REVISION LOG SHEET

Revision Date: PORC 4-7-83 (issued 6-16-83)

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

Inserted by: _____ Date Inserted: _____

Pages to be Removed			New Pages to be Inserted		
Part	Page Number	Revision	Part	Page Number	Revision
List of Effective Pages	1 of 10	3-25-83	List of Effective Pages	1 of 10	6-16-83
	2 of 10	3-25-83		2 of 10	6-16-83
	3 of 10	3-3-83		3 of 10	6-16-83
	4 of 10	11-1-82		4 of 10	6-16-83
	5 of 10	11-1-82		5 of 10	6-16-83
	6 of 10	11-1-82		6 of 10	6-16-83
	7 of 10	11-1-82		7 of 10	6-16-83
	8 of 10	2-4-83		8 of 10	6-16-83
	9 of 10	3-3-83		9 of 10	6-16-83
	10 of 10	11-1-82		10 of 10	6-16-83
Table of Contents	1 of 1	2-8-83	Table of Contents	1 of 1	4-7-83
IP-1	1 of 11	10-19-82	IP-1	1 of 11	4-7-83
	11 of 11	10-19-82		11 of 11	4-7-83
IP-3	1 of 2	2-4-83	IP-3	1 of 2	4-7-83
	2 of 2	2-4-83		2 of 2	4-7-83
IP-4	1 of 2	2-4-83	IP-4	1 of 3	4-7-83
	2 of 2	2-4-83		2 of 3	4-7-83
				3 of 3	4-7-83
IP-5	1 of 2	2-4-83	IP-5	1 of 3	4-7-83
	2 of 2	2-4-83		2 of 3	4-7-83
				3 of 3	4-7-83

REVISION LOG SHEET (Continued)
Subject: BFN-IPD
Revision Date: PORC 4-7-83 (issued 6-16-83)

Pages to be Removed			New Pages to be Inserted		
Part	Page Number	Revision	Part	Page Number	Revision
IP-8	1 of 5	12-21-82	IP-8	1 of 3	4-7-83
	2 of 5	12-21-82		2 of 3	4-7-83
	3 of 5	12-21-82		3 of 3	4-7-83
	4 of 5	12-21-82			
	5 of 5	12-21-82			
Att. 1	1 of 1	12-21-82	Att. 1	1 of 1	4-7-83
IP-11	1 of 2	12-21-82	IP-11	1 of 2	4-7-83
	2 of 2	10-6-81		2 of 2	4-7-83
IP-14	1 of 6	10-19-82	IP-14	1 of 5	4-7-83
	2 of 6	10-19-82		2 of 5	4-7-83
	3 of 6	10-19-82		3 of 5	4-7-83
	4 of 6	10-19-82		4 of 5	4-7-83
	5 of 6	10-19-82		5 of 5	4-7-83
	6 of 6	10-19-82			
IP-17	3 of 15	4-22-82	IP-17	3 of 15	4-7-83
IP-19	Cover Page	6-29-82	IP-19	Cover Page	4-7-83
	1 of 2	10-19-82		1 of 9	4-7-83
	2 of 2	10-19-82		2 of 9	4-7-83
				3 of 9	4-7-83
				4 of 9	4-7-83
				5 of 9	4-7-83
				6 of 9	4-7-83
				7 of 9	4-7-83
				8 of 9	4-7-83
				9 of 9	4-7-83
IP-20	1 of 5	12-21-82	IP-20	1 of 3	4-7-83
	2 of 5	12-21-82		2 of 3	4-7-83
	3 of 5	12-21-82		3 of 3	4-7-83
	4 of 5	12-21-82			
	5 of 5	12-21-82			

REVISION LOG SHEET (Continued)
Subject: BFN-IPD
Revision Date: PORC 4-7-83 (issued 6-16-83)

Pages to be Removed			New Pages to be Inserted		
Part	Page Number	Revision	Part	Page Number	Revision
Att. B	1 of 1	12-21-82	Att. B	1 of 1	4-7-83
Att. C	1 of 1	6-29-82	Att. C	1 of 1	4-7-83
			Att. E	1 of 1	4-7-83
			Att. F	1 of 1	4-7-83
			Att. G	1 of 3	4-7-83
				2 of 3	4-7-83
				3 of 3	4-7-83
			Att. H	1 of 1	4-7-83
			Att. I	1 of 1	4-7-83
			Att. J	1 of 3	4-7-83
				2 of 3	4-7-83
				3 of 3	4-7-83
			Att. K	1 of 1	4-7-83
Figure 1	1 of 1	12-21-82	Figure 1	1 of 1	4-7-83
Figure 2	1 of 1	12-21-82	Figure 2	1 of 1	4-7-83
IP-21	1 of 1	12-21-82	IP-21	1 of 1	4-7-83
Att. 1	1 of 2	12-21-82	Att. 1	1 of 2	4-7-83
Figure 1	1 of 1	12-21-82	Figure 1	1 of 1	4-7-83
IP-22	1 of 2	12-21-82	IP-22	1 of 1	4-7-83
	2 of 2	12-21-82			
IP-23	1 of 5	12-21-82	IP-23	1 of 5	4-7-83
	2 of 5	10-19-82		2 of 5	4-7-83
	3 of 5	12-21-82		3 of 5	4-7-83
	4 of 5	10-28-82		4 of 5	4-7-83
	5 of 5	12-21-82		5 of 5	4-7-83
Att. A	1 of 1	12-21-82	Att. A	1 of 2	4-7-83
				2 of 2	4-7-83
Att. C	1 of 1	6-29-82	Att. C	1 of 1	4-7-83
Att. E	1 of 1	2-8-83	Att. E	1 of 1	4-7-83
			IP-25	Cover Page	4-7-83
				1 of 2	4-7-83
				2 of 2	4-7-83

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 10	06/16/83
			2 of 10	06/16/83
			3 of 10	06/16/83
			4 of 10	06/16/83
			5 of 10	06/16/83
			6 of 10	06/16/83
			7 of 10	06/16/83
			8 of 10	06/16/83
			9 of 10	06/16/83
			10 of 10	06/16/83
		Table of Contents	1 of 1	04/07/83
	IP-1		Coversheet	10/19/82
		Preface	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	03/25/83
			2 of 3	03/25/83
			3 of 3	02/04/83

LIST OF EFFECTIVE PAGES (Con't)

Part	Procedure Number	Subdivision	Page Number	Date/Rev. No.
BFN	IP-3		Coversheet	06/29/82
			1 of 2	04/07/83
			2 of 2	04/07/83
		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	04/07/83
			2 of 3	04/07/83
			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	04/07/83
			2 of 3	04/07/83
			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	03/25/83
			3 of 4	03/25/83
			4 of 4	02/14/83
	IP-7		Coversheet	06/29/82
			1 of 1	12/21/81
		Attachment 1	1 of 2	02/23/83
			2 of 2	12/21/82
	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	04/07/83

LIST OF EFFECTIVE PAGES (Con't)

Part	Procedure Number	Subdivision	Page Number	Date/Rev. No.
BFN	IP-9		Coversheet	06/15/82
			1 of 1	12/21/82
	IP-10		Coversheet	06/29/82
			1 of 6	06/30/81
			2 of 6	02/08/83
			3 of 6	04/22/82
			3a of 6	04/22/82
			4 of 6	06/30/81
			5 of 6	12/21/81
			6 of 6	06/30/81
		Attachment 1	1 of 2	06/29/82
			2 of 2	06/29/82
		Attachment 2A	1 of 1	06/30/81
		Attachment 2B	1 of 1	Rev. 0
		Attachment 3	1 of 1	Rev. 0
		Attachment 4	1 of 1	Rev. 0
		Attachment 5	1 of 1	04/22/82
		Attachment 6	1 of 1	Rev. 0
		Attachment 7	1 of 2	06/30/81
			2 of 2	06/30/81
		Attachment 8	1 of 2	06/30/81
			2 of 2	06/30/81
	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	IP-14		Coversheet	06/29/82
			1 of 5	04/07/83
			2 of 5	04/07/83
			3 of 5	04/07/83
			4 of 5	04/07/83
			5 of 5	04/07/83
		Attachment 1	1 of 1	Rev. 0
		Attachment 2	1 of 1	03/16/82
		Attachment 3	1 of 1	Rev. 0
		Attachment 4	1 of 1	Rev. 0
		Attachment 5	1 of 1	Rev. 0
	IP-15		Coversheet	06/15/82
			1 of 4	Rev. 0
			2 of 4	Rev. 0
			3 of 4	Rev. 0
			4 of 4	03/30/82
	IP-16		Coversheet	06/15/82
			1 of 2	04/22/82
			2 of 2	Rev. 0
	IP-17		Coversheet	06/15/82
			1 of 15	01/26/82
			2 of 15	03/16/82
			3 of 15	04/07/83
			4 of 15	03/16/82
			5 of 15	01/26/82
			6 of 15	07/08/82
			7 of 15	01/26/82
			8 of 15	03/16/82
			9 of 15	01/26/82
			10 of 15	04/22/82
			11 of 15	04/06/82
			12 of 15	01/26/82
			13 of 15	01/26/82
			14 of 15	01/26/82
			15 of 15	01/26/82

LIST OF EFFECTIVE PAGES (Con't)

Part	Procedure Number	Subdivision	Page Number	Date/Rev. No.
BFN (Con'd)	IP-17			
		Figure 1	1 of 1	06/30/81
		Figure 2	1 of 1	04/22/82
		Figure 3	1 of 1	Rev. 0
	IP-18		Coversheet	06/15/82
			1 of 1	10/19/82
		Title Page	1 of 1	Rev. 0
		Table of Contents	1 of 1	04/07/81
		List of Figures	1 of 4	07/21/81
			2 of 4	07/21/81
			3 of 4	07/21/81
			4 of 4	07/21/81
		Appendix	1 of 12	04/22/82
			2 of 12	04/07/81
			3 of 12	04/07/81
			4 of 12	04/07/81
			5 of 12	04/07/81
			6 of 12	04/07/81
			7 of 12	04/07/81
			8 of 12	04/07/81
			9 of 12	04/07/81
			10 of 12	04/07/81
			11 of 12	04/07/81
			12 of 12	04/07/81
		Figure 1.1	1 of 1	Rev. 0
		Figure 1.2	1 of 1	Rev. 0
		Figure 1.3	1 of 1	Rev. 0
		Figure 1.4	1 of 1	Rev. 0
		Figure 2.1	1 of 1	Rev. 0
		Figure 2.2	1 of 1	Rev. 0
		Figure 2.3	1 of 1	Rev. 0
		Figure 2.4	1 of 1	Rev. 0
		Figure 3	1 of 1	Rev. 0
		Figure 4.1	1 of 1	Rev. 0
		Figure 4.2	1 of 1	Rev. 0
		Figure 4.3	1 of 1	Rev. 0
		Figure 4.4	1 of 1	Rev. 0

LIST OF EFFECTIVE PAGES (Con't)

Part	Procedure Number	Subdivision	Page Number	Date/Rev. No.
BFN (Cont'd)	IP-18	Figure 4.5	1 of 1	Rev. 0
		Figure 4.6	1 of 1	Rev. 0
		Figure 4.7	1 of 1	Rev. 0
		Figure 4.8	1 of 1	Rev. 0
		Figure 4.9	1 of 1	Rev. 0
		Figure 4.10	1 of 1	Rev. 0
		Figure 4.11	1 of 1	Rev. 0
		Figure 4.12	1 of 1	Rev. 0
		Figure 5.1	1 of 1	Rev. 0
		Figure 5.2	1 of 1	Rev. 0
		Figure 5.3	1 of 1	Rev. 0
		Figure 5.4	1 of 1	Rev. 0
		Figure 5.5	1 of 1	Rev. 0
		Figure 5.6	1 of 1	Rev. 0
		Figure 5.7	1 of 1	Rev. 0
		Figure 5.8	1 of 1	Rev. 0
		Figure 5.9	1 of 1	Rev. 0
		Figure 5.10	1 of 1	Rev. 0
		Figure 5.11	1 of 1	Rev. 0
		Figure 5.12	1 of 1	Rev. 0
		Figure 6.1	1 of 1	Rev. 0
		Figure 6.2	1 of 1	Rev. 0
		Figure 6.3	1 of 1	Rev. 0
		Figure 6.4	1 of 1	Rev. 0
		Figure 6.5	1 of 1	Rev. 0
		Figure 6.6	1 of 1	Rev. 0
		Figure 6.7	1 of 1	Rev. 0
		Figure 6.8	1 of 1	Rev. 0
		Figure 6.9	1 of 1	Rev. 0
		Figure 6.10	1 of 1	Rev. 0
		Figure 6.11	1 of 1	Rev. 0
		Figure 6.12	1 of 1	Rev. 0
		Figure 7.1	1 of 1	Rev. 0
		Figure 7.2	1 of 1	Rev. 0
		Figure 7.3	1 of 1	Rev. 0
		Figure 7.4	1 of 1	Rev. 0
		Figure 7.5	1 of 1	Rev. 0
		Figure 7.6	1 of 1	Rev. 0
		Figure 7.7	1 of 1	Rev. 0
		Figure 7.8	1 of 1	Rev. 0
		Figure 7.9	1 of 1	Rev. 0
		Figure 7.10	1 of 1	Rev. 0
		Figure 7.11	1 of 1	Rev. 0
		Figure 7.12	1 of 1	Rev. 0

LIST OF EFFECTIVE PAGES (Con't)

Part	Procedure Number	Subdivision	Page Number	Date/Rev. No.
BFN	IP-19		Coversheet	04/07/83
			1 of 9	04/07/83
			2 of 9	04/07/83
			3 of 9	04/07/83
			4 of 9	04/07/83
			5 of 9	04/07/83
			6 of 9	04/07/83
			7 of 9	04/07/83
			8 of 9	04/07/83
			9 of 9	04/07/83
		Attachment 1	1 of 18	06/29/82
			2 of 18	06/29/82
			3 of 18	06/29/82
			4 of 18	06/29/82
			5 of 18	06/29/82
			6 of 18	06/29/82
			7 of 18	06/29/82
			8 of 18	06/29/82
			9 of 18	06/29/82
			10 of 18	06/29/82
			11 of 18	06/29/82
			12 of 18	06/29/82
			13 of 18	06/29/82
			14 of 18	06/29/82
			15 of 18	06/29/82
			16 of 18	06/29/82
			17 of 18	06/29/82
			18 of 18	06/29/82
	IP-20		Coversheet	06/29/82
			1 of 3	04/07/83
			2 of 3	04/07/83
			3 of 3	04/07/83
		Attachment A	1 of 3	12/21/82
			2 of 3	12/21/82
			3 of 3	12/21/82
		Attachment B	1 of 1	04/07/83

LIST OF EFFECTIVE PAGES (Con't)

Part	Procedure Number	Subdivision	Page Number	Date/Rev. No.
BFN (Cont'd)	IP-20			
		Attachment C	1 of 1	04/07/83
		Attachment D	1 of 1	10/19/82
		Attachment E	1 of 1	04/07/83
		Attachment F	1 of 1	04/07/83
		Attachment G	1 of 3	04/07/83
			2 of 3	04/07/83
			3 of 3	04/07/83
		Attachment H	1 of 1	04/07/83
		Attachment I	1 of 1	04/07/83
		Attachment J	1 of 3	04/07/83
			2 of 3	04/07/83
			3 of 3	04/07/83
		Attachment K	1 of 1	04/07/83
		Figure 1	1 of 1	04/07/83
		Figure 2	1 of 1	04/07/83
	IP-21		Coversheet	06/15/82
			1 of 1	04/07/83
		Attachment 1	1 of 2	04/07/83
			2 of 2	12/21/82
		Figure 1	1 of 1	04/07/83
		Figure 2	1 of 1	04/22/82
	IP-22		Coversheet	06/15/82
			1 of 1	04/07/83
	IP-23		Coversheet	06/29/82
			1 of 5	04/07/83
			2 of 5	04/07/83
			3 of 5	04/07/83
			4 of 5	04/07/83
			5 of 5	04/07/83
		Attachment A	1 of 2	04/07/83
			2 of 2	04/07/83
		Attachment B	1 of 1	12/21/82

LIST OF EFFECTIVE PAGES (Con't)

Part	Procedure Number	Subdivision	Page Number	Date/Rev. No.
BFN (Cont'd)	IP-23			
		Attachment C	1 of 1	04/07/83
		Attachment D	1 of 1	12/21/82
		Attachment E	1 of 1	04/07/83
	IP-24		Coversheet	06/29/82
			1 of 2	02/23/82
			2 of 2	02/23/82
		Attachment A	1 of 36	02/23/82
			2 of 36	02/23/82
			3 of 36	02/23/82
			4 of 36	02/23/82
			5 of 36	02/23/82
			6 of 36	02/23/82
			7 of 36	02/23/82
			8 of 36	02/23/82
			9 of 36	02/23/82
			10 of 36	02/23/82
			11 of 36	02/23/82
			12 of 36	02/23/82
			13 of 36	02/23/82
			14 of 36	02/23/82
			15 of 36	02/23/82
			16 of 36	02/23/82
			17 of 36	02/23/82
			18 of 36	02/23/82
			19 of 36	02/23/82
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			21 of 36	02/23/82
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			24 of 36	02/23/82
			25 of 36	02/23/82
			26 of 36	02/23/82
			27 of 36	02/23/82
			28 of 36	02/23/82
			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

LIST OF EFFECTIVE PAGES (Con't)

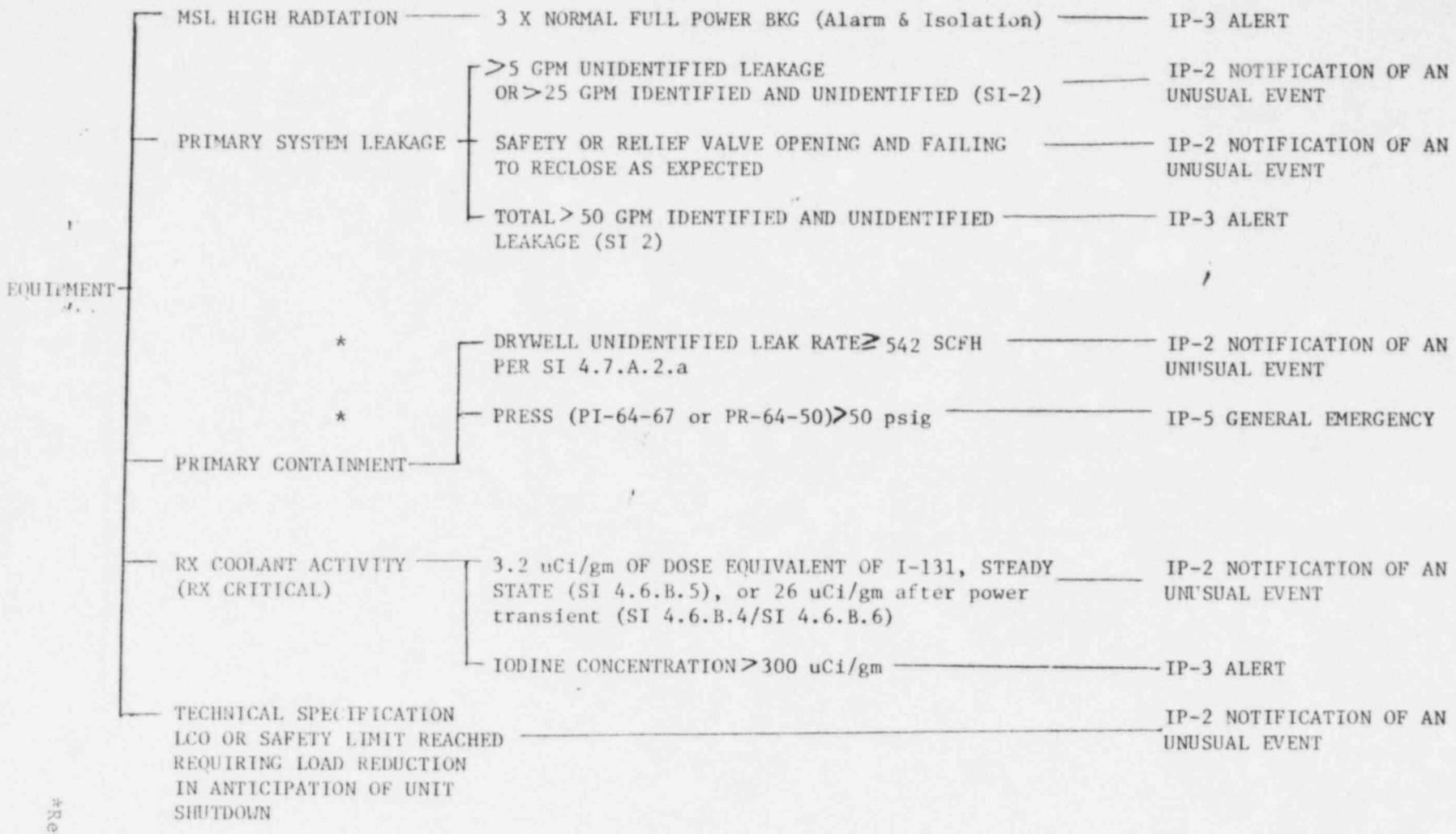
Part	Procedure Number	Subdivision	Page Number	Date/Rev. No.
BFN	IP-25		Coversheet	04/07/83
			1 of 2	04/07/83
			2 of 2	04/07/83

BFN - IPD
APR 07 1983
Table of Contents

BROWNS FERRY NUCLEAR PLANT

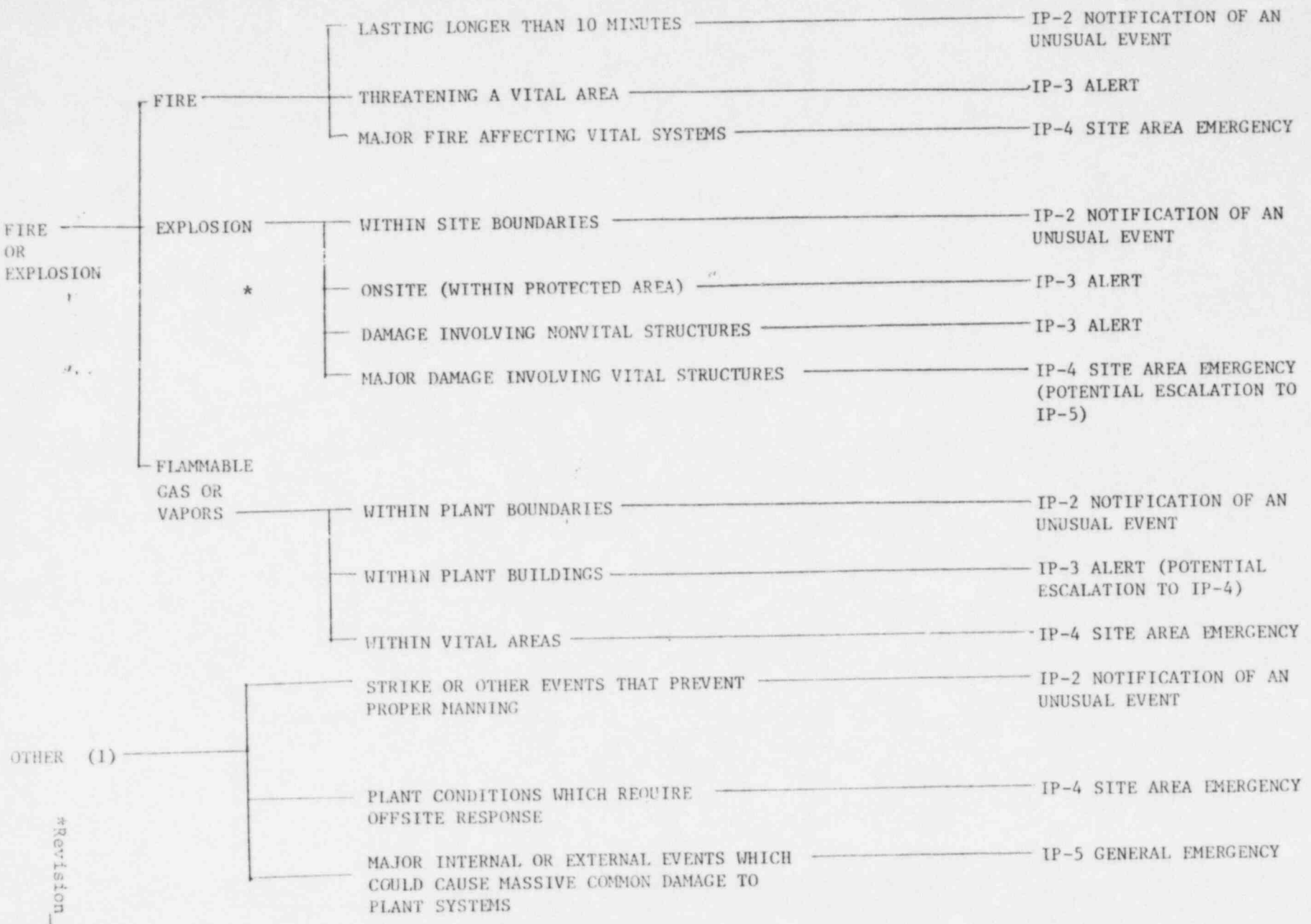
RADIOLOGICAL EMERGENCY PROCEDURES

* Revision 2a



*Revision

APR 07 1983



(1) These items are based on Site Emergency Director's professional judgment

*Revision

APR 07 1983

ALERT

1.0 Purpose

1.1 Provide for timely notification of appropriate individuals and organizations of an ALERT.

1.2 Provide for periodic reanalysis to determine whether the ALERT should be cancelled, continued, or upgraded to a more serious classification.

2.0 INSTRUCTIONS

Initials	Time	
_____	____	2.1 Shift Engineer notify Operations Duty Specialist (40- 200, 50-0200, or 51-0200) within 5 minutes of declaration of ALERT.

Give the following:

a. Your name

b. Browns Ferry Nuclear Plant

c. ALERT

d. Time of incident

e. Brief description of incident

f. Plant condition (whether stable or deteriorating)

g. Reactor (did/did not) shut down at (time)

h. Unusual release of radioactivity (yes, no, or not known)

i. If a radiation release:
   a. Ground level - airborne
   b. Elevated airborne
   c. Waterborne
   d. Other

j. If yes, calculate release rate(s) in _____ μCi/sec from Table 1 and 2. Release rate _____ μCi/sec.

k. Direction wind is coming from _____ (degrees) and speed _____ (meters/second). (Use 300 ft. info. if available).

l. No protective action recommended

m. Any emergency actions underway onsite

n. Any offsite support that has been requested

*Revision JM

APR 07 1983

2.2 Operations Duty Specialist will return call to verify authenticity.

2.3 Shift Engineer will evaluate conditions. If required, initiate area (by public address) or total plant (by siren) evacuation. Refer to IP-8.

2.4 Shift Engineer's Clerk will:

a. Notify other Shift Engineer (when assigned) of ALERT.

b. Notify STA (PAX 353/396/313) of the ALERT.

c. Notify Chem Lab Supervisor (PAX 367/368) of ALERT. Direct them to activate IP-25.

d. Notify HP Shift Supervisor (PAX 300) of ALERT. Direct them to activate IP-14.

e. Notify Public Safety Supervisor (PAX 273) of ALERT. Direct them to activate IP-11 (Control Rooms Only) and IP-7.

2.5 Shift Engineer's Clerk will:

a. Initiate IP-6.

2.6 Shift Engineer will notify NRC of ALERT by red phone. Give a brief description. Maintain an open line until released by NRC.

Note: NRC may send a response team to the site.

2.7 Time permitting, the Shift Engineer will implement operation of the TSC (IP-20), to include activation of Dimension telephones and placing required desks in hall in front of TSC.

2.8 At least every two hours, or more frequently if conditions warrant, the Shift Engineer/Site Emergency Director will reevalute the event using IP-1.

a. If the situation no longer exists or should be downgraded, inform all personnel previously notified.

b. If the condition warrants upgrading to a higher classification, initiate the appropriate procedure.

2.9 Refer to Table 1 for a quick estimate of maximum offsite dose for a stack release, and Table 2 for a quick estimate of the site boundary dose for building release.

*Revision Jw

APR 07 1983

SITE AREA EMERGENCY

1.0 Purpose

1.1 Provide for timely notification of appropriate individuals and organizations of a SITE AREA EMERGENCY .

1.2 Provide for periodic reanalysis of the situation to determine whether the SITE AREA EMERGENCY should be cancelled, continued, or upgraded to a more serious classification.

2.0 INSTRUCTIONS

Initials	Time	
_____	____	2.1 Shift Engineer notify Operations Duty Specialist (40-200, 50-0200, or 51-0200) within 5 minutes of declaration of SITE AREA EMERGENCY .

Give the following:

a. Your name

b. Browns Ferry Nuclear Plant

c. SITE AREA EMERGENCY

d. Time of incident

e. Brief description of incident

f. Plant condition (whether stable or deteriorating)

g. Reactor (did/did not) shut down at (time)

h. Unusual release of radioactivity (yes, no, or not known)

i. If a radiation release:
   a. Ground level - airborne
   b. Elevated airborne
   c. Waterborne
   d. Other

j. If yes, calculate release rate(s) in ____ μCi/sec from Table 1 and 2. Release rate _____ μCi/sec.

*Revision Jar

APR 07 1983

INITIALS TIME

k. Direction wind is coming from _____ (degrees) and speed _____ (meters/second). (Use 300 ft. info. if available).

l. No protective action recommended

m. Any emergency actions underway onsite

n. Any offsite support that has been requested

_____ ____ 2.2 Operations Duty Specialist will return call to verify authenticity.

_____ ____ 2.3 Shift Engineer will evaluate conditions. If required, initiate area (by public address) or total plant (by siren) evacuation. Refer to IP-8.

Note: Precautionary site evacuation should be considered.

2.4 Shift Engineer's Clerk will:

_____ ____ a. Notify other Shift Engineer (when assigned) of SITE AREA EMERGENCY

_____ ____ b. Notify STA (PAX 353/396/313) of SITE AREA EMERGENCY

* _____ ____ c. Notify Chem Lab Supervisor (PAX 367/368) of SITE AREA EMERGENCY . Direct them to activate IP-25.

_____ ____ d. Notify HP Shift Supervisor (PAX 300) of SITE AREA EMERGENCY. Direct them to activate IP-14.

e. Notify Public Safety Supervisor (PAX 273) of SITE AREA EMERGENCY . Direct them to activate IP-11 and IP-7.

_____ ____ 2.5 Shift Engineer's Clerk will:

a. Initiate IP-6.

_____ ____ 2.6 Shift Engineer will notify NRC of SITE AREA EMERGENCY by red phone. Give a brief description. Maintain an open line until released by NRC.

Note: NRC will probably send a response team to the site.

*Revision jse

2.7 Time permitting, the Shift Engineer will implement operation of the TSC (IP-20), to include activation of Dimension telephones and placing required desks in hall in front of TSC.

2.8 At least every two hours, or more frequently if conditions warrant, the Shift Engineer/Site Emergency Director will reevaluate the event using IP-1.

a. If the situation no longer exists or should be downgraded, inform all personnel previously notified.

b. If the condition warrants upgrading to a higher classification, initiate the appropriate procedure.

2.9 Refer to Table 1 for a quick estimate of maximum offsite dose for a stack release, and Table 2 for a quick estimate of site boundary dose for building release.

*Addendum: Jac

GENERAL EMERGENCY

1.0 Purpose

1.1 Provide for timely notification of appropriate individuals and organizations of a GENERAL EMERGENCY.

1.2 Provide for periodic reanalysis of the situation to determine whether the GENERAL EMERGENCY should be cancelled or continued.

2.0 INSTRUCTIONS

Initials Time

_____ _____ 2.1 Shift Engineer notify Operations Duty Specialist (40-200, 50-0200, or 51-0200) within 5 minutes of declaration of GENERAL EMERGENCY.

Give the following:

a. Your name

b. Browns Ferry Nuclear Plant

c. GENERAL EMERGENCY

d. Time of incident

e. Brief description of incident

f. Plant condition (whether stable or deteriorating)

g. Reactor (did/did not) shutdown at (time)

h. Unsual release of radioactivity (yes, no, or not known).

i. If a radiation release:
   a. Ground level - airborne
   b. Elevated airborne
   c. Waterborne
   d. Other

j. If yes, calculate release rate(s) in _____ μ Ci/sec from Table 1 and 2.
   Release rate _____ μ Ci/sec.

k. Direction wind is coming from _____ (degrees) and speed _____ (Meters/second). (Use 300 ft. info. if available).

*Revision jw

l. Recommended initial protective actions for the public: Activate warning system and advise public to take shelter, tune radio or TV to a local station, and await further instructions.

m. Any emergency actions underway onsite.

n. Any offsite support that has been requested.

_____ ____ 2.2 Operations Duty Specialist will return call to verify authenticity.

_____ ____ 2.3 Shift Engineer will evaluate conditions. If required, initiate area (by public address) or total plant (by siren) evacuation. Refer to IP-8.

Note: Site evacuation is probable under these conditions.

2.4 Shift Engineer's Clerk will:

_____ ____ a. Notify other Shift Engineer (when assigned) of GENERAL EMERGENCY

_____ ____ b. Notify STA (PAX 353/396/313) of GENERAL EMERGENCY

* _____ ____ c. Notify Chem Lab Supervisor (PAX 367/368) of GENERAL EMERGENCY. Direct them to activate IP-25

_____ ____ d. Notify HP Shift Supervisor (PAX 300) of GENERAL EMERGENCY. Direct them to activate IP-14.

_____ ____ e. Notify Public Safety Supervisor (PAX 273) of GENERAL EMERGENCY. Direct them to activate IP-11 and IP-7.

_____ ____ 2.5 Shift Engineer's Clerk will:

a. Initiate IP-6

_____ ____ 2.6 Shift Engineer will notify NRC of GENERAL EMERGENCY by red phone. Give a brief description. Maintain an open line until released by NRC.

Note: NRC will probably send a response team to the site.

_____ ____ 2.7 Time permitting, the Shift Engineer will implement operation of the TSC (IP-20), to include activation of Dimension telephones and placing required desks in hall in front of TSC.

*Revision jar

2.8 At least every two hours, or more frequently if conditions warrant, the Shift Engineer/Site Emergency Director will reevaluate the event using IP-1.

a. If the situation no longer exists or should be downgraded, inform all personnel previously notified.

2.9 Refer to Table 1 for a quick estimate of maximum offsite dose for a stack release, and Table 2 for a quick estimate of the site boundary dose for building release.

*Addendum: jac

APR 07 1983

PERSONNEL ACCOUNTABILITY AND EVACUATION

1.0 PURPOSE

1.1 Provide for the accounting and orderly evacuation of plant personnel and visitors from an area, building, or site. Reentry guidelines are also described.

2.0 INSTRUCTIONS

2.1 It is the responsibility of the Site Emergency Director to make the decision concerning the necessity for area, building, and site evacuation.

2.2 AREA AND BUILDING EVACUATION (NOTIFICATION BY PUBLIC ADDRESS)

2.2.1 All personnel evacuate to a safe area and remain there for further instructions.
Caution: Individuals in a "C" zone

a. Remove outer protective clothing
b. Walk at outer edge of normal passage route.
c. Avoid contact with others.
d. Request HP surveillance as soon as possible.

2.2.2 Senior individual report accountability to Site Emergency Director.

2.3 TOTAL SITE EVACUATION (NOTIFICATION BY PUBLIC ADDRESS AND SIREN)

2.3.1 Site Emergency Groups

a. TSC personnel previously notified by IP-6 report to TSC.
b. OSC personnel previously notified by IP-7 report to OSC.
c. TSC/OSC report accountability to Site Emergency Director.
d. Site Emergency Director notify DNPEC Director of evacuation.

2.3.2 Operations Personnel

a. Secure any operations outside control room.
b. Report to assigned control room.
c. ASE will account for his personnel and report to Shift Engineer.
d. Shift Engineer report accountability to Site Emergency Director.

2.3.3 HP Technicians

a. Proceed to HP lab (if habitable)
b. If HP lab uninhabitable, proceed to backup HP center in unit 3 control bay mechanical equipment room (El 617).

c. Report accountability to Site Emergency Director.

*Revision 14

2.3.4 Public Safety Service

a. Man assigned post until directed otherwise by PSS Shift Supervisor.
b. PSS Shift Supervisor assign officers to strategic locations as needed.
c. PSS Shift Supervisor notify construction (see Attachment 1).
d. Perform check for visitors outside the protected area (see Section 2.5)
e. PSS Shift Supervisor make accountability check of PSS personnel.

2.3.5 Radiochemical Laboratory Analysts

a. Proceed to lab (if habitable).
b. If lab uninhabital proceed to backup at intake in installed wire cage.
c. Report accountabililty to Site Emergency Director.

2.3.6 Nurse

a. Proceed to health station (if habitable).
b. If uninhabitable, proceed to Shift Engineer's office..
c. Report accountability to Site Emergency Director.

2.3.7 All Other Personnel

a. Plant personnel evacuate to west parking lot.
b. Field Services personnel evacuate to east parking lot.
c. Construction personnel in protected area evacuate to east or west lot and report to Public Safety.
d. Construction personnel not in protected area - See IP-9.

Caution: If either parking lot is uninhabitable, personnel assigned to that area will exit through their normal gatehouse but then be directed by PSS to proceed to opposite parking lot.

Caution: Individuals in "C" zone
a. Remove outer protective clothing.
b. Walk at outer edge of normal passage route.
c. Avoid contact with others.
d. Request HP surveillance as soon as possible.

2.4 Accountability

a. Assembled personnel's names and badge numbers from control rooms, TSC, OSC, health physics, radiochemical laboratory, public safety, and health station are forwarded to the Site Emergency Director.
b. Each foreman/supervisor will account for personnel assigned to them and report any missing to PSS.
c. Visitor's escorts will account for their visitors and report to Public Safety.
d. Offsite badged personnel will be accounted for by Public Safety.
e. Construction Services personnel will be accounted for by Public Safety.
f. The portals will provide a listing of badge numbers and names of all present in-plant personnel to Public Safety. This list, along with those from steps a thru e, will be sent to PSS Supervisor in TSC.

g. With the listing from steps a - e, the Public Safety Service Supervisor in the TSC will subtract these from step f.
h. The names and badge number of absent persons are returned to Public Safety to determine where persons may be.
i. If required, Public Safety Service forms search parties, each having at least one HP technician.

2.5 Visitors Outside Plant Protected Area

a. PSS will dispatch officer(s) to search areas on TVA property outside the Protected Area Fence.
b. All personnel located will be brought to west parking lot.
c. PSS will obtain name, address, and phone number and forward to Site Emergency Director.
d. Personnel will be surveyed and released as described in 2.6, below.

Note: Affected areas of Wheeler Lake will be evacuated by the Alabama Division of Water Safety, as defined in that section of the State Plan, through the CECC Emergency Director.

2.6 Release from Site

a. Site Emergency Director will determine which individuals will remain (additional TSC/OSC, engineering, craft, etc. personnel).
b. HP sets up checkpoints coincident with PSS access control points.
c. Personnel will be directed by PSS to proceed to their residences, to tune in TV/radio for further information, and keep phone lines clear for possible recall.
d. HP will survey all personnel and vehicles at the checkpoints before release. Contaminated individuals will be evacuated to the Power Service Shops utility building at Wilson Hydro Plant. Site Emergency Director will notify DNPEC Director of any such individuals.

2.7 PLANT REENTRY

As soon as possible after personnel evacuation has been accomplished, procedures will be initiated to restore the plant to normal conditions. Complete radiation and contamination surveys will be made prior to plant personnel (other than those required for emergency duty) reentering the evacuated areas.

The Site Emergency Director will authorize general personnel reentry only when he is assured that the emergency has been controlled and reentry is safe.

*Revision jw

APR 07 1983

ATTACHMENT 1

TIME CONTACTED		PAX	BELL
_____	Dave Montgomery	267/378	729-6204
	or		
_____	Preston Scott	321/267/378	729-6204
	or		
*_____	Bud Corder	321/267/378	729-6204

Give the following information:

"We have an emergency condition existing at the plant necessitating a site evacuation. Please assemble at the construction gatehouse, account for your personnel, and notify plant public safety when completed."

*Revision JAE

APR 07 1983

SECURITY AND ACCESS CONTROL

1.0 PURPOSE

1.1 Provide for implementation of a predetermined security and access control plan for an ALERT, SITE AREA EMERGENCY, or GENERAL EMERGENCY.

2.0 INSTRUCTIONS

2.1 PSS Shift Supervisor will, when notified by Shift Engineer or Shift Engineers Clerk:

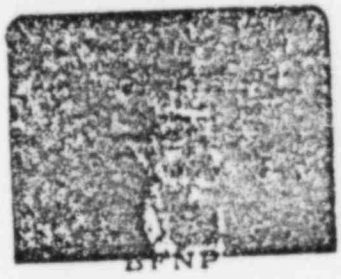
Initials	Time		
_____	_____	a.	Report immediately to CAS, make necessary assignments to PSS personnel, maintain communications with all PSS personnel.
_____	_____	b.	If an ALERT, dispatch officers to entrance of control rooms. Officers will deny access except to those who: 1) Have solid red bar at bottom of picture badge 2) Have been authorized by Shift Engineer/Site Emergency Director
_____	_____	c.	If a SITE AREA EMERGENCY or GENERAL EMERGENCY, or at request of Site Emergency Director a) Dispatch officers as described in b, above b) Close all site access control points which control personnel entering or leaving the site. No personnel except those preauthorized by identification card or authorized by the Site Emergency Director will be allowed to enter. No personnel except those who have (1) been authorized by Site Emergency Director, (2) accounted for by PSS, and (3) monitored by HP will be allowed to allowed to leave the site. c) Dispatch officers to secure all exterior doors into the plant and all gates on the reservaition. d) Establish contact with PSS Supervisor in TSC upon arrival.

2.2 If the evacuation alarm sounds, assign available officers to access portals, east and west. These officers will survey the employees badges, accountability card racks, and visitor log. Refer to IP-8, Sections 2.3.4, 2.4, 2.5, and 2.6 for further instructions.

* 2.3 Periodic radio or phone checks shall be made to the PSS shift supervisor or his designee, by all officers assigned to a post.

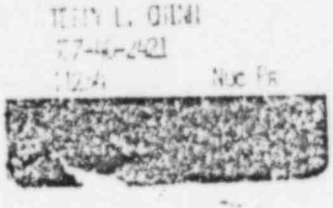
* 2.4 At the end of the emergency, PSS will be relieved from the emergency duties by the Site Emergency Director or the PSS supervisor by radio. At this time, Public Safety officers will resume their normal duties.

Below is an example of picture badge authorized for access to the control room during an emergency.



Person's picture with red background

Red Bar



Below is an example of I.D. card authorized to gain access onsite during emergencies. They will be required to be shown to Public Safety officers at predetermined locations. (Example: County road, access road to plant, etc.)

This is to certify that

Terry L. Chinn

is an employee of the
Tennessee Valley Authority at
the Browns Ferry Nuclear Plant

Terry L. Chinn
Employee Signature

Herbert Abercrombie
H. L. Abercrombie
Plant Superintendent

*Revision 1

HEALTH PHYSICS PROCEDURES

1.0 PURPOSE

This procedure outlines the actions to be followed by Health Physics personnel during a radiological emergency. Natural phenomena, security threats, or other events not involving radiation could be the cause for the emergency. This procedure describes those HP actions required during an emergency involving radiological problems.

NOTE: Shift Engineer's clerk will initiate IP-14 by calling the Health Physics Shift Supervisor.

2.0 NOTIFICATION OF UNUSUAL EVENT

2.1 No offsite radiological problems are postulated during a NOTIFICATION OF UNUSUAL EVENT. This situation should not have any major impact on the health physics unit.

2.2 Although Health Physics will not automatically be called, should assistance be needed Health Physics will follow standard practices and procedures during any response work.

3.0 ALERT

A limited release is possible during an ALERT situation. Significant loss of fuel cladding, small line breaks, fuel handling accidents, or high radiation levels are examples.

INITIALS

_____ 3.1 All HP technicians report to the HP lab.

_____ 3.2 HP will take 1 ion chamber survey instrument to the TSC and to OSC.

_____ 3.3 HP personnel will periodically survey the TSC and OSC.

_____ 3.4 A HP technician will accompany any personnel dispatched into areas of potential hazard.

_____ 3.5 An ALERT may require the evacuation of a certain plant area and/or building. HP will post these areas and have public safety restrict all unauthorized access.

3.6 Health Physics personnel will assist in the development of all recovery plans as necessary. Recommendations will be made to keep exposure as low as reasonably achievable and to recommend and approve any cleanup activities.

*Revision Jpe

4.0 SITE AREA EMERGENCY

A SITE AREA EMERGENCY may require extensive HP response. A LOCA or major fuel handling accident are examples.

INITIALS

_____ 4.1 HP technicians report to the lab.

_____ 4.2 HP will take 1 ion chamber survey instrument to the TSC and to the OSC.

_____ 4.3 Health Physics personnel will periodically survey the TSC and OSC.

_____ 4.4 A health physics technician will accompany any personnel dispatched into areas of potential hazard.

_____ 4.5 Initial offsite enviromental assessment will be conducted per HPTSIL 20. Report findings to the Site Emergency Director.

_____ 4.6 Dispatch HP Technician to the site access control point established by PSS personnel. Survey vehicles and personnel leaving tne site using RM-14 friskers and smear techniques.

_____ 4.7 If requested by Site Emergency Director, perform site boundary survey, using the emergency van. Equipment listed in Attachment 1 should be transported to the van.

a. When instructed to do so, travel to the site boundary in the down wind direction and measure the dose rate with an ionization chamber or similar survey instrument. If possible, air sampling should also be performed at the same time.

b. Precautions must be taken to prevent overexposure if there are high concentrations of radioactive particulates or radioiodine being released.

c. Record all survey results. All findings shall be reported to the TSC. If results indicate offsite contamination, the survey may need to be extended. Obtain further instructions and perform required surveillance.

d. Arrangements can be made for manpower support and offsite surveys from Muscle Shoals

_____ 4.8 If a site evacuation is ordered, see Section 6.0.

_____ 4.9 If HP lab must be evacuated, see Section 7.0.

5.0 GENERAL EMERGENCY

During a GENERAL EMERGENCY, there will probably be radiation releases to the environment requiring health physics response.

INITIALS

_____ 5.1 HP technicians report to lab.

_____ 5.2 HP will take 1 ion chamber survey instrument to the TSC and CSC.

_____ 5.3 Health Physics personnel will periodically survey the TSC and OSC.

_____ 5.4 A health physics technician will accompany any personnel dispatched into areas of potential hazard.

_____ 5.5 Initial offsite enviromental assessment will be conducted per HPTSIL 20. Report findings to the Site Emergency Director.

_____ 5.6 Dispatch a HP Technician to the site access control point established by PSS personnel. Survey vehicles and personnel leaving the site using RM-14 friskers and smear techniques.

_____ 5.7 If requested by Site Emergency Director, perform site boundary survey, using the emergency van. Equipment listed in Attachment 1 should be transported to the van.

a. When instructed to do so, travel to the site boundary in the down wind direction and measure the dose rate with an ionization chamber or similar survey instrument. If possible, air sampling should also be performed at the same time.

b. Precautions must be taken to prevent overexposure if there are high concentrations of radioactive particulates or radiodine being released.

c. Record all survey results. All findings shall be reported to the TSC. If results indicate offiste contamination, the survey may need to be extended. Obtain further instructions and perform required surveillance.

d. Arrangements can be made for manpower support and equipment for offsite surveys from Muscle Shoals.

_____ 5.8 If a site evacuation is ordered, see Section 6.0.

_____ 5.9 If HP lab must be evacuated, see Section 7.0

6.0 SITE EVACUATION

_____ 6.1 HP technicians proceed to lab, if habitable. If uninhabitable, see Section 7.0.

INITIALS

_____ 6.2 Report accountability to Site Emergency Director.

_____ 6.3 If any plant personnel are missing, PSS will form search parties, each having at least one HP technician.

_____ 6.4 HP will survey personnel and vehicles leaving the site at the PSS access control point. Contaminated individuals will be evacuated to the Power Service Shops utility building at Wilson Hydro Plant. Notify Site Emergency Director of any such individuals.

7.0 HP LAB UNINHABITABLE

_____ 7.1 HP technicians will secure equipment listed in Attachment 2, and proceed with equipment to mechanical equipment room, control bay, unit 3, elevation 617.

_____ 7.2 Report to Site Emergency Director.

8.0 ISSUANCE OF POTASSIUM IODINE (KI)

8.1 If a responsible health physicist has reason to believe that a person's projected cumulative dose to the thyroid from inhalation of radioactive iodine might exceed 10 rems (See Attachment 3) the exposed person should be started immediately on a dose regimen of potassium iodine (KI). Anyone authorized to initiate KI shall be familiar with the Food and Drug Administration approved package insert and be sure that each proposed recipient is similarly informed. The initial dose of KI should not be delayed and those who begin therapy should continue the 10-day course of KI unless their thyroid dose is determined not to have exceeded 10 rem. An adequate supply of KI is stored in the medical station to supply any personnel exposed to radioactive iodine. It is supplied in bottles which contain a full 10-day dose regime. Follow dosage scheduled as outlined on the package insert accompanying each bottle of KI.

8.2 The potassium iodine is stored in the plant medical station. KI has an approved shelf-life with the expiration date listed on each bottle. To ensure that the KI supply is valid, these dates will be inspected during the emergency medical supply inventory and the bottles replaced as necessary.

8.3 A copy of the Food and Drug Administration approved package insert shall accompany each bottle of KI issued. Dosage scheduled and other pertinent information are outlined on the package and should be followed closely (Attachment 4).

8.4 The issuing agent shall complete the Potassium Iodine Issue Report (Attachment 5) for each bottle of KI issued. A copy of this report will be routed to the plant health physicist in a timely manner.

9.0 USE OF NRC ORANGE PHONE (HEALTH PHYSICS NETWORK)

9.1 This phone is located in the HP plant laboratory and the NRC Resident Inspector's office.

9.2 The phone is to be used by TVA personnel only under the following circumstances:

a. Incoming call from NRC.

b. Incoming call from another reactor site, if call is made at request of NRC at that site. Individual answering phone should verify the incoming call is made at NRC request.

c. Outgoing call to another reactor site at request of NRC at Browns Ferry.

d. Outgoing call to the two numbers (NRC) listed on the phone. This is to be used in the event of an emergency, or as a third backup to the ENS (red phone) and Bell system during an emergency.

APR 07 1983

4.2.7 Rezero all emergency dosimeters to assure proper operation.

4.3 Completion of Inventory Forms

4.3.1 If the particular items are present and in sufficient quantities and, when applicable, in good working condition, then check the YES column.

4.3.3 Under the remarks column, explain the corrective actions taken.

* NOTE All comments in the remarks column should be detailed enough to leave no doubt as to the actions taken. Comments to the effect - "batteries missing" will not suffice. A simple check in the NO column will represent that a deficiency exists. Such comments do not allow a person to determine what, if any, action has been taken and will only lead to confusion. Comments should read as follows: "Batteries replaced on March 25, 1980."

All deficiences must be corrected as soon as possible. If circumstances do not allow deficiences to be corrected, then the Shift Engineer shall be notified,

4.4 Upon activationof the Technical Support Center and Operations Support Center, the equipment listed below will be carried to each center by the Health Physics Section.

1 Ion chamber survey instrument.

*Revision JM

TENNESSEE VALLEY AUTHORITY

BROWNS FERRY NUCLEAR PLANT

RADIOLOGICAL EMERGENCY PLAN

OPERATION OF THE EMERGENCY DATA INFORMATION SYSTEM
BFN, IP-19

Approved: J. A. Lorry
Plant Superintendent

Date: APR 07 1983
General Revision

OPERATION OF THE EMERGENCY DATA INFORMATION SYSTEM

1.0 EQUIPMENT AND LOCATION

A CRT and a lineprinter are provided in the Technical Support Center for sending and receiving messages between emergency centers and for display of meteorological data.

2.0 INSTRUCTIONS

2.1 Turn on power to CRT and lineprinter. The CRT switch is located at right rear of console - Lineprinter switch is located approximately 10-inches BELOW (underneath) the keyboard on the left side of the machine and is colored white.

2.2 Enter on CRT: HELLO BFTSC. Return. The screen will respond - PASSWORD. Enter BFNP. Return. (The password will not be shown on the screen).

2.3 When logged in, the following menu will be shown:

FUNCTION KEY	ACTION OF KEY
f1	Exit the current module
f2	Program Stop
f3	Display meteorological data
f4	List, edit, and review messages
f5	Release a message to another site
f6	Create a new message
f8	Edit/display the next page
f9	Edit/display the previous page
f10	Edit/save changes made to the current page
f11	Edit/refresh the current page

If the program is not used, the computer will automatically log out after approximately 2 minutes.

2.4 To select a menu action (function), press the corresponding function (F) key at the top of the keyboard. (f7 key is not operable at this time). You do not have to press the return key after pressing a function key.

2.5 Description of menu functions:

2.5.1 Exit the current module, function key = f1, EXIT.
The f1 key is used to exit the menu function or module that the program is presently in. It will usually return the program menu on the screen.

2.5.2 Program stop, function key = f2, HALT.
Use this f2 key to log out of the program.

2.5.3 Display meteorological data, function key F3, MET. Screen will respond - WHICH SITE (1-BFNP, 2 = SNP, 3 = WBNP). Select the site desired and return. Screen will respond - ENTER PREVIOUS HOURS (0-168). Enter the number of the hours for which you desire to see data, return. Screen will respond - DATA TO RECEIVE (1 = HOURLY ONLY, 2 = 15 MINUTE ONLY, 3 = ALL)
Select the time interval you desire, return. The line printer will then print meteorological data. Print out will appear similar to the following sample =

TENNESSEE VALLEY AUTHORITY
BROWNS FERRY NUCLEAR PLANT

LATITUDE	LONGTITUDE	ELEVATION	(MSL)	DATE	TIME
34,70083	87,10806	596.		16-FEB-83	07:50:07

WIND SENS	U I L	DELTAT U-L		DELTAT U-I		DELTAT I-L		TA	TO	PCP
92.6	45.7	10.4	89.6	10.0	89.6	45.3	45.3	10.0	10.0	10.2	1.0

LATITUDE AND LONGITUDE ARE GIVEN FOR THE METEROLOGICAL TOWER
SENSOR HEIGHTS ARE HEIGHTS ABOVE TOWER BASE

YYJJJHHMM	WDU	WDI	WDL	WSL	STUSTISTL	DTUL	DTUI	DTIL	TAL	TDL	PCP
83 47 100	209.	315.	18.	0.8	0.9 0.7	15.	7.	6.	3.9F	2.6F	5.4G 4.1 -2.2 0.0

WPU= 34. WPI= 28. WPL= 50. SLR= 0.00 TU= 6.1

The codes for the above data are:

YY	=year
JJJ	=julian date
HH	=hour
MM	=minute
WDU	=wind direction(degrees) upper level
WDI	=wind direction(degrees) intermediate level
WDL	=wind direction(degrees) lower level
WSU	=wind speed(m/s) upper level
WSI	=wind speed(m/s) intermediate level
WSL	=wind speed(m/s) lower level
STU	=sigma theta(degrees) upper level
STI	=sigma theta(degrees) intermediate level
STL	=sigma theta(degrees) lower level
DTUL	=temperature difference(C/100 m) upper-lower
DTUI	=temperature difference(C/100 m) upper-intermediate
TAL	=ambient temperature (C) lower level
TDL	=dew point temperature(C) lower level
PCP	=precipitation total(mm) ground level
S	=stability class

The screen will respond - PRESS CARRIAGE RETURN FOR MORE INFORMATION, (f1) TO EXIT.
The return key will present which SITE (1 BFNP, 2=SNP, 3=WBNP) on the screen.

The following data points are only available on the hourly transmission:

NOTE ****ALL HOURLY READINGS ARE HOURLY AVERAGES****

STU
STI
STL
TDL
PCP

The following points are included in the hourly transmission and will be on the next line with the heading preceeding each value.

WPU =wind direction persistence upper (%)
WPI =wind direction persistence intermediate (%)
WPL =wind direction persistence lower (%)
SLR =solar radiaion (sm-cal/cm2--min)
TU =temperature(C) upper-level
TI =temperature(C) intermediate level

If a particular data point is not available the display will include asterisks (*****) for the value, if an entire data record was not recieved the display will print DATA NOT RECEIVED.

Wind directions, wind speeds, differential temperatures, and precipitation are checked against set criteria to determine whether or not they should be considered questionable. If a data point has failed one test it will appear in the display with question marks (????) directly below it. If the data point has failed two or more tests it will appear with plus signs (++++) directly below it.

If the stability class does not appear to agree with the temperature difference displayed, this is due to round-off. This condition indicates that the temperature difference is on the border between the two classes.

2.5.4 List, Edit, and Review messages, function key F4, LIST. Screen will respond - (if there are inbound messages which have not been reviewed)

** Number of messages waiting=
Enter 1 to review a waiting message
Enter 2 to review a particular message
Press Function Key (F1) to Exit this module
Enter the action code

Enter 1, return - will display a message.

When incoming messages are being reviewed, the (F1) key will terminate the edit message and begin the edit module for the next incoming message. When the last message has been reviewed, the (F1) key will cause the system to return to the function select module.

(All incoming messages must be viewed before key F1 will return the menu).

If a 2 is entered, the screem will respond - **ENTER 1 FOR INBOUND MESSAGES, 2 FOR OUTBOUND MESSAGES**

When 1 or 2, return, are entered, a listing of the messages will be shown. The screen heading is:

SEQ. NO./TITLE MESSAGE DEST. DATE

<u>If a message is to be viewed - remember its Seq. No.</u>

Pressing return shows the remainder of the list. When the last of the list is shown, continued pressing of return shows the last page of the list.

The Seq. No. may be entered to view a message.

Messages may be viewed with purpose of updating or "refreshing" the original message. When the message is called up, the screen gives the options of **PRESS (F1) to EXIT, (F10) to SAVE PAGE, (F11) to REFRESH PAGE**

If a page is "REFRESHED" the (F10) must be pressed to save or record the changes made. When (F10) is pressed, the rewritten message will be shown. If you are going to transmit the message - remember the Seq. No.

2.5.5 Release a Message to Another Site, function Key F5, REC. Screen will respond -
ENTER 1 to RELEASE A MESSAGE CREATED AT THIS SITE
ENTER 2 to RELEASE A MESSAGE RECEIVED AT THIS SITE
Enter 1, return - screen will respond *ENTER THE MESSAGE SEQUENCE NUMBER**

When the message sequence number is entered, the screen will respond -

1 "DNPEC"
2 "MSEC - CECC COMMUNICATOR
3 "KEC"
4 "BFNP LRC"
5 "*ME*"
(F1)
ENTER THE ACTION CODE

Select the number key for the destination desired, return. The message will then be automatically transmitted.

2.5.6 Create a New Message, Function Key F6, CRE
IMPORTANT: Do not use cursor movement keys when in CREATE. Their use erases the message you type in. The message text should be entered in normal keyboard fashion. Each line must be terminated by a carriage return. Corrections can be made to the current line by using the delete key (DEL) to move the cursor backwards. The backspace key and the cursor positioned keys can NOT be used to make corrections while the system is in the create module. Corrections can not be made to previous lines while the system is in the create module.

When the message text has filled the screen, the system will clear the screen and the user can continue to enter the message text on the next page. There is a maximum of 5 pages for the standard message form.

A message can be terminated at any time by pressing the (F1) key. This will cause the system to exit the create module and enter the edit module where changes and modifications can be made to the message before sending it.

****

TITLE TEST FORM 2

PAGE NUMBER 1 16-FEB-83 10:13:41 CST SEQ. NO. 19 INBOUND

DATE: _____
TIME: _____
INITIALS: _____
CALL VERIFIED: _____
SITE EMERGENCY DIRECTOR: _____
AFFECTED PLANT: _____
CLASSIFICATION: _____
TIME OF INCIDENT: _____
BRIEF DESCRIPTION (5 LINES): _____

PLANT CONDITION: _____
UNUSUAL RELEASE OF RADIOACTIVITY?_____
WIND DIRECTION: _____
WIND SPEED: _____
RECOMMENDED PROTECTIVE ACTION: _____

PAGE NUMBER 2 16-FEB-83 10:13:41 CST SEQ. NO. 19 INBOUND

.STOP.

****

Number 3, BFNP emergency parameter list is shown below:

(Sample date, time and Seq. No.)

****

TITLE BFNP EMERGENCY PARAMETER LIST

PAGE NUMBER 1 16-FEB-83 08:52:42 CST SEQ. NO. 3 INBOUND

PARAMETER	INSTR. NO.	PANEL READING
REACTOR LEVEL	LI 3-53 (INCHES)	9-5
REACTOR LEVEL	LI 3-62 (INCHES)	9-3
REACTOR LEVEL	LI 3-46A (INCHES)	9-5
REACTOR PRESSURE	PI 3-54 (PSIA)	9-5
REACTOR COLLANT TEMPERATURE	TR 68-2 LOOP A (DEG F)	9-4
	LOOP B (DEG F)	9-4
DRYWELL PRESSURE	PI 64-50A (PSIA)	9-3
	PI 64-67B (PSIA)	9-3
DRYWELL TEMPERATURE	TR 64-52 (DEG F)	9-3
DRYWELL HYDRGN CONCENTRATION	H2R 76-37 OR 39	9-54,55
DRYWELL OXYGEN CONCENTRATION	O2R 76-41 OR 43	9-54,55
TORUS TEMPERATURE	TR 64-52 (EG F)	9-3
TORUS HYDROGEN CONCENTRATION	H2 76-37 OR 39	9-54,55
TORUS OXYGEN CONCENTRATION	O2R 76-41 OR 43	9-54,55
TORUS WATERLEVEL	LI 64-54A (INCHES)	9-3
EQUIPMENT DRAIN SUMP FLOW	FR 77-16 (GPM)	9-4
FLOOR DRAIN SUMP FLOW	FR 77-6 (GPM)	9-4
HPCI PRESSURE	PI 73-31A (PSIG)	9-3
HPCI FLOW	FI 73-33 (GPM)	9-3

PAGE NUMBER 2 16-FEB-83 08:52:42 CST SEQ. NO. 3 INBOUND

RCIC PRESSURE	PI 71-35A	(PSIG)	9-3
RCIC FLOW	FI 71-36A	(GPM)	9-3
RHR LOOP I PRESSURE	PI 74-51	(PSIG)	9-3
RHR LOOP I FLOW	FI 74-50	(GPM)	9-3
RHR LOOP II PRESSURE	PI 74-65	(PSIG)	9-3
RHR LOOP II FLOW	FI 74-64	(GPM)	9-3
CORE SPRAY LOOP I PRESSURE	PI 75-20	(PSIG)	9-3
CORE SPRAY LOOP I FLOW	FI 75-21	(GPM)	9-3
CORE SPRAY LOOP II PRESSURE	PI 75-48	(PSIG)	9-3
CORE SPRAY LOOP II FLOW	FI 75-49	(GPM)	9-3
EECW FLOW	FI 67-3	(GPM)	9-20
	FI 67-6	(GPM)	9-20
	FI 67-9	(GPM)	9-20
	FI 67-12	(GPM)	9-20
EECW HEADER PRESSURE	PI 67-15	(PSIG)	9-20
	PI 67-16	(PSIG)	9-20
	PI 67-19	(PSIG)	9-20
	PI 67-20	(PSIG)	9-20
	PI 67-23	(PSIG)	9-20
	PI 67-24	(PSIG)	9-20

**PAGE NUMBER 3	16-FEB-83 08:52:42 CST**	SEQ. NO. 3	INBOUND
RHRSW PRESSURE	PI 23-4 (PSIG)	9-3	
	PI 23-11 (PSIG)	9-3	
	PI 23-18 (PSIG)	9-3	
	PI 23-26 (PSIG)	9-3	
CRD PRESSURE	PI 85-13A (PSIG)	9-3	
CRD FLOW	FI 85-11A (GPM)	9-5	
SBGTS FLOW	FI 65-50 (SCFMX1000)	9-25	
	FI 65-71 (SCFMX1000)	9-25	
SBGTS DELTA P	PDI 65-5 (IN. WATER)	9-25	
	PDI 65-27(IN. WATER)	9-25	
STACK FLOW	FI 90-271 (SCFM)	1-9-57	
DRYWELL RADIATION	RM 90-272A (R/HR)	9-54	
	RM 90-273A (R/HR)	9-55	
TORUS RADIATION	RM 90-272B (R/HR)	9-54	
	RM 90-273B (R/HR)	9-55	
STACK RADIATION	RE 90-147 (CPS)	25-39	
	RE 90-148 (CPS)	25-39	
RHRSW RADIATION	(A&C)RM 90-133B(CPS)	9-10	
	(B&D)RM 90-134B(CPS)	9-10	

****

When the message or data entry is completed, pressing the F1 key will provide a screen response of the destination menu so the message can be transmitted.

2.5.7 Display Rad Data or Plant Data, Function Key F7.

This function is not presently used.

2.5.8 Edit Function.

2.5.8.1 Edit/--Display the Next Page, function key F8, NEXT

2.5.8.2 Edit/--Display the Previous Page, function key F9, LAST

2.5.8.3 Edit/--Save Changes Made To The Current Page, Function Key F10, SAVE

2.5.8.4 Edit/--Refresh the Current Page, function key F11, REF.

When either the f6 or f4 menu function has been selected and messages are being edited these keys may be used for the following:

(F8) KEY

This key is used to advance to the next page. When this key is used, the current page of the message will be removed from the screen and the next page will be printed on the screen. If the current page is the last page of the message, that page will be reprinted when the (F8) key is pressed.

(F9) KEY

This key is used to return to the previous page. When this key is used, the current page of the message will be removed from the screen and the previous page will be printed on the screen. If the current page is the first page of the message, that page will be reprinted when the (F9) key is pressed.

(F10) KEY

This key is used to save changes made to the current page. This key must be used whenever changes are made to a page of the message. If changes are made the (F10) KEY must be pressed before pressing any other function keys. If this is not done, the changes made will be lost.

(F11) KEY

This key is used to refresh the current page. If undesirable changes have been made to a page of the message, this key can be used to return the original message text.

2.5.9 MAKING CHANGES TO THE TEXT:

Changes can be made to the message text by overtyping the incorrect or undesired portion, and by using special edit keys available on the Televideo terminal. These keys and their functions are listed below.

CURSOR POSITION KEYS

These keys are used to move the cursor to the desired location. There are 4 cursor positioning keys at the lower right of the keyboard. Each key has an arrow to indicate the direction of cursor movement.

CHARACTER DELETE KEY

This key deletes the character at the current cursor position and shifts all remaining characters in the line to the left one space.

CHARACTER INSERT KEY

This key inserts a blank space at the current cursor position by shifting all remaining characters in the line to the right one space.

LINE ERASE KEY

This key will remove all characters in the line from the current position of the cursor to the end of the line.

2.6 MAINTENANCE

Call the following BFN personnel for repairs and trouble shooting:

NAME	PAX	DIM	HOME
1. Glen T. Gibson	382		205-766-6528
2. Russell McNutt	264/109	879	205-232-2359
3. Lawrence (Larry) Johnson	264/382	856	205-233-0417

Call the following DNP, Computer Engineering Section, 1300 CST2-C, on operating problems:

NAME	DAY SHIFT	AFTER HOURS/WEEKENDS
1. David Woodard	751-4811 or 4812	615-622-4490
2. Chip Orman	751-4813	615-875-9543
3. Steve Oaks	751-4804	615-344-7032

APR 07 1983

TECHNICAL SUPPORT CENTER (TSC) OPERATION

1.0 PURPOSE

To establish the TSC organization and provide for TSC operation after it is manned.

2.0 INSTRUCTIONS

2.1 INITIAL ACTIVATION (Performed by Shift Engineer and/or first individuals reporting to TSC - Confirmed by REP Communicator)

Initials	Time	
_____	_____	a. Shift engineer (designated by schedule as Site Emergency Director) relocate to TSC, if possible.
_____	_____	b. Activate TSC phones (See Attachment C).
_____	_____	c. Establish communications with DNPEC.
_____	_____	d. Establish log of events/communications.
_____	_____	e. Transfer names of TSC personnel from IP-6 data sheets to REP Organization Board.
_____	_____	f. Establish communications with NRC via Red Phone (if required).
_____	_____	g. Move desks and phones to hallway for Secretary, Information Officer, and PSS Supervisor.

2.2 COMPLETE ACTIVATION (After majority of TSC personnel have arrived - Confirmed by REP Communicator).

_____	_____	a. REP Communicator assure TSC positions are filled.
_____	_____	b. REP Communicator begin maintaining plant status board.
_____	_____	c. Site Emergency Director relieve Shift Engineer. Obtain log of events.
_____	_____	d. Secretary take over log of events/communications.
_____	_____	e. REP Communicator establish communication with DNPEC Communicator.

* jaw
Revision

Initials Time

_____ _____ f. Technical Assessment Manager direct TSC Communicator to begin completing IP-20 data sheets (See Attachment A) every 1/2-hour.

_____ _____ g. Technical Assessment Manager establish communications with TSC Communicator in control room using portable phone. (Unit 1-628, Unit 2 - 629, Unit 3 - 630)

_____ _____ h. Maintenance Engineers establish communications with OSC. Designate individual in charge if Maintenance Unit Supervisor not available. Maintain log of activities.

PAX Numbers:

Mechanical 301/310/308/114/102/305/305/306
Electrical 307/145/407
Instrumentation 375/376/425/426/359/184/187

_____ _____ i. Secretary activate Emergency Data Information system (See IP-19).

_____ _____ j. Secretary begin operation of telefax machine (see Attachment F).

_____ _____ k. NRC Communicator establish communications with NRC (if required).

_____ _____ l. NRC Communicator begin maintaining area maps and off-site radiation status board.

_____ _____ m. Health Physicist begin maintaining in-plant radiation status boards.

_____ _____ n. Radiochemical Engineer begin providing information to KEC for projected dose calculations.

_____ _____ o. Health physicist begin providing release information and any plant field team data to MSEC for dose calculations.

_____ _____ p. Secretary (in hall) begin accountability of TSC personnel.

_____ _____ q. Site Emergency Director will reevaluate emergency conditions in accordance with IP-1 every two hours or more often if conditions warrant.

2.3 OTHER INFORMATION

a. Organization chart is show on Figure 1.

b. Physical layout of TSC is shown on Figure 2.

c. Lunchroom (Swamp) is available for breaks and extra work space.

* JAW
Revision

d. Reference books for TSC use are listed on Attachment D.

e. Complete list of TSC Dimension Numbers - See Attachment B.

f. See IP-23 for communication list.

g. List of DNPEC/CECC Numbers - See Attachment E.

h. Refer to Attachment K for Emergency Information Flow Diagram.

i. River flows and/or predicted flows - In Shift Engineer's Office.

j. Complete list of TSC duties for each individual - See Attachment G.

2.4 CONTINGENCIES

a. Long-term operation - See IP-22.

b. Loss of off-site communication by phone. Use PSO Radio - See Attachment H.

c. NRC order - The NRC role onsite is to observe, advise, and concur with licensee decisions and actions. If a situation arises where the NRC wants an action taken regarding plant operation that TVA does not agree with, the Site Emergency Director shall require the NRC to sign a Written Order (per 10 CFR 2) directing TVA to take the action before the Site Emergency Director will comply.

d. Using HP VHF radio - See Attachment I.

e. Evacuation - Relocate TSC to second level of Office Building. (See Attachment J)

f. Activity control - Activity control (Maintenance, etc.) will remain as specified in plant instructions, unless revised by PORC and Plant Supt./Asst Supt., or as modified by NRC order.

BFN - IPD
BFN, IP-20
Attachment B
APR 07 1983

TECHNICAL SUPPORT CENTER - DIMENSION PHONE NUMBERS

TITLE	PHONE
Site Emergency Director	771
Operations Manager	765
REP Communicator	769
*NRC Communicator	896
Technical Assessment Manager	761
Maintenance Manager	766
Health Physicist	767
Health Physicist	763
Radiochemical Engineer	768
Mechanical Engineer	773
Electrical Engineer	772
I & C Engineer	774
Reactor Engineer	775
Systems & Test Engineer	762
Operations Specialist	764
Secretary	770
PSO Engineer	776
Secretary	777
NRC Site Director of Operations	855
NRC	851
NRC	852
NRC	853
NRC	854
Secretary (Hallway)	848
PSS Supervisor	849
Public Information Officer	850
Any	PAX 493 (1)

(1)Rings at Secretary's desk (777 or 770) and can be transferred via dimension to any phone in TSC.

*Revision jae

APR 07 1983

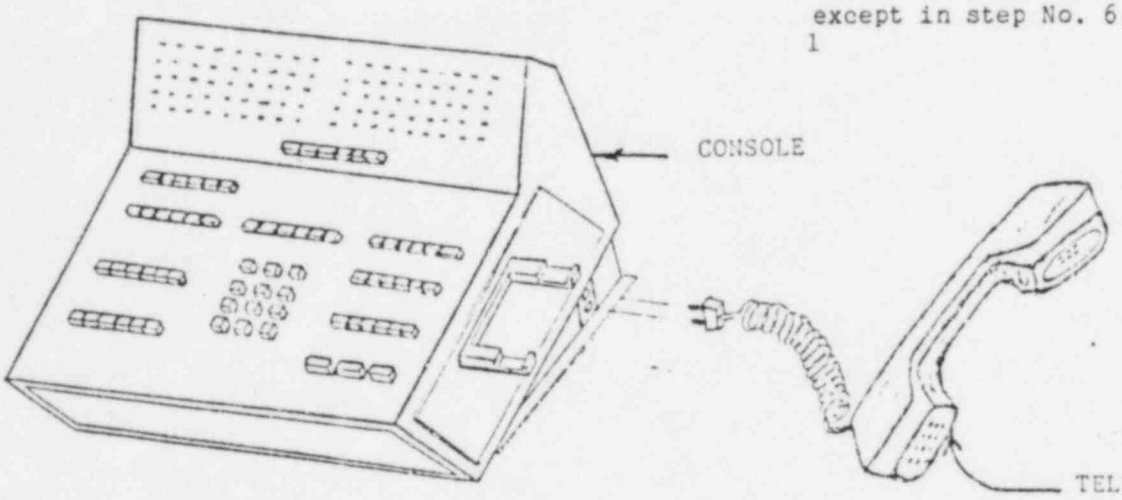
ACTIVATION OF TSC DIMENSION PHONES

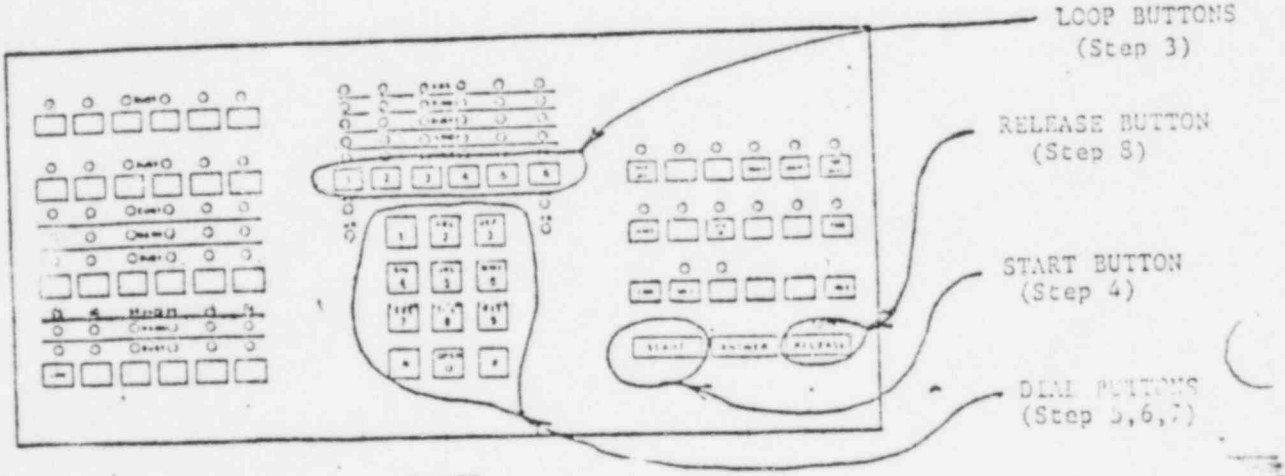
1. Obtain a telephone handset from supply cabinet in TSC or top right hand drawer of table behind Plant Superintendent's receptionist's desk in Office Building.
2. Plug telephone handset into RIGHT side of console (located in Plant Superintendent's receptionist's area).
3. Press any idle LOOP BUTTON (a button not lit)
4. Press START BUTTON: Dial tone is heard.
5. Dial 22 (pause)
6. Dial 0: Dial tone is heard.
7. Dial 04: Confirmation tone is heard. (3 beeps)
8. Press RELEASE BUTTON
9. To check activation, to to TSC, dial 30 or 31 (WATS lines). If dial tone is heard, the phones are activated.

DEACTIVATION OF PHONES

1. Repeat steps 1 thru 8 above except in step No. 6, dial 1

*





*Revision jpr

BFN-IPD
BFN, IP-20
Attachment E
APR 07 1983

CECC AND DNPEC TELEPHONE NUMBERS

Station	Extension (40 or 50 + Number) (Note: If dialing on 50, use 50 + 0 + Number, i.e. 50 + 0200)
Operations Duty Specialist	200
Management Services	203
State Coordinator	205
NRC (DNPEC)	206
Technical Services	207
Electrical, Instrument & Controls	208
Field Services	209
Reactor Engineering	212
Mechanical Engineering	213
Plant Communicator	214
CECC Director	220
State Communicator	228
NRC (CECC)	229
Information Office	230, 231, 232, 233, 234, 235, 236

*Addendum: Joe

BFN - IPD
BFN, IP-20
Attachment F
APR 07 1983

PANAFAX MV-3000 BASIC OPERATION

A. Initial Checks

1. Verify the machine is plugged into an electrical outlet.
2. Verify the power switch on left side of machine is turned "ON".
3. Verify there is paper in the machine by looking through the paper indicator window on the top of the machine.

B. To receive documents

The Panafax MV-3000 is to receive documents automatically. Therefore, no special procedures are necessary.

C. To transmit documents

1. Make sure the document is face up on the document tray.
2. Insert the document so that the long axis of the paper is parallel to the long axis of the machine.
3. Adjust the document guides to the width of the document.
4. Set the resolution button to "Fine" if the document is not clear or if it is hard to read, otherwise set to "Standard."
5. Press the original button according to the density of the originals.
6. Pick up the telephone handset and dial the number for the receiving party.
7. After hearing a "beep" tone press the "ON Line" button.
8. Check that the XMT lamp is lit and hang up the handset.

* Addendum

TSC Organization Duties

Site Emergency Director

1. Directs activities of site emergency organization.
2. Consults with DNPEC on important decisions.
3. Initiates protective actions onsite.
4. Coordinates as necessary emergency actions with onsite NRC.
5. Initiates long term operation.

Operations Manager

1. Directs operational activities.
2. Informs Site Emergency Director of plant status and operational problems.
3. Performs damage assessment as necessary.
4. Recommends solutions and mitigating action for operational problems.

Technical Assessment Manager

1. Directs onsite radiological monitoring and effluent assessment.
2. Directs activities of technical assessment team.
3. Projects future plant status based on present plant conditions.
4. Keeps assessment team informed on plant status.
5. Provides information, evaluations, and projections to Site Emergency Director.
6. Coordinates assessment activities with the DNPEC.

Maintenance Manager

1. Directs repairs and corrective actions.
2. Performs damage assessment.
3. Directs activities of Operational Support Center thru his engineers.
4. Coordinates repair activities with the DNPEC.

REP Communicator

1. Advises site emergency director regarding overall radiological emergency plan, use of procedures, emergency equipment availability, and coordination with DNPEC, KEC, and MSEC.
2. Evaluates plant status and performs principal communications with DNPEC.
3. Maintains plant status board.
4. Maintains REP Organization Board.
5. Confirms TSC set up and operating properly.

Secretaries

1. Maintains log of events.
2. Maintains accountability of TSC personnel.
3. Answers telephones.
4. Distributes IP-20, Attachment A data sheets.
5. Other duties as assigned by Site Emergency Director.
6. Operates Panafax
7. Operates Emergency Data Information System.

*Addendum: Jac

TSC Communicator

1. Provides information from control rooms to Technical Assessment Manager.
2. Completes IP-20, Attachment A data sheets.

Public Safety Services Supervisor

1. Directs activities of PSS personnel.
2. Controls access to site and control rooms.
3. Reports on accountability in case of evacuation.

Radiochemical Engineer

1. Coordinates with MSEC assessment of radioactive effluents.
2. Directs post-accident sampling activities.
3. Directs activities of the radiochemical laboratory.
4. Determines impact of incident on radwaste and various effluent treatment systems.
5. Coordinates assessment of radiological conditions offsite with MSEC.
6. Provides meteorological and dose projection information.

Mechanical Engineer

1. Directs OSC (Mechanical)
2. Performs damage and repair assessment.

Reactor Engineer

1. Performs evaluations as directed by Technical Assessment Manager.

Instrument & Controls Engineer

1. Directs OSC (Instrumentation)
2. Performs damage and repair assessment.

Electrical Engineer

1. Directs OSC (Electrical)
2. Performs damage and repair assessment.
3. Maintains Maintenance Assessment Board.

Health Physicist

1. Directs and/or performs assessment of inplant and onsite radiological conditions.
2. Directs onsite HP activities.
3. Coordinates additional HP support with MSEC.
4. Makes recommendations for protective actions for onsite personnel.
5. Coordinates effluent and offsite dose assessment with MSEC.
6. Maintains inplant radiation status board.

*Addendum: JAF

PSO Engineer

1. Directs OSC (PSO)
2. Performs damage and repair assessment.

Systems & Test Engineer

1. Performs evaluations as directed by Technical Assessment Manager.
2. Maintains Technical Assessment Board.

NRC Communicator

1. Acts as primary liason with onsite NRC personnel.
2. Updates NRC personnel of plant status.
3. Provides information requests from NRC to TSC personnel.
4. Mans NRC red phone.
5. Update area maps and off-site board.

Operations Specialist

1. Provides operational knowledge into status evaluation of all plant systems.
2. Provides advice regarding technical specifications, system response, safety limits, etc.
3. Assists in development of recommended solutions to developing problems.

Computer Engineer

1. Provides assistance to TSC by maintaining computer, repairing hardware, software development, etc.
2. Troubleshoot, maintain, and repair TSC computer systems and peripheries (when installed).

Quality Assurance

1. Assure QA requirements are met.
2. Provide relief (short term) to TSC personnel as needed.

Public Information Officer

1. Coordinates press releases and briefings as required.

*Addendum: Jac

BFN - IPD
BFN - IP-20
Attachment H

APR 07 1983

PSO VHF RADIO INSTRUCTIONS

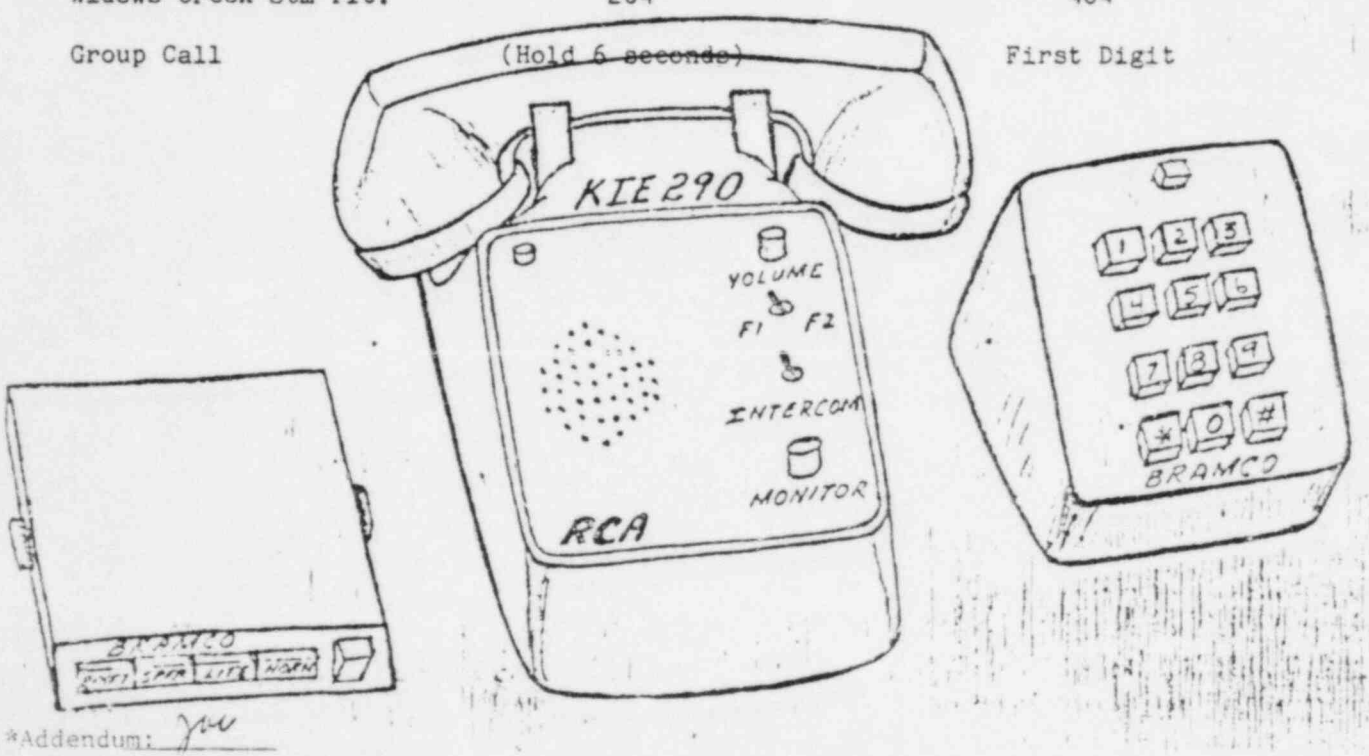
LOCATION - REP Communicator's Desk in TSC

TO OPERATE - Depress SPKR button on BRAMCO control box. Switch toggle switch on radio-telephone to F1 position. Lift radio-telephone handset; depress touch tone buttons for touch tone number desired. First digit depressed must be held down long engugh to illuminate red light on radio-telephone to activate the radio. Depress hand button in handset grip to transmit.

PSO Radio Locations/Numbers
Radio Call Letters

To Call	Radio Call Letters	Touch Tone Number
Chatt. OPS Duty Off.	243	243
Bellefonte NP	250	250
Browns Ferry NP	290	290
Chickamauga LD	237	037
Chickamauga LD	204	004
Chattanooga AO	237	537
Chattanooga WC	237	837
Chattanooga LD	201	101
Guntersville Hydro	203	303
Huntsville AO	201	501
Huntsville AO	207	507
Madison Sub.	207	707
Madison Sub.	201	701
Muscle Shoals AO	200	500
Scottsboro PSC	204	904
Trinity Sub	282	782
Wilson LD	200	000
Wilson WC	200	800
Wilson LD	201	001
Wilson LD	207	007
Widows Creek Stm Plt.	204	404

Group Call (Hold 6 ~~seconds~~) First Digit



*Addendum: Yes

Health Physics VHF Radio Instructions

TO Talk:

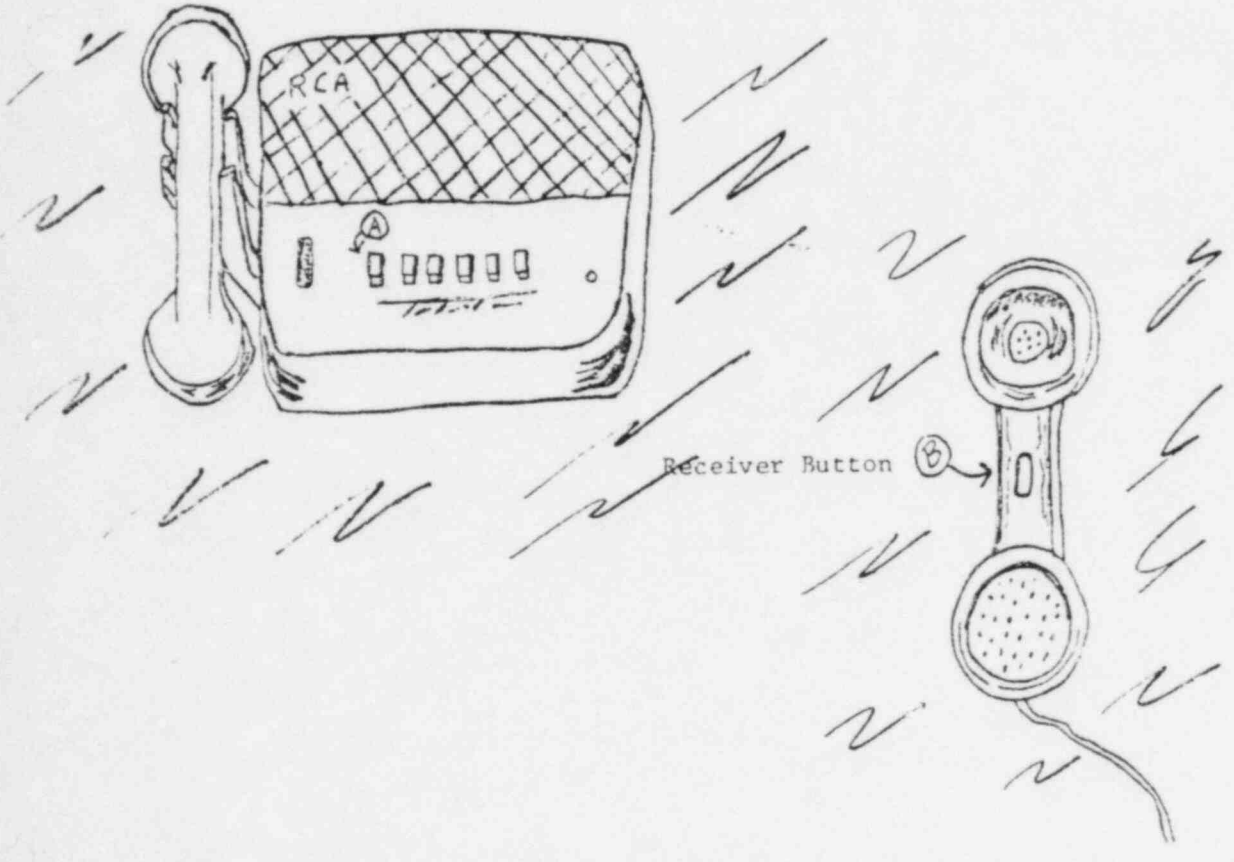
1. Depress the first black button on the left (See A in figure below).
2. Lift the receiver.
3. Depress the receiver button (See B)
4. Talk into the receiver.

To Listen:

Release the receiver button

Station Call Letters

1. Mobile HP van - KIF 9133
2. BFN Meterological Tower - KIF-254
3. Muscle Shoals Emergency Center - KIF-253



*Addendum Jac

APR 07 1983

Operation With TSC Relocated and/or OSC
To Office Building
(See Sketch)

1. Site Emergency Director relocate to Plant Superintendent's Office.

2. Operations Manager relocate to Assistant Plant Superintendent's (Maintenance) Office.

3. Maintenance Manager relocate to Electrical Maintenance Office.

4. Technical Assessment Manager relocate to Compliance Staff Office.

5. REP Communicator and NRC Communicator relocate to reception area.

6. a. One secretary relocate to Plant Superintendent's Office.
   b. One secretary relocate to reception area.
   c. One secretary relocate to outside reception area for maintaining accountability.

7. TSC Communicator remain in Control Room or Backup Control Room.

8. Radiochemical Engineer, Reactor Engineer, Systems & Test Engineer, and Operations Specialist relocate to Compliance Staff Office.

9. PSO, Electrical, I & C, Mechanical Engineer, and Quality Assurance Representative relocat to Electrical Maintenance Office.

10. Health Physicists relocate to Engineering Section Office.

11. Public Safety Supervisor relocate to outside reception area. Set up access controls to relocated TSC.

Phone Numbers

Position	DIM	PAX
Site Emergency Director	703/704	212
Operations Manager	707/708	221
Maintenance Manager	797	235/207
Technical Assessment Manager	786	405/406
REP Communicator	701	202
NRC COmmunicator	701	202
Secretaries	701	202
TSC Communicator	628 (U-1)	191/192 (U-1)
	629 (U-2)	291/292 (U-2)
	630 (U-3)	391/392 (U-3)
Radiochemical Engineer	788	405/406
Operations Specialist	788	405/406

*Addendum

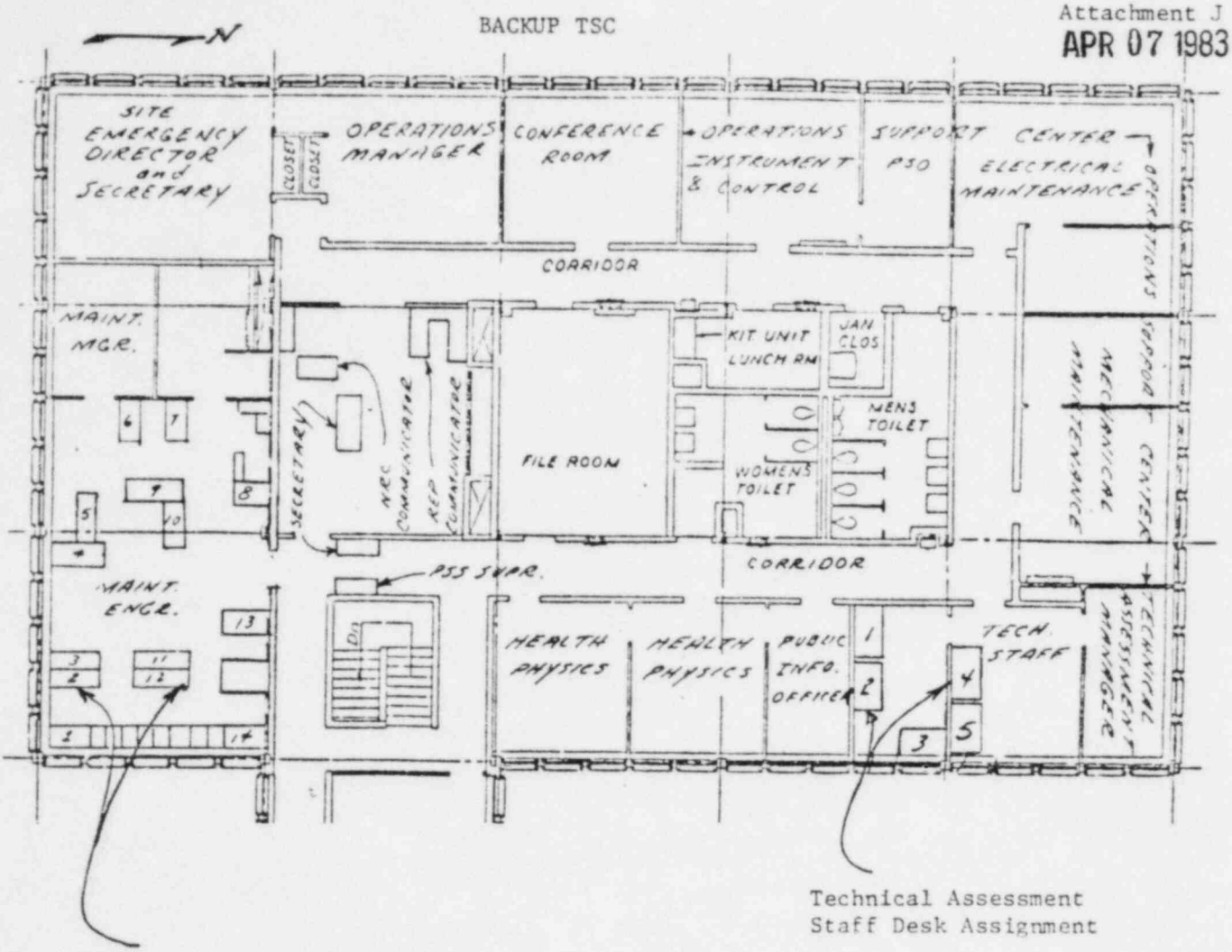
APR 07 1983

POSITION	DIM	PAX
Reactor Engineer	865	405/406
Systems & Test Engineer	865	405/406
PSO Engineer	891	207/235
Electrical Engineer	890	207/235
Mechanical Engineer	799	207/235
Quality Assurance	797	207/235
Health Physicist	784	208/215
Health Physicist	785	208/215
PSS Supervisor	701	202
OSC (Elec)	790	241
OSC (Mech)	618	206
OSC (I&C)	794	214
OSC (PSO)	793	205

* Jac
Addendum

APR 07 1983

BACKUP TSC



Maint. Engr. Desk Assignment

2. PSO Engineer
5. Electrical Engineer
8. Quality Assurance
9. Mechanical Engineer
13. Inst. & Controls Engineer

Technical Assessment Staff Desk Assignment

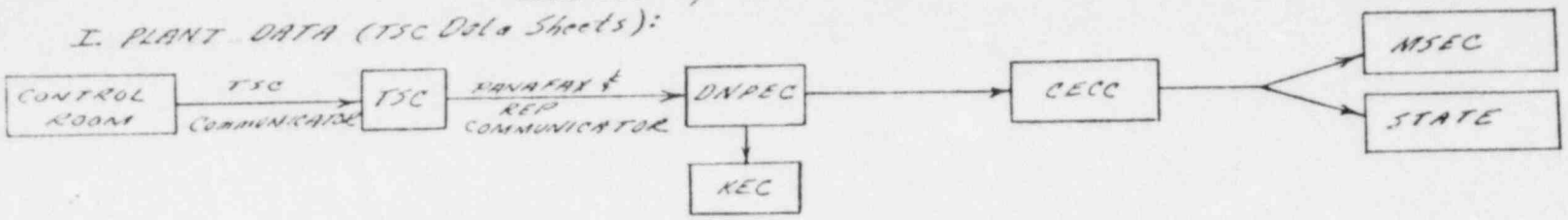
1. Reactor Engineer
2. Systems & Test Engineer
4. Operations Specialist
5. Radiochemical Engineer

* JRL
Addendum

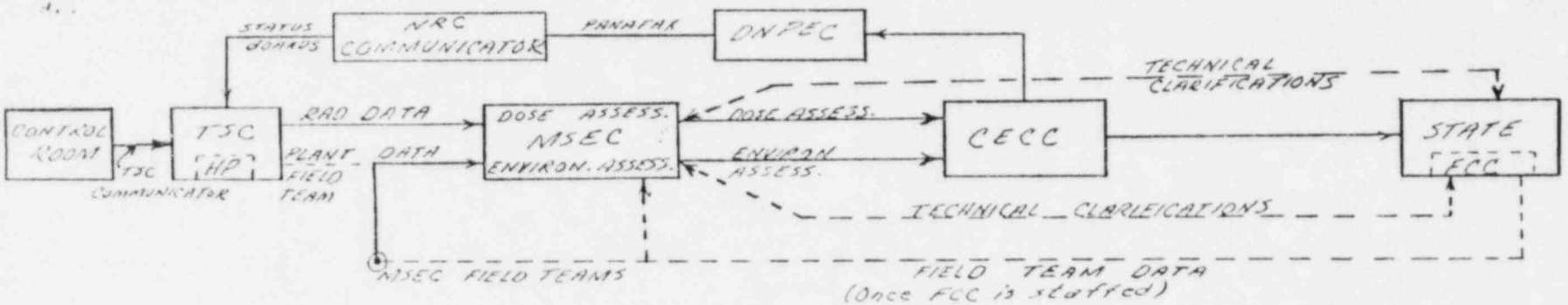
* Page 1 of 1
BEN-IPD
BEN, IP.20
Attachment K
APR 07 1983

EMERGENCY INFORMATION FLOW DIAGRAM

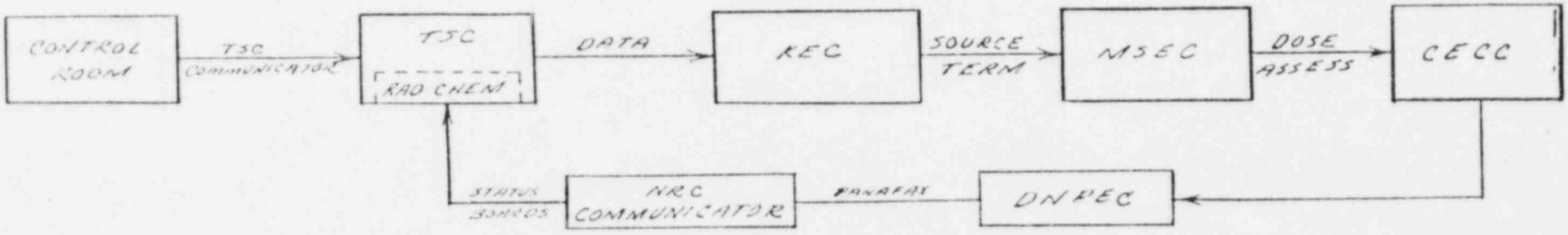
I. PLANT DATA (TSC Data Sheets):



II. DOSE/ENVIRONS ASSESSMENT: (Real Time)

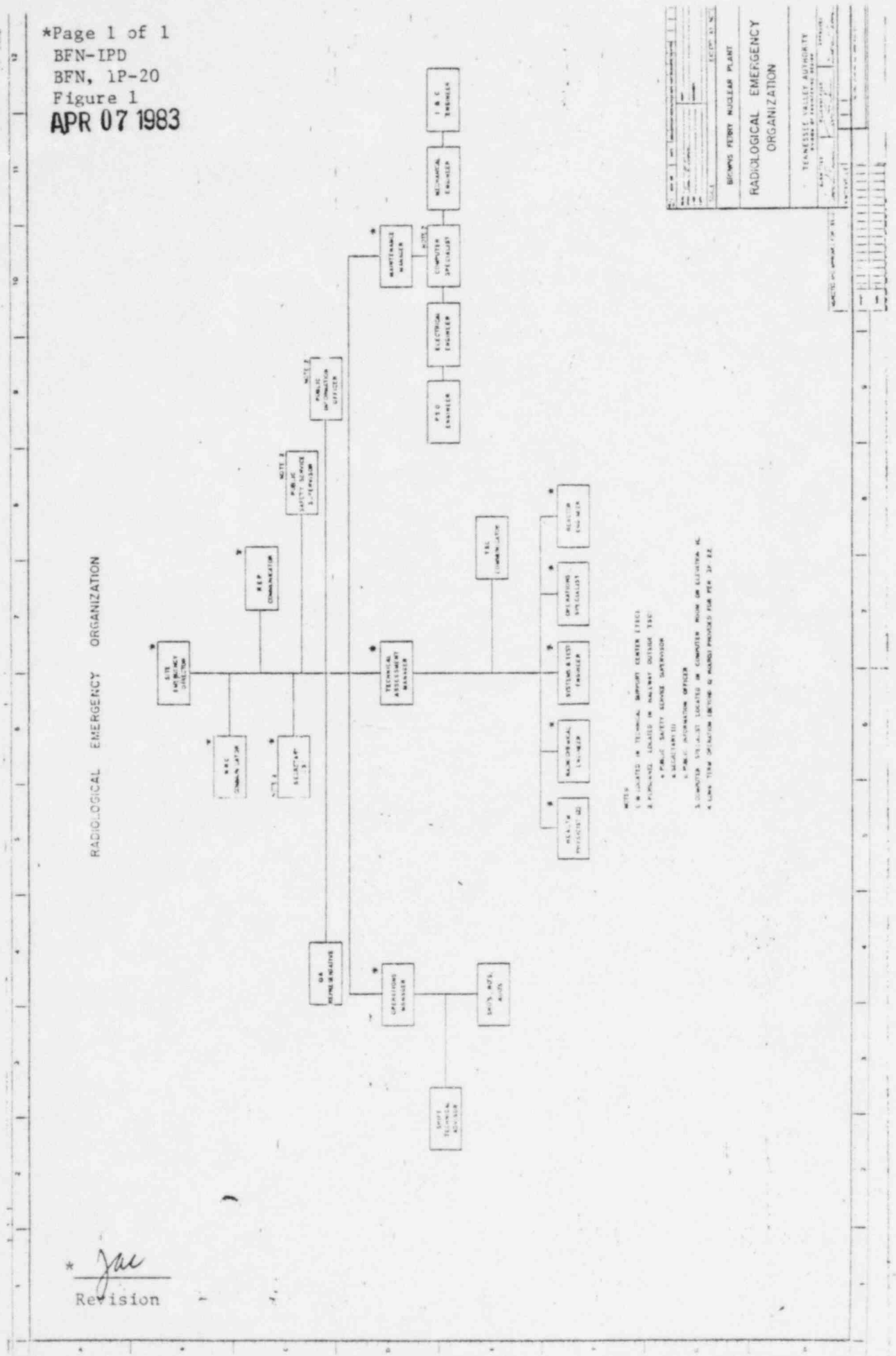


III. PREDICTED RELEASE CALCULATIONS (IP-18)



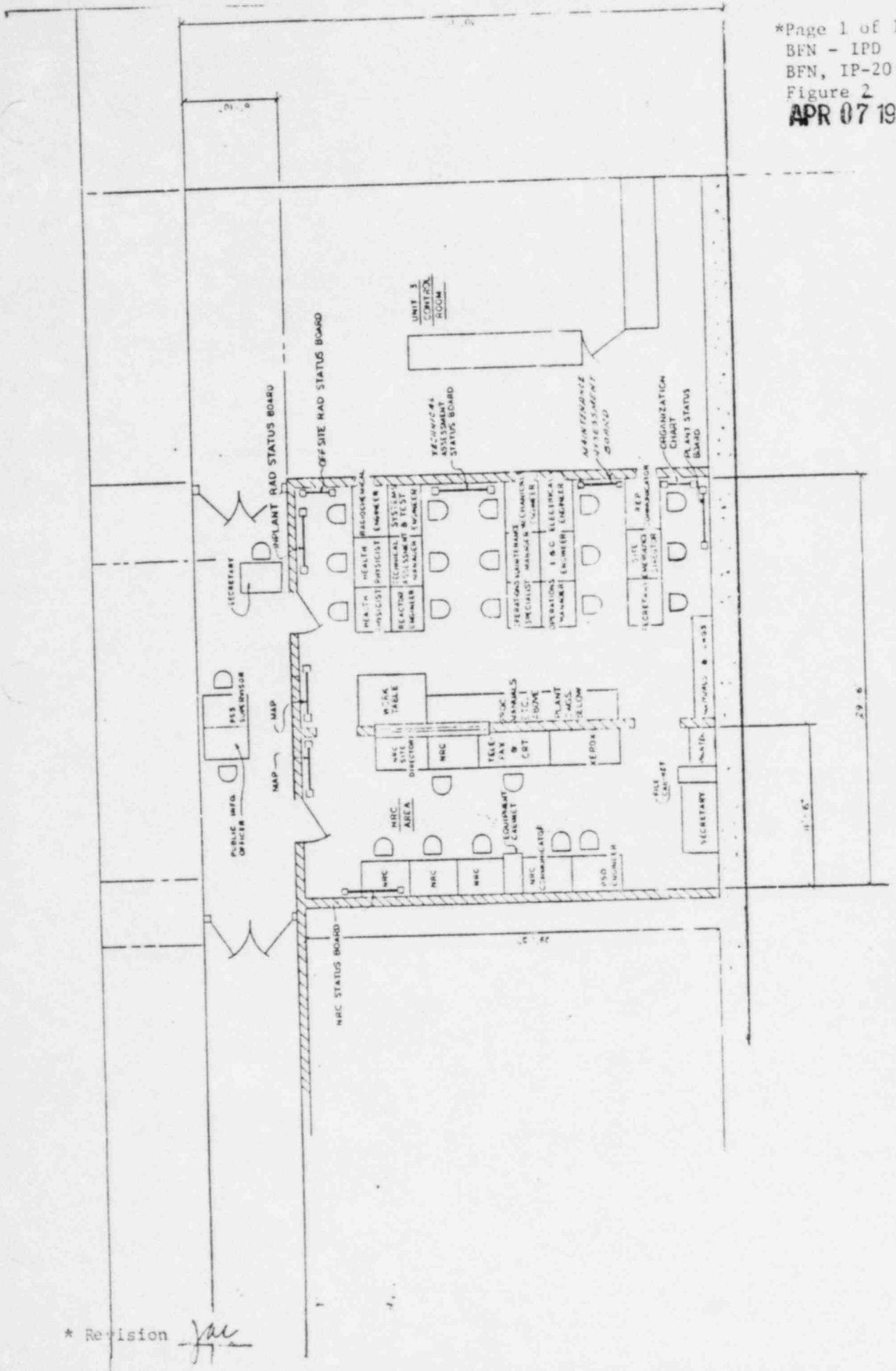
* Addendum Jac

*Page 1 of 1
BFN-IPD
BFN, 1P-20
Figure 1
APR 07 1983



* Jac
Revision

*Page 1 of 1
BFN - IPD
BFN, IP-20
Figure 2
APR 07 1983



* Revision

OPERATIONS SUPPORT CENTER (OSC) OPERATIONS

1.0 PURPOSE

To provide for OSC operation after it is manned.

2.0 INSTRUCTIONS

NOTE: Refer to Figure 1 of IP-20 for Radiological Emergency Organization.

2.1 The OSC is located in three maintenance shop offices as follows:
Mechanical - Mechanical maintenance shop office, elevation 565 service building. (Figure 1)
Electrical - Electrical maintenance shop office, elevation 565 service building, (Figure 1)
Instrumentation - Instrument maintenance shop office, elevation 580 service building. (Figure 2)
PSO - Same as Electrical

2.2 Any necessary emergency supplies for the OSC can normally be found in the shop areas, but a cabinet in the Central Alarm Station can be used as necessary (See IP-17 for additional supplies)

2.3 The Maintenance Manager in the TSC will direct the OSC through the respective engineers in the TSC.

2.4 Maintenance Unit Supervisor or individual designated by Maintenance Manager will supervise the 3 OSC areas. They will maintain a log of activities.

2.5 Individual in charge of OSC area will maintain accountability for his personnel.

2.6 The primary role of OSC is damage and repair assessment. Any inspections must be coordinated with Health Physics. Teams will be briefed as to conditions prior to disptch.

2.7 In events lasting longer than 12 hours, long-term operations will be undertaken as described in IP-22.

2.8 Should evacuation of the OSC be necessary, the office building, second floor, will act as backup (See IP-20, Attachment J).

2.9 See Attachment 1 for TSC Dimension and PAX phone numbers.

*Revision

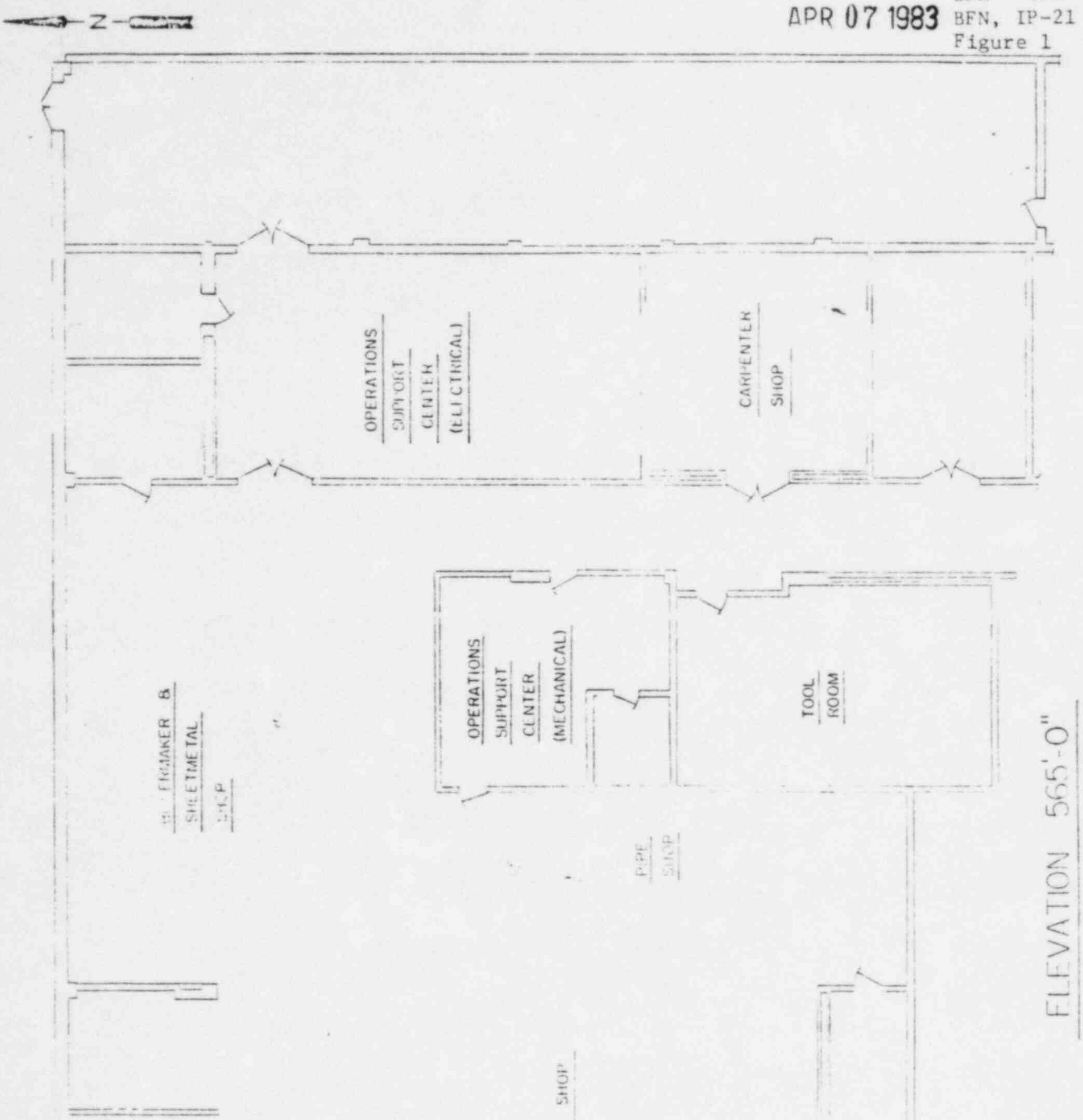
APR 07 1983

TECHNICAL SUPPORT CENTER - DIMENSION PHONE NUMBERS

TITLE	PHONE
Site Emergency Director	771
Operations Manaager	765
REP Communicator	769
*NRC Communicator	896
Technical Assessment Manager	761
Maintenance Manager	766
Health Physicist	767
Health Physicist	763
Radiochemical Engineer	768
Mechanical Engineer	773
Electrical Engineer	772
I & C Engineer	774
Reactor Engineer	775
Systems & Test Engineer	762
Operations Specialist	764
Secretary	770
PSO Engineer	776
Secretary	777
NRC Site Director of Operations	855
NRC	851
NRC	852
NRC	853
NRC	854

*Revision JAW

APR 07 1983



* Revision

LONG TERM OPERATION

1.0 PURPOSE

To provide for operation during a ALERT, SITE AREA EMERGENCY, or GENERAL EMERGENCY which exists or is projected to exist for more than 12 hours.

2.0 INSTRUCTIONS

INITIALS

_____ 2.1 Site Emergency Director notify DNPEC of decision to begin long-term operation. DNPEC can make arrangements necessary for food, clothing, cots, and other supplies requested.

_____ 2.2 Meal periods in the plant lunchroom will be scheduled by the Site Emergency Director. PSS Supervisor will provide for control of the area during these periods.

_____ 2.3 Sleeping facilities will be established as necessary in the second floor of the Office Building. PSS Supervisor will provide access control. (If radiological or other conditions do not permit this area to be used, provisions will be made through the DNPEC for near-site lodging, or for other sleeping areas onsite).

_____ 2.4 The lunchroom in the control bay at elevation 3C (Swamp) will serve as an assembly room for meetings, etc. The plant assembly room can also be used if additional space is needed and radiological conditions permit.

_____ 2.5 Additional personnel will be called in by the Site Emergency Director to provide coverage in the following areas as necessary:

a. Drawing Control Center
b. Document Control
c. Administration
d. Additional clerical support

_____ 2.6 Site Emergency Director establish 12 hour or shorter shifts in the TSC. Additional personnel will be called from IP-6 as necessary.

_____ 2.7 The Maintenance Manager, through the designated engineers, will establish 12-hour (or shorter) shifts for the OSC personnel. The OSC personnel will, in turn, establish 12-hour (or shorter) shifts for their craft personnel onsite and call in additional personnel as necessary.

*Revision jac

COMMUNICATIONS SYSTEMS

1.0 PURPOSE

Provide a ready reference of onsite communication capabilities and key telephone and pager numbers on and offsite.

2.0 INSTRUCTIONS

2.1 Shift Engineers Office

a. PAX (213/190)

b. NRC red phone (GPO-1488)

c. Bell (Dimension) system (750/751)

d. Repeater radio (F1, F2)

e. Paging system (beeper). See Attachment B

f. PAX/Dimension executive right-of-way

g. Turret extension (receiver only)

h. Ring-down to/from superintendent's office

2.2 Technical Support Center

a. PAX 288 (lunchroom or relay room)

b. PAX 493 (5 lines)

c. Bell (Dimension) System

d. Private circuit with Chattanooga, Muscle Shoals, Knoxville - For TSC use (see IP-20 for numbers).

e. NRC red phone (GPO 1488)

f. PSO VHF radio - For PSO or Site Emergency Director use. (See Attachment E for operating instructions and numbers)

g. Cordless telephone for TSC Communicator use (stored in TSC cabinet)

h. Emergency Data Information System (CRT Lineprinter)

*Revision JAV

APR 07 1983

2.3 Operations Support Center

* a. Mechanical - PAX 301/310/308/114/102/305/304/306
Dimension 620/625

* b. Electrical & PSO - PAX 307/145/407
Dimension 619/612

c. Instrumentation - PAX 376/426/425/375/359/184/187
Dimension 634/635

2.4 Key Onsite Numbers

	Location	Phone (PAX)	DIMENSION
	Assembly Room	167	-
*	Central Alarm Station	219	828/829/830
*	Chemical Laboratory	367/368	808
	Code Call	270 (plus code)	-
	Code Call (Answer)	279	-
	Communications room	257/283	821
	Construction (CSB)	Bell 729-6204 PAX 267/378	-
	Document Control	203/421	842
*	Drawing Control	149/419	879
	East Gatehouse	112	-
	Fire	199/299/399	-
	Health Station	113/117	805/806/807
	Health Physics Laboratory	300	803/804
	Lunchroom	166	-
	Medical Emergency	199/299/399	-
	Meteorological Tower	182 Bell 729-6917	-
	NRC (onsite)	346 Bell 729-6196 729-6197	627/877

*Revision JW

Operations	205/214	794
OSC		
Mechanical	301/310/308/114 102/304/305/306	620
Electrical & PSO	307/145/407	619/612
* Instrumentation	376/426/425/375 359/184/187	634/635
Field Services	701/715	712
Paging System	387	-
* Plant Superintendent's Office	212/221/202 Ring-down to/from	701 SE's office
Power Stores	217/268	754
PSS shift supervisor	273	829
Shift engineer's office	213/190	750
* Shift technical advisor	353/396/313	
TSC	493 288 (lunchroom)	777/775
TVA ambulance	273	829
West Gatehouse	271/280	828/829/830

2.4 Key Offsite Numbers

Location	Phone
Ambulances	
AAA Southend (Decatur)	205-355-3844
Athens Limestone Hospital	205-232-4141
Metro Shoals Emergency Hospital Serviced (Florence)	205-766-8600

*Revision jar

APR 07 1983

Hospitals

Athens-Limestone	205-232-4141
Colonial Manor (Florence)	205-766-5091
Decatur General	(205) 522-0175/522-0174
REAC/TS (Oak Ridge, TN)	615-576-3131
* KEC	Private circuit from TSC (615) 533-5344/5345 Dimension 50-124-7690/7691 7692/7693
MSEC	Private circuit from TSC (205) 386-2534/2767 PAX 5-310-1385/1384
Nat'l Earthquake Information Center	(303) 234-3994
NRC (Atlanta)	(404) 221-4503
(After 4 p.m., rings in Washington)	(404) 221-5085
NRC Bethesda-via HPN	Orange phone-Dial 22
NRC Operations Center (Bethesda)	(202) 951-0550 (Commercial, used upon a failure of the Emergency Notification System)
NRC (G. L. Paulk)	(205) 350-5613
Beeper	(205) 552-8929
* Operations Duty Specialist, CECC	Dimension 40+200 PAX 5-211-2495 (615) 751-2495

*Revision Jan

APR 07 1983

2.6 Information on plant communications systems (Normal and alternate power supplies, etc.) is shown on Attachment A.

2.7 NRC Orange Phone (HP Network) - This phone is located in the HP plant laboratory and the NRC Resident Inspectors Office. The phone is to be used by TVA personnel only under the following circumstances:

a. Incoming call from NRC.

b. Incoming call from another reactor site, if call is made at request of NRC at that site. Individual answering phone should verify that incoming call is made at NRC request.

c. Outgoing call to another reactor site at request of NRC at Browns Ferry.

d. Outgoing call to the two numbers (NRC listed on the phone. This is to be used in the event of an emergency, or as a third backup to the ENS (red phone) and Bell system during an emergency.

*Revision jw

APR 07 1983

EQUIPMENT	COMMENTS	NORMAL POWER SUPPLY	ALTERNATE POWER SUPPLY
PAX	48V DC Battery charged by battery charger	480V control bay vent board A (1)	480V common board 1
	Spare battery charger	480V Rx mov bd 2B (1)	480V common board 1
Two-way portable radios	Lt bd 2C F1 channel (4)	4kV common bd A	4kV common board B
	Lt bd 2A - F2 channel (4)	4kV common bd A	4kV common board B
	Instrument & Control A (Batt bd 2) F3 480V SD bd 2A	4kV Sd bd B (1)	4kVSd bd C (1)
Sound powered phones	Emergency shutdown control (self powered)	N/A	N/A
Sound powered phones	HP - Radiological emergency (self powered)	N/A	N/A
Sound powered jacks	Self powered	N/A	N/A
UHF Radio Station	Instrument & Control A (batt bd 2) - 480V SD bd 2A (1)	4kV sd bd B (1)	4kV sd bd C (1)
Evacuation alarm	Fuse panel A 480V diesel aux bd A	4kV sd bd A (1)	4kV sd bd B (1)
	Fuse Panel B 480V diesel aux bd B	4kV sd bd D (1)	4kV sd bd B (1) (see notes on page 2)

*Revision 14

EQUIPMENT	COMMENTS	NORMAL POWER SUPPLY	ALTERNATE POWER SUPPLY
Code call	Various lighting panels (2)	4kV common bd A or B	4kV common bd B or 1
Intercom system	Various lighting panels (5)	4kV common bd A or B	4kV common bd B or 1
Paging system	Non-preferred MG set (3)	(lighting bd 3B) 4kV common bd A	(Lighting bd 3B 4-kV common bd B
NRC, HP, REP phones	Panel 9-9 bkr 621 (Unit 2)	Unit preferred (U2) (Batt bd 2 bkr 117) (1)	Unit preferred (U3) (Batt bd 3 bkr 1102)
Microwave radio and power line carrier for PAX phones	(24V batteries) battery charger control bay vent bd A	480V sd bd kA (1)	480V common bd A
	(24V batteries) battery charger control bay vent bd B	480V com bd 3	480V sd bd 3B (1)
Dimension phones		LC #205, BKR #1 LOC R12N (1C Ctrl. Bay)	
*Addendum;	Notes: 1. Diesel backed 2. DCR P2437 Diesel backed power. 3. DCR P2438 Diesel backed power. 4. DCR P2420 Diesel backed power. 5. DCR P2440 Diesel backed power.		

APR 07 1983

DELETED

*Revision

APR 07 1983

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*Revision Jac

TENNESSEE VALLEY AUTHORITY
BROWNS FERRY NUCLEAR PLANT

RADIOLOGICAL EMERGENCY PLAN

RADIOCHEMICAL LABORATORY PROCEDURE
BFN IP - 25

Approved: J. A. Lorry
Plant Superintendent

Date: APR 07 1983

APR 07 1983

RADIOCHEMICAL LABORATORY PROCEDURE

1.0 PURPOSE

This procedure outlines the actions to be followed by Radiochemical Laboratory personnel during an emergency involving radiochemical problems. Natural phenomena, security threats, or other events not involving radiochemistry could be the cause for the emergency. This procedure describes those Radiochemical Laboratory actionsrequired during an emergency involving radiochemical problems.

NOTE: Shift Engineer's clerk will initiate IP-25 by calling the Radiochemical Shift Supervisor.

2.0 NOTIFICATION OF UNUSUAL EVENT

2.1 No offsite radiochemical problems are postulated during a NOTIFICATION OF UNUSUAL EVENT. This situation should not have any major impact on the Radiochemical Laboratory.

2.2 Although the lab will not automatically be called, should assistance be needed, RLAS will follow standard practices and procedures during any response work.

3.0 ALERT

General
A limited release is possible during an ALERT situation. Significant loss of fuel cladding, small line breaks, fuel handling accidents, or high radiation levels are examples.

INITIALS

_____ 3.1 All RLAS report to the radiochemical lab.

_____ 3.2 Prepare to implement RLM Radiological Emergency Sampling and Analysis Procedures.

_____ 3.3 Verify proper operation of laboratory assigned survey instruments.

_____ 3.4 An ALERT may require the evacuation of a certain plant area and/or building. If the lab must be evacuated, See Section 7.0.

4.0 SITE AREA EMERGENCY

General
A SITE AREA EMERGENCY may require extensive Radiochemical Laboratory response. A LOCA or major fuel handling accident are examples of a SITE AREA EMERGENCY.

_____ 4.1 RLAS report to the lab.

_____ 4.2 Prepare to implement RLM Radiological Emergency Sampling and Analysis Procedures.

_____ 4.3 Verify proper operation of laboratory assigned survey instruments.

INITIALS

_____ 4.4 If a site evacuation is ordered, see Section 6.0.

_____ 4.5 If the Radiochemical Laboratory must be evacuated, see Section 7.0.

5.0 GENERAL EMERGENCY

General
During a GENERAL EMERGENCY, there will probably be radiochemical problems requiring radiochemical laboratory response.

_____ 5.1 RLAS report to the lab.

_____ 5.2 Prepare to implement RLM Radiological Emergency and Sampling Procedures.

_____ 5.3 Verify proper response of laboratory assigned survey instruments.

_____ 5.4 If a site evacuation is ordered, see Section 6.0.

_____ 5.5 If the Radiochemical Laboratory must be evacuated, see Section 7.0.

6.0 SITE EVACUATION

_____ 6.1 RLAS proceed to lab, if habitable. If uninhabitable, see Section 7.0.

_____ 6.2 Report accountability to Site Emergency director.

7.0 RADIOCHEMICAL LABORATORY UNINHABITABLE

_____ 7.1 Move equipment as shown in RLM 2106 to establish a laboratory at the intake in the installed wire cage. This cage would be equipped with all the necessary gamma counting instrumentation needed to perform a minimum of radiochemistry sampling and analyses required during an emergency.

_____ 7.2 Report to Site Emergency Director.

Revision Log Sheet

Revision Date: JUN 0 3 1983

This log sheet must be retained as the last page of the Division of Nuclear Power 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
IP-2	Cover Page	4	IP-2	Cover Page	5
Att. 1	1 of 2	4	Att. 1	1 of 2	5
	2 of 2	4		2 of 2	5
Att. 2	1 of 2	4	Att. 2	1 of 2	5
	2 of 2	4		2 of 2	5
IP-3	Cover Page	5	IP-3	Cover Page	6
	1 of 3	5		1 of 4	6
	2 of 3	5		2 of 4	6
	3 of 3	5		3 of 4	6
				4 of 4	6
Att. 1	1 of 2	5	Att. 1	1 of 2	6
	2 of 2	5		2 of 2	6
Att. 2	1 of 2	5	Att. 2	1 of 2	6
	2 of 2	5		2 of 2	6
IP-4	Cover Page	5	IP-4	Cover Page	6
	1 of 3	5		1 of 4	6
	2 of 3	5		2 of 4	6
	3 of 3	5		3 of 4	6
				4 of 4	6
Att. 1	1 of 2	5	Att. 1	1 of 2	6
	2 of 2	5		2 of 2	6
Att. 2	1 of 2	5	Att. 2	1 of 2	6
	2 of 2	5		2 of 2	6

REVISION LOG SHEET (Continued)
Subject: DNPEC-IPD
Revision Date: JUN 03 1983

Pages to be Removed			New Pages to be Inserted		
Part	Page Number	Revision	Part	Page Number	Revision
IP-5	Cover Page	5	IP-5	Cover Page	6
	1 of 3	5		1 of 4	6
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IP-6	Cover Page	3	IP-6	Cover Page	4
	1 of 9	3		1 of 5	4
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				5 of 5	4
Att. 2	1 of 1	3	Att. 2	1 of 1	4
--	--	--	Att. 3	1 of 1	4
--	--	--	Att. 4	1 of 1	4

REP-IPD

DNPEC - IP-2

OPERATIONS DUTY SPECIALIST
PROCEDURE FOR NOTIFICATION OF UNUSUAL EVENT

Prepared By: W. E. Webb, Jr.

Approved By: J. W. Hufham

Date: 9/25/81

Rev. No.	Date	Revised Pages
0	9/25/81	All
1	3/10/82	2
2	OCT 26 1982	All
3	2/3/83	2
4	MAR 17 1983	All
5	JUN 03 1983	4 - 7

Rev. No.	Date	Revised Pages	Rev. No.	Date	Revised Pages

The last page of this procedure is 7.

Attachment 1

BROWNS FERRY/BELLEFONTE NUCLEAR PLANTS

OPERATIONS DUTY SPECIALIST INCIDENT FORM

Turn on recording equipment _____

Date _____ Time _____ Initials _____

Call verified _____ Site Emergency Director _____

NOTIFICATION TO STATE OF ALABAMA/TVA EMERGENCY CENTER

My name is _____ TVA, Operations Duty Specialist.

*The _____ Browns Ferry _____ Bellefonte Nuclear Plant, Unit _____,

declared a: _____ Notification of Unusual Event _____ Alert

_____ Site Area Emergency _____ General Emergency

at _____ CST (time of incident) on _____ (date).

*(Initially, provide the above information. Request State Radiological Health Staff duty officer to call you back for detailed information.)

Brief description of the incident is: _____

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

The plant condition is: _____ Stable _____ Deteriorating

The reactor (did/did not) shut down at _____ CST on _____ (date)

*Revision

Attachment 1 (Continued)

BROWNS FERRY/BELLEFONTE NUCLEAR PLANTS

OPERATIONS DUTY SPECIALIST INCIDENT FORM

The emergency situation:
_____ (a) Does Not Involve a Radiation Release from the Plant
_____ (b) Involves a Radiation Release From the Plant
_____ (c) Radiation Release Information is Not Known

The radiation release is:
_____ (a) Ground Level - Airborne
_____ (b) Elevated - Airborne
_____ (c) Waterborne
_____ (d) Other

The radiation release rate is: (assumes noble gas/radio-iodine mix with 0.11% I_{131})
_____ (a) Microcuries/Second
_____ (b) None
_____ (c) Unknown

The wind direction is from _____° (degrees)

Wind speed _____ m/s (meters per second)

We recommend this protective action:

_____ (a) No protective action is recommended at this time (Notification of Unusual Event, Alert, Site Area Emergencies).

_____ (b) Activate the warning system and tune radio or TV to a local station. Advise the public to take shelter, and await further instructions (General Emergency).

Emergency actions underway onsite are: (i.e., plant evacuation) _____

_____

Onsite support needed from offsite organization is: _____

_____

General Revision

Attachment 2

SEQUOYAH/WATTS BAR NUCLEAR PLANTS

OPERATIONS DUTY SPECIALIST INCIDENT FORM

Turn on recording equipment _____

Date _____ Time _____ Initials _____

Call verified _____ Site Emergency Director _____

NOTIFICATION TO STATE OF TENNESSEE/TVA EMERGENCY CENTER

My name is _____, TVA, Operations Duty Specialist.

*The _____ Browns Ferry _____ Bellefonte Nuclear Plant, Unit _____,

declared a: _____ Notification of Unusual Event _____ Alert

_____ Site Area Emergency _____ General Emergency

at _____ CST (time of incident) on _____ (date).

(Initially, provide the above information. Request State duty officer to call you back for detailed information.)

Brief description of the incident is: _____

*Revision

Attachment 2 (Continued)

SEQUOYAH/WATTS BAR NUCLEAR PLANTS

OPERATIONS DUTY SPECIALIST INCIDENT FORM

The plant condition is: _____ Stable _____ Deteriorating

The emergency situation:
_____ (a) Does Not Involve a Radiation Release from the Plant
_____ (b) Involves a Radiation Release From the Plant
_____ (c) Radiation Release Information is Not Known

The radiation release is:
_____ (a) Ground Level - Airborne
_____ (b) Elevated - Airborne
_____ (c) Waterborne
_____ (d) Other

The wind direction is from _____° (degrees)

Wind speed _____ mi/h (miles per hour)

We recommend this protective action:

_____ (a) No protective action is recommended at this time (Notification of Unusual Event, Alert, Site Area Emergencies).

_____ (b) Activate the warning system and tune radio or TV to a local station. Advise the public to take shelter, and await further instructions (General Emergency).

General Revision

REP-IPD

DNPEC - IP-3

OPERATIONS DUTY SPECIALIST PROCEDURE FOR ALERT

Prepared By: W. E. Webb, Jr.

Approved By: J. W. Hoffman

Date: 9/25/81

Rev. No.	Date	Revised Pages	Rev. No.	Date	Revised Pages
0	9/25/81	All	3	2/3/83	2
1	3/10/82	2, 3	4	2/24/83	3
2	OCT 26 1982	All	5	MAR 17 1983	All
6	JUN 03 1983	All			

The last page of this procedure is 8.

OPERATIONS DUTY SPECIALIST

PROCEDURE FOR ALERT

1.0 PURPOSE

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

2.0 SCOPE

This procedure covers anticipated requirements of the ODS during an alert. This procedure does not cover additional actions to be taken prior or subsequent to an emergency or drill, nor does it cover the requirements of the ODS under a Site Area Emergency, or General Emergency, or Notification of Unsual Event.

3.0 REFERENCES

Radiological Emergency Plan.

4.0 ABBREVIATIONS AND DEFINITIONS

EDO - Emergency Duty Officer
ODS - Operations Duty Specialist
DNPEC - Division of Nuclear Power Emergency Center
CECC - Central Emergency Control Center
MSEC - Muscle Shoals Emergency Center
KEC - Knoxville Emergency Center

5.0 RESPONSIBILITIES

5.1 *Upon notification by the Site Emergency Director that an alert exists, the ODS is responsible for recording the preliminary report of information (attachment 1 for Browns Ferry/Bellefonte or attachment 2 for Sequoyah/Watts Bar) concerning the incident.

*The ODS is responsible for notifying the appropriate State agency, DNP EDO, CECC Director, DNPEC Director, MSEC Director, KEC Duty Officer, Load Coordinator, and key CECC and DNPEC staff. The ODS is also responsible for notifying technical support personnel at the discretion of the DNPEC Director.

6.0 PROCEDURE REQUIREMENTS

6.1 *Actions to be Taken for an Alert

The ODS performs the following tasks:

*Revision

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

(Time/Initials)

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

1. Turn on recording equipment.

2. Receive information from the Site Emergency Director.

3. Log information on the appropriate attachment.

4. Conduct verification call to originating plant.

___/___ 6.1.2 Notify the appropriate State agency by direct line. For the initial notification, provide only the basic information as indicated on the appropriate attachment. Request that the State make a verification callback, and at that time provide them the remainder of the attachment information.

After hours, the Alabama phone will be answered by the Department of Public Safety. Provide the officer with the basic information as indicated on attachment 1. Request that he contact the Radiological Health Staff and have them call the ODS for additional information. Provide the remainder of the attachment 1 information when the call is returned.

Alternate telephone numbers for these agencies are listed in the TVA Radiological Emergency Notification Directory.

Note: Notification to the State shall be made as soon as possible such that in all cases it is made within five minutes from when call is first received from the plant. Under this emergency classification, the ODS is the "primary contact" with the State. The ODS is relieved of this function by the CECC State Communicator once the CECC is staffed.

___/___ 6.1.3 Notify the DNP EDO. (See the DNP Notification Board.)

___/___ 6.1.4 Notify the MSEC Director. (See the DNP Notification Board.)

___/___ 6.1.5 Notify the CECC Director and have him report to the center. (See the DNP Notification Board.)

*Revision

___/___ 6.1.6 Notify the DNPEC Director and have him report to the *center. Ask the DNPEC Director who should be contacted *as DNPEC Technical Communicator; Electrical and Instrument *and Controls or Mechanical Branch representative. Determine if the DNPEC Director considers it necessary to call any technical support personnel at this time. If requested to do so, notify them last (see section 6.1.10). (See the DNP Notification Board.)

___/___ 6.1.7 Notify the KEC Duty Officer and have him activate the KEC, if required. (See the DNP Notification Board.)

___/___ 6.1.8 Notify the Load Coordinator of the condition.

___/___ 6.1.9 Notify the key DNPEC staff (see the DNP Notification **Board).

Key DNPEC Staff

***[1]Assistant Director (a DNPEC Director alternate)
[1]Reactor Engineering
***[1]Technical Communicator (designated by the DNPEC Director as either Electrical and Instrument and Controls or Mechanical Branch)
*[1]Plant Communicator
***[1]Assessment Team Leader (BWR - Browns Ferry, PWR - Sequoyah or Watts Bar)
[1]Emergency Preparedness and Protection
*[2,3]Mechanical (if primary representative was contacted as Technical Communicator, contact the designated alternate)
*[2,3]Electrical and Instrument and Controls (if primary representative was contacted as Technical Communicator, contact the designated alternate)
[2]Field Services
*[2]Management Services (request that he provide appropriate clerical support and an electronic board writer for the DNPEC and CECC)

***NOTE: [1]Request these individuals to report to the DNPEC.
[2]Request these individuals to report to the appropriate branch office.
[3]If the primary contact was not reached, and the alternate was contacted to serve as Technical Communicator, then request the alternate to designate a Technical Support contact to respond to the appropriate branch office. Contact that person and have him respond.

*Revision
**Deletion
***Addendum

___/___ 6.1.10 Notify the designated technical support personnel to report to the DNPEC if requested by the DNPEC Director. (See the DNP Notification Board.)

Attachment 1

BROWNS FERRY/BELLEFONTE NUCLEAR PLANTS

OPERATIONS DUTY SPECIALIST INCIDENT FORM

Turn on recording equipment _____

Date _____ Time _____ Initials _____

Call verified _____ Site Emergency Director _____

NOTIFICATION TO STATE OF ALABAMA/TVA EMERGENCY CENTER

My name is _____, TVA, Operations Duty Specialist.

*The _____ Browns Ferry _____ Bellefonte Nuclear Plant, Unit _____,

declared a: _____ Notification of Unusual Event _____ Alert

_____ Site Area Emergency _____ General Emergency

at _____ CST (time of incident) on _____ (date).

*(Initially, provide the above information. Request State Radiological Health Staff duty officer to call you back for detailed information.)

Brief description of the incident is: _____

_____

_____

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_____

The plant condition is: _____ Stable _____ Deteriorating

The reactor (did/did not) shut down at _____ CST on _____ (date)

*Revision

Attachment 1 (Continued)

BROWNS FERRY/BELLEFONTE NUCLEAR PLANTS

OPERATIONS DUTY SPECIALIST INCIDENT FORM

The emergency situation:
_____ (a) Does Not Involve a Radiation Release from the Plant
_____ (b) Involves a Radiation Release From the Plant
_____ (c) Radiation Release Information is Not Known

The radiation release is:
_____ (a) Ground Level - Airborne
_____ (b) Elevated - Airborne
_____ (c) Waterborne
_____ (d) Other

The radiation release rate is: (assumes noble gas/radio-iodine mix with 0.11% I_{131})
_____ (a) Microcuries/Second
_____ (b) None
_____ (c) Unknown

The wind direction is from _____° (degrees)

Wind speed _____ m/s (meters per second)

We recommend this protective action:

_____ (a) No protective action is recommended at this time (Notification of Unusual Event, Alert, Site Area Emergencies).

_____ (b) Activate the warning system and tune radio or TV to a local station. Advise the public to take shelter, and await further instructions (General Emergency).

Emergency actions underway onsite are: (i.e., plant evacuation) _____

_____

Onsite support needed from offsite organization is: _____

_____

General Revision

Attachment 2

SEQUOYAH/WATTS BAR NUCLEAR PLANTS

OPERATIONS DUTY SPECIALIST INCIDENT FORM

Turn on recording equipment _____

Date _____ Time _____ Initials _____

Call verified _____ Site Emergency Director _____

NOTIFICATION TO STATE OF TENNESSEE/TVA EMERGENCY CENTER

My name is _____, TVA, Operations Duty Specialist.

*The _____ Sequoyah _____ Watts Bar Nuclear Plant, Unit _____,

declared a: _____ Notification of Unusual Event _____ Alert

_____ Site Area Emergency _____ General Emergency

at _____ CST (time of incident) on _____ (date).

*(Initially, provide the above information. Request State duty officer to call you back for detailed information.)

Brief description of the incident is: _____

*Revision

Attachment 2 (Continued)

SEQUOYAH/WATTS BAR NUCLEAR PLANTS

OPERATIONS DUTY SPECIALIST INCIDENT FORM

The plant condition is: _____ Stable _____ Deteriorating

The emergency situation:
_____ (a) Does Not Involve a Radiation Release from the Plant
_____ (b) Involves a Radiation Release From the Plant
_____ (c) Radiation Release Information is Not Known

The radiation release is:
_____ (a) Ground Level - Airborne
_____ (b) Elevated - Airborne
_____ (c) Waterborne
_____ (d) Other

The wind direction is from _____° (degrees)

Wind speed _____ mi/h (miles per hour)

We recommend this protective action:

_____ (a) No protective action is recommended at this time (Notification of Unusual Event, Alert, Site Area Emergencies).

_____ (b) Activate the warning system and tune radio or TV to a local station. Advise the public to take shelter, and await further instructions (General Emergency).

REP-IPD

DNPEC - IP-4

OPERATIONS DUTY SPECIALIST PROCEDURE FOR SITE EMERGENCY

Prepared By: W. E. Webb, Jr.

Approved By: J. W. Hufham

Date: 9/25/81

Rev. No.	Date	Revised Pages
0	9/25/81	All
1	3/10/82	2, 3
2	OCT 26 1982	All

Rev. No.	Date	Revised Pages
3	2/3/83	2
4	2/24/83	2
5	MAR 17 1983	All

Rev. No.	Date	Revised Pages
6	JUN 03 1983	All

Rev. No.	Date	Revised Pages

The last page of this procedure is 8.

OPERATIONS DUTY SPECIALIST

PROCEDURE FOR SITE AREA EMERGENCY

1.0 PURPOSE

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

2.0 SCOPE

This procedure covers anticipated requirements of the ODS during a Site Area Emergency. This procedure does not cover additional actions to be taken prior or subsequent to an emergency or drill, nor does it cover the requirements of the ODS under a General Emergency, Notification of Unusual Event or Alert.

3.0 REFERENCES

Radiological Emergency Plan.

4.0 ABBREVIATIONS AND DEFINITIONS

EDO - Emergency Duty Officer
ODS - Operations Duty Specialist
DNPEC - Division of Nuclear Power Emergency Center
CECC - Central Emergency Control Center
MSEC - Muscle Shoals Emergency Center
KEC - Knoxville Emergency Center

5.0 RESPONSIBILITIES

5.1 Upon notification by the Site Emergency Director that a Site Area Emergency exists, the ODS is responsible for recording the preliminary report of information (attachment 1 for Browns Ferry/Bellefonte or attachment 2 for Sequoyah/Watts Bar) concerning the incident.

The ODS is responsible for notifying the appropriate State agency, DNP EDO, CECC Director, DNPEC Director, MSEC Director, KEC Duty Officer, Load Coordinator, and key CECC and DNPEC staff. The ODS is also responsible for notifying technical support personnel at the discretion of the DNPEC Director.

6.0 PROCEDURE REQUIREMENTS

6.1 *Actions to be Taken for a Site Area Emergency

*Revision

The ODS performs the following tasks:

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

(Time/Initials)

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

1. Turn on recording equipment.
2. Receive information from the Site Emergency Director.
3. Log information on the appropriate attachment.
4. Conduct verification call to originating plant.

___/___ 6.1.2 Notify the appropriate State agency by direct line. For the initial notification, provide only the basic information as indicated on the appropriate attachment. Request that the State make a verification callback, and at that time provide them the remainder of the attachment information.

After hours, the Alabama phone will be answered by the Department of Public Safety. Provide the officer with the basic information as indicated on attachment 1. Request that he contact the Radiological Health Staff and have them call the ODS for additional information. Provide the remainder of the attachment 1 information when the call is returned.

Alternate telephone numbers for these agencies are listed in the TVA Radiological Emergency Notification Directory.

Note: Notification to the State shall be made as soon as possible such that in all cases it is made within five minutes from when call is first received from the plant. Under this emergency classification, the ODS is the "primary contact" with the State. The ODS is relieved of this function once the CECC is staffed.

___/___ 6.1.3 Notify the DNP EDO. (See the DNP Notification Board.)

___/___ 6.1.4 Notify the MSEC Director and have him activate the MSEC. (See the DNP Notification Board.)

*Revision

___/___ 6.1.5 Notify the CECC Director and have him report to the center. (See the DNP Notification Board.)

___/___ 6.1.6 Notify the DNPEC Director and have him report to the *center. Ask the DNPEC Director who should be contacted *as DNPEC Technical Communicator; Electrical and Instrument *and Controls or Mechanical Lranch representative. Determine if the DNPEC Director considers it necessary to call any technical support personnel. If requested to do so, notify them last (see section 6.1.10). (See the DNP Notification Board.)

___/___ 6.1.7 Notify the KEC Duty Officer and have him activate the KEC. (See the DNP Notification Board.)

___/___ 6.1.8 Notify the Load Coordinator of the condition.

___/___ 6.1.9 Notify the key DNPEC staff (see the DNP Notification **Board).

Key DNPEC Staff

***[1]Assistant Director (a DNPEC Director alternate)
[1]Reactor Engineering
***[1]Technical Communicator (designated by the DNPEC Director as either Electrical and Instrument and Controls or Mechanical Branch)
*[1]Plant Communicator
***[1]Assessment Team Leader (BWR - Browns Ferry, PWR - Sequoyah or Watts Bar)
[1]Emergency Preparedness and Protection
*[2,3]Mechanical (if primary representative was contacted as Technical Communicator, contact the designated alternate)
*[2,3]Electrical and Instrument and Controls (if primary representative was contacted as Technical Communicator, contact the designated alternate)
[2]Field Services
*[2]Management Services (request that he provide appropriate clerical support and an electronic board writer for the DNPEC and CECC)

***NOTE: [1]Request these individuals to report to the DNPEC.
[2]Request these individuals to report to the appropriate branch office.
[3]If the primary contact was not reached and the alternate was contacted to serve as Technical Communicator, then request the alternate to designate a Technical Support contact to respond to the appropriate branch office. Contact that person and have him respond.

*Revision
**Deletion
***Addendum

___/___ 6.1.10 Notify the designated technical support personnel to report to the DNPEC if requested by the DNPEC Director. (See the DNP Notification Board.)

Attachment 1

BROWNS FERRY/BELLEFONTE NUCLEAR PLANTS

OPERATIONS DUTY SPECIALIST INCIDENT FORM

Turn on recording equipment _____

Date _____ Time _____ Initials _____

Call verified _____ Site Emergency Director _____

NOTIFICATION TO STATE OF ALABAMA/TVA EMERGENCY CENTER

My name is _____, TVA, Operations Duty Specialist.

*The _____ Browns Ferry _____ Bellefonte Nuclear Plant, Unit ____,

declared a: _____ Notification of Unusual Event _____ Alert

_____ Site Area Emergency _____ General Emergency

at _____ CST (time of incident) on _____ (date).

*(Initially, provide the above information. Request State Radiological Health Staff duty officer to call you back for detailed information.)

Brief description of the incident is: _____

_____

_____

_____

_____

_____

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_____

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_____

_____

The plant condition is: _____ Stable _____ Deteriorating

The reactor (did/did not) shut down at _____ CST on _____ (date)

*Revision

Attachment 1 (Continued)

BROWNS FERRY/BELLEFONTE NUCLEAR PLANTS

OPERATIONS DUTY SPECIALIST INCIDENT FORM

The emergency situation:
_____ (a) Does Not Involve a Radiation Release from the Plant
_____ (b) Involves a Radiation Monitor From the Plant
_____ (c) Radiation Release Information is Not Known

The radiation release is:
_____ (a) Ground Level - Airborne
_____ (b) Elevated - Airborne
_____ (c) Waterborne
_____ (d) Other

The radiation release rate is: (assumes noble gas/radioiodine mix with 0.11% I_{131})
_____ (a) Microcuries/Second
_____ (b) None
_____ (c) Unknown

The wind direction is from _____° (degrees)

Wind speed _____ m/s (meters per second)

We recommend this protective action:

_____ (a) No protective action is recommended at this time (Notification of Unusual Event, Alert, Site Area Emergencies).

_____ (b) Activate the warning system and tune radio or TV to a local station. Advise the public to take shelter, and await further instructions (General Emergency).

Emergency actions underway onsite are: (i.e., plant evacuation) _____

_____

Onsite support needed from offsite organization is: _____

_____

Attachment 2

SEQUOYAH/WATTS BAR NUCLEAR PLANTS

OPERATIONS DUTY SPECIALIST INCIDENT FORM

Turn on recording equipment _____

Date _____ Time _____ Initials _____

Call verified _____ Site Emergency Director _____

NOTIFICATION TO STATE OF ALABAMA/TVA EMERGENCY CENTER

My name is _____, TVA, Operations Duty Specialist.

*The _____ Sequoyah _____ Watts Bar Nuclear Plant, Unit _____,

declared a: _____ Notification of Unusual Event _____ Alert

_____ Site Area Emergency _____ General Emergency

at _____ CST (time of incident) on _____ (date).

*(Initially, provide the above information. Request State Radiological Health Staff duty officer to call you back for detailed information.)

Brief description of the incident is: _____

_____

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_____

_____

*Revision

Attachment 2 (Continued)

SEQUOYAH/WATTS BAR NUCLEAR PLANTS

OPERATIONS DUTY SPECIALIST INCIDENT FORM

The plant condition is: _____ Stable _____ Deteriorating

The emergency situation:
_____ (a) Does Not Involve a Radiation Release from the Plant
_____ (b) Involves a Radiation Release From the Plant
_____ (c) Radiation Release Information is Not Known

The radiation release is:
_____ (a) Ground Level - Airborne
_____ (b) Elevated - Airborne
_____ (c) Waterborne
_____ (d) Other

The wind direction is from _____° (degrees)

Wind speed _____ mi/h (miles per hour)

We recommend this protective action:

_____ (a) No protective action is recommended at this time (Notification of Unusual Event, Alert, Site Area Emergencies).

_____ (b) Activate the warning system and tune radio or TV to a local station. Advise the public to take shelter, and await further instructions (General Emergency).

General Revision

REP-IPD

DNPEC - IP-5
OPERATIONS DUTY SPECIALIST
PROCEDURE FOR GENERAL EMERGENCY

Prepared By: W. E. Webb, Jr.

Approved By: J. W. Higham

Date: 9/25/81

Rev. No.	Date	Revised Pages	Rev. No.	Date	Revised Pages
0	9/25/81	All	3	2/3/83	2
1	3/10/82	2, 3	4	2/24/83	3
2	OCT 26 1982	All	5	MAR 17 1983	All
6	JUN 03 1983	All			

The last page of this procedure is 8.

OPERATIONS DUTY SPECIALIST

PROCEDURE FOR GENERAL EMERGENCY

1.0 PURPOSE

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

2.0 SCOPE

This procedure covers the action of the ODS during a General Emergency. This procedure does not cover additional actions to be taken prior or subsequent to an emergency or drill, nor does it cover the requirements of the ODS under a Notification of Unusual Event, Alert, or Site Area Emergency.

3.0 REFERENCES

Radiological Emergency Plan.

4.0 ABBREVIATIONS AND DEFINITIONS

EDO - Emergency Duty Officer
ODS - Operations Duty Specialist
DNPEC - Division of Nuclear Power Emergency Center
CECC - Central Emergency Control Center
MSEC - Muscle Shoals Emergency Center
KEC - Knoxville Emergency Center

5.0 RESPONSIBILITIES

5.1 Upon notification by the Site Emergency Director that a General Emergency exists, the ODS is responsible for recording the preliminary report of information (attachment 1 for Browns Ferry/Bellefonte or attachment 2 for Sequoyah/Watts Bar) concerning the incident.

The ODS is responsible for notifying the appropriate State and local agencies, DNP EDO, CECC Director, DNPEC Director, MSEC Director, KEC Duty Officer, Load Coordinator, and key CECC and DNPEC staff. The ODS is responsible for notifying technical support personnel at the discretion of the DNPEC Director.

6.0 PROCEDURE REQUIREMENTS

6.1 *Action to be Taken for a General Emergency

The ODS performs the following tasks:

*Revision

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

(Time/Initials)

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

1. Turn on recording equipment.
2. Receive information from the Site Emergency Director.
3. Log information on the appropriate attachment.
4. Conduct verification call to originating plant.

___/___ 6.1.2 Notify the appropriate State agency by direct line. For the initial notification, provide only the basic information as indicated on the appropriate attachment. Request that the State make a verification callback, and at that time provide them the remainder of the attachment information.

After hours, the Alabama phone will be answered by the Department of Public Safety. Provide the officer with the basic information as indicated on attachment 1. Request that he contact the Radiological Health Staff and have them call the ODS for additional information. Provide the remainder of the attachment 1 information when the call is returned.

Alternate telephone numbers for these agencies are listed in the TVA Radiological Emergency Notification Directory.

Note: Notification to the State shall be made as soon as possible such that in all cases it is made within five minutes from when call is first received from the plant. Under this emergency classification, the ODS is the "primary contact" with the State. The ODS is relieved of this function the CECC is staffed.

___/___ 6.1.3 Notify the appropriate local Civil Defense Agencies. (See the TVA Radiological Emergency Notification Directory.)

Give the following message. "This is the TVA Operations Duty Specialist. We have a General Emergency existing at _____ nuclear plant. Please activate your emergency organization. You will receive further instructions from the appropriate State agency."

*Revision

Ensure the following recommended protective action is given:

"TVA recommends that you activate the warning system and advise the public to take shelter, tune radio or TV to a local station, and await further instructions."

___/___ 6.1.4 Notify the DNP EDO. (See the DNP Notification Board.)

___/___ 6.1.5 Notify the MSEC Director and have him activate the MSEC. (See the DNP Notification Board.)

___/___ 6.1.6 Notify the CECC Director and have him report to the center. (See the DNP Notification Board.)

___/___ 6.1.7 Notify the DNPEC Director and have him report to the *center. Ask the DNPEC Director who should be contacted as *DNPEC Technical Communicator; Electrical and Instrument and *Controls or Mechanical Branch representative. Determine if the DNPEC Director considers it necessary to call any *technical support personnel at this time. If requested to *do so, notify them last (see section 6.1.11). (See the DNP Notification Board.)

___/___ 6.1.8 Notify the KEC Duty Officer and have him activate the KEC. (See the DNP Notification Board.)

___/___ 6.1.9 Notify the Load Coordinator of the condition.

___/___ 6.1.10 Notify the key DNPEC staff (see the DNP Notification **Board).

Key DNPEC Staff

***[1]Assistant Director (a DNPEC Director alternate)
[1]Reactor Engineering
***[1]Technical Communicator (designated by the DNPEC Director as either Electrical and Instrument and Controls or Mechanical Branch)
*[1]Plant Communicator
***[1]Assessment Team Leader (BWR - Browns Ferry, PWR - Sequoyah or Watts Bar)
[1]Emergency Preparedness and Protection
*[2,3]Mechanical (if primary representative was contacted as Technical Communicator, contact the designated alternate)
*[2,3]Electrical and Instrument and Controls (if primary representative was contacted as Technical Communicator, contact the designated alternate)
[2]Field Services
*[2]Management Services (request that he provide appropriate clerical support and an electronic board writer for the DNPEC and CECC)

*Revision
**Deletion
***Addendum

***NOTE: [1]Request these individuals to report to the DNPEC.
[2]Request these individuals to report to the appropriate branch office.
[3]If the primary contact was not reached and the alternate was contacted to serve as Technical Communicator, then request the alternate to designate a Technical Support contact to respond to the appropriate branch office.

___/___ 6.1.11 Notify the designated technical support personnel to report to the DNPEC if requested by the DNPLC Director. (See the DNP Notification Board.)

Attachment 1

BROWNS FERRY/BELLEFONTE NUCLEAR PLANTS

OPERATIONS DUTY SPECIALIST INCIDENT FORM

Turn on recording equipment _____

Date _____ Time _____ Initials _____

Call verified _____ Site Emergency Director _____

NOTIFICATION TO STATE OF ALABAMA/TVA EMERGENCY CENTER

My name is _____, TVA, Operations Duty Specialist.

*The _____ Browns Ferry _____ Bellefonte Nuclear Plant, Unit _____,

declared a: _____ Notification of Unusual Event _____ Alert

_____ Site Area Emergency _____ General Emergency

at _____ CST (time of incident) on _____ (date).

*(Initially, provide the above information. Request State Radiological Health Staff duty officer to call you back for detailed information.)

Brief description of the incident is: _____

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

The plant condition is: _____ Stable _____ Deteriorating

The reactor (did/did not) shut down at _____ CST on _____ (date)

*Revision

Attachment 1 (Continued)

BROWNS FERRY/BELLEFONTE NUCLEAR PLANTS

OPERATIONS DUTY SPECIALIST INCIDENT FORM

The emergency situation:
_____ (a) Does Not Involve a Radiation Release from the Plant
_____ (b) Involves a Radiation Release From the Plant
_____ (c) Radiation Release Information is Not Known

The radiation release is:
_____ (a) Ground Level - Airborne
_____ (b) Elevated - Airborne
_____ (c) Waterborne
_____ (d) Other

The radiation release rate is: (assumes noble gas/radio-iodine mix with 0.11% I_{131})
_____ (a) Microcuries/Second
_____ (b) None
_____ (c) Unknown

The wind direction is from _____° (degrees)

Wind speed _____ m/s (meters per second)

We recommend this protective action:

_____ (a) No protective action is recommended at this time (Notification of Unusual Event, Alert, Site Area Emergencies).

_____ (b) Activate the warning system and tune radio or TV to a local station. Advise the public to take shelter, and await further instructions (General Emergency).

Emergency actions underway onsite are: (i.e., plant evacuation) _____

_____

Onsite support needed from offsite organization is: _____

_____

Attachment 2

SEQUOYAH/WATTS BAR NUCLEAR PLANTS

OPERATIONS DUTY SPECIALIST INCIDENT FORM

Turn on recording equipment _____

Date _____ Time _____ Initials _____

Call verified _____ Site Emergency Director _____

NOTIFICATION TO STATE OF ALABAMA/TVA EMERGENCY CENTER

My name is _____, TVA, Operations Duty Specialist.

*The _____ Sequoyah _____ Watts Bar Nuclear Plant, Unit _____,

declared a: _____ Notification of Unusual Event _____ Alert

_____ Site Area Emergency _____ General Emergency

at _____ CST (time of incident) on _____ (date).

*(Initially, provide the above information. Request State Radiological Health Staff duty officer to call you back for detailed information.)

Brief description of the incident is: _____

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

*Revision

Attachment 2 (Continued)

SEQUOYAH/WATTS BAR NUCLEAR PLANTS

OPERATIONS DUTY SPECIALIST INCIDENT FORM

The plant condition is: _____ Stable _____ Deteriorating

The emergency situation:
_____ (a) Does Not Involve a Radiation Release from the Plant
_____ (b) Involves a Radiation Release From the Plant
_____ (c) Radiation Release Information is Not Known

The radiation release is:
_____ (a) Ground Level - Airborne
_____ (b) Elevated - Airborne
_____ (c) Waterborne
_____ (d) Other

The wind direction is from _____° (degrees)

Wind speed _____ mi/h (miles per hour)

We recommend this protective action:

_____ (a) No protective action is recommended at this time (Notification of Unusual Event, Alert, Site Area Emergencies).

_____ (b) Activate the warning system and tune radio or TV to a local station. Advise the public to take shelter, and await further instructions (General Emergency).

General Revision

REP-IPD

DNPEC - IP-6

DIVISION OF NUCLEAR POWER EMERGENCY CENTER PROCEDURE FOR ALERT, SITE EMERGENCY, AND GENERAL EMERGENCY

Prepared By: W. E. Webb, Jr.

Approved By: [signature]

Date: 9/25/81

Rev. No.	Date	Revised Pages
0	9/25/81	All
1	3/10/82	2, 3, 4
2	OCT 26 1982	All
3	MAR 24 1983	All
4	JUN 03 1983	All

The last page of this procedure is Number 13.

DIVISION OF NUCLEAR POWER EMERGENCY CENTER

PROCEDURE FOR

ALERT, SITE AREA EMERGENCY, AND GENERAL EMERGENCY

1.0 PURPOSE

This procedure is designed to direct the DNPEC Director and staff to ensure a consistent, accurate, and timely response in the event of an accident. This procedure further serves to identify the necessary information which the DNPEC must provide the CECC Director to ensure that prompt, accurate, public-protective action recommendations can be made by the CECC to appropriate State authorities.

2.0 SCOPE

This procedure covers the actions of the DNPEC Director and staff during an 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
***NCO - Nuclear Central Office
***NUC PR - Division of Nuclear Power
***ODS - Operations Duty Specialist
***POTC - Power Operations Training Center
***SRO - Senior Reactor Operator
***REND - Radiological Emergency Notification Directory
***TSC - Technical Support Center

5.0 RESPONSIBILITIES

5.1 In the event of a radiological emergency classified as an Alert, Site Area Emergency, or General Emergency, the ODS calls the NUC PR EDO to act as DNPEC and CECC Director until he is relieved by the permanent CECC Director and DNPEC Director. The ODS is also responsible for contacting the DNPEC staff and having them report to the DNPEC. After contacting the EDO, the ODS contacts the DNPEC Director and requests that he report to the DNPEC.

***Addendum

Upon his arrival at the DNPEC, the DNPEC Director relieves the EDO of his duties as acting DNPEC Director. The DNPEC Director is responsibile for committing the support efforts of NUC PR to the affected plant. If NUC PR cannot fulfill the needs of the affected plant, the DNPEC Director has the authority to seek help from other divisions within TVA. The DNPEC Director is *responsible for ensuring that the CECC is provided with periodic summaries of information needed for overall accident assessment.

5.2 DNPEC Staff

The DNPEC staff is responsible for assisting the DNPEC Director in carrying out the DNPEC responsibilities in providing NCO technical support to the affected plant and to the CECC. An *assignment of positions and duties of this staff as well as a *description of augmenting support groups is described in *attachment 1.

**

6.0 PROCEDURE REQUIREMENTS

NOTE: The EDO will follow this procedure until relieved by the *permanent DNPEC Director or his assistant. The permanent DNPEC Director debriefs the EDO and continues with the procedure where the EDO left off.

6.1 Notifications

6.1.1 Verify that the ODS has contacted any requested technical support personnel. If technical support personnel are to be sent to the site by aircraft, verify that the ODS has made appropriate arrangements.

6.1.2 Notify the Site Emergency Director that the DNPEC is activated and obtain a current status report.

6.1.3 Review the emergency condition with the CECC Director.

6.1.4 *Ensure that the DNPEC Technical Communicator has *established communications with the KEC and the division *branch positions appropriately.

6.2 Accident Assessment

6.2.1 Verify that the electronic blackboard is manned and operational and is being kept current with the synoptics **of the emergency.

*Revision
**Deletion

6.2.2 Verify that the key plant parameter lists are being transmitted to the DNPEC via telecopy, and are promptly distributed to the DNPEC staff, plant assessment team, *and CECC (Plant Communicator's responsibility).

6.2.3 *Verify that the Plant Communicator is constructing and maintaining a current chronological key sequence of events. Ensure this information is transmitted to the CECC and KEC.

6.2.4 *Verify that the assessment team continually performs plant accident assessments and that they make prompt *reports to the assistant DNPEC Director. Evaluations must be keyed to specific plant parameters.

**

*6.2.5 The DNPEC Director shall ensure that accident assessment information is provided to the CECC on a frequent basis, *(at a minimum, hourly). These assessments shall provide *summary information on these items listed in attachment 2 *based on the last data transmittal from the plant.

*6.2.6 *Ensure that current offsite assessment information is *being provided by the CECC and transmitted to the TSC *(EP&P Branch Representative's responsibility).

*6.2.7 Potential Release Evaluation

If after consultation with the CECC, the CECC Director requests that a predictive release evaluation be performed based on the potential for significant changes in plant conditions, the DNPEC shall provide the KEC the appropriate assumptions to be made pertaining to plant status for performing the necessary calculations. The areas to be considered are as follows:

a. Increased fuel failure (changes in primary coolant activity levels).

b. Anticipated changes in primary coolant leakage rates or break sizes.

c. Anticipated changes in containment leakage rates (i.e., changes in containment pressure and/or changes in size of containment ruptures or holes).

*Revision
**Deletion

6.3 General Operation

6.3.1 During the course of an emergency, should the accident upgrade, downgrade, or terminate, the DNPEC Director shall notify the KEC and CECC Directors immediately.

6.3.2 The DNPEC Director shall conduct periodic briefings for the entire DNPEC staff to update the emergency situation.

6.3.3 If available personnel and equipment of NUC PR are not enough to cope with the emergency, contact the designated representative of other TVA divisions, as necessary, to supply adequate resources to recover from the accident. Log the organizations called for assistance. A description of services available and emergency contacts are available in the TVA Radiological Emergency Notification Directory (REND).

6.3.4 For a Site Area or General Emergency, the site should be reminded that additional technical personnel are available from the DNPEC to upgrade the technical support capability at the TSC. The DNPEC Director should discuss the need for this upgraded capability with the Site Emergency Director. Based upon this discussion, selected technical support personnel may be dispatched by ground or air transportation.

***6.3.5 For a Site Area or General Emergency the CECC Director will dispatch a senior division 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.

***6.3.6 The DNPEC Director will coordinate with the CECC 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 nontechnical interpretation of the event for the CECC Information Office Staff.

*6.3.7 Relief of Duties--Should the accident be expected to last for an extended period, the DNPEC Director originates a schedule for relief. The duties of DNPEC Director should only be passed on to individuals identified as alternates for the DNPEC Director's position. However, for short periods of time, the DNPEC Director may delegate the

*Revision
***Addendum

authority of DNPEC Director to a member of the DNPEC staff until an alternate DNPEC Director can arrive. The DNPEC Director also directs his staff to prepare a schedule for their relief to ensure the necessary staff of the DNPEC is
**available for the duration of the emergency.

*6.3.8 The DNPEC Director and staff will support the CECC Director as required for carrying out recovery efforts from the accident.

*6.3.9 Upon termination of the emergency, the DNPEC Director and staff shall make themselves available for review of the accident.

*Revision
**Deletion

ATTACHMENT 1

***DNPEC STAFF POSITIONS/SUPPORT FUNCTIONS

1.0 DNPEC STAFF

1.1 DNPEC Director

1. Provides support services to the plant by utilizing all of the necessary manpower and equipment under the control of the division.

2. Ensures that employees who may be required to go to the affected plant are fully briefed prior to leaving, and know to whom they are to report.

3. Keeps the Site Emergency Organization informed of personnel ordered to the site and expected time of arrival.

4. Maintains periodic status reports and summaries of key events from the plant and provide this information to the CECC Director and other support organizations as needed.

5. Responsible to the CECC Director to ensure that he is kept periodically briefed (at a minimum, hourly) and provide the information pertaining to plant status described in attachment 2. This information will be used by the CECC for overall accident assessment (see attachment 4).

6. Requests assistance from other divisions, local agencies, government installations, or vendors, as needed.

7. Maintains contact with the Site Emergency Director and ensures that necessary support is provided.

8. Ensures that a sequence of key events is being maintained. This sequence of events is to be updated hourly.

1.2 Assistant DNPEC Director

1. Responsible for managing the overall activities of the DNPEC assessment team.

***Addendum

ATTACHMENT 1 (Continued)

***DNPEC STAFF POSITIONS/SUPPORT FUNCTIONS

2. Ensures that overall plant assessments are being periodically provided to the DNPEC Director. This assessment shall address, as a minimum, the conditions as shown in attachment 2 and shall be keyed to the last data transmittal from the plant. Protective action recommendations shall be made to the DNPEC Director in accordance with the criteria established in attachment 2. The DNPEC Director will use the assessments and recommendations to brief the CECC Director.

3. Responsible for coordinating overall activities of the DNPEC and other division support activities as required.

1.3 Reactor Engineering Branch

1. Directs Reactor Engineering Branch activities in support of the plant.

2. Responsible for providing periodic assessments of plant conditions to the DNPEC Director and Assistant Director.

3. Provides logistics support as required to the DNPEC.

1.4 Technical Communicator

(Position filled by either the Electrical and Instrument and Control or Mechanical Branch representative or their alternate.)

1. Maintains communications with other NUC PR technical branch representatives to keep them briefed of the emergency conditions and coordinates obtaining support from them as necessary.

2. Maintains communications with the KEC to keep them briefed of the emergency conditions and obtains support from the KEC as necessary.

3. Assists the DNPEC Director in other communications needs as necessary.

4. Responsible for ensuring the electronic board writer is kept current with a general sequence of events relevant to the incident.

***Addendum

ATTACHMENT 1 (Continued)

***DNPEC STAFF POSITIONS/SUPPORT FUNCTIONS

1.5 Assessment Team

1. The assessment team shall be made up of the following:

   a. Team leader - Reactor Engineering Branch Supervisor, NSSS Engineering and Analysis.

   b. Nuclear engineers (two minimum).

   c. At the discretion of the REB Representative and team leader: mechanical engineer, electrical engineer, Field Services engineer, instrument engineer, and/or an SRO from the POTC.

2. The assessment team leader will be activated automatically. He is responsible for activating the remainder of the required team members.

3. The assessment team shall provide a periodic assessment of the situation and input back to the site as appropriate via the DNPEC Director.

4. Shall develop for the DNPEC Director a periodic assessment of the items described in attachment 2. This assessment shall be updated hourly (minimum) for the DNPEC Director to brief the CECC Director. The assessment will be based on the last data transmittal from the plant.

5. Material, documents, etc. shall be available in the DNPEC for use by the assessment team. A list of this material is provided in attachment 3.

1.6 Plant Communicator

1. Maintain continuous communications with the site TSC.

2. Responsible for ensuring that the DNPEC assessment team is kept updated with the current plant conditions and coordinates obtaining additional information from the TSC as necessary for the assessment team.

3. Responsible for maintaining a detailed sequence of events during the emergency. This sequence of events shall be updated and provided to the DNPEC and CECC hourly.

***Addendum

ATTACHMENT 1 (Continued)

***DNPEC STAFF POSITIONS/SUPPORT FUNCTIONS

4. Responsible for ensuring that information received via the telecopy machine, (i.e., plant parameter lists, etc.) is promptly distributed to the DNPEC Director, DNPEC staff, assessment team and the CECC as appropriate.

5. Assists the DNPEC with other communication needs with the site as necessary.

1.7 Emergency Preparedness and Protection (EP&P) Branch Representative

1. Directs the EP&P Branch activities in support of the plant.

2. Supports the DNPEC Director as required in coordinating emergency support actions with the site.

3. Assists, as necessary, the TSC Health Physics and Rad-Chem Supervisors in coordinating the performance of the predictive release rate model with the KEC and MSEC.

4. Responsible for providing current offsite information, as provided by the CECC, to the TSC and for notifying the DNPEC Director when such information is updated.

5. Provides logistics support as required to the DNPEC.

1.8 Clerical Support

1. Operate CRT terminals.

2. Maintain log of events.

3. Operate Dimension Telephone System.

4. Maintain DNPEC organization board.

5. Operate telecopy machine.

6. Performs other duties as required by the DNPEC staff.

1.9 ODS

1. Provides for initial notification of all offsite emergency organizations upon declaration of an emergency classification.

***Addendum

ATTACHMENT 1 (Continued)

***DNPEC STAFF POSITIONS/SUPPORT FUNCTIONS

2. Notifies key DNPEC and CECC staff members which are required to report to the DNPEC and CECC.

3. Performs notifications to other organizations or personnel as requested by the DNPEC or CECC Directors.

1.10 Supporting NUC PR Branches

Other branches within the division will be activated to support the DNPEC. These include: Electrical and Instrument and Controls Branch, Mechanical Branch, Field Services Branch, and Management Services Staff.

Representatives from these branches will be activated along with activation of the DNPEC Staff. They will be requested to man their respective branch offices to coordinate support as required within their areas of expertise.

1.11 Technical Support

The technical support group is composed of skilled professionals trained to provide plant support. The group consists of TVA central office employees in NUC PR. The technical support members provide expertise in reactor systems and core engineering, electrical engineering, mechanical engineering, chemical engineering, chemistry, shielding, transient analysis, fire protection, electrical distribution (inplant), security, metallurgy, radwaste, and instrumentation. The DNPEC Director delegates to the Technical Communicator the job of contacting these designated individuals by phone or through their respective branch contacts as needed. If necessary, technical support personnel may be sent to the plant. Transportation may be provided by helicopter or fixed-wing aircraft.

1.12 Supporting Division

If necessary, the DNPEC Director may obtain assistance from other divisions within TVA.

***Addendum

*ATTACHMENT 2

ACCIDENT ASSESSMENT CECC STATUS BOARD

I. HEAT REMOVAL CAPABILITY:

II. FUEL INTEGRITY:

III. RADIOACTIVITY IN CONTAINMENT:

IV. CONTAINMENT INTEGRITY:

V. OVERALL ASSESSMENT:

*Revision

***ATTACHMENT 3

DNPEC ASSESSMENT TEAM
REFERENCE MATERIAL/EQUIPMENT

Sequoyah
- FSAR
- Technical Specifications
- Emergency Operating Procedures
- Abnormal Operating Instructions
- PWR Systems Manuals
- Controlled Diagrams - Mechanical, Electrical, Logic, Piping Layout
- Offsite Dose Calculation Manual

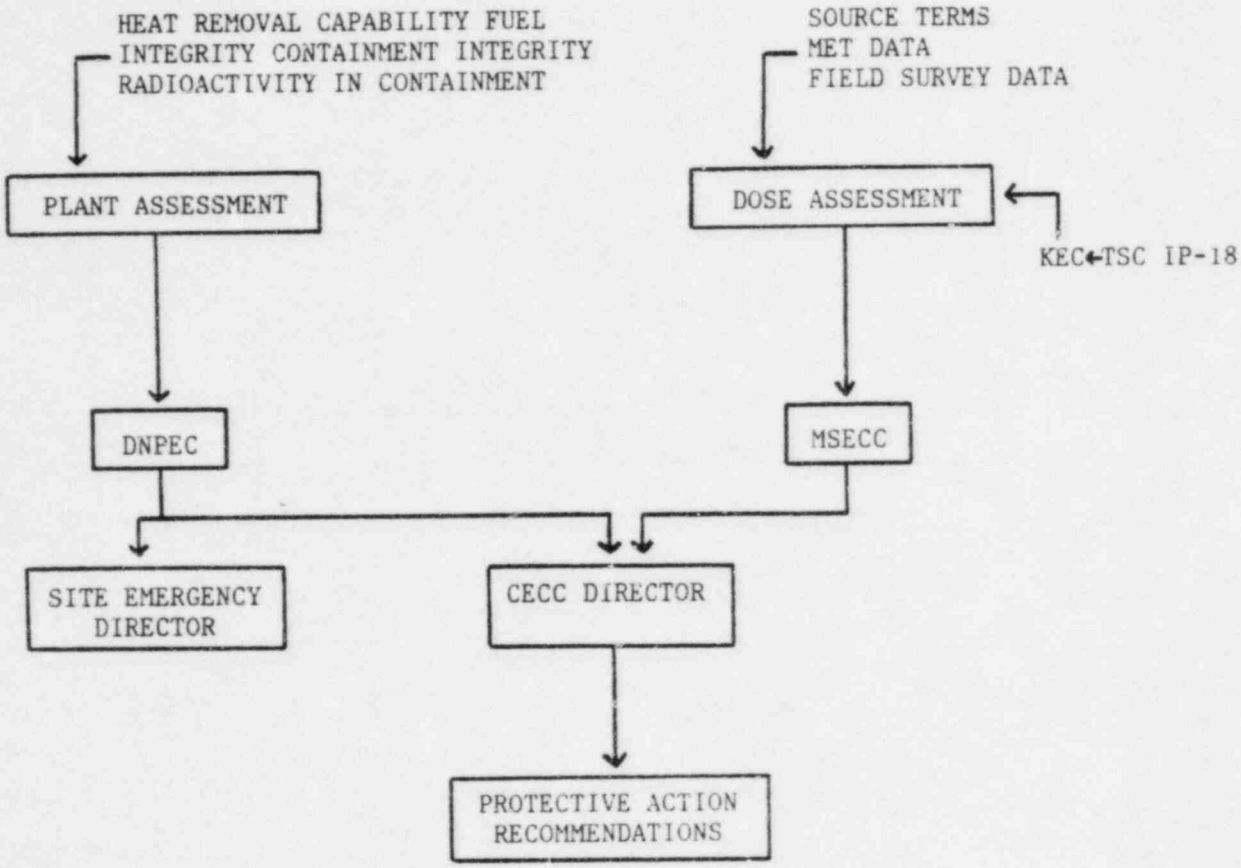
Browns Ferry
- FSAR
- Technical Specifications
- Emergency Operating Procedures
- Abnormal Operating Instructions (These will be available when the new EOPs are implemented)
- BWR Systems Manuals
- Controlled Diagrams - Mechanical, Electrical, Logic, Piping Layout
- Technical Instruction - 47
- Browns Ferry GEKs

Common
- 10 CFR
- Steam Tables
- 2 HP 41 VC Calculators, 2 Card Readers, 2 Extra Chargers
- Key to Document Control
- Supplies - Paper, Pencils, Pencil Sharpener

***Addendum

***ATTACHMENT 4

INPUT FOR CECC ACCIDENT ASSESSMENT



*Revision

Revision Log Sheet

Revision Date: JUN 07 1983

This log sheet must be retained as the last page of the Division of Nuclear Power 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
IP-4 Att. 2	1 of 2	6	IP-4 Att. 2	1 of 2	7
IP-5 Att. 2	1 of 2	6	IP-5 Att. 2	1 of 2	7

Attachment 2

SEQUOYAH/WATTS BAR NUCLEAR PLANTS

OPERATIONS DUTY SPECIALIST INCIDENT FORM

Turn on recording equipment _____

Date _____ Time _____ Initials _____

Call verified _____ Site Emergency Director _____

*NOTIFICATION TO STATE OF TENNESSEE/TVA EMERGENCY CENTER

My name is _____, TVA, Operations Duty Specialist.

The _____ Sequoyah _____ Watts Bar Nuclear Plant, Unit _____,

declared a: _____ Notification of Unusual Event _____ Alert

_____ Site Area Emergency _____ General Emergency

at _____ CST (time of incident) on _____ (date).

*(Initially, provide the above information. Request State duty officer to call you back for detailed information.)

Brief description of the incident is: _____

*Revision

Attachment 2

SEQUOYAH/WATTS BAR NUCLEAR PLANTS

OPERATIONS DUTY SPECIALIST INCIDENT FORM

Turn on recording equipment _____

Date _____ Time _____ Initials _____

Call verified _____ Site Emergency Director _____

*NOTIFICATION TO STATE OF TENNESSEE/TVA EMERGENCY CENTER

My name is _____, TVA, Operations Duty Specialist.

The _____ Sequoyah _____ Watts Bar Nuclear Plant, Unit _____,

declared a: _____ Notification of Unusual Event _____ Alert

_____ Site Area Emergency _____ General Emergency

at _____ CST (time of incident) on _____ (date).

*(Initially, provide the above information. Request State duty officer to call you back for detailed information.)

Brief description of the incident is: _____

*Revision

REP-IPD

DNPEC - IP-4

OPERATIONS DUTY SPECIALIST PROCEDURE FOR SITE EMERGENCY

Prepared By: W. E. Webb, Jr.

Approved By: J. W. Hufham

Date: 9/25/81

Rev. No.	Date	Revised Pages	Rev. No.	Date	Revised Pages
0	9/25/81	All	3	2/3/83	2
1	3/10/82	2, 3	4	2/24/83	2
2	OCT 26 1982	All	5	MAR 17 1983	All
6	JUN 03 1983	All			
7	JUN 07 1983	Att. 2, p. 1			

The last page of this procedure is 8.

REP-IPD

DNPEC - IP-5
OPERATIONS DUTY SPECIALIST
PROCEDURE FOR GENERAL EMERGENCY

Prepared By: W. E. Webb, Jr.

Approved By: J. W. Higham

Date: 9/25/81

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1	3/10/82	2, 3	4	2/24/83	3
2	OCT 26 1982	All	5	MAR 17 1983	All

Rev. No.	Date	Revised Pages	Rev. No.	Date	Revised Pages
6	JUN 03 1983	All			
7	JUN 07 1983	Att. 2, p. 1			

The last page of this procedure is 8.

Revision Log Sheet

Revision Date: JUL 07 1983

This log sheet must be retained as the last page of the Division of Nuclear Power Emergency Center Implementing Procedures Manual.

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	1	Table of Contents	1 of 1	2
IP-2	Cover Page	5	IP-2	Cover Page	6
Att. 2	1 of 2	5	Att. 2	1 of 2	6
IP-3	Cover Page	6	IP-3	Cover Page	7
	3 of 4	6		3 of 4	7
IP-4	Cover Page	7	IP-4	Cover Page	8
	3 of 4	6		3 of 4	8
IP-5	Cover Page	7	IP-5	Cover Page	8
	3 of 4	6		3 of 4	8
IP-6	Cover Page	4	IP-6	Cover Page	5
	3 of 5	4		3 of 5	5
Att. 1	2 of 5	4	Att. 1	2 of 5	5
	4 of 5	4		4 of 5	5
			Att. 5	1 of 1	5
IP-7	Cover Page	(reflects deletion)	IP-7	Cover Page	0
				1 of 2	0
				2 of 2	0
			Att. 1	1 of 1	0
			Att. 2	1 of 1	0
			Att. 3	1 of 1	0

TABLE OF CONTENTS

DIVISION OF NUCLEAR POWER EMERGENCY CENTER PROCEDURES

REP-IPD

DNPEC - IP-2

OPERATIONS DUTY SPECIALIST
PROCEDURE FOR NOTIFICATION OF UNUSUAL EVENT

Prepared By: W. E. Webb, Jr.

Approved By: J. W. Hufham

Date: 9/25/81

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0	9/25/81	All
1	3/10/82	2
2	OCT 26 1982	All
3	2/3/83	2
4	MAR 17 1983	All
5	JUN 03 1983	4 - 7
6	JUL 07 1983	Att. 2--p. 1

Attachment 2

SEQUOYAH/WATTS BAR NUCLEAR PLANTS

OPERATIONS DUTY SPECIALIST INCIDENT FORM

Turn on recording equipment _____

Date _____ Time _____ Initials _____

Call verified _____ Site Emergency Director _____

NOTIFICATION TO STATE OF TENNESSEE/TVA EMERGENCY CENTER

My name is _____, TVA, Operations Duty Specialist.

*The _____ Sequoyah _____ Watts Bar Nuclear Plant, Unit _____,

declared a: _____ Notification of Unusual Event _____ Alert

_____ Site Area Emergency _____ General Emergency

at _____ CST (time of incident) on _____ (date).

(Initially, provide the above information. Request State duty officer to call you back for detailed information.)

Brief description of the incident is: _____

*Revision

REP-IPD

DNPEC - IP-3

OPERATIONS DUTY SPECIALIST PROCEDURE FOR ALERT

Prepared By: W. E. Webb, Jr.

Approved By: J. W. Stafham

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2	OCT 26 1982	All	5	MAR 17 1983	All

Rev. No.	Date	Revised Pages	Rev. No.	Date	Revised Pages
6	JUN 03 1983	All			
7	JUL 07 1983	3			

___/___ 6.1.6 Notify the DNPEC Director and have him report to the center. Ask the DNPEC Director who should be contacted as DNPEC Technical Communicator; Electrical and Instrument and Controls or Mechanical Branch representative. Determine if the DNPEC Director considers it necessary to call any technical support personnel at this time. If requested to do so, notify them last (see section 6.1.10). (See the DNP Notification Board.)

___/___ 6.1.7 Notify the KEC Duty Officer and have him activate the KEC, if required. (See the DNP Notification Board.)

___/___ 6.1.8 Notify the Load Coordinator of the condition.

___/___ 6.1.9 Notify the key DNPEC staff (see the DNP Notification *Board). Tell each person contacted what position he is *reporting for.

Key DNPEC Staff

[2]Management Services (request that he provide appropriate clerical support and an electronic board writer for the DNPEC and CECC)
[1]Plant Communicator
[1]Assistant Director (a DNPEC Director alternate)
[1]Reactor Engineering
[1]Technical Communicator (designated by the DNPEC Director as either Electrical and Instrument and Controls or Mechanical Branch)
[1]Assessment Team Leader (BWR - Browns Ferry, PWR - Sequoyah or Watts Bar)
[1]Emergency Preparedness and Protection
[2,3]Mechanical (if primary representative was contacted as Technical Communicator, contact the designated alternate)
[2,3]Electrical and Instrument and Controls (if primary representative was contacted as Technical Communicator, contact the designated alternate)
[2]Field Services

NOTE: [1]Request these individuals to report to the DNPEC.
[2]Request these individuals to report to the appropriate branch office.
[3]If the primary contact was not reached, and the alternate was contacted to serve as Technical Communicator, then request the alternate to designate a Technical Support contact to respond to the appropriate branch office. Contact that person and have him respond.

*Revision

REP-IPD

DNPEC - IP-4

OPERATIONS DUTY SPECIALIST PROCEDURE FOR SITE EMERGENCY

Prepared By: W. E. Webb, Jr.

Approved By: J. W. Hotham

Date: 9/25/81

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1	3/10/82	2, 3	4	2/24/83	2
2	OCT 26 1982	All	5	MAR 17 1983	All
6	JUN 03 1983	All			
7	JUN 07 1983	Att. 2, p. 1			
8	JUL 07 1983	3			

___/___ 6.1.5 Notify the CECC Director and have him report to the center. (See the DNP Notification Board.)

___/___ 6.1.6 Notify the DNPEC Director and have him report to the center. Ask the DNPEC Director who should be contacted as DNPEC Technical Communicator; Electrical and Instrument and Controls or Mechanical Branch representative. Determine if the DNPEC Director considers it necessary to call any technical support personnel. If requested to do so, notify them last (see section 6.1.10). (See the DNP Notification Board.)

___/___ 6.1.7 Notify the KEC Duty Officer and have him activate the KEC. (See the DNP Notification Board.)

___/___ 6.1.8 Notify the Load Coordinator of the condition.

___/___ 6.1.9 Notify the key DNPEC staff (see the DNP Notification *Board). Tell each person contacted what position he is *reporting for.

Key DNPEC Staff

[2]Management Services (request that he provide appropriate clerical support and an electronic board writer for DNPEC and CECC)
[1]Plant Communicator
[1]Assistant Director (a DNPEC Director alternate)
[1]Reactor Engineering
[1]Technical Communicator (designated by the DNPEC Director as either Electrical and Instrument and Controls or Mechanical Branch)
[1]Assessment Team Leader (BWR - Browns Ferry, PWR - Sequoyah or Watts Bar)
[1]Emergency Preparedness and Protection
[2,3]Mechanical (if primary representative was contacted as Technical Communicator, contact the designated alternate)
[2,3]Electrical and Instrument and Controls (if primary representative was contacted as Technical Communicator, contact the designated alternate)
[2]Field Services

NOTE: [1]Request these individuals to report to the DNPEC.
[2]Request these individuals to report to the appropriate branch office.
[3]If the primary contact was not reached and the alternate was contacted to serve as Technical Communicator, then request the alternate to designate a Technical Support contact to respond to the appropriate branch office. Contact that person and have him respond.

*Revision

REP-IPD

DNPEC - IP-5
OPERATIONS DUTY SPECIALIST
PROCEDURE FOR GENERAL EMERGENCY

Prepared By: W. E. Webb, Jr.

Approved By: J. W. Higham

Date: 9/25/81

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2	OCT 26 1982	All	5	MAR 17 1983	All
6	JUN 03 1983	All			
7	JUN 07 1983	Att. 2, p. 1			
8	JUL 07 1983	3			

Ensure the following recommended protective action is given:

"TVA recommends that you activate the warning system and advise the public to take shelter, tune radio or TV to a local station, and await further instructions."

__/__ 6.1.4 Notify the DNP EDO. (See the DNP Notification Board.)

__/__ 6.1.5 Notify the MSEC Director and have him activate the MSEC. (See the DNP Notification Board.)

__/__ 6.1.6 Notify the CECC Director and have him report to the center. (See the DNP Notification Board.)

__/__ 6.1.7 Notify the DNPEC Director and have him report to the center. Ask the DNPEC Director who should be contacted as DNPEC Technical Communicator; Electrical and Instrument and Controls or Mechanical Branch representative. Determine if the DNPEC Director considers it necessary to call any technical support personnel at this time. If requested to do so, notify them last (see section 6.1.11). (See the DNP Notification Board.)

__/__ 6.1.8 Notify the KEC Duty Officer and have him activate the KEC. (See the DNP Notification Board.)

__/__ 6.1.9 Notify the Load Coordinator of the condition.

__/__ 6.1.10 Notify the key DNPEC staff (see the DNP Notification *Board). Tell each person contacted what position he is *reporting for.

Key DNPEC Staff

[2]Management Services (request that he provide appropriate clerical support and an electronic board writer for the DNPEC and CECC)
[1]Plant Communicator
[1]Assistant Director (a DNPEC Director alternate)
[1]Reactor Engineering
[1]Technical Communicator (designated by the DNPEC Director as either Electrical and Instrument and Controls or Mechanical Branch)
[1]Assessment Team Leader (BWR - Browns Ferry, PWR - Sequoyah or Watts Bar)
[1]Emergency Preparedness and Protection
[2,3]Mechanical (if primary representative was contacted as Technical Communicator, contact the designated alternate)
[2,3]Electrical and Instrument and Controls (if primary representative was contacted as Technical Communicator, contact the designated alternate)
[2]Field Services

*Revision

REP-IPD

DNPEC - IP-6

DIVISION OF NUCLEAR POWER EMERGENCY CENTER PROCEDURE FOR ALERT, SITE EMERGENCY, AND GENERAL EMERGENCY

Prepared By: W. E. Webb, Jr.

Approved By: J. W. Thigpen

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2	OCT 26 1982	All
3	MAR 24 1983	All
4	JUN 03 1983	All
5	JUL 07 1983	3, Att. 1--p.2,4; Att. 5--p. 1

6.2.2 Verify that the key plant parameter lists are being transmitted to the DNPEC via telecopy, and are promptly distributed to the DNPEC staff, plant assessment team, and CECC (Plant Communicator's responsibility).

6.2.3 Verify that the Plant Communicator is constructing *and maintaining a current chronological sequence of *events. Ensure this information is updated and transmitted *to the DNPEC, CECC, and KEC staffs, hourly.

***6.2.4 The Reactor Engineering Branch representative is responsible for identifying and maintaining a sequence of "key" events. This sequence of key events shall be updated and transmitted to the CECC, hourly. He also assists the DNPEC director in identifying "significant" events which will be provided to the CECC sooner than hourly.

*6.2.5 Verify that the assessment team continually performs plant accident assessments and that they make prompt reports to the assistant DNPEC Director. Evaluations must be keyed to specific plant parameters.

*6.2.6 The DNPEC Director shall ensure that accident assessment information is provided to the CECC on a frequent basis, (at a minimum, hourly). These assessments shall provide summary information on these items listed in attachment 2 based on the last data transmittal from the plant.

*6.2.7 Ensure that current offsite assessment information is being provided by the CECC and transmitted to the TSC (EP&P Branch Representative's responsibility).

*6.2.8 Potential Release Evaluation

If after consultation with the CECC, the CECC Director requests that a predictive release evaluation be performed based on the potential for significant changes in plant conditions, the DNPEC shall provide the KEC the appropriate assumptions to be made pertaining to plant status for performing the necessary calculations. The areas to be considered are as follows:

a. Increased fuel failure (changes in primary coolant activity levels).

b. Anticipated changes in primary coolant leakage rates or break sizes.

c. Anticipated changes in containment leakage rates (i.e., changes in containment pressure and/or changes in size of containment ruptures or holes).

*Revision
***Addendum

ATTACHMENT 1 (Continued)

DNPEC STAFF POSITIONS/SUPPORT FUNCTIONS

2. Ensures that overall plant assessments are being periodically provided to the DNPEC Director. This assessment shall address, as a minimum, the conditions as shown in attachment 2 and shall be keyed to the last data transmittal from the plant. Protective action recommendations shall be made to the DNPEC Director in accordance with the criteria established in attachment 2. The DNPEC Director will use the assessments and recommendations to brief the CECC Director.

3. Responsible for coordinating overall activities of the DNPEC and other division support activities as required.

1.3 Reactor Engineering Branch

1. Directs Reactor Engineering Branch activities in support of the plant.

***2. Maintains a sequence of "key" events. Ensures this sequence is updated hourly and provided to the CECC. Items of "significance" will be provided to the CECC sooner than hourly.

*3. Responsible for providing periodic assessments of plant conditions to the DNPEC Director and Assistant Director.

*4. Provides logistics support as required to the DNPEC.

1.4 Technical Communicator

(Position filled by either the Electrical and Instrument and Control or Mechanical Branch representative or their alternate.)

1. Maintains communications with other NUC PR technical branch representatives to keep them briefed of the emergency conditions and coordinates obtaining support from them as necessary.

2. Maintains communications with the KEC to keep them briefed of the emergency conditions and obtains support from the KEC as necessary.

3. Assists the DNPEC Director in other communications needs as necessary.

4. Responsible for ensuring the electronic board writer is kept current with a general sequence of events relevant to the incident.

*Revision
***Addendum

ATTACHMENT 1 (Continued)

DNPEC STAFF POSITIONS/SUPPORT FUNCTIONS

4. Responsible for ensuring that information received via the telecopy machine, (i.e., plant parameter lists, etc.) is promptly distributed to the DNPEC Director, DNPEC staff, assessment team and the CECC as appropriate.

5. Assists the DNPEC with other communication needs with the site as necessary.

1.7 Emergency Preparedness and Protection (EP&P) Branch Representative

1. Directs the EP&P Branch activities in support of the plant.

2. Supports the DNPEC Director as required in coordinating emergency support actions with the site.

3. Assists, as necessary, the TSC Health Physics and Rad-Chem Supervisors in coordinating the performance of the predictive release rate model with the KEC and MSEC.

4. Responsible for providing current offsite information, as provided by the CECC, to the TSC and for notifying the DNPEC Director when such information is updated.

5. Provides logistics support as required to the DNPEC.

***6. Notifies property or liability insurance carrier contact for Alert, Site Area Emergency General Emergency, and during any nuclear emergency exercise (see attachment 5).

1.8 Clerical Support

1. Operate CRT terminals.

2. Maintain log of events.

3. Operate Dimension Telephone System.

4. Maintain DNPEC organization board.

5. Operate telecopy machine.

6. Performs other duties as required by the DNPEC staff.

1.9 ODS

1. Provides for initial notification of all offsite emergency organizations upon declaration of an emergency classification.

***Addendum

***Attachment 5

Insurance Carrier Contact

The Emergency Preparedness and Protection Branch Representative should call the appropriate ANI insurance carrier in the event of a reportable accident. An accident is reportable when an Alert, Site Area Emergency, or General Emergency has been declared. The carrier should also be notified of any nuclear plant emergency exercise.

Browns Ferry:

Property Insurance Carrier Contact - (non-nuclear accident)
(809) 295-5447 Nuclear Mutual Limited

Liability Insurance Carrier Contact - (nuclear accident)
(203) 677-7305 American Nuclear Insurers

Sequoyah:

Property Insurance Carrier Contact - (non-nuclear accident)
(800) 243-3172 American Nuclear Insurers

Liability Insurance Carrier Contact - (nuclear accident)
(203) 677-7305 American Nuclear Insurers

Watts Bar:

Liability Insurance Carrier Contact (nuclear accident)
(203) 677-7305 American Nuclear Insurers

Bellefonte:

Liability Insurance Carrier Contact (nuclear accident)
(203) 677-7305 American Nuclear Insurers

***Addendum

REP or IPD Cover Page

DNPEC - IP-7

PROCEDURE FOR PERFORMANCE OF ASSESSMENT TEAM FUNCTION

Prepared by: R. E. Alsup

Approved by: J. W. Huffman

Date: JUL 07 1983

Rev. No.	Date	Revised Pages

DIVISION OF NUCLEAR POWER EMERGENCY CENTER

PROCEDURE FOR

PERFORMANCE OF ASSESSMENT TEAM FUNCTION

1.0 PURPOSE

This procedure is designed to outline in general terms the role of the assessment team during an Alert, Site Area Emergency, or General Emergency.

2.0 SCOPE

This procedure covers the notification of and the actions taken by the assessment team.

3.0 REFERENCES

Radiological Emergency Plan

4.0 ABBREVIATIONS AND DEFINITIONS

ATL - Assessment Team Leader
BWR E&A - Boiler Water Reactor Engineering and Analysis Section
CECC - Central Emergency Control Center
DNPEC - Division of Nuclear Power Emergency Center
EDO - Emergency Duty Officer
PWR E&A - Pressurized Water Reactor Engineering and Analysis Section
REB - Reactor Engineering Branch
TSC - Technical Support Center

5.0 RESPONSIBILITIES

5.1 In the event of a radiological emergency classified as an Alert, Site Area Emergency, or General Emergency, either the PWR E&A or the BWR E&A ATL will be notified, depending on which plant is affected. The ATL will determine if other REB nuclear engineers are required and refer to the duty team roster as needed. He will also contact other branch representatives as needed for their support.

5.2 Once the ATL and/or the Assessment Team are assembled in the DNPEC they will evaluate all previous telecopied information, the electronic blackboard, and discuss the key plant events with the Plant Communicator and REB representative (if he has arrived at the DNPEC) or the EDO or DNPEC director (if REB representative has not arrived at the DNPEC) to ensure they have received all the information necessary to provide the initial plant assessment. Attachment 1 (to be determined) provides a methodology to be used as guidance in performing this assessment. This assessment is formalized by completing attachment 2.

5.3 Preparation of the plant assessment shall be keyed to the specific plant parameters listed on telecopies from the plant TSCs. The assessment team will draw on their knowledge of FSAR, EOIs, owners' group work, analytical basis for accident analyses, and communications between the TSC and plant communicator in preparation of the plant assessment. Attachment 3 provides a list of reference material/equipment which is maintained in the DNPEC-Assessment Team area. A TSC communicator shall be available to answer all the Assessment Team's questions at all times.

The plant assessment serves to inform the DNPEC Director with the plant status. It also enables the DNPEC director to communicate with the CECC Director in planning offsite emergency actions with the intent of informing the State through the CECC of the status of the plant and the implications of that status.

5.4 Subsequent to the initial plant assessment, plant evaluations shall be completed using the latest telecopied information from the TSC. These assessments shall be updated hourly (minimum). To the extent possible, the Assessment Team will serve as an engineering reference for the plant. They will reply to plant inquiries to the best of their ability based on the telecopied plant parameters and information provided by the TSC Communicator. Gross predictive actions may be required for offsite emergency planning. If possible, the change in plant status will be addressed (e.g., the plant's status is improving or the plant's status is degrading).

Attachment 1

Sample of Methodology That can be Used by Assessment Team
(To be determined)

ATTACHMENT 2

ACCIDENT ASSESSMENT CECC STATUS BOARD

I. HEAT REMOVAL CAPABILITY:

II. FUEL INTEGRITY:

III. RADIOACTIVITY IN CONTAINMENT:

IV. CONTAINMENT INTEGRITY:

V. OVERALL ASSESSMENT:

ATTACHMENT 3

DNPEC ASSESSMENT TEAM
REFERENCE MATERIAL/EQUIPMENT

Sequoyah

- FSAR
- Technical Specifications
- Emergency Operating Procedures
- Abnormal Operating Instructions
- PWR Systems Manuals
- Controlled Diagrams - Mechanical, Electrical, Logic, Piping Layout
- Offsite Dose Calculation Manual

Browns Ferry

- FSAR
- Technical Specifications
- Emergency Operating Procedures
- Abnormal Operating Instructions (These will be available when the new EOPs are implemented)
- BWR Systems Manuals
- Controlled Diagrams - Mechanical, Electrical, Logic, Piping Layout
- Technical Instruction - 47
- Browns Ferry GEKs

Common

- 10 CFR
- Steam Tables
- 2 HP 41 VC Calculators, 2 Card Readers, 2 Extra Chargers
- Key to Document Control
- Supplies - Paper, Pencils, Pencil Sharpener

REVISION LOG SHEET

Revision Date: JUL 01 1983

This log sheet must be retained as the last page of the Knoxville 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
IP-6	Cover Page	0	IP-6	Cover Page	1
	3 of 3	0		3 of 3	0
Appendix A	1 of 79	0	Appendix A	1 of 79	1
Appendix B	1 of 53	0	Appendix B	1 of 53	0
	2 of 53	0		2 of 53	1
	5 of 53	0		5 of 53	0
	6 of 53	0		6 of 53	1
Appendix C	2 of 50	0	Appendix C	2 of 50	0
	3 of 50	0		3 of 50	1
	6 of 50	0		6 of 50	0
	7 of 50	0		7 of 50	1
	12 of 50	0		12 of 50	1
	13 of 50	0		13 of 50	0

EC-IPD

KEC IP-6

KEC OPERATING PROCEDURES

Prepared by: Michael W. Kinnaird

Reviewed by: [illegible]

Approved by: John A Hawthorne

Date: FEB 23 1983

Revision Log

Rev No.	Date	Revised Pages
1	JUL 01 1983	Appendix A - 1 of 79, Appendix B - 2 and 6 of 53, Appendix C - 3, 7, and 12 of 50

2. CONTAINMENT LEAKAGE

Radioactive gas leakage from containment can be expected to vary with the pressure drop across the containment walls. Containment leak tests are not considered adequate to establish this relationship, nor is it likely that a simple relationship would be found even if adequate data were available. For purposes of this plan, it is assumed that containment leakage is described by a simple orifice equation; the curves shown for containment leak rate versus pressure are based on this equation. These curves are included only for making predictions, since the calculated releases assume a leak rate from containment.

3. SAFETY SYSTEMS

The final step in determining the radioactivity releases following an accident considers the operation of engineered safety features. The calculations in this procedure take account of the possible locations where leakage could occur, as well as airflow patterns established after these engineered safety features start operation.

METHODOLOGY

The TVA method for predicting releases of radioactivity to the environment is based on evaluation of plant conditions (actual, suspected, or postulated) and comparison with a range of calculated results for certain assumed conditions. (The assumed conditions range from a best estimate or expected value to a "worst case" value.) The parameters examined are primary coolant activity, radioactivity discharge to containment, and leakage from containment. The effects of engineered safety features on releases are taken into account. The calculated results are reduced to graphical form which facilitates interpolation and projection.

1.0 PLANT PARAMETERS REQUIRED FOR RELEASE RATE CALCULATION

1.1 Determine which isotope spectrum to use based on the latest primary coolant measurement.

1.1.1 On worksheet 1-A record the latest measured primary coolant activity (per SI 4.6.B or postaccident measurement) and calculate the activity ratios.

1.1.2 On Table 1.1, circle the entries corresponding to the ratios calculated in 1.1.1. Circle the isotope spectrum on the line with the most circled entries.

1.1.3 Check the spectrum circled in step 1.1.2. This isotope spectrum will be used in all steps of 1.0 and 2.0 of this procedure.

IMPORTANT: A POWER CHANGE OF MORE THAN 15 PERCENT WITHIN 2-3 HOURS BEFORE THE PRIMARY COOLANT SAMPLE WAS TAKEN INVALIDATES THE RATIOS INVOLVING IODINE (I). IN SUCH A CASE, RELY ON THE C/S RATIO.

1.2 Determine normalization factor

The information labeled "NUREG-0016" is based on that amount of *failed fuel which produces an off-gas release rate of 50,000 μCi/s at 30 minute decay. The "Modified TID-14844" information is based on 1.0×10^{-6} percent of the total radioactivity inventory of an equilibrium reactor core.

1.2.1 On worksheet 1-A, circle the column of calculated specific activities for the isotopes I-131, CS-137, and Sr-92 given in Table 1.2 for the isotope spectrum chosen in step 1.1.3.

1.2.2 Calculate and record the ratio of the measured specific activity (from step 1.1.1) to the circled calculated values in Table 1.2.

1.2.3 Select a normalization factor corresponding most closely to two of the three ratios. Record this on worksheet 1-A, step 1.2.3.

1.3 Determine primary system break size

Use worksheet 1-B. Record the readings of radiation monitors RE-90-171A and RE-90-273A (drywell radiation) and RE-90-272B and RE-90-273B (torus radiation). Also record date and time at which readings were taken. It should be noted that all radiation monitor readings are assumed to be background subtracted before being used in this predictive model. Readings taken immediately prior to the accident should be used as the background values if available. This applies to effluent as well as area monitors.

*Revision

TVA Predictive Model
Appendix B - SQN

1.0 PLANT PARAMETERS REQUIRED FOR RELEASE RATE CALCULATION

1.1 Determine which isotope spectrum to use based on the latest primary coolant measurement.

1.1.1 On Worksheet 1-A record the latest measured primary coolant activity (per SI-54 or postaccident measurement) and calculate the activity ratios.

1.1.2 On Table 1.1, circle the entries corresponding to the ratios calculated in 1.1.1.

1.1.3 On Table 1.1, circle the isotope spectrum on the line with the most circled entries. This isotope spectrum will be used in all steps of 1.0 and 2.0 of this procedure.

IMPORTANT: A POWER CHANGE OF MORE THAN 15 PERCENT WITHIN 2-8 HOURS BEFORE THE PRIMARY COOLANT SAMPLE WAS TAKEN INVALIDATES THE RATIOS INVOLVING IODINE (I). IN SUCH A CASE, RELY ON THE C/R RATIO.

1.2 Determine Normalization Factor

The information labeled "Expected" and "Design" is based on 1 percent failed fuel; the "Modified TID-14844" information is based on 1 percent of the total radioactivity inventory of an equilibrium reactor core.

1.2.1 On Worksheet 1-A, circle the calculated specific activities for each of the isotopes (I-131, Cs-137, Rb-88) given in Table 1.2 for the isotope spectrum chosen in 1.1.3.

1.2.2 Calculate and record the ratio of the measured specific activity (from step 1.1.1) to the circled calculated values of Table 1.2.

1.2.3 Select a normalization factor corresponding most closely to two of the three ratios. Record this on worksheet 1-A, step 1.2.3.

Note: For "Expected" and "Design" isotope spectra, the normalization factor corresponds to the failed fuel fraction; for the "Modified TID-14844" spectrum, the normalization factor corresponds to the percentage of equilibrium core inventory.

1.3 Determine primary coolant leak rate into containment.

Use worksheets 1-B and 1-C. Record readings of radiation monitors RM-90-100, RM-90-112, RM-90-106. If RM-90-112 and/or RM-90-106 readings are off-scale, record RM-90-2. Record the time the readings are taken. It should be noted that all radiation monitor readings are assumed to be background subtracted before being used in this predictive model. Readings taken immediately prior to the accident should be used as the background values if available. This applies to effluent as well as area monitors.

1.3.1 *Convert CPM readings to μCi/cc by multiplying the monitor *readings by the conversion factor of 2.8×10^{-8} μCi/cc/cpm.

1.3.2 Calculate the elapsed time from reactor shutdown to the reading of monitor readings.

1.3.3 If both radiation monitors RM-90-112 and RM-90-106 readings are off-scale, skip to 1.3.7; otherwise, continue with 1.3.4.

1.3.4 From the latest detector efficiency verification (TI-18, Worksheet 18-C-1B) calculate the ratio of Xe-133 cpm to total cpm for RM-90-112, RM-90-106.

1.3.5.a Calculate the Xe-133 specific activity in upper containment by multiplying radiation monitor RM-90-106 reading by its Xe-133/total ratio.

1.3.5.b Calculate the Xe-133 specific activity in lower containment by multiplying radiation monitor RM-90-106 reading by its Xe-133/total ratio.

1.3.6 Determine the primary coolant leak rate into lower containment as follows:

a. For isotopic spectrum:

Expected - Use Figure B.1-a.

Design - Use Figure B.1-b.

Modified TID-14844 - Use Figure B.1-c.

b. Normalize the measured Xe-133 specific activity by dividing by the normalization factor determined in step 1.2.3.

c. Using the elapsed time from step 1.3.2, estimate a primary coolant leak rate by visually interpolating between the curves in Figure B.1. Record on worksheet 1-C the value of the specific activity from the curves above and below the normalized measured value.

d. If the reading from RM-90-106 only is off-scale, use Figures B.2-a, B.2-b, or B.2-c and the RM-90-112 reading. Then repeat steps 1.3.6 a through c.

e. Record on Worksheet 1-C the estimated primary coolant leak rate.

1.3.7 If the readings for both RM-90-106 and RM-90-112 are off-scale, do the following:

a. Select Figure B.3-a, B.3-b, or B.3-c depending on the isotope spectrum chosen.

*Revision

If the isotope spectrum is "Design," do not increase the normalization factor to more than 15; instead, change the spectrum to "Modified TID-14844."

3.2 For a different postulated containment leak rate

3.2.1 For an anticipated change in containment pressure with no additional containment degradation, use Figure B.5 with the equivalent hole size determined in Step 1.4.5.

3.2.2 For anticipated containment degradation, use Figure B.5 with an appropriately chosen hole size.

3.2.3 Determine the new containment leak rate from Figure B.5.

3.3 For an anticipated degradation of the primary coolant loop.

Change the primary coolant leak rate to containment.

3.4 For the postulated changed plant parameters, recalculate future vent releases using the methods given in part 2.0.

NOTE: Part 2.0 is based on unchanged plant parameters. If the postulated conditions are more severe than those determined to exist in part 1.0, the part 2.0 methods with the changed parameters will result in release rates which are too high; conversely, in the unlikely event that the postulated conditions are less severe, the estimated release rates will be too low.

GASEOUS RELEASES WORKSHEET
1-A

1.1 Determination of Isotopic spectrum

1.1.1 I_m = I-131 specific activity _____ µCi/g
C_m = Cs-137 specific activity _____ µCi/g
R_m = Rb-88 specific activity _____ µCi/g

I_m/C_m = _____ I_m/R_m = _____ C_m/R_m = _____

*TABLE 1.1
Selection of Isotope Spectrum

I/C	I/R	C/R	Appropriate Isotope Spectrum
$8.5 < I/C \leq 18.5$	$1.0 < I/R \leq 10$	$C/R \leq 0.18$	Expected
$I/C \leq 8.5$	$I/R \leq 1.0$	$0.18 < C/R \leq 1.0$	Design
$I/C > 18.5$	$I/R > 10$	$C/R > 1.0$	Modified TID-14844

1.1.3 Chosen distribution is (check one):

_____ "Expected"

_____ "Design"

_____ "Modified TID-14844"

1.2 Determination of severity of fuel failure:

1.2.1

TABLE 1.2
Specific Activity in Primary Coolant (Prior to Incident)
for Three Isotopic Spectra

Isotope	Specific Activity Level (µCi/g) Expected	Design	Modified TID-14844
I_c = I-131	2.3	2.5	3.57×10^3
C_c = Cs-137	0.16	1.0	1.59×10^2
R_c = Rb-88	1.9	3.7	9.09×10^1

*Revision

1.3.1 Calculate the elapsed time from reactor shutdown to the time at which the monitor readings were taken.

1.3.2 Record the normalization factor F, determined in 1.2.3.

1.3.3 Normalize the measured dose rates by dividing by the normalization factor. The terminology used is: MDR = measured dose rate; MDRN = normalized measured dose rate.

1.3.4.a The primary coolant leak rate will be determined using the normalized values of the upper containment area monitors (i.e., RM-90-59 and RM-90-60). Select the greater of the two normalized upper containment monitor readings determined by 1.3.3. Note that these two monitors should have similar readings. Large deviations may imply that one of the monitors is not operating properly, in which case only the reading from the operating monitor should be used. Record the normalized monitor reading which was selected as the MDRN (upper containment) in 1.3.4.a on worksheet 1-B. If the upper containment area monitors cannot be used, skip to 1.3.5.

1.3.4.b Choose the appropriate figure to be used for visual interpolation based on the reactor coolant source spectrum determined in 1.1.3:

Expected Spectrum: Figure C.1-a
Design Spectrum: Figure C.1-b
TID-14844 Spectrum: Figure C.1-c

Record the figure number selected on 1.3.4.b, worksheet 1-B.

1.3.4.c Using the elapsed time t_e from 1.3.1, and the normalized upper containment radiation (mR/hr) from 1.3.4.a, estimate a primary coolant leak rate (gpm) by visually interpolating between the curves on the figure selected in 1.3.4.b. Record in 1.3.4.c on worksheet 1-B the value of the calculated monitor reading and associated primary coolant leak rate from the curves above and below the normalized measured value.

1.3.4.d Record the estimated primary coolant leak rate in 1.3.4.d on worksheet 1-B and proceed to 1.4.

1.3.5 The primary coolant leak rate will be determined using the normalized value of the accident monitor outside the personnel hatch (i.e., RM-90-2). This monitor should be used only if the upper containment area monitors cannot be used.

1.3.5.a Choose the appropriate figure to be used for visual interpolation based on the reactor source spectrum determined in 1.1.3:

Expected Spectrum: Figure C.2-a
Design Spectrum: Figure C.2-b
TID-14844 Spectrum: Figure C.2-c

Record the figure number selected on 1.3.5.a, worksheet 1-B.

1.3.5.b Using the elapsed time t_e from 1.3.1 and the normalized radiation level (mR/hr) outside the personnel hatch from 1.3.3, estimate a primary coolant leak rate (gpm by visually interpolating between the curves on the figure selected in 1.3.5.a. Record in 1.3.5.b on worksheet 1-B the value of the calculated monitor reading and associated primary coolant leak rate from the curves above and below the normalized measured value.

1.3.5.c Record the estimated primary coolant leak rate in 1.3.5.c on worksheet 1-B. Proceed to 1.4.

1.4 Determine containment leak rate.

Use worksheet 1-C. Record the readings of radiation monitor RM-90-100B (shield building vent - gross radioactive gas channel) and flow element FE-30-242 (shield building vent total flow). Record the time and date the readings were taken.

Note: If the readings of the shield building vent monitor are not significantly greater than normal background count rate, the containment leak rate cannot be determined analytically. For this situation, the containment leak rate will be assumed to be 268 scfh (0.25 percent per day of primary containment free volume at 12.0 psig). If this assumption is made, skip to 2.0.

1.4.1 *Calculate the noble gas specific activity (μCi/cc) in the shield building vent by multiplying the monitor reading (cpm by the *conversion factor of 2.8×10^{-8} μCi/cc/cpm

Vent Concentration = Monitor cpm x 2.8×10^{-8}

1.4.2 Calculate the noble gas release rate (μCi/s) by multiplying the specific activity (μCi/cc) determined in 1.4.1 by the vent flow (cfm) from FE-30-242 and by 472 (unit conversion factor):

Release rate = 472 x specific activity x vent flow

1.4.3 Calculate the elapsed time from reactor shutdown to the time at which the shield building vent radiation monitor reading was taken.

1.4.4 Record the normalization factor F, determined in 1.2.3.

1.4.5 Normalize the measured noble gas release rate by dividing by the normalization factor. The terminology used is: VRRN = normalized vent noble gas release rate.

1.4.6 Select from figure C.4, the figure to be used for visual interpolation based on the reactor coolant source spectrum determined in 1.1.3 and the primary coolant leak rate determined in 1.3.4.d or 1.3.5.c. Record the figure number selected on 1.4.6, worksheet 1-C.

*Revision

3.4 For the postulated changed plant parameters, recalculate future vent releases using the methods given in part 2.0.

NOTE: Part 2.0 is based on unchanged plant parameters. If the postulated conditions are more severe than those determined to exist in part 1.0, the part 2.0 methods with the changed parameters will result in release rates which are too high; conversely, in the unlikely event that the postulated conditions are less severe, the estimated release rates will be too low.

GASEOUS RELEASES WORKSHEET
1-A

1.1 Determination of Isotopic spectrum

1.1.1 I_m = I-131 specific activity _____ µCi/g
C_m = Cs-137 specific activity _____ µCi/g
R_m = RB-88 specific activity _____ µCi/g

I_m/C_m = _____ I_m/R_m = _____ C_m/R_m = _____

*TABLE 1.1
Selection of Isotope Spectrum

I/C	I/R	C/R	Appropriate Isotope Spectrum
$8.5 < I/C \leq 18.5$	$1.0 < I/R \leq 10$	$C/R \leq 0.18$	Expected
$I/C \leq 8.5$	$I/R \leq 1.0$	$0.18 < C/R \leq 1.0$	Design
$I/C > 18.5$	$I/R > 10$	$C/R > 1.0$	Modified TID-14844

1.1.3 Chosen distribution is (check one):

_____ "Expected"

_____ "Design"

_____ "Modified TID-14844"

1.2 Determination of severity of fuel failure:

1.2.1

TABLE 1.2
Specific Activity in Primary Coolant (Prior to Incident)
for Three Isotopic Spectra

Isotope	Specific Activity Level (µCi/g) Expected	Design	Modified TID-14844
I_c = I-131	2.3	2.5	3.57×10^3
C_c = Cs-137	0.16	1.0	1.59×10^2
R_c = Rb-88	1.9	3.7	9.09×10^1

*Revision

GASEOUS RELEASES WORKSHEET
2-A
Containment Noble Gas Release Rate

2.1.2 From Figure C.3 ___ (Record figure used)

LR(U) = _____ scfh LR(L) = _____ scfh

*where: LR = Containment leak rate used in Step 1.4.7.

Containment Leak Rate from Worksheet 1-C, step 1.4.5:

LRD = _____ scfh

2.1.3 Time elapsed since reactor shutdown t: = _____ hours

2.1.4 Interpolation Fraction:

$$IF = \frac{LRD - LR(L)}{LR(U) - LR(L)}$$

$$= \frac{(\quad\quad) - (\quad\quad)}{(\quad\quad) - (\quad\quad)} = \_\_\_\_\_$$

From Figure C.3, at t, determine CRR(U) corresponding to LR(U):

CRR(U) = _____ μCi/s

From Figure C.3, at t, determine CRR(L) corresponding to LR(L):

CRR(L) = _____ μCi/s

Normalization factor (from 1.2.3, worksheet 1-A) F = _____

Future noble gas release rate =

[IF x (CRR(U) - CRR(L) + CRR(L)] x F

= [_____ x (_____ - _____) + _____] x _____

= _____ μCi/s

NOTE: Same nomenclature as on worksheet 1-C

*Revision

GASEOUS RELEASES WORKSHEET
2-B

Interpolation Fraction from Worksheet 2-A: IF = _____

2.2.1 From Figure C.5 __ : (Same nomenclature as worksheet 2-A).

CRR(L) = _____ μCi/s CRR(U) = _____ μCi/s

Normalization Factor F = _____

Future iodine release rate:

$$[IF \times (CRR(U) - CRR(L)) + CRR(L)] \times F$$

$$= [\_\_\_\_ \times (\_\_\_\_ - \_\_\_\_) + \_\_\_\_] \times \_\_\_\_$$

$$= \_\_\_\_ \mu Ci/s$$