the public, initiates recovery from the emergency, and informs the news media and public.
3. 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.
4. Reviews with the DNPEC and Radiological Health staff representatives the onsite and offsite consequences and assesses the adequacy and need for measures taken for protection of the public.
5. Commits TVA resources and provides necessary information to assist the State, Federal, and local agencies to the extent possible.
6. Maintains accurate records of decisions made and actions started and completed.
7. Coordinates TVA's efforts with State and Federal agencies involved in the offsite aspects of the emergency.
8. Makes recommendations to State and local agencies on protective actions for the public.
- ***9. Responsible for determining the need for the Radiological Assessment Advisor and relocating the MSEC staff to the CECC.

5.2.2 MSEC Communicator

1. Responsible for maintaining communications with the *MSEC staff and ensures continuous and timely information flow related to the dose assessment activities and information required for transmittal to the State (see attachment 4).

2. Maintains a summary of key offsite events and ensures this summary is distributed to all emergency centers. This summary is to be updated, at a minimum, on an hourly basis.
3. Ensures the CECC status boards are maintained (see attachment 3). Will call in additional personnel as necessary.
4. Provides pertinent offsite assessment information to the DNPEC Emergency Preparedness and Protection Branch representative for transmittal to the TSC (see attachment 5).
5. Assists the CECC Radiological Health staff representative in tracking offsite releases, decisions, responses, etc.
- ***6. Responsible for establishing the MSEC staff area at the onset of an emergency and ensuring the equipment is operating and information is being appropriately assembled to ensure a quicker and smoother transition should the MSEC staff relocate to this area.

5.2.3 Radiological Health Staff Representative

1. Serves as the CECC Director's chief advisor in offsite radiological assessment matters.
2. Ensures that all appropriate information provided from *the MSEC staff, related to the dose assessment activities and results, is accurate and timely.
3. Coordinates with the MSEC Communicator in tracking pertinent information and ensuring status board information is current and accurate and that dose assessment information for the State is kept current and accurate.
4. Responsible for ensuring that any technical clarifications required by the State related to TVA's dose assessment activities are being provided.

5.2.4 State Communicator (TVA Employee)

1. Acts as TVA's primary communicator and source of information to the State.
2. 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.

3. Responsible for ensuring pertinent information related to plant status, onsite responses, and TVA's dose/environs assessment activities is being provided to the State (see attachment 4). This information shall be provided, at a minimum, hourly, or when significant changes occur. Communication contact shall be made at least at 30-minute intervals.
4. Assists the State as requested in providing TVA resource assistance to the State.
5. Provides the State with name and number for technical clarifications related to dose/environs *assessment matters as necessary.
6. Assists the MSEC Communicator as necessary in maintaining summary of key offsite events and maintaining status boards (see attachment 3).
7. Assists the State Coordinator (State Government Representative) as necessary to keep him briefed of the plant situation and coordinating responses to State inquiries, etc.

5.2.5 State Coordinator (State Government Representative)

The State Coordinator's role in the CECC is to observe events taking place, licensee actions, and advise the State agencies appropriately throughout the emergency. He will receive assistance as necessary from the State Communicator.

5.2.6 NRC

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

5.2.7 Power Information Staff

1. Responsible for monitoring the emergency from the CECC, drafting and coordinating written TVA news releases, and securing approval of the draft from the CECC Director.
2. Responsible for assisting the media in covering the activities of the emergency.
3. Responsible for periodically briefing the CECC Director on specific media concerns and actions.
4. Responsible for activating and coordinating activities of the nearsite press center.

5.2.8 Clerical Staff

1. Operates CRT terminals of the CECC Emergency Computer System.
2. Maintains log of events.
3. Answers telephones.
4. Maintains CECC organization board.
5. Operates Dimension telephone console.
6. Operates Panafax machine.
7. Other duties as assigned by CECC staff.

6.0 PROCEDURE REQUIREMENTS

NOTE: The EDO will follow this procedure until relieved by the permanent CECC Director. The permanent CECC Director debriefs the EDO and continues with the procedure where the EDO left off.

6.1 Notifications

- 6.1.1 Upon reporting to the CECC, the Director will verify that communications have been established with the MSEC and State and that the nature of the accident has been reviewed with them.
- 6.1.2 The CECC Director shall ensure that notification of the event is made to all those listed on the Notification Check Sheet (attachment 1), as appropriate. Priority is noted on the attachment.
- 6.1.3 The CECC Director shall ensure that those listed on attachment 1 are kept briefed periodically, as appropriate, on the progression of events and in particular when the accident classification is either upgraded or downgraded.
- 6.1.4 Upon termination of the emergency, the CECC Director shall ensure that all attachment 1 notifications are made as appropriate.

6.2 Accident Assessment

- 6.2.1 The CECC Director is responsible for directing TVA's overall response to the emergency.

- 6.2.2 The CECC Director 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 attachment 4).
- 6.2.3 The CECC Director is responsible for making appropriate public protective actions to State authorities. Attachment 2 provides an overview of the necessary information required by the CECC Director to make appropriate protective action recommendations.
- 6.2.4 The CECC Director shall schedule periodic briefings (at a minimum, hourly) with the DNPEC Director, CECC Radiological Health Staff representative, Power Information Director, and others as necessary to review all appropriate information as identified in attachment 2.
- 6.2.5 The CECC Director shall ensure that the accident information collected is posted appropriately on the status boards (responsibility of the MSEC Communicator). The information on the status boards must be kept current for the benefit of the CECC Director, DNPEC Director, and their staffs.
- 6.2.6 *The CECC Director shall ensure that a chronology of key offsite activities is being kept and distributed to other emergency centers as appropriate. This responsibility is assigned to the MSEC Communicator.
- 6.2.7 The CECC Director shall ensure that appropriate offsite assessment information is transmitted to the DNPEC.
- 6.2.8 The CECC Director shall utilize the DNPEC and MSEC (through the CECC Radiological Health staff representative) staffs to continuously review the onsite and offsite accident information, respectively. These reviews should attempt to identify trends in key information (attachment 2) and emphasize display and analysis of data for predictive purposes. Assessments in these areas shall be updated, at a minimum, on an hourly basis and all TVA and State personnel briefed appropriately.
- 6.2.9 The CECC Director shall ensure that any discrepancies between TVA and State information/assessment are resolved and clarified appropriately.

6.2.10 Potential Release Evaluation

- 6.2.10.1 A potential release evaluation is continuously performed by the KEC. This evaluation is based on the present plant conditions. The results are provided to the MSEC for an associated dose assessment, which is then provided to the CECC.
- 6.2.10.2 The CECC Director shall determine the need for a potential release and associated dose evaluation based on a potential change in plant conditions. The need for such an evaluation shall be based on the continuing assessments being made by the DNPEC and MSEC staffs and the information obtained from trending key plant and offsite parameters.
- 6.2.10.3 If the CECC Director decides this evaluation is needed, he shall instruct the DNPEC director to request the KEC perform the necessary calculation to predict the potential release. The DNPEC shall also provide the KEC with the assumptions and postulated plant status that should be considered when performing the calculation (i.e., expected LOCA, loss of containment, etc.).
- 6.2.10.4 The KEC will calculate the predicted release and provide it to the MSEC who will calculate an associated offsite dose. The MSEC will then provide the results of the dose assessment to the CECC.

***6.2.11 Relocation of the MSEC Staff to the CECC

- ***6.2.11.1 For certain events and situations, it may be more effective for TVA's response to an emergency if the MSEC staff relocates to the CECC.
- ***6.2.11.2 The CECC Director, in consultation with the MSEC Director, DNPEC Director, and the RHS representative (if available), is responsible for directing the relocation of the MSEC staff.
- ***6.2.11.3 The following criteria shall be used in making this determination:

Any time events are underway that require the dispatching of field monitoring teams from Muscle Shoals and once the MSEC is staffed

and has made an initial response, the MSEC Director will begin assembling a backup MSEC staff and preparing for transfer of this staff to the CECC.

The decision to perform the actual relocation will be made as described in section 6.2.11.2, taking into consideration the following factors:

- Estimated time required to assemble and actually transfer the backup MSEC staff.
- Estimated duration of the emergency and/or recovery operations.
- Overall threat to the environs (actual or potential).

***6.2.11.4 The CECC-MSEC Communicator shall ensure that the MSEC staff area at the CECC is made operational and maintained once the CECC is staffed and will transfer this function to the RHS representative upon his arrival.

***6.2.11.5 When the backup team arrives, they will be thoroughly briefed and familiarized with the situation prior to the official transfer of responsibility from the MSEC.

***6.2.11.6 When the transfer is complete, the primary MSEC staff will relocate to the CECC to handle around-the-clock operations.

6.3 General Operation

6.3.1 Physical Security Requirements for CECC

The CECC Director has responsibility for physical security of the CECC, DNPEC, and ODS work area. The CECC Director or his representative will inform the Public Safety Officer (stationed at the entry way to the CECC) if visitors requesting admittance to the emergency center should be allowed to enter. Permanent members of the ODS, CECC, and DNPEC staffs will have identification badges.

6.3.2 Power Information Liason

The CECC Director will coordinate with the DNPEC Director the selection of one person to serve as a technical advisor to the Power Information Duty Officer in the CECC. The person will be responsible for providing a non-technical interpretation of the event for the CECC Information Office staff.

If the NMC is to be staff, the CECC Director will coordinate with the DNPEC Director and the CECC Radiological Health Staff representative the selection of two people to serve as technical advisors to the TVA spokesperson located there. One will serve as a Radiological Health Advisor and the other as a Plant Operations Advisor. These people will be responsible for assisting the TVA spokesperson in interpreting the approved press releases and events taking place.

6.3.3 Discussion with Other TVA Organizations

The CECC Director will discuss the efforts being taken by TVA to mitigate the consequences of an accident with representatives of other TVA organizations as needed. Representatives are identified for the Radiological Health Staff, Division of Medical Services, Division of Water Resources, the Office of Power Nuclear Licensing Staff, Office of Quality Assurance, and the Office of the General Counsel (Law). These representatives may report to the CECC if necessary or desirable. Notification information is provided in the TVA Radiological Emergency Notification Directory.

6.3.4 CECC Briefings

The CECC Director shall conduct periodic briefings for the entire CECC staff to update the emergency situation for them.

6.3.5 State Advisors

For a classification of SITE AREA EMERGENCY OR GENERAL EMERGENCY, the CECC Director will coordinate with the DNPEC Director the selection of two people to serve as technical advisors to the State Emergency Operations Center. The CECC Director will authorize travel to the State Emergency Operations Center for the purpose of providing technical information, advice, and interpretation to state personnel. Those personnel will set up a 12-hour shift rotation upon arrival to provide 24-hour coverage for the State. The CECC Director may provide additional personnel as needed.

Primary duties of the state advisors are as follows:

- A. Technical explanations and clarification on plant status.

- B. Assist the State by keeping them informed of available TVA resources.
- C. Assist the State in describing/clarifying TVA's response to the emergency, understanding TVA's emergency organization, key TVA staff positions, etc.

6.3.6 NCO Management Support at the Plant

For a classification of SITE AREA EMERGENCY OR GENERAL EMERGENCY, the CECC Director will dispatch a senior management representative to the site to act as senior advisor to the Site Emergency Director. This individual will advise the Site Emergency Director on TVA policy matters and act as an additional interface with the NRC as necessary. He will not control events or operations at the site. If 24-hour operation is necessary, 2 people should be sent.

6.3.7 Relief of Duties

Should the accident be expected to last for an extended period, the CECC Director originates a schedule for relief. The duties of CECC Director should only pass to individuals identified as alternates for the CECC Director's position. However, for a short period of time, the CECC Director may delegate the authority of CECC Director to a member of the CECC staff until an alternate CECC Director can arrive. The CECC Director also directs his staff and the CECC representatives to prepare a schedule for their relief to ensure the necessary staff and representatives of the CECC are available for the duration of the emergency. The CECC Director gives the DNPEC Management Services representative a copy of the schedule, and he notifies the individuals of the time they are to report.

6.3.8 Coordination of Recovery Efforts

Appropriate recovery efforts shall be initiated upon termination of the emergency. The CECC Director is responsible for assessing and coordinating the recovery efforts for response to an emergency in accordance with the general guidelines provided in the Radiological Emergency Plan. The CECC Director will inform each emergency center when the emergency is terminated and the recovery phase begins. As judgement and events determine,

additional resources outside of TVA may be required to mitigate the consequences of an emergency. The CECC Director contacts these offsite agencies as needed. Some of the groups from whom support can be obtained include: NRC, DOE (Oak Ridge), DOE (Savannah River), INPO, MAELU, NSSS vendors, and other nuclear utilities.

6.3.9 Termination of the Emergency

Upon termination of the emergency, the CECC Director and staff will make themselves available for review of the accident.

REVISION LOG SHEET

Revision Date: JUL 07 1983

This log sheet must be retained as the last page of the Muscle Shoals Emergency Center Implementing Procedures Document.

Inserted by: _____			Date Inserted: _____		
Pages to be Removed			New Pages to be Inserted		
Part	Page Number	Revision	Part	Page Number	Revision
Table of Contents	1 of 1	2 3	Table of Contents	1 of 1	3 4
IP-1	Cover Page	3	IP-1	Cover Page	4
	1 of 3	3		1 of 3	4
	2 of 3	3		2 of 3	4
	3 of 3	3		3 of 3	4
Att. 1	1 of 1	2	Att. 1	1 of 1	4
Att. 2	1 of 1	3	Att. 2	1 of 1	4
Att. 3	1 of 3	3	Att. 3	1 of 2	4
	2 of 3	2		2 of 2	4
	3 of 3	2		--	-
			Att. 4	1 of 1	4
IP-2	Cover Page	4	IP-2	Cover Page	5
	3 of 4	4		3 of 4	5
	4 of 4	4		4 of 4	5
Att. 1	1 of 1	3	Att. 1	1 of 1	5
Att. 3	1 of 3	4	Att. 3	1 of 2	5
	2 of 3	3		2 of 2	5
	3 of 3	3		--	-
			Attachment 4	1 of 1	5

REVISION LOG SHEET (Continued)
 Subject: MSEC-IPD
 Revision Date: JUL 07 1983

Pages to be Removed			New Pages to be Inserted		
Part	Page Number	Revision	Part	Page Number	Revision
IP-18	Cover Page	1	IP-3	Cover Page	2
	1 of 3	0	(changed	1 of 3	2
	2 of 3	1	number of	2 of 3	2
	3 of 3	0	IP)	3 of 3	2
Att. 1	1 of 1	0	Att. 1	1 of 1	2
Att. 2	1 of 1	0	Att. 2	1 of 1	2
Att. 3	1 of 1	0	Att. 3	1 of 1	2
Att. 4	1 of 1	0	Att. 4	1 of 1	2
Att. 5	1 of 1	0	Att. 5	1 of 1	2
Att. 6	1 of 1	0	Att. 6	1 of 1	2
Att. 7	1 of 1	1	Att. 7	1 of 1	2
Att. 8	1 of 1	1	Att. 8	1 of 1	2
Att. 9	1 of 1	0	Att. 9	1 of 1	2
Att. 10	1 of 1	1	Att. 10	1 of 1	2
IP-5	Cover Page	3	IP-5	Cover Page	Deletion
	1 of 5	3			
	2 of 5	3			
	3 of 5	3			
	4 of 5	3			
	5 of 5	3			
IP-7	Cover Page	2	IP-7	Cover Page	3
	1 of 11	2		1 of 11	3
	2 of 11	2		2 of 11	3
	3 of 11	2		3 of 11	3
	4 of 11	2		4 of 11	3
	5 of 11	2		5 of 11	3
IP-9	Cover Page	2	IP-9	Cover Page	3
Table of	1 of 2	1	Table of	1 of 3	3
Contents	2 of 2	1	Contents	2 of 3	3
				3 of 3	3
	1 of 11	1		1 of 10	3
	2 of 11	1		2 of 10	3
	3 of 11	2		3 of 10	3
	4 of 11	2		4 of 10	3
	5 of 11	1		5 of 10	3
	6 of 11	1		6 of 10	3

REVISION LOG SHEET (Continued)

Subject: MSEC-IPD

Revision Date: JUL 07 1983

Pages to be Removed			New Pages to be Inserted		
Part	Page Number	Revision	Part	Page Number	Revision
IP-9 (Continued)			IP-9 (Continued)		
	7 of 11	1		7 of 10	3
	8 of 11	1		8 of 10	3
	9 of 11	1		9 of 10	3
	10 of 11	1		10 of 10	3
	11 of 11	1			
Att. 1	1 of 2	1	Att. 1	1 of 2	3
	2 of 2	1		2 of 2	3
Att. 2	1 of 1	1	Att. 2	1 of 1	3
Att. 3	1 of 1	1	Att. 3	1 of 1	3
Att. 4	1 of 1	1	Att. 4	1 of 1	3
Att. 5	1 of 1	1	Att. 5	1 of 1	3
Att. 6	1 of 2	1	Att. 6	1 of 2	3
	2 of 2	1		2 of 2	3
Att. 7	1 of 3	1	Att. 7	1 of 2	3
	2 of 3	1		2 of 2	3
	3 of 3	1			
Att. 8	1 of 2	1	Att. 8	1 of 1	3
	2 of 2	1			
Att. 9	1 of 1	1	Att. 9	1 of 2	3
				2 of 2	3
Att. 10	1 of 2	1	Att. 10	1 of 4	3
	2 of 2	1		2 of 4	3
				3 of 4	3
				4 of 4	3
Att. 11	1 of 4	1	Att. 11	1 of 3	3
	2 of 4	1		2 of 3	3
	3 of 4	1		3 of 3	3
	4 of 4	1			
Att. 12	1 of 2	1	Att. 12	1 of 4	3
	2 of 2	1		2 of 4	3
				3 of 4	3
				4 of 4	3
Att. 13	1 of 3	1	Att. 13	1 of 1	3
	2 of 3	1			
	3 of 3	1			
Att. 14	1 of 1	1	Att. 14	1 of 3	3
				2 of 3	3
				3 of 3	3

REVISION LOG SHEET (Continued)

Subject: MSEC-IPD

Revision Date: JUL 07 1983

Pages to be Removed			New Pages to be Inserted		
Part	Page Number	Revision	Part	Page Number	Revision
IP-9 (Continued)			IP-9 (Continued)		
Att. 15	1 of 3	1	--	--	-
	2 of 3	1			
	3 of 3	1			
Appendix 1	1 of 2	1	Appendix 1	1 of 4	3
	2 of 2	1		2 of 4	3
<i>Table 1</i>	<i>1 of 1</i>	<i>1</i>		3 of 4	3
<i>Table 2</i>	<i>1 of 1</i>	<i>1</i>		4 of 4	3
Appendix 2	1 of 6	1	Appendix 2	1 of 6	3
	2 of 6	1		2 of 6	3
	3 of 6	1		3 of 6	3
	4 of 6	1		4 of 6	3
	5 of 6	1		5 of 6	3
	6 of 6	1		6 of 6	3
Appendix 3	1 of 5	1	Appendix 3	1 of 7	3
	2 of 5	1		2 of 7	3
	3 of 5	1		3 of 7	3
	4 of 5	1		4 of 7	3
	5 of 5	1		5 of 7	3
<i>Table 1</i>	<i>1 of 1</i>	<i>1</i>		6 of 7	3
				7 of 7	3
IP-10	Cover Page	4	IP-10	Cover Page	5
	1 of 8	2		1 of 8	5
	2 of 8	2		2 of 8	5
	3 of 8	2		3 of 8	5
	4 of 8	4		4 of 8	5
	5 of 8	4		5 of 8	5
	6 of 8	4		6 of 8	5
	7 of 8	4		7 of 8	5
	8 of 8	2		8 of 8	5
Att. 3	1 of 1	4	Att. 3A	1 of 1	5
Att. 6	1 of 1	4	Att. 3B	1 of 1	5
			Att. 6	1 of 1	5
IP-17	Cover Page	0	IP-11 (changed number of IP)	Cover Page	1
	1 of 2	0		1 of 2	1
	2 of 2	0		2 of 2	1
IP-14	Cover Page	0	IP-14	Cover Page	Deletion
	1 of 2	0			
	2 of 2	0			

REVISION LOG SHEET (Continued)
Subject: MSEC-IPD
Revision Date: JUL 07 1983

Pages to be Removed			New Pages to be Inserted		
Part	Page Number	Revision	Part	Page Number	Revision
IP-15	Cover Page	0	IP-15	Cover Page	Deletion
	1 of 1	0			
Appendix A	1 of 2	0			
	2 of 2	0			
Appendix B	1 of 1	0			
Appendix C	1 of 1	0			

*MUSCLE SHOALS EMERGENCY CENTER - IMPLEMENTING PROCEDURES DOCUMENT

Table of Contents

IP-1	Notification of Unusual Event, Alert, or Transportation Accident - MSEC Director
IP-2	Site Area Emergency or General Emergency - MSEC Director
IP-3	*Environs Assessment Supervisor (formerly Notification Procedure - NOUE or Alert--deleted October 1982)
IP-4	Deleted October 1982 (Notification Procedure - Site Emergency or General Emergency)
IP-5	*Deleted June 1983 (Training/Drill Requirements)
IP-6	Emergency Preparedness
IP-7	*Air Quality Branch Procedures - MSEC
IP-8	*Water Resources Radiological Emergency Procedures
IP-9	Emergency Radiological Monitoring Procedures - MSEC
IP-10	*Dose Assessment Staff Activities During Nuclear Plant Radiological Emergencies
IP-11	*Activation of Meteorological Forecast Services in Support of the Radiological Emergency Plan (formerly BFPN Emergency Dose Assessment Procedures for Liquid Releases of Radioactivity--deleted April 1982)
IP-12	*Deleted April 1982 (Sequoyah Nuclear Plant Emergency Dose Assessment Procedures for Atmospheric Releases of Radioactivity)
IP-13	*Deleted April 1982 (Sequoyah Nuclear Plant Emergency Dose Assessment Procedures for Liquid Releases of Radioactivity)
IP-14	*Deleted June 1983 (Agreement Letter Update)
IP-15	*Deleted June 1983 (Activation, Operation, and Maintenance of MSEC Recording System)
IP-16	Security Procedures
IP-17	*Changed to IP-11 June 1983 (Activation of Meteorological Forecast Services in Support of the Radiological Emergency Plan)
IP-18	*Changed to IP-3 June 1983 (Environs Assessment Supervisor)

*Revision

REP or IPD Cover Page

MSEC IP-1

NOTIFICATION OF UNUSUAL EVENT, ALERT, OR TRANSPORTATION ACCIDENT

Prepared By: _____

Approved By: _____

Date: _____

9/25/81

Rev. No.	Date	Revised Pages			
0	9/25/81	All			
CEK 1	2/17/82	1, 2, 3, 5			
2	OCT 26 1982	All			
3	4/8/83	1-3, 5, 6			
4	JUL 07 1983	1-3, Att. 1--p. 1; Att. 2--p. 1; Att. 3--p. 1, 2; Att. 4			

NOTIFICATION OF UNUSUAL EVENT,
ALERT, OR TRANSPORTATION ACCIDENT

MSEC DIRECTOR

1.0 PURPOSE

This procedure is designed to guide the MSEC Director during a NOUE, Alert, or transportation accident.

2.0 SCOPE

This procedure covers the anticipated action of the MSEC Director during a NOUE, Alert, or transportation accident. It does not address the Site Area Emergency or General Emergency.

3.0 REFERENCES

Plant Radiological Emergency Plans.

4.0 ABBREVIATIONS AND DEFINITIONS

All times are entered as Central time (daylight or standard, as applicable).

CECC - Central Emergency Control Center
*HPS - Health Physics Services
MSEC - Muscle Shoals Emergency Center
NOUE - Notification of Unusual Event
ODS - Operations Duty Specialist
REND - Radiological Emergency Notification Directory
RHS - Radiological Health Staff

5.0 RESPONSIBILITIES

See plant Radiological Emergency Plan, appendix D.

6.0 PROCEDURE REQUIREMENTS

6.1 Notification

The initial notification comes from the TVA ODS to the MSEC Director. Enter the information on attachment 1. The MSEC Director makes the following notifications immediately after receiving this notification.

*Revision

- 6.1.1 Place appropriate MSEC staff on standby (or activate MSEC as specified in 6.1.3) as follows:
- NOUE - Those deemed necessary.
- Alert - Environs Assessment Supervisor, Dose Assessment
**Supervisor, and others as deemed necessary.
- 6.1.1.1 During off-duty hours, call the TVA Operator, give necessary information, and ask that he make the notifications required in attachment 3.
- 6.1.1.2 During duty hours, give necessary information and ask the HPS secretary to make the notifications required in attachment 3.
- 6.1.1.3 In the event of an Alert, notify a RHS representative. (See TVA REND.)
- 6.1.3 Activate the MSEC as necessary. Complete 6.2 through 6.5 if the MSEC is activated.

CRITERIA FOR MSEC ACTIVATION

Reasonable potential or actual need for offsite dose or environmental assessment.

Reasonable potential or actual need for implant health physics support.

6.2 MSEC Activation

- 6.2.1 Proceed to the MSEC. Activate MSEC emergency systems. See MSEC equipment procedures.
- NOTE: If not in close proximity to MSEC, direct the Environs or Dose Assessment Supervisor to the MSEC for initial activation. Stay at the telephone until the supervisor is ready to assume responsibility, then proceed to the MSEC.
- 6.2.2 Call the CECC Director and report that the MSEC is activated.
- 6.2.3 Notify a RHS representative of the activation of the MSEC and CECC. (See the TVA REND.)
- 6.2.4 Notify the primary MSEC Director that the MSEC has been activated. (See the REND.)

**Deletion

6.3 Assess and Respond

Assess the situation as warranted, and make whatever response is required. Request assistance from MSEC personnel, as required.

6.4 State Communications

The CECC is the primary communicator with the State contacts. All radiological assessment information shall be transmitted to the CECC, which will pass it on, combined with plant status information, to the State. Informal technical communications will be carried out, as necessary, between the MSEC and State as related to radiological assessments and for technical clarifications in this area.

6.5 Emergency Termination

***6.5.1 The MSEC is shut down on mutual agreement between the MSEC Director and the CECC Director. In general, this should not be considered until (1) all issues of environmental contamination are cleared up, and it is known that no further significant public exposure is occurring or is likely to occur, and (2) all abnormal inplant radiation protection problems are under control.

*6.5.2 If the MSEC staff has been placed on standby, have the individual who made the contacts in 6.1.1 notify the staff that the emergency has been terminated.

*6.5.3 Provide all recorded information to the Technical Assistance Section for forwarding to the NUC PR, Radiological Emergency Preparedness Section.

6.6 Transportation Accidents

6.6.1 The MSEC Director activates the MSEC to the extent deemed necessary based upon the information available regarding the severity of the accident. The staffing of the MSEC and the dispatching of emergency teams is decided by discussion between the MSEC and CECC Directors.

7.0 MSEC Director Checklist

A checklist is provided in attachment 2 for quick reference by the MSEC Director. This procedure shall be well understood before use of the checklist.

ATTACHMENT 1

DATE _____ TIME _____ INITIALS _____

Affected Plant _____ BFN _____ SQN _____ WBN _____ BLN _____
Unit _____

Classification _____ Notification of Unusual Event _____ Alert _____
Site Area Emergency _____ General Emergency _____

*Time of Declaration _____

Brief Description _____

Plant Condition _____ Stable _____ Deteriorating _____

Unusual Release of Radioactivity _____ Yes _____ No _____

***Radiation Release Point: _____ Ground Level _____ Elevated _____
_____ Diffuser Pipe _____ Other _____

Wind Direction _____ Wind Speed _____

*Revision
***Addendum

ATTACHMENT 2

MSEC DIRECTOR'S CHECKLIST
NOUE OR ALERT

Date _____

TIME - INITIALS

- | | | | |
|--------------|---|-------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| _____ | - | _____ | Enter initial notification information on MSEC, IP-1 attachment 1. |
| _____ | - | _____ | Place MSEC staff on standby or activate MSEC as appropriate by giving the TVA operator or HPS secretary the appropriate information to carry out actions of attachment 3. |
| _____ | - | _____ | For Alert, notify RHS CECC representative. |
| _____ | - | _____ | *If MSEC is to be staffed, activate MSEC emergency systems. Director remains at telephone until Dose or Environs Assessment Supervisor assumes MSEC responsibility. |
| _____ | - | _____ | Activate MSEC emergency systems. |
| _____ | - | _____ | *Notify RHS CECC representative that MSEC is activated. |
| _____ | - | _____ | Call primary MSEC Director and inform him of MSEC activation. |
| Ensure that: | | | |
| _____ | - | _____ | Monitoring teams are dispatched as necessary |
| _____ | - | _____ | CECC is provided hourly update. |
| _____ | - | _____ | When terminated, deactivate the MSEC staff and inform staff on standby. |
| _____ | - | _____ | Provide Technical Assistance staff with recorded information. |

*Revision

ATTACHMENT 3

MSEC NOTIFICATION CHECKLIST

Time	*Person Returning Call
11:00	Mr. Smith
11:15	Mr. Jones
11:30	Mr. Brown
11:45	Mr. White
12:00	Mr. Green
12:15	Mr. Black
12:30	Mr. Grey
12:45	Mr. Gold
13:00	Mr. Silver
13:15	Mr. Copper
13:30	Mr. Iron
13:45	Mr. Lead
14:00	Mr. Zinc
14:15	Mr. Nickel
14:30	Mr. Cobalt
14:45	Mr. Cadmium
15:00	Mr. Barium
15:15	Mr. Strontium
15:30	Mr. Calcium
15:45	Mr. Magnesium
16:00	Mr. Aluminum
16:15	Mr. Silicon
16:30	Mr. Phosphorus
16:45	Mr. Sulfur
17:00	Mr. Chlorine
17:15	Mr. Fluorine
17:30	Mr. Bromine
17:45	Mr. Iodine
18:00	Mr. Bismuth
18:15	Mr. Antimony
18:30	Mr. Arsenic
18:45	Mr. Tellurium
19:00	Mr. Selenium
19:15	Mr. Manganese
19:30	Mr. Chromium
19:45	Mr. Vanadium
20:00	Mr. Titanium
20:15	Mr. Zirconium
20:30	Mr. Hafnium
20:45	Mr. Niobium
21:00	Mr. Tantalum
21:15	Mr. Tungsten
21:30	Mr. Molybdenum
21:45	Mr. Rhenium
22:00	Mr. Osmium
22:15	Mr. Iridium
22:30	Mr. Platinum
22:45	Mr. Gold
23:00	Mr. Silver
23:15	Mr. Copper
23:30	Mr. Nickel
23:45	Mr. Cobalt
24:00	Mr. Iron

PARTIAL MSEC ACTIVATION
(NOUE or Alert ONLY)

NOTE: Call pager number 386-7--wait for tone to stop and give following message, "There is a (NOUE, Alert) at _____ Nuclear Plant. Call (telephone number) for call verification and standby (report to the MSEC as soon as possible) for further instructions."

Environs Assessment Supervisor Pager 301

Dose Assessment Staff Pager 303¹

☆☆

FULL MSEC ACTIVATION

(Site Area or General Emergency
or in accordance with instruction of MSEC Director)

NOTE: Call pager number 386-7--wait for tone to stop and give following message, "There is a (Site Area, General or other) emergency at _____ Nuclear Plant. Call (telephone number) for call verification and report to the MSEC as soon as possible."

Environ Assessment Supervisor Page 301

Dose Assessment Staff Pager 303¹

**

Field Coordinator Page: 302

Assessment Meteorologist Pager 181

Water Resources Pager 195

¹Three pagers are assigned to Dose Assessment Supervisor.

*Revision

☆Deletion

NOTE: The following positions are listed in the REND. Refer to the REND for telephone numbers calling sequentially for each position until one (or number designated) person has been notified. Notification shall be as follows, "A _____ emergency has been declared at _____ Nuclear Plant. Please report to the MSEC as soon as possible."

***TVA operators will refer to the TVA Operator Call List.
A typical list is attachment 4.

<u>Position</u>	<u>Person Notified</u>	<u>Time</u>
**	_____	_____
Clerical Supervisor	_____	_____
***Communication Machine Operator	_____	_____
Lab Supervisor	_____	_____
Dosimetry Supervisor	_____	_____
Public Safety	_____	_____
Public Information	_____	_____
ADP Support Staff	_____	_____
**	_____	_____
Clerical Pool (Notify 2)	_____	_____
Material Support	_____	_____
CRT Operator	_____	_____
WRC Contact	_____	_____

**Deletion
***Addendum

***Attachment 4
MSEC DIRECTORY
(TVA OPERATORS CALL LIST)

Pager No. 7-180	<u>MSEC Director</u> R. B. Maxwell J. L. Ingwersen J. L. Lobdell
Pager No. 7-301	<u>Environs Assessment Supervisor</u> C. E. Kent L. J. Politte P. E. Knapp
Pager No. 7-302	<u>Field Coordinator</u> R. G. Wallace R. L. Coleman S. G. Bugg E. V. Kingery
Pager No. 7-303	<u>Dose Assessment Supervisor</u> R. L. Doty R. P. Reed M. S. Robinson
Pager No. 7-181	<u>Assessment Meteorologist</u> D. E. Pittman
Pager No. 7-195	<u>Water Resources</u> B. G. Isom J. C. Cooney
	<u>Laboratory Supervisor</u> W. L. Raines L. G. Kanipe
	<u>Field Team</u> L. R. Ratliffe L. J. Generette
	<u>Public Information</u> Dr. Harold Parker Ann Underwood
	<u>Clerical Supervisor</u> K. C. Williams
	<u>Communications Coordinator</u> D. L. Loden

***Addendum

REP or LPD Cover Page

MSEC IP-2

Site Emergency, or General Emergency
Director

Prepared By: _____

Approved By: _____

Date: 9/25/81

Rev. No.	Date	Revised Pages			
0	9/25/81	All			
^{CEK} 1	2/17/82	All			
2	9/1/82	3 & 4			
3	OCT 26 1982	All			
4	4/8/83	1-3a, 5, 6			
5	JUL 07 1983	3, 4, Att. 1--p. 1; Att. 3--p. 1, 2; Att. 4--p. 1			

6.3.2.2 The Field Coordinator ensures through the Materials Support Coordinator that manpower, equipment, food, etc., are provided for field personnel including screening teams, terrestrial and aquatic monitoring teams, and couriers who are on duty for long periods of time. The shifts for the Field Coordinator require a 1-hour overlap. All other field personnel require a 30-minute overlap.

6.3.3 **Recommendations for Protective Actions

In the early stages of any accident, the Shift Engineer at the plant is prepared and trained to initially recommend protective actions to State and local officials.

When the MSEC is properly staffed, the MSEC Director takes over the responsibility to recommend protective actions to the CECC RHS representative, or in his absence, the CECC Director. The CECC Director is notified that the MSEC is assuming this responsibility by the MSEC Director.

6.3.4 Dose Assessment

6.3.4.1 The Dose Assessment Supervisor has responsibility for coordinating TVA's dose assessment activities once the MSEC is staffed. Necessary radiological information needed to perform this function shall be obtained directly from the plant TSC or (for clarifications) from the DNPEC Emergency Preparedness and Protection Branch Representative or the CECC-MSEC ***Communicator. Dose assessments and protective action recommendations are provided to the MSEC Director.

6.3.4.2 Hourly, or whenever significant changes occur, the Dose Assessment Supervisor will provide the CECC with the information specified in MSEC IP-10, attachment 3. The CECC will communicate this information to the State.

6.3.4.3 The MSEC shall be available to provide the State any technical clarifications related to the radiological assessment information.

6.3.5 Communications with State Agencies

6.3.5.1 The CECC is the primary communicator with the State. All radiological assessment information shall be transmitted to the CECC, which will pass it on, combined with plant status information, to the State. The MSEC will provide, as necessary, informal technical communications with the State related to radiological assessments and technical clarifications in this area.

**Deletion
***Addendum

6.3.5.2 The Field Coordinator is in touch with the coordinator of the State environmental monitoring teams. He is responsible for coordinating TVA field team activities with the State Coordinator. He is also responsible for providing all field data to the MSEC.

*6.4 Shutdown of the MSEC Upon Accident Termination

*6.4.1 The MSEC is shut down on mutual agreement between the MSEC Director and the CECC Director. In general, this should not be considered until (1) all issues of environmental contamination are cleared up and it is known that no further significant *public exposure is occurring, or is likely to occur, and (2) all abnormal inplant radiation protection problems are under control.

*6.4.2 After the MSEC is shut down, ensure that all personal logs, tapes, and written correspondence are provided to the Technical Assistance Section for forwarding to the NUC PR, Radiological Emergency Preparedness Section.

7.0 MSEC DIRECTOR CHECKLIST

A checklist is provided in attachment 2 for quick reference by the MSEC Director. This procedure shall be well understood before use of the checklist.

ATTACHMENT 1

DATE _____ TIME _____ INITIALS _____

Affected Plant _____ BFN _____ SQN _____ WBN _____ BLN _____

Unit _____

Classification _____ Notification of Unusual Event _____ Alert _____

_____ Site Area Emergency _____ General Emergency

*Time of Declaration _____

Brief Description _____

Plant Condition _____ Stable _____ Deteriorating

Unusual Release of Radioactivity _____ Yes _____ No

***Radiation Release Point: _____ Ground Level _____ Elevated

_____ Diffuser Pipe _____ Other

Wind Direction _____ Wind Speed _____

*Revision

***Addendum

ATTACHMENT 3

MSEC NOTIFICATION CHECKLIST

<u>Time</u>	<u>*Person Returning Call</u>	<u>PARTIAL MSEC ACTIVATION</u> (NOUE or Alert ONLY)
-------------	-----------------------------------	--------------------------------------------------------

NOTE: Call pager number 386-7--wait for tone to stop and give following message, "There is a (NOUE, Alert) at _____ Nuclear Plant. Call (telephone number) for call verification and standby (report to the MSEC as soon as possible) for further instructions."

_____	_____	Environs Assessment Supervisor	Pager 301
-------	-------	--------------------------------	-----------

_____	_____	Dose Assessment Staff	Pager 303 ¹
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**

FULL MSEC ACTIVATION
(Site Area or General Emergency
or in accordance with instruction of MSEC Director)

NOTE: Call pager number 386-7--wait for tone to stop and give following message, "There is a (Site Area, General or other) emergency at _____ Nuclear Plant. Call (telephone number) for call verification and report to the MSEC as soon as possible."

_____	_____	Environs Assessment Supervisor	Pager 301
-------	-------	--------------------------------	-----------

_____	_____	Dose Assessment Staff	Pager 303 ¹
-------	-------	-----------------------	------------------------

**

_____	_____	Field Coordinator	Pager 302
-------	-------	-------------------	-----------

_____	_____	Assessment Meteorologist	Pager 181
-------	-------	--------------------------	-----------

_____	_____	Water Resources	Pager 195
-------	-------	-----------------	-----------

¹Three pagers are assigned to Dose Assessment.
*Revision
**Deletion

NOTE: The following positions are listed in the REND. Refer to the REND for telephone numbers calling sequentially for each position until one (or number designated) person has been notified. Notification shall be as follows, "A _____ emergency has been declared at _____ Nuclear Plant. Please report to the MSEC as soon as possible."

***TVA operators will refer to the TVA Operator Call List.
A typical list is attachment 4.

<u>Position</u>	<u>Person Notified</u>	<u>Time</u>
**	_____	_____
Clerical Supervisor	_____	_____
***Communication Machine Operator	_____	_____
Lab Supervisor	_____	_____
Dosimetry Supervisor	_____	_____
Public Safety	_____	_____
Public Information	_____	_____
ADP Support Staff	_____	_____
**	_____	_____
Clerical Pool (Notify 2)	_____	_____
Material Support	_____	_____
CRT Operator	_____	_____
WRC Contact	_____	_____

**Deletion
**Addendum

***Attachment 4
MSEC DIRECTORY
(TVA OPERATORS CALL LIST)

Pager No. 7-180	<u>MSEC Director</u> R. B. Maxwell J. L. Ingwersen J. L. Lobdell
Pager No. 7-301	<u>Environs Assessment Supervisor</u> C. E. Kent L. J. Politte P. E. Knapp
Pager No. 7-302	<u>Field Coordinator</u> R. G. Wallace R. L. Coleman S. G. Bugg E. V. Kingery
Pager No. 7-303	<u>Dose Assessment Supervisor</u> R. L. Doty R. P. Reed M. S. Robinson
Pager No. 7-181	<u>Assessment Meteorologist</u> D. E. Pittman
Pager No. 7-195	<u>Water Resources</u> B. G. Isom J. C. Cooney
	<u>Laboratory Supervisor</u> W. L. Raines L. G. Kanipe
	<u>Field Team</u> L. R. Ratliffe L. J. Generette
	<u>Public Information</u> Dr. Harold Parker Ann Underwood
	<u>Clerical Supervisor</u> K. C. Williams
	<u>Communications Coordinator</u> D. L. Loden

***Addendum

REP or IPD Cover Page

*MSEC IP-3 (formerly IP-18)

Environs Assessment Supervisor

Prepared By:

Charles Kent

Approved By:

R. D. Maffett

Date:

2/17/82

Rev. No.	Date	Revised Pages			
0	2/17/82	All			
1	4/8/83	2, 10, 11, 13			
2	JUL 07 1983	All			

ENVIRONS ASSESSMENT SUPERVISOR

1.0 PURPOSE

This procedure defines the responsibility of the Environs Assessment Supervisor during radiological emergencies. It details his responsibilities for activation of environs assessment personnel and the direction of assessment activities.

2.0 SCOPE

This procedure covers all classes of radiological emergencies at nuclear power plants.

3.0 REFERENCES

*Plant Radiological Emergency Plans.

4.0 ABBREVIATIONS AND DEFINITIONS

Central Time - Central Daylight or Central Standard, as applicable.

Local Monitor (LM) - Fixed Monitors located on or near the site boundary. These monitors are equipped with particulate and radioiodine air filters as well as an exposure rate indication (GM tube with the output in cpm). This exposure rate indication is recorded on a strip chart and telemetered to the Environmental Data Station.

Perimeter Monitor (PM) - Fixed monitors located, typically within 3 to 10 miles of the plant. They are equipped as the local monitors above with the exception that only those monitors within about 5 miles are equipped with telemetry.

Remote Monitor (RM) - Fixed monitors located at distances of 15 miles or greater from the plant. They are equipped with particulate and radioiodine filters, but have no exposure rate indication (GM).

Environs Assessment Supervisor's Log - A record of the Environs Coordinator's activities during all drills, exercises and emergencies.

*Revision
**Deletion

5.0 RESPONSIBILITIES

See Radiological Emergency Plans, appendix D.

6.0 PROCEDURE REQUIREMENTS

6.1 Notification

The initial notification comes from the MSEC Director by pager 301. The Director will request the Environs Assessment Supervisor to report to the MSEC or to stand by. If the request is to stand by, the Director will provide the supervisor with a summary of the accident situation. As directed, establish MSEC ***operation until MSEC Director arrives.

- 6.1.1 Activate environs assessment and support personnel as appropriate. The Field Coordinator will notify field team members and coordinate their initial preparations. The Water Resources Coordinator will notify and coordinate the activities of the aquatic sampling teams as requested. The Laboratory Supervisor will staff EARL, WARL and screening vans as requested.
- 6.1.2 If an Alternate Environs Assessment Supervisor is on duty, initiate actions to contact the Environs Assessment Supervisor as soon as possible to provide status report and establish duty schedule.
- 6.1.3 Brief the MSEC Director on the status of the Environs Assessment staff preparations.
- 6.1.4 Establish environs assessment log.
- 6.1.5 Establish contact with affected plant Health Physics Supervisor and obtain field data collected by the plant team. Assume coordination of plant team assessments if appropriate.
- 6.1.6 Establish contact with the CECC - MSEC Communicator and provide status report of TVA environs assessment efforts.
- 6.1.7 Direct TVA environs monitoring effort and ensure that data is promptly and accurately disseminated to the MSEC, CECC, and site. Upon activation of the Field Coordination Center, the Field Coordinator will ensure the exchange of field data. (See attachments 1-5.) Overall environs assessment (attachment 7) shall be periodically (at a minimum, hourly, or when significant changes occur) provided to the CECC to be transmitted to the State. If differences exist in environs assessment activities between TVA and the State, the CECC will advise the State to contact the MSEC to attempt to define the reasons for such differences and resolve the issues.
- 6.1.8 Establish dose record for each team. (See attachment 6.)

*6.1.9 Periodically provide emergency status report to field teams.

As a minimum the status report should include the following:

1. Plant status
2. Emergency class
3. Known or suspected releases and associated doses
4. Status of protective actions

*6.1.10 For emergencies involving SQN or WBN, arrangements for team member transportation, food and lodging will be coordinated by the CECC. For emergencies involving BFN or BLN, these services will be provided through the MSEC Material Coordinator.

7.0 INFORMATION FLOW THROUGH MSEC

The information flow into and through the MSEC is depicted in attachments 7, 8, and 9.

8.0 RECORDS MAINTENANCE

Upon termination of the emergency consolidate all environs assessment records generated during the event and forward to the *Technical Assistance Section.

FIXED MONITOR DATA

Date/Time (Central) Recorded

Recorded By

Sheet Number _____

_____/_____

 (initials)

Station

Time(Central)/Date
Sample Taken

Result
 (Average/Peak)

1. <u>Local</u>	LM- _____	_____/_____ _____	_____/_____ _____	CPM
	LM- _____	_____/_____ _____	_____/_____ _____	CPM
	LM- _____	_____/_____ _____	_____/_____ _____	CPM
	LM- _____	_____/_____ _____	_____/_____ _____	CPM
	LM- _____	_____/_____ _____	_____/_____ _____	CPM
	LM- _____	_____/_____ _____	_____/_____ _____	CPM
2. <u>Perimeter</u>	PM- _____	_____/_____ _____	_____/_____ _____	CPM
	PM- _____	_____/_____ _____	_____/_____ _____	CPM
	PM- _____	_____/_____ _____	_____/_____ _____	CPM
	PM- _____	_____/_____ _____	_____/_____ _____	CPM
	PM- _____	_____/_____ _____	_____/_____ _____	CPM
	PM- _____	_____/_____ _____	_____/_____ _____	CPM
3. <u>Remote</u>	RM- _____	_____/_____ _____	_____/_____ _____	CPM
	RM- _____	_____/_____ _____	_____/_____ _____	CPM
	RM- _____	_____/_____ _____	_____/_____ _____	CPM
	RM- _____	_____/_____ _____	_____/_____ _____	CPM
	RM- _____	_____/_____ _____	_____/_____ _____	CPM
	RM- _____	_____/_____ _____	_____/_____ _____	CPM

MSEC Director _____
 (initials)

Time (Central) _____

 Comments:

*Revision

AIRBORNE SAMPLES

Date/Time(Central)Recorded

Recorded By

Sheet Number _____

_____/_____

(Initials)

Location	Time	Date	Type	Results($\mu\text{Ci/cc}$)

Comments:

*Revision

EXPOSURE RATES

Date/Time(Central)Recorded

Recorded By

Sheet Number _____

(Initials)

Location

Time

Date _____

Instrument

Results (mR/hr)

FIELD TEAM MEMBER EXPOSURE RECORD

Name _____

1. Dosimeter

Initial Reading (mR)	Initial Date and Time	Final Reading (mR)	Final Date and Time	Total Exposure (mR)
a.				
b.				
c.				
d.				
e.				
f.				
g.				
h.				

2. TLD

Exposure Period (Date and Time)	Whole Body (mRem)	Skin (mRem)
a.		
b.		
c.		
d.		
e.		
f.		

Comments:

*Revision

CRT MESSAGE FORM

To: CECC

From: MSEC

Subject: ENVIRONS ASSESSMENT RESULTS STATUS

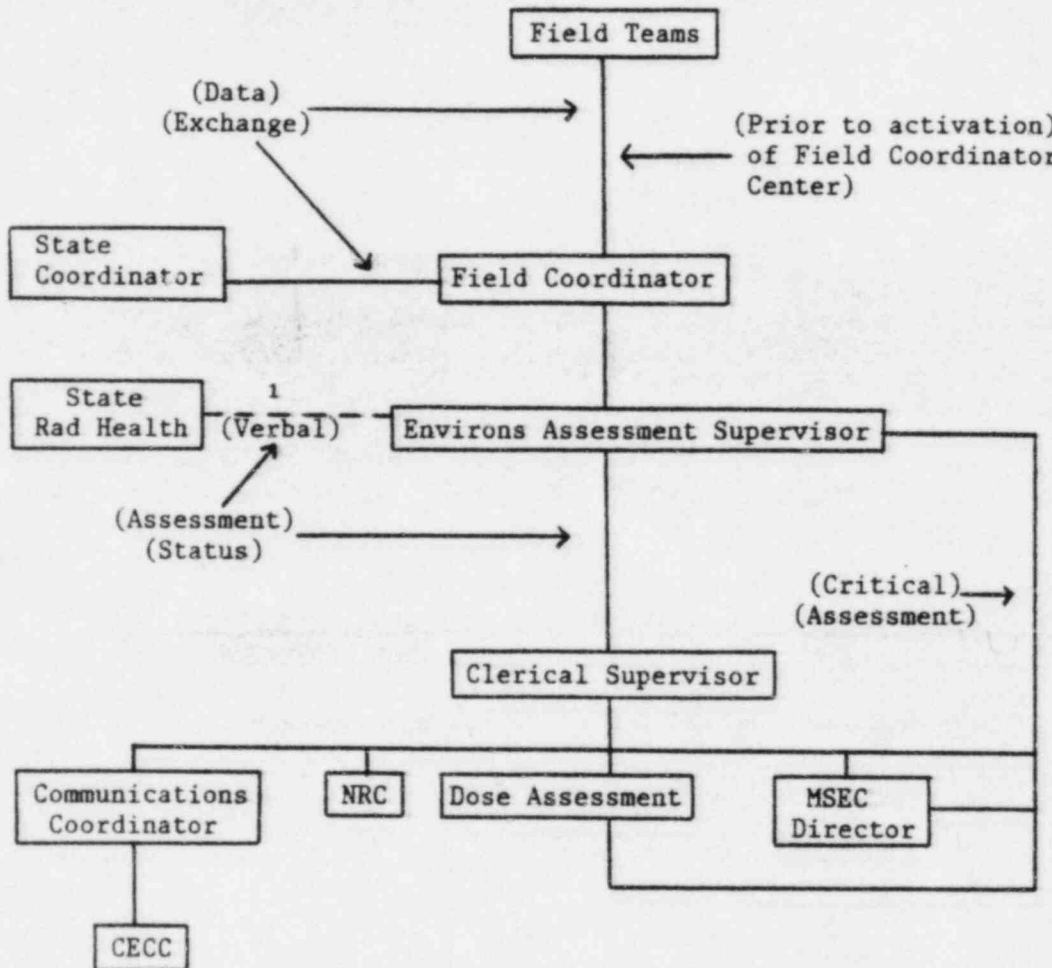
Time:

Message:

Time(CT)	Location	Reading(mR/hr)	Activity(μ Ci/cc)
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____

*Revision

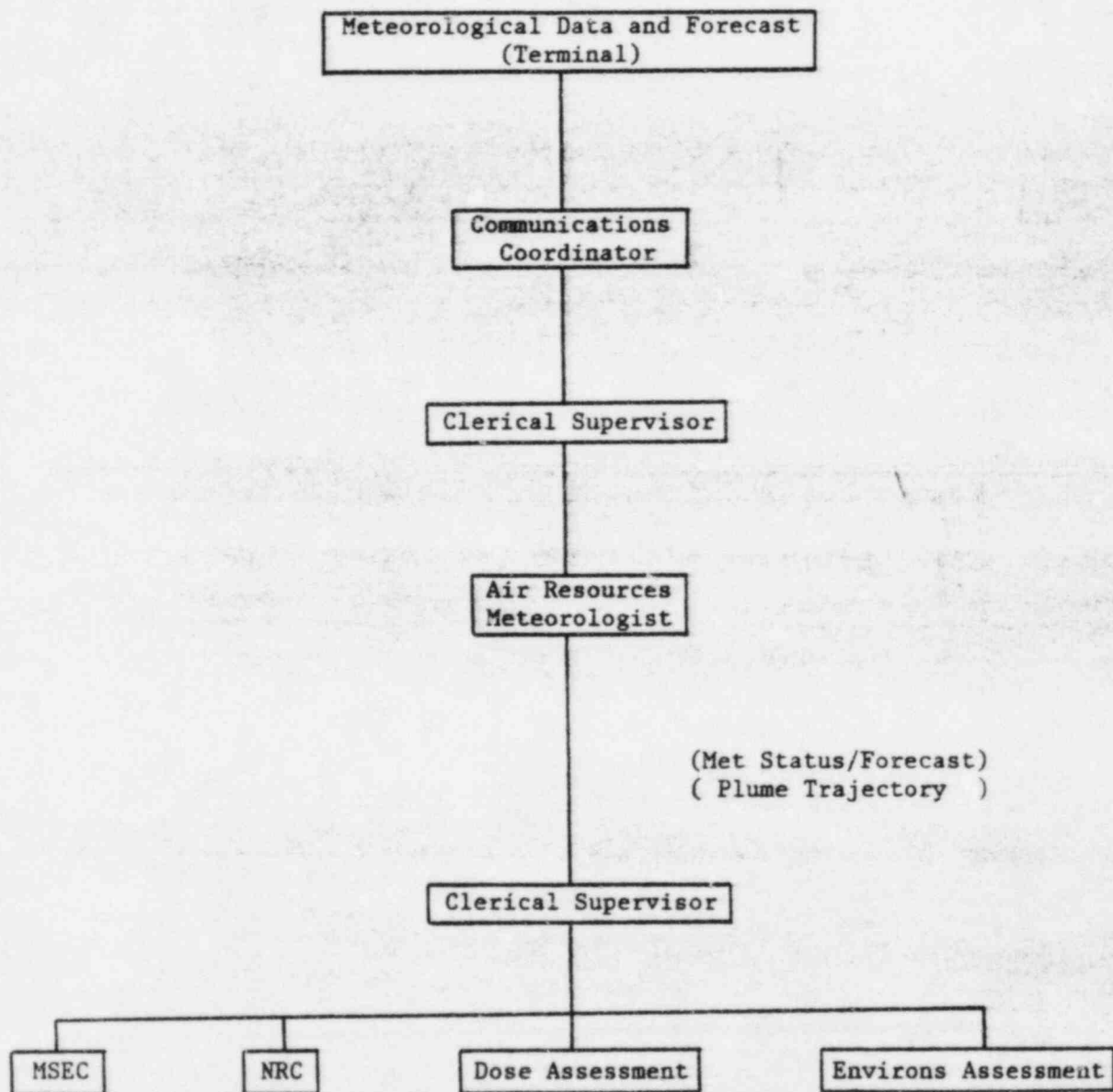
ENVIRONS ASSESSMENT DATA



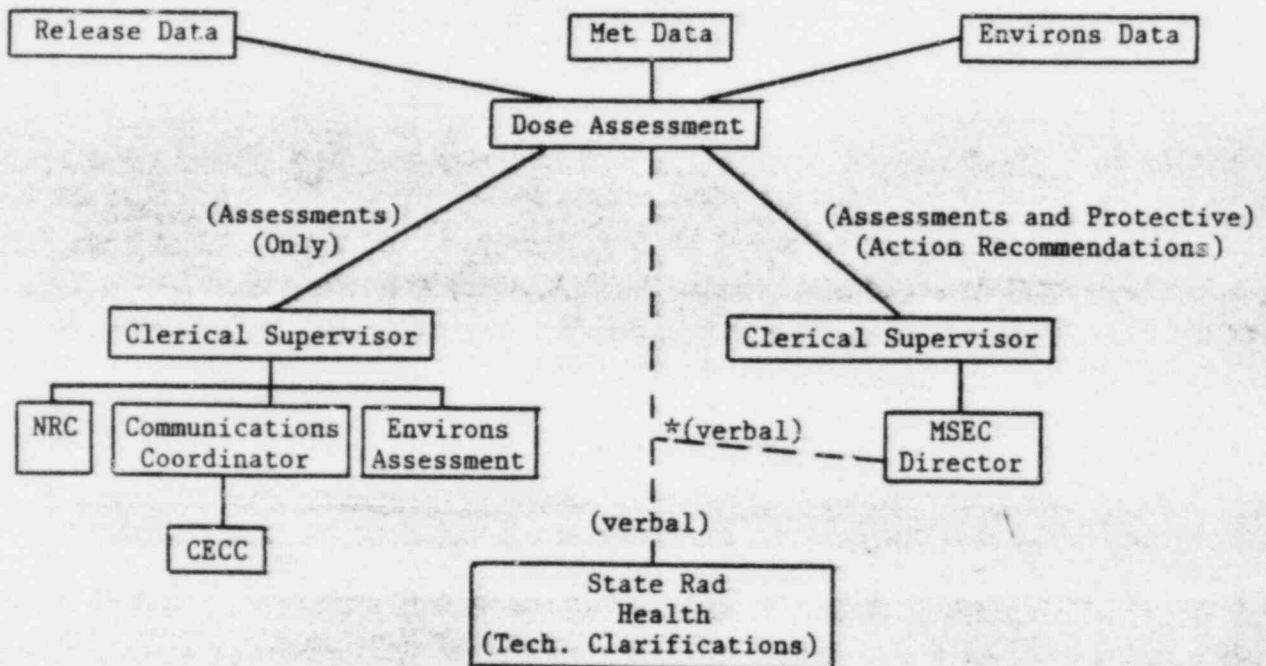
¹Informal communications link for technical clarifications. Initially, the raw field data will be provided through this link until the TVA and State field coordinators are in place. Periodic transmission of assessment information to the State will be provided through the CECC.

*Revision

METEOROLOGICAL DATA



DOSE ASSESSMENTS
AND
PROTECTIVE ACTION RECOMMENDATIONS



*Revision

REP-IPD/EC-IPD Cover Page

REP-IPD

MSECC, IP-5

Training Procedures

Prepared By: _____

Approved By: _____

Date: _____

9/25/81

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0 1	12/31/81	7	_____	_____	_____
2	9/1/82	All	_____	_____	_____
3	OCT 26 1982	All	_____	_____	_____
<u>PROCEDURE DELETED JUNE 1983</u>			_____	_____	_____

REP or IPD Cover Page

MSEC IP-7

*Air Quality Branch Procedures

Muscle Shoals Emergency Center

Prepared By:

Approved By:

Date:

9/25/81

Rev. No.	Date	Revised Pages			
0	9/25/81	All			
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3	JUL 07 1983	1 - 5			

AIR QUALITY BRANCH PROCEDURES
MUSCLE SHOALS EMERGENCY CENTER

1.0 PURPOSE

These procedures are designed to direct the activities of the WCA and the AS personnel during a radiological emergency to provide a timely response, consistent and accurate meteorological data, and assessment advice in the event of a nuclear accident.

2.0 SCOPE

These procedures cover anticipated requirements for meteorological support during emergency conditions. The procedures do not cover additional actions to be taken prior and subsequent to an emergency or drill or to maintain response capabilities routinely.

3.0 REFERENCES

None

4.0 ABBREVIATIONS AND DEFINITIONS

AQB - Air Quality Branch
AS - Assessment Section of the AQB
CECC - Central Emergency Control Center
EDS - Environmental Data Station (at each nuclear plant site)
FO - Field Operations (NR OPS)
MSEC - Muscle Shoals Emergency Center
NRC - Nuclear Regulatory Commission
NR OPS - Division of Natural Resource Operations
NUC PR - Division of Nuclear Power
NWS - National Weather Service
REND - Radiological Emergency Notification Directory
WCA - Weather Corporation of America

5.0 RESPONSIBILITIES

- 5.1 Upon notification by the MSEC that an emergency condition exists, the AS Meteorologist notifies the individuals specified in section 6.1 (Initial Notification) of this procedure. In addition, he performs the duties of his position as described in the procedures provided in this document. WCA begins issuing forecasts for the affected plant as described in these procedures.

- 5.2 WCA and AS emergency personnel function as meteorological forecasters and dispersion assessment meteorologists, respectively.
- 5.2.1 WCA responsibilities include preparation of forecasts of wind speed and direction, stability class, and precipitation type and intensity.
- 5.2.2 AS responsibilities include: (1) Accessing and reviewing real time and forecast meteorological data and transferring these data to the MSEC staff, (2) Providing expert advice on combinations of individual measurements (wind speed level, wind direction level, and stability class interval) that most realistically represent dispersion and transport of radiological effluent in the atmosphere, without being nonconservative, (3) Providing expert advice on current dispersion and transport characteristics, (4) Performing trajectory analysis of effluent transport, (5) Applying backup procedures for the replacement of missing or garbled data, (6) Advising the MSEC staff whenever backup procedures are in use in lieu of real time data, (7) Indicating the level of confidence in the procedures being used, (8) Responses to questions from appropriate State officials, (9) Maintaining a logbook for recording emergency (or drill) contacts and activities of the AS, and (10) Notifying appropriate personnel of known or indicated communication or sensor equipment problems.
- 5.2.3 FO is responsible for operation and maintenance of EDS and associated monitoring systems.
- 5.2.4 NUC PR is responsible for operation and maintenance of the interrogable remote access system which uses the CECC computer.
- 6.0 PROCEDURE REQUIREMENTS
- 6.1 Initial Notification

The WCA Duty Forecaster and a member of the AS emergency team of meteorologists are notified according to the REND.
- 6.1.1 The AS Meteorologist responding to the emergency notification by the MSEC notifies one of the following, attempted in the order listed, as soon as possible: (1) AS Radiological Emergency Plan Technical Leader and (2) AS Meteorological Unit Supervisor or the AS Supervisor.
- 6.1.2 The AS Meteorologist notifies (directly or by message) the Chief of the AQB or the person acting in his behalf.
- 6.1.3 The notification time, time of arrival at the MSEC, name of the plant experiencing the emergency, and the emergency classification, are entered in the AS logbook by the AS Meteorologist as soon after arrival as possible.

6.2 AS Recordkeeping

- 6.2.1 A logbook is maintained in which the AS Meteorologist records , pertinent information regarding WCA and AS response and support to the MSEC and communications between the AS Meteorologist and appropriate State officials.
- 6.2.2 Pertinent meteorological data are recorded on four forms (forms 2a, 2b, 3, and 4).

The plant and time of the emergency, the release geometry, and plume transport and dispersion information are entered on the Coversheet for Radiological Emergency (form 2a). This form also provides space for updating such information. Real time 15-minute averages of meteorological data from the plant site are entered on the Report of Raw Meteorological Data and Conversions for Radiological Emergency (form 2b). Hourly average data are also entered on form 2b. The Meteorological Information (form 3) provides the MSEC staff with information for dispersion calculations. Form 4, Meteorological Data for Trajectory Analysis is an optional form consolidating four hours of data for estimating effluent transport.

Blank and completed copies of these forms are placed in a sorting rack (slot file). The file is kept at the AS Meteorologist station during an emergency or drill and stored in the MSEC otherwise.

6.3 Meteorological Data Communications Equipment

- 6.3.1 Communications equipment consists of an Alden weather facsimile recorder for receipt of NWS charts and an interrogable remote access system for receipt of real time meteorological data from the EDS and for receipt of WCA meteorological forecasts. Teletypewriters provide a backup communication of real time meteorological data from the Browns Ferry and Sequoyah EDSs via dedicated telephone lines. A Panafax telecopier provides a backup means of receiving WCA forecasts.
- 6.3.2 Equipment repair, in case of malfunction, is effected by contacting TVA or private contract repairmen for NWS data equipment, NUC PR for the interrogable remote access system, and FO for EDS equipment.
- 6.3.3 A generator for backup power capability allows the restoration of power, if regular power is lost.

6.4 Basic Procedures of Operation

- 6.4.1 All communications, including entries in logbooks and on forms, use Central time (either Daylight Savings Time or Standard Time, as applicable).

- 6.4.2 Within 30 minutes of notification, WCA will provide the MSEC with an initial forecast for 1 and 2 hours in the future. The forecast parameters are wind speed and direction for three onsite tower levels, stability class for two layers, and precipitation type and intensity. An example of the forecast format is given on page 6. The information sheet on page 7 provides basic information for use in forecast preparation.
- 6.4.3 The AS Meteorologist will report to the MSEC as soon as possible after being notified (within 15 minutes during work hours). He will complete form 2a, extract wind and stability data from the most recent 15-minute period from the plant site, and enter the data and conversions on form 2b. The forecast data (form 1) and converted real time data (form 2b) are entered on form 3. Form 3 is provided to the Clerical Supervisor for distribution to the MSEC staff.
- 6.4.4 Within one hour after notification, the WCA Forecaster will prepare an updated and expanded forecast for the same parameters and levels as the initial forecast. The forecast will be for 1, 2, 4, 6, and 8 hours in the future. These forecasts will be updated each hour until the WCA Forecaster is notified to discontinue (e.g., at the end of an emergency). An outlook for hours 9 through 24 in the future will also be provided in the updated forecasts. The outlook will indicate either persistence or change for each parameter (wind direction, wind speed, stability, and precipitation) for 12, 16, 20, and 24 hours on the future.
- 6.4.5 The AS Meteorologist provides an updated form 3 for 15-minute average meteorological data for every ensuing 15-minute period. Updated forecast information will also be included on the updated form 3. Hourly average data, converted for MSEC use (form 2b), are also entered on form 3 and provided for every hour, beginning with the first hour received after provision of the first set of 15-minute averages.
- 6.4.6 The AS Meteorologist plots 15-minute vector sequence trajectories on the appropriate site map (attachments 4A and 4B of IP-10) and provides the map to the dose assessment staff.
- 6.4.7 The AS Meteorologist responds to questions from State officials as requested and MSEC staff concerning meteorological information.
- 6.4.8 As meteorological or release conditions change or are projected to change, the AS Meteorologist provides recommendations for altering the combination of parameter levels being used for atmospheric dispersion and transport calculations to reflect the new conditions.

- 6.4.9 The AS Meteorologist documents decisions, recommendations, and pertinent communications in the AS logbook and inserts all completed copies of forms 2a through 4 in the AS slot file.
- 6.4.10 If the real time wind speed, wind direction, or stability class used for dose calculations are missing or garbled, the AS Meteorologist will apply backup procedures to determine estimated values for the missing variables.
- 6.4.11 At the end of the drill or emergency, the AS Meteorologist removes the completed forms from the slot file and places them in the "Completed Forms" ring binder which is kept in the MSEC in the same bookcase as the slot file.
- 6.5 Requirements for Shift Relief
- 6.5.1 WCA maintains a forecast staff on duty 24 hours a day. Additional forecasters are called in if needed.
- 6.5.2 The AS Meteorologist will normally work a 9-hour shift, with a one-hour overlap between shift periods. In addition, a second AS Meteorologist (not notified initially) can be called to assist, if necessary.

MSEC IP-9

Prepared By:

Approved By:

Date:

9/25/81

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<u>3</u>	<u>JUL 07 1983</u>	<u>All</u>	<u> </u>	<u> </u>	<u> </u>

TABLE OF CONTENTS

EMERGENCY RADIOLOGICAL MONITORING PROCEDURES MUSCLE SHOALS EMERGENCY CENTER

	<u>Page</u>
1.0 Purpose	1
2.0 Scope	1
3.0 References	1
3.1 Radiological Emergency Plants	1
3.2 Emergency Radiological Dose Assessment Procedures	1
3.3 Other Reference Materials	1
4.0 Abbreviations and Definitions	2
5.0 Responsibilities	2
5.1 MSEC	2
5.2 MSEC Environs Assessment Supervisor	2
5.3 Field Coordinator	3
5.4 Monitoring Teams	3
5.5 Couriers	3
6.0 Preparations and Precautions	5
6.1 Notification	5
6.2 Preparations Prior to Departure	5
6.3 Preparations Prior to Entering the 10 mile EPZ	5
6.4 Radiological Precautions	5
7.0 Documentation Requirements	6
8.0 Sampling Priorities and Procedures	7
8.1 Sampling Priorities	7
8.2 Environs Monitoring Procedures	8
8.2.1 Mobile Environs Monitoring	8
8.2.1.1 Exposure Rate Measurements	8
8.2.1.2 Air Sampling	9
8.2.2 Aerial Environs Monitoring	9
8.2.2.1 Gamma Exposure Rate Measurement	10
8.2.3 Fixed Environs Sampling	10
8.2.4 Terrestrial Monitoring	10

General Revision

TABLE OF CONTENTS (Con't)

List of Attachments

**

1. *Environs Monitoring Van Equipment Checklist
2. Protective and Precautionary Measures Prior to Entering 10-Mile EPZ
3. Protective Action Levels and Recommended Protective Actions
4. Radiological Monitoring Record
5. Exposure Rate Measurement Data Form
6. *Operating Instructions - GSM, Ionization Survey Meters, and Direct-Reading Dosimeters

**

- *7. Instructions for Mounting and Use of Sodium-Iodide (NaI) Detector as an Airborne Radiation Monitor
- *8. Atmospheric and Terrestrial Sampling Data Form
- *9. Air Sampling Instructions
- *10. Operating Instructions - MS-2 Miniscaler with GM (HP-210) and Scintillation (SPA-3) Detector Probes
- *11. Instructions for Collecting Samples at Fixed Monitoring Locations, Local and Perimeter Monitors
- *12. Instructions for Collecting Environmental Samples
- *13. Sample Analysis Data Form
- *14. Operating Instructions - Tracor Northern 1705 Multichannel Analyzer with Scintillation Detector

**

List of Appendices

1. Operating Instructions - Mobile Communications System
2. Browns Ferry Site Maps and Environmental Monitoring Locations
3. Sequoyah Site Maps and Environmental Monitoring Locations

*Revision

**Deletion

TABLE OF CONTENTS (Con't)

***List of Figures

1. Emergency Radiological Monitoring Organization

***List of Tables

1. Radio Call Signs
2. Emergency Telephone Directory
3. Atmospheric and Terrestrial Monitoring Station
Locations - Sequoyah Nuclear Plant

***Addendum

EMERGENCY RADIOLOGICAL MONITORING PROCEDURES

MUSCLE SHOALS EMERGENCY CONTROL CENTER

1.0 PURPOSE

The objective of these procedures is to provide guidance and instructions to the environs monitoring personnel should a radiological emergency occur at a TVA nuclear plant.

2.0 SCOPE

These procedures are applicable for all classes of radiological emergencies at TVA nuclear plants.

3.0 REFERENCES

3.1 Radiological Emergency Plans

3.1.1 Browns Ferry Nuclear Plant Radiological Emergency Plan

3.1.2 Sequoyah Nuclear Plant Radiological Emergency Plan

3.2 Emergency Radiological Dose Assessment Procedures

3.2.1 "Emergency Dose Assessment Procedures for Atmospheric Releases of Radioactivity - Browns Ferry Nuclear Plant," TVA Publication OHS-20-80-02 (1980)

3.2.2 "Emergency Dose Assessment Procedures for Atmospheric Releases of Radioactivity - Sequoyah Nuclear Plant," TVA Publication OHS-20-80-03 (1980).

3.2.3 "Emergency Dose Assessment Procedures for Atmospheric Releases of Radioactivity - Technical Bases," TVA Publication OHS-20-80-05 (1980).

3.3 Other Reference Material

3.3.1 "Criteria for Preparation and Evaluation of Radiological Emergency Response Plans and Preparedness in Support of Nuclear Power Plants," NUREG-0654 FEMA-REP-1, Rev. 1 (1980).

3.3.2 "Manual of Protective Action Guide and Protective Actions for Nuclear Accidents," EPA-520/1-75-001 (1980).

3.3.3 "Health Physics Manual" TVA Publication (1972).

3.3.4 Evaluation of Radiation Emergencies and Accidents Selected Criteria and Data, International Atomic Energy Agency, Vienna (1974).

*Revision

4.0 ABBREVIATIONS AND DEFINITIONS

CECC: Central Emergency Control Center
CPSM: Cutie Pie survey meter
DRD: direct-reading dosimeter
EARL: Eastern Area Radiological Laboratory
EOC: Emergency Operations Center
EPZ: Emergency Planning Zone
FCC: Field Control Center
GMSM: Geiger Mueller survey meter
Hi-Vol: high volume air sampler
HP-210: hand probe model 210
Lo-Vol: low volume air sampler
MS-2: miniature scaler model 2
MSEC: Muscle Shoals Emergency Center
PIC: pressurized ionization chamber
SEOC: State Emergency Operations Center
SPA-3: scintillation probe assembly model 3
TLD: thermoluminescent dosimeter
WARL: Western Area Radiological Laboratory

5.0 RESPONSIBILITIES

5.1 MSEC

MSEC will support the CECC by assessing the offsite consequences of a radiological emergency and recommending appropriate protective actions for the public. In performing these functions, the MSEC will assist the State as requested in clarifying technical assessments of the population exposure resulting from radiological emergencies. MSEC environmental monitoring teams will perform emergency assessments under the direction of the MSEC Environs Assessment Supervisor. The data collected and resulting assessments of environs and plant release data will be provided through the CECC to State officials for their use. When State monitoring personnel are prepared to perform their independent assessments, the monitoring efforts of both TVA and the State will be closely coordinated in order to ensure the most efficient use of resources and the timely exchange of environmental data.

The emergency radiological monitoring organization is shown in figure 1.

5.2 MSEC Environs Assessment Supervisor

The MSEC Environs Assessment Supervisor's primary responsibilities will be to direct the efforts of emergency radiological monitoring personnel in the collection of field data in a safe and expeditious manner. Until the termination of the emergency condition, he will be expected to draw upon the technical

expertise of the Air Resources Program and Radiological Assessment Section to determine the approximate location, dimension, and radiological characteristics of the plume so that the monitoring teams will be deployed in the best possible locations to confirm the release. All other emergency radiological monitoring personnel will be subordinate to him and will be responsible for following and implementing his directives.

5.3 Field Coordinator

The TVA Field Coordinator will be responsible for directing the nearsite emergency radiological monitoring personnel in accordance with the directives issued by the MSEC Environs Assessment Supervisor. He will be expected to coordinate the activities of the field personnel in such a manner as to optimize the collection, analysis, and transfer of field data to the State officials and MSEC.

5.4 Monitoring Teams

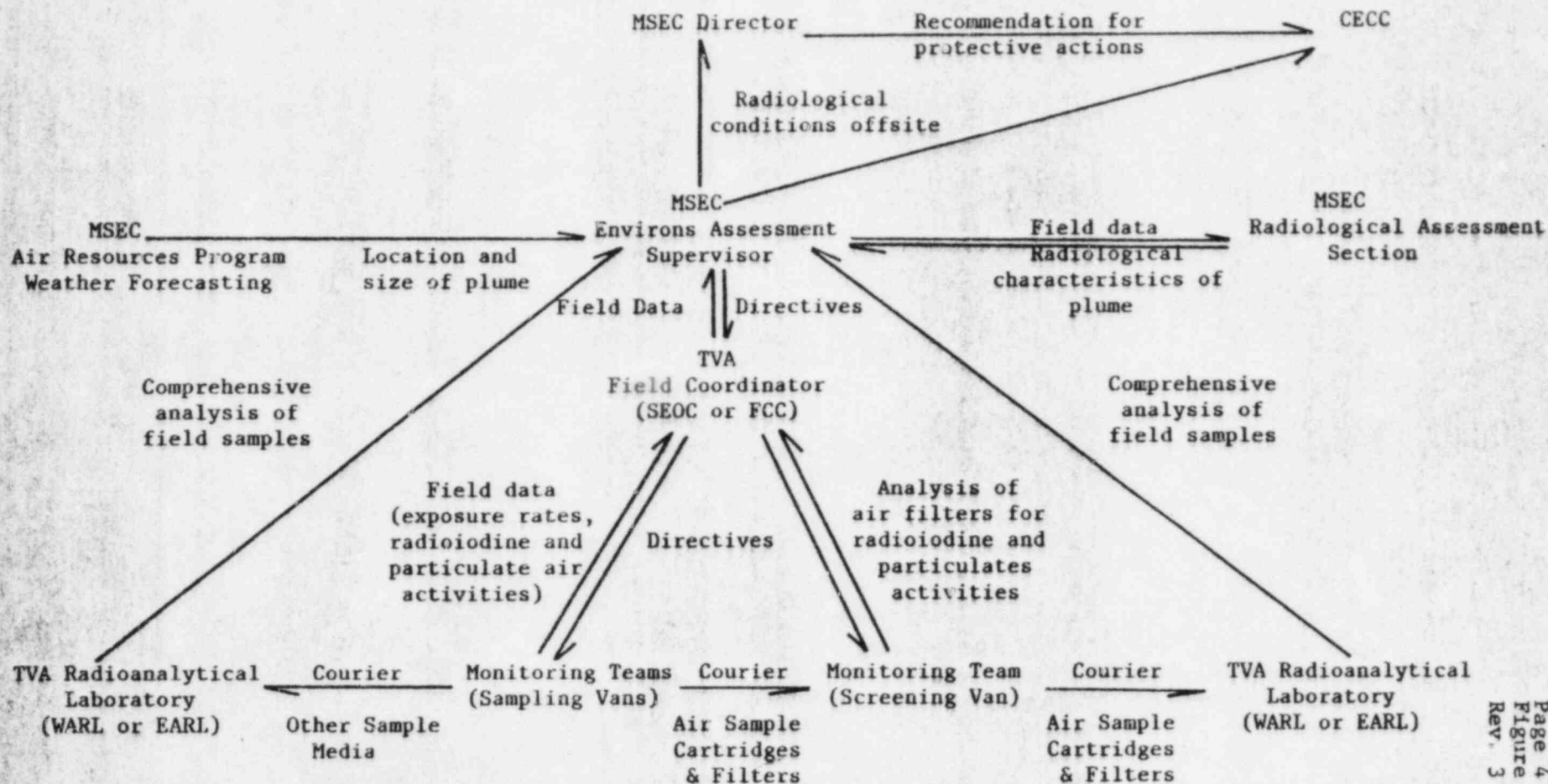
The TVA monitoring teams are categorized as ground- or aerial-based monitoring teams. The ground-based monitoring teams are subdivided into two groups--sampling teams and a screening team. The sampling teams will be responsible for collecting sample media and taking measurements in the radiation areas (i.e., inplume monitoring). They can perform preliminary analyses on the air filters to determine the radioiodine and particulate air activities. However, they will be required to send their samples by courier to the screening van for analyses when it is set up and operational. The screening van is equipped with a scintillation gamma spectroscopy system to scan for the presence of radioiodine and a GM counting system for analyzing the particulate filters for fission products. An aerial monitoring team may be deployed in a TVA helicopter to perform aerial exposure rate monitoring of the plume. All monitoring teams will be expected to follow (in order of descending priority) the directives issued by the Field Coordinator and then the procedures and precautions set forth herein.

5.5 Couriers

The couriers will be primarily responsible for transporting environmental samples from the sampling vans to the screening van for analysis. However, they will be responsible for following the directives issued by the Field Coordinator to provide whatever supplemental field support is necessary to sustain the emergency radiological monitoring program.

FIGURE 1

EMERGENCY RADIOLOGICAL MONITORING ORGANIZATION



6.0 PREPARATIONS AND PRECAUTIONS

6.1 Notification

Monitoring team personnel can be notified when a radiological emergency reaches the ALERT status. Depending on the severity of the plant conditions, the personnel will be required to stand by or *assemble at the MSEC for possible deployment. If required to come in, the personnel should report directly to the Field Coordinator and, upon his instructions, prepare to leave for the site.

6.2 Preparations Prior to Departure

Prior to leaving MSEC for the site, each monitoring team will be responsible for verifying that their van or helicopter (aerial monitoring) is properly equipped and that the instrumentation is fully operational. Monitoring team leaders will be required to complete and initial equipment checklist provided as attachment 1.

6.3 Preparation Prior to Entering the 10 Mile EPZ

6.3.1 Communications

While deployed, the monitoring teams will have their FM transmitter/receiver radios turned on so as to be in communication contact at all times. Operating instructions and directories for the mobile telephones and radios are provided in appendix 1 and a listing of the call signs is in each van.

6.3.2 Protective and Precautionary Measures

Prior to entering the 10 mile EPZ, each monitoring team leader will complete the protective and precautionary checklist provided as attachment 2.

6.4 Radiological Precautions

While in radiation areas, team personnel will monitor the radiological conditions with survey instruments, direct-reading dosimeters, and by collecting and analyzing air samples. If the radiological conditions exceed the protective action levels listed in attachment 3, then the teams should take the protective actions listed therein. Prompt implementation of these actions should ensure that the personnel do not accrue radiation doses in excess of the limits promulgated by the Nuclear Regulatory Commission (NRC) in 10 CFR 50.47 (b)(11). These limits, established by the Environmental Protection Agency (EPA) for the general public and emergency workers, are the projected doses above which evacuation from a radiation area is mandatory. The EPA limits and TVA guidelines are provided in the following table:

<u>Population at Risk</u>	<u>Dose Limit (Rem)</u>	
	<u>Whole Body</u>	<u>Thyroid</u>
General Population	5	25
Emergency Workers	10, 25	10, 125

TVA Guidelines

In general accordance with NRC recommendations [NUREG-0654, section II, K.4], team personnel will advise the Field Coordinator when their whole body dose exceeds 5 rem (DRD reading > 5 r). If circumstances warrant the team remaining in the radiation area, the whole body dose limit will be raised to that established for emergency workers. However, when possible, the Field Coordinator will direct the monitoring teams to evacuate a radiation area when their wholebody dose exceeds 10 rem (DRD readings > 10 r). Similarly, the protective action levels in attachment 3 were designed so that if the protective actions are implemented promptly the dose to the thyroid should be less than 10 rem. The protective actions listed in attachment 3 are recommended by the EPA and include the following.

- (a) The ingestion of 130 mg of potassium iodide (KI) to reduce the dose (commitment) to the thyroid from the inhalation of radioiodine, primarily ^{131}I . The proper dosage is one tablet per day for up to 10 days following exposure.
- (b) The use of full-face respirators to filter out radioactive particulates in the air and thereby reduce the dose (commitment) to the internal organs of the body.
- (c) The immediate evacuation of the personnel from the radiation area.

7.0 Documentation Requirements

- 7.1 In order to ensure that essential monitoring data are recorded properly, the sampling teams will use the forms provided as attachments 5 and 9. The columns headed with the letters A through H are key parameters, which should be reported to the Field Coordinator. Whenever samples are sent to the screening van or TVA radioanalytical laboratories for analyses, they should be tagged with an identification label as shown below:

Sample Number _____
 Sample Type _____
 Sampling Parameters _____
 Location _____
 Time/Date _____
 Remarks _____

The sample number is composed of the four-digit radio call sign number assigned to the vehicle (refer to appendix 1) followed by a dash and the number of the sample (i.e., 9135-1, 9135-2, 9125-3, etc.). The remaining information should be taken directly from attachment 9. Upon receiving air filter media samples, the screening team personnel will record the information on the form provided as attachment 14. After performing the analysis, the screening team will report the important data (columns labeled with the letters A through H) to the Field Coordinator. He will in turn record this information on the form provided as attachment 4 for distribution to MSEC and the State.

8.0 Sampling Priorities and Procedures

To obtain the most important field data in a safe and timely fashion, the monitoring team will follow the instructions for monitoring given in this section.

8.1 Sampling Priorities

During the early phases of a radiological emergency, when protective actions (i.e., evacuation, sheltering, and/or ingestion of KI) must be initiated quickly to be effective, environmental measurements which can be used to calculate the inhalation dose commitment rate to the thyroid and the total body external gamma dose rates to the general public are the most important. Accordingly, monitoring teams will perform the following tasks as directed by the Field Coordinator.

- (a) Take exposure rate measurements at two meters, one meter, and at near contact with the ground surface.
- (b) Collect and analyze low-volume air samples for radioiodine (^{131}I).
- (c) Collect and analyze high-volume air samples for particulate activity.

However, air filter papers and cartridges will be sent to the screening van for analysis as soon as it is operational.

After the hazards from the inhalation pathway have been mitigated, the dose to the public must be determined from the ingestion of foodstuff directly or indirectly contaminated with radioactive fallout from the passage of the plume. In order to assess whether protective actions are warranted, numerous environmental samples must be taken from the areas known or suspected to have been traversed by the plume. Under the direction of the Field Coordinator, the monitoring teams will collect atmospheric and terrestrial samples.

Atmospheric sampling is performed continuously at fixed locations (perimeter and local monitors). These installations are equipped to sample the air for radioiodine and particulate activity. In addition, radioactive fallout (heavy particulate) is collected on gum paper, and the soluble portion is collected with a rainwater sampler. Terrestrial sampling is accomplished by collecting vegetation, foodstuffs, water, and soil from areas suspected of being contaminated by fallout from the plume. Once collected, the sample will be sent to EARL or WARL for analysis.

8.2 Environs Monitoring Procedures

8.2.1 Mobile Environs Monitoring

The mobile environs monitoring will be accomplished by sampling vans and a screening van. The sampling vans are equipped for making exposure rate measurements, collecting air samples and performing preliminary analyses for radioiodine and radioactive particulates. However, the samples will be sent by courier to the screening van, located outside of the radiation area, for analysis as soon as it is operational. Preselected sites for the screening van are given in appendices 2 and 3. The screening van is equipped with a scintillation gamma-spectroscopy system for scanning air filter cartridges for radioiodine and a GM counting system for analyzing particulate filters for fission products. Samples which are tested positive will then be sent by courier to the radioanalytical laboratories for comprehensive analyses.

8.2.1.1 Exposure Rate Measurements

Exposure rate measurements will be performed with energy-compensated *GMSM and ionization survey meters. All survey data should be recorded on the data sheet provided as attachment 5. The operating **instructions are provided in attachment 6.

The GMSMs, which have sealed, weathertight probes, are the preferred *instruments for inplume monitoring. The ionization survey meter is an air ion chamber which is vented to the atmosphere. Consequently, care must be exercised to prevent the infiltration of radioactive gas or other contaminants (such as moisture, dust, oil, vapor, etc.) into the chamber. The presence of any of these contaminants can cause erroneous readings (erratic or upscale). *To prevent contamination, the instruments must be enclosed in an airtight plastic bag prior to entry into the adverse environment.

Measurements should be taken at two meters, one meter, and at near contact with the ground surface. Any statistically significant increase in the count rate for the near-contact reading over the one at two meters could indicate the presence of ground contamination.

8.2.1.2 Air Sampling

Sampling for airborne radioiodine and radioactive particulates will be performed with vacuum pumps (air samplers) and high-efficiency silver zeolite cartridges and/or paper filters. Sampling parameters and data will be recorded on the form provided as attachment 9. Sampling instructions and precautions are provided in attachment 10. Filter cartridges will be sent to the screening van for analyses whenever possible. This vehicle is equipped with a gamma spectroscopy system, which features a multi-channel analyzer and scintillation detector. Complete operating instructions are provided in attachment 15. For maximum counting efficiency this van will be located outside of the radiation area, preferably at one of the predesignated locations listed in appendices 2 and 3. However, if the screening van is not operable, cartridges can be analyzed at the sampling site provided the background radiation level is less than 10 mR/h and the amount of activity accumulated in the cartridges does not exceed the detection limit of the counting equipment. Under these conditions, *the cartridges can be analyzed with a single-channel analyzer and scintillation probe. In addition, particulate filters can be **analyzed with the scaler and thin-window GM probe. Complete operating instructions are provided in attachment 11. Sampling parameters and data will be recorded on the form provided as attachment 9.

In conditions where the background radiation level is greater than 10 mR/h, the monitoring team should relocate outside of the radiation area to perform the analyses. When a cartridge cannot be counted with the standard monitoring van equipment, it should be surveyed with a GSM (beta shield closed) and then sent via the screening van to EARL or WARL for comprehensive analysis. Correction factors for converting GSM readings, taken on contact with cartridge, to radioiodine air activity are given in attachment 10. However, it is important to limit sampling time in high airborne activity areas since TVA radioanalytical laboratories cannot analyze samples with contact exposure rates greater than 100 mR/h.

8.2.2 Aerial Environs Monitoring

The Environs Assessment Supervisor will have the option of dispatching a monitoring team in a TVA helicopter to perform exposure rate measurements of the airborne activity in the plume or of ground contamination. All pertinent data collected from the surveys will be recorded on the form provided as attachment 5.

8.2.2.1 Gamma Exposure Rate Measurements

The aerial monitoring team will be equipped with 3 exposure rate measuring instruments, which cover the range from 1 μ r/hr to **10 r/hr. In order of decreasing sensitivities they are: scaler *equipped with a scintillation detector, GSM, and ionization **survey meter. The scaler will be adjusted for gross gamma counting *and the scintillation probe will be housed in a holder and mounted *on the helicopter skid as specified in attachment 8. The probe can be mounted either in a horizontal forward-looking position or a vertical down-looking position. Count rate measurements taken with the detector in the horizontal position can be used to define the position, dimensions, and centerline of the plume. Measurements taken with the probe in the vertical position can be used to locate areas with significant ground contamination.

Should the exposure rate exceed the detection level of the scintillation detector (~ 1 mR/hr), team personnel are required to monitor the exposure rate inside the passenger compartment with a *GSM or ionization survey meter if necessary. The complete operating instructions for these instruments are provided in attachment 6.

8.2.3 Fixed Environs Sampling

Under the direction of the Field Coordinator, monitoring teams will collect environmental samples from perimeter and local monitors. The particulate (paper) and radioactive (charcoal) air filters should be collected first. If time permits, the heavy particulate sample (gum paper) and a sample of the rainwater should be taken. All samples should be sent by courier via the screening van to TVA radioanalytical laboratories for comprehensive analyses. The sampling parameters will be recorded on the form provided as attachment 9. The instructions for collecting the samples are provided in attachment 12.

8.2.4 Terrestrial Monitoring

Under the direction of the Field Coordinator, monitoring teams will collect environmental and TLD samples. These samples include vegetation, soil, surface and well water, foodstuffs, and milk. Sampling parameters will be recorded on the form provided as attachment 9. Complete listings of the environmental monitoring sites are provided in appendices 2 and 3. The instruction for collecting the samples are provided in attachment 13.

ATTACHMENT 1

ENVIRONS MONITORING VAN EQUIPMENT CHECKLIST

Monitoring team leaders are required to enter a check in the blank to the left of each item which is loaded in the van or helicopter (if applicable) prior to departure.

*The following equipment, except as noted, is stored in the MSEC.

Radiation Detection Instrumentation and Equipment

- _____ 1 miniature scaler model MS-2
- _____ 1 GM detector with holder (model HP-210)
- _____ 1 scintillation probe (model SPA-3)
- _____ 1 scintillation probe holder for helicopter with clamps (required for aerial monitoring team)
- * _____ 1 ionization survey meter (model CP-10 or RO-2A)
- _____ 1 GSM (model E-530)
- _____ 1 check source (Ba-133)

Sampling Equipment (not required for aerial monitoring team)

- _____ 1 low-volume air sampler (Radeco)
- _____ 1 high-volume air sampler (Staplex)
- _____ 1 support pole (stored in van)

Power Equipment (not required for aerial monitoring team)

- _____ 1 AC generator (stored in van)
- _____ 1 gas can
- _____ 1 ground pole (stored in van)

- _____ Emergency kit (auxiliary equipment and supplies)
The emergency kits are presealed and should contain the following:

Protective Clothing

- coveralls, 2 pr.
- gloves, rubber, 2 pr.
- gloves, cloth, inserts, 2 pr.
- gloves, work, 2 pr.
- shoe covers, rubber, 2 pr.
- booties, plastic, 2 pr.

Protective and Monitoring Equipment

- TLD badges, 2
- full-face mask respirators with filters, 2
- direct-reading dosimeters 0-200 mR range, 4
- direct-reading dosimeters, 0-5R range, 2
- dosimeter charger, 1

*Revision

**Deletion

Attachment 1 (Cont'd)

Protective Medicine

KI tablets, 1 pk.

Sampling Supplies and Equipment

filters, Hi-vol air samples, 1 box (Whatman 41)
cartridges, Lo-vol air samples, 1 box (silver zeolite)
smears, disc, with bags, 2 pks.
cutters, filter paper, 1 pr.
envelopes, Hi-vol samples, 1 pk.
bags, plastic, 30
tags, identification, 100
tags, radiation, 1 pk.
planchets, 6

Manuals and References Documents

operational manual, MS-2 miniscaler, 1
Radiological Health Handbook, 1

Electrical Supplies

fuses, (MS-2, generator), 4
power cord, (for MS-2 with lighter adapter), 1
extension card, 1

Tools

screwdriver, 1
pliers, 1 pr.
scissors, 1 pr.

Generator Supplies

funnel, 1
siphon pump, 1

Miscellaneous

tape, masking, 2 rolls
twine, 1 ball
pencils, misc., 1 pk.
notebooks, 2
change, 1 pk. (\$1.00)
map, plant vicinities, 2 ea.
map, state road maps

Time/Date

Team Leader

*Revision

ATTACHMENT 2

PROTECTIVE AND PRECAUTIONARY MEASURES -
PRIOR TO ENTERING 10 MILE EPZ

Monitoring team leaders are required to enter a check in the blank to the left of each measure performed.

- Each team member is equipped with one TLD and two DRDs (200 mR
***and 5 R fullscale). Dosimeters will be worn between the neck and
waist.
- Each team member has at ready access, a full-face respirator with
filter cartridges.
- *Each team member has at ready access, one course (14 tablets) of KI.
- GMSM turned on with selector switch adjusted to lowest range and
the audio speaker activated. The instrument is positioned for
continuous viewing and ready access.
- MS-2 miniscaler turned on, adjusted for gross gamma counting and
positioned in the proper configuration for plume monitoring
(applicable for aerial monitoring teams only).
- All radiation detector probes are sealed in poly-plastic bags to
prevent contamination.
- Contacted Field Coordinator to confirm completion of protective
and precautionary measures.

Time/Date

Team Leader

*Revision
***Addendum

ATTACHMENT 3

PROTECTIVE ACTION LEVELS AND RECOMMENDED

PROTECTIVE ACTIONS

Protection Action Levels

Recommended Protective Actions

A. Survey Instrument Readings

1. Radioiodine air activity is not known and survey meter readings > 25 mR/h
2. GSM readings > 200 mR/h
3. CPSM readings > 10 R/h

Take KI unless directed otherwise by Field Coordinator

Evacuate radiation area unless directed otherwise by Field Coordinator

Evacuation of radiation area mandatory, contact Field Coordinator

B. Direct-Reading Dosimeter Measurements

1. DRD total measurement > 5 R
2. DRD total measurement > 10 R
3. DRD total measurement > 25 R

Contact Field Coordinator and advise

Evacuate radiation area unless directed otherwise by Field Coordinator

Evacuation of radiation area mandatory

C. Air Sample Measurements

1. Radioiodine (^{131}I) air activity > 3.6×10^{-7} $\mu\text{Ci/cc}$ (40 MPC)
2. Radioiodine (^{131}I) air activity > 4.5×10^{-6} $\mu\text{Ci/cc}$ (500 MPC)
3. Particulate air activity
*> 4×10^{-8} $\mu\text{Ci/cc}$ (40 MPC)
4. Particulate air activity
*> 5×10^{-7} $\mu\text{Ci/cc}$ (500 MPC)
5. Particulate air activity
*> 2.5×10^{-6} $\mu\text{Ci/cc}$ (2500 MPC)

Take KI unless directed otherwise by Field Coordinator

Take KI and contact Field Coordinator

Full-face respirator recommended, unless directed otherwise by Field Coordinator

Full-face respirator required, contact Field Coordinator

Evacuation of radiation area mandatory, contact Field Coordinator.

RADIOLOGICAL MONITORING RECORD

Page of

Date _____

Field Coordinator _____

[illegible]⁵ Abbreviations:

⁵Survey Instruments

MS-2/SPA-3 (VDL or HFL) = miniscaler with scintillation detector in vertical down looking position or horizontal forward looking position

6 Fixed Monitoring Samples

P-Particulate (paper filter)
HP-Heavy Particulate (gum paper)
RI-Radioiodine (charcoal filter)
RW-Rainwater

7 Terrestrial Samples

DR-Direct Radiation (TLDs)
M-Milk
V-Vegetation (grass)
WW-Well Water
DWSS-Drinking Water from Surface Source
S-Soil

Footnotes:

Protective Action Levels

- 1a. Exposure rate > 25 mR/h and radioiodine (^{131}I) air activity is not known
- b. Exposure rate > 200 mR/h
- c. Exposure rate > 10 R/h
- 2a. Total exposure > 5 R
- b. Total exposure > 10 R
- c. Total exposure > 25 R
- 3a. Radioiodine (^{131}I) air activity $> 3.7 \times 10^{-7} \mu\text{Ci/cc}$ (40 MPC)
- b. Radioiodine (^{131}I) air activity $> 4.5 \times 10^{-6} \mu\text{Ci/cc}$ (500 MPC)
- *4a. Particulate air activity $> 4 \times 10^{-8} \mu\text{Ci/cc}$ (40 MPC)
- * b. Particulate air activity $> 5 \times 10^{-7} \mu\text{Ci/cc}$ (500 MPC)
- * c. Particulate air activity $> 2.5 \times 10^{-6} \mu\text{Ci/cc}$ (2500 MPC)

Protective Actions

- 1a. Potassium iodide (KI) recommended
- b. Evacuation recommended
- c. Evacuation mandatory
- 2a. Consider evacuation
- b. Evacuation recommended
- c. Evacuation mandatory
- 3a. Potassium iodide (KI) recommended
- b. Potassium iodide (KI) mandatory
- 4a. Respiratory protection recommended
- b. Respiratory protection mandatory
- c. Evacuation mandatory

Additional Comments

*Revision

Monitoring Team _____

Date _____

³ Abbreviations:

GMSM—GM Survey Meter

CPSM—Cutie Pie Survey Meter

PIC-Pressurized Ion Chamber

MS-2/SPA-3 (VDL or HFL) = miniscaler with scintillation detector in vertical down looking position or horizontal forward looking position

Radiological Protective Action Levels

- ### Radiological Protective Actions

- 1a. Potassium iodide (KI) recommended, unless directed otherwise by Field Coordinator
- b. Evacuation recommended, unless directed otherwise by Field Coordinator
- c. Evacuation mandatory, contact Field Coordinator
- 2a. Contact Field Coordinator and advise
- b. Evacuation recommended, unless directed otherwise by Field Coordinator
- c. Evacuation mandatory, contact Field Coordinator

ATTACHMENT 6

*OPERATING INSTRUCTIONS - GSM, IONIZATION SURVEY METERS,
AND DIRECT-READING DOSIMETERS

1. *GSM Ludium 14 (Eberline E-530 with HP 270, 240, 177C probes)

A. General

1. Assure that the instrument has a current calibration sticker (3-months calibration interval).
2. Check batteries - in BATT position the meter should indicate within the BATT OK area.
3. The meter reading (mR/h or cpm) must be multiplied by the appropriate scale multiplier (X10, X1.0, X0.1, X0.01) to obtain the correct measurement.
4. Audible speakers attached to GSM contain a battery and have an ON-OFF switch.

B. Operation

1. *Inplume measurements are to be performed with the instrument enclosed in a protective plastic bag to prevent contamination.
2. Exposure rate measurements are to be made with the beta shield closed. *Measurements are to be taken at two meters, one meter, and at near contact with the ground surface.
3. *Contamination surveys, if requested by Field Coordinator, will be performed at near contact with the surface. The beta component of the radiation is taken to be the difference in readings with the beta shield open versus closed.

2. *Ionization Survey Meters (i.e., Nuclear Research Corp. CP-2, CP-10).

A. General

1. Assure that the instrument has a current calibration sticker (3-months calibration interval).
2. Check batteries - a BATT test position is provided; the meter reading should indicate within the BATT TEST or BATT OK position.
3. The meter readings (mR/h or mrad/h) must be multiplied by the scale multiplier to obtain the correct readings.

*Revision

Attachment 6 (con't)

4. These instruments are designed to measure gamma and beta radiation. The protective "end caps" are removable for measuring low-energy *photon (< 100 keV) and beta radiation when requested when requested.

**

B. Operation

1. Inplume measurements are to be performed with the entire instrument enclosed in a protective plastic bag to prevent contamination.
2. Check battery - BATT position
3. Zero the instrument - ZERO SET position and adjust scale reading to "0."
4. Adjust the range switch to the lowest multiplier which permits an on-scale reading. Record the measurement.
5. *Inplume exposure rate measurements are to be performed at two meters, one meter, and at near contact with the ground surface.
6. Contamination surveys are performed with the detector at near contact with the surface. Both beta and gamma measurements should be taken.

3. Direct-Reading Dosimeters

A. General

1. This dosimetry system is composed of a small cylindrical self-reading (direct) dosimeter and a charger/reader unit.

B. Operation

1. Reading the dosimeter is accomplished by holding the device up to a light source and looking through the optical end. The position of the dark line (shadow of the fiber) on the graduated scale indicates the exposure to the meter.
2. Zeroing the dosimeter is accomplished by firmly coupling the dosimeter to the charger/reader device, and while viewing the illuminated scale, adjust the zero control to position the thin dark line to the zero position.
3. Remove the dosimeter from the charger/reader unit and read to be sure it is zeroed properly.

**

*ATTACHMENT 7

INSTRUCTIONS FOR MOUNTING AND USE OF SODIUM-IODIDE (NaI)

DETECTOR AS AN AIRBORNE RADIATION MONITOR

1. Equipment Required

- 1 Miniscaler Model:MS-2
- 1 Scintillation Probe Assembly (SPA-3)
- 1 Scintillation Probe Holder for Helicopter (w/clamps)
- 1 Power Converter Model PSI/1 (step-down transformer)
- 1 Roll Nylon Tape

2. Equipment Preparation and Mounting

- (a) Remove front of scintillation probe holder and insert the scintillation probe. The cable should be inserted first and should extend through the opening on the back of the holder.
- (b) Place the cover on the front of the holder and lock into place. Further secure the cover by wrapping nylon tape around the holder and front cover.
- (c) Mount the scintillation probe and holder on the helicopter skid using the four clamps provided with the holder. Precautions should be taken to preclude the holder from becoming loose and falling off the skid during flight. The holder should be placed in position to permit the cable to extend into the cockpit. NOTE: The probe may be mounted either parallel or perpendicular to the ground--parallel for plume movement, etc.; perpendicular to determine ground deposition.
- (d) Place miniscaler inside the cockpit and connect probe cable to the detector connector.
- (e) Connect power converter to miniscaler battery outlet on the back of the scaler.
- (f) Connect the power converter to the helicopter battery using the red (+) and black (-) alligator clamps. The power converter converts the 28V from the helicopter battery to 14V. The MS-2 can operate at 7.5-14V at 1.0 amp load.

*Attachment 7 (con't)

3. Miniscaler Settings¹

1. Adjust the H.V. Adjust dial to 0.0.
2. Flip the power switch (back of instrument) to ON position.
3. Set the H.V. Adjust knob to the value indicated in section C.1 of the instructions attached to the cover of the miniscaler.
4. Set the THRESHOLD knob to 5.0.
5. Flip the WINDOW IN-OUT switch to OUT position.
6. Set the TIMED-STOP-MAN switch to the TIMED position.
7. Set the time select switches to X1 and 1 positions.
8. Position a ¹³³Ba check source on the front face of the detector.
9. Push the RESET-START button to begin COUNT.
10. Normalize the count rate by the check source activity (cpm/ μ Ci).
11. If the instrument reference reading from step 10 is not within $\pm 20\%$ of the value listed in section C.6 of the instruction attached to the cover of the miniscaler, it should not be used to make the survey.
12. For exposure rate measurements, select the desired counting time and set accordingly. (NOTE: It may be necessary to use the count rate meter on the MS-2 to determine the plume location and direction of movement.)
13. Calculate the exposure rate with the equation, given in section C.7 of the instructions attached to the cover of the miniscaler, which is of the form:
$$\mu\text{R/hr} = \frac{\text{Count Rate (cpm)}}{(\text{Correction factor}) (\text{cpm}/\mu\text{R/hr})}$$
14. Record the measurements on the form provided as attachment 5.

¹Note - These procedures are to be used with the instrument settings and reference readings listed in the instructions attached to the cover of the miniscaler.

*ATTACHMENT 9

AIR SAMPLING INSTRUCTIONS

A. AC Power Source

Monitoring teams should utilize AC power outlets at siren sites, perimeter or local monitors, if possible. However, if electric power is not available, use the portable generator according to instructions given below:

1. Remove the generator from the vehicle.
2. Fill the fuel tank.
3. Implant the ground pole at least one foot into the ground.
4. Attach the generator ground lead to the ground pole.
5. Attach ground fault extension cord and outlet.
6. *Position air sampler on support upwind of generator and van.
7. Plug in air samplers with ON-OFF switches in OFF position.
8. Start generator.
9. When generator is fully operational, turn on air samplers to test operability.

B. High-Volume Air Sampling for Radioactive Particulates

1. Mount the paper filter (rough side facing out) on the air sampler.
2. Turn air sampler on and note the flow rate in ft^3/min . (note rotometer value and refer to calibration curve) and the sampling start time.
3. Collect an air sample for 5 minutes ($\sim 100\text{-}125 \text{ ft}^3$ at $20\text{-}25 \text{ ft}^3/\text{min}$).
4. Remove the filter and carefully cut out the center section ($1/4$ of filter area) using the filter cutters.
5. Analyze the filter disc using the miniscaler and GM probe (HP-210). Refer to attachment 11 for the operating instructions and methods for calculating the radioactive particulate air activity.
6. Record sampling parameters and data on the form provided as *attachment 8.

C. Low-Volume Air Sampling For Radioiodine

- *1. Mark the side of the cartridge with an arrow pointing the direction of the air flow and seal in a plastic bag.
- *2. Mount the silver zeolite cartridge with paper prefilter (rough side out) on the air sampler.
- *3. Turn air sampler on and adjust the flow rate to $2 \text{ ft}^3/\text{min}$. Record the time the sampler was started.
- *4. Collect an air sample for 30 minutes ($\sim 60 \text{ ft}^3$ at about $2 \text{ ft}^3/\text{min}$), however, reduce sampling time if cartridge has contact exposure rates of $> 1 \text{ mR/h}$.
- *5. Remove the filter and cartridge from the air sampler.
- *6. Survey the cartridge with GSM (beta shield closed).

*Revision

*Attachment 9 (con't)

- ***7. Place filter in an envelope and label in accordance with section 7.1.
- ***8. Transfer the filter to the courier as soon as possible.
- *9. Cartridges with contact exposure rates < 1 mR/h can be analyzed with
*the miniscaler and scintillation probe. Refer to attachment 11
for operating instruction and methods for calculating the
radioiodine (¹³¹I) air activity.
- *10. Cartridges with contact exposures > 1 mR/h should not be analyzed
*with the miniscaler and scintillation probe. These cartridges
should be sent directly to the screening van for processing.
- *11.*The monitoring team should contact the Field Coordinator for
instructions. For the safety of the monitoring team, the
radioiodine (¹³¹I) air activity can be approximated from the
contact exposure rate as follows:

$$\mu\text{Ci/cc} = \frac{\text{Contact Exposure Rate (mR/h)} \times 1.8 \times 10^{-4}}{\text{Sample Volume (ft}^3\text{)}}$$

- *12. Record the sampling parameters and data on the form provided as
*attachment 8.
- ***13. Place filter in an envelope and label in accordance with section 7.1.
- ***14. Transfer the filter to the courier as soon as possible.

*Revision
**Deletion
***Addendum

*ATTACHMENT 10

OPERATING INSTRUCTIONS - MS-2 MINISCALER WITH GM (HP-210)

AND SCINTILLATION (SPA-3) DETECTOR PROBES

These procedures are to be used with the instrument settings and reference readings listed in the instructions attached to the cover of the miniscaler.

A. Gross Beta - Gamma counting with GM Detector (HP-210)

1. **Adjust the H.V. Adjust dial to the setting indicated on calibration sticker.

2. Adjust THRESHOLD dial to 10.00.

3. Set WINDOW IN-OUT switch to OUT position.

4. Set TIMED-STOP-MAN switch in TIMED position.

Note: Steps 5 through 13 should be performed each time the miniscaler is turned on or when a probe is exchanged.

5. Set time switches to X.1 and 1 positions for a tenth of a minute count.

6. Set TEST switch to ON position.

7. Push RESET-START button to clear scaler display and begin test count.

8. Adjust the range switch for the count rate meter (in the upper left hand corner of the instrument face) until the meter shows an on scale reading. Adjust the response knob as necessary to slow needle movements.

9. The count rate meter value times the range switch multiplier should be approximately 3600 counts per minute. The digital scaler should indicate approximately 360 counts at the end of the tenth of a minute time period.

10. Set the TEST switch in the OFF position.

11. Position the ^{133}Ba check source on planchet and insert directly under GM probe mounted on aluminum holder.

*12. Reset time switches to X1 and 1 positions for a one-minute count.

*13. Push RESET-START button to take a one-minute count.

*14. After the count return the check source to the source container (plastic box).

*Revision
**Deletion

*Attachment 10 (con't)

15. Push the RESET-START button to zero the scaler and begin a one-minute background count.
16. Record the background count rate shown on the scaler.
17. Subtract the background count rate from the check source count rate to obtain the net count rate.
18. Normalize (divide) the net count rate in counts per minute by the check source activity (μCi).
19. If the value calculated in step 18 is not within ± 20 percent of the reference value listed in section A.7 of the instructions attached to the cover of the miniscaler, the instrument should not be used to make the survey.
20. Position the filter disc on the planchet (rough side up) and insert it under the GM detector.
21. Push RESET-START button to begin one-minute count.
22. Subtract the background count rate from the sample count rate to obtain the net count rate.
23. Calculate the particulate air activity with the equation given in section A.8 of the instructions attached to the cover of the miniscaler, which is of the form:

$$\mu\text{Ci/cc} = \frac{\text{Net count rate (cpm)} (\text{correction factor})}{\text{Sample Volume (ft}^3\text{)}}$$

*Note: MPC for unknown beta-gamma emitting radioisotopes =
 $1 \times 10^{-9} \mu\text{Ci/cc}$

24. *Record the sampling parameters and data on the form provided as attachment 8.

B. *Gamma Spectroscopy with Scintillation Detector.

1. Adjust to H.V. Adjust dial to 0.00.
2. Attach scintillation probe cable connector to the miniscaler input jack (on lower right corner of instrument face).
3. Adjust the H.V. Adjust, THRESHOLD and WINDOW dials to the setting indicated in sections B.1 and B.2 of the instructions attached to the cover of the miniscaler.
4. Set the WINDOW IN-OUT switch in the IN position.
5. Set the TIMED-STOP-MAN switch in TIMED position.

*Revision

*Attachment 10 (con't)

(Note: Steps 6 through 18 should be performed each time MS-2 miniscaler is turned on or a probe is exchanged.

6. Set time switches to X.1 and 1 positions for a tenth of a minute count.
7. Set TEST switch to ON position.
8. Push RESET-START button to clear scaler display and begin test count.
9. Adjust the range switch for the count rate meter (in upper left hand corner of instrument face) until the meter shows are on scale reading. Adjust the response knob as necessary to slow needle movement.
10. The count rate meter value times the range switch multiplier should be approximately 3600 counts per minute. The digital scaler should indicate approximately 360 counts at the end of the tenth of a minute time period.
11. Set the TEST switch in the OFF position.
12. Attach the ^{133}Ba check source to the flat end surface of the scintillation detector and insert probe in lead shield.
13. Reset time switches to X1 and 1 positions for a one-minute count.
14. Push RESET-START button to take a one-minute count.
15. After the count, return the check source to the source container (plastic box).
16. Push RESET-START button to take a one-minute background count.
17. Subtract background count rate from check source count rate to obtain net count rate.
18. Normalize (divide) the net count rate by the check source activity (μCi) to obtain reference reading.
19. If value calculated in step 18 is not within ± 20 percent of value listed in section B.7 of the instructions attached to the cover of the miniscaler, the instrument should not be used to make the survey.
20. Attach silver zeolite cartridge (with arrow pointing away from detector) to the flat end surface of the scintillation detector and insert probe in lead shield.

*Attachment 10 (con't)

21. Push RESET-START button to take a one-minute count.
22. Subtract the background count rate from the sample count rate to obtain net count rate.
23. Calculate radioiodine air activity from the equation given in section B.8 of the instructions attached to the cover of the miniscaler, which is of the form:

$$\mu\text{Ci/cc} = \frac{\text{net count rate (cpm)} (\text{correction factor})}{\text{Sample Volume (ft}^3\text{)}}$$

(Note: MPC_a for radioiodine (^{131}I) = $9 \times 10^9 \mu\text{Ci/cc}$)

24. Record the sampling parameters and data on the form provided as *attachment 8.

*ATTACHMENT 11

INSTRUCTIONS FOR COLLECTING SAMPLES AT
FIXED MONITORING LOCATIONS
LOCAL AND PERIMETER MONITORS

A. *Air Particulate Filters¹

1. Record the rotometer flow (in ft³/min, cfm), date, time, and initials of the collector on the envelope located on the inside of the monitor building door.
2. Carefully remove the O-rings and masking tape from the filter paper.
3. Handling the filter by its edges, place the filter inside the envelope.
4. Place a new filter around the filter holder, securing it with a strip of masking tape and the two O-rings.
5. Adjust the flow rate to 3 ft³/min on the rotometer.
6. Record the date, time, and flow rate on an envelope and leave it in the door of the monitor building.
7. Make an additional note on the envelope to indicate that the previous sample was collected by a TVA Emergency Radiological Monitoring Team and indicate the van number for identification.
8. *Record the sampling parameters on the form provided as attachment 8.

B. *Charcoal Filters (Radioiodine)¹

1. Record the rotometer flow rate (in ft³/min, cfm), date, time, and initials of the collector on the envelope inside the door of the monitor building.
2. Record both the start and stop dates, times, and flow rates on the label attached to the small plastic bag from the emergency kit.
3. Open the filter holder.
4. Remove the charcoal filter and place it in the plastic bag.
5. Insert a new charcoal filter into the holder and reassemble the filter holder.
6. If the particulate filter is being changed at the same time, set the flow rate as described in section A.5 and record the date, time, and flow rate on the envelope.

¹LSB will provide necessary supplies for collecting fixed station samples.
*Revision

*Attachment 11 (con't)

7. If the particulate filter is not being changed, note the existing flow rate and record the date, time, and flow rate on the air particulate envelope.
8. Make an additional note on the envelope to indicate that the previous sample was collected by a TVA Emergency Radiological Monitoring Team and indicate the van number for identification.
9. *Record the sampling parameters on the form provided as attachment 8.

C. *Rainwater¹

1. Remove the rainwater storage container(s) from the building and thoroughly mix the contents.
2. Observe the total number of gallons collected in the 5-gallon containers and transfer a 1-gallon subsample to a 1-gallon container.
3. Attach a label to the sample container indicating the date, time, location, collectors initials, and the total number of gallons collected in the 5-gallon container(s).
4. Return the containers to the building and reconnect the collection lines, making sure the tubing is not pinched.
5. Special grab samples of rainwater may be taken from locations other than atmospheric monitoring stations.
 - 5.1 Place a collection device (tray, bucket, etc.) in the area as directed by the Field Coordinator.
 - 5.2 After an appropriate collection period, transfer the sample to a 1-gallon container.
 - 5.3 Label the container with the date, time, location, sample type, and the initials of the collector.
6. Record the sampling parameters on the form provided as attachment 8.

D. *Heavy Particle Fallout (Gumpaper)¹

1. Remove the gummed acetate paper and its associated holder.
2. Label with date, time, location, and the initials of the collector.

¹LSB will provide necessary supplies for collecting fixed station samples.
*Revision

*Attachment 11 (con't)

3. Place a new gummed acetate paper fallout collector on the mount and secure it in place.
4. Place the collector taken from the mount into the box from which the new collector was obtained.
5. *Record the sampling parameters on the form provided as attachment 8.

*ATTACHMENT 12

INSTRUCTIONS FOR COLLECTING ENVIRONMENTAL SAMPLES

A. Direct Radiation

1. Remove the in-place TLD from its holder.
2. Exchange it with an annealed TLD.
3. Place additional TLDs at locations directed by the Field Coordinator.
4. *Record sampling parameters on form provided as attachment 8.

B. Milk

1. At the direction of the Field Coordinator, proceed to the designated farm.
2. Contact the farm owner and request that he sell TVA a sample of milk.
3. Obtain at least one gallon (preferably two gallons, unless otherwise notified).
4. Label the container with the date, time, location, and the collector's initials.
5. *Record sampling parameters on form provided as attachment 8.

C. Vegetation

1. Proceed to the area as directed by the Field Coordinator.
2. Cut or break at ground level one and one-half to two kilograms (enough to fill an 18- x 20-inch plastic bag) of grass and place it into the plastic bag. (Efforts should be made to collect vegetation representative of the pasturage where cattle graze or representative of edible vegetation.)
3. Seal the bag and label with date, time, location, type of sample, and the initials of the collector.
4. *Record sampling parameters on form provided as attachment 8.

D. Poultry and Food Crops

1. Proceed to the sampling location as directed by the Field Coordinator.
2. Purchase the designated sample from the source.

*Revision

*Attachment 12 (con't)

3. Label each sample with the date, time, location, type of sample, and the initials of the collector.
4. Record sampling parameters on form provided as attachment 8.
5. Examples of types of products and the approximate amounts necessary for analysis are shown below:

<u>Product</u>	<u>Amount of Sample</u>
Poultry	5 kg (N 4 chickens)
Grains	4 kg
Greens	4 kg
Corn	3 dozen ears
Tomatoes	5 kg
Potatoes	5 kg
Peaches	6 kg
Soy beans	4 kg

E. Well Water

1. Pumped Wells
 - 1.1 Collect one gallon of water from a convenient faucet at the designated sampling location.
 - 1.2 Label with the date, time, location, type of sample, and the initials of the collector.
 - 1.3 *Record sampling parameters on form provided as attachment 8.
2. Observation (open) wells
 - 2.1 Lower a standard floating valve well bucket (obtain from the EDS) into the well.
 - 2.2 Draw the bucket up from the well.
 - 2.3 Transfer 1 gallon of water from the bucket to a 1-gallon sample container.
 - 2.4 Label with the date, time, location, type of sample, and the collector's initials.
 - 2.5 *Record sampling parameters on form provided as attachment 8.

*Revision

*Attachment 12 (con't)

3. Automatic Sampler

- 3.1 Remove the sample storage container from the shelter.
- 3.2 Agitate the sample thoroughly.
- 3.3 Transfer a 1-gallon subsample to a 1-gallon container.
- 3.4 Label with date, time, location, type of sample, and the initials of the collector.
- 3.5 *Record sampling parameters on form provided as attachment 8.
- 3.6 Return the storage container to the shelter and reconnect the collection line, making sure the tubing is not pinched.

F. Drinking Water From Surface Sources

1. Grab sampling (from water system)
 - 1.1 Collect one gallon of water from a convenient faucet at the designated sampling location.
 - 1.2 Label with the date, time, location, type of sample, and the initials of the collector.
 - 1.3 *Record sampling parameters on form provided as attachment 8.
2. Grab sampling (from intake area)
 - 2.1 Lower a bucket (obtain from EDS) into the water source (river, etc.) at the intake area.
 - 2.2 Transfer 1 gallon to a 1-gallon container.
 - 2.3 Label with the date, time, location, type of sample, and the collectors initials.
 - 2.4 *Record sampling parameters on form provided as attachment 8.

G. Soil

1. Mark off an area 1-foot square.
2. Cut the soil to a depth of at least one-half inch.

*Revision

*Attachment 12 (con't)

3. Remove the top one-half-inch layer of soil and place it in a plastic bag.
4. Seal the bag and label with the date, time, location, type of sample, and the collector's initials.
5. *Record sampling parameters on form provided as attachment 8.

* ATTACHMENT 13
SAMPLE ANALYSIS DATA FORM

Date _____

Page ____ of ____

A. Monitoring Team

Location (Direction \pm Distance/Point)[illegible]

2 Abbreviations:

2-Air Samples

Air Samples
Lo-Vol—Low Volume air sample for radioiodine (¹³¹I)
Hi-Vol—High Volume air sample for radioactive particulate

3 Fixed Monitoring Samples

6 Terrestrial Samples
OR-Direct Radiation (YLDs)

Terrestrial Samples
DR-Direct Radiation (TLDs)
M-Milk
V-Vegetation (grass)
WW-Well Water
DWSS-Drinking Water from Surface Source
S-Soil

Footnotes:

Conditions

1a. Silver zeolite cartridge contact exposure rate > 2 mR/h
b. Silver zeolite cartridge contact exposure rate > 100 mR/h

Recommended Actions

- 1a. Contact Field Coordinator, send cartridge to TVA radiological laboratory for analysis
- b. Contact Field Coordinator and request instructions

*Revision

*ATTACHMENT 14

OPERATING INSTRUCTIONS - TRACOR NORTHERN 1705 MULTICHANNEL ANALYZER
WITH SCINTILLATION DETECTOR

Note: Comprehensive operating instructions are provided in the instruction manual, which is stored with the analyzer.

A. System Assembly

1. Connect the scintillation detector output cable to the analyzer input jack.
2. Connect the battery pack (bias high-voltage power supply) to the scintillation detector base assembly.
3. Plug the analyzer into an AC power source. If an external AC power source is not available, use the on-board inverter-battery power supply. To operate the inverter, follow the directions attached to the inverter.

B. Multichannel Analyzer Operation

1. Pull the POWER switch out gently.
2. Adjust the INTENSITY and FOCUS controls to illuminate the screen with a clear image.
3. Raise the CLEAR switch to the DATA position to clear the screen and then depress the CLEAR switch to zero the time.
4. Set the AMP switch in the IN position.
5. Adjust LLD to 0.2 and lock dial.
6. Adjust ULD to 10.0 and lock dial.
7. Adjust GAIN to 1.9.
8. Set OFFSET to 0.
9. Set CONVERSION GAIN to 1024.
10. Set HORIZONTAL to FULL.
11. Set MODE to PHA.

*Revision

*Attachment 14 (con't)

12. Set PRESET to LIVE.
13. Set TIME BASE (lower switch) to 00.
14. Set VERTICAL SCALE to 5K.
15. Adjust AMP switch to IN position.
16. Adjust ADD/SUB switch to ADD position.

C. Source Calibration

1. Place ^{109}Cd , ^{137}Cs , and ^{60}Co check sources on detector and close shield.
2. Depress CLEAR switch to TIME position to zero time and then raise to DATA position to clear screen.
3. Push the ACQUIRE button--light indicates that the analyzer is in the acquiring data.
4. Four defined photopeaks should appear on the screen.
5. Adjust the HORIZONTAL/EXPAND control so that the entire spectrum appears on the screen.
6. Move the CURSOR control and compare the peak channel number for each of the photopeaks with the values listed in the table below.

<u>Radioisotope</u>	<u>Gamma Energy (KeV)</u>	<u>Channel Numbers</u>
^{109}Cd	88	45
^{137}Cs	662	331
^{60}Co	1173	585
	1332	665

7. If the center of the photopeak falls within plus or minus one channel of the values listed in the table (step C6), the analyzer is calibrated to approximately 2 KeV per channel.
8. Lock the GAIN dial to preserve the calibration.
9. If the analyzer is not calibrated properly, adjust GAIN to shift the spectrum to the right or left on the screen.

*Revision

*Attachment 14 (con't)

10. After each adjustment of the GAIN control, raise the CLEAR switch to the DATA position to clear the screen.
11. Once the analyzer is calibrated, lock GAIN dial and remove check source from detectors.

C. Sample Analysis

1. Readjust TIME BASE switches to 6 (top) and 10 PHA (bottom) for 60 second counting period.
2. Clear data and time with CLEAR switch.
3. Depress ACQUIRE button to begin one-minute background count.
4. Determine the number of background counts in the radioiodine (^{131}I) photopeak region by adjusting the cursor control to position the cursor (bright dot on screen) in channel 168. Then raise the REGION switch to the ENTER position. Move the cursor to channel 211 and repeat the process. Record the number of counts displayed in the upper right hand corner of the screen and then depress the REGION switch to ERASE position to remove the intensified region.
5. Place the sealed air filter cartridge on the detector, activity side down (arrow on filter cartridge should be pointing upward, away from the detector).
6. Clear data and time with CLEAR switch.
7. Depress the ACQUIRE button to begin one-minute count.
8. Repeat step 4 and record the integral number of counts for radioiodine (^{131}I).
9. Subtract the background count rate (step C.4) from the sample count rate (step C.7) to determine the net sample count rate.
10. Calculate the radioiodine (^{131}I) air activity from the following formula.

$$\mu\text{Ci/cc} = \frac{\text{net count rate (cpm)} \times (2.1 \times 10^{-10})}{\text{Sample volume (ft}^3\text{)}}$$

11. Record sampling parameters and results on the form provided as *attachment 13.

APPENDIX 1
OPERATING INSTRUCTIONS - MOBILE
COMMUNICATIONS SYSTEMS

A. FM Transmitter/Receivers

All TVA vans dedicated for emergency radiological monitoring are equipped with two-way radios. To operate the units, the vehicle ignition switch must be in the on or accessory power position. Then readjust the ON-VOLUME and SQUELCH controls to the proper loudness.

When making a radio-call, depress the button on the hand microphone and speak directly into it. All communications should begin with the caller identifying himself by his call number (refer to table 1) and then identifying the station he is trying to contact by its call numbers. At the end of the transmission, the caller should say the word "over" to indicate that he is finished and waiting for a response. As an example of a transmission:

"This is 9139 calling K1F253, . . over."

The receiving stations should reply:

"This is K1F253, go ahead with your transmission 9139, over."

After the information has been transmitted in a timely and professional manner, each station should sign off by stating their call number and the word "clear." As there is currently only one frequency which is utilized for the transmission of field data from the monitoring team to the Field Coordinator, the amount of time required for transmitting information should be kept to a minimum.

Appendix 1 (con't)

B. Mobile Telephones

TVA vans, license numbers TV-10261 and -10263 are equipped with mobile telephones. The operation of the telephones requires that the vehicle ignition switch be in the ON or accessory power position. To make a call, first select the proper frequency channel for the area that you are located in. A complete listing of the available channels is in the National Mobile Telephone Service Area Listings booklet which is stored in the glove compartment of each vehicle. Next pick up the receiver, the green indicator light on the unit will light when the channel is clear and the red will light when it is busy. If the channel is clear, wait two or three seconds for a dial tone and dial the number or contact the operator for assistance.

Telephone numbers for the vans, emergency centers, and facilities are provided in table 2.

Table 1¹
Radio Call Signs

<u>Location</u>		<u>Call Sign</u>
ROB	**MSEC	*KIF 253, KIF 252M
	Mobile Units:	
	Laboratory Services - TV-29346	9148
	TV-29349	9149
	Radiological Hygiene - TV-10203	9139
	TV-10261	9147
	TV-10278	9130
	TV-10263	9131
	TV-10279	9132
	Portable Units:	
	Radiological Hygiene	Portable 1
		Portable 2
		Portable 3
	*Industrial Hygiene (MPB)	9116P
		9117P
		9118P
BFN	Met Station/Control Room	KIF 254
	Mobile Unit TV - 10219	9133
SQN	Met Station/Control Room/HP LAB	KIF 252
	Mobile Unit TV - 10158	9145
	***FCC Lovell Field	***KIF 252 F
WBN	Met Station	KTD 273
	Mobile Unit TV-10220	9134
EDB	Water Quality Branch	
	(Base - c/o Mahlon Taylor)	KTD 240
	Mobile Units TV-29257	9142
	TV-29287	9141
	Portable Units	9120P
		9121P
EARL (Vonore)	Base Station	KPA 218
	Mobile Units TV-10238	9144
	TV-29370	9129
SEOC (Decatur)	Base Station	KPA 263

¹NOTE: A copy of this table is in each emergency radiological monitoring vehicle on the driver's side sun visor.

*Revision
 **Deletion
 ***Addendum

Table 2

Emergency Telephone Directory

Emergency Monitoring Vehicles

Telephone Numbers

TVA van TV-10261
 TVA van TV-10203
 (Channels: YS(11)-JS(15)-YR(19)-JR(23)(152-162 MHz)

381-2190
 381-2160

Emergency Centers

Muscle Shoals Emergency Center
 *Multipurpose Building
 Muscle Shoals, Alabama

*(205) 386-2811
 (205) 386-2075
 (205) 386-2991

Central Emergency Control Center
 Chestnut Street Towers II
 Chattanooga, Tennessee

(615) 755-6834

State Emergency Operation Center
 Morgan County Court House
 Decatur, Alabama

(615) 355-1680
 (615) 355-9520

Field Control Center
 National Guard Armory (Lovell Field)
 Chattanooga, Tennessee

(615) 892-0844
 (615) 892-1366

Nuclear Plant Health Physics Staff

Browns Ferry Nuclear Plant

(205) 729-6488

Sequoyah Nuclear Plant

(615) 751-0328

Watts Bar Nuclear Plant

(615) 365-4354

Meteorological Towers (Environment Data Stations)

Browns Ferry Nuclear Plant

(205) 729-6917

Sequoyah Nuclear Plant

(615) 842-9271
 (615) 842-9201

TVA Transportation Branch Garages

Muscle Shoals
 Chattanooga
 Knoxville

(205) 386-2421
 (615) 751-5550
 (615) 632-3524

*Revision

APPENDIX 2

BROWNS FERRY SITE MAPS

Maps with coordinates and monitoring points are
located in the emergency kits.

APPENDIX 2
ENVIRONMENTAL MONITORING LOCATIONS
BROWNS FERRY NUCLEAR PLANT

<u>Screening Vans</u>		<u>Map Coordinates</u>
1. PM-4 BF (Courtland)	North side of Alabama, Hwy. 26, one mile east of Courtland	WSW +10
2. PM-2 BF (Athens)	Athens substation just west of intersection of U.S. Hwy. 72 bypass and bus route 72.	NE +10 ENE -10
3. Elk River Park	Hwy. 72 across the bridge on the northwest side of Elk River.	NW +9.5
4. Morgan County Courthouse	302 Lee Street, Decatur, Alabama	SE -10
<u>Local Monitors</u> (Environmental monitors with telemetry systems)		
1. LM-1 BF (Northwest-1)	At overpass northwest of Cooling tower.	NNW +1 ¹ N -1
2. LM-2 BF (North)	Gravel road east of LM-1 BF.	NNE -1/2
3. LM-3 BF (Northeast)	South side of Huntsville-Browns Ferry Road at cemetery	ENE -1/2
4. LM-4 BF (Northwest-2)	One mile west of Shaw Road in Paradise Shores	WNW -1½
5. LM-5 BF (Southwest)	Dale Davis Farm on NE. side of Mallard Creek Road, 1/2 mile SE of Mallard Creek Bridge	WSW -2½

¹The station is located near the boundary between the NNW and the N sectors and, depending on the map used, may fall in either sector.

ENVIRONMENTAL MONITORING LOCATION

BROWNS FERRY NUCLEAR PLANT

(Continued)

<u>Perimeter Monitors (con't)</u>		<u>Map Coordinates</u>
1. PM-1 BF (Rogersville)	Rogersville substation one mile N of Rogersville on Alabama Hwy. 207	NW $\pm 13^2$
2. PM-2 BF (Athens)	Athens substation just west of intersection of U.S. Hwy. 72 bypass and bus route 72	NE +10 ENE -10
3. PM-3 BF (Trinity)	Trinity substation, one mile south of Alabama, Hwy. 20, two miles west of Monsanto entrance	SSE -7
4. PM-4 BF (Courtland)	North side of Alabama, Hwy. 20, one mile east of Courtland	WSW +10
<u>Remote Monitors</u>		
1. RM-1 BF (Muscle Shoals)	East side of River Oaks Building	W $\pm 32^3$
2. RM-2 BF (Lawrenceburg, TN)	At Lawrenceburg substation, one mile north of Lawrenceburg, 0.2 mile west of U.S. Hwy. 43.	NNW ± 40

²The station is located near the middle of the sector and, depending on the map used, may fall into either the NW, +13 or the NW, -13 sector.

³The station is located in the W sector at a distance exceeding the range of the map; therefore, the + or - portion of the sector is not easily determined.

ENVIRONMENTAL MONITORING LOCATION

BROWNS FERRY NUCLEAR PLANT

(Continued)

<u>Milk</u>		<u>Map Coordinates</u>
Brooks Dairy	5 miles NW of plant, 1 mile S on U.S. 72 on the first road E of Clements School	NNW -6,7 ⁴
Bitting Dairy	4 miles E of plant just N of the Huntsville-Browns Ferry Road (First house on left on the first road on left after crossing second creek from plant)	ENE +3,4 E -3,4
Smith Dairy	5 miles N of plant on snake Road, 1/2 mile E of Shaw Road (plant access road from U.S. 72)	N ± 4,5
Looney Dairy	1 mile NE of intersection of Reid Community, 5 miles NE of plant on Athens-Browns Ferry Road	ENE -6
Thrasher Dairy	7 miles NE of plant, 2 miles W of Tanner, Alabama	ENE +6
Control Dairies	(The following dairies are listed as control dairies; however, additions, substitutions, and/or deletions may be made as needed.	
Newton Dairy	Approximately 5 miles E of Loretto, Tennessee, near the Five Points Community	NW, 27

⁴The station is near the 7-mile ring and, depending on the map used, may fall into either the NNW, -6 or the NNW, -7 sector.

ENVIRONMENTAL MONITORING LOCATION

BROWNS FERRY NUCLEAR PLANT

(Continued)

<u>Milk (con't)</u>		<u>Map Coordinates</u>
Jennings Dairy	Approximately 4 miles E of Lawrenceburg, Tennessee, on Mars Hill Road	NNW, 40
Curry Dairy	Approximately 3 mile S of of Pulaski, Tennessee, on Airport Road	N, 32
Carton Dairy	Approximately 1 mile S of Tuscumbia, Alabama, E of Jackson Highway	W, 32
<u>Vegetation</u>		
Dairy Farms	Every effort should be made to take these samples from the pasture on which cattle graze, or equivalent	N, \pm 4,5
<u>Well Water</u>		
Observation Well #6		
Observation Wells 1-5		
Control Well	Smith Farm	
<u>Public Water</u>		
Champion Paper Company	Automatic water sampler at Champion water intake structure	WNW, -10
Decatur	Bait Shop at boat harbor, north of Keller Memorial Bridge	SE, -10
Sheffield	River Oaks Building	W, 32
Wheeler Dam	Public Safety Office on S side of dam	WNW, 15,16

*Revision

ENVIRONMENTAL MONITORING LOCATION

BROWNS FERRY NUCLEAR PLANT

(Continued)

<u>Food Crops</u>	<u>Map Coordinates</u>
Poultry	Local farmers, or Conagra, Athens
Vegetables	Private vegetable gardens in Paradise Shores area or Turner's Store (locally grown produce only)
Grains	Limestone County Co-op, or local, if available
Fruits	Paradise Shores, if available, or Athens area
Control	Obtain comparable food crops grown at a distance of at least 10 miles from the plant
<u>TLD</u>	Perimeter and remote monitors Davis farm across river from plant, along river bank, 2 miles E of Davis farm, and onsite locations
<u>River Water</u>	
Elk River	At bridge on Limestone County Road 99 between Good Springs and Athens
Browns Ferry Discharge	*Collected by Field Operations at the discharge
Reservoir (samplers located at: TRM 285.2 TRM 293.3 TRM 305.0)	Collected by automatic samplers. *Samplers serviced by Field Operations personnel and samples held at the Environmental Data Station for pickup by Radiological Hygiene personnel

*Revision

APPENDIX 3

SEQUOYAH SITE MAPS

Maps with coordinates and monitoring points
are located in the emergency kits.

APPENDIX 3

ENVIRONMENTAL MONITORING LOCATIONS

SEQUOYAH NUCLEAR PLANT

<u>Screening Vans</u>		<u>Map Coordinates</u>
1. PM-5 SQ (Georgetown)	Georgetown Substation on S side of Tennessee Hwy. 60, 200 feet E of Tennessee Hwy. 58	NE, +9 ENE, +4
2. Forward Control Center	Air National Guard Armory Lovell Field, Chattanooga	SSW ±14
3. Sale Creek Volunteer Fire Department Hall No. 1	Hwy. 27, Sale Creek	N -10
4. PM-1 SQ (Northwoods)	Northwoods Substation 1 mile W of Hixson Pike on Tennessee Hwy. 153.	WSW, -10
<u>Local Monitors</u> (Environmental monitors with telemetry systems)		
1. LM-1 S (Southwest)	50 feet behind SQN Environmental Data Station	SW, +1/2
2. LM-2 S (North)	Along plant road under transmission lines, on N side of plant, 150 feet W of river	N, +1/2
<u>Perimeter Monitors</u>		
1. PM-1 S (Northwoods)	Northwoods substation, 1 mile W of Hixson Pike on Tennessee Hwy. 153	WSW, -10
2. PM-2 S (Hamilton County Park)	Hamilton County Park, 100 feet behind assembly hall	SW, +3
3. PM-3 S (Soddy-Daisy)	Daisy substation 1/2 mile E of U.S. Hwy. 27	W, +5

*Revision

ENVIRONMENTAL MONITORING LOCATIONS

SEQUOYAH NUCLEAR PLANT

(Continued)

<u>Perimeter Monitors (con't)</u>		<u>Map Coordinates</u>
4. PM-4 S (Sale Creek)	Sale Creek, 1/4 mile W of U.S. Hwy. 27, behind Tillman Fuller's house	N, -10
5. PM-5 S (Georgetown)	Georgetown substation on S side of Tennessee Hwy. 60, 200 feet E of Tennessee Hwy. 58	NE, +9; ENE, -9
6. PM-6 S (Work)	Work community, E side of Birchwood Pike, 5 miles S of Birchwood	NNE, +4
7. PM-7 S (Harrison Bay)	Harrison Bay substation, E side of Tennessee Hwy. 58, 1 mile N of Mahan Gap Road	SE, ±3
8. PM-8 S (Harrison)	Volunteer Ordnance Works E side of Tennessee Hwy. 58, 1/4 mile S of Central High School	SSW, -8
<u>Remote Monitors</u>		
1. RM-1 S	Riverside substation, across from Riverside School	SW, -16
2. RM-2 S	Dayton Water Filtration Plant, Old Armstrong Ferry Rd., 3 miles SE of Dayton, Tennessee 2 miles E of Hwy. 60	NNE, 17
<u>Milk</u>		
Malone Dairy	Birchwood Pike, approximately 5.5 miles S of Birchwood	NNE, +3
Lovell Dairy	Birchwood Pike, approximately 6 miles S of Birchwood	NNE, +2-1/2,3

*Revision

ENVIRONMENTAL MONITORING LOCATIONS

SEQUOYAH NUCLEAR PLANT

(Continued)

<u>Milk (con't)</u>		<u>Map Coordinates</u>
Jones Farm	West of Hixson Pike, approximately 200 yards N of plant access road	WNW, -1,1-1/2, W, +1,1-1/2
Control Dairy	(The following dairy is listed as a control dairy; however, additions or substitutions may be made as needed.)	
Bilderback Dairy	Approximately 1 mile N of Hwy. 68 on the first road W of Hwy. 68/I-75 interchange, W of Sweetwater, Tennessee	NE, 43
Crumley Dairy	W side of Hwy. 58, approximately 1-1/2 miles N of the Hiwassee River	NE, -16
Shadden Dairy	Tennessee Hwy. 60, 2 miles N of Birchwood	NNE, 12
<u>Well Water</u>		
<u>Dairies (as described in section 3)</u>		
<u>Residences</u>		
May Residence	1 mile E of Hixson Pike on Igou Ferry Road	W, ±1/2
<u>Observation Wells</u>		
<u>Public Water</u>		
C. F. Industries	C. F. Industries potable water supply intake at TRM 473.0	SSW, ±9; SSQ, ±10
Chattanooga	Restroom at Chickmauga Dam Lock	SSW, ±11

*Revision

ENVIRONMENTAL MONITORING LOCATIONS

SEQUOYAH NUCLEAR PLANT

(Continued)

<u>Public Water (con't)</u>		<u>Map Coordinates</u>
Dayton	Outside faucet at Dayton water filtration plant (RM-2 S)	NNE, 17
Daisy-Soddy Falling Water Utility District	Chevron Station, E side of Hwy. 27, Daisy, Tennessee	W, +5,6 WNW, -5,6
E. I. Dupont & Company	Outside faucet at Dupont Plant on N side of north access road	SW, +11
Cleveland	Service station on Hwy. 60 at I-75, Cleveland, Tennessee	E, +11 ESE, -11
<u>Food Crops</u>		
Poultry	Poultry grown near SQN, or Central Soya of Chattanooga, Inc. Call to determine when they are processing chickens from the SQN area	
Vegetables	Private vegetable gardens in the SQN area or locally-grown produce from fruit stands in Soddy-Daisy	
Grains	Local farmers, if available, or county co-op	
Fruits	Fruit stands in Soddy-Daisy or Sale Creek (locally-grown fruits only)	
Control Samples	Obtain comparable food crops grown at a distance of at least 10 miles from the plant	
<u>TLD</u>	Perimeter and remote monitors and onsite locations	

*Revision

ENVIRONMENTAL MONITORING LOCATION

BROWNS FERRY NUCLEAR PLANT

(Continued)

River Water

Map Coordinates

Reservoir

Samplers located at:
TRM 473.2
TRM 483.0
TRM 497.0

Collected by automatic
samplers by Data Services
Branch personnel

*Revision

*Table 3

ATMOSPHERIC AND TERRESTRIAL MONITORING STATION LOCATIONS

SEQUOYAH NUCLEAR PLANT

<u>Sample Station</u>	<u>Location Approximate Distance and Direction from Plant</u>
LM-2 S	1/4 mile N
PM-1 S (Northwoods)	10 miles WSW
PM-2 S (Hamilton County Park)	3-3/4 miles WSW
PM-3 S (Daisy)	5-1/2 miles WNW
PM-4 S (Sale Creek)	10-1/2 miles N
PM-5 S (Georgetown)	9 miles ENE
PM-6 S (Work)	5 miles NE
PM-7 S (Harrison Bay)	3-1/2 miles SE
PM-8 S (Harrison)	8-1/2 miles SE
RM-1 S (Chattanooga, Riverside)	16 miles WSW
RM-2 S (Dayton)	17-1/2 miles NNE
(Identical with RM-2 WB, Watts Bar Nuclear Plant)	
Farm L	2-3/4 miles NNE
Farm M	3-1/2 miles NNE
Farm J	1-1/4 miles W
Farm S (Control)	12 miles NNE
Farm C (Control)	16 miles NE
Farm B (Control)	43 miles NE

REP or IPD Cover Page

MSEC IP-10

Dose Assessment Staff Activities During
Nuclear Plant Radiological Emergencies

Prepared by: Richard L. [Signature]
Approved by: R. B. Maxwell [Signature]
Date: 4/29/82

Rev. No.	Date	Revised Pages			
0	9/25/81	All			
1	3/02/82	Add 56			
2	4/29/82	All			
3	9/1/82	31-33, 43, 44, 60-62, 71-73, 78, 79, 117, 118			
4	4/8/83	4 - 7, 12, 124			
5	JUL 07 1983	1-8, Att. 3A & 3B, Att. 6			

DOSE ASSESSMENT STAFF ACTIVITIES
DURING NUCLEAR PLANT RADIOLOGICAL EMERGENCIES

1.0 PURPOSE

To guide the dose assessment staff in obtaining necessary information, calculating doses and dose rates, developing protective action recommendations, and communicating assessment results, used in responding to radiological emergencies at nuclear power plants or arising in shipment of radioactive materials.

2.0 SCOPE

This procedure applies to the activities of the Dose Assessment *staff at the Muscle Shoals Emergency Center in actual and hypothetical radiological emergency situations.

3.0 REFERENCES

Radiological Emergency Plans for the Browns Ferry, Sequoyah, and Watts Bar Nuclear Plants.

Implementing Procedures Document for the MSEC.

*Radiological Emergency Notification Directory (REND) for the Browns Ferry, Sequoyah, and Watts Bar Nuclear Plants (in preparation).

Alabama Radiological Emergency Response Plan.

Tennessee Multijurisdictional Radiological Emergency Response Plans for the Sequoyah and Watts Bar Nuclear Plants (Watts Bar in preparation).

RAC: A Computer System for Radiation Accident Dose Assessment, OHS-20-80-07, August 1981.

*RAC Operator's Guide, September 1982 (version 3.4).

Emergency Dose Assessment Procedures for Atmospheric Releases of Radioactivity - Technical Bases, OHS-20-80-05, Revision 2, January 1982.

Emergency Dose Assessment Procedures for Liquid Releases of Radioactivity - Technical Bases, OHS-20-80-06, Revision 1, January 1982.

Browns Ferry Nuclear Plant Final Safety Analysis Report.

*Revision

Sequoyah Nuclear Plant Final Safety Analysis Report.

Watts Bar Nuclear Plant Final Safety Analysis Report.

RED: A Computer System for Estimating Doses in Case of Radiological Emergencies (in preparation).

RED Operator's Guide (in preparation).

Regulatory Guide 1.109, Revision 1, Nuclear Regulatory Commission, October 1977.

4.0

ABBREVIATIONS/DEFINITIONS

*AQB--Air Quality Branch.

CECC--Central Emergency Control Center

Dose--Dose equivalent or dose equivalent commitment.

LTR--Long Term Releases is a code designed to be executed on an HP-97 calculator and to estimate dispersion of water containing radioactivity released from a plant over a long period of time (>24 hours).

*MSEC--Muscle Shoals Emergency Center.

***NUC PR--Division of Nuclear Power

PAG--Protective Action Guide is a dose value which is used in developing protective action recommendations.

RAC--Radiation Accident Code is a computer system used to provide estimates of individual doses resulting from accidental releases of radioactivity to the atmosphere. A straight-line model is used.

RED--Radiological Emergency Dose is a computer code used to provide estimates of individual and population doses and ground contamination resulting from accidental releases of radioactivity to the atmosphere. A segmented-plume model is used.

STR--Short Term Releases is a code designed to be executed on a HP-97 calculator and to estimate dispersion of water containing radioactivity released from a plant over a short period of time (<24 hours).

TSC--Technical Support Center is an emergency response facility within a nuclear power plant.

WCA--Weather Corporation of America is an organization which provides meteorological forecast services in the case of radiological emergencies and drills.

*Revision
***Addendum

Workbook--A name for the document which may be used in estimating individual doses resulting from accidental releases of radioactivity to the atmosphere or water systems. Copies of these documents are attached to this procedure (attachments 1 and 2).

WRC--The Water Resources Coordinator at the MSEC.

All times are entered as central time (daylight or standard as applicable).

5.0 Responsibilities

5.1 The Dose Assessment Supervisor is responsible for directing the dose assessment activities of the MSEC and for providing protective action recommendations to the MSEC Director.

5.2 *The Dose Assessment staff is responsible for performing dose assessments at the MSEC and for assisting the Dose Assessment Supervisor as necessary.

5.3 *The AQB staff is responsible for providing to the Dose Assessment staff, the real time and forecast meteorological data and associated advice on atmospheric dispersion and transport.

5.4 The Environs Assessment Supervisor is responsible for providing results of environs assessments to the Dose Assessment staff.

5.5 TSC and CECC staffs are responsible for providing to the Dose Assessment staff radioactivity release rates and information on plant status and prognosis.

5.6 The MSEC Director coordinates all MSEC staff functions and advises the CECC Director or staff of MSEC status and recommendations on protective actions for the general public and/or TVA employees.

6.0 REQUIREMENTS

6.1 Notification

The initial notification comes from the MSEC Director to the Dose Assessment Supervisor. If the notification is via pager, the Dose Assessment staff members with pagers will receive the same notifying call as the Dose Assessment Supervisor. The Dose Assessment Supervisor makes the following notifications immediately after receiving personal notification. The Dose Assessment Supervisor may request the secretary or the TVA operator (205-386-2601) to make the notifications required.

6.1.1 Place appropriate Dose Assessment staff on standby or direct their reporting to the MSEC on a timely basis. The name of the

*Revision

affected plant and the emergency classification should be stated. Supplemental information may be given. The staff member(s) should be requested to telephone a paging party to confirm receipt of notification.

- 6.1.2 *Place appropriate AQB staff on standby or direct their reporting to the MSEC on a timely basis. The name of the affected plant and the emergency classification should be stated. Supplemental information may be given. The staff member(s) should be requested to telephone a paging party to confirm receipt of notification.
- 6.1.3 The Dose Assessment Supervisor activates meteorological forecast support services (WCA) as appropriate. Reference should be made to IP-17 of reference 3.2.
- 6.1.4 Alternate Dose Assessment Supervisors may notify the primary Dose Assessment Supervisor to discuss response strategies.
- 6.2 MSEC Activation
 - 6.2.1 As requested, proceed to the MSEC.
 - 6.2.2 Report to the MSEC Director that the Dose Assessment staff is activated.
 - 6.2.3 Confirm activation of WCA services (IP-17 of reference 3.2) if appropriate.
 - 6.2.4 As required, obtain the workbooks and forms ("Information Periodically Supplied to CECC," "Dose Rates and Time to PAGs," and "Dose Rates Calculated to Result from Releases to Water"--examples are attached as attachments 3, 4, and 5 to this procedure, respectively) and place them in the designated work area. Copies of appropriate forms are available in the storage area.
 - 6.2.5 As required, obtain an HP-97 calculator from the routine work area of the Dose Assessment staff for use in liquid-related calculations. Other calculators (for example, HP-45s) may be obtained for performing arithmetical calculations.
 - 6.2.6 Log on to the computer system to enable use of the RAC and/or RED models to estimate dose rates.
- 6.3 Assess and Respond

Assess the situation as warranted and make whatever response is required. In general, dose rates are calculated and assessment results are communicated to the CECC.

*Revision

The attached diagram (attachment 6, figure 1) describes general information flow.

- 6.3.1 Release data are provided to MSEC staff from the CECC and TSC. The Communications Coordinator will provide, through the Clerical Supervisor, a copy of incoming hardcopy release information to the Dose Assessment Supervisor.
- 6.3.1.1 The electronic blackboard may be observed to obtain plant status information.
- 6.3.1.2 If additional or clarifying information is required, the Dose Assessment staff should request the information from the TSC staff by telephone and/or from the CECC staff by telephone. The TSC link should be the primary link for receiving additional or clarifying radiological information.
- 6.3.2 *Meteorological information is provided by the AQB staff, with MSEC IP-7. Information incoming to the MSEC should be *provided to the AQB staff if that information has not been provided directly to that staff by the Clerical Supervisor.
- 6.3.3 Environs data are provided by the Environs Assessment Supervisor, through the Clerical Supervisor, with results, sampling/measurement locations, and sampling/measurement times specified.
- 6.3.4 For releases to water systems, dose rates/doses will be calculated using the methodologies described in the workbook (attachment 2). If the WRC provides dispersion estimates developed by Water Systems Development Branch, those estimates should be used in place of the corresponding estimates found in the workbook. The WRC may be consulted for additional information regarding downstream water supplies and transport time to reach those supplies.
- 6.3.4.1 Calculational results will be reported using the format given in attachments 5 to this procedure. The forms are given to the Clerical Supervisor for distribution.
- 6.3.4.2 If the total dose rate for an individual using a public water supply is calculated to be greater than 1.4×10^{-3} rem/d whole body or 8.2×10^{-3} rem/d thyroid, the staff should recommend that the Director advise the CECC of the comparison with maximum permissible concentrations and associated dose rates. If the dose rate exceeds 1 rem/d whole body or 5 rem/d thyroid, the staff should recommend a temporary shutoff of that supply. Such a recommendation is made to the MSEC Director both by form and verbally by the Dose Assessment Supervisor. The Dose Assessment Supervisor should provide to the MSEC Director an opinion regarding the uncertainty associated with the dose rate estimates.

*Revision

- 6.3.4.3 A copy is maintained of the reported results and recommendations.
- 6.3.5 For releases to the atmosphere, dose rates/doses will normally be calculated using the methodologies incorporated into RAC and RED. If the computer systems are not operational or, at the staff member's discretion, if only a few receptor points are relevant, calculations will be performed consistent with the methodologies described in the workbook (attachment 1).
 - 6.3.5.1 RAC methodology is used primarily to project dose rates for individuals on the plume centerline, given a straight plume trajectory. Use of this methodology is likely to overestimate received doses because plume meander is not considered.
 - 6.3.5.2 RED methodology is used to project dose rates/doses to individuals and the population. A segmented-plume methodology is used to determine spatial areas over which the plume has passed.
 - 6.3.5.3 Calculational results will be reported using the format given in attachments 4a and 4b to this procedure. The forms are given to the Clerical Supervisor for distribution.
 - 6.3.5.4 Time to PAG is printed out when RAC or RED is used. If the workbook methodology is used, the time will be calculated as follows: $\text{time (h)} = \text{PAG (rem)} \div \text{calculated dose rate (rem/h)}$.
 - 6.3.5.6 Attachment 7 to this procedure should be used in developing recommendations for protective actions for the general public. Recommendations (except for "No Action") are made to the MSEC Director both by form and verbally by the Dose Assessment Supervisor. The Dose Assessment Supervisor should provide to the MSEC Director an opinion regarding the uncertainty associated with the dose rate estimates.
 - 6.3.5.7 A copy is maintained of the reported results and recommendations.
- 6.3.6 The Dose Assessment staff will update the CECC hourly, or as appropriate, to provide new information or to confirm that the offsite radiological situation is unchanged. CECC personnel should routinely be receiving copies of information on attachments 4 and 5 to this procedure. The Dose Assessment staff is to provide that information promptly upon completion of the forms if the CECC is not receiving copies. Relevant information for a CECC update is given in attachment 3 to this procedure.
 - 6.3.6.1 Order-of-magnitude changes in release rates, and significant changes in projected doses will promptly be brought to the attention of the CECC by the Dose Assessment Supervisor or the designee of the Supervisor. [A significant change is here

defined as one whose magnitude equals or exceeds 10 percent of the appropriate PAG given a release duration of several (for example, 4) hours.]

- *6.3.6.2 *For significant differences in projected dose rates/doses or other technical questions involving radiological assessments by the MSEC and State staffs, the MSEC will attempt to define the reasons for such differences and resolve the issue with the State such that consistent dose rates/doses are being used in developing protective action recommendations.
- 6.3.7 *As requests are made by the MSEC Director, or as appropriate, the Dose Assessment staff will assist in calculating doses to inplant workers. Regulatory Guide 1.109 may be a useful document in making such calculations. A copy is maintained of calculational worksheets and results.
- 6.3.8 Dose assessment status boards should be maintained as time permits. If the boards are not current, they should be identified as being out-of-date.
- 6.4 Transportation Accidents
- 6.4.1 Release rate information will be supplied as available, by personnel at the accident site or by NUC PR personnel. In the absence of release rate information, a calculation should be performed assuming a ground-level release, in a period of one hour, of the total activity(s) in the shipment (or significantly involved in the accident, whichever is less). Nuclide-specific information should be used if available. The default nuclide will be cobalt-60.
- 6.4.2 *The AQB staff should be requested to provide estimates of wind speed, wind direction, and stability class at the accident site unless personnel at the site are able to provide reliable estimates.
- 6.4.3 WRC should be requested to provide estimates of stream flow, as appropriate for the event, unless personnel at the site are able to provide reliable estimates.
- 6.4.4 Dose calculational methodologies and reporting schemes are to be consistent with those described in earlier sections of this procedure.
- 6.5 Event Termination
- 6.5.1 Upon termination of the emergency, all dose assessment records generated during the event are to be consolidated and forwarded *to the Technical Assistance Section for forwarding to the NUC PR Radiological Emergency Preparedness Section. Appropriate supplemental information may be supplied.

*Revision

- 6.5.2 *Members of the Dose Assessment, AQB, and WCA staffs activated for the event are to be informed of event termination. The Dose Assessment Supervisor may request the secretary or the TVA operator (205-386-2601) to make the notifications required.

*Revision

***Attachment 3A (Airborne)

Information Periodically Supplied to the CECC

A. Time: _____ (Central) Caller: _____

B. Release Point: _____ Ground Level, _____ Elevated - Airborne
 Release Mix at _____ (Time, Central) Hours to Termination: _____

_____ Noble Gas	Release Rate: _____ $\mu\text{Ci/s}$
_____ Iodine	_____ $\mu\text{Ci/s}$
_____ Particulates	_____ $\mu\text{Ci/s}$
_____ Gross Activity	_____ $\mu\text{Ci/s}$

C. Met Information: Current _____ Hour Forecast _____

_____ Wind Speed m/s	_____ m/s
_____ Plume Direction	_____
_____ Wind Direction	_____
_____ Stability Class	_____
_____ Precipitation	_____

D. Dose Rate (rem/h):

Total Body	Thy. Inhalation	Sectors
Site Boundary _____	_____	_____
2 mi _____	_____	_____
5 mi _____	_____	_____
10 mi _____	_____	_____

E. Dose (rem)

Total Body	Thy. Inhalation	Sectors
Site Boundary _____	_____	_____
2 mi _____	_____	_____
5 mi _____	_____	_____
10 mi _____	_____	_____

F. Comments: _____

***Attachment 3B (Liquid)

Information Periodically Supplied to the CECC

A. Time: _____ (Central) Caller: _____

B. Release Point: _____ Diffuser, _____ Shoreline - Liquid

Release Mix at _____ (Time, Central)

	Concentration:	(μCi/mL)	MPC Limit
			3×10^{-7}
I-131			
_____		(μCi/mL)	_____
_____		(μCi/mL)	_____
_____		(μCi/mL)	_____
_____		(μCi/mL)	_____
_____		(μCi/mL)	_____
Gross Activity		(μCi/mL)	_____ Total MPC

Release Rate: _____ ft³/s Expected Duration _____ h

C. River Flow at the Plant _____ ft³/s

TRM: WBN-528.0, SQN-484.7, BFN-294.0

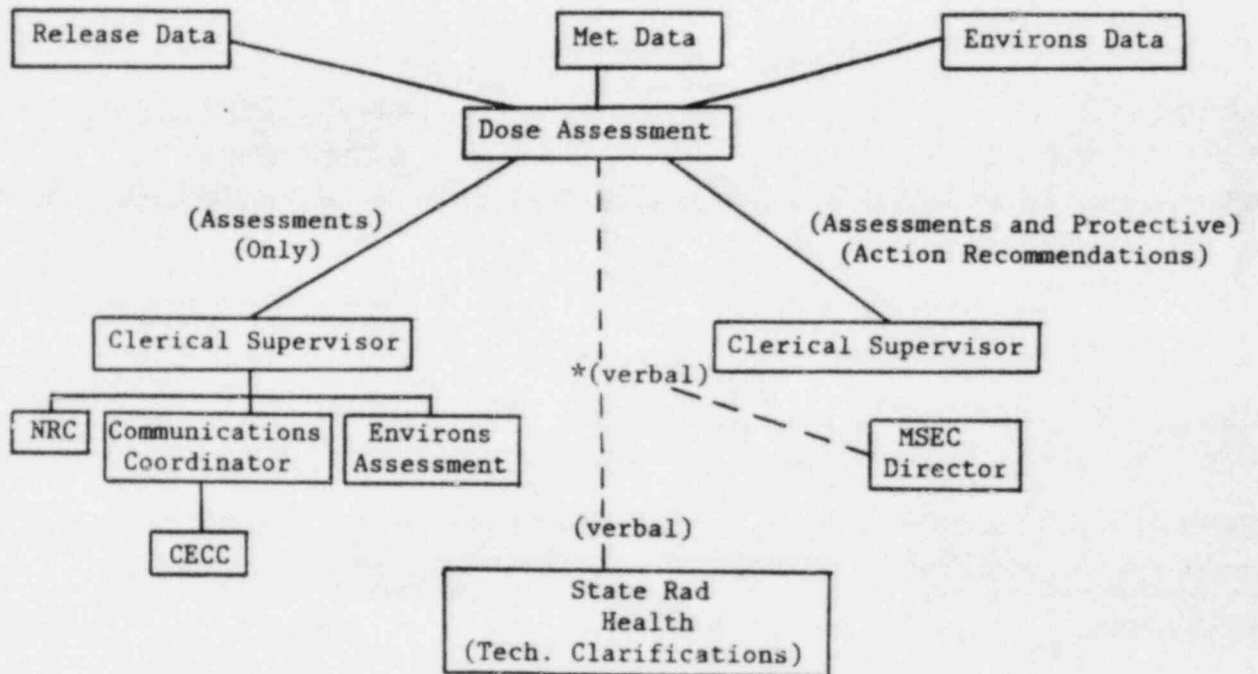
D. Downstream Dose Rate (rem/d) to _____ (specify organ)

Location (TRM)	Name of Water Supply	Arrival Time (Central Time)	Plant Side		Opposite Side	
			Conc (μCi/mL) ^a	Dose Rate (rem/d)	Conc (μCi/mL) ^a	Dose Rate (rem/d)
_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____

E. Comments: _____

^a Nuclides should be specified as necessary.

DOSE ASSESSMENTS
AND
PROTECTIVE ACTION RECOMMENDATIONS



*Revision

REP or IPD Cover Page

MSECC, IP-11 (formerly IP-17)

Activation of Meteorological Forecast Services in Support of
The Radiological Emergency Plan

Prepared By:

Approved By:

Date:

October 30, 1981

<u>Rev. No.</u>	<u>Date</u>	<u>Revised Pages</u>	<u>Rev. No.</u>	<u>Date</u>	<u>Revised Pages</u>
0	10/30/81	All			
1	JUL 07 1983	All			

ACTIVATION OF METEOROLOGICAL FORECAST SERVICES IN SUPPORT OF
THE RADIOLOGICAL EMERGENCY PLAN

1.0 PURPOSE

This procedure details the specific instructions to be used in requesting the activation of the special forecast services of WCA.

2.0 SCOPE

These procedures describe the method for requesting WCA forecast services in support of the Radiological Emergency Plan.

3.0 REFERENCES

4.0 ABBREVIATIONS AND DEFINITIONS

***MSEC - Muscle Shoals Emergency Center
WCA - Weather Corporation of America

5.0 RESPONSIBILITIES

*The MSEC Director or Dose Assessment Supervisor is responsible for requesting the activation of the special forecast services of WCA upon declaration of an Alert, Site Area Emergency, or General Emergency. Activation may be requested upon declaration of Notification of Unusual Event if deemed necessary.

6.0 PROCEDURE REQUIREMENTS

- 6.1 Telephone WCA using the number listed in Radiological Emergency Notification Directory. The authorized caller should then identify himself as a representative of the Tennessee Valley Authority.
- 6.2 For an emergency exercise state, the caller should give the following message: "This is (name of authorized person). We want a code blue for (name of nuclear plant)."
- 6.3 For an actual radiological emergency, the caller should give the following message: "This is (name of authorized person). We want a code red, repeat code red, for (name of nuclear plant)."
- 6.4 Any further consultation with the WCA forecaster should take place through the telephone number given in 6.1.

*Revision
***Addendum

6.5 Upon conclusion of the emergency exercise or actual radiological emergency, the authorized person should call WCA and give the following message: "This (name of authorized person). The event at (name of nuclear plant) is now completed. Please terminate the special forecast."

6.6 The following individuals are authorized to initiate and terminate WCA forecast services:

R. B. Maxwell
J. L. Ingwersen
C. E. Kent, Jr.
J. L. Lobdell
S. G. Bugg
R. L. Doty
R. P. Reed
***M. S. Robinson

REP-IPD/EC-IPD Cover Page

REP-IPD

MSECC, IP-14

Agreement Letter Update

Prepared By:

Approved By:

Date:

9/25/81

<u>Rev. No.</u>	<u>Date</u>	<u>Revised Pages</u>	<u>Rev. No.</u>	<u>Date</u>	<u>Revised Pages</u>
0	9/25/81	All			
PROCEDURE DELETED JUNE 1983					

REVISION LOG SHEET

Revision Date: JUL 08 1983

This log sheet must be retained as the last page of the Muscle Shoals
Emergency Center Implementing Procedures Document.

Inserted by: _____

Date Inserted: _____

<u>Pages to be Removed</u>			<u>New Pages to be Inserted</u>		
Part	Page Number	Revision	Part	Page Number	Revision
IP-1	Cover Page	4	IP-1	Cover Page	5
	1 of 3	4		1 of 5	5
	2 of 3	4		2 of 5	5
	3 of 3	4		3 of 5	5
Attachment 2	1 of 1	4		4 of 5	5
				5 of 5	5
		Attachment 2	1 of 2	5	
			2 of 2	5	
Attachment 3	1 of 2	4	Attachment 3	1 of 2	5
	2 of 2	4		2 of 2	5
IP-2	Cover Page	5	IP-2	Cover Page	6
	1 of 4	4		1 of 6	6
	2 of 4	4		2 of 6	6
	3 of 4	5		3 of 6	6
	4 of 4	5		4 of 6	6
Attachment 2	1 of 1	4		5 of 6	6
				6 of 6	6
		Attachment	1 of 2	6	
			2 of 2	6	
Attachment 3	1 of 2	5	Attachment 3	1 of 2	6
	2 of 2	5		2 of 2	6

REP or IPD Cover Page

MSEC IP-1

NOTIFICATION OF UNUSUAL EVENT, ALERT, OR TRANSPORTATION ACCIDENT

Prepared By: J. J. Ingram
 Approved By: R. B. Maxwell
 Date: 9/25/81

Rev. No.	Date	Revised Pages			
0	9/25/81	All			
CEK 1	2/17/82	1, 2; 3, 5			
2	OCT 26 1982	All			
3	4/8/83	1-3, 5, 6			
4	JUL 07 1983	1-3, Att. 1--p. 1; Att. 2--p. 1; Att. 3--p. 1, 2; Att. 4			
5	JUL 08 1983	1-5, Att. 2--p. 1, 2; Att. 3--p. 1, 2			

NOTIFICATION OF UNUSUAL EVENT,
ALERT, OR TRANSPORTATION ACCIDENT

MSEC DIRECTOR

1.0 PURPOSE

This procedure is designed to guide the MSEC Director during a NOUE, Alert, or transportation accident.

2.0 SCOPE

This procedure covers the anticipated action of the MSEC Director during a NOUE, Alert, or transportation accident. It does not address the Site Area Emergency or General Emergency.

3.0 REFERENCES

Plant Radiological Emergency Plans.

4.0 ABBREVIATIONS AND DEFINITIONS

All times are entered as Central time (daylight or standard, as applicable).

CECC - Central Emergency Control Center
HPS - Health Physics Services
MSEC - Muscle Shoals Emergency Center
NOUE - Notification of Unusual Event
ODS - Operations Duty Specialist
REND - Radiological Emergency Notification Directory
RHS - Radiological Health Staff

5.0 RESPONSIBILITIES

See plant Radiological Emergency Plan, appendix D.

6.0 PROCEDURE REQUIREMENTS

6.1 Notification

The initial notification comes from the TVA ODS to the MSEC Director. Enter the information on attachment 1. The MSEC Director makes the following notifications immediately after receiving this notification.

- 6.1.1 Place appropriate MSEC staff on standby (or activate MSEC as specified in 6.1.3) as follows:
- NOUE - Those deemed necessary.
- Alert - Environs Assessment Supervisor, Dose Assessment Supervisor, and others as deemed necessary.
- 6.1.1.1 During off-duty hours, call the TVA Operator, give necessary information, and ask that he make the notifications required in attachment 3.
- 6.1.1.2 During duty hours, give necessary information and ask the HPS secretary to make the notifications required in attachment 3.
- 6.1.1.3 In the event of an Alert, notify a RHS representative. (See TVA REND.)
- 6.1.3 Activate the MSEC as necessary. Complete 6.2 through 6.5 if the MSEC is activated.

CRITERIA FOR MSEC ACTIVATION

Reasonable potential or actual need for offsite dose or environmental assessment.

Reasonable potential or actual need for inplant health physics support.

- 6.2 MSEC Activation
- 6.2.1 Proceed to the MSEC. Activate MSEC emergency systems. See MSEC equipment procedures.
- NOTE: If not in close proximity to MSEC, direct the Environs or Dose Assessment Supervisor to the MSEC for initial activation. Stay at the telephone until the supervisor is ready to assume responsibility, then proceed to the MSEC.
- 6.2.2 Call the CECC Director and report that the MSEC is activated.
- 6.2.3 Notify a RHS representative of the activation of the MSEC ***and CECC. (See the TVA REND.) If the representative is to be ***dispatched to the CECC, either an alternate MSEC Director or ***one of the MSEC supervisor alternates shall be notified to ***accompany him and assist in the CECC operation.
- 6.2.4 Notify the primary MSEC Director that the MSEC has been activated. (See the REND.)

6.3 Assess and Respond

Assess the situation as warranted, and make whatever response is required. Request assistance from MSEC personnel, as required.

6.4 State Communications

The CECC is the primary communicator with the State contacts. All radiological assessment information shall be transmitted to the CECC, which will pass it on, combined with plant status information, to the State. Informal technical communications will be carried out, as necessary, between the MSEC and State as related to radiological assessments and for technical clarifications in this area.

***6.5 MSEC Staff Relocation

***6.5.1 Upon activation, the MSEC Director, CECC Director, and RHS CECC representative (if available) discuss and decide upon the necessity for relocating MSEC staff.

CRITERIA TO BE CONSIDERED FOR STAFF RELOCATION

1. Reasonable potential or actual threat to environment.
2. Expected duration of event.
3. Weather conditions.

If relocation is considered desirable, the MSEC Director advises a clerical staff person to locate and place on standby backup staff for each of the following positions: MSEC Director, Dose Assessment Supervisor and two dose assessment staff members, Environs Assessment Supervisor and one environs assessment staff member, AQB meteorologist, and one Chattanooga-based Water Resources representative. These contacts shall be made unless the MSEC emergency operation will not be affected.

***6.5.2 When all backup staff have been located and a time is established when they can meet at the Muscle Shoals Airport, the MSEC Director shall consult with the CECC Director and the RHS CECC representative (if available) to make a final determination on whether the backup team should proceed to the CECC.

***6.5.3 If a decision is made to relocate the MSEC staff to the CECC, the following actions shall be taken:

1. MSEC Director asks CECC to make travel and lodging recommendations.

*Revision
***Addendum

2. Team members are notified of time and place to meet for movement to Chattanooga.

***6.5.4 The staff member accompanying the RHS CECC representative is responsible for taking over and directing the activities of the environs assessment portion of the CECC and its assigned clerical support. He is responsible for keeping informed of emergency activities and for seeing that all duplicate copies of MSEC-generated information is placed at the appropriate station. Upon arrival of the MSEC backup team, he is responsible for an initial briefing. Following relief of the initial MSEC staff in Muscle Shoals, he shall remain at the CECC to provide continuity for at least one hour after relief has occurred.

***6.5.5 The MSEC backup team, following the initial brief, shall discuss the situation with their counterparts in Muscle Shoals until satisfied that they are fully aware of the problems and ongoing activities. When the MSEC backup team Director has received reports from each supervisor, the AQB meteorologist, and the Water Resources representative (if necessary), he informs the MSEC Director (Muscle Shoals) and the RHS CECC representative that the MSEC backup team has relieved the MSEC staff in Muscle Shoals and that all future operations will be from Chattanooga.

***6.5.6 The MSEC staff, upon relief, will remain at the MSEC for a period of about one hour and carry out the following activities.

1. Notify all emergency centers that the MSEC staff has been relocated to the CECC and that the alternate telephone numbers should be used. •
2. Provide information as needed to MSEC staff in Chattanooga.
3. Secure MSEC operation, gather all information, reports, tapes, etc., generated during the first shift and package for transport to Chattanooga.
4. Make arrangements for Chattanooga relief shift including transportation and lodging and notifications of additional staff as necessary.
5. Arrange for clerical support to remain at the MSEC and forward NWS information to the MSEC staff in Chattanooga. Security should be maintained for the reduced MSEC operation.

***Addendum

*6.6 Emergency Termination

- *6.6.1 If the MSEC staff has been placed on standby, have the individual who made the contacts in 6.1.1 notify the staff that the emergency has been terminated.

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- *6.6.2 *If the MSEC is activated, its shutdown is based upon mutual agreement between the MSEC Director and the CECC Director. In general, this should not be considered until (1) all issues of environmental contamination are cleared up, and it is known that no further significant public exposure is occurring or is likely to occur, and (2) all abnormal inplant radiation protection problems are under control.

- ***6.6.3 After the MSEC is shut down, ensure that all personal logs, tapes, and written correspondence are provided to the Technical Assistance Section for forwarding to the NUC PR, Radiological Emergency Preparedness Section.

*6.7 Transportation Accidents

- *6.7.1 The MSEC Director activates the MSEC to the extent deemed necessary based upon the information available regarding the severity of the accident. The staffing of the MSEC and the dispatching of emergency teams is decided by discussion between the MSEC and CECC Directors.

7.0 MSEC Director Checklist

A checklist is provided in attachment 2 for quick reference by the MSEC Director. This procedure shall be well understood before use of the checklist.

*Revision
**Deletion
***Addendum

ATTACHMENT 2

MSEC DIRECTOR'S CHECKLIST
NOUE OR ALERT

Date _____

TIME - INITIALS

- _____ - _____ Enter initial notification information on MSEC, IP-1 attachment 1.
- _____ - _____ Place MSEC staff on standby or activate MSEC as appropriate by giving the TVA operator or HPS secretary the appropriate information to carry out actions of attachment 3.
- _____ - _____ For Alert, notify RHS CECC representative.
- _____ - _____ If MSEC is to be staffed, activate MSEC emergency systems. Director remains at telephone until Dose or Environs Assessment Supervisor assumes MSEC responsibility.
- _____ - _____ Activate MSEC emergency systems.
- _____ - _____ Notify RHS CECC representative that MSEC is activated.
***Notify alternate MSEC Director or Supervisor if
***representative is to move to CECC.
- _____ - _____ Call primary MSEC Director and inform him of MSEC activation.
- _____ - _____ ***Consult with CECC Director, RHS CECC representative
***on MSEC staff relocation. Request CECC provide
***transportation, lodging for MSEC backup team, if
***necessary.
- Ensure that:
- _____ - _____ Monitoring teams are dispatched as necessary
- _____ - _____ CECC is provided hourly update.
- _____ - _____ When terminated, deactivate the MSEC staff and inform staff on standby.
- _____ - _____ Provide Technical Assistance staff with recorded information.

*Revision
***Addendum

____ - _____
***Upon relief by backup staff at CECC, notify State
***and TVA emergency centers of change, proceed to
***shut down MSEC, package all recorded information
***for transport to Chattanooga, and make arrangements
***for relief of second (Chattanooga) shift including
***lodging and transportation.

____ - _____
***Ensure clerical and security shifts and provisioning
***for reduced MSEC support is arranged.

ATTACHMENT 3

MSEC NOTIFICATION CHECKLIST

Time Person
 Returning Call

PARTIAL MSEC ACTIVATION
(NOUE or Alert ONLY)

NOTE: Call pager number 386-7--wait for tone to stop and give following message, "There is a (NOUE, Alert) at _____ Nuclear Plant. Call (telephone number) for call verification and standby (report to the MSEC as soon as possible) for further instructions."

_____	_____	Environs Assessment Supervisor	Pager 301
_____	_____	Dose Assessment Staff	Pager 303 ¹
		***Clerical Supervisor	
		***Public Safety	
		***Public Information	

FULL MSEC ACTIVATION
(Site Area or General Emergency
or in accordance with instruction of MSEC Director)

NOTE: Call pager number 386-7--wait for tone to stop and give following message, "There is a (Site Area, General or other) emergency at _____ Nuclear Plant. Call (telephone number) for call verification and report to the MSEC as soon as possible."

_____	_____	Environs Assessment Supervisor	Pager 301
_____	_____	Dose Assessment Staff	Pager 303 ¹
_____	_____	Field Coordinator	Pager 302
_____	_____	Assessment Meteorologist	Pager 181
_____	_____	Water Resources	Pager 195

¹Three pagers are assigned to Dose Assessment Supervisor.

***Addendum

NOTE: The following positions are listed in the REND. Refer to the REND for telephone numbers calling sequentially for each position until one (or number designated) person has been notified. Notification shall be as follows, "A _____ emergency has been declared at _____ Nuclear Plant. Please report to the MSEC as soon as possible."

TVA operators will refer to the TVA Operator Call List. A typical list is attachment 4.

<u>Position</u>	<u>Person Notified</u>	<u>Time</u>
Clerical Supervisor	_____	_____
Communication Machine Operator	_____	_____
**	_____	_____
Dosimetry Supervisor	_____	_____
Public Safety	_____	_____
Public Information	_____	_____
ADP Support Staff	_____	_____
Clerical Pool (Notify 2)	_____	_____
Material Support	_____	_____
CRT Operator	_____	_____
**	_____	_____

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REP or IPD Cover Page

MSEC IP-2

Site Emergency, or General Emergency
Director

Prepared By:

Approved By:

Date:

9/25/81

Rev. No.	Date	Revised Pages			
0	9/25/81	All			
CEK 1	2/17/82	All			
2	9/1/82	3 & 4			
3	OCT 26 1982	All			
4	4/8/83	1-3a, 5, 6			
5	JUL 07 1983	3, 4, Att. 1--p. 1; Att. 3--p. 1, 2; Att. 4--p. 1			
6	JUL 08 1983	1-6, Att. 2--p. 1, 2; Att. 3--p. 1, 2			

SITE AREA EMERGENCY OR GENERAL EMERGENCY

MSEC DIRECTOR

1.0 PURPOSE

This procedure is designed to guide the MSEC personnel during a Site Emergency or General Emergency at a TVA nuclear power plant.

2.0 SCOPE

This procedure covers the anticipated action of the MSEC staff during a Site Emergency or General Emergency. It does not address a NOUE or an Alert.

3.0 REFERENCES

Plant Radiological Emergency Plan.

4.0 ABBREVIATIONS AND DEFINITIONS

All times are entered as Central time (daylight or standard, as applicable).

CECC - Central Emergency Control Center
DNPEC - Division of Nuclear Power Emergency Center
MSEC - Muscle Shoals Emergency Center
NOUE - Notification of Unusual Event
ODS - Operations Duty Specialist
REND - Radiological Emergency Notification Directory
RHS - Radiological Health Staff
TSC - Technical Support Center

5.0 RESPONSIBILITIES

See plant Radiological Emergency Plans, appendix D.

6.0 PROCEDURE REQUIREMENTS

6.1 Notification

The initial notification comes from the TVA ODS to the MSEC Director. Enter the information on attachment 1. The MSEC Director makes the following notifications immediately after receiving this notification.

6.1.1 Activate the MSEC staff.

*Revision

- 6.1.1.1 During off-duty hours, call the TVA operator, give the necessary information and ask that he make the notifications required in attachment 3.
- 6.1.1.2 During duty hours, give the necessary information and ask the branch secretary to make the notifications required in attachment 3.

6.2 Activate the MSEC

The MSEC Director performs the following tasks:

- 6.2.1 Proceed to the MSEC. Activate MSEC emergency systems. See MSEC equipment procedures.

NOTE: If not in close proximity to MSEC, direct the Environs or Dose Assessment Supervisor to the MSEC for initial activation. Stay at telephone until supervisor is ready to assume responsibility, then proceed to MSEC.

- 6.2.2 Call the CECC Director or ODS and report that the MSEC is activated, and the MSEC now assumes the responsibility to recommend protective actions for the public to the CECC.
- 6.2.3 Notify primary MSEC Director and alternates of MSEC activation.
- 6.2.4 *Notify a RHS representative and alternative Director or Supervisor. (See the TVA REND.)

6.3 ENSURE THAT THE FOLLOWING ACTIVITIES ARE CARRIED OUT:

- 6.3.1 Dispatch of Monitoring Teams (by Environs Assessment Supervisor)

MSEC monitoring and screening teams are dispatched to the affected plant area for Site Area or General emergencies.

- 6.3.2 Emergency Worker Support

- 6.3.2.1 Continuous Operation for Long Period of Time (by Materials Support)

The MSEC Materials Support Coordinator schedules manpower, supplies, food, etc., to sustain the operations if the MSEC
**is staffed for a long period of time. Personnel are scheduled for 24-hour operation until the emergency is terminated. The shifts for the MSEC Director, Environs Assessment Supervisor, and Dose Assessment Supervisor are scheduled so that at least one-hour overlap is provided.

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All other personnel require at least 30-minute overlap. Work schedules will be submitted to the appropriate ~~tele~~supervisor to be approved. If MSEC is relocated to the ~~tele~~CECC, the coordinator arranges shifts for MSEC (Muscle ~~tele~~Shoals) clerical support and meals for the support ~~tele~~personnel as necessary.

- 6.3.2.2 *The Field Coordinator ensures through the CECC Management ~~tele~~Services Representative that manpower, equipment, food, etc., are provided for field personnel including screening teams, terrestrial and aquatic monitoring teams, and couriers who are on duty for long periods of time. The shifts for the Field Coordinator require a 1-hour overlap. All other field personnel require a 30-minute overlap.

6.3.3 Recommendations for Protective Actions

In the early stages of any accident, the Shift Engineer at the plant is prepared and trained to initially recommend protective actions to State and local officials.

When the MSEC is properly staffed, the MSEC Director takes over the responsibility to recommend protective actions to the CECC RHS representative, or in his absence, the CECC Director. The CECC Director is notified that the MSEC is assuming this responsibility by the MSEC Director.

6.3.4 Dose Assessment

- 6.3.4.1 The Dose Assessment Supervisor has responsibility for coordinating TVA's dose assessment activities once the MSEC is staffed. Necessary radiological information needed to perform this function shall be obtained directly from the plant TSC or (for clarifications) from the DNPEC Emergency Preparedness and Protection Branch Representative or the CECC-MSEC Communicator. Dose assessments and protective action recommendations are provided to the MSEC Director.
- 6.3.4.2 Hourly, or whenever significant changes occur, the Dose Assessment Supervisor will provide the CECC with the information specified in MSEC IP-10, attachment 3. The CECC will communicate this information to the State.
- 6.3.4.3 The MSEC shall be available to provide the State any technical clarifications related to the radiological assessment information.

*Revision
***Addendum

6.3.5 Communications with State Agencies

6.3.5.1 The CECC is the primary communicator with the State. All radiological assessment information shall be transmitted to the CECC, which will pass it on, combined with plant status information, to the State. The MSEC will provide, as necessary, informal technical communications with the State related to radiological assessments and technical clarifications in this area.

6.3.5.2 The Field Coordinator is in touch with the coordinator of the State environmental monitoring teams. He is responsible for coordinating TVA field team activities with the State Coordinator. He is also responsible for providing all field data to the MSEC.

~~6.4~~ MSEC Staff Relocation

~~6.4.1~~ Following activation and when time is available without interference in immediate emergency response, the MSEC Director shall have an alternate MSEC staff located, and determine when they can report to a transportation departure point.

~~6.4.2~~ MSEC Director, CECC RHS Representative, and CECC Director shall consult to determine the advisability of relocating the MSEC staff to Chattanooga.

CRITERIA TO BE CONSIDERED FOR RELOCATION

1. Reasonable potential or actual threat to environment.
2. Expected duration of event.
3. Time backup MSEC staff can be ready to move.
4. Weather conditions.

~~6.4.3~~ If a decision is made to relocate the MSEC staff to the CECC, the following actions shall be taken:

1. MSEC Director asks CECC to make travel and lodging recommendations.
2. Team members are notified of time and place to meet for movement to Chattanooga.

*Revision
**Addendum

- ***6.4.4 The staff member accompanying the RHS CECC representative is responsible for taking over and directing the activities of the environs assessment portion of the CECC and its assigned clerical support. He is responsible for keeping informed of emergency activities and for seeing that all duplicate copies of MSEC-generated information is placed at the appropriate station. Upon arrival of the MSEC backup team, he is responsible for an initial briefing. Following relief of the initial MSEC staff in Muscle Shoals, he shall remain at the CECC to provide continuity for at least one hour after relief has occurred.
- ***6.4.5 The MSEC backup team, following the initial brief, shall discuss the situation with their counterparts in Muscle Shoals until satisfied that they are fully aware of the problems and ongoing activities. When the MSEC backup team Director has received reports from each supervisor, the AQB meteorologist, and the Water Resources representative (if necessary), he informs the MSEC Director (Muscle Shoals) and the RHS CECC representative that the MSEC backup team has relieved the MSEC staff in Muscle Shoals and that all future operations will be from Chattanooga.
- ***6.4.6 The MSEC staff, upon relief, will remain at the MSEC for a period of about one hour and carry out the following activities.
1. Notify all emergency centers that the MSEC staff has been relocated to the CECC and that the alternate telephone numbers should be used.
 2. Provide information as needed to MSEC staff in Chattanooga.
 3. Secure MSEC operation, gather all information, reports, tapes, etc., generated during the first shift and package for transport to Chattanooga.
 4. Make arrangements for Chattanooga relief shift including transportation and lodging and notifications of additional staff as necessary.
 5. Arrange for clerical support to remain at the MSEC and forward NWS information to the MSEC staff in Chattanooga. Security should be maintained for the reduced MSEC operation.

*6.5 Shutdown of the MSEC Upon Accident Termination

- *6.5.1 The MSEC is shut down on mutual agreement between the MSEC Director and the CECC Director. In general, this should not be considered until (1) all issues of environmental contamination

*Revision
***Addendum

are cleared up and it is known that no further significant public exposure is occurring, or is likely to occur, and (2) all abnormal inplant radiation protection problems are under control.

#6.5.2 After the MSEC is shut down, ensure that all personal logs, tapes, and written correspondence are provided to the Technical Assistance Section for forwarding to the NUC PR, Radiological Emergency Preparedness Section.

7.0 MSEC DIRECTOR CHECKLIST

A checklist is provided in attachment 2 for quick reference by the MSEC Director. This procedure shall be well understood before use of the checklist.

*Revision

ATTACHMENT 2

MSEC DIRECTOR'S CHECKLIST
Site Area or General Emergency

Date _____

TIME - INITIALS

- _____ - _____ Enter information on MSEC, IP-2 attachment 1.
- _____ - _____ Activate MSEC by giving the TVA operator or RHS secretary the appropriate information to carry out actions of attachment 3.
- _____ - _____ Activate the MSEC emergency systems. Director remains at telephone until Dose or Environs Assessment Supervisor assumes MSEC responsibility.
- _____ - _____ ***Notify RHS CECC Representative and an alternate MSEC Director or Supervisor.
- _____ - _____ Notify CECC that MSEC is activated and:
- a. Monitoring teams will be dispatched by _____
- b. Obtain information on environmental or inplant radiation problems
- c. Arrange assistance as necessary
- _____ - _____ Notify primary MSEC Director and alternates of MSEC activation.
- _____ - _____ ***Consult with CECC Director and RHS CECC representative on MSEC staff relocation. Request CECC provide transportation, lodging for MSEC backup team (if necessary).
- Ensure that:
- _____ - _____ Monitoring teams are dispatched
- _____ - _____ All MSEC positions are staffed
- _____ - _____ *CECC is provided hourly update
- _____ - _____ MSEC information flow is proper

*Revision
***Addendum

- _____ - _____ When terminated deactivate MSEC staff
- _____ - _____ Provide TAS with all relevant material
- _____ - _____ ***Upon relief by backup staff at CECC, notify
state and TVA emergency centers of change,
proceed to shutdown MSEC, package all recorded
information for transport to Chattanooga.
- _____ - _____ ***Ensure clerical and security shifts and
provisioning for reduced MSEC support is
arranged.

ATTACHMENT 3

MSEC NOTIFICATION CHECKLIST

<u>Time</u>	<u>Person Returning Call</u>	<u>PARTIAL MSEC ACTIVATION</u> (NOUE or Alert ONLY)
		NOTE: Call pager number 386-7--wait for tone to stop and give following message, "There is a (NOUE, Alert) at _____ Nuclear Plant. Call (telephone number) for call verification and standby (report to the MSEC as soon as possible) for further instructions."
_____	_____	Environs Assessment Supervisor Pager 301
_____	_____	Dose Assessment Staff Pager 303 ¹ ***Clerical Supervisor ***Public Safety ***Public Information

FULL MSEC ACTIVATION
(Site Area or General Emergency
or in accordance with instruction of MSEC Director)

		NOTE: Call pager number 386-7--wait for tone to stop and give following message, "There is a (Site Area, General or other) emergency at _____ Nuclear Plant. Call (telephone number) for call verification and report to the MSEC as soon as possible."
_____	_____	Environs Assessment Supervisor Pager 301
_____	_____	Dose Assessment Staff Pager 303 ¹
_____	_____	Field Coordinator Pager 302
_____	_____	Assessment Meteorologist Pager 181
_____	_____	Water Resources Pager 195

¹Three pagers are assigned to Dose Assessment.

***Addendum

NOTE: The following positions are listed in the REND. Refer to the REND for telephone numbers calling sequentially for each position until one (or number designated) person has been notified. Notification shall be as follows, "A _____ emergency has been declared at _____ Nuclear Plant. Please report to the MSEC as soon as possible."

TVA operators will refer to the TVA Operator Call List.
A typical list is attachment 4.

<u>Position</u>	<u>Person Notified</u>	<u>Time</u>
Clerical Supervisor	_____	_____
Communication Machine Operator	_____	_____
Lab Supervisor	_____	_____
Dosimetry Supervisor	_____	_____
Public Safety	_____	_____
Public Information	_____	_____
ADP Support Staff	_____	_____
Clerical Pool (Notify 2)	_____	_____
Material Support	_____	_____
CRT Operator	_____	_____
☆☆	_____	_____

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