

**CLINTON POWER STATION**  
**NUCLEAR STATION ENGINEERING DEPT.**  
Controlled Document Transmittal

Transmittal No. 01P0218 Transmittal Date 10/31/01 Sheet 1 of

Letter No. \_\_\_\_\_ Document EMERGENCY PLAN IMPLEMENTING PROCEDURE

The attached documents are being transmitted for your use.

27.	CPS/RL	V-455	183.	CPS/JPIC	V-922
56.	SDC/NRC OFFICE	V-130A		C/o A. Oleson	
64.	CPS/TSC	T-31B	493.	CPS/EOF	V-922
64A.	CPS/TSC	T-31B	493A(740).	CPS/EOF	V-922
64B.	CPS/TSC	T-31B	493B(741).	CPS/EOF	V-922
90.	OPS SUPPORT MANAGER	V-130G	493C(742).	CPS/EOF	V-922
110.	SUPV - CHEMISTRY	T-31C	493D(743).	CPS/EOF	V-922
179.	CPS/OPS	T-31B	493F(744).	CPS/EOF	V-922
202.	NTD/SIMULATOR	V-922	493G(745).	CPS/EOF	V-922
202C(673).	SIMULATOR	V-922	493H(746).	CPS/EOF	V-922
255B(698).	DOSIMETRY OFFICE	T-31H			
262A(69A).	MCR/HORSESHOE	T-31B	76.	D. V. PICKETT	OS
262C(69C).	SHIFT SUPERVISOR	T-31B	222/(679)	C. SANGSTER	OS
262D(69D).	REMOTE SHUTDOWN	T-31B	223.	U.S. NRC	OS
273.	TRAINING REQUAL	V-922		DOC. CONTROL DESK	
273A(708).	TRAINING REQUAL	V-922	225/(680).	IDNS (M. SINCLAIR)	OS
467.	MEDICAL	V-374B	234.	STATE EOC	OS
505.	EMERGENCY PLANNING	V-922	235.	D. Shull	OS
542.	CAS	T-31M		(DEWITT CO. ESDA)	
544.	SAS	T-31M	238.	M. Sinclair (IDNS)	OS
3.	CPS/BEOF	V-150	567.	J. FAIROW	OS
3A.	CPS/BEOF	V-150		(RADIOLOGICAL EP MANAGER)	

**SEE PAGE 2 FOR UPDATING INSTRUCTIONS**

Please acknowledge receipt of the attached documents and return this signed transmittal to DOCUMENT CONTROL, V-150. **NOTE: RETAIN A COPY OF THIS TRANSMITTAL FOR UPDATING INSTRUCTIONS, AS NEEDED.**

Any questions regarding this transmittal should be forwarded to L. Hegger, extension 4087.

A045

\_\_\_\_\_  
Signature/Date

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STATUS REPORT

NUMBER	EPIP TITLE	REVISION	DATE	ACN'S	ACN DATE
<u>ADMINISTRATIVE PROCEDURE (AP)</u>					
AP-01	ORGANIZATION & PREPARATION OF CONTROLLED DOCUMENTS	7	05/16/01	n/a	
AP-02	REVISIONS AND ADVANCE CHANGE NOTICES	16	07/03/01	n/a	
AP-03	EMERGENCY RECORDS RETENTION	4	01/12/96	5/1	02/03/99
AP-04	PREPARATION & CONDUCT OF EMERGENCY DRILLS & EXERCISES	5	08/03/99	n/a	
AP-05	EMERGENCY PREPAREDNESS TRAINING PROGRAM	11	08/03/01	n/a	
AP-06	REVIEW OF EMERGENCY PREPAREDNESS PROGRAM	6	08/23/01	n/a	
AP-07	ALERT AND NOTIFICATION SYSTEM	8	06/15/01	n/a	
AP-09	EMERGENCY FACILITY AND EQUIPMENT CHECKS	8	10/16/01	n/a	
AP-10	EMERGENCY RESPONSE ORGANIZATION ASSIGNMENTS	9	10/16/01	n/a	

DOCUMENT CONTROL

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STATUS REPORT

NUMBER	EPIP TITLE	REVISION	DATE	ACN'S	ACN DATE
<u>EMERGENCY CONTROL (EC)</u>					
EC-01	CPS EMERGENCY RESPONSE ORGANIZATION & STAFFING	8	08/23/01	n/a	
	F-01 Interim Station Emergency Director	5	08/02/01	n/a	
	F-02 Station Emergency Director (SED)	5	06/15/01	n/a	
	F-03 SED Administrative Support	2	06/15/01	n/a	
	F-04 TSC Administrative Supervisor	4	09/25/01	n/a	
	F-05 Technical Assessment Supervisor	1	04/21/99	n/a	
	F-06 Emergency Operations Supervisor	1	04/21/99	n/a	
	F-07 TSC Radiological Supervisor	1	09/25/01	n/a	
	F-08 OSC Supervisor	1	08/26/99	n/a	
	F-09 Station Security Coordinator	0	07/28/92	n/a	
	F-10 TSC Communicator	4	08/23/01	n/a	
	F-11 TSC Records Management Coordinator	0	07/28/92	n/a	
	F-12 TSC Electrical Engineer	1	04/21/99	n/a	
	F-13 TSC Reactor Engineer	1	04/21/99	n/a	
	F-14 TSC Chemist-Nuclear	2	04/21/99	n/a	
	F-15 Operations Coordinator	1	04/21/99	n/a	
	F-16 TSC Computer Operator	5	02/28/00	n/a	

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NUMBER	EPIP TITLE	REVISION	DATE	ACN'S	ACN DATE
F-17	Radiological Engineering Specialist	1	11/23/93	n/a	
F-19	RP (TSC) Communicator	0	07/28/92	n/a	
F-20	Status Board Keepers	0	07/28/92	n/a	
F-21	Radiological Controls Supervisor	0	07/28/92	1/1	06/29/00
F-22	In-station Emergency Teams	0	07/28/92	n/a	
F-23	OSC Radiological Controls Coordinator	1	04/11/01	n/a	
F-24	Assistant OSC Radiological Controls Coordinator	0	07/28/92	n/a	
F-25	RP (OSC) Communicator	0	07/28/92	n/a	
F-26	Emergency Team Coordinator	1	10/18/93	n/a	
F-28	Emergency Manager	3	06/15/01	n/a	
F-30	EOF Director	3	03/05/97	n/a	
F-31	Executive Administrative Support	2	06/15/01	n/a	
F-32	Licensing Advisor	0	07/28/92	n/a	
F-33	EOF Emergency Advisor	3	04/11/01	n/a	
F-34	EOF Technical Advisor	0	07/28/92	n/a	
F-36	Technical Information Liaison	1	01/22/97	n/a	
F-37	Emergency Action Level/Protective Action Evaluator	0	07/28/92	n/a	
F-38	Security Supervisor	0	07/28/92	n/a	
F-39	Radiation Protection Supervisor	2	09/25/01	n/a	

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NUMBER	EPIP TITLE	REVISION	DATE	ACN'S	ACN DATE
F-40	EOF Administrative Supervisor	2	07/25/00	n/a	
F-41	EOF Engineering Supervisor	0	07/28/92	1/1	07/28/99
F-42	RP (EOF) Communicator	0	07/28/92	n/a	
F-43	Dose Assessment Supervisor	1	12/01/93	n/a	
F-44	Dose Assessor	0	07/28/92	n/a	
F-45	Field Team Coordinator	2	01/10/00	n/a	
F-46	Field Teams	0	07/28/92	n/a	
F-47	Radiological Controls Coordinator	1	11/23/93	n/a	
F-48	Environmental Lab Coordinator	1	11/23/93	2/1	03/25/99
F-49	EOF Monitor	0	07/28/92	n/a	
F-50	EOF Records Management Coordinator	0	07/28/92	n/a	
F-51	EOF Communicator	3	02/24/00	n/a	
F-53	Copy Clerk	0	07/28/92	n/a	
F-54	TSC Emergency Advisor	0	07/28/92	n/a	
F-55	Procurement Coordinator	1	05/16/01	n/a	
F-56	Word Processor	1	05/16/01	n/a	
F-57	EOF Computer Operator	4	09/02/99	n/a	
F-58	Mechanical/Nuclear Engineer	0	07/28/92	n/a	
F-59	EOF Electrical Engineer	0	07/28/92	n/a	
F-60	Core Damage Assessor	0	07/28/92	n/a	

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NUMBER	EPIP TITLE	REVISION	DATE	ACN'S	ACN DATE
F-61	Technical Advisor to State/Local Organizations	0	07/28/92	n/a	
F-62	EOF Administrative Support	0	07/28/92	n/a	
F-63	Fire Brigade Coordinator	0	07/28/92	n/a	
F-64	RAFT Liaison	0	07/28/92	n/a	
F-65	Warehouseman	1	05/17/01	n/a	
F-66	EOF Access Control Coordinator	3	08/23/01	n/a	
F-67	PASS Team Leader	1	05/24/93	n/a	
F-68	Fitness for Duty (FFD) Coordinator	0	07/28/92	n/a	
F-69	HAZMAT Team Leader	0	07/28/92	n/a	
F-70	Assistant Emergency Team Coordinator	0	07/28/92	n/a	
F-71	OSC Communicator	0	07/28/92	n/a	
F-72	OSC Support	0	10/05/93	n/a	
F-73	Mechanical Engineer	0	07/27/99	n/a	
EC-02	EMERGENCY CLASSIFICATIONS	6	04/24/98	7/1, 7/2, 7/3	01/27/99, 12/13/99, 12/20/99
EC-03	NOTIFICATION OF UNUSUAL EVENT	6	06/15/01	n/a	
EC-04	ALERT	6	06/15/01	n/a	
EC-05	SITE AREA EMERGENCY	6	06/15/01	n/a	
EC-06	GENERAL EMERGENCY	6	06/15/01	n/a	
EC-07	EMERGENCY PLAN NOTIFICATION	13	09/25/01	n/a	

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STATUS REPORT

NUMBER	EPIP TITLE	REVISION	DATE	ACN'S	ACN DATE
	F-01 State and NRC Notifications Checklist	2	10/16/01	n/a	
EC-08	NON-ESSENTIAL PERSONNEL EVACUATION	8	07/23/00	n/a	
EC-09	SECURITY DURING EMERGENCIES	6	08/23/01	n/a	
EC-10	PERSONNEL ACCOUNTABILITY	7	06/15/01	n/a	
EC-11	REENTRY	4	08/03/99	n/a	
EC-12	EMERGENCY TEAMS	8	10/03/00	n/a	
EC-13	REACTOR CORE DAMAGE ESTIMATION	4	09/19/97	5/1, 5/2	12/01/97, 09/28/99
EC-14	RECOVERY	3	10/21/94	4/1, 4/2, 4/3	02/08/96, 02/03/99, 12/13/99
	F-01 Recovery Checklist	0	10/21/94	n/a	

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NUMBER	EPIP TITLE	REVISION	DATE	ACN'S	ACN DATE
<u>FACILITIES AND EQUIPMENT (FE)</u>					
FE-01	TSC OPERATIONS	8	08/23/01	n/a	
FE-02	OSC OPERATIONS	6	06/09/97	7/1, 7/2	07/23/99, 08/02/01
FE-03	EOF OPERATIONS	7	08/23/01	n/a	
FE-04	BEOF OPERATIONS	7	08/23/01	n/a	
FE-05	EMERGENCY EQUIPMENT & SUPPLIES	11	05/26/97	n/a	
F-02	OSC Emergency Equipment	4	05/16/01	n/a	
F-03	EOF Emergency Equipment	5	10/16/01	n/a	
F-04	BEOF Emergency Equipment	1	05/16/01	n/a	
F-05	EOF Environmental Lab Equipment	0	04/28/92	n/a	
F-06	Emergency Vehicle Kit	0	04/28/92	n/a	
F-07	Field Monitoring Kit	3	10/16/01	n/a	
F-08	Hospital Kit	2	05/16/01	n/a	
F-09	Decontamination Kit	2	10/16/94	n/a	
F-10	TSC Administrative Supplies	4	05/16/01	n/a	
F-11	OSC Administrative Supplies	1	05/16/01	n/a	
F-12	OSC Maintenance Tool Box	3	05/16/01	n/a	
F-13	First Aid Kit (Trauma Kit)	2	05/16/01	n/a	
F-14	EOF Administrative Supplies	2	05/16/01	n/a	
F-15	BEOF Administrative Supplies	1	05/16/01	n/a	

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NUMBER	EPIP TITLE	REVISION	DATE	ACN'S	ACN DATE
F-16	JPIC Administrative Supplies	2	04/11/01	n/a	
F-17	EOP Supply Kit	4	09/30/99	n/a	
F-18	EOP MCR Tool Bag	1	05/16/01	n/a	
FE-06	EMERGENCY COMMUNICATIONS EQUIPMENT	5	11/07/00	n/a	

MISCELLANEOUS (MS)

MS-01	TRANSPORTATION ACCIDENTS	4	10/13/97	5/1	02/01/00
MS-03	NOTIFICATION OF NEXT OF KIN	4	01/12/96	5/1, 5/2	02/03/99, 12/13/99
MS-04	PROCESSING NRC & IDNS PERSONNEL DURING AN EMERGENCY	4	06/06/00	n/a	

STATUS REPORT

NUMBER	EPIP TITLE	REVISION	DATE	ACN'S	ACN DATE
<u>PUBLIC RELATIONS (PR)</u>					
PR-01	JOINT PUBLIC INFORMATION CENTER OPERATION AND STAFFING	7	08/23/01	n/a	
F-01	JPIC Administration Coordinator Checklist	2	08/23/01	n/a	
F-02	JPIC Audiovisual Support Checklist	1	02/06/97	n/a	
F-03	JPIC Director Checklist	3	08/23/01	n/a	
F-06	JPIC Graphic Support Checklist	0	07/28/92	n/a	
F-07	JPIC Public Information Officer Checklist	2	04/11/01	n/a	
F-08	JPIC Media Coordinator Checklist	1	08/24/01	n/a	
F-09	JPIC Media Monitoring Team Checklist	0	07/28/92	n/a	
F-12	JPIC Technical Advisor Checklist	0	07/28/92	n/a	
F-13	JPIC Technical Information Coordinator Checklist	0	07/28/92	n/a	
F-14	Writer Checklist	0	07/28/92	n/a	
F-18	JPIC Administrative Support Staff	0	08/23/01	n/a	
PR-03	PREPARATION AND DISSEMINATION OF EMERGENCY INFORMATION	9	05/16/01	n/a	
PR-05	PUBLIC INFORMATION & EDUCATION	7	06/15/01	n/a	

STATUS REPORT

NUMBER	EPIP TITLE	REVISION	DATE	ACN'S	ACN DATE
<u>RADIOLOGICAL ASSESSMENT (RA)</u>					
RA-01	MANUAL RADIOLOGICAL DOSE ASSESSMENT	6	08/20/99	7/1	11/29/99
RA-02	PROTECTIVE ACTION RECOMMENDATIONS	6	09/25/01	n/a	
RA-03	RADIOLOGICAL EXPOSURE GUIDELINES	5	10/13/97	n/a	
RA-04	PERSONNEL MONITORING & DECONTAMINATION	7	08/03/99	n/a	
RA-05	PERSONNEL PROTECTION	6	02/24/00	n/a	
RA-06	STATION RADIOLOGICAL SURVEYS	6	06/03/96	n/a	
RA-07	FIELD RADIOLOGICAL MONITORING	6	08/03/99	n/a	
RA-09	POST ACCIDENT SAMPLING	6	10/12/94	7/1	06/19/97
RA-11	STACK EFFLUENT ANALYSIS & SAMPLING	7	08/27/00	n/a	
RA-14	DOSE RATE DETERMINATION BASED ON ENVIRONMENTAL AIR SAMPLES	6	12/14/99	n/a	
RA-15	PREDICTIVE RELEASE RATES	6	02/18/98	n/a	
RA-16	COMPUTERIZED RADIOLOGICAL DOSE ASSESSMENT	5	08/03/99	n/a	
RA-17	RADIOLOGICAL CONTROL OF THE EOF	9	5/16/01	n/a	
RA-18	EOF ENVIRONMENTAL LAB OPERATIONS	4	08/03/99	n/a	

CLINTON POWER STATION  
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PROCEDURE: RA-02  
REVISION: 6  
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TITLE: PROTECTIVE ACTION RECOMMENDATIONS

SCOPE OF REVISION: This revision incorporates a new Protective Action Chart based on fission product barriers. It also eliminates shelter as a protective action recommendation.

DOCUMENT CONTROL

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CLINTON POWER STATION

Authority

Function

Signature

Date

Prepared by

Ken Evans

9/24/01

Security Manager

Dennis Smith

9/25/01

Concurrence

Joseph Sears

9/25/01

Concurrence

N/A

N/A

Concurrence

N/A

N/A

Independent Reviewer

~~James Smith~~  
Al Vach

9/25/01

Manager-Clinton Power Station

9/25/01

TITLE: PROTECTIVE ACTION RECOMMENDATIONS

1.0 INTRODUCTION

The purpose of this procedure is to establish the guidelines to follow for determining Protective Action Recommendations for the public.

2.0 RESPONSIBILITY

- 2.1 Individual With Command Authority - is responsible for issuing Protective Action Recommendations.
- 2.2 Security Manager - is responsible for review of this procedure.
- 2.3 Radiation Protection - is responsible for review of this procedure for radiological control content.
- 2.4 Manager-Clinton Power Station - is responsible for final approval of this procedure.

3.0 DEFINITIONS

- 3.1 Protective Action Recommendation - Recommendation designed to minimize the dose of radiation to the public thereby protecting the public from radiation exposure.
- 3.2 Protective Action Guide (PAG) - is defined as the projected dose to population groups or emergency workers which warrants taking protective action.
- 3.3 General Emergency - is a severe core damage accident or loss of control of facility.
- 3.4 Subarea - Predefined evacuation areas that follow roads or other geopolitical boundaries.

4.0 INSTRUCTIONS

4.1 Initial Assessment

Protective actions are based on plant conditions and dose assessment.

- 4.1.1 For the unique situation in which a GENERAL EMERGENCY is the initiating event, DeWitt County shall be informed via NARS simultaneously with the State.
- 4.1.2 Protective action recommendations are **mandatory** for a GENERAL EMERGENCY and should be given immediately.
- 4.1.3 If a General Emergency has been declared, conduct an immediate assessment of protective measures using Attachment 1, CLINTON STATION PAR DETERMINATION and Section 4.2.

TITLE: PROTECTIVE ACTION RECOMMENDATIONS

4.2 Protective Action Recommendations Based on System Status

- 4.2.1 To make protective action recommendations turn to Attachment 1, CLINTON STATION PAR DETERMINATION.
- 4.2.2 Start at the top of the chart under the category "General Emergency Declared".
- 4.2.3 Recommendations are made according to the logic chart going straight down the chart until the appropriate protective action recommendation is determined.
- 4.2.4 If a General Emergency has been declared and all three fission product boundaries have not failed, the recommendation for CPS is to evacuate a two mile radius and five miles downwind. For CPS no matter what the wind direction is Subarea 1 will be the only Subarea recommended.
- 4.2.5 If all three fission product boundaries fail then the recommendation is made to evacuate a five mile radius and 10 miles downwind. This would be Subarea 1 and the additional Subareas out to 10 miles determined based on wind direction using Attachment 1.

NOTE

When evaluating meteorological data, consider the source of the data. The most accurate data is generated onsite. The least accurate data is from the National Weather Service in Lincoln, Illinois. More conservative protective action recommendations should be considered if less accurate meteorological data is used. The minimum protective action recommendation includes evacuating Subarea 1. In all cases, if a wind shift occurs such that the Subarea from 5-10 miles changes, then protective action recommendations shall be updated by adding the affected Subarea to the already existing Subareas.

- 4.2.6 Section 4.3 should be evaluated to ensure no additional areas need to be evacuated based on exceeding EPP PAGs.

4.3 Protective Action Recommendations Based on Dose, Dose Rates or Field Monitoring Data

- 4.3.1 As more detailed information, such as release rates and field sampling data, is obtained dose rates should be calculated.

TITLE: PROTECTIVE ACTION RECOMMENDATIONS

- 4.3.2 Once dose rates become available, protective action recommendations are validated and updated, if necessary, in accordance with Attachment 2, EPA PROTECTIVE ACTION GUIDES.

NOTE:

Since at a minimum, Subarea 1 will be evacuated upon declaration of a General Emergency, and if all three fission product boundaries fail Subareas out to 10 miles will be evacuated, it is very likely no areas beyond this will require evacuation based on exceeding EPA PAG's. Dose Projections should be updated and compared against Attachment 2 to determine if further evacuations are necessary.

- 4.3.3 If the length of the release is unknown and cannot be estimated, use 6 hours as a default time for release duration.
- 4.3.4 For protective action recommendations based on measurements corresponding to offsite dose, those areas where the dose will exceed 1 rem (as defined and recommended in Attachment 2) should be evacuated if not already performed.

NOTE

Attention should be given to the "Comments" column. There are significant uncertainties associated with dose projections. These uncertainties result from the inherent inaccuracies involved in characterizing source terms, transport, and dispersion. Dose projections are based on greatly simplified models of very complex dispersion conditions. All parties conducting dose assessments should recognize these substantial uncertainties and the limitation of the models being used. Actual dose rates, if available, should be compared with assumptions to provide maximum insights into actual offsite response.

- 4.3.5 Consideration should be given to evacuating any hot spots. These are areas that field monitoring has identified as having significant deposition that results in a greater exposure rate than would be expected based on normal deposition rates.

NOTE:

The Plume Exposure Pathway Emergency Planning Zone evacuation time estimates are provided on Attachment 3, CPS EVACUATION TIME ESTIMATE RESULTS, and should be used to obtain the evacuation time for the sector(s)/Sub-Areas under consideration. Apply time estimates for evacuation in a conservative manner.

4.4 Notification of Protective Action Recommendations

- 4.4.1 The recommendations for protective actions shall be given to the State via the NUCLEAR ACCIDENT REPORTING SYSTEM (NARS) FORM which is approved by the individual with Command Authority.

TITLE: PROTECTIVE ACTION RECOMMENDATIONS

- 4.4.2 At the start of an accident, initial recommendations shall be transmitted to offsite authorities in the initial message, even if no protective actions are needed.
- 4.4.3 Protective action recommendations and periodic updates shall be monitored by CPS personnel located in State and DeWitt County emergency facilities and reported to the EOF Emergency Advisor. Conflicts between CPS and State recommendations shall be brought to the attention of the Emergency Manager for resolution.
- 4.4.4 For changes in the Protective Action Recommendation due to shifts in wind direction, the NARS Form shall reflect all previous downwind subareas and any newly added downwind subareas.
- 4.4.5 Protective action recommendations may not be delegated and therefore shall be made only by the individual with Command Authority.
- 4.4.6 The recommendations shall also be discussed with the official representative of the State who is present in the EOF.

5.0 REFERENCES

- 5.1 NUREG/CR-2925, "In Plant Considerations for Optimal Offsite Response to Reactor Accidents"; Burke, Heising, Aldrich - November, 1982.
- 5.2 NUREG/CR-1131, "Examination of Offsite Radiological Emergency Protective Measures for Nuclear Reactor Accidents Involving Core Melt"; Aldrich and McGrath - June, 1978.
- 5.3 "Manual of Protective Action Guides and Protective Actions for Nuclear Incidents," EPA 400-R-91-001 - February, 1991, U.S. Environmental Protection Agency.
- 5.4 NUREG/CR-2300 PRA Procedures Guide, Chapter 9, Environmental Transport and Consequence Analysis.
- 5.5 Radioactivity Inventories and Protective Action Guides; James A. Martin paper presented at Health Physics Society Annual Meeting, San Francisco, CA - June, 1976.
- 5.6 CPS Emergency Plan, Section 4.3.2.4.
- 5.7 NUREG-1210 Volumes 2 and 4, Pilot Program: NRC Severe Reactor Accident Incident Response Training Manual.

6.0 ATTACHMENTS

- 1. CLINTON STATION PAR DETERMINATION
- 2. EPA PROTECTIVE ACTION GUIDES
- 3. CPS EVACUATION TIME ESTIMATE RESULTS
- 4. CPS SUBAREAS

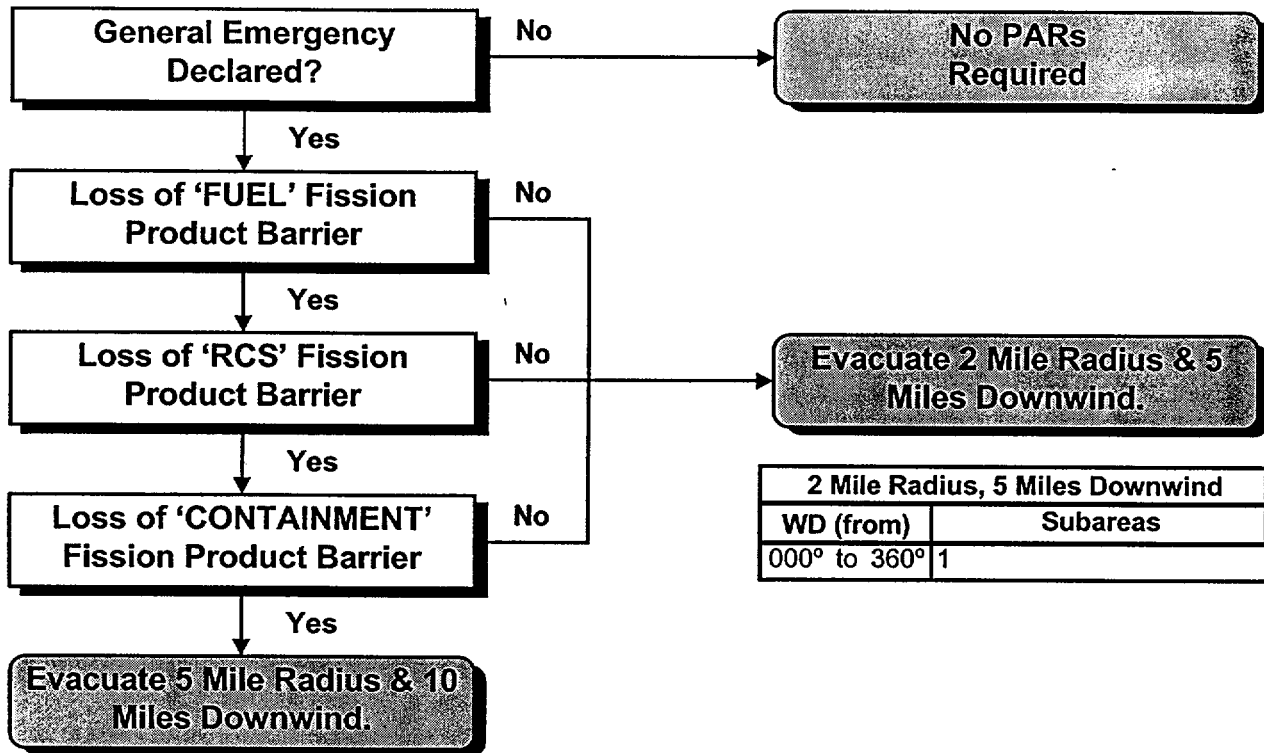
7.0 FORMS

None

CLINTON POWER STATION  
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PROCEDURE: RA-02  
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CLINTON STATION PAR DETERMINATION



2 Mile Radius, 5 Miles Downwind	
WD (from)	Subareas
000° to 360°	1

5 Mile Radius, 10 Miles Downwind	
WD (from)	Subareas
021° to 048°	1, 5, 6
049° to 066°	1, 6
067° to 090°	1, 6, 7
091° to 094°	1, 7
095° to 132°	1, 7, 8
133° to 157°	1, 2, 8
158° to 196°	1, 2
197° to 228°	1, 2, 3
229° to 251°	1, 3
252° to 281°	1, 3, 4
282° to 308°	1, 4
309° to 338°	1, 4, 5
339° to 020°	1, 5

NOTE: Use Attachment 2 and Section 4.3 to verify all areas that exceed EPA PAGs have been evacuated.

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EPA PROTECTIVE ACTION GUIDES

Protective Action	PAG (projected dose)	Comments
Evacuating (or sheltering)	1-5 rem <sup>b</sup>	Evacuation (or, for some situations, sheltering <sup>a</sup> ) should normally be initiated at 1 rem. Further guidance is provided in Sections 4.3 and 4.4.
Administration of stable iodine	25 rem <sup>c</sup>	Requires approval of State medical officials.

- a Sheltering may be the preferred protective action when it will provide protection equal to or greater than evacuation, based on consideration of factors such as source term characteristics, and temporal or other site-specific conditions (see Section 4.4).
- b The sum of the effective dose equivalent resulting from exposure to external sources and the committed effective dose equivalent incurred from all significant inhalation pathways during the early phase. Committed dose equivalents to the thyroid and to the skin may be 5 and 50 times larger, respectively.
- c Committed dose equivalent to the thyroid from radioiodine.

DEFINITIONS:

Effective Dose Equivalent ( $H_T$ ) - The sum of the products of the dose equivalent to the organ or tissue ( $H_T$ ) and the weighting factors ( $w_T$ ) applicable to each of the body organs or tissues which are irradiated ( $H_E = \sum w_T H_T$ ).

Committed Effective Dose Equivalent ( $e_{50}$ ) - The sum of the products of the weighting factors applicable to each of the body organs or tissues which are irradiated and the committed dose equivalent to these organs or tissues ( $H_{E,50} = \sum w_T H_{T,50}$ ).

NOTE: For CPS evacuation is the only Protective Action Recommendation made. CPS does not make shelter recommendations. IF PAGs are exceeded, evacuation will be recommended.

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CPS EVACUATION TIME ESTIMATE RESULTS

Analysis		Evacuation Time In Minutes							
		Fair Weather				Adverse Weather			
		Winter Weekday	Winter Weeknight	Summer Weekday	Summer Weeknight	Winter Weekday	Winter Weeknight	Summer Weekday	Summer Weeknight
1	2-mile ring	170	150	170	150	180	150	180	150
2	2-mile ring + Sectors A,B,C to 5 miles	180	160	180	160	190	160	190	160
3	2-mile ring + Sectors A,B,C to 10 miles	185	160	185	160	200	165	200	165
4	2-mile ring + Sectors B,C,D to 5 miles	180	160	180	160	190	160	190	160
5	2-mile ring + Sectors B,C,D to 10 miles	185	170	185	170	200	175	200	175
6	2-mile ring + Sectors C,D,E to 5 miles	180	160	180	160	190	160	190	160
7	2-mile ring + Sectors C,D,E to 10 miles	185	170	185	170	200	175	200	175
8	2-mile ring + Sectors D,E,F to 5 miles	180	160	180	155	185	160	185	170
9	2-mile ring + Sectors D,E,F to 10 miles	185	170	185	175	200	180	200	185
10	2-mile ring + Sectors E,F,G to 5 miles	180	160	180	160	190	160	190	160
11	2-mile ring + Sectors E,F,G to 10 miles	185	170	185	175	200	180	200	185
12	2-mile ring + Sectors F,G,H to 5 miles	180	160	180	160	190	160	190	170
13	2-mile ring + Sectors F,G,H to 10 miles	185	170	185	170	200	175	200	180
14	2-mile ring + Sectors G,H,I to 5 miles	180	160	180	160	190	160	190	160
15	2-mile ring + Sectors G,H,I to 10 miles	185	170	185	170	200	175	200	180
16	2-mile ring + Sectors H,I,J to 5 miles	170	150	170	150	180	150	180	150
17	2-mile ring + Sectors H,I,J to 10 miles	185	170	185	180	200	175	200	185
18	2-mile ring + Sectors I,J,K to 5 miles	170	150	170	150	180	155	180	160
19	2-mile ring + Sectors I,J,K to 10 miles	185	160	200	185	240	180	250	240
20	2-mile ring + Sectors K,L,M to 5 miles	170	150	170	150	180	155	180	160
21	2-mile ring + Sectors K,L,M to 10 miles	185	160	200	185	240	180	250	240
22	2-mile ring + Sectors L,M,N to 5 miles	170	150	170	150	185	155	200	185
23	2-mile ring + Sectors L,M,N to 10 miles	185	160	200	185	240	180	250	240
24	2-mile ring + Sectors M,N,P to 5 miles	175	150	185	180	225	160	200	235
25	2-mile ring + Sectors M,N,P to 10 miles	185	175	200	185	240	180	250	240
26	2-mile ring + Sectors N,P,Q to 5 miles	170	150	170	150	185	150	200	185
27	2-mile ring + Sectors N,P,Q to 10 miles	185	175	200	185	240	180	250	240
28	2-mile ring + Sectors P,Q,R to 5 miles	170	150	170	150	180	155	180	155
29	2-mile ring + Sectors P,Q,R to 10 miles	185	175	185	180	190	180	185	185

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CPS EVACUATION TIME ESTIMATE RESULTS

Analysis		Evacuation Time In Minutes							
		Fair Weather				Adverse Weather			
		Winter Weekday	Winter Weeknight	Summer Weekday	Summer Weeknight	Winter Weekday	Winter Weeknight	Summer Weekday	Summer Weeknight
30	2-mile ring + Sectors Q,R,A to 5 miles	170	150	170	150	180	155	180	155
31	2-mile ring + Sectors Q,R,A to 10 miles	185	175	185	180	190	180	185	185
32	2-mile ring + Sectors R,A,B to 5 miles	170	150	170	150	180	155	180	155
33	2-mile ring + Sectors R,A,B to 10 miles	185	160	185	155	200	160	200	160
34	5-mile ring	175	160	175	160	190	160	200	185
35	Full EPZ	185	180	200	185	240	185	255	245
36	DeWitt County	185	175	185	185	240	180	250	240
37	Piatt County	185	170	185	175	200	180	200	185
38	Macon County	185	170	185	170	200	175	200	180
39	McLean County	185	160	185	155	200	160	200	160
40	Subarea 1	185	165	185	175	200	175	200	185
41	Subareas 1,2	185	155	185	155	200	165	200	160
42	Subareas 1,3	185	170	185	170	200	175	200	175
43	Subareas 1,4	185	170	190	175	205	175	200	185
44	Subareas 1,5	185	170	185	180	200	175	200	180
45	Subareas 1,6	185	165	200	185	240	180	250	240
46	Subareas 1,7	185	175	200	185	240	180	250	240
47	Subareas 1,8	185	175	180	180	190	180	185	185
48	Subareas 1,2,3	185	170	185	175	200	175	200	185
49	Subareas 1,4,5	185	170	190	180	205	175	200	185
50	Subareas 1,5,6	185	170	200	185	240	180	250	240
51	Subareas 1,2,7,8	185	175	200	185	240	180	250	240
	Apple & Pork Festival				380				530

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CPS SUBAREAS

