DISTRIBUTION CONTROL LIST

Document Name: EMER PLAN

CC_NAME	NAME	DEPT	LOCATION
2	EP/TRAINING ADMINISTRATOR	TRAINING (ALL EP'S)	#48
3	RES DEPARTMENT MANAGER	RES (UNIT 3/IPEC ONLY)	45-4-A
4	REFERENCE LIBRARY	REC/TRN(UNT 3/IPEC ONLY)	BLDG/17
9	JOINT NEWS CENTER	EMER PLN (ALL EP'S)	EOF
10	SHIFT MGR.(LUB-001-GEN)	OPS (UNIT 3/IPEC ONLY)	IP3
11	CONTROL ROOM & MASTER	OPS(3PT-D001/6(U3/IPEC)	IP3(ONLY)
14	EOF	E-PLAN (ALL EP'S)	EOF
16	AEOF/A.GROSJEAN(ALL EP'S)	E-PLAN (EOP'S ONLY)	WPO-12D
19	NUC ENGINEERING LIBRARY	DOC (UNIT 3/IPEC ONLY)	WPO/7A
21	TSC	RECORDS	45-3-F
22	RESIDENT INSPECTOR	US NRC 88' ELEVATION	IP2
23	SILK DAVID	NRC (ALL EP'S)	OFFSITE
24	SILK DAVID	NRC (ALL EP'S)	OFFSITE
25	DOCUMENT CONTROL DESK	NRC (ALL EP'S)	OFFSITE
28	AVRAKOTOS N	J A(UNIT 3/IPEC ONLY)	OFFSITE
29	E-PLAN STAFF	E-PLAN (ALL EP'S)	EOF
30	E-PLAN STAFF	E-PLAN (ALL EP'S)	EOF
31	BARANSKI J(VOLUME I ONLY)	ST. EMERG. MGMT. OFFICE	OFFSITE
32	SUTTON A -(VOLUME I ONLY)	DISASTER & EMERGENCY	WESTCHESTR
33	LONGO N (VOLUME I ONLY)	EMERGENCY SERVICES	ROCKLAND
34	GREENE D (VOLUME I ONLY)	DISASTER & CIVIL DEFENSE	ORANGE
35	RAMPOLLA M(VOLUME I ONLY)	OFFICE OF EMERG MANAGE	PUTNAM
41	SIMULATOR	TRAIN(UNIT 3/IPEC ONLY)	48-2-A
107	QA MANAGER	QA (UNIT 3/IPEC)	K-IP2-4302
319	L.GRANT (LRQ-OPS TRAIN)	LRQ (UNIT 3/IPEC ONLY)	#48
354	L.GRANT(LRQ-OPS/TRAIN)	LRQ (UNIT 3/IPEC ONLY)	#48
376	E-PLAN STAFF	E-PLAN (ALL EP'S)	EOF
424	HULBERT TRACY(7COPIES)	(UNIT 3/IPEC ONLY)	#48
510	L.GRANT(LRQ-OPS/TRAIN)	LRQ (UNIT 3/IPEC ONLY)	#48
511	L.GRANT(LRQ-OPS/TRAIN)	LRQ (UNIT 3/IPEC ONLY)	#48
512	L.GRANT (LRQ-OPS TRAIN)	LRQ (UNIT 3/IPEC ONLY)	#48
513	L.GRANT (LRQ-OPS TRAIN)	LRQ (UNIT 3/IPEC ONLY)	#48
517	PLANT MANAGER'S OFFICE	ADMIN/(UNIT 2/IPEC ONLY)	IP2
518	LAZAZZARO MIKE	UNIT 2(UNIT 2/IPEC ONLY)	IP2
520	CONTROL ROOM (UNIT 2)	OPS (UNIT 2 & IPEC ONLY)	IP2
521	SIMULATOR	TRAIN (UNIT 2/IPEC ONLY)	IP2
522	NRC RESIDENT	US NRC(UNIT 2/IPEC ONLY)	88'ELV IP2
523	DIGIOVANNI TINA (UNIT 2)	REFERENCE LIBRARY	48-2-ALLE
524	JOHN MCCANN (UNIT 2)	NUC SAFETY/LIC(ALL EP'S)	IP2
558	TORRES DAMARIS	R&D EEC BUILDING 2ND FL.	IP2

A045

ATTACHMENT 10.1 SMM CONTROLLED DOCUMENT TRANSMITTAL FORM

SITE MANAGEMENT MANUAL CONTROLLED DOCUMENT TRANSMITTAL FORM - **PROCEDURES**

Page 1 of 1

Entergy	CONTROLLED DOCUMENT TRANSMITTAL FORM - **PROCEDURES**

TO: DISTRIBUTION **DATE: 11/14/2003** **TRANSMITTAL NO: 28803**

FROM: IPEC DOCUMENT CONTROL: EEC or **IP2 53'EL** (Circle one) **PHONE NUMBER: 271-7057**

The Document(s) identified below are forwarded for use. In accordance with IP-SMM-AD-103, please review to verify receipt, incorporate the document(s) into your controlled document file, properly disposition superseded, void, or inactive document(s). Sign and return the receipt acknowledgement below within fifteen (15) working days.

AFFECTED DOCUMENT: EMERGENCY PLANNING IMPLEMENTATION PROCEDURES

DOC #	REV #	TITLE	INSTRUCTIONS

NOTE: REPLACE CURRENT INDEX WITH ATTACHED REVISED INDEX.

********** **FOLLOW ATTACHED INSTRUCTIONS** **********

************PLEASE NOTE EFFECTIVE DATE************

RECEIPT OF THE ABOVE LISTED DOCUMENT(S) IS HEREBY ACKNOWLEDGED. I CERTIFY THAT ALL SUPERSEDED, VOID, OR INACTIVE COPIES OF THE ABOVE LISTED DOCUMENT(S) IN MY POSSESSION HAVE BEEN REMOVED FROM USE AND ALL UPDATES HAVE BEEN PERFORMED IN ACCORDANCE WITH EFFECTIVE DATE(S) (IF APPLICABLE) AS SHOWN ON THE DOCUMENT(S).

NAME (PRINT) SIGNATURE DATE CC# 25

TO: Nuclear Regulatory Commission 25

#28803

FROM: IPEC Emergency Planning

SUBJECT: Emergency Planning Document Update

Date: 11/06/03

Please update your controlled copy of the documents listed below as specified with the copy(s) attached.

Document #	Document Name	New Rev. #/ Date	Old Rev. #/ Date	Instructions
IPEC	Emergency Plan Implementing Procedures			
TOC	IPEC	11/06/03	10/28/03	Replace old with new
IP-EP-115	Emergency Plan Forms	Rev. 5 11/06/03	Rev. 4 07/14/03	Replace old with new
IP-EP-120	Emergency Classification	Rev. 0 11/06/03		Add new procedure to book

Indian Point Energy Center
Emergency Plan Implementing Procedures
Table of Contents

Procedure No.	Procedure Title	Rev. No.	Effective Date
IP-EP-115	Emergency Plan Forms	5	11/06/03
IP-EP-120	Emergency Classification	0	11/06/03
IP-EP-130	Emergency Notifications and Mobilization	0	05/05/03
IP-EP-250	Emergency Operations Facility	0	03/06/03
IP-EP-251	Alternate Emergency Operations Facility	1	03/06/03
IP-EP-255	Emergency Operations Facility Management and Liaisons	N/A	VOIDED
IP-EP-260	Joint News Center	0	03/06/03
IP-EP-310	Dose Assessment	2	10/28/03
IP-EP-410	Protective Action Recommendations	2	06/06/03
IP-EP-430	Personnel Accountability	0	07/09/03
IP-EP-510	Meteorological, Radiological & Plant Data Acquisition System	1	03/06/03
IP-EP-520	Modular Emergency Assessment & Notification System (MEANS)	1	03/06/03
IP-EP-610	Emergency Termination and Recovery	1	03/06/03
IP-EP-620	Estimating Total Population Exposure	1	03/06/03

As of 11/4/03

CONTROLLED

COPY # 25

Emergency Plan Forms

Prepared by: Daria Weaver (Print Name) — Daria Weaver (Signature) — 11/4/03 (Date)

Approval: Frank Inzirillo (Print Name) — (Signature) — 11/4/03 (Date)

Effective Date: 11/6/03

This procedure excluded from further ENN-LI-100 reviews

Table of Contents

Emergency Plan Forms

1.0 PURPOSE

This procedure controls Forms used by the Emergency Response Organization during emergencies.

2.0 REFERENCES

NONE

3.0 DEFINITIONS

NONE

4.0 RESPONSIBILITIES

5.1 The Emergency Planning Department is responsible for maintaining forms used by the Emergency Response Organization in accordance with this procedure.

5.0 DETAILS

5.1 Use of Forms

5.1.1 The Implementing Procedure that calls for a form to be completed controls the actual use of forms.

5.1.2 Any needed instructions for form completion will either be on the form itself or in the procedure calling for its use.

5.2 Control of Forms

5.2.1 Forms are numbered sequentially as the need for them is defined by other implementing procedures.

5.2.2 Form numbers will be formatted as "Form EP-n Rev x", where n is the sequential number of the form and x is the current revision of the form.

5.3 Method of Placing Forms in this Procedure

5.3.1 Forms are attached as addendums to this procedure. They will appear formatted in the end use format. There will be no annotation on the addendums or actual forms showing addendum number or procedure page number.

6.0 INTERFACES

Attachment 1, Current List of Effective Forms contains interfacing documents to each form.

7.0 RECORDS

Forms become official records when completed during a declared emergency.

8.0 REQUIREMENTS AND COMMITMENT CROSS-REFERENCE

None

9.0 ATTACHMENTS

Attachment 9.1 Current List of Effective Forms

Attachment 9.1
Current List of Effective Forms
Sheet 1 of 2

Form Number	Current Revision	Form Title (number of pages)	Interfacing Procedures
EP-1	Rev. 2	NYS Radiological Emergency Data Form, Part 1 (1 page)	IP-EP-130 IP-EP-250 IP-1010 (Unit 2) IP-2001 (Unit 3)
EP-2	Rev. 2	NYS Radiological Emergency Data Form, Part 2 (1 page)	IP-EP-130 IP-EP-250 IP-1010 (Unit 2)
EP-3	Rev. 1	CCR NUE Notification Checklist (2 pages, used back to back)	IP-EP-130 IP-EP-250 IP-1010 (Unit 2) IP-2001 (Unit 3)
EP-4	Rev. 1	CCR Initial Notification Checklist – Alert/SAE/GE (2 pages, used back to back)	IP-EP-130 IP-EP-250 IP-1010 (Unit 2) IP-2001 (Unit 3)
EP-5	Rev. 1	Upgrade / Update Notification Alert/SAE/GE Checklist (2 pages, used back to back)	IP-EP-130 IP-EP-250 IP-1010 (Unit 2) IP-2001 (Unit 3)
EP-6	Rev. 0	Emergency Exposure Authorizations	IP-EP-250 IP-1023 (Unit 2)
EP-7	Rev. 0	EOF Staffing	IP-EP-250
EP-8	Rev. 0	Recovery Issues / Strategies Form	IP-EP-610
EP-9	Rev. 1	Essential Information Checklist	IP-EP-250 IP-1010 (Unit 2) IP-2001 (Unit 3)
EP-10	Rev. 0	ERO Log Sheet	IP-EP-250
EP-11	Rev. 1	IPEC Manual Dose Assessment Worksheet / Estimating Containment Activity via R-25 / 26	IP-EP-310
EP-12	Rev. 0	Estimated Total Population Dose (8 pages)	IP-EP-620
EP-13	Rev. 1	IPEC Manual Dose Assessment Worksheet/ TEDE Whole Body Exposure Calculations and TODE Thyroid Exposure Calculations (2 pages)	IP-EP-310
EP-14	Rev. 0	EOF Check Point Sign-In Log (2 pages, used back to back)	IP-EP-250
EP-15	Rev. 0	(un-assigned)	
EP-16	Rev. 0	(un-assigned)	
EP-17	Rev. 0	IP-2 Manual Determination of Release Rate	IP-EP-310

Attachment 9.1
Current List of Effective Forms
Sheet 2 of 2

Form Number	Current Revision	Form Title (number of pages)	Interfacing Procedures
EP-18	Rev. 0	IP-3 Manual Determination of Release Rate	IP-EP-310
EP-19	Rev. 0	IPEC Manual Dose Assessment Worksheet/Back Calculating Release Rate from Field Data	IP-EP-310
EP-20	Rev. 1	Emergency Director Turnover Sheet	IP-EP-250
EP-21	Rev. 0	Media Briefing Worksheet	IP-EP-260
EP-22	Rev. 0	Media Briefing Issues Form	IP-EP-260
EP-23	Rev. 0	JNC Staffing Form	IP-EP-260
EP-24	Rev. 0	Emergency Summary Sheet	IP-EP-260
EP-25	Rev. 1	Written Statement Distribution Checklist	IP-EP-260
EP-26	Rev. 2	Information Distribution Guide	IP-EP-260
EP-27	Rev. 0	Public Inquiry - Media Referral and Media Monitoring Form	IP-EP-260
EP-28	Rev. 0	Joint News Center Fax Cover Sheet	IP-EP-260
EP-29	Rev. 0	Individual Exposure Tracking Log	IP-EP-250
EP-30	Rev. 0	Monitoring Team Radiation Field Survey Data	IP-EP-250
EP-31	Rev. 0	Monitoring Team Sample Data	IP-EP-250
EP-32	Rev. 0	Determination of Radioactive Airborne Concentrations	IP-EP-250
EP-33	Rev. 0	Media Inquiry Log	IP-EP-260
EP-34	Rev. 0	Courtesy Call Guide	IP-EP-260
EP-35	Rev. 0	JNC Talking Points	IP-EP-260
EP-36	Rev. 0	Primary – ERO Activation Checklist	IP-EP-130
EP-37	Rev. 1	Backup – ERO Activation Checklist	IP-EP-130
NRC 361	12-2000	Reactor Plant Event Notification Worksheet (NRC Form)	IP-EP-130
EP-38	Rev. 0	Emergency Team Briefing Form	IP-EP-1023 Unit 2 IP-2204 Unit 3

New York State
Radiological Emergency Data Form *Notification # ____*
Indian Point Energy Center
Part I - General Information Instructions

1. This message being transmitted on: _____ (Date) at: _____ (Time) ☐ AM ☐ PM VIA: A. RECS B. Other _____

2. This is... A. **NOT** an Exercise B. An Exercise

3. The Facility Affected is: A. Unit 2 B. Unit 3 C. Both

4. The Emergency A. Unusual Event B. Alert C. Site Area Emergency D. General Emergency E. Emergency Terminated F. Recovery G. Other

5. This Emergency Classification Declared on: _____ (Date) at: _____ (Time) ☐ AM ☐ PM

6. Release of Radioactive Materials Specifications) due to the Classified Event:
A. No Release
B. Release **BELOW** federally approved operating limits (Technical Specifications)
☐ To Atmosphere ☐ To Water
C. Release **ABOVE** federally approved operating limits (Technical Specifications)
☐ To Atmosphere ☐ To Water
D. Unmonitored Release – requiring evaluation

7. Protective Action Recommendations are recommended to be implemented as soon as practical:
A. No need for Protective Actions outside the site boundary.
B. **EVACUATE** and implement the KI plan for the following ERPAs and SHELTER all remaining ERPAs:

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
41	42	43	44	45	46	47	48	49	50	51									

8. **EAL Number:** ☐
Brief _____
Event Description _____

9. The Plant status is: A. Stable B. Improving C. Degrading D. Hot Shutdown E. Cold Shutdown

10. Reactor Shutdown: A. Not Applicable B. _____ (Date) at: _____ (Time) ☐AM ☐PM

11. Wind Speed: _____ Meters/Second at elevation 10 meters.

12. Wind Direction: (From) _____ Degrees at elevation 10 meters.

13. Stability Class: A B C D E F G

14. Report By: _____ (Communicator's Name) at Telephone Number (914) _____

Message Received by: _____ Message Ended at: _____

Emergency Director Review and Approval: _____

New York State
Radiological Emergency Data Form
Indian Point Energy Center **Part II - Radiological Assessment Data**

This is: A. **NOT** an Exercise B. An Exercise

15. Message transmitted at: Date:_____ Time:_____ Location / Facility transmitted from: _____

16. General release information:

A. Event Release started Date _____ Time: _____
B. Event Release expected to end Date: _____Time: _____
C. Event Release ended: Date: _____Time: _____
D. Reactor Shutdown: N/A **OR** Date: _____Time: _____

Meteorological Data As of Date: _____ Time: _____

E. Wind Speed _____ *meters/second* At elevation: _____ *meters*
F. Wind Direction: _____ *degrees* At elevation: _____ *meters*
G. Stability class (Pasquill):A B C D E F G

17. Atmospheric release information: As of Date _____ Time_____

A. Release from: ☐ Ground ☐ Elevated D. Noble gas release rate: _____ *Ci/sec*
B. Iodine/Noble gas ratio: _____ (Assumed OR Actual) E. Iodine release rate _____ *Ci/sec*
C. Total release rate: _____ *Ci/sec* F. Particulate release rate _____ *Ci/sec*

18. Waterborne release information: As of Date _____ Time_____

A. Volume of release _____ *gallons* C. Radionuclides in release: _____
B. Total concentration: _____ *μCi/ml* D. Total activity released _____ *Ci*

19. Dose calculations (based on a release duration of _____ *hours*)

Calculation is based on (circle one):

A. Inplant measurements B. Field Measurements C. Assumed source term

Table below applies to (circle one) A. Atmospheric release B. Waterborne release

DISTANCE	Xμ/Q	DOSE	
		TEDE (*Rem*)	TODE (*Rem*)
Site Boundary			
2 Miles			
5 Miles			
10 Miles			
____ Miles			

20. Field measurement of dose rates or surface contamination/deposition:

Mile/Sector OR Mile/Degrees	Location OR Sampling Point	Time of Reading	Dose Rate (*mR/hr*) OR Contamination ($\mu Ci/m^2$)

Emergency Director Review and Approval: _____

INDIVIDUAL EMERGENCY EXPOSURES AUTHORIZATION

NAME: _____ SOCIAL SECURITY NO.: _____

AGE: _____

Reason for exposure in excess of 5 Rem: (include tasks to be performed)

	ESTIMATE OF PLANNED DOSE	AUTHORIZED EMERGENCY DOSE
WHOLE BODY	_____ REM	_____ REM
EXTREMITY	_____ REM	_____ REM
THYROID	_____ REM	_____ REM

I have volunteered to perform the task(s) during which I will receive the emergency Exposure, and I understand the potential consequences of the proposed emergency from the attached summary.

Individual to Receive Exposure: _____ Date: _____
(Signature)

EPM/POM Or Emergency Director Approval: _____ Date: _____
(Signature)

WARNING

Emergency worker exposure limits are **NOT TO BE APPLIED** to minors or Fertile women

Emergency Exposure Guidelines:

1. All Emergency Exposures shall be authorized by the Emergency Director or Emergency Plant Manager.
2. All individuals may be authorized up to 5 Rem emergency exposure for a given emergency event. Historical occupational exposure is not totaled into this limit.
3. Procedures allow for the Emergency Director or Emergency Plant Manager to give a blanket authorization of up to 5 Rem emergency exposure for Alert or higher classifications.
4. Any emergency exposure greater than 5 Rem Whole Body, 50 Rem Extremities or 50 Rem Skin of Whole Body, shall be authorized on a individual basis for a specific task.
5. All emergency exposures are voluntary. – For higher doses individuals over the age of 45 are preferable.
6. Individuals shall be briefed that these exposures may increase their chances of cancer during their lifetime.
7. Volunteers may be authorized up to 10 Rem to protect valuable property.
8. Volunteers may be authorized up to 25 Rem for life saving or the protection of large populations.
9. Individuals may volunteer to receive greater than 25 Rem to save a life.
10. For any expected or actual Thyroid Exposure > 25 Rem CDE, the issuance of KI should be considered.

EFFECTS FROM HIGH LEVELS OF RADIATION EXPOSURE

Radiation injury depends on numerous factors such as the type of radiation, the parts of the body exposed, the rate and duration of exposure, the number of exposures, and the age and sex of the irradiated person. There are short and long term effects from high levels of radiation exposure.

Short Term Effects:

Whole Body Effects:

15 to 50 Rem – No symptoms, blood test may show some slight changes.

50 to 200 Rem – Some nausea, vomiting, and slight decrease in blood count, no deaths expected.

200 to 450 Rem – Most have nausea, vomiting, and feel flu symptoms. Most have hair loss, infection likely, 10-50% deaths.

450 to 600 Rem – Flu, bleeding from mouth and throat, infections likely, 50-90% deaths.

600 to 1000 Rem- Symptoms worse than above, 90-100% deaths.

Radiation Injury to the Skin:

Less than 1000 Rem	- First degree thermal burn (similar to sunburn)
to 5000 Rem	- Blisters form and break open
to 5000 Rem	- Similar to scalding or chemical burn
Over 5000 Rem	- Ulceration and major skin damage

Potential Long Term Effects: Based on information from the National Research Council (BEIR V).

Cancer Probability:	The normal chance of contracting fatal cancer for a group of people with no radiation exposure in the United States is 20%.If this group of people were exposed to 100 Rem, the chance of any person contracting fatal cancer would increase to 28%.
Genetic Effects:	A 100 Rem exposure to radiation is estimated to increase the chance of a genetic effect from 0.25% for the average person with no radiation exposure to 0.5%
Fertility Effects:	An exposure to the gonads of 250 Rem may cause reduced fertility, and an exposure of 600 Rem may cause permanent sterility.
Cateracts:	(Cloudiness or darkening in the lens of the eyes.) 200 Rem to the eyes may cause cataracts (ICRP 41).

EOF Staffing

No.	Positions	1st SHIFT	2nd SHIFT	
1*	Emergency Director			
1*	ED Technical Advisor			
1*	Offsite Radiological Manager			
1*	Offsite Communicator			
1	EOF Manager			
2**	Dose Assessor			
1	Radiological Communicator			
1	Field Team Coordinator			
6	Field Monitoring Team Members			
1	Admin & Logistics Manager			
3	EOF Clerical Staff			
1	Lead Offsite Liaison			
1	State Liaison			
1	Westchester County Liaison			
1	Rockland County Liaison			
1	Orange County Liaison			
1	Putnam County Liaison			
1	Equipment Operator			
1	Information Liaison			

* Minimum Staffing for facility activation

** Only one Dose Assessor required if determination is made there is limited offsite radiological concerns for event.

Recovery Issue / Strategies Form

Area	Owner	Safety Rel.	Priority	Duration	Man-hours

Description of Issue

Resources Needed

Use this form to document major items to be addressed during Recovery.

Area:	Onsite / Offsite / Public Information	
Owner:	Responsible individual or organization	
Safety Related:	Yes or No	
Priority:	1 = Immediate (24 hr.)	2 = Short Term (1 Week)
	3 = Intermediate (1 Month)	4 = Long Term (> 1 Month)
Duration:	Estimated Calendar Duration	
Man-hours:	Estimated Total Project Hours	

Form EP-8 Rev 0

Essential Information Checklist

Affected Unit: ❑ Unit 2 ❑ Unit 3 ❑ Both Status of Unaffected Unit:

Emergency Classification:

	Time:	EAL #:
❑ Unusual Event	_____	_____
❑ Alert	_____	_____
❑ Site Area Emergency	_____	_____
❑ General Emergency	_____	_____

Last Offsite Notification Completed _____

Reactor: ❑ **At Power** ❑ **Tripped**

RCS:

Temp: _____ °F **Pressure:** _____ **PSIG**

RVLIS / Pressurizer Level: _____

Subcooling: _____

Method of Core Cooling: ❑ **S/G** ❑ **Safety Injection** ❑ **RHR**

Electrical Power Supply: ❑ **138 KV** ❑ **13.8 KV** ❑ **#** ____ **Diesel Generators**

Event Description: _____

Major Equipment Problems:

Current Priorities:	High	Med	Low

❑ **No Release** ❑ **Release**

❑ Liquid ❑ Gaseous

Release Status:

❑ In Progress ❑ Expected

❑ Filtered ❑ Unfiltered

❑ Monitored ❑ Unmonitored

❑ Controlled ❑ Uncontrolled

Fission Product Barrier Status

Barrier	Intact	Challenged	Lost
Fuel Clad	❑	❑	❑
RCS	❑	❑	❑
Containment	❑	❑	❑

Wind Speed: _____ Wind Direction From: _____

Date / Time This Checklist was

Completed: _____ / _____

Other: _____

Emergency Response Organization Log Sheet

ERO Position: _____ Name:	Date: _____

Time	Significant Events, Information or Communications

Signature: _____

IPEC Manual Dose Assessment Worksheet

Estimating Containment Activity via R-25 / 26

Radiological Data		
R-25 / 26 Reading		Rem/hr
Dose Conversion Factor (from table below)		(μCi/cc) / (R/hr)

Time after Shutdown (hrs.)	Dose Conversion Factor (μCi/cc) / (R/hr)	
	< 1000 Rem/hr (Gap Release)	> 1000 Rem/hr (Fuel Overheat / Melt Release)
0	0.04	0.03
4	0.12	0.07
8	0.17	0.1
12	0.2	0.13
16	0.22	0.14
20	0.25	0.17
24	0.27	0.18

Vapor Containment Activity Calculation						
	×		×	7.4 E+10 cc	=	
R-25 / 26 Reading (R/hr)		Dose Conversion Factor		Containment Volume		Total VC Activity (μCi)

	x		=	
R-25/26 Reading (R/hr)		Dose Conversion Factor		Release Concentration (µCi/cc)

IPEC Manual Dose Assessment Worksheet

Estimating Containment Activity via R-25 / 26

Containment Data		
Containment Pressure		psig
Estimated Leak Rate (see table below)		(cc/sec) – cm^2
Estimated Leak Area		Cm^2 (leak area = πr^2)

Leak Rate per Cm^2			
VC Pressure	Leak Rate (cc/sec)	VC Pressure	Leak Rate (cc/sec)
1.0	8.34E+03	18.0	1.93E+04
1.5	9.96E+03	20.0	1.95E+04
2.0	1.12E+04	22.5	1.97E+04
2.5	1.22E+04	25.0	1.99E+04
3.0	1.31E+04	27.5	2.01E+04
4.0	1.44E+04	30.0	2.03E+04
5.0	1.55E+04	32.5	2.04E+04
6.0	1.63E+04	35.0	2.06E+04
7.0	1.69E+04	37.5	2.07E+04
8.0	1.74E+04	40.0	2.08E+04
9.0	1.78E+04	42.5	2.10E+04
10.0	1.81E+04	45.5	2.11E+04
12.0	1.86E+04	47.5	2.12E+04
14.0	1.89E+04	50.0	2.13E+04
16.0	1.91E+04		

Vapor Containment Release Rate Calculation

	×		×		×	1.0E-06	=
VC Activity (µCi/cc)		Leak Rate (from Table)		Leak Area (Cm^2)		Conversion Factor	VC Release Rate (Ci/sec)

ESTIMATED TOTAL POPULATION DOSE

Sector/Zone	Ref. TLD mrem	Zone Corr. Factor (1)	Interpreted mrem (2)	Modifier (3)	Population (4)	Est. WB Rem
1-1					0	
1-2					55	
1-3					0	
1-4					20	
1-5					335	
1-6					350	
1-7					5,425	
1-8					5,935	
1-9					2,345	
1-10					990	
				SECTOR TOTALS:		
2-1					0	
2-2					40	
2-3					135	
2-4					140	
2-5					1,450	
2-6					1,065	
2-7					825	
2-8					695	
2-9					2,280	
2-10					1,370	
				SECTOR TOTALS:		

(1) Zone in question correction factor (Attachment 2 procedure IP-EP-620 or calculated from formula at bottom of Attachment2 and Xu/Q values)
(2) Multiply TLD mrem by Zone Correction Factor
(3) If no evacuation, modifier is 1.0
(4) 1990 Census

ESTIMATED TOTAL POPULATION DOSE

Sector/Zone	TLD mrem	Zone Corr. Factor (1)	Interpreted mrem (2)	Modifier (3)	Population (4)	Est. WB Rem
3-1					0	
3-2					4,480	
3-3					8,945	
3-4					3,520	
3-5					5,315	
3-6					3,660	
3-7					4,020	
3-8					1,175	
3-9					635	
3-10					1,455	
				SECTOR TOTALS:		
4-1					40	
4-2					2,715	
4-3					3,035	
4-4					1,990	
4-5					2,095	
4-6					2,725	
4-7					2,715	
4-8					5,140	
4-9					5,920	
4-10					4,475	
				SECTOR TOTALS:		

(1) Zone in question correction factor (Attachment 2 procedure IP-EP-620 or calculated from formula at bottom of Attachment2 and Xu/Q values)
(2) Multiply TLD mrem by Zone Correction Factor
(3) If no evacuation, modifier is 1.0
(4) 1990 Census

ESTIMATED TOTAL POPULATION DOSE

Sector/Zone	TLD mrem	Zone Corr. Factor (1)	Interpreted mrem (2)	Modifier (3)	Population (4)	Est. WB Rem
5-1					65	
5-2					505	
5-3					0	
5-4					230	
5-5					140	
5-6					235	
5-7					1,590	
5-8					1,155	
5-9					4,165	
5-10					3,450	
				SECTOR TOTALS:		
6-1					170	
6-2					375	
6-3					260	
6-4					730	
6-5					260	
6-6					675	
6-7					1,145	
6-8					415	
6-9					1,040	
6-10					1,740	
				SECTOR TOTALS:		

(1) Zone in question correction factor (Attachment 2 procedure IP-EP-620 or calculated from formula at bottom of Attachment2 and Xu/Q values)
(2) Multiply TLD mrem by Zone Correction Factor
(3) If no evacuation, modifier is 1.0
(4) 1990 Census

ESTIMATED TOTAL POPULATION DOSE

Sector/Zone	TLD mrem	Ratio Corr. Factor (1)	Interpreted mrem (2)	Modifier (3)	Population (4)	Est. WB Rem
7-1					555	
7-2					2,100	
7-3					980	
7-4					705	
7-5					420	
7-6					5,150	
7-7					3,340	
7-8					2,505	
7-9					2,010	
7-10					6,945	
				SECTOR TOTALS:		
8-1					105	
8-2					1,835	
8-3					1,295	
8-4					635	
8-5					85	
8-6					0	
8-7					0	
8-8					95	
8-9					5,020	
8-10					5,955	
				SECTOR TOTALS:		

(1) Zone in question correction factor (Attachment 2 procedure IP-EP-620 or calculated from formula at bottom of Attachment2 and Xu/Q values)
(2) Multiply TLD mrem by Zone Correction Factor
(3) If no evacuation, modifier is 1.0
(4) 1990 Census

ESTIMATED TOTAL POPULATION DOSE

Sector/Zone	TLD mrem	Zone Corr. Factor (1)	Interpreted mrem (2)	Modifier (3)	Population (4)	Est. WB Rem
9-1					465	
9-2					695	
9-3					25	
9-4					110	
9-5					1,110	
9-6					3,535	
9-7					3,090	
9-8					3,710	
9-9					5,235	
9-10					5,545	
				SECTOR TOTALS:		
10-1					150	
10-2					1,210	
10-3					1,145	
10-4					1,845	
10-5					8,260	
10-6					4,440	
10-7					2,345	
10-8					2,690	
10-9					6,320	
10-10					9,115	
				SECTOR TOTALS:		

(1) Zone in question correction factor (Attachment 2 procedure IP-EP-620 or calculated from formula at bottom of Attachment2 and Xu/Q values)
(2) Multiply TLD mrem by Zone Correction Factor
(3) If no evacuation, modifier is 1.0
(4) 1990 Census

ESTIMATED TOTAL POPULATION DOSE

Sector/Zone	TLD mrem	Zone Corr. Factor (1)	Interpreted mrem (2)	Modifier (3)	Population (4)	Est. WB Rem
11-1					0	
11-2					25	
11-3					1,505	
11-4					2,485	
11-5					2,220	
11-6					3,785	
11-7					2,830	
11-8					1,010	
11-9					3,045	
11-10					3,705	
				SECTOR TOTALS:		
12-1					10	
12-2					345	
12-3					125	
12-4					295	
12-5					160	
12-6					185	
12-7					80	
12-8					20	
12-9					155	
12-10					565	
				SECTOR TOTALS:		

(1) Zone in question correction factor (Attachment 2 procedure IP-EP-620 or calculated from formula at bottom of Attachment2 and Xu/Q values)
(2) Multiply TLD mrem by Zone Correction Factor
(3) If no evacuation, modifier is 1.0
(4) 1990 Census

ESTIMATED TOTAL POPULATION DOSE

Sector/Zone	TLD mrem	Zone Corr. Factor (1)	Interpreted mrem (2)	Modifier (3)	Population (4)	Est. WB Rem
13-1					0	
13-2					280	
13-3					200	
13-4					0	
13-5					0	
13-6					0	
13-7					0	
13-8					70	
13-9					440	
13-10					55	
				SECTOR TOTALS:		
14-1					0	
14-2					80	
14-3					65	
14-4					0	
14-5					25	
14-6					45	
14-7					20	
14-8					620	
14-9					320	
14-10					2,045	
				SECTOR TOTALS:		

(1) Zone in question correction factor (Attachment 2 procedure IP-EP-620 or calculated from formula at bottom of Attachment2 and Xu/Q values)
(2) Multiply TLD mrem by Zone Correction Factor
(3) If no evacuation, modifier is 1.0
(4) 1990 Census

ESTIMATED TOTAL POPULATION DOSE

Sector/Zone	TLD mrem	Zone Corr. Factor (1)	Interpreted mrem (2)	Modifier (3)	Population (4)	Est. WB Rem
15-1					0	
15-2					20	
15-3					105	
15-4					180	
15-5					45	
15-6					0	
15-7					20	
15-8					305	
15-9					25	
15-10					1,055	
				SECTOR TOTALS:		
16-1					0	
16-2					70	
16-3					0	
16-4					95	
16-5					1,635	
16-6					235	
16-7					0	
16-8					35	
16-9					25	
16-10					0	
				SECTOR TOTALS:		

(1) Zone in question correction factor (Attachment 2 procedure IP-EP-620 or calculated from formula at bottom of Attachment2 and Xu/Q values)
(2) Multiply TLD mrem by Zone Correction Factor
(3) If no evacuation, modifier is 1.0
(4) 1990 Census

Manual Dose Assessment Worksheet

TEDE Whole Body Exposure Calculations

Date:	Time	Name:

Meteorology

Wind Direction (from):		Downwind Sector:		WS = Wind Speed (m/sec):	

Pasquill Category: ❑ A ❑ B ❑ C ❑ D ❑ E ❑ F ❑ G

TEDE – Whole Body Exposure — Release Duration (RD): hrs

Distance	NGRR (Ci/sec)	Xu/Q (from tables)	$\frac{1}{WS}$ (M/sec)	K1[1] + Constant[2]	Dose Rate(DR) (mrem/hr)	Dose (mrem) (DR x RD)
Site Boundary		X X	1 / ☐	X (+) =	=	
2 Mile		X X	1 / ☐	X (+) =	=	
5 Mile		X X	1 / ☐	X (+) =	=	
10 Mile		X X	1 / ☐	X (+) =	=	

(1) Obtain K1 value from table below.

(2) Constant for MSL & SGBD is 3.3E+05, for all others use 3.3E+03 (Constant includes Iodine CEDE)

K1 Whole Body @ Time After Shutdown for Noble Gas DDE TAS = _____ hours.		K2 Thyroid For Iodine CDE	
4.7E+5	0 – 1.5 Hours	Iodine Mix	8.0E+8
2.8E+5	1.5 – 2.5 Hours	I-131	2.6E+9
2.3E+5	2.5 – 3.5 Hours	I-132	1.5E+7
2.0E+5	3.5 – 4.5 Hours	I-133	4.4E+8
1.7E+5	4.5 – 6.5 Hours	I-134	2.6E+6
1.2E+5	6.5 – 12.5 Hours	I-135	7.6E+7
5.8E+4	> 12.5 Hours		

NOTE:
Particulate Dose Conversion Factor (DCF) for TEDE is 2.7E+07. This DCF should be used applied during dose assessments performed in the EOF or AEOF only if significant particulates are identified in the release (E.G., FSB Accident). Control Room Staff need not consider particulates.

Form EP-13 Rev.1

IPEC Manual Dose Assessment Worksheet

TODE Thyroid Exposure Calculations

Date:	Time	Name:

Meteorology

Wind Direction (from):		Downwind Sector:		WS = Wind Speed (m/sec):	

Pasquill Category: ☐ A ☐ B ☐ C ☐ D ☐ E ☐ F ☐ G

NOTES:

For **Less Than** 24 hours use Iodine Mix K2 (8.0 E+8)

For **Greater Than** 24 hours, only use I-131 K2 value when using isotopic analysis. (2.6 E+9)

Isotope I-131 (or Total Mix) TODE – Thyroid Exposure Release Duration (RD)= [ ].

NGRR _____ X K1 _____ = A _____ | $RR_{(I\text{-}131 \text{ or Total})}$ _____ X K2 _____ = B _____

Distance	Xu/Q (from tables)	$\frac{1}{WS}$ (m/sec)	A + B (above)	Dose Rate (mrem/hr)	Dose (mrem) (DR X RD)
Site Boundary	X	$\frac{1}{[\ ]}$	X (+) =	=	
2 Mile	X	$\frac{1}{[\ ]}$	X (+) =	=	
5 Mile	X	$\frac{1}{[\ ]}$	X (+) =	=	
10 Mile	X	$\frac{1}{[\ ]}$	X (+) =	=	

Form EP-13 Rev. 1

EOF Check Point Sign In Log

EOF Registration Assistant: (print name)		Date:	

Print Name	Time In / Out	Time In / Out	Organization
			❑ Indian Pt. FFD* Yes: ❑ No: ❑ ❑ Other ______
			❑ Indian Pt. FFD* Yes: ❑ No: ❑ ❑ Other ______
			❑ Indian Pt. FFD* Yes: ❑ No: ❑ ❑ Other ______
			❑ Indian Pt. FFD* Yes: ❑ No: ❑ ❑ Other ______
			❑ Indian Pt. FFD* Yes: ❑ No: ❑ ❑ Other ______
			❑ Indian Pt. FFD* Yes: ❑ No: ❑ ❑ Other ______
			❑ Indian Pt. FFD* Yes: ❑ No: ❑ ❑ Other ______
			❑ Indian Pt. FFD* Yes: ❑ No: ❑ ❑ Other ______
			❑ Indian Pt. FFD* Yes: ❑ No: ❑ ❑ Other ______
			❑ Indian Pt. FFD* Yes: ❑ No: ❑ ❑ Other ______
			❑ Indian Pt. FFD* Yes: ❑ No: ❑ ❑ Other ______
			❑ Indian Pt. FFD* Yes: ❑ No: ❑ ❑ Other ______
			❑ Indian Pt. FFD* Yes: ❑ No: ❑ ❑ Other ______

* If NO, THEN report to EOF Manager for further evaluation.

EOF Check Point Sign In Log

EOF Check Point Instructions:

1.0 Set up a EOF Checkpoint at the entrance to the EOF.

> **NOTES:**
> **IF** there is any question if an individual should be allowed to enter the EOF **THEN** request clearance from the Emergency Director or the EOF Manager.
>
> Individuals entering the EOF during emergencies must be screened in accordance IPEC Fitness for Duty procedures. The Emergency Director may authorize individuals not meeting these requirements into the EOF.

1.1 Have all individuals entering EOF complete sign in log.

1.2 Request the Admin & Logistics Manager draft someone to take sign in log around to individuals who may have entered facility before check point was set up.

2.0 Allow only the following personnel into the EOF:

A. Indian Point Emergency Response Organization Personnel, as listed in the Emergency Telephone Directory,

B. Indian Point Corporate Officers,

C. State and County Officials,

D. Federal Officials from the Nuclear Regulatory Commission and Federal Emergency Management Agency;

E. Individuals authorized by the Emergency Director or the EOF Manager.

> **NOTE:**
> **IF** individuals are only going to another room within the Buchanan Service Center (offices across the hall or men's rest room) **THEN** it is not necessary to log them in and out each time they leave the EOF.

3.0 Maintain a "EOF Check Point Sign in Log" complete with names of all personnel within the EOF.

IP-2 Manual Determination of Release Rate

Determine Noble Gas & Radioiodine Release Rates

Date:	Time:	Name:

Plant Vent Release Rate Calculations *(use only one vent monitoring method)*

R-27 Wide Range		X	X 4.7E-04	=	
	(µCi/cc)	(Plant Vent CFM)*	(Constant)		(NGRR Ci/sec)
R-44 Low / Mid Range		X	X 4.7E-04	=	
	(µCi/cc)	(Plant Vent CFM)*	(Constant)		(NGRR Ci/sec)
Vent Contact Reading		X	X	X 4.7E-04	=
	(mR/hr)	(Conv. Factor)	(Plant Vent CFM)*	(Constant)	(NGRR Ci/sec)

Time After Shutdown Conversion Factors for Contact Reading	TAS (hr)	Factor	TAS (hr)	Factor
	0 - 2	2.8E-04	6 - 8	4.9E-04
	2 - 4	3.4E-04	8 - 12	6.1E-04
	4 - 6	4.1E-04	12 - 24	7.6E-04

Plant Vent Chemistry Sample		X	X 4.7E-04	=	
	(µCi/cc)	(Plant Vent CFM)*	(Constant)		(NGRR Ci/sec)
Air Ejector (AE)					
Air Ejector R-45		X	X 4.7E-04	=	
	(µCi/cc)	(AE CFM)**	(Constant)		(NGRR Ci/sec)
Main Steam Line (MSL)					
R-28, R-29 R-30, R-31		X 2.7E-03	X	X 4.9 E-06	=
	(CPM)	(MSL Conv. Factor)	(lbm/hr)***	(Constant)	(NGRR Ci/sec)
Steam Generator Blowdown (SGBD)					
Chemistry Sample		X	X 6.3E-05	=	
	(µCi/cc)	(GPM)**	(Constant)		(NGRR Ci/sec)

Total Noble Gas Release Rate: Add Plant Vent + AE + MSL + SGBD	Total NGRR Ci/sec	

Determine Radioiodine Release Rate (RR) In Curies/Second

1. MSL NG RR + SGBD NG RR =	X 1.0E-02 =	
2. Plant Vent NG RR + AE NG RR =	X 1.0E-04 =	
Total Radioiodine Release Rate (Add 1 + 2 to Obtain)	Total IRR (Ci/sec) =	

* If actual flow rate is unavailable, use 70,000 cfm

** If actual flow rate is unavailable, use 20 cfm

*** Steam Generator Atmospheric Flowrate 3.50 E+5 lbm / hr / atmospheric

Steam Generator Safety Flowrate 7.60 E+5 lbm / hr / safety

#22 Auxiluary Feedwater Pump 2.5 x 10^4 lbm / hr

IP-3 Manual Determination of Release Rate

Determine Noble Gas & Radioiodine Release Rates

Date:	Time:	Name:

Plant Vent Release Rate Calculations (use only one vent monitoring method)						
R-27 Wide Range		X 1.0E-06 =				
	(µCi/sec)	(Ci/µCi)*				(NGRR Ci/sec)
R-14 Low / Mid Range		X		X 4.7E-04 =		
	(µCi/cc)	(Plant Vent CFM)*		(Constant)		(NGRR Ci/sec)
Vent Contact Reading (Contact / 6 Ft)		X		X	X 4.7E-04 =	
	(mR/hr)	(Conv. Factor)		(Plant Vent CFM)*	(Constant)	(NGRR Ci/sec)
Time After Shutdown Conversion Factors for Contact Reading	TAS (hr)	Contact Factor	6 ft	TAS (hr)	Contact Factor	6 ft
	0 - 2	6.0E-04	2.5E-03	6 – 12	2.8E-03	9.5E-03
	2 - 4	1.2E-03	3.8E-03	12 – 24	5.5E-03	1.6E-02
	4 - 6	1.6E-03	5.5E-03	24 – 2 Wk	6.5E-03	2.0E-02
Plant Vent Chemistry Sample		X		X 4.7E-04 =		
	(µCi/cc)	(Plant Vent CFM)*		(Constant)		(NGRR Ci/sec)
Air Ejector (AE)						
Air Ejector R-15		X		X 4.7E-04 =		
	(µCi/cc)	(AE CFM)**		(Constant)		(NGRR Ci/sec)
Main Steam Line (MSL)						
R-62A, R-62B R-62C, R-62D		X		X 3.2 E-06 =		
	(µCi/cc)	(lbm/hr)***		(Constant)		(NGRR Ci/sec)
Total Noble Gas Release Rate: Add Plant Vent + AE + MSL + SGBD					Total NGRR Ci/sec	

Determine Radioiodine Release Rate (RR) In Curies/Second			
1. MSL NG RR =		X 1.0E-02 =	
2. Plant Vent NG RR + AE NG RR =		X 1.0E-04 =	
Total Radioiodine Release Rate (Add 1 + 2 to Obtain)		Total IRR (Ci/sec) =	

* If actual flow rate is unavailable, use 70,000 cfm

** If actual flow rate is unavailable, use 20 cfm

*** Steam Generator Atmospheric Flowrate 6.30 E+5 lbm / hr / atmospheric

Steam Generator Safety Flowrate 5.50 E+5 lbm / hr / safety

IPEC Manual Dose Assessment Worksheet

Back Calculating Release Rate from Field Data

Administrative Data	
Field Reading Location	
Field Reading Mileage	Miles
Field Reading Sector	1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16

Meteorology	
Wind Speed (at time of release)	meters/sec
X_μ / Q	

Radiological Data	
Field Reading (clsd window or Reuter Stokes)	mrem / hr
Noble Gas DCF (from table below)	(mr/hr) / (μCi/cc)

Time after Shutdown (hrs.)	Dose Conversion Factor (mr/hr) / (μCi/cc)
0 - 1.5	4.70 E+5
1.5 – 2.5	2.80 E+5
2.5 – 3.5	2.30 E+5
3.5 – 4.5	2.00 E+5
4.5 – 6.5	1.70 E+5
6.5 – 12.5	1.20 E+5
> 12.5	5.80 E+4

Release Rate Calculation

(	×	)	÷	(	×	)	=	
Field Reading (mr/hr)		Wind Speed (m/sec)		X_μ / Q		Noble Gas DCF		NGRR (Ci/sec)

Turnover Sheet	
Date:	Time:
Outgoing:	Relieving:
Discuss the following items:	
1. Emergency Classification: ❑ GE ❑ SAE ❑ Alert ❑ Unusual Event EAL:	
2. Initiating Event:	
3. Current Status of: A. Personnel Safety: B. Plant Safety: C. Release of Non-Essential Personnel: D. Accountability: Missing Persons: Search and Rescue: E: Radiological Conditions: F. WPO/JNC Actions: G. OSC/TSC Status: H. Offsite Actions (ie: schools, facility activation, PARs, etc.)	
5. Status of Offsite Notifications:	❑ None ❑ NYS / Counties ❑ NRC (headquarters and Residents ❑ INPO ❑ ANI
6. Corrective Actions: Teams Out:	
7. Actions Underway: Priorities:	
8. Actions that need to be Initiated:	
9. Prognosis:	

Media Briefing Worksheet

Date: _____	**Briefing #:** _____
Time: _____	**Briefing Announced:** ☐ Yes ☐ No

Reason for Briefing:

- ☐ Initial Briefing
- ☐ Emergency Classification Change
- ☐ EAS Broadcast
- ☐ Periodic Update / Other

	Points to be Covered	**Order**
Entergy		
Westchester County		
Rockland County		
Putnam County		
Orange County (confirm if via PictureTel or teleconference)		
State of NY		
Public Inquiry Feedback		
Media Monitoring Feedback		

Graphic Changes Needed:	
Graphics / Visual Requests:	

Media Briefing Issues Form

Time Noted:	Noted By:
Type of Issue: ❑ Incorrect Information ❑ Additional Information Needed ❑ Clarification Requested ❑ Unanswered Question	
Issue:	
Type of Resolution: ❑ Provide Information to Media Rep. ❑ Include in Written Statement ❑ Include in Next Media Briefing ❑ Brief Spokesperson(s) ❑ Other	
Resolution Details:	

JNC STAFFING FORM

Position	1st Shift Name (print)	Time Arrived	Time Departed	2nd Shift Name (print)	Time Arrived	Time Departed
JNC Director						
Company Spokesperson						
JNC Technical Advisor						
Technical Briefer						
Agency Liaison						
Support Services Manager						
Media Room Manager						
Media Room Liaison						
JNC Writer						
JNC Documenter						
Audiovisual Coordinator						
AV / Graphics Staff (2 minimum for activation, may include Audiovisual Coordinator)						

Date: _____

Shaded positions entail functions that are required for activation

JNC STAFFING FORM

Position	1st Shift Name (print)	Time Arrived	Time Departed	2nd Shift Name (print)	Time Arrived	Time Departed
Public Inquiry Coordinator						
Media Monitoring Staff						
Media Referral Staff Member(s)						
Public Inquiry Staff (as required)						

Date: _____

Shaded positions entail functions that are required for activation

JNC STAFFING FORM

Position	1st Shift Name (print)	Time Arrived	Time Departed	2nd Shift Name (print)	Time Arrived	Time Departed
Support Services Staff						
Registration Coordinator						
Registration Coordinator						
IT Representative						
Radiological Advisor						
JNC Access Control						
IP Communications Representative						
Government Liaison Rep						
Government Liaison Rep						
Government Liaison Rep						

Date: _____

Shaded positions entail functions that are required for activation

Emergency Summary Sheet

Indian Point Energy Center

Time: _____

Date: _____

1. This is a Drill ☐

   This is an Actual Event ☐

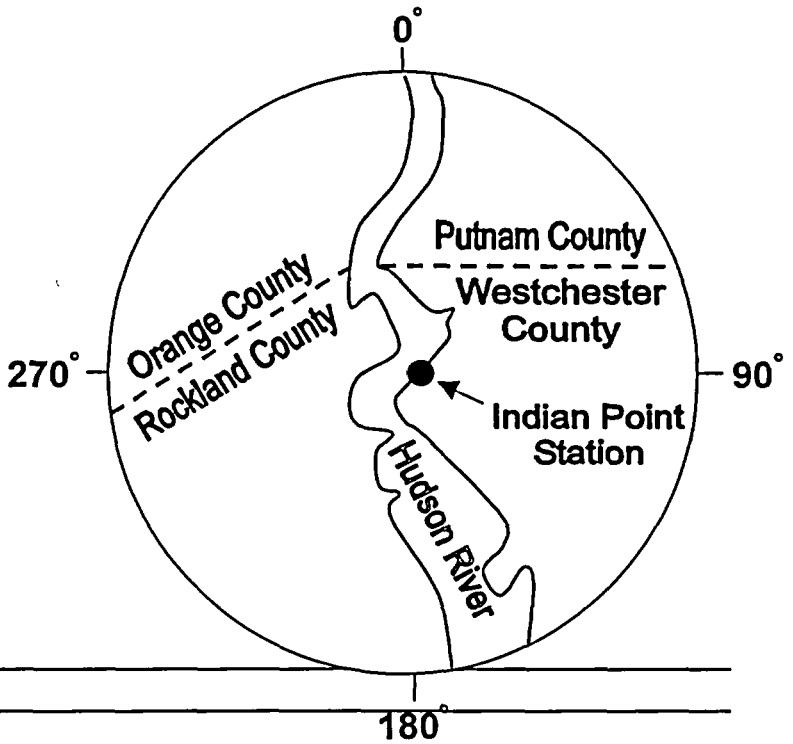
2. **Emergency Classification:**

   Unusual Event ☐

   Alert ☐

   Site Area Emergency ☐

   General Emergency ☐



3. **Event Description:**

_____

_____

4. **Radiological Conditions:**

Release of Radioactive Materials due to the classified event.

☐ No Release

☐ Release **BELOW** federally approved operating limits (Technical Specifications)
   ☐ To Atmosphere ☐ To Water

☐ Release **ABOVE** federally approved operating limits (Technical Specifications)
   ☐ To Atmosphere ☐ To Water

☐ Unmonitored Release – Being Evaluated

5. **Meteorological Conditions:**

Wind Speed: _____ MPH Wind Direction (from): _____

General Weather Conditions: _____

_____

_____

(To convert Meters / sec to Miles / Hr divide by .46)

Written Statement Distribution Checklist

Follow each step below as assigned. Some steps are concurrent, as noted by the numbering. Support Services Manager is to confirm all steps are completed at conclusion.		Statement Number:	
Step #	**JNC Position Responsible**	Detail Description	Completed By (Print) and Time
1	Support Services Manager	Obtain "APPROVED WRITTEN STATEMENT/NEWS RELEASE" from JNC Writer and start distribution process: ❑ Have Company Spokesperson initial, notify Documenter of approval time ❑ Start a Written Statement Distribution Checklist and Fax Distribution Sheet (in Position Binder and file cabinet) ❑ Record Statement Number above ❑ Give Original statement with Distribution Checklist and Fax Distribution sheet to Support Services Staff to make initial copies.	
2	Assigned Support Services Staff Person	❑ Make 2 copies of statement ❑ Provide Support Services Staff in fax/copy room with 2 copies (one for further copying and one for fax distribution described below) ❑ Provide original initialed copy back to Support Services Manager	
3a	Support Services Staff assigned to Copy area	*Make 48+ copies of final written statement/news releases and coordinate distribution with other Support Services Staff as follows:* ❑ 16 Copies to Public Inquiry Coordinator ❑ 12+ Copies to the Media Room Liaison for media (Coordinate number needed with Media Room Liaison. Copies to Media may take priority depending on timing.) ❑ 4 Copies to Media Monitoring Room Personnel ❑ 8 Copies to Entergy Rooms A/B ❑ Post 1 Copy on Bulletin Board near JNC Writer ❑ 7 (or 14—2 each) copies to each work room (State, Westchester, Rockland, Putnam, Orange, NRC and FEMA) ❑ Upon completion, provide this Distribution Checklist to Support Services Manager	

Written Statement Distribution Checklist

Follow each step below as assigned. Support Services Manager is to confirm all steps are completed.			Statement Number:	
3b	Support Service Staff in Fax/Copy Room	Concurrently, ensure statement is faxed to locations indicated on the Fax Distribution Form. DO NOT SEND FAX DISTRIBUTION FORM IN OUT-GOING FAX TRANSMISSION, Include Fax Cover Sheet ❑ Complete fax distribution to media on one fax machine ❑ Complete fax distribution to other emergency facilities and other Entergy locations on another fax machine (follow Fax Distribution Form) ❑ Review Fax Confirmation sheets to ensure they state that all transmissions were successfully completed (the text of the confirmation will read OK) Upon completion, provide fax confirmation sheet(s) to Support Services Manager		
4	Support Services Manager	Provide original (initialed) statement; fax confirmation(s); and this Distribution Checklist to JNC Documenter for log keeping		

Information Distribution Guide

(Follow the priority order noted)

Type of Information	**Recipient** (follow order for distribution, if possible)	**Distribution Completed By (Print)**
Plant Status, including PICS or EDDS data sheets, Forms and plant parameters (received via fax or from/via JNC Technical Advisor)	Utility Room A & B ❑ JNC Technical Advisor (& Radiological Advisor) ❑ Company Spokesperson ❑ JNC Director ❑ Agency Liaison ❑ JNC Documenter ❑ State/County PIOs (Radiological Data Forms, Part 1 and 2 **ONLY**)	
EAS Statements (provided by State or via Agency Liaison)	ALL Locations/All positions ❑ Public Inquiry Room & Media Monitoring Room *(20+ copies)* ❑ Entergy Rooms A & B *(9+ copies)* ❑ State, County and Federal Work Rooms ❑ Media Briefing Room (at assigned time provided by State or Agency Liaison)	
Written Statements, including news releases	Follow Written Statement Distribution Checklist form	
All Other Information Received (via fax or otherwise)	Request distribution instructions from the Support Services Manager and/or JNC Director	

PUBLIC INQUIRY - MEDIA REFERRAL - MEDIA MONITORING FORM

Type of call: (Public Inquiry) (Professional Inquiry) (Media Inquiry) (Media Monitor Report)

Date of call/broadcast: _____ Time of call/broadcast: _____

Name of responder/monitor: _____

Media Name/Location: _____

Caller's/Reporter's name: _____ Phone: (___)___-_____

Question(s) asked/Inaccurate Information: _____

_____

_____

_____

Response given/Correct Information and Source: _____

_____

_____

_____

Is call back required: (___) Yes (___) No Call Back Number (_____)_____-_____

If yes, call back completed at: _____ By:_____

Was the call referred: (___) Yes (___) No If yes, to whom? _____

Further action required: (__) Yes (__) No

Was this action completed? (___) Yes (___) No By: _____

Reported to Public Inquiry Coordinator at: _____

Public Inquiry Coordinator Notes: _____

_____

Return completed form to Public Inquiry Coordinator:

Joint News Center
Fax Cover Sheet

FROM: _____

DATE: _____ **TIME:** _____

Number of Pages (including cover): _____

☐ **WIRE SERVICES**

AP/NYC
AP/WESTCHESTER
CNN
REUTERS AMERICA
GANNET SUBURBAN NEWS/WHITE PLAINS
BLOOMBERG NEWSWIRE
NEW YORK TIMES NEWS SERVICE

☐ **IP EOF** **OR** ☐ **IP AEOF**

☐ **ENTERGY MEDIA RELATIONS**

☐ **LOCAL OFFICIALS**

☐ **Other**

Individual Exposure Tracking Log

Name:				TLD #_____ Employee #: _____	
Location / Team / Times		Available Exposure (mrem)	Time of Reading	Dosimeter Reading	Emergency Exposure (mrem)
_____					
Team:					
Time Out:					
Time In:					
_____					
Team:					
Time Out:					
Time In:					
_____					
Team:					
Time Out:					
Time In:					
_____					
Team:					
Time Out:					
Time In:					
_____					
Team:					
Time Out:					
Time In:					

NOTES:

1. Use this form to track individual's exposure of ERO members dispatched from EOF/OSC/TSC and
2. Initial Exposure Limit will be 1000 mrem for duration of emergency. ED or EPM may authorize more exposure.
3. If Form is filled transfer Name, TLD # and remaining available exposure to new form and staple this completed form to it.

MONITORING TEAM RADIATION FIELD SURVEY DATA

Team Name:_____ **Date:**_____

Team Member Names:_____

Count Rate Meter, Model#: _____ Serial#:_____ **Ion Chamber,** Model#: R-02 Serial#:_____

SURVEY LOCATION (Sector/Mile, Street/Intersection/mi. to Int.)	TIME (HH:MM) [1]	(CPM) [2]	OW (mR/hr) [3]	CW (mR/hr) [3]	(OW-CW)X2 (mrad/hr) [3]	REMARK #
Remarks:						

NOTES: [1] 24-hr clock
[2] Count Rate Meter data or conversion from Dose Rate Meter 1000 CPM = 0.1mR/hr (OW).
[3] RO-2, Ion Chamber data.

Form EP-30, Rev.0

MONITORING TEAM SAMPLE DATA

Team Name: _____ **Date:** _____

Sample Location:

Radiation Field Measurements (may be recorded on separate form):

Ion Chamber, Model #: _____ Serial #: _____ Time: _____

@ 3 in. above ground:	**@ 3 ft. above ground:**
Opened Window (OW) (mR/hr): _____	Opened Window (OW) (mR/hr): _____
Closed Window (CW) (mR/hr): _____	Closed Window (CW) (mR/hr): _____
	(OW-CW) X 2 (mrad/hr): _____

Air Sampling:

Air Sampler, Model #: _____ Serial #: _____

Particulate Filter: _____ Iodine (C): _____ Iodine (AgZ): _____

Sampling Start: Time (HH:MM): _____ Flow (CFM): _____

Sampling Stop: Time (HH:MM): _____ Flow (CFM): _____

Duration (MM) _____

Average Flow (CFM): _____

Sample Volume (CF): _____

Air Sample Counting:

Count Rate Meter, Model #: _____ Serial #: _____ Time: _____

Part Filter, Bkgd (CPM): _____ Gross (CPM): _____ Net (CPM): _____

Iodine (C), Bkgd (CPM): _____ Gross (CPM): _____ Net (CPM): _____

Iodine (AgZ), Bkgd (CPM): _____ Gross (CPM): _____ Net (CPM): _____

Determination of Radioactive Airborne Concentrations

$$\mu Ci/cc = \frac{A = \text{Net CPM} \times 1.0E\text{-}09}{B = 2.2 \times \text{Vol} \times \text{Eff.} \times \text{CCF}}$$

Where: Vol[1] is in liters (Liters = 2.832 x FT^3)
Efficiency[2] is 0.1 for particulate, 0.2 for iodine
CCF[3] is .95 for Charcoal, 1.0 for AgZ / Paper

Sample Location:				☐ Particulate ☐ Iodine
Sample Time:			Team:	
Sample Net CPM	Constant		A ⇩	
	X 1.0E-09 =			
Sample Volume in Liters[1]	Efficiency [2]	Constant	CCF [3]	B ⇩
	X	X 2.2 X	=	
µCi/cc = A / B =		µCi/cc		

Calculated by: Time:

Sample Location:				☐ Particulate ☐ Iodine
Sample Time:			Team:	
Sample Net CPM	Constant		A ⇩	
	X 1.0E-09 =			
Sample Volume in Liters[1]	Efficiency [2]	Constant	CCF [3]	B ⇩
	X	X 2.2 X	=	
µCi/cc = A / B =		µCi/cc		

Calculated by: Time:

Sample Location:				☐ Particulate ☐ Iodine
Sample Time:			Team:	
Sample Net CPM	Constant		A ⇩	
	X 1.0E-09 =			
Sample Volume in Liters[1]	Efficiency [2]	Constant	CCF [3]	B ⇩
	X	X 2.2 X	=	
µCi/cc = A / B =		µCi/cc		

Calculated by: _____ Time: _____

MEDIA INQUIRY LOG

DATE: _____ TIME: _____

NAME OF REPORTER: _____

AFFILIATED WITH: _____

PHONE NUMBER: _____

INQUIRY: _____

_____

_____

RESPONSE: _____

_____

_____

_____

_____

RESPONSE PROVIDED BY: _____

COMMENTS: _____

_____

_____

_____

Courtesy Call Guide

1. EVENT SUMMARY *(from IP Communications Representative)*

Indicate Emergency Classification Level (ECL), EAL/Time

Unusual Event	Alert	Site Area Emergency	General Emergency
_____	_____	_____	_____

Plant Status/Information/Radiological Conditions *(notes)*:

_____
_____
_____
_____

2. Script for Courtesy Calls

"Hi, my name is _____.

I'm representing the Indian Point Energy Center as a Government Liaison Representative.

I'm calling to inform you that....(*provide the event information obtained from the IP Communications Representative*)....

_____
_____
_____
_____
_____
_____

This is all the information that I have at this point. Entergy will be issuing a news release regarding the event *(give timeframe, e.g. within the next 30 minutes)*.

Should I continue to call you at this number if I need to contact you again?"

Name of GLR: _____

Time Calls Completed: _____

JNC BRIEFING SUMMARY/TALKING POINTS

BRIEFING # _____ DATE:_____

TIME: Start: _____ End: _____

Indian Point Energy Center declared a _____ at _____ (time). The event was declared as a result of _____.

PLANT STATUS/EVENT INFORMATION:	RESPONSE (SITE, CORPORATE):
RADIOLOGICAL CONDITIONS:	**EMPATHY:**

QUESTIONS REQUIRING FOLLOW-UP:

RUMORS TO ADDRESS:

FACSIMILE of NRC FORM 361
(12-2000)

U.S. NUCLEAR REGULATORY COMMISSION
OPERATIONS CENTER

REACTOR PLANT
EVENT NOTIFICATION WORKSHEET

EN#

NRC OPERATION TELEPHONE NUMBER: PRIMARY - 301-816-5100 or 800-532-3469*, BACKUPS -- [1st] 301-951-0550 or 800-449-3694*, [2nd] 301-415-0550 and [3rd] 301-415-0553

*Licensees who maintain their own ETS are provided these telephone numbers.

NOTIFICATION TIME	FACILITY OR ORGANIZATION	UNIT	NAME OF CALLER	CALL BACK #

EVENT TIME & Zone	EVENT DATE	POWER/MODE BEFORE	POWER/MODE AFTER

EVENT CLASSIFICATIONS

	GENERAL EMERGENCY	GEN/AAEC		TS Deviation	ADEV		(v)(A) Safe S/D Capability	AINA
	SITE AREA EMERGENCY	SIT/AAEC	**4-Hr. Non-Emergency 10 CFR 50.72(b)(2)**				(v)(B) RHR Capability	AINB
	ALERT	ALE/AAEC		(i) TS Required S/D	ASHU		(v)(C) Control of Rad Release	AINC
	UNUSUAL EVENT	UNU/AAEC		(iv)(A) ECCS Discharge to RCS	ACCS		(v)(D) Accident Mitigation	AIND
	50.72 NON-EMERGENCY	(see next columns)		(iv)(B) RPS Actuation (scram)	ARPS		(xii) Offsite Medical	AMED
	PHYSICAL SECURITY (73.71)	DDDD		(xi) Offsite Notification	APRE		(xiii) Loss Comm/Asmt/Resp	ACOM
	MATERIAL/EXPOSURE	B???	**8-Hr. Non-Emergency 10 CFR 50.72(b)(3)**			**60-Day Optional 10 CFR 50.73(a)(1)**		
	FITNESS FOR DUTY	HFIT		(ii)(A) Degraded Condition	ADEG		Invalid Specified System Actuation AINV	
	OTHER UNSPECIFIED REQMT.	(see last column)		(ii)(B) Unanalyzed Condition	AUNA	**Other Unspecified Requirement (Identify)**		
	INFORMATION ONLY	NNF		(iv)(A) Specified System Actuation	AESF			NONR
								NONR

DESCRIPTION

Include: Systems affected, actuations and their initiating signals, causes, effect of event on plant, actions taken or planned, etc. *(Continued on back)*

NOTIFICATIONS	YES	NO	WILL BE
NRC RESIDENT			
STATE(s)			
LOCAL			
OTHER GOV AGENCIES			
MEDIA/PRESS RELEASE			

ANYTHING UNUSUAL OR NOT UNDERSTOOD? ☐ YES (Explain above) ☐ NO

DID ALL SYSTEMS FUNCTION AS REQUIRED? ☐ YES ☐ NO (Explain above)

MODE OF OPERATION UNTIL CORRECTED:	ESTIMATED RESTART DATE:	ADDITIONAL INFO ON BACK ☐ YES ☐ NO

RADIOLOGICAL RELEASES: CHECK OR FILL IN APPLICABLE ITEMS *(specific details/explanation should be covered in the event description)*

	LIQUID RELEASE		GASEOUS RELEASE		UNPLANNED RELEASE		PLANNED RELEASE		ONGOING		TERMINATED
	MONITORED		UNMONITORED		OFFSITE RELEASE		T.S. EXCEEDED		RM ALARMS		AREAS EVACUATED
	PERSONNEL EXPOSED OR CONTAMINATED				OFFSITE PROTECTIVE ACTIONS RECOMMENDED				* State release path in description		

	Release Rate (Ci/sec)	% T. S. Limit	HOO GUIDE	Total Activity (Ci)	% T. S. Limit	HOO GUIDE
Noble Gas			0.1 Ci/sec			1000 Ci
Iodine			10 uCi/sec			0.01 Ci
Particulate			1 uCi/sec			1 mCi
Liquid *(excluding tritium and dissolved noble gases)*			10 uCi/min			0.1 Ci
Liquid (tritium)			0.2 Ci/min			5 Ci
Total Activity						

	PLANT STACK	CONDENSER/AIR EJECTOR	MAIN STEAM LINE	SG BLOWDOWN	OTHER
RAD MONITOR READINGS					
ALARM SETPOINTS					
% T. S. LIMIT *(if applicable)*					

RCS OR SG TUBE LEAKS: CHECK OR FILL IN APPLICABLE ITEMS: *(specific details/explanations should be covered in event description)*

LOCATION OF THE LEAK *(e.g., SG #, valve, pipe, etc.)*

LEAK Rate	UNITS: gpm/gpd	T. S. LIMITS	SUDDEN OR LONG-TERM DEVELOPMENT
LEAK START DATE	TIME	COOLANT ACTIVITY AND UNITS:	PRIMARY SECONDARY

LIST OF SAFETY RELATED EQUIPMENT NOT OPERATIONAL

EVENT DESCRIPTION (Continued from front)

Emergency Team Briefing Form

Team #:

Lead Briefer:_____ ☐ I&C ☐ Rad ☐ Maint ☐ Ops ☐ Chem ☐ Sec	Date: _____ Time: _____	Location of Work:

Task (description/understanding/comprehension):

Attach any additional supporting documentation (diagrams,maps,visual aids,procedures,drawings,etc)

Tools, Keys,Equipment and Supplies:

	Name / Avail Dose	Name / Avail Dose
Team Members: ❊	_____	_____
	_____	_____
	_____	_____

❊ Designate one member as the Team Leader

Rad. Brief: ☐ Complete ☐ N/A **Estimated Dose:**_____

ERWP: ☐ N/A or #_____

Contact Numbers:

Method(s) of Communications: ☐ Radio ☐ Phone ☐ Other:

Recommended Route to Work:

Time released to field:_____ Expected duration in field:_____

Status / Debrief Items: ☐ Completed _____

Debriefer:_____

Emergency Team Briefing Form

Team Dispatch Guidelines:

* **Technical Briefing,** including scope of job, held, description on form. ☐
* **Radiological Briefing** held, available dose on form ☐
* Is their **Team Number** on the form ☐
* Is the **Location of Job and Route** on the form ☐
* **Approximate Duration** on form ☐
* Required **Tools** on form ☐
* Review **Safety** issues (ie electrical; confined space; lighting; environmental; chemical; fall and fire protection; available/applicable OE; other work in vicinity) ☐
* Do they have **HP Coverage** if needed ☐
* Are the correct **Team Members Assigned** with names on form ☐
* Put contact **Phone Numbers** on form ☐
* Tell them to **Report Back Every 20 - 30 Minutes** ☐
* Have them perform a **Radio Check** ☐
* Give copy of briefing form to Emergency Team Leader ☐

Team Check-In Guidelines:

* Ensure **All Team Members Returned** ☐
* Record **Dose Received** ☐
* Ask about **Job Status** ☐
* Have them **Return Radio to Charger** ☐
* Tell them to **Report to Lead Briefer for Debriefing** ☐

Team Debriefing Guidelines:

* Are there any outstanding safety issues to address? ☐
* Were any Non-Quality or Non-Standard Parts used? ☐
* Were any Temporary Facility Changes made? ☐
* Was any excess torque or force applied to components? ☐
* Was any valve position or equipment status changed? ☐
* Was any work performed which would normally require follow-up Testing? ☐

Attach further details as needed to ensure outstanding issues can be addressed during Recovery Phase.

CONTROLLED

COPY # 25

Emergency Classification

Prepared by:	Kelly Walker Print Name	M.L. Meale for K. Walker Signature	11-3-03 Date
Approval:	Frank Inzirillo Print Name	 Signature	11/6/03 Date

Effective Date: 11/6/03

This procedure excluded from further ENN-LI-100 reviews.

Table of Contents

Emergency Classification

1.0 PURPOSE

To describe the method for classification of emergencies at IPEC as a Notification of Unusual Event (NUE), Alert, Site Area Emergency (SAE) or General Emergency (GE)

2.0 REFERENCES

2.1 Indian Point Energy Center Emergency Plan

2.2 IP-EP-110, Conduct of Operations

2.3 NUMARC/NESP-007, Revision 2, Methodology for Development of Emergency Action Levels

2.3 IP-EP-AD13 IPEC Emergency Action Level Technical Bases

3.0 DEFINITIONS

Refer to Reference 2.3

4.0 RESPONSIBILITIES

4.1 The Shift Manager (Control Room Supervisor if the Shift Manager is unavailable or incapacitated) of the **affected unit** shall implement this procedure for the initial emergency classification. For classifiable events that potentially impact both units (security, natural or man-made events), the Shift Managers for each unit shall confer about the need to classify the event. If it is determined that emergency classification is warranted, the **Unit 2** Shift Manager shall declare the event in accordance with this procedure. Once an initial emergency classification has been made, the unit Shift Manager making the initial declaration shall be responsible for any subsequent emergency classifications, regardless of which unit is affected, until such time as relieved by the on-call Emergency Director.

4.2 The Shift Manager, upon initial emergency classification, shall assume the role of Emergency Director and shall act as the Emergency Director until relieved by the On-Call Emergency Director or other qualified Emergency Director (Emergency Plant Manager / Plant Operations Manager).

4.3 The Emergency Director is responsible for overall command and control of the emergency response, including classifications; notifications, PARs and ensuring all resources are available to mitigate emergency conditions. The Emergency Director is the final authority for determining the emergency classification level (initial classification, upgrading, or terminating to recovery). This authority may not be delegated.

4.4 Initial and subsequent emergency classification shall be made within 15 minutes following the identification of a classifiable event to ensure that prompt notification, mobilization, protective and corrective actions are taken.

4.5 Upon becoming aware of any condition or event that they believe may warrant an upgrade in emergency classification, Emergency Response Organization members shall promptly inform the Emergency Director via their chain of command.

4.6 A broad spectrum of discretion in classifying events is provided under Category 9.0 "Other". In using the Category 9.0 "Other" and in classifying emergencies under circumstances which are not a straight-forward use of the EALs, ERO members should be mindful than an approach is needed which is conservative with respect to public, plant, and personnel safety and with respect to ensuring the adequacy of personnel and technical support. Conservative decisions must be made if the Emergency Director has any doubt regarding the health and safety of the public.

5.0 DETAILS

5.1 Recognizing an Emergency

NOTE

All classifications are to be based upon VALID indications, reports or conditions. Indications, reports or conditions are considered VALID when they are verified by (1) an instrument channel check, or (2) indications on related or redundant indicators, or (3) by direct observation by plant personnel, such that doubt related to the indicator's operability, the condition's existence, or the report's accuracy is removed. Implicit in this definition is the need for timely assessment.

5.1.1 When indications of abnormal conditions or events are received, personnel will verify the symptoms/indications and then compare with the Emergency Action Levels (Attachment 1) and Fission Product Barrier Thresholds (Attachment 2).

5.1.2 Identify the highest applicable emergency classification level (if multiple EALs are exceeded) for which an EAL has been met or exceeded considering the following:

(a) The plant condition existing at the time the abnormal condition exists:

- Average reactor coolant temperature > 200°F
- Average reactor coolant temperature ≤ 200°F
- Defueled (no irradiated fuel in the reactor vessel)

(b) **IF** conditions warrant the issuance of offsite Protective Action Recommendations (PARs), **THEN** the classification of General Emergency is required.

(c) **IF** plant conditions indicate a possible radiological release or a release is in progress or suspected, **THEN** evaluate the applicability of offsite dose-based EALs (IP-EP-310, Dose Assessment).

(d) **IF** a classification level was met or exceeded but the classifiable condition no longer exists (a lesser classification level may or may not still be appropriate), **THEN** refer to Section 5.4, Transitory Events, Spikes and Spurious Indications.

5.2 Initial Emergency Declaration from the Control Room

NOTE

IF the condition or event requiring initial classification potentially affects both units (security, natural or man-made events), **THEN** the Unit Shift Managers shall contact each other and confer on the need to declare. Upon concurrence, the **Unit 2** Shift Manager shall make the appropriate emergency classification and assume the role of Emergency Director.

5.2.1 The Shift Manager (Control Room Supervisor if the Shift Manager is unavailable or incapacitated) shall announce to the Control Room operating staff:

(a) That an emergency has been declared.

(b) The emergency classification level.

(c) That the (Unit 2 or Unit 3) Shift Manager (Control Room Supervisor if the Shift Manager is unavailable or incapacitated) has assumed the role of Emergency Director.

5.2.2 For an emergency declared by the **Unit 2** Shift Manager, implement procedure **IP-EP-212 "Unit 2 Control Room".**

5.2.3 For an emergency declared by the **Unit 3** Shift Manager, implement procedure **IP-EP-213 "Unit 3 Control Room".**

5.3 While In a Classified Emergency

5.3.1 Emergency response personnel shall continuously review the Emergency Action Levels (Attachment 1) and Fission Product Barrier Thresholds (Attachment 2) to ensure appropriate event classification.

5.3.2 If an Emergency Action Level threshold is exceeded for an emergency classification higher than currently declared, the Emergency Director shall re-classify the event to the appropriate level and initiate all required notifications.

5.4 Transitory Events, Spikes and Spurious Indications

5.4.1 Transitory events that result in exceeding the Emergency Action Level criteria for event declaration, but which are terminated before they are declared, should still be identified, documented and reported (10CFR50.72), but not declared to implement the Emergency Plan.

5.4.2 In the case of a "spike" in a plant indication or event which rapidly exceeds and then decreases below an Emergency Action Level threshold, entry into the Emergency Plan or escalation to a higher classification "in retrospect" is not appropriate unless the "spike" is indicative of continuing degrading conditions which will lead to an escalated emergency classification level. Examples include momentary steam generator level shrink following reactor trip or brief wind gusts in excess of classifiable levels.

5.4.3 Spurious alarms or parameters, which are known to be invalid indicators of actual plant conditions or of the emergency classification, should not be used to declare emergency classifications.

6.0 INTERFACES

6.1 IP-EP-130, Emergency Notification & Mobilization

6.2 IP-EP-212, Unit 2 Control Room

6.3 IP-EP-213, Unit 3 Control Room

6.4 IP-EP-222, Unit 2, Technical Support Center

6.5 IP-EP-310, Dose Assessment

6.6 IP-EP-410, Protective Action Recommendations

6.7 IP-EP-510, Meteorological, Radiological & Plant Data Acquisition

6.8 IP-EP-520, Modular Emergency Assessment & Notification System (MEANS)

7.0 RECORDS

Any logs or forms completed by members of the ERO during an actual declared emergency are permanent quality records.

8.0 REQUIREMENTS AND COMMITMENTS

NONE

9.0 ATTACHMENTS

9.1 Attachment 1, Emergency Action Levels

9.2 Attachment 2, Fission Product Barrier Thresholds

Attachment 1 - Emergency Action Levels

CATEGORY 1.0 CSFST STATUS

Category	General	Site Area	Alert	Unusual Event
1.1 Subcriticality	**1.1.3 {> 200°F}** RED path in F-0.1, Subcriticality **AND** Actual or imminent entry into either: RED Path in F-0.2, Core Cooling **OR** Red Path in F-0.3, Heat Sink	**1.1.2 {> 200°F}** RED path in F-0.1 Subcriticality **AND** ALL manual attempts at tripping the reactor from the Control Room have failed to reduce power range < 5%	**1.1.1 {> 200°F}** Any Failure of an automatic trip signal to reduce power range < 5% **AND** Manual trip is successful	
1.2 Core Cooling	**1.2.2 {> 200°F}** RED path in F-0.2,Core Cooling **AND** Functional restoration actions taken and procedures not effective within **15 min.**	**1.2.1 {> 200°F}** ORANGE or RED path in F-0.2, Core Cooling		
1.3 Heat Sink		**1.3.1 {> 200°F}** RED path in F-0.3, HEAT SINK **AND** Feed & Bleed is required		
1.4 Integrity			**1.4.1 {> 200°F}** RED Path on F-0.4, Integrity	
1.5 Containment	**1.5.1 {> 200°F}** RED Path F-0.5, Containment resulting from loss of coolant.			

Attachment 1 - Emergency Action Levels

CATEGORY 2.0 REACTOR FUEL

Category	General	Site Area	Alert	Unusual Event
2.1 Coolant Activity		**2.1.3 {> 200°F}** Coolant activity > **300 µCi/cc** I-131 equivalent and any of the following: • RED path on F-0.4, INTEGRITY • Primary system leakage exceeding capacity **(> 75 gpm)** of a single charging pump • RCS subcooling < SI initiation setpoint due to RCS leakage • [Unit 2] Rise in R-41 or R-42 offscale due to RCS leakage • [Unit 3] > **0.06 µCi/cc** on R-11 or R-12 due to RCS leakage	**2.1.2 {> 200°F}** Coolant Activity > **300 µCi/cc** I-131 equivalent	**2.1.1 {All}** Coolant sample activity in excess of Technical Specification limits
2.2 Containment Radiation	**2.2.3 {> 200°F}** Containment Radiation monitor R-25 or R-26 **> 68 R/HR**	**2.2.2 {> 200°F}** Containment Radiation monitor R-25 or R-26 **> 17 R/HR**	**2.2.1 {> 200°F}** [Unit 2] Rise on R-41 or R-42 offscale due to RCS leakage OR [Unit 3] > **0.06 µCi/cc** on R-11 or R-12 due to RCS leakage	

Attachment 1 - Emergency Action Levels

CATEGORY 2.0 REACTOR FUEL

Category	General	Site Area	Alert	Unusual Event
2.3 Refueling Accidents or Other Radiation Monitors			**2.3.2 {All}** Confirmed sustained alarm on any of the following radiation monitors resulting from fuel damage caused by an uncontrolled fuel handling process: • R-2/R-7 Vapor Containment Area Monitors • R-5 Fuel Storage Building Area Monitor • R-25/26 Vapor Containment High Radiation Area Monitors **2.3.3 {All}** Report of visual observation of (Unit 2 or Unit 3) irradiated fuel uncovered	**2.3.1 {All}** [Unit 2] or [Unit 3] spent fuel pool (reactor cavity during refueling) water level cannot be restored and maintained above the Technical Specification minimum water level

Attachment 1 - Emergency Action Levels
CATEGORY 3.0 REACTOR COOLANT SYSTEM

Category	General	Site Area	Alert	Unusual Event
3.1 RCS Leakage		**3.1.3 {>200°F, ≤ 200°F }** RVLIS cannot be maintained [Unit 2] **> 41%** [Unit 3] **> 33%** with no RCPs running OR With the reactor vessel head removed, it is reported that water level in the Reactor Vessel is dropping in an uncontrolled manner and core uncovery is likely	**3.1.2 {>200°F}** Primary system leakage exceeding capacity **(> 75 gpm)** of single charging pump	**3.1.1 {>200°F}** Unidentified or pressure boundary leakage **> 10 gpm** OR Identified leakage **> 25 gpm**
3.2 Primary to Secondary Leakage		**3.2.2 {>200°F}** Unisolable release of secondary side to atmosphere from the affected steam generator(s) with primary to secondary leakage exceeding capacity **(> 75 gpm)** of a single charging pump **3.2.3 {>200°F}** Unisolable release of secondary side to atmosphere from the affected steam generator(s) with primary to secondary leakage > Technical Specification limit in any steam generator AND Coolant activity **> 300 µCi/cc** of I-131 equivalent		**3.2.1 {>200°F}** Unisolable release of secondary side to atmosphere from the affected steam generator(s) with primary to secondary leakage > Technical Specifications limit in any steam generator
3.3 RCS Subcooling			**3.3.1 {>200°F}** RCS subcooling < SI initiation setpoint due to RCS leakage	

Attachment 1 - Emergency Action Levels

CATEGORY 4.0 CONTAINMENT

Category	General	Site Area	Alert	Unusual Event
4.1 Containment Integrity Status	**4.1.4 {>200°F}** Confirmed **Phase "B"** isolation signal following confirmed LOCA with less than minimum containment cooling safeguards equipment operating, Table 4.3 **AND** Any indicators of fuel clad loss, Table 4.1 **4.1.5 {>200°F}** **EITHER:** Rapid uncontrolled decrease in containment pressure following initial increase due to RCS failure **OR** Loss of primary coolant inside containment with containment pressure or sump level response not consistent with LOCA conditions **AND** Any indications of fuel clad damage, Table 4.2	**4.1.2 {>200°F}** Rapid uncontrolled decrease in containment pressure following initial increase due to RCS failure **OR** Loss of primary coolant inside containment with containment pressure or sump level response not consistent with LOCA conditions		**4.1.1 {>200°F}** Both doors open on a VC airlock for **> 4 hrs.** **OR** Inability to close containment pressure relief or purge valves which results in a radiological release pathway to the environment for **> 4 hrs.** **OR** Any **Phase "A"** or **Phase "B"** or containment ventilation isolation valve(s) not closed when required which results in a radiological release pathway to the environment

Attachment 1 - Emergency Action Levels

CATEGORY 4.0 CONTAINMENT

Category	General	Site Area	Alert	Unusual Event
4.1 Containment Integrity Status (cont.)	**4.1.6 {>200°F}** **EITHER:** Any **Phase "A"** or **Phase "B"** or Containment Ventilation Isolation valve(s) not closed when required following confirmed LOCA **OR** Inability to isolate any primary system discharging *outside containment* **AND** Radiological release to the environment exists as a result **AND** Any indicators of fuel clad damage, Table 4.2	**4.1.3 {>200°F}** **EITHER:** Any **Phase "A"** or **Phase "B"** or Containment Ventilation Isolation valve(s) not closed when required following confirmed LOCA **OR** Inability to isolate any primary system discharging outside containment **AND** Radiological release to the environment exists as a result		
4.2 SG Tube Rupture w/Secondary Release	**4.2.2 {>200°F}** Unisolable faulted (outside VC) ruptured steam generator **AND** Any indicators of fuel clad damage, Table 4.2	**4.2.1 {>200°F}** Unisolable faulted (outside VC) ruptured steam generator		
4.3 Combustible Gas Concentrations	**4.3.1 {>200°F}** ≥4% Hydrogen concentration in containment			

Attachment 1 - Emergency Action Levels

CATEGORY 4.0 CONTAINMENT

Table 4.1 Fuel Clad Loss Indicators
• Coolant activity > **300 µCi/cc** of I-131 equivalent • Containment radiation monitor R-25/R-26 reading > **17 R/hr** • RED path in F-0.2, CORE COOLING

Table 4.2 Fuel Clad Damage Indicators
• ORANGE or RED path in F-0.2, CORE COOLING • RED path in F-0.3, HEAT SINK **AND** Heat sink is required • Coolant activity > **300 µCi/cc** of I-131 equivalent • Containment radiation monitor R-25/R-26 reading > **17 R/hr**

Table 4.3 Minimum Containment Cooling Safeguards Equipment	
Fan Cooler Units Operating	Spray Pumps Required
< 3	2
3	1
5	0

Attachment 1 - Emergency Action Levels CATEGORY 5.0 RADIOACTIVITY RELEASE				
Category	**General**	**Site Area**	**Alert**	**Unusual Event**
5.1 Effluent Monitors	**5.1.4 {All}** A valid reading on any monitors Table 5.1 column "GE" for > **15 min.** unless dose assessment can confirm releases are below Table 5.2 column "GE" within this time period.	**5.1.3 {All}** A valid reading on any monitors Table 5.1 column "SAE" for > **15 min.** unless dose assessment can confirm releases are below Table 5.2 column "SAE" within this time period.	**5.1.2 {All}** A valid reading on any monitors Table 5.1 column "Alert for > **15 min.** unless dose assessment can confirm releases are below Table 5.2 column "Alert" within this time period.	**5.1.1 {All}** A valid reading on any monitors Table 5.1 column "NUE" for > **60 min.** unless sample analysis can confirm release rates < Table 5.1 column "NUE" within this time period.
5.2 Dose Projections/ Environmental Measurements/ Release Rates	**5.2.5 {All}** Dose projections or field surveys resulting from an actual imminent release which indicate doses/dose rates > Table 5.2 column "GE" at the site boundary or beyond.	**5.2.4 {All}** Dose projections or field surveys resulting from an actual imminent release which indicate doses/dose rates > Table 5.2 column "SAE" at the site boundary or beyond.	**5.2.2{All}** Confirmed sample analysis for gaseous or liquid release rates >Table 5.1 column "Alert" limits for > **15 min.** **5.2.3 {All}** Dose projections or field surveys resulting from an actual imminent which indicate doses/dose rates > Table 5.2 column "Alert" at the site boundary or beyond.	**5.2.1 {All}** Confirmed sample analysis for gaseous or liquid release rates > Table 5.1 column "NUE" limits for > **60 min.**

Attachment 1 - Emergency Action Levels

CATEGORY 5.0 RADIOACTIVITY RELEASE

Category	General	Site Area	Alert	Unusual Event
5.3 Area Radiation Levels			**5.3.2 {All}** Sustained area radiation levels **> 15 mRem/hr in EITHER:** Control Room **OR** Central Alarm Station and Secondary Alarm Station **5.3.3 {All}** Sustained abnormal area radiation levels **> 8 R/hr** within any areas, Table 5.3 **AND** Access is required for safe operation or shutdown	**5.3.1 {All}** Any sustained direct ARM readings **> 100 x alarm or** offscale high resulting from an uncontrolled process

Attachment 1 - Emergency Action Levels

CATEGORY 5.0 RADIOACTIVITY RELEASE

Table 5.1 Effluent Monitor Classification Thresholds

Monitor		GE	SAE	Alert	UE
Unit 2	R-27	44 µCi/cc (1200 Ci/sec)	4.4 µCi/cc (120 Ci/sec)	4.4E-1 µCi/cc (12 Ci/sec)	4.4E-3 µCi/cc (1.2E-1 Ci/sec)
	R-44	44 µCi/cc	4.4 µCi/cc	4.4E-1 µCi/cc	4.4E-3 µCi/cc
	R-54	N/A	N/A	2.5E-1 µCi/cc	2.5E-3 µCi/cc
	R-49	N/A	N/A	2.7E-2 µCi/cc	2.7E-4 µCi/cc
Unit 3	R-27	44 µCi/cc (1200 Ci/sec)	4.4 µCi/cc (120 Ci/sec)	4.4E-1 µCi/cc (12 Ci/sec)	4.4E-3 µCi/cc (1.2E-1 Ci/sec)
	R-14	N/A	N/A	N/A	4.4E-3 µCi/cc
	R-19	N/A	N/A	475 µCi/cc	9.50 µCi/cc

Table 5.2

Dose Projection/Env. Measurement Classification Thresholds

	GE	SAE	Alert
TEDE	1000 mRem	100 mRem	10 mRem
CDE Thyroid	5000 mRem	500 mRem	N/A
External Exposure Rate	1000 mRem/hr	100 mRem/hr	10 mRem/hr
Thyroid exposure rate (for 1 hr. of inhalation)	5000 mRem/hr	500 mRem/hr	N/A

Attachment 1 - Emergency Action Levels

CATEGORY 5.0 RADIOACTIVITY RELEASE

Table 5.3 Plant Areas	
UNIT 2	**UNIT 3**
• Condensate Storage Tank • RWST • Service Water Intake Structure • Service Water Valve Pit East • Fuel Storage Building • Primary Auxiliary Building/Fan House • 480 Volt Switchgear Room (Control Building) • Cable Spreading Room/Electrical Tunnel • Diesel Generator Building/Fuel Tank Area • Auxiliary Feedwater Pump Building • Battery Room (Control Building 33' 0" ele.)	• Auxiliary Feedpump Building • P.A.B. • Fuel Storage Building • Control Building • Service Water Pumps • Refueling Water Tank • Diesel Fuel Tank • Vital Area Access to Containment • Appendix R Diesel Generator • Backup Service Water

Attachment 1 - Emergency Action Levels
CATEGORY 6.0 ELECTRICAL FAILURES

Category	General	Site Area	Alert	Unusual Event
6.1 Loss of AC Power Sources	**6.1.5 {>200°F}** Loss of all 480 volt safeguards bus (5A, 2A/3A, 6A) AC power AND EITHER: Power restoration to required core cooling systems is not likely in ≤ 4 hrs. OR Actual or imminent entry into ORANGE or RED path on F-0.2, "CORE COOLING"	**6.1.4 {>200°F}** Loss of AC power to all 480 volt safeguard busses (5A, 2A/3A, 6A) for > 15 min. AND Inability to power required core cooling systems with alternate power sources for > 15 min.	**6.1.2 {≤200°F, Defuel}** Loss of AC power to all 480 volt busses (5A, 2A/3A, 6A) for **> 15 min.** **6.1.3 {Hot}** AC power capability to 480 volt safeguard busses (5A, 2A/3A, 6A) reduced to only one Table 6.1 source for **> 15 min.**	**6.1.1 {All}** Unplanned loss of offsite power capability to all 480V safeguard busses (5A, 2A/3A, 6A) for > 15 min.
6.2 Loss of DC Power Sources		**6.2.2 {> 200°F}** Loss of bus voltage **(< 105 vdc)** for **> 15 min.** on all of the DC Busses.		**6.2.1 {≤200°F}** [Unit 2] Unplanned loss of bus voltage **(< 105 vdc)** for > 15 min. on any DC Bus resulting in the loss of decay heat removal capability [Unit 3] Unplanned loss of bus voltage **(< 105 vdc)** for > 15 min. on all of the DC Busses

Attachment 1 - Emergency Action Levels
CATEGORY 6.0 ELECTRICAL FAILURES

Table 6.1 Safeguard Bus AC Power Sources

UNIT 2	UNIT 3
• 480 V EDG 21 • 480 V EDG 22 • 480 V EDG 23 • Unit Auxiliary transformer* • Station Auxiliary transformer* • 13.8 KV gas turbine auto transformer* * With 86P or 86BU tripped, all offsite power supplies must be considered as one power supply.	• 480V EDG 31 • 480V EDG 32 • 480V EDG 33 • Unit Auxiliary transformer • Station Auxiliary transformer • 13W92 feeder • 13W93 feeder • Appendix R Diesel

Attachment 1 - Emergency Action Levels CATEGORY 7.0 EQUIPMENT FAILURES				
Category	**General**	**Site Area**	**Alert**	**Unusual Event**
7.1 Technical Specifications/ Requirements				**7.1.1 {>200°F}** Plant is not brought to required operating mode within Technical Specifications LCO Action Statement Time.
7.2 System Failures or Control Room Evacuation		**7.2.5 {All}** Control Room evacuation AND Plant control cannot be established per [Unit 2] AOI 27.1.9 [Unit 3] ONOP-FP-1A in [Unit 2] ≤ 15 min. [Unit 3] ≤ 30 min.	**7.2.2 {>200°F}** Turbine failure generated missiles which causes or potentially causes any required safety related system or structure to become inoperable. **7.2.3 {All}** Entry into [Unit 2] AOI 27.1.9 [Unit 3] ONOP-FP-1A **7.2.4 {≤200°F}** Reactor coolant temperature cannot be maintained ≤ 200°F	**7.2.1 {>200°F}** Report of main turbine failure requiring turbine trip resulting in: Damage to turbine generator seals causing a release of lubricating oil or hydrogen **OR** Turbine casing penetration

Attachment 1 - Emergency Action Levels
CATEGORY 7.0 EQUIPMENT FAILURES

Category	General	Site Area	Alert	Unusual Event
7.3 Loss of Indications/ Alarms/ Communication Capability		**7.3.4 {>200°F}** Loss of most (approx. 75%) safety system annunciators or indications on Control Room Panels **AND** Loss of ability to monitor critical safety function status **AND** A significant plant transient in progress	**7.3.3 {>200°F}** Unplanned loss of most (approx. 75%) safety system annunciators or indications on Control Room Panels for > 15 min. **AND** Increased surveillance is required for safe plant operation **AND EITHER:** A significant plant transient in progress **OR** [Unit 2] PICS [Unit 3] CFMS and QSPDS are unavailable	**7.3.1 {>200°F}** Unplanned loss of most (approx. 75%) safety system annunciators or indications on Control Room Panels for **> 15 min.** **AND** Increased surveillance is required for safe plant operation **7.3.2 {All}** Loss of all communications capability affecting the ability to EITHER: Perform routine operations **OR** Notify offsite agencies or personnel

Attachment 1 - Emergency Action Levels
CATEGORY 8.0 HAZARDS

Category	General	Site Area	Alert	Unusual Event
8.1 Security Threats	**8.1.4 {All}** Security Event which results in: Loss of plant control from the Control Room **AND** Loss of remote shutdown capability	**8.1.3 {All}** Intrusion into a plant security vital area by an adversary **OR** Any security event which represents actual or likely failures of plant systems needed to protect the public.	**8.1.2 {All}** Intrusion into plant Protected Area by an adversary **OR** Any security event which represents an actual substantial degradation of the level of safety of the plant.	**8.1.1 {All}** Bomb device or other indication of attempted sabotage discovered within plant Protected Area **OR** Notification of any credible site specific security threat by the Security Shift Supervisor or outside agency (NRC, military or law enforcement)
8.2 Fire or Explosion			**8.2.3 {All}** Fire or explosion in any plant area, Table 8.1, which causes or potentially causes any required safety related system or structure to become inoperable	**8.2.1 {All}** Confirmed fire in or contiguous to any plant area, Table 8.1 not extinguished in ≤ 15 min. of Control Room notification. **8.2.2 {All}** Report by plant personnel of an explosion within Protected Area boundary resulting in visible damage to non-vital permanent structures or equipment.

Attachment 1 - Emergency Action Levels

CATEGORY 8.0 HAZARDS

Category	General	Site Area	Alert	Unusual Event
8.3 Man-Made Events			**8.3.3 {All}** Vehicle crash or projectile impact which causes or potentially causes any required safety related system or structure to become inoperable, Table 8.1 **8.3.4 {All}** Report or detection of toxic or flammable gases within a plant area, Table 8.1, in concentrations that will be life threatening to plant personnel or preclude access to equipment (even when using personal protective equipment) needed for safe plant operation	**8.3.1 {All}** Vehicle crash into or projectile which impacts plant safety related structures or systems within Protected Area boundary **8.3.2 {All}** Report or detection of toxic or flammable gases that could enter or have entered within the Protected Area boundary in amounts that could affect the health of plant personnel or safe plant operation **OR** Report by local, county or state officials, for potential evacuation of site personnel based on offsite event

Attachment 1 - Emergency Action Levels

CATEGORY 8.0 HAZARDS

Category	General	Site Area	Alert	Unusual Event
8.4 Natural Events			**8.4.4 {All}** Earthquake felt inplant based upon a consensus of Control Room Operators on duty AND Kinemetrics Strong Motion Accelographs in the Unit 3 VC produce an alarm in the Control Room **AND** Amber and red Peak Shock Annunciators indicate seismic activity **8.4.5 {All}** Sustained winds > **90 mph** onsite **OR** Tornado strikes a plant vital area, Table 8.1 **8.4.6 {All}** Assessment by the Control Room personnel that a natural event has occurred which causes or potentially causes any required safety system or structure to become inoperable, Table 8.1 **8.4.7 {All}** River level ≥ **15'** (Ø MSL) **OR** Low service water bay (intake structure) level resulting in a loss of service water flow	**8.4.1 {All}** Earthquake felt in plant based upon a consensus of Control Room Operators on duty AND EITHER Kinemetrics Strong Motion Accelographs in the Unit 3 VC produce an alarm in the Control Room **OR** At least one amber Peak Shock Annunciator is lit **8.4.2 {All}** Report by plant personnel of tornado within plant Protected Area boundary **8.4.3 {All}** River level ≥ **14.5'** (Ø MSL) **OR** Service water bay (intake structure) level < **-4.5'** (Ø MSL)

Attachment 1 - Emergency Action Levels

CATEGORY 8.0 HAZARDS

Table 8.1 Plant Areas	
Unit 2	Unit 3
• Condensate Storage Tank • RWST • Service Water Pump Structure • Service Water Valve Pit East • Fuel Storage Building • Primary Auxiliary Building/Fan House • Vapor Containment Building • 480 Volt Switchgear Room (Control Bldg.) • Cable Spreading Room/Electrical Tunnel • Central Control Room • Diesel Generator Building/Fuel Tank Area • Auxiliary Feedwater Pump Building • Battery Room (Control Bldg. 33'0" ele.) • Central Alarm Station	• Auxiliary Feedpump Building • P.A.B. • CAS/SAS • Fuel Storage Building • Control Building • Control Room • Service Water Pumps • Refueling Water Tank • EDG Rooms • Diesel Fuel Tanks • Vital Area Access to Containment • Appendix R Diesel Generator • Backup Service Water

Attachment 2 - Emergency Action Levels CATEGORY 9.0				
Category	**General**	**Site Area**	**Alert**	**Unusual Event**
9.1 Other	**9.1.7 {All}** As determined by the Shift Manager or Emergency Director, events are in progress which indicate actual, or imminent core damage and the potential for a large release of radioactive material in excess of EPA PAGs outside the site boundary. **9.1.8 {>200°F}** Any event, as determined by the Shift Manager or Emergency Director, that could lead or has led to a loss of any two fission product barriers and loss or potential loss of the third, Attachment 2.	**9.1.5 {All}** As determined by the Shift Manager or Emergency Director, events are in progress which indicate actual or likely failures of plant systems needed to protect the public. Any releases are not expected to result in exposures which exceed EPA PAGs. **9.1.6 {>200°F}** Any event, as determined by the Shift Manager or Emergency Director, that could lead or has led to **EITHER:** Loss or potential loss of both fuel clad and RCS barrier, Attachment A. **OR** Loss or potential loss of either fuel clad or RCS barrier in conjunction with a loss of containment, Attachment 2.	**9.1.3 {All}** Any event, as determined by the Shift Manager or Emergency Director, that could cause or has caused actual substantial degradation of the level of safety of the plant. **9.1.4 {>200°F}** Any event, as determined by the Shift Manager or Emergency Director, that could lead or has led to a loss or potential loss of either fuel clad or RCS barrier, Attachment 2.	**9.1.1 {All}** Any event, as determined by the Shift Manager or Emergency Director, that could lead to or has led to a potential degradation of the level of safety of the plant. **9.1.2 {>200°F}** Any event, as determined by the Shift Manager or Emergency Director, that could lead to or has led to a loss or potential loss of containment, Attachment 2.

Attachment 2 – Fission Product Barrier Thresholds

FUEL CLADDING BARRIER

Potential Loss	Loss
• ORANGE path in F-0.2, CORE COOLING	• RED path in F-0.2, CORE COOLING
• RED path in F-0.3, HEAT SINK AND Heat sink is required	• Coolant activity > **300 µCi/cc I-131** equivalent
• Core Exit Thermocouple Readings [Unit 2] > **700°F** [Unit 3] > **715 °F**	• Core Exit Thermocouple Readings > **1200 °F**
• RVLIS [Unit 2] ≤ **41%** [Unit 3] ≤ **33%** w/ no RCPs running	• Containment radiation monitor **R-25 or R-26 > 17 R/hr**
• Emergency Director Judgment	• Emergency Director Judgment

RCS BARRIER

Potential Loss	Loss
• RED path on F-0.4, INTEGRITY	• RCS subcooling < SI initiation setpoint due to RCS leakage
• RED path on F-0.3, HEAT SINK AND Feed & Bleed is required	• Unisolable faulted (outside VC) ruptured steam generator
• Primary system leakage exceeding capacity (> **75 gpm**) of a single charging pump	• [Unit 2] R-41 or R-42 offscale due to RCS leakage [Unit 3] R-11 or R-12 > **0.06 µCi/cc** due to RCS leakage
• Emergency Director Judgment	• Emergency Director Judgment

Attachment 2 – Fission Product Barrier Thresholds

CONTAINMENT BARRIER

Potential Loss

- RED path F-0.5, CONTAINMENT
- EITHER:

  Core exit thermocouples **>1200° F**

  OR

  Core exit thermocouples [Unit 2] **>700 °F** [Unit 3] **> 715 °F** with RVLIS [Unit 2] **<41%** [Unit 3] **<33%** *w/ no RCPs*

  AND

  Restoration procedures not effective within 15 min.
- Confirmed phase "B" isolation signal following confirmed LOCA with less than minimum containment cooling safeguards equipment operating

Fan Cooler Units Oper.	Spray Pumps Req'd
<3	2
3	1
5	0

- Containment pressure **47 psig** and increasing
- **≥4 %** hydrogen concentration in containment
- Containment radiation monitor R-25 or R-26 reading **>68 R/hr**
- Emergency Director Judgment

Loss

- Rapid uncontrolled decrease in containment pressure following initial increase due to RCS failure
- EITHER:

  Any Phase "A" or Phase "B" or containment ventilation isolation valve(s) not closed when required following confirmed LOCA

  OR

  Inability to isolate any primary system discharging outside containment

  AND

  Radiological release to the environment exists as a result
- Both doors open on a VC airlock for > 4 hrs.

  OR

  Inability to close containment pressure relief or purge valves which results in a radiological release pathway to the environment for > 4 hrs.

  OR

  Any Phase "A" or Phase "B" or containment ventilation isolation valve(s) not closed when required which results in a radiological release pathway to the environment
- Unisolable release of secondary side to atmosphere from the affected steam generator(s) with primary to secondary leakage > Technical Specifications limit in any steam generator
- Loss of primary coolant inside containment with containment pressure or sump level response not consistent with LOCA conditions
- Emergency Director Judgment