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SUBJECT: Emergency action procedure 1, rev 1 & emergency plan implementing procedure 20, rev 9

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NIAGARA MOHAWK POWER CORPORATION/301 PLAINFIELD ROAD, SYRACUSE, N.Y. 13212/TELEPHONE (315) 474-1511

10CFR50, Appendix E, Section V

April 13, 1987
(NMP1L 0145)

U.S. Nuclear Regulatory Commission
Attn: Document Control Desk
Washington, D.C. 20555

Re: Nine Mile Point Unit 1
Docket No. 50-220
DPR-63

Gentlemen:

Enclosed is an uncontrolled copy of each of the following emergency procedures relating to the Niagara Mohawk Power Corporation Nine Mile Point Nuclear Station:

- Emergency Action Procedure 1, Revision 5
- Emergency Plan Implementing Procedure 20, Revision 9

These emergency procedure revisions are submitted as required in Section V to Appendix E of 10CFR Part 50. Two controlled copies have been provided to the Region I office and one controlled copy has been provided to the Resident Inspector under separate cover.

Very truly yours,

NIAGARA MOHAWK POWER CORPORATION

C. V. Mangan
Senior Vice President

CDH/pns
0477b-1
Enclosure

xc: Regional Administrator, Region I
Mr. J. Zwolinski, Project Director
Mr. W. A. Cook, Resident Inspector
Mr. T. Chwalek

A001
1/1

NINE MILE POINT NUCLEAR STATION

EMERGENCY ACTION PROCEDURE

PROCEDURE NO. EAP-1

ACTIVATION AND DIRECTION OF EMERGENCY PLAN

APPROVALS	SIGNATURES	DATE AND INITIALS REVISION 5	REVISION 6	REVISION 7
Supervisor Radiological Support P. Volza	P. Volza	3/16/87 PV		
Station Superintendent NMPNS Unit 1 T. W. Roman				
Station Superintendent NMPNS Unit 2 R. B. Abbott	R.B. Abbott	3/19/87 RBA		
General Superintendent Nuclear Generation T. J. Perkins	T J Perkins	3/19/87 TJP		

FOR INFORMATION ONLY

Summary of Pages

REVISION 5 (Effective 3/19/87)

PAGE	DATE
1	March 1986
i,2-26	January 1987

NIAGARA MOHAWK POWER CORPORATION

THIS PROCEDURE NOT TO BE USED AFTER March 1989 SUBJECT TO PERIODIC REVIEW.

A001
1/1

EAP-1

ACTIVATION AND DIRECTION OF THE EMERGENCY PLAN

EAP-1

ACTIVATION AND DIRECTION OF EMERGENCY PLAN

1.0 PURPOSE

The purpose of this procedure is to provide the person with overall responsibility for emergency events at the NMPNS, namely the Site Emergency Director, with the necessary instructions and guidance to adequately and effectively control the emergency response effort. Since this procedure provides guidance it is not necessary that all steps be performed in precisely the order listed as long as they are performed in a reasonable and prudent time frame.

2.0 REFERENCES

2.1 NUREG-0654, "Criteria for Preparation and Evaluation of Radiological Emergency Response Plans and Preparedness in Support of Nuclear Power Plants".

2.2 EPP-1 "Radiation Emergencies"

2.3 EPP-2 "Fire Fighting"

2.4 EPP-3 "Search and Rescue"

2.5 EPP-4 "Personnel Injury or Illness" 4

2.6 EPP-5 "Station Evacuation"

2.7 EPP-6 "Inplant Emergency Surveys"

2.8 EPP-7 "Downwind Radiological Monitoring"

2.9 EPP-13 "On-Site Emergency Facilities Operations"

2.10 EPP-15 "Health Physics Procedure"

2.11 EPP-19 "Site Evacuation - Procedure" 4

2.12 EPP-20 "Emergency Notifications"

2.13 EPP-22 "Damage Control"

2.14 EPP-25 "Emergency Reclassification and Recovery" 4

2.15 EPP-26 "Protective Action Recommendations"

2.16 EAP-2 "Classification of Emergency Conditions"

2.17 EPMP-3 "Review and Revision of Site Emergency Plan and Procedures"

3.0 RESPONSIBILITIES

In order to ensure the complete and appropriate handling of an emergency condition, the following position listing provides associated assignment responsibilities:

3.1 Site Emergency Director

3.1.1 Evaluates plant conditions and declares emergency condition(s). 5

3.1.2 Implements the NMPNS Site Emergency Plan.

3.1.3 Responsibilities that the site Emergency Director may not delegate are:

a. Classification of the emergency event as an Unusual Event, Alert, Site Area Emergency or General Emergency.
b. Determining the necessity for a site evacuation.
c. Authorizing emergency workers to exceed normal radiation exposure limits.

3.1.4 Directs emergency response organization and assumes overall authority for control of the emergency situation until relieved by the Corporate Emergency Director/Recovery Manager.

3.1.5 Maintains responsibility for actual operation and control of the station, including tracking of initiating conditions. However, the following responsibilities are transferred to the Corporate Emergency Director/Recover Manager when this position is manned in the activated EOF:

a. Making the decision to notify off-site emergency management agencies.
b. Making protective action recommendations (PAR's) as necessary to off-site emergency management agencies.

3.2 Station Shift Supervisor - Affected Unit

3.2.1 Assumes the role of Site Emergency Director, until properly relieved.

3.2.2 Initiates the classification of emergency conditions based on available information.

3.2.3 Initiates and maintains communications with off-site authorities until TSC or EOF is staffed.

3.3 Unit 1 SSS

3.3.1 If an emergency condition exists which will effect both Units 1 and 2, the Unit 1 SSS shall be made aware of this condition and shall assume the role of Site Emergency Director, until properly relieved. These initiating emergency conditions may include natural phenomenon such as earthquakes, floods, tornados and hurricanes. It may also include aircraft activity, explosions, radioactive off-site spills and/or transportation accidents involving radioactive materials, etc. 5

3.3.2 When the Unit 1 or Unit 2 SSS is notified that the JAFNPP has declared an alert or higher emergency classification, they shall declare a sympathetic alert at their respective units. In this situation, the Unit 1 SSS shall become the Site Emergency Director for NMPNS, and Unit 1 shall be the lead in making all required offsite notifications; except that both Units 1 and 2 shall make initial notifications of the sympathetic alert to the NRC. 5

4.0 PROCEDURE

4.1 SSS - Affected Unit (See EAP-1, Figure 1, "SSS Checklist")

4.1.1 The Affected Unit Station Shift Supervisor, when informed of an emergency situation, is responsible for performing the assessment of the emergency (e.g., plant systems, reactor core and drywell status, and radiological conditions) of his/her respective unit. 5

4.1.2 The SSS shall evaluate what SOPs/EOPs need to be initiated to ensure the safe operation of the plant.

4.1.3 The SSS should use the Affected Unit Assistant SSS to aide and advise him on matters pertaining to the safe and proper operation of the plant with regards to nuclear safety. Performing the duties of a Shift Technical Advisor, the Assistant SSS should maintain independence from normal plant operations to make objective evaluations of plant operations and to advise or assist plant supervision in correcting conditions that may compromise the safety of operations. 5

4.1.4 The SSS shall assume the role of Site Emergency Director until relieved by the General Superintendent-Nuclear Generation, Acting General Superintendent-Nuclear Generation, or designee. 5

NOTE: When the Unit 1 or Unit 2 SSS is notified of an Unusual Event emergency condition at JAFNPP which does not necessitate the activation of the NMPNS Emergency Plan, he shall record all transmitted data and notify appropriate station management as necessary. 5

If the Affected Unit declares an Alert or higher emergency classification, the Unaffected Unit(s) will declare a Sympathetic ALERT. The Unaffected Unit(s) will make all notifications required by the Alert emergency classification, including the NRC. However, after the NRC is notified of the initial event, no continuing notifications (updates, follow-up) to the NRC is required. (See EAP-1, Section 3.3.2 for actions if the JAFNPP declares an alert or higher emergency classification). 5

4.2 Site Emergency Director - (See EAP-1, Figure 2 "Site Emergency Director's Checklist - TSC")

NOTE: During off-hours when the station is inaccessible, the arriving Site Emergency Director will proceed to the EOF or Alternate EOF (AEOF) and perform the steps shown in EAP-1, Figure 5, "Site Emergency Director's Checklist - EOF or AEOF".

4.2.1 Implement the appropriate portions of the Site Emergency Plan Implementing Procedures for the conditions at hand using EAP-1 Figure 4 "Activation and Direction of Emergency Plan - Emergency Plan Implementation".

4.2.2 Classify and declare the emergency as an Unusual Event, Alert, Site Area Emergency or General Emergency using EAP-2 Attachments 1 and/or 2 Action Level Criteria for the Classification of Emergency Conditions. Make appropriate notifications to off-site organizations within approximately 15 minutes of the classification. 5 5

4.2.3 Have CSO sound station alarm (for an Unusual Event and Alert) or the station evacuation alarm (for a Site Area Emergency and General Emergency) in the merge mode, and announce in the merge mode, the emergency condition using announcements provided in EAP-1, Figure 3, "Emergency Announcements". 5

NOTE: Disregard alarm and announcements if already accomplished per Section 4.2.1.

4.2.4 If the station evacuation alarm is sounded or a precautionary staffing of the TSC, OSC and Control Room is underway, ensure proper staffing of emergency facilities and obtain qualified alternates per the approved personnel lists of EPMP-3 if necessary.

4.2.5 Determine whether protective actions for the general public should be recommended to State and local officials using EPP-26 within 15 minutes of classifying the event and periodically thereafter. Determination should be based on information available at that time. 5

4.2.6 The Site Emergency Director or his designee will complete the Fact Sheet Part 1 (EPP-20, Figure 4a, Part 1 Notification Sheet) and will initiate Fact Sheet Parts 2 and/or 3 (EPP-20, Figures 4b, 4c and/or 4d), filling in on these sheets as much information as is available and appropriate. 5

NOTE: Part 2 and/or 3 of the Fact Sheet should be updated as information entered on the sheet changes and/or becomes available from the Affected Unit.

4.2.7 Notify Communications Coordinator to commence emergency contacts per EPP-20. If the designated Communications Coordinator is not immediately available, the Site Emergency Director will assign another individual to that position or will assume the duties himself until relieved by the designated individual.

NOTE: The Site Emergency Director is the only individual authorized to declare an emergency. The Site Emergency Director or the Corporate Emergency Director/Recovery Manager recommends protective actions to off-site authorities. The Communications Coordinator may relay these items of information from the Site Emergency Director or Corporate Emergency Director/Recovery Manager to off-site authorities.

4.2.8 Provide appropriate alarms and announcements to station personnel as necessary using EAP-1, Figure 3, "Emergency Announcements" in the merge mode.

NOTE: In addition to the normal escalation/de-escalation alarms and announcements, provide status updates to station emergency personnel at an interval deemed appropriate.

4.2.9 Dispatch survey/sample teams through the Survey/Sample Team Coordinators if available, or assume duties until relieved.

4.2.10 Evaluate plant status, survey results and effectiveness of emergency actions. As appropriate, redirect emergency actions and escalate, de-escalate or close out emergency class per EPP-25, "Emergency Reclassification and Recovery".

4.2.11 Determine whether a Site Evacuation is appropriate and direct site evacuation activities per EPP-19.

4.2.12 Transfer overall emergency management authority to the Corporate Emergency Director/Recovery Manager (if available).

NOTE: The Site Emergency Director shall maintain overall responsibility for the operation and control of the station and of the actions performed by members of the on-site emergency organization (Staffing Level 2 of the Emergency Response Organization). He shall coordinate his activities with the Corporate Emergency Director/Recovery Manager.

4.2.13 In consultation with the Corporate Emergency Director/Recovery Manager (if available), periodically evaluate and assess the status of the emergency and effectiveness of emergency actions. As appropriate redirect emergency actions and/or escalate, de-escalate or close out the emergency class (refer to EPP-25, "Emergency Reclassification and Recovery").

4.2.14 If the emergency situation will be protracted or if extensive recovery operations will be required, consult with the Corporate Emergency Director/Recovery Manager to determine organizational requirements. Consult with staff to assure a sufficient number of qualified personnel are available to staff key positions on a rotating basis. If more personnel are needed, arrange for such personnel through the Corporate Emergency Director/Recovery Manager from corporate headquarters, JAFNPP, INPO, contractors, etc. (Refer to EPMP-3 for lists of qualified personnel.)

NINE MILE POINT NUCLEAR STATION
EAP-1, FIGURE 1
ACTIVATION OF EMERGENCY PLAN
SSS CHECKLIST

Date_____ SSS/SED_____ 5
Unit 1 / Unit 2
(circle one)

Initial/Time

NOTE: This checklist assumes an off-hours emergency situation, in which all steps shall be performed (or at least reviewed for applicability). During normal hours, the first eight (8) steps shall be performed; the remaining steps shall be performed (or at least reviewed for applicability) only if not immediately relieved as Site Emergency Director; the remaining steps should at least be reviewed with the Site Emergency Director after relieved.

1. _____/____ Evaluate the alarm(s) received with respect to other Control Room indicators.

2. _____/____ Direct initiation of any Special Operating Procedures or Emergency Operating Procedures required.

3. _____/____ Implement appropriate portions of the Site Emergency Implementing Procedures for the conditions at hand using EAP-1, Figure 4, "Activation and Direction of Emergency Plan"..

4. _____/____ Have CSO "merge" the Unit #1 and Unit #2 gaitronics system and announce condition to Station Personnel in accordance with emergency implementing procedures or EAP-1, Figure 3, "Emergency Announcements" as appropriate.

5. _____/____ Dispatch as appropriate teams for investigation, corrective actions, or observations, per emergency procedures (e.g., EPP-6, Inplant Surveys; EPP-7, Downwind Surveys; EPP-22, Damage Control).

6. _____/____ Perform initial evaluation of conditions:

( ) If investigation/surveys/observations indicate conditions to be normal, have CSO make appropriate announcements per EAP-1, Figure 3, "Emergency Announcements" and stop here.

( ) If extent of emergency is not yet known, proceed with Step 7.

( ) If emergency is immediately identifiable, perform Steps 7, 8 and 9 and proceed with Step 13. 5

7. _____/____ Assign an operator to act as your Communications Aide, if available.

EAP-1, FIGURE 1 (Cont.)
ACTIVATION OF EMERGENCY PLAN
SSS CHECKLIST

Initial/Time

8. ____/____ Check adequate volume of plant radios.

9. ____/____ Assign personnel to perform surveys (inside and outside the station), and/or other investigations as necessary to provide for evaluation of conditions. Use appropriate protective clothing and respiratory equipment. (See EPP-6, 7, 15 and 22.)

10. ____/____ Evaluate (or re-evaluate) conditions:

( ) Normal Conditions:

- If the results of surveys, investigations, corrective actions, etc. indicate the activities to be local and easily corrected.

AND

- If instrumentation indicates an accidental release rate of less than Hi-Hi Alarm setpoints (Unit 1) or High Level Trip (Unit 2).

THEN

- Isolate local area (as necessary) and return station to normal operation. Notify Security and all contacts of termination of emergency situation. Announce termination using the Gaitronics in merge mode to Station personnel using EAP-1, Figure 3, "Emergency Announcements.

OR

( ) Abnormal Conditions:

- If the results of the surveys, investigations, corrective actions, etc. and Control Room instrumentation indicate a condition which is not readily corrected by operator action.

OR

- If the dose rate at the downwind unrestricted area (fence line) is greater than 2 mr/hr.

OR

- If there are indications of an accidental release rate greater than Hi-Hi Alarm setpoints (Unit 1) or High Level Trip (Unit 2), then proceed with Step 13.

EAP-1, FIGURE 1 (Cont.)
ACTIVATION OF EMERGENCY PLAN
SSS CHECKLIST

Initial/Time

11. ____/____ Evaluate Emergency Classification:

( ) Determine emergency classification using appropriate EAP-2, Figure, Action Level Criteria for Classification of Emergency Conditions. (EAP-2, Figure 1 for Unit 1, or EAP-2, Figure 2 for Unit 2). | 5 | 5

( ) Have CSO sound the station alarm (for an Unusual Event or Alert) or the station evacuation alarm (for a Site Area Emergency or General Emergency) and announce the condition over the GAItronics in the merge mode per EAP-1, Figure 3, "Emergency Announcements". (Disregard this step if already accomplished per Step 4 or update if necessary.) | 5

12. ____/____ If a Station Evacuation is necessary:

( ) Instruct CSO to commence a station evacuation.

( ) Account for plant personnel and visitors using EPP-5, "Station Evacuation". Initiate EPP-3, "Search and Rescue", if required.

( ) If notified that the computer accountability system is inoperative, instruct the CSO to make the appropriate GAItronics announcement identified in EAP-1, Figure 3, "Emergency Announcements", #3. "Computer Accountability System Inoperative". | 5

( ) If notified by Security that the accountability report printout has been initiated, instruct the CSO to make the appropriate GAItronics announcement identified in EAP-1, Figure 3, "Emergency Announcements", #4. "Accountability Report Printout Initiated". | 5

13. ____/____ Have an Operator initiate Control Room and Laboratory Counting Room Emergency Ventilation System, if appropriate/necessary.

14. ____/____ Proceed with actions specified on EAP-1, Figure 2, "Site Emergency Director's Checklist-TSC" commencing with Step 8 until relieved as Site Emergency Director.

15. ____/____ When relieved as Site Emergency Director, continue assessment and corrective actions as directed by and/or in consultation with the Site Emergency Director. Ensure the Control Room Communications Aide maintains an open line of communication with the TSC to assist in performing these functions.

EAP-1, FIGURE 2

SITE EMERGENCY DIRECTOR CHECKLIST - TSC

NOTE: The following is a listing of tasks that may need to be completed by the Site Emergency Director depending on the nature and severity of the emergency situation. The Site Emergency Director shall keep a running log of his activities in order to keep track of requests for assistance, actions taken, assignments given, completion of tasks, etc. This log should be kept utilizing the "Emergency Response/Recovery Action Log (EPP-13, Figure 11) however, a note pad may be used. An accurate recording of actions must be maintained as it may be vitally important to later review of emergency response/recovery activities. | 5

Date_____ SED_____ | 5
Affected Unit(s): Unit 1/Unit 2
(circle as appropriate)

Initial/Time		
1.	____/____	Contact SSS/SED for status report and turnover. | 5
2.	____/____	Implement appropriate portions of the Emergency Implementing Procedures for the conditions at hand using EAP-1, Figure 4, "Activation and Direction of Emergency Plan".
3.	____/____	Evaluate conditions, then classify and declare the emergency as an Unusual Event, Alert, Site Area Emergency or General Emergency using EAP-2, Figure 1 and/or 2, "Action Level Criteria for Classification of Emergency Conditions" (for Unit 1 or Unit 2 respectively). If appropriate classify event as a Sympathetic Alert. | 5
4.	____/____	Have CSO "merge" the Unit 1 and Unit 2 GAItronics systems. Sound the station alarm (for an Unusual Event and Alert) or the station evacuation alarm (for a Site Area Emergency or General Emergency). (Disregard if alarms accomplished in step #2 above). | 5
5.	____/____	Have CSO announce the emergency condition and classification over the GAItronics per EAP-1 Figure 3, "Emergency Announcements. (Disregard this announcement if already accomplished in step #2 above). | 5
6.	____/____	If Station Evacuation alarm has sounded or precautionary staffing of TSC, OSC and Control Room(s) is underway, ensure proper staffing: | 5

a. Technical Support Center staffed to appropriate level for emergency (per EPP-13, Figure 2 or 3 organization chart): | 5

( ) Unusual Event - Site Staff only

( ) Alert, Site Area Emergency, General Emergency or Sympathetic Alert - Site and Corporate Staff | 5

SITE EMERGENCY DIRECTOR CHECKLIST - TSC

Initial/Time

6. (Cont.) b. Operations Support Center Staffed by:

( ) OSC Coordinator
( ) OSC Communicator
( ) Personnel Accountability Coordinator
( ) Chemistry and Radiation Protection Team Coordinator.
( ) Damage Control Team Coordinator
( ) NMP Fire Department Coordinator
( ) OSC I&C Coordinator
( ) Stores Coordinator

c. If all positions are not filled, obtain alternates through OSC Coordinator (using EPMP-3, Attachment 2 approved personnel lists).

7. _____/_____ If a radiation problem exists:

a. ____ Initiate survey of Technical Support Center, i.e., CAM/VAMP (if not already accomplished) - evaluate conditions:

( ) TSC Radiation levels >100 mr/hr or airborne activity >10xMPC (9E-8 µCi/cc). Evacuate TSC or initiate emergency ventilation

OR

( ) TSC Survey OK - continue below

5

b. ___ OSC survey initiated (if not already done) - evaluate conditions.

( ) OSC Radiation levels >100mr/hr or airborne activity >10xMPC (9E-8 µCi/cc). Evacuate OSC.

OR

( ) OSC OK

5

c. ___ Contact Security to verify that the North and South gates between Unit 1 and 2 are open.

d. ___ Step-off pad and monitor established at Unit 1 Administration Building employee entrance for employee monitoring.

8. _____/_____ Determine whether protective actions for the general public should be recommended to state and local officials using EPP-26. Determination should be based on the information available at that time.

SITE EMERGENCY DIRECTOR CHECKLIST - TSC

Initial/Time

9. ____/____ Complete the Fact Sheet Part 1 (EPP-20, Figure 4a, Part 1 Notification Sheet) and initiate Fact Sheet Parts 2 and/or 3 (EPP-20, Figure 4b, 4c and/or 4d). Provide these sheets to the Communications Coordinator (or Aide) or his designee. | 5

10. ____/____ Ensure Communications Coordinator has all communication lines manned.

11. ____/____ Control Rooms contacted. Determine status of safeguards and notifications which have been completed by the Control Room(s). | 5

12. ____/____ Notify Communications Coordinator of:

___ a. Protective actions to be taken by Training Center, EIC personnel and visitors (evacuate, go indoors, only visitors evacuate, etc.).

___ b. Assistance required from JAFNPP, if any.

13. ____/____ Notify Communications Coordinator to commence emergency contacts required per EPP-20, Figure 5a-5p "Emergency Contact List".

14. ____/____ Off-Hours: Have Communications Aide notify Security (x2405) of emergency condition and to make necessary contacts required per Security Off-Hours Emergency Contact List (EPP-20 Figure 3). Ensure the following information is relayed to Security. (For an Unusual Event, only items a through h are required). | 5

a. This (is/is not) _____a drill. | 5
b. Affected Unit:_____
c. Emergency Classification:_____
d. Type of Incident:_____
e. Status of Safeguards:_____
_____
f. Protective Actions for EIC:_____
_____
g. Protective Actions for Training Center:_____
_____
h. Radioactive Release (has/has not) _____occurred. | 5
i. Wind Speed:_____
j. Wind Direction (from):_____
k. Assembly Point(s) (TSC/EOF/AEOF):_____ | 5

15. ____/____ Provide appropriate alarms and status announcements to station personnel as necessary using EAP-1, Figure 3, "Emergency Announcements" or others as appropriate.

SITE EMERGENCY DIRECTOR CHECKLIST - TSC

	Initial/Time		
16.	____/____	If station evacuation in progress, ensure personnel, visitors and contractors are accounted for via EPP-5 "Station Evacuation".	
17.	____/____	Technical Data Coordinator has assigned personnel for data plotters and assistants. Obtain two Site Emergency Director assistants from OSC using EPMP-3, Attachment 2, List of Qualified Personnel.	5 5
18.	____/____	Radiological Assessment Manager, Environmental Survey/Sample Team Coordinator and Station Survey/Sample Team Coordinator positions staffed and in contact with Survey Teams.	
19.	____/____	Dispatch survey/sample teams directly or through the Radiological Assessment Manager and/or the appropriate Survey/Sample Team Coordinators (as required).	5
20.	____/____	Communications Coordinator reports calls (EPP-20, Figure 5a-5p) made to the following (as appropriate):	5

____ System Power Control (Shift Supervisor Power Operations)
____ Oswego County EOC (County Warning Point)
____ NYS Emergency Operations Center (Warning Pt)
____ JAFNPP Control Room
____ NRC Emergency Operations Center
____ Fulton District Operator
____ NRC Resident Inspector
____ EIC
____ Training Center
____ Oswego County Sheriff
____ Coast Guard (Buffalo)
____ GE
____ DOE (FRMAP)
____ INPO
____ ANI

5

21.	____/____	Contact Affected Unit(s) SSS: Determine corrective actions to secure equipment in plant.	

EAP-1, FIGURE 2 (Cont.)

SITE EMERGENCY DIRECTOR CHECKLIST - TSC

Initial/Time

22. ____/____ Contact Survey/Sample Team Coordinators through Radiological Assessment Manager for Survey Team results - inplant and environmental (downwind). 5

____/____ a. Inplant survey data received
____/____ b. Environmental (downwind) survey data received
____/____ c. Radiological Assessment Manager informed of environmental survey data 5

____/____ d. Determination of downwind 1 hour and total projected child thyroid dose commitments at the site boundary and at 2, 5 and 10 miles requested from the Radiological Assessment Manager. 5

23. ____/____ Evaluate plant status and effectiveness of emergency actions. As appropriate, redirect emergency actions and/or escalate/de-escalate, or close out emergency class (refer to EPP-25, "Emergency Reclassification and Recovery").

24. ____/____ If problem is radiological, evaluate conditions:

( ) Normal Conditions: 5
If surveys results indicate the conditions to be local and easily corrected and if instrumentation indicates an accidental release rate of less than Hi-Hi Alarm setpoints (Unit 1) or High Level Trip (Unit 2) then isolate local area and return station to normal operation. Terminate the emergency per EPP-25 and announce per EAP-1 Figure 3, "Emergency Announcements", No. 8. 5

OR 5

( ) Abnormal Conditions:
If survey results indicate a condition which is not readily corrected by operator action or if the dose rate at the downwind protected area fence is greater than 2 mR/hr or if an accidental release rate greater than Hi-Hi Alarm setpoints (Unit 1) or High Level Trip (Unit 2) is indicated, proceed with the remaining checklist items 5

25. ____/____ Initiate Control Room(s), Technical Support Center and Laboratory Counting Room Emergency Ventilation (if appropriate and not already accomplished). 5

SITE EMERGENCY DIRECTOR CHECKLIST - TSC

Initial/Time

26. ____/____ Contact Control Room(s) - update situation, as appropriate. | 5

27. ____/____ Contact Radiological Assessment Manager; obtain updated information on on-site and off-site whole body and thyroid doses/dose rates.

NOTE: Ensure that appropriate off-site authorities (Oswego County Emergency Operations Center, NYS Emergency Operations Center and NRC) are kept fully informed of the emergency status and actions in progress. Furthermore, ensure that followup messages are transmitted in a timely manner (approximately at 30 minute intervals) and contain the information required per Fact Sheet Parts 1, 2 and/or 3 (EPP-20, Figures 4a-4d).

28. ____/____ Instruct Radiological Assessment Manager or the appropriate Survey/Sample Team Coordinator to direct environmental (downwind) and inplant survey teams to additional areas. | 5

29. ____/____ Evaluate EIC and Training Center survey data and direct Communications Coordinator to inform EIC Director and Training Superintendent of required action.

30. ____/____ Determine whether a Site Evacuation as per EPP-19, "Site Evacuation", is appropriate. If ordered:

a. Instruct Technical Data Coordinator to determine number and type of personnel that should be retained on-site.

b. Instruct Personnel Accountability Coordinator to proceed to the Security Building and prepare to account for personnel during the Site Evacuation.

c. Evaluate evacuation routes and assembly areas with the Radiological Assessment Manager per EPP-19. | 5

d. Instruct Environmental Survey/Sample Team Coordinator to coordinate the survey of personnel and cars leaving including those leaving the Energy Information Center, Training Center and Unaffected Unit(s). | 5

SITE EMERGENCY DIRECTOR CHECKLIST - TSC

Initial/Time

30. (Cont'd)

e. Direct Maintenance Coordinator to dispatch personnel to provide hose washdown for any contaminated cars at the EIC, Training Center and Unaffected Unit(s) (as necessary). | 5

f. Instruct CSO to make a site evacuation announcement in the merge mode per, EAP-1, Figure 3, "Emergency Announcements". | 5

g. Instruct Communications Coordinator to relay an evacuation order to Security, the EIC, the Training Center and Unaffected Unit(s). |

h. Instruct Communications Coordinator to contact appropriate remote assembly area(s) and notify them of the impending arrival of site personnel.

31. _____/____ Provide appropriate alarms and announcements to station personnel as necessary using EAP-1, Figure 3 "Emergency Announcements", or others as appropriate.

32. _____/____ NYS Emergency Operations Center, Oswego County Emergency Operations Center, NRC contact maintained; inform of changes in station or weather conditions using Fact Sheet Parts 1, 2 and/or 3 (EPP-20, Figures 4a-4d); transfer responsibility to EOF when manned by their representatives and as directed. | 5

33. _____/____ Continue corrective actions as required to minimize severity of incident. Dispatch Damage Control Teams directly or through the Maintenance Coordinator or I&C Coordinator.

34. _____/____ Update the Corporate Emergency Director/Recovery Manager (when/if designee arrives in EOF).

35. _____/____ Formally transfer overall emergency management authority to the Corporate Emergency Director/Recovery Manager (when and if ready) and make appropriate announcements at the station and in the TSC.

SITE EMERGENCY DIRECTOR CHECKLIST - TSC

Initial/Time

NOTE: The Site Emergency Director shall maintain overall responsibility for the operation and control of the station and of the actions performed by members of the onsite emergency organization (Staffing Level 2 of the Emergency Response Organization). He shall coordinate his activities with the Corporate Emergency Director/Recovery Manager.

36. _____/____ In consultation with the Corporate Emergency Director/Recovery Manager (if available), periodically evaluate and assess the status of the emergency and effectiveness of emergency actions. As appropriate, redirect emergency actions and/or escalate, de-escalate or close out emergency class (refer to EPP-25, "Emergency Reclassification and Recovery").

37. _____/____ In consultation with the Corporate Emergency Director/Recovery Manager (if available) and staff, review organizational requirements and assure sufficient qualified personnel are available for 24-hour coverage. Arrange schedules and obtain extra personnel as necessary (refer to approved personnel lists in EPMP-3).

EAP-1, FIGURE 3

EMERGENCY ANNOUNCEMENTS

(REPEAT ALL ALARMS AND ANNOUNCEMENTS TWICE)

1. Initial Announcements

NOTE: Ensure Unit 1 and Unit 2 GAItronics systems are "merged" for all emergency announcements. 5

a) UNUSUAL EVENT - Station Alarm

"Attention. Attention. This is/is not a drill. The Nine Mile Point Nuclear Station Unit ___ (1 or 2) is experiencing an Unusual Event (provide further specific information if appropriate). All personnel should continue with normal duties and stand by for further announcements. I repeat, this is/is not a drill."

b) ALERT - Station Alarm 5

"Attention. Attention. This is/is not a drill. The Nine Mile Point Nuclear Station Unit ____ (1 or 2) is experiencing an Alert emergency condition (provide further specific information if appropriate). Supervisory personnel having emergency functions in the Control Room, Technical Support Center, Operations Support Center, and Emergency Operations Facility are instructed to proceed to these locations. All other personnel should continue with normal duties and stand by for further announcements. I repeat, this is/is not a drill." 5

c) SITE AREA EMERGENCY and GENERAL EMERGENCY - Station Evacuation Alarm 5

1. If Station Evacuation is in effect:

Station Alarm

"Attention. Attention. This is/is not a drill. The Nine Mile Point Nuclear Station Unit ____ (1 or 2) is experiencing a Site Area (or General) Emergency (provide further specific information if appropriate).

2. If Station Evacuation is not in effect:

Station Evacuation Alarm

"Attention. Attention. This is/is not a drill. The Nine Mile Point Nuclear Station Unit ____ (1 or 2) is experiencing a Site Area (or General) Emergency (provide further specific information if appropriate).

EAP-1, FIGURE 3 (Cont'd)

EMERGENCY ANNOUNCEMENTS

(REPEAT ALL ALARMS AND ANNOUNCEMENTS TWICE)

2. Station Evacuation Announcement - Station Evacuation Alarm

"Attention. Attention, all personnel. This is/is not a drill.

A _____(state condition necessitating the evacuation, i.e., high airborne levels, high radiation levels or emergency classification)_____(has been detected/exists) at _____(location or Nine Mile Point Nuclear Station). All personnel evacuate to their designated assembly areas. All persons entering the Unit #1 Administration Building from the outside are instructed to monitor at the employee entrance. I repeat, this is/is not a drill."

3. Computer Accountability System Inoperative - Station Alarm | 5

"Attention. Attention, all personnel. This is/is not a drill. The computer accountability system is inoperative. Please initiate manual accountability procedures."

4. Accountability Report Printout Initiated - Station Alarm | 5

"Attention. Attention, all personnel. This is/is not a drill. All personnel who have not yet carded in at an assembly area should card-in now and notify the Personnel Accountability Coordinator at extension 2662.

5. Site Evacuation Announcement - Station Alarm

"Attention. Attention, all personnel. This is/is not a drill. This is a site evacuation notice. All personnel not having specific emergency duties shall leave the site through the Security Building and proceed to the _____ (specify remote assembly area and/or home). I repeat this is/is not a drill." | 5

EAP-1, FIGURE 3 (Cont'd)

EMERGENCY ANNOUNCEMENTS

(REPEAT ALL ALARMS AND ANNOUNCEMENTS TWICE)

6. Status Announcement - Station Alarm

NOTE: Ensure Unit 1 and Unit 2 GAItronics systems are "merged" for all emergency announcements. 5

"Attention. Attention, all personnel. This is/is not a drill. The following is an emergency status announcement. _____ (Provide brief description of current plant status and emergency actions underway.) I repeat, this is/is not a drill."

7. De-escalation Announcements - Station Alarm

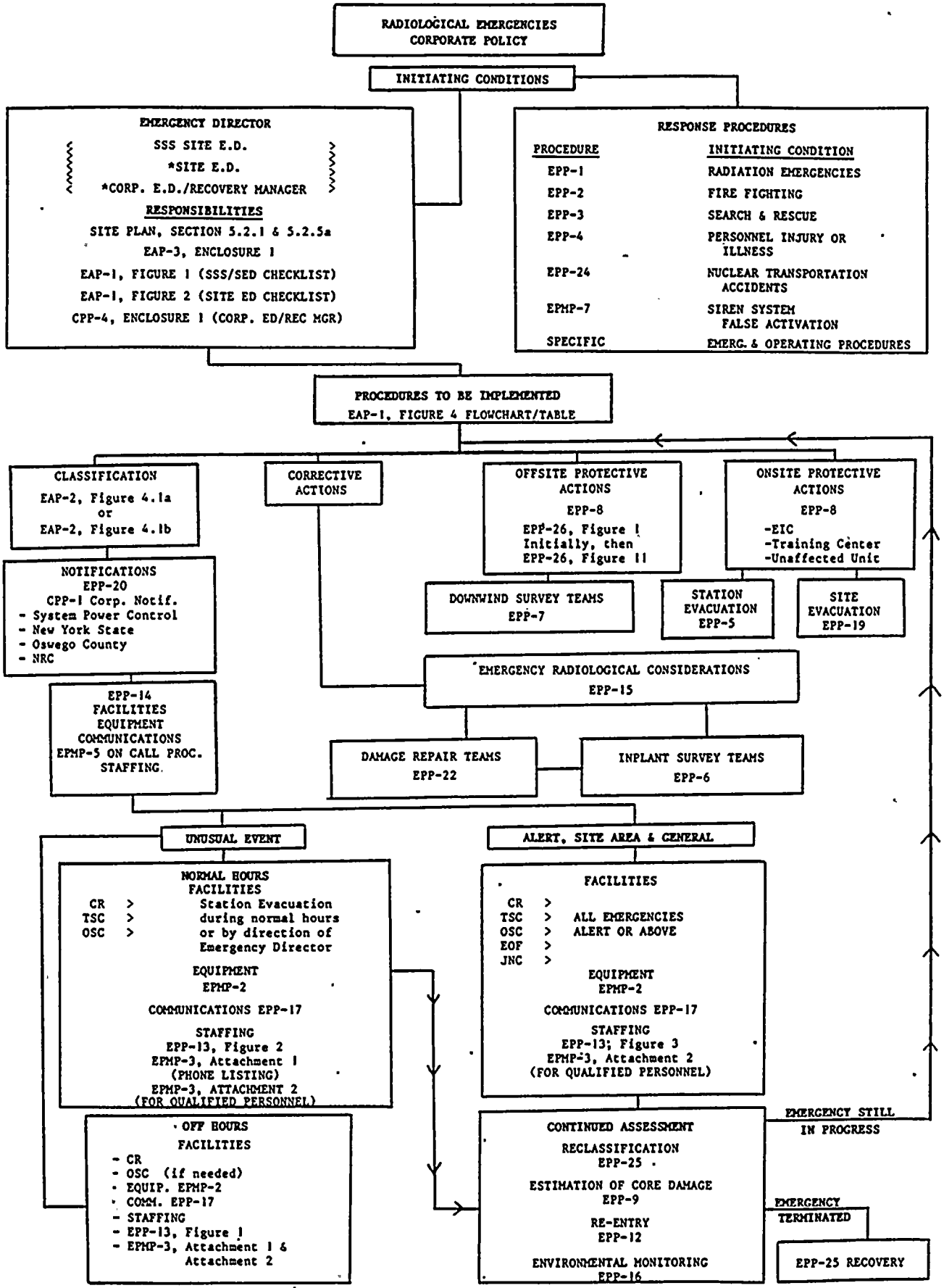
"Attention. Attention. This is/is not a drill. The Nine Mile Point Nuclear Station Unit ____(1 or 2) has de-escalated to a _____ (specify emergency status). All personnel are instructed to stand by for further instructions. I repeat this is/is not a drill."

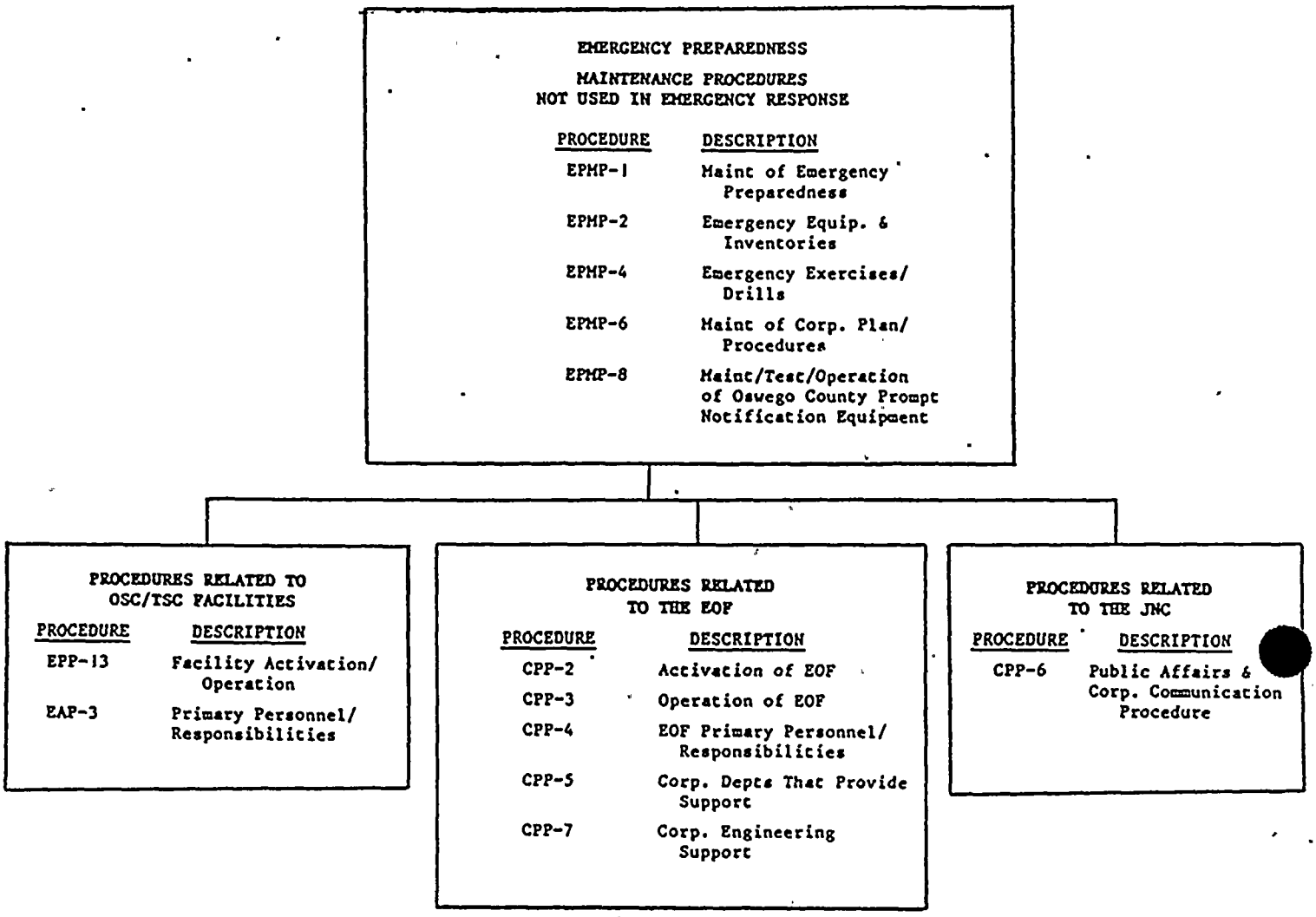
8. Emergency Termination Announcement - Station Alarm

"Attention. Attention. This is/is not a drill. The emergency condition at the Nine Mile Point Nuclear Station has been terminated. (Provide further instructions as necessary.) I repeat this is/is not a drill."

EAP-1, FIGURE 4, FLOWCHART

ACTIVATION AND DIRECTION OF EMERGENCY PLAN




EMERGENCY PREPAREDNESS
MAINTENANCE PROCEDURES
NOT USED IN EMERGENCY RESPONSE
PROCEDURE
DESCRIPTION
EPMP-1
Maint of Emergency Preparedness
EPMP-2
Emergency Equip. & Inventories
EPMP-4
Emergency Exercises/ Drills
EPMP-6
Maint of Corp. Plan/ Procedures
EPMP-8
Maint/Test/Operation of Oswego County Prompt Notification Equipment
PROCEDURES RELATED TO OSC/TSC FACILITIES
PROCEDURE
DESCRIPTION
EPP-13
Facility Activation/ Operation
EAP-3
Primary Personnel/ Responsibilities
PROCEDURES RELATED TO THE EOF
PROCEDURE
DESCRIPTION
CPP-2
Activation of EOF
CPP-3
Operation of EOF
CPP-4
EOF Primary Personnel/ Responsibilities
CPP-5
Corp. Depts That Provide Support
CPP-7
Corp. Engineering Support
PROCEDURES RELATED TO THE JNC
PROCEDURE
DESCRIPTION
CPP-6
Public Affairs & Corp. Communication Procedure

5

EAP-1, FIGURE 4, TABLE

ACTIVATION AND DIRECTION OF EMERGENCY PLAN

Emergency Plan Implementation

5

Directions:

1. Determine Initiating Condition(s) requiring implementation of Emergency Plan from column one below.

2. From column two below determine the Emergency Response actions to be taken, as appropriate.

COLUMN 1 Initiating Condition	COLUMN 2 Emergency Response
Conditions Necessitating Increased Awareness on the part of Local, State and Federal Authorities	EAP-1, Activation and Direction of Emergency Plan EAP-2, Classification of Emergency Conditions EPP-26, Protective Action Recommendations EPP-20, Emergency Notifications
High Radiation or High Airborne in a Local Area	EPP-1, Radiation Emergencies EPP-6, Emergency Inplant Surveys EAP-1, Activation and Direction of Emergency Plan EAP-2, Classification of Emergency Conditions EPP-26, Protective Action Recommendations EPP-20, Emergency Notifications
High Radiation or High Airborne in a General Area	EPP-1, Radiation Emergencies EPP-6, Emergency Inplant Surveys EAP-1, Activation and Direction of Emergency Plan EAP-2, Classification of Emergency Conditions EPP-26, Protective Action Recommendations EPP-20, Emergency Notifications EPP-5, Station Evacuation EPP-7, Downwind Radiological Monitoring EPP-8, On-Site and Off-Site Dose Assessment Procedure
Fire Other than Tower, EIC or Training Center	EPP-2, Fire Fighting EAP-1, Activation and Direction of Emergency Plan EPP-5, Station Evacuation EAP-2, Classification of Emergency Conditions EPP-15, Health Physics Procedure

EAP-1, FIGURE 4, TABLE (Cont.)

ACTIVATION AND DIRECTION OF EMERGENCY PLAN

COLUMN 1 Initiating Condition	COLUMN 2 Emergency Response
Other Conditions Necessitating Station Evacuation (e.g., Severe Fire, Natural Phenomenon)	EAP-1, Activation and Direction of Emergency Plan EAP-2, Classification of Emergency Conditions EPP-2, Fire Fighting EPP-5, Station Evacuation EPP-26, Protective Action Recommendations EPP-20, Emergency Notifications EPP-6, Inplant Emergency Surveys EPP-7, Downwind Radiological Monitoring EPP-8, On-Site and Off-Site Dose Assessment Proc.
Search and Rescue	EPP-3, Search and Rescue EPP-4, Personnel Injury or Illness EPP-15, Health Physics Procedure
Personnel Injury or Illness - Major	EPP-4, Personnel Injury or Illness EAP-1, Activation and Directions of Emergency Plan EPP-15, Health Physics Procedure EAP-2, Classification of Emergency Conditions EPP-20, Emergency Notifications
Toxic Chemical Release, Equipment Malfunction or Explosion Possibility	EAP-1, Activation and Direction of Emergency Plan EAP-2, Classification of Emergency Conditions EPP-2, Fire Fighting EPP-5, Station Evacuation EPP-26, Protective Action Recommendations EPP-20, Emergency Notifications
Security Compromise	EAP-1, Activation and Direction of Emergency Plan EAP-2, Classification of Emergency Conditions EAP-20, Emergency Notifications Station, Physical, Security and Plan

EAP-1, FIGURE 5

SITE EMERGENCY DIRECTOR'S CHECKLIST - EOF OR AEOF
(circle one)

Date_____ SED_____

Affected Unit(s): Unit 1 / Unit 2
(circle as appropriate)

Initial/Time

1. ____/____ Establish contact with Control Rooms.

2. ____/____ Affected Unit(s) SSS Status Report received. Determine: 5

( ) On-Site Conditions_____
( ) Direction of Release_____
( ) Emergency Classification Level_____
per SSS or EAP-2, Attachment 1 or Attachment 2, Classification of Emergency Conditions. 5

3. ____/____ Check off the TSC staff members as they arrive:

Title	Name	Arrival Time	
Site Emergency Director			
Communication Coordinator			
Technical Data Coordinator			
Maintenance Coordinator			
Rad Assessment Manager			5
Offsite Dose Assessment Manager			
Env. Survey/Sample Team Coord.			
Station Survey/Sample Team Coord.			
Reactor Analyst Coordinator			
Instrumentation and Control Coord.			
TSC/EOF Liaison			5
Security Coordinator			
TSC/NELD Coordinator			
Others:			
_____			
_____			
_____			
_____			
_____			

NOTE: If persons are not present to fill all positions, obtain an alternate (per EPMP-3, approved personnel lists).

4. ____/____ Initiate EOF (or AEOF) survey, if not already started.

SITE EMERGENCY DIRECTOR'S CHECKLIST - EOF OR AEOF

	Initial/Time	
5.	____/____	Contact Control Room(s) (and, off-hours, Security) to ascertain which contacts have been made.
6.	____/____	Instruct Communications Coordinator to continue with emergency contacts not already made using EPP-20, Figure 5 "Emergency Contact List" (and, if off-hours, Figure 3, Security Off-Hours Emergency Contact List).
7.	____/____	Send out Environmental (downwind) Survey Team(s).
8.	____/____	Send out Re-entry Survey Team, and notify Sheriff (if initiated from Alternate EOF).
9.	____/____	Establish radio contact with teams.
10.	____/____	NYS Emergency Operations Center, Oswego County Emergency Operations Center and NRC contact maintained; inform of changes in station or weather conditions.

NOTE: Ensure that proper off-site authorities (Oswego County Emergency Operations Center, NYS Emergency Operations Centers & NRC) are kept fully informed of the emergency status and actions in progress. Furthermore, ensure that follow-up messages are transmitted in a timely manner (approximately at 30 minute intervals) and contain the information required as noted on Fact Sheet Part 1 (EPP-20, Figure 4a, Part 1 Notification Sheet); and Fact Sheets Part 2 and/or 3 (EPP-20, Figures 4b, 4c and/or 4d) as appropriate.

11.	____/____	If at AEOF and Re-entry possible - Transfer emergency activities to Technical Support Center (or EOF).
12.	____/____	Contact Re-entry Survey Team for report.
13.	____/____	Evaluate survey data and direct Communications Coordinator to inform Control Rooms and/or Security of required action.
14.	____/____	Re-evaluate plant status and survey data for reclassification of action level, if appropriate per EAP-1, Figure 1, "SSS Checklist".
15.	____/____	Once TSC personnel are present (at TSC or EOF), commence actions required per EAP-1, Figure 2, "Site Emergency Director's Checklist-TSC" and modify steps accordingly.

NINE MILE POINT NUCLEAR STATION

EMERGENCY ACTION PROCEDURE

PROCEDURE NO. EAP-2

CLASSIFICATION OF EMERGENCY CONDITIONS

APPROVALS	SIGNATURES	DATE AND INITIALS REVISION 8	REVISION 9	REVISION 10
Supervisor Radiological Support P. Volza	P. Volza	3/18/87 PV		
Station Superintendent NMPNS Unit I T. W. Roman				
Station Superintendent NMPNS Unit II R. B. Abbott	RB Abbott	3/20/87 RBA		
General Superintendent Nuclear Generation T. J. Perkins	TJ Perkins	3/18/87 TJP		

INFORMATION ONLY

Summary of Pages

Revision 8 (Effective 3/23/87)

PAGES	DATE
i,ii,1-34,36-60	February 1987
*35	March 1987 (Reissue)

NIAGARA MOHAWK POWER CORPORATION

THIS PROCEDURE NOT TO BE USED AFTER March 1989 SUBJECT TO PERIODIC REVIEW.

*Changes made per section 11.5, AP-2.0 AM Sal 4/3/87

Signed Date

EAP-2

CLASSIFICATION OF EMERGENCY CONDITIONS

8

CLASSIFICATION OF EMERGENCY CONDITIONS

EAP-2

CLASSIFICATION OF EMERGENCY CONDITIONS

1.0 PURPOSE

The purpose of this procedure is to describe the criteria employed by the Site Emergency Director to classify emergencies based on the occurrence of specific events or combinations of events which may reduce the overall safety of the station.

2.0 REFERENCES

2.1 NUREG-0654 "Criteria for Preparation and Evaluation of Radiological Emergency Response Plans and Preparedness in Support of Nuclear Power Plants".

2.2 EAP-1, Activation and Direction of Emergency Plan

2.3 EPP-25, Emergency Reclassifications and Recovery

2.4 N1-CSP-7V, Stack Effluent Sampling, Analysis & Record Keeping

2.5 N2-CSP-7V, Gaseous Radioactive Waste Chemistry Surveillance at Unit 2 | 8

3.0 RESPONSIBILITIES

In order to ensure the complete and appropriate handling of emergency classifications, the following position listing provides associated assignment responsibilities.

3.1 Station Shift Supervisor

a. Assumes the role of Site Emergency Director until properly relieved.

b. Initiates the classification of emergency conditions based on available information.

3.2 Site Emergency Director

Evaluates and performs emergency classification or reclassification as necessary.

4.0 EMERGENCY CLASSIFICATIONS

An emergency is defined as any situation outside of routine operational events or minor equipment malfunction which could lead to a radiological hazard affecting the health and safety of plant personnel or the general public, or result in significant property damage.

4.0 (Cont'd)

The initial classification of an emergency is made as quickly as possible after the occurrence to ensure that the proper protective and corrective actions are taken and that appropriate off-site authorities are promptly notified.

Continual surveillance and assessment of plant conditions may warrant revising the emergency classification as conditions change in order to be consistent with established criteria and to ensure that protective actions initiated, taken, or recommended are commensurate with the situation.

Four classes of emergencies and one non-emergency class have been established to categorize emergency conditions. These classes in increasing order of severity are:

Operational Event
Unusual Event
Alert (or Sympathetic Alert)
Site Area Emergency
General Emergency

8

The rational behind this classification is to provide early and prompt notification of minor events which could lead to more serious consequences given equipment failure or operator error, or which might be indicative of more serious conditions which are not yet fully realized. A graduation of levels is provided to assure fuller response preparations for more serious indicators and to allow for a de-escalation of response once the incident has been stabilized. The evaluation or (re-evaluation) of emergency action level classification and subsequent action required is the responsibility of the Site Emergency Director or his alternate as specified in EAP-3.

5.0 PROCEDURE

5.1 Station Shift Supervisor

5.1.1 Assume the role of Site Emergency Director and activate the NMPNS Site Emergency Plan per EAP-1.

5.1.2 When informed of an emergency situation, assess the emergency (e.g., plant systems, reactor core and drywell status, radiological conditions).

5.1.3 Evaluate conditions against the action levels delineated in EAP-2 Attachments 1 and/or 2, "Action Level Criteria for Classification of Emergency Conditions" (Use EAP-2, Attachment 1 for a Unit I condition or EAP-2, Attachment 2 for a Unit II condition). Based on this evaluation classify and declare the emergency as an Unusual Event, Alert, Site Area Emergency or General Emergency. 8

5.2 Site Emergency Director

5.2.1 Activate the Emergency Plan per EAP-1.

5.2.2 When informed of an emergency situation, contact the SSS and receive a status report and relieve the SSS of Site Emergency Director responsibilities.

5.2.3 Evaluate conditions and evaluate (re-evaluate) the emergency classification against the action levels delineated in EAP-2, Attachment 1 and/or 2, "Action Level Criteria for Classification of Emergency Conditions" for a Unit I condition or Unit II condition, respectively. | 8

5.2.4 If not already done, classify and declare the emergency as an Unusual Event, Alert (or Sympathetic Alert), Site Area Emergency or General Emergency. | 8

5.2.5 Periodically reassess emergency conditions, in consultation with the SSS and, if available, Corporate Emergency Director/Recovery Manager. If appropriate, upgrade, downgrade or terminate the emergency classification (utilizing EAP-2, Attachment 1 and/or 2 "Action Level Criteria for Classification of Emergency Conditions" and EPP-25 "Emergency Reclassification and Recovery", for guidance). | 8

EAP-2

ATTACHMENT 1

Classification of Emergency Conditions

for

NMPNS Unit I

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CONTENTS:

EAP-2, ATTACHMENT 1, FIGURE 1.A

ACTION LEVEL CRITERIA FOR CLASSIFICATION OF EMERGENCY CONDITIONS FOR NMPNS UNIT I

Initiating Condition	Unusual Event	Alert	Site Area Emergency	General Emergency
	Off-normal Events Which Could Indicate a Potential Degradation of the Level of Safety of the Plant	Events Which Indicate an Actual Degradation of the Level of Safety of the Plant	Events Which Involve Actual or Likely Major Failures of Plant Functions Needed for Protection of the Public	Events Which Involve Actual or Imminent Substantial Core Degradation or Melting with Potential for Loss of Containment Integrity
Radioactive Effluent (Applicable to any release points(s) and resulting from any initiating event)	Indicated by the following: -High Alarm(s) on stack or High-High Alarms on liquid effluent monitor(s), with confirmation by the Chemistry Laboratory, that Tech. Specs. limits have been exceeded when averaged over a period of one (1) hour including any or all contribution from the Unit I emergency condenser, Unit II and the J.A. Fitzpatrick Nuclear Power Plant. -The Unit I emergency condenser vent monitor alarm(s) and confirmation is made by the Chemistry Laboratory that Tech-Specs. limits have been exceeded when these limits are averaged over the projected longest emergency condenser vent release. -Routine or special samples or surveys. Which indicate that Tech Spec have been exceeded.(The stack monitor(s) alarm(s) is/are set at a lower value than the Tech-Spec. limit.)	Indicated by the following: Ten times the High Alarm(s) setpoint on stack or ten times the High-High Alarms setpoint on liquid effluent monitor(s), with confirmation by the Chemistry Laboratory, that Tech. Specs. limits have been exceeded when averaged over a period of one (1) hour including any or all contribution from the Unit I emergency condenser, Unit II and the J.A. Fitzpatrick Nuclear Power Plant. -Ten Times the Unit I emergency condenser vent monitor alarm(s) and confirmation is made by the Chemistry Laboratory that Tech-Specs. limits have been exceeded when these limits are averaged over the projected longest emergency condenser vent release. -Routine or special samples or surveys. (The stack monitor(s) alarm(s) is/are set at a lower value than the Tech-Spec. limit.)	Indicated by one or more of the following: -Effluent monitors detect levels corresponding to >50mr/hr for 1/2 hr, or >500mr/hr whole body for 2 minutes (or five times these levels to the thyroid) at the site boundary for adverse meteorology as indicated by: Effluent monitors detect stack release rates in Attachment 1, Figure 1.B, Data sources (surveys, monitors, etc.) indicate ground level release rates in Attachment 1, Figure 1.C. - These dose rates are projected based on plant parameters or are measured in the environs. - Effluent monitors detect levels such that projected accumulated dose is >1 rem whole body or > 5 rem child thyroid at the site boundary for actual meterology.	Indicated by one or more of the following: - Release corresponds to >1000 mrem/hr to Whole Body or >5,000 mrem/hr to child thyroid at site boundary under actual meteorology as confirmed by field sample or lab analysis. - These dose rates are projected based on plant parameters or are measured in the environs. 8 - Off-site dose due to event is projected to exceed 5 rem to whole body or 25 rem to the child thyroid at site boundary under actual meteorology. 8

ACTION LEVEL CRITERIA FOR CLASSIFICATION OF EMERGENCY CONDITIONS FOR NMPNS UNIT 1

Initiating Condition	Unusual Event	Alert	Site Area Emergency	General Emergency
High Radiation Levels	Indicated by one or more of the following: - Two or more area radiation monitors reach their alarm points (not including the TIP room monitor or a monitor in alarm due to a planned evolution) (NOTE: Redundant radiation monitors that monitor the same system or area should be considered as one ARM.) - Confirmed building ventilation duct airborne activity indicates in excess of MPC values - SSS decides radiation condition in the station dictates the need for a general area evacuation.	Indicated by one or more of the following: -Two or more area radiaction monitors or continuous air monitors indicate greater than 1000 times background -Confirmed airborne activity greater than 1000 x MPC. (Background for all area radiation monitors will be noted in the Control Room.)	Not Applicable	Indicated by one or more of the following: - Release corresponds to >1000 mrem/hr to whole body or >5000 mrem/hr to child thyroid at site boundary under actual meteorology as confirmed by field sample or lab analysis; - These dose rates are projected based on plant parameters or are measured in the environs; - Off-site dose due to event is projected to exceed 5 rem to whole body or 25 rem to the child thyroid at site boundary under actual meteorology.
Fuel Damage	Indicated by one or more of the following: - Reactor system activevity exceeds 25 µCi/g H_2O total iodine. When both - When both off-gas monitors trip on high alarm	Indicated by one or more of the following: -Reactor system activevity exceeds 300 µCi/g H_2O total iodine. -When both off-gas monitors trip on high-high alarm	Not Applicable	

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ACTION LEVEL CRITERIA FOR CLASSIFICATION OF EMERGENCY CONDITIONS FOR NMPNS UNIT 1

Initiating Condition	Unusual Event	Alert	Site Area Emergency	General Emergency
Spent Fuel Damage	Not Applicable	Indicated by one or more of the following: -Fuel pool water level decreases below low level alarm setting -Fuel damage accident with release of radioactivity to Reactor Building. This could be indicated by radiation alarms on ARM-17 (low range)	Major damage to spent fuel with release of radioactivity. This could be indicated by high radiation alarms on the refueling Platform High Range Area Radiation Monitor.	Indicated by one or more of the following: - Release corresponds to >1000 mrem/hr to whole body or >5000 mrem/hr to child thyroid at site boundary under actual meteorology as confirmed by field sample or lab analysis; - These dose rates are projected based on plant parameters or are measured in the environs; - Off-site dose due to event is projected to exceed 5 rem to whole body or 25 rem to the child thyroid at site boundary under actual meteorology.

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EAP-2, ATTACHMENT 1, FIGURE 1.A. (Cont'd)

ACTION LEVEL CRITERIA FOR CLASSIFICATION OF EMERGENCY CONDITIONS FOR NMPNS UNIT I

Initiating Condition	Unusual Event	Alert	Site Area Emergency	General Emergency
Reactor Coolant System Integrity	Reactor system leak rate exceeds 5 gpm from an unidentified source or total of 25 gpm as identified by daily RCS leakage evaluation	Reactor system leak rate exceeds 50 gpm from an unidentified source as indicated by rate of use or integrator readings	Loss of coolant accident which exceeds the makeup pump capacity as indicated by all the following: - low water level alarm, - high drywell pressure alarm, - high floor drain level alarm, - HPCI activation alarm, - Main steam line isolation valve closure.	Indicated by one or more of the following: - Loss of 2 of 3 fission product barriers with a potential loss of the third; - Any initiating event that makes release of large amounts of radioactivity of probable, i.e. 1. LOCA with failure of ECCS. Loss of containment imminent, 2. LOCA with failure of containment. Potential for loss of ECCS, 3. S/D occurs, but decay heat removal systems fail, 4. Transient occurs plus failure of requisite core S/D systems (Scram and Standby Liquid Control System). - Loss of plant control occurs. - External events which could cause massive common damage to plant systems leading to any of the above.
Reactor Circulating Pump Seizure Leading to Fuel Failure	Not applicable	Not applicable	Not applicable	

EAP-2, ATTACHMENT 1, FIGURE 1.A. (Cont'd)

ACTION LEVEL CRITERIA FOR CLASSIFICATION OF EMERGENCY CONDITIONS FOR NMPNS UNIT I

Initiating Condition	Unusual Event	Alert	Site Area Emergency	General Emergency
Degraded Core with Possible Loss of Coolable Geometry	Not Applicable	Not Applicable	1. Indicated by all of the following: - Failure of control rods to fully insert on a scram or shutdown as indicated on full core display panel; - Upscale readings on local power range monitor (LPRM) adjacent to not-fully-inserted rods; - Very high coolant activity as determined by sample analysis (greater than or equal to 300 µCi/gram equivalent of I-131) OR 2. Indicated by all of the following: - Reactor water level at or below top of active fuel core height as indicated by reading on fuel zone level indicator; - Very high coolant activity as determined by sample analysis (greater than or equal to 300 µCi/gram equivalent of I-131).	Indicated by one or more of the following: - Loss of 2 of 3 fission product barriers with a potential loss of the third; - Any initiating event that makes release of large amounts of radioactivity probable, i.e. 1. LOCA with failure of ECCS. Loss of containment imminent; 2. LOCA with failure of containment. Potential for loss of ECCS; 3. S/D occurs, but decay heat removal systems fail; 4. Transient occurs plus failure of requisite core S/D systems (Scram and Standby Liquid Control System). - Loss of plant control occurs. - External events which could cause massive common damage to plant systems leading to any of the above.

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ACTION LEVEL CRITERIA FOR CLASSIFICATION OF EMERGENCY CONDITIONS FOR NMPNS UNIT I

Initiating Condition	Unusual Event	Alert	Site Area Emergency	General Emergency
Reactor System (RS) Pressure	Reactor system pressure exceeds 1218 psig.	Not Applicable	Not Applicable	Indicated by one or more of the following: - Loss of 2 of 3 fission product barriers with a potential loss of the third; - Any initiating event that makes release of large amounts of radioactivity probable, i.e. 1. LOCA with failure of ECCS. Loss of containment imminent; 2. LOCA with failure of containment. Potential for loss of ECCS; 3. S/D occurs, but decay heat removal systems fail; 4. Transient occurs plus failure of requisite core S/D systems (Scram and Standby Liquid Control System). - Loss of plant control occurs. - External events which could cause massive common damage to plant systems leading to any of the above.
Initiation of ECCS coincident with positive finding that initiation is not spurious and discharge to vessel	Indicated by one of the following: - Manual initiation of Core Spray System - Automatic initiation of Core Spray System with verification using redundant instrumentation.	Not Applicable	Not Applicable	
Loss of containment integrity requiring shutdown by Technical Specifications	Same as initiating event	Not Applicable	Not Applicable	

ACTION LEVEL CRITERIA FOR CLASSIFICATION OF EMERGENCY CONDITIONS FOR NMPNS UNIT I

Initiating Condition	Unusual Event	Alert	Site Area Emergency	General Emergency
Failure of a Reactor System Safety/ Relief Valve to reseat (exceeding normal leakage)	Failure of a Safety Valve would be indicate by all of the following: - Annunciator H3-4-5, will annunciate, - Drywell pressure will rise, - Verification with acoustic monitor Failure of a Relief Valve would be indicate by all of the following: - Drop in electrical output, - Drop in steam flow, - No change in reactor pressure and temperature, - Slight decrease in reactor level, - Verification with acoustic monitor.	Not Applicable	Not Applicable	Indicated by one or more of the following: - Loss of 2 of 3 fission product barriers with a potential loss of the third; - Any initiating event that makes release of large amounts of radioactivity probable, i.e. 1. LOCA with failure of ECCS. Loss of containment imminent; 2. LOCA with failure of containment. Potential for loss of ECCS; 3. S/D occurs, but decay heat removal systems fail, 4. Transient occurs plus failure of requisite core S/D systems (Scram and Standby Liquid Control System). - Loss of plant control occurs. - External events which could cause massive common damage to plant systems leading to any of the above.

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ACTION LEVEL CRITERIA FOR CLASSIFICATION OF EMERGENCY CONDITIONS FOR NMPNS UNIT I

Initiating Condition	Unusual Event	Alert	Site Area Emergency	General Emergency
Main Steam Line Break	Not Applicable	Steam line break outside the drywell with proper MSIV function. This could be indicated by one or more of the following: - Steam flow/feed-flow mismatch, - Decrease in reactor pressure, - Decrease in generator output, - MSIV closure, - Turbine building CAM alarm, - Main steam line tunnel temp. and radiation alarms. - Main steam line break alarm.	Steam line break outside the drywell with failure of the MSIV. This could be indicated by one or more of the following: - Steam flow/feed flow mismatch, - Decrease in reactor pressure, - Decrease in generator output, - High radiation alarms in turbine building, - Decreasing reactor level, - Main steam line tunnel temp. and radiation alarms, - Main steam line break alarm, - MSIVs indicate not closed.	Indicated by one or more of the following: - Loss of 2 of 3 fission product barriers with a potential loss of the third; - Any initiating event that makes release of large amounts of radioactivity probable, i.e. 1. LOCA with failure of ECCS. Loss of containment imminent, 2. LOCA with failure of containment. Potential for loss of ECCS, 3. S/D occurs, but decay heat removal systems fail, 4. Transient occurs plus failure of requisite core S/D systems (Scram and Standby Liquid Control System). - Loss of plant control occurs. - External events which could cause massive common damage to plant systems leading to any of the above.

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ACTION LEVEL CRITERIA FOR CLASSIFICATION OF EMERGENCY CONDITIONS FOR NMPNS UNIT I

Initiating Condition	Unusual Event	Alert	Site Area Emergency	General Emergency
Loss of all off-site power or loss of on-site AC power capability	Indicated by either one of the following: - Loss of both 115 KV feeders, - Loss of both on-site diesel generators.	Not Applicable	Not Applicable	Indicated by one or more of the following: - Loss of 2 of 3 fission product barriers with a potential loss of the third; - Any initiating event that makes release of large amounts of radioactivity probable, i.e. 1. LOCA with failure of ECCS. Loss of containment imminent, 2. LOCA with failure of containment. Potential for loss of ECCS, 3. S/D occurs, but decay heat removal systems fail, 4. Transient occurs plus failure of requisite core S/D systems (Scram and Standby Liquid Control System). - Loss of plant control occurs. - External events which could cause massive common damage to plant systems leading to any of the above.
Loss of all off-site power and loss of all AC on-site power capability	Not Applicable	Indicated by both of the following: - Loss of both 115 KV feeders, - Loss of both on-site diesel generators with scram of the reactor.	Loss of all on-site and off-site AC power exceeds 15 minutes.	
Loss of On-site Vital DC Power	Not Applicable	Loss of DC power boards #11 and #12; would be indicated by one or more of the following: - Coastdown of flow on reactor recirculation pumps, - Flashing of all fire detector zone alarms, - Low voltage alarms on annunciator panels Unit I, #1A, #4A, #6A and #8A.	Loss of DC power supplies exceeds 15 minutes.	

ACTION LEVEL CRITERIA FOR CLASSIFICATION OF EMERGENCY CONDITIONS FOR NMPNS UNIT I

Initiating Condition	Unusual Event	Alert	Site Area Emergency	General Emergency
Loss of Engineered Safety Feature or Fire Protection System Function requiring shutdown by Technical Specifications (e.g. because of malfunction, personnel error or procedural inadequacy)	Same as Initiating Event.	Not Applicable	Not Applicable	Indicated by one or more of the following: - Loss of 2 of 3 fission product barriers with a potential loss of the third; - Any initiating event that makes release of large amounts of radioactivity probable, i.e. 1. LOCA with failure of ECCS. Loss of containment imminent, 2. LOCA with failure of containment. Potential for loss of ECCS, 3. S/D occurs, but decay heat removal systems fail, 4. Transient occurs plus failure of requisite core S/D systems (Scram and Standby Liquid Control System). - Loss of plant control - External events which could cause massive common damage to plant systems leading to any of the above.
Loss of Indicators, Annunciators or Alarms	Loss of indicators or alarms on process or effluent parameters not functional in Control Room to an extent requiring shutdown by Technical Specifications.	Loss of All Control Room Alarms (Annunciators).	Either one of the following occurs: - Loss of all alarms for >15 min. with plant not in cold S/D, - Plant transient occurs occurs while all alarms are lost.	

ACTION LEVEL CRITERIA FOR CLASSIFICATION OF EMERGENCY CONDITIONS FOR NMPNS UNIT I

Initiating Condition	Unusual Event	Alert	Site Area Emergency	General Emergency
Fire	Fire not under control within ten minutes or requiring assistance of off-site fire dept. to extinguish	Fire confirmed and potentially affecting safe shutdown systems as indicated by: A) Fire resulting in the loss of function of a channel of a safe shutdown system or B) Fire in any fire zone(s) that could impact redundant channels involving safe shutdown cables or equipment (See Attachment 1, Figure 1.D.)	Fire confirmed resulting in the loss of function of a safe shutdown system path as indicated by Attachment 1, Figure 1.D.	Indicated by one or more of the following: -Loss of 2 of 3 fission product barriers with a potential loss of the third: -Any initiating event that makes release of large amounts of radioactivity probable, i.e. 1. LOCA with failure of ECCS. Loss of containment imminent, 2. LOCA with failure of containment. Potential for loss of ECCS, 3. S/D occurs, but decay heat removal systems fail, 4. Transient occurs plus failure of requisite core S/D systems (Scram and Standby Liquid Control System). -Loss of plant control -External events which could cause massive common damage to plant systems leading to any of the above.

ACTION LEVEL CRITERIA FOR CLASSIFICATION OF EMERGENCY CONDITIONS FOR NMPNS UNIT I

Initiating Condition	Unusual Event	Alert	Site Area Emergency	General Emergency
Security Compromise	Security threat or attempted entry or sabotage in accordance with Site Security Plan.	Ongoing security compromise in accordance with Site Security Plan.	Imminent loss of physical control of the plant.	Indicated by one or more of the following: - Loss of 2 of 3 fission product barriers with a potential loss of the thirds; - Any initiating event that makes release of large amounts of radioactivity probable, i.e. 1. LOCA with failure of ECCS. Loss of containment imminent, 2. LOCA with failure of containment. Potential for loss of ECCS, 3. S/D occurs, but decay heat removal systems fail, 4. Transient occurs plus failure of requisite core S/D systems (Scram and Standby Liquid Control System). - Loss of plant control occurs. - External events which could cause massive common damage to plant systems leading to any of the above.
Natural Phenomenon Earthquake	Any earthquake felt in-plant or detected on Station seismic instrumentation by valid alarm trip.	Earthquake > 0.08 g while plant not in cold shutdown and a valid alarm trip of Station seismic instrumentation	Earthquake > 0.11 g while plant not in cold shutdown and a valid alarm trip of Station seismic instrumentation	
Flood, tsunami, hurricane surge, seiche	Lake water level experienced or projected beyond usual levels.	Lake water level experienced or projected near design levels.	Lake water level experienced or projected greater than design levels or damages vital equipment at lower levels.	
Tornado on-site	Any tornado experienced or projected on-site.	Tornado striking the facility.	Sustained winds in excess of 100 mph.	
Hurricane	Any hurricane experienced or projected within the 10-mile EPZ.	Experienced or projected hurricane winds approach 100 mph.	Sustained winds in excess of 100 mph.	

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ACTION LEVEL CRITERIA FOR CLASSIFICATION OF EMERGENCY CONDITIONS FOR NMPNS UNIT I

Initiating Condition	Unusual Event	Alert	Site Area Emergency	General Emergency
Turbine	Experienced or projected turbine failure causing rapid plant shutdown.	Turbine failure causing penetration. This would be indicated by one or more of the following: -Turbine overspeed, - Rapid loss of condenser vacuum, - Loud unusual noises.	Not Applicable	Indicated by one or more of the following: - Loss of 2 of 3 fission product barriers with a potential loss of the third; - Any initiating event that makes release of large amounts of radioactivity probable, i.e. 1. LOCA with failure of ECCS. Loss of containment imminent, 2. LOCA with failure of containment. Potential for loss of ECCS, 3. S/D occurs, but decay heat removal systems fail, 4. Transient occurs plus failure of requisite core S/D systems (Scram and Standby Liquid Control System). - Loss of plant control occurs. - External events which could cause massive common damage to plant systems leading to any of the above.
Explosion or Missile Impacts	Explosion or missile impact experienced or projected within 2 miles of the site.	Explosion damage to facility affecting plant operation or missile impact on facility.	Experienced or projected severe damage to safe shutdown equipment and plant not in cold shutdown.	
Aircraft	Either one of the following occurs: - Experienced or projected unusual aircraft activity over the facility, - Aircraft crashes on-site.	Either one of the following occurs: - Aircraft projected to strike a station structure. - Aircraft strikes a station structure.	Aircraft crash causing damage or fire in one or more of the following: - Drywell; - Control Room; - Reactor Bldg; - Waste Bldg; - Turbine Bldg; - Screen House.	
Toxic or Flammable Gases	Toxic or flammable gas releases experienced or projected within 2 miles of the site	Experienced or projected entry into facility environs. Presents habitability problems, which are verified by portable instruments.	Experienced or projected entry into vital areas and restricts necessary access.	

ACTION LEVEL CRITERIA FOR CLASSIFICATION OF EMERGENCY CONDITIONS FOR NMPNS UNIT I

Initiating Condition	Unusual Event	Alert	Site Area Emergency	General Emergency
Contaminated Injury	Transportation of Contaminated injured individual from site to off-site hospital.	Not Applicable	Not Applicable	Indicated by one or more of the following: - Loss of 2 of 3 fission product barriers with a potential loss of the third; - Any initiating event that makes release of large amounts of radioactivity probable, i.e. 1. LOCA with failure of ECCS. Loss of containment imminent, 2. LOCA with failure of containment. Potential for loss of ECCS, 3. S/D occurs, but decay heat removal systems fail, 4. Transient occurs plus failure of requisite core S/D systems (Scram and Standby Liquid Control System). - Loss of plant control occurs. - External events which could cause massive common damage to plant systems leading to any of the above.
Nearby Nuclear Emergency	Not Applicable	An emergency situation of an Alert classification or above at NMP Unit II or JAFNPP.	Not Applicable	
Failure to Initiate or Complete a Scram	Not Applicable	Failure of the reactor protection system to initiate and complete a scram. This would be indicated by all of the following: - Positive readings on the SRM, IRM, LPRM, - APRM instrumentation systems above shutdown levels.	Transient requiring operation of shutdown systems with failure to scram. Continued power generation (but no core damage immediately evident) and initiation of liquid poison system.	
Loss of Plant Control	Not Applicable	Loss of capability to initiate and/or maintain cold shutdown as indicated by all of the following: -Shutdown Cooling System not functional -Inability to sustain natural circulation and RCS temperature increases to >212°F	Loss of capability to initiate and/or maintain hot shutdown as indicated by all of the following: - Loss of all high pressure pumps, - Loss of all low pressure pumps, - Failure of the Reactor coolant boundary.	

EAP-2, ATTACHMENT 1 - FIGURE 1.A. (Cont'd)

ACTION LEVEL CRITERIA FOR CLASSIFICATION OF EMERGENCY CONDITIONS FOR NMPNS UNIT 1 | 8

Initiating Condition	Unusual Event	Alert	Site Area Emergency	General Emergency
Control Room Evacuation	Not Applicable	Evacuation of Control Room anticipated or required as determined by the Site Emergency Director, with control of shutdown systems established from local stations.	Evacuation of Control Room as determined by the Site Emergency Director, and control of shutdown systems not established from local stations in 15 minutes.	Indicated by one or more of the following: - Loss of 2 of 3 fission product barriers with a potential loss of the third; | 8 - Any initiating event that makes release of large amounts of radioactivity probable, i.e. | 8 1. LOCA with failure of ECCS. Loss of containment imminent, 2. LOCA with failure of containment. Potential for loss of ECCS, 3. S/D occurs, but decay heat removal systems fail, 4. Transient occurs plus failure of requisite core S/D systems (Scram and Standby Liquid Control System).
All other Plant Anomalies	Other plant conditions exist, as determined by the Site Emergency Director, that warrant increased awareness on the part of the plant operating staff or State and/or local off-site authorities. These conditions may include plant shutdown under T.S. requirements or involve other than normal controlled shutdown	Other plant conditions exist, as determined by the Site Emergency Director, that warrant precautionary activation of the Technical Support Center and placing Emergency Operations Facility and other key emergency personnel on standby	Other plant conditions exist, as determined by the Site Emergency Director, that warrant activation of emergency centers and monitoring teams or a precautionary notification to the public within the 10-mile EPZ.	
Radioactive Off-Site Spills and/or Transportation Accident Involving Radioactive Material being Shipped to or from NMPNS	Transportation accident with the release of radioactive material to the environment	Not Applicable	Not Applicable	- Loss of plant control - External events which could cause massive common damage to plant systems leading to any of the above. | 8

Attachment 1, Figure 1.B.

Two and Thirty-Minute Site Area Emergency
Source Term Values for NMPNS Unit I Stack Release

Wind Direction from (Degree Range)	Site Boundary Distance (Meters)	Site Boundary Distance (Miles)	Q_2 (μCi/sec)	Q_{30} (μCi/sec)
168.75 - 191.25	122	7.58E-2	6.4E+7	6.4E+6
191.25 - 213.75	152	9.45E-2	6.1E+7	6.0E+6
213.75 - 236.25	183	1.14E-1	5.8E+7	5.8E+6
236.25 - 258.75	884	5.49E-1	4.8E+8	4.8E+7
258.75 - 281.25	1920	1.19	3.1E+9	3.1E+8
281.25 - 303.75	2042	1.27	4.0E+9	4.0E+8
303.75 - 326.25	2789	1.73	1.3E+10	1.3E+9
326.25 - 348.75	2271	1.41	5.9E+9	5.9E+8
348.75 - 11.25	2758	1.71	1.3E+10	1.3E+9
11.25 - 33.75	1798	1.12	2.4E+9	2.4E+8
33.75 - 56.25	1417	8.81E-1	1.2E+9	1.2E+8
56.25 - 78.75	892	5.54E-1	5.0E+8	5.0E+7
78.75 - 101.25	221	1.37E-1	5.9E+7	5.9E+6
101.25 - 123.75	137	8.51E-2	6.3E+7	6.3E+6
123.75 - 146.25	114	7.08E-2	6.5E+7	6.5E+6
146.25 - 168.75	107	6.65E-2	6.7E+7	6.6E+6

1. Atmospheric conditions assumed for stack (107 m high) release are unstable (A) conditions and wind speed of 1 m/sec (2.24 mph).

2. Q values are calculated based on the characteristics of a fictional isotope with an average gamma energy of 0.7 MeV/dis and half-life of 30 minutes.

3. Q_2 is based on 500 mr/hr exposure for 2 minutes and the Q_{30} is based on 50 mr/hr exposure for 30 minutes.

4. The Q_2 and Q_{30} values in the table were corrected for the radioactive decay during the plume travel time from the release point to the receptor under consideration.

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Attachment 1, Figure 1.C.

Two and Thirty-Minute Site Area Emergency
Source Term Values for NMPNS Unit I Ground Level Release

Wind Direction from (Degree Range)	Site Boundary Distance (Meters)	(Miles)	Q_2 (μCi/sec)	Q_{30} (μCi/sec)
168.75 - 191.25	122	7.58E-2	1.3E+6	1.3E+5
191.25 - 213.75	152	9.45E-2	1.7E+6	1.7E+5
213.75 - 236.25	183	1.14E-1	1.9E+6	1.9E+5
236.25 - 258.75	884	5.49E-1	1.0E+7	1.0E+6
258.75 - 281.25	1920	1.19	2.8E+7	2.8E+6
281.25 - 303.75	2042	1.27	3.1E+7	3.1E+6
303.75 - 326.25	2789	1.73	5.2E+7	5.2E+6
326.25 - 348.75	2271	1.41	3.8E+7	3.8E+6
348.75 - 11.25	2758	1.71	5.1E+7	5.1E+6
11.25 - 33.75	1798	1.12	2.5E+7	2.5E+6
33.75 - 56.25	1417	8.81E-1	1.8E+7	1.8E+6
56.25 - 78.75	892	5.54E-1	9.8E+6	9.8E+5
78.75 - 101.25	221	1.37E-1	2.3E+6	2.3E+5
101.25 - 123.75	137	8.51E-2	1.5E+6	1.5E+5
123.75 - 146.25	114	7.08E-2	1.2E+6	1.2E+5
146.25 - 168.75	107	6.65E-2	1.1E+6	1.1E+5

1. Atmospheric conditions assumed for a ground level release are stable (F) conditions and wind speed of 1 m/sec (2.24 mph).

2. Q values are calculated based on the characteristics of a fictional isotope with an average gamma energy of 0.7 MeV/dis and half-life of 30 minutes.

3. Q_2 is based on 500 mr/hr exposure for 2 minutes and the Q_{30} is based on 50 mr/hr exposure for 30 minutes.

4. The Q_2 and Q_{30} values in the table were corrected for the radioactive decay during the plume travel time from the release point to the receptor under consideration.

EAP-2, Attachment 1, Figure 1.D.

FIRE RELATED EMERGENCY ACTION LEVELS (Unit I)

CROSS REFERENCE INDEX

DETECTION PANEL	FIRE ZONE	PAGE NO.
DA-2013N	T2A	28
DA-2013S	T2A	28
DA-2022N	T2B	28
DA-2022S	T2B	28
DA-2031	T2D	29
DA-2041N	D1B	29
DA-2041N	D1C	29
DA-2041N	D1D	29
DA-2041S	D1A	30
DA-2051E	T2B	30
DA-2051W	T2B	30
DA-2081S	T3A	31
DA-2083M	T3A	31
DA-2083N	T3A	31
DA-2092E	T3B	31
DA-2092MG	T3B	31
DA-2092W	T3B	31
DX-2113A	D2D	33
DX-2113B	D2D	33
DX-2123A	D2C	33
DX-2123B	D2C	33
DA-2141	D2B	32
DX-2141A	D2B	33
DX-2141B	D2B	33
D-2151	D3	23
DA-2151	D2A	32
DX-2151A	D2A	33
DX-2151B	D2A	33

DETECTION PANEL	FIRE ZONE	PAGE NO.
DA-2161E	B1A	31
DA-2161E	B1B	31
DA-2161E	T3B	31
DA-2161M	T3B	31
DA-2162W	T3B	31
D-2224	B2A	23
D-2224	B2B	23
D-2224	T4B	23
DA-2234	T4A	31
DA-2234	T4B	31
D-2345	T6A	23
D-2395	T6B	23
D-2395	T6C	23
DX-3011A	C1	34
DX-3011B	C1	34
DX-3031A	C2	24
DX-3031B	C2	24
D-3031PL	C2	24
D-3054	C3	24
D-4016	R1B	24
D-4026	R1A	24
D-4027	R4A	24
D-4027	R4B	24
D-4036	R1B	24
D-4046	R1D	24

DETECTION PANEL	FIRE ZONE	PAGE NO.
DA-4076E	R1A	32
DA-4076E	R1C	32
DA-4076W	R1B	32
D-4086	R1	25
DA-4116E	R2A	32
DA-4116E	R1C	32
DA-4116W	R2B	32
DA-4116W	R2C	32
D-4156	R3A	26
D-4156	R3B	26
D-4166	R3A	26
D-4197	R4A	26
D-4197	R4B	26
DX-4217A	R4A	34
DX-4217B	R4A	34
DA-4237	R5A	32
DA-4237	R5B	32
D-4267	R6A	26
D-4267	R6B	26
D-5013	S1	27
D-5023	S2	27
D-8151	F1	27

FIRE RELATED EMERGENCY ACTION LEVELS (Unit I)

NOTE: For purposes of this Figure 1D, a safe shutdown system for Unit I consists of any one of the following decay heat removal paths; 1) Emergency Condenser Control Rod Drive Pump (After 8 hours), and Reactor Shutdown Coolant System, 2) Core Spray, Automatic Depressurization System and Containment Spray Torus Cooling.

DETECTION ZONE	FIRE ZONE	FIRE AREA	LOCATION	ALERT	SITE AREA EMERGENCY
D-2151	D3	18	DG 103 Cable Tray Missle Shield	Fire confirmed resulting in: 1) Loss of function of DG 102 OR 2) Loss of function of PB 102	Not Applicable
D-2224	B2A	17A	#12 Bat Rm	Fire confirmed in one division Bat Rm resulting in the loss of function of any channel of a safe shutdown system due to the following: 1) Loss of Bat #11 or Bat #12 OR 2) Loss of DG 102 or DG 103 OR 3) Loss of PB 102 or PB 103 OR 4) Loss of PB 16B or PB 17B	Fire confirmed resulting in loss of process variable indication due to: 1) Loss of MG sets 162 and 172 AND 2) Loss of Control Room Instrumentation and Remote Shutdown Panel Instrumentation, AND 3) Failure to make the connection from the security UPS system within 15 minutes (alternate 115 VAC power source to Remote Shutdown Panel 11). NOTE: Fire area losses and repairs are addressed in IRP-5.
	B2B	17B	#11 Bat Rm		
	T4B	5	T.B. 277' - P.B. 101 Area	Fire confirmed in Turbine building fire zone that involves safe shutdown cables or equipment	
D-2345	T6A	5	T.B. 305' N.-Rx. Bldg. Supply Fan Area	Not Applicable	Not Applicable
D-2395	T6B	5	T.B. 300' East Control Ventilation Area		
	T6C	5	T.B. 300' South		

FIRE RELATED EMERGENCY ACTION LEVELS (Unit I)

DETECTION ZONE	FIRE ZONE	FIRE ZONE	LOCATION	ALERT	SITE AREA EMERGENCY
D-3031PL DX-3031A DX-3031B	C2	11	Aux. Control Rm.	Fire confirmed in fire zone that involves safe shutdown cables or equipment. NOTE: Fire area losses and repairs are addressed in DRP-8	Fire confirmed resulting in loss of function of a shutdown systems due to: 1a) Isolation of both emergency condenser loops, AND 1b) Loss of shutdown cooling, OR 2a) Loss of all four (4) core spray loops, AND 2b) Loss of all six (6) electromatic relief valves
D-3054	C3	11	Main Control Rm.		
D-4016	R1B	2	Rx Bldg., 198' N.W. Corner	1) Fire confirmed resulting in loss of function of a channel (1/2 of a of a safe shutdown system (CH11 or CH12) OR 2) Fire confirmed in two (2) fire zones that involves safe shutdown cables or equipment in both zones as follows: a) Fire breaching a Fire Break Zone (e.g. between R1A and R1B) OR b) Fire in opposite channel zones (e.g. between R1A and R4B)	
D-4026	R1A	1	Rx Bldg., 198' N.E. Corner		
D-4027	R4A	1	Rx Bldg., 298' S.E. Corner		
	R4B	2	Rx Bldg., 298' S.W. Corner		
D-4036	R1B	2	Rx Bldg., 198' S.W. Corner		
D-4046	R1D	1	Rx Bldg., 198' S.E. Corner		

FIRE RELATED EMERGENCY ACTION LEVELS (Unit I)

DETECTION ZONE	FIRE ZONE	FIRE AREA	LOCATION	ALERT	SITE AREA EMERGENCY
D-4086	R1	3	Drywell	Fire confirmed resulting in loss of function of a channel (1/2) of a safe shutdown system due to the following: 1) The status of the drywell being in a non-inerted condition, OR 2a) Loss of a shutdown cooling suction or discharge valves, AND 2b) Loss of any two (2) core spray discharge valves, OR 3) Loss of any three (3) electromatic relief valves. OR 4) Fire confirmed in the fire zone that involves safe shutdown cables or equipment.	Not Applicable

FIRE RELATED EMERGENCY ACTION LEVELS (Unit I)

DETECTION ZONE	FIRE ZONE	FIRE AREA	LOCATION	ALERT	SITE AREA EMERGENCY
D-4156	R3A	1	Rx Bldg., 281' East	1) Fire confirmed resulting in loss of function of a channel (1/2) of a safe shutdown system due to one of the following: a) Loss of PB 16B or 17B OR b) Loss of shutdown cooling OR c) Loss of any two (2) core spray discharge valves, OR d) Loss of any three (3) electromatic relief valves OR 2) Fire confirmed in any two (2) redundant channel fire zones (e.g. breach of a fire break zone) that involves safe shutdown cables or equipment.	Fire confirmed resulting in loss of a safe shutdown system due to: 1a) Loss of shutdown cooling, AND 1b) Isolation of both emergency condenser loops, OR 2a) Loss of shutdown cooling, AND 2b) Loss of all four (4) core spray discharge valves, AND 2c) Loss of all six (6) electromatic relief valves.
	R3B	2	Rx Bldg., 281' West		
D-4166	R3A	1	Rx Bldg., 281'East	Fire confirmed resulting in the loss of PB 17B.	
D-4197	R4A	1	Rx Bldg. 298' N.E. Side	Not Applicable	Not Applicable
	R4B	2	Rx Bldg. 298' N.W. Side		
D-4267	R6A	1	Rx Bldg. 340' East		
	R6B	2	Rx Bldg. 340' West		

FIRE RELATED EMERGENCY ACTION LEVELS (Unit I)

DETECTION ZONE	FIRE ZONE	FIRE AREA	LOCATION	ALERT	SITE AREA EMERGENCY
D-5013	S1	13	Screenhouse	1) Fire confirmed resulting in loss of function of a channel (1/2) of a safe shutdown system due to one of the following: a) Loss of an emergency service water pump, OR b) Loss of any two (2) containment spray raw water pumps, OR c) Loss of a diesel generator cooling water pump (102 or 103), OR d) Loss of diesel generator 102 or 103 OR 2) Fire confirmed in fire zone that involves safe shutdown cables or equipment NOTE: Spool piece ties are addressed in procedures: 1) N1-OP-18 (Emerg. Serv. Wtr.) 2) N1-OP-21 (Feedwater) 3) N1-OP-45 (Diesel Gen.)	Fire confirmed resulting in the loss of a safe shutdown system due to: 1a) Loss of DG cooling water AND 1b) Failure to make the spool piece tie from the fire pump system to the emergency service water system and to the diesel generator cooling water system OR 2a) Loss of normal & emergency service pumps AND 2b) Loss of all normal inventory makeup capability to the vessel, AND 2c) Failure to make the spool piece tie to the feedwater system from fire pump system.
D-5023	S2	14	Diesel Fire Pump Rm	Not Applicable	Not Applicable
D-8151	F1	4	Foam Room		

FIRE RELATED EMERGENCY ACTION LEVELS (Unit I)

DETECTION ZONE	FIRE ZONE	FIRE AREA	LOCATION	ALERT	SITE AREA EMERGENCY
DA-2013N	T2A	6	T.B. 250' N.E. Cond. Stor.Tank	Fire confirmed in fire zone that involves safe shutdown cables, OR Fire resulting in the loss of function of a channel (1/2) of a safe shutdown system due to the following: 1) Loss of PB 16B or PB 17B OR 2) Loss of PB 102 or PB 103 OR 3) Loss of DG 102 or DG 103 NOTE: Fire area losses and repairs are addressed in DRP #1.	Not Applicable
DA-2013S	T2A	6	T.B. 250' N. Side E.		
DA-2022N	T2B	2	T.B. 250' N.W. Corner	1) Fire confirmed resulting in the loss of function of a channel (1/2) of a safe shutdown system due to the following: a) Loss of PB 102 OR b) Loss of PB 16B, OR 2) Fire confirmed in fire zone that involves safe shutdown cables or equipment. NOTE: Fire area losses and repairs are addressed in DRP #2.	
DA-2022S	T2B	2	T.B. 250' W. Side		

FIRE RELATED EMERGENCY ACTION LEVELS (Unit I)

DETECTION ZONE	FIRE ZONE	FIRE AREA	LOCATION	ALERT	SITE AREA EMERGENCY
DA-2031	T2D	9	T.B. 250' North of Cable Spreading Room	1) Fire confirmed resulting in loss of function of a channel (1/2) of a safe shutdown system due to the following: a) Loss of DG 103 OR b) Loss of PB 17B OR c) Loss of PB 102 OR 2) Fire confirmed in fire zone that involves safe shutdown cables or equipment. NOTE: Fire area losses and repairs are addressed in IRP #1	Not Applicable
DA-2041N	D1C	20	DG 103 El. 250'	1) Fire confirmed resulting in loss of function of a channel (1/2) of a safe shutdown system due to the following: a) Loss of PB 102 OR b) Loss of DG 102 OR c) Loss of DG 103 2) Fire confirmed in any two (2) redundant channels or fire zones that involves safe shutdown cables or equipment	
	D1D	21	Area under PB 102 & 103		
	D1B	22	DG 102 Foundation		

FIRE RELATED EMERGENCY ACTION LEVELS (Unit I)

DETECTION ZONE	FIRE ZONE	FIRE AREA	LOCATION	ALERT	SITE AREA EMERGENCY
DA-2041S	D1A	19	DG 103 Foundation	Fire confirmed resulting in the loss of function of DG 103.	Not Applicable
DA-2051E	T2B	2	T.B. 250' S. Side E.	Fire confirmed in fire zone that involves safe shutdown cables or equipment NOTE: Fire area losses and repairs are addressed in DRP #2.	
DA-2051W	T2B	2	T.B. 250' S. Side W.		

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FIRE RELATED EMERGENCY ACTION LEVELS (Unit 1)

DETECTION ZONE	FIRE ZONE	FIRE AREA	LOCATION	ALERT	SITE AREA EMERGENCY
DA-2081S	T3A	5	T.B. 261' E. Corridor	1) Fire confirmed resulting in loss of function of a channel (1/2) of a safe shutdown system due to the following: a) Loss of PB 102 OR b) Loss of PB 103 OR c) Loss of DG 102 OR d) Loss of DG 103 OR 2) Fire confirmed in fire zone that involves safe shutdown cable or equipment. NOTE: Fire area losses and repairs are addressed in DRP #5.	Fire confirmed resulting in loss of function of a safe shutdown system due to: 1a) Loss of shutdown cooling AND 1b) All four (4) core spray Loops, AND 1c) All six (6) electromatic relief valves, OR Loss of the process variables indication due to: 2a) Loss of MG Sets 162 and 172, AND 2b) Loss of Control Room and RSP Instrumentation AND 2c) Failure to make the connection from the security UPS system (alternate 115 VAC power source) to Remote Shutdown Panel 11, El. 250' within 15 minutes.
DA-2083M	T3A	5	T.B. 261' Cooling Wtr. Pp. Area		
DA-2083N	T3A	5	T.B. 261' N. Cond. Stor. Tk.		
DA-2092E	T3B	5	T.B. 261' -277 Booster Pp Area		
DA-2092MG	T3B	5	T.B. 261' Recirc. MG Sets		
DA-2092W	T3B	5	T.B. 261' -277 Recirc. MG Set Area		
DA-2161M	T3B	5	T.B. 261' T.B. 11 and 12 Area		
DA-2162W	T3B	5	T.B. 261' W. Side S.		
DA-2234	T4A	5	T.B. 277' S. E. Side		
	T4B	5	T.B. 277' S. E. Side		
DA-2161E	T3B	5	T.B. 261' S. Side E.	Fire confirmed resulting in the loss of function of Bat Bd. #12.	
	B1A	16A	Bat. Bd. Rm. #12		
	B1B	16B	Bat. Bd. Rm. #11	Fire confirmed resulting in the loss of function of Bat Bd. #11.	

FIRE RELATED EMERGENCY ACTION LEVELS (Unit I)

DETECTION ZONE	FIRE ZONE	FIRE AREA	LOCATION	ALERT	SITE AREA EMERGENCY
DA-2141	D2B	22	DG3102 Room	Fire confirmed resulting in loss of function of DG 102	Not Applicable
DA-2151	D2A	19	DG3103 Room	Fire confirmed resulting in the loss of function DG 103	
DA-4076E	R1C	1	R.B. 237' to 340' S.E. Stairwell	N/A	
	R1A	1	R.B. 237' E. Side	Fire confirmed resulting in loss of function of a channel (1/2) of core spray system.	Fire confirmed resulting in loss of function of a shutdown system due to: 1a) Loss of shutdown cooling, AND 1b) Isolation of both emergency condenser loops, OR 2a) Loss of shutdown cooling, AND 2b) Loss of all four (4) core spray loops, AND 2c) Loss of all six (6) electromatic relief valves
DA-4076W	R1B	2	R.B. 237' W.	Not Applicable	
DA-4116E	R1C	1	R.B. 237' to 340' S.E. Stairwell		
	R2A	1	R.B. 261' E. Side	Fire confirmed resulting in loss of PB 171B	
DA-4116W	R2B	2	R.B. 261' W. Side	Fire confirmed resulting in loss of PB 161B	
	R2C	2			
DA-4237	R5A	1	R.B. 318' E.	Not Applicable	
	R5B	2	R.B. 317' W. Storage		

FIRE RELATED EMERGENCY ACTION LEVELS (Unit I)

DETECTION ZONE	FIRE ZONE	FIRE ZONE	LOCATION	ALERT	SITE AREA EMERGENCY
DX-2113A DX-2113B	D2D	24	PB 103 Room	Fire confirmed resulting in loss of function of PB 103	Not Applicable
DX-2123A DX-2123B	D2C	23	PB 102 Room	Fire confirmed resulting in loss of function of PB 102	
DX-2141A DX-2141B	D2B	22	D.G. 102 Room	Fire confirmed resulting in loss of function of DG 102	
DX-2151A DX-2151B	D2A	19	D.G. 103 Room	Fire confirmed resulting in loss of function of DG 103	

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FIRE RELATED EMERGENCY ACTION LEVELS (Unit I)

DETECTION ZONE	FIRE ZONE	FIRE AREA	LOCATION	ALERT	SITE AREA EMERGENCY
DX-3011A DX-3011B	C1	10	Cable Spreading Room	1) Fire confirmed resulting in loss of function of a channel (1/2) of a safe shutdown system path due to the following: a) Loss of DG 102 or 103, OR b) Loss of PB 102 or PB 17B OR c) Loss of shutdown cooling system, OR 2) Fire confirmed in fire zone that involves safe shutdown cables or equipment NOTE: Fire area losses and repairs are addressed in DRP #6.	Fire confirmed resulting in loss of functions of a safe shutdown system due to: 1a) Loss of shutdown cooling AND 1b) Isolation of both E.C. loops OR 2a) Loss of all four (4) core spray loops AND 2b) Loss of all six (6) electromatic relief valves
DX-4217A DX-4217B	R4A	1	Rx Bldg., 298' N. Side Emerg. cond. Vlv. Rm.	Fire confirmed resulting in of function of: 1) Emergency Condenser #11 OR 2) Emergency Condenser #12	Not Applicable

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ATTACHMENT 2

Classification of Emergency Conditions

for

NMPNS Unit II

CONTENTS:

ACTION LEVEL CRITERIA FOR CLASSIFICATION OF EMERGENCY CONDITIONS FOR NMPNS UNIT II

Initiating Condition	Unusual Event	Alert	Site Area Emergency	General Emergency
	Off-normal Events Which Could Indicate a Potential Degradation of the Level of Safety of the Plant	Events Which Indicate an Actual Degradation of the Level of Safety of the Plant	Events Which Involve Actual or Likely Major Failures of Plant Functions Needed for Protection of the Public	Events Which Involve Actual or Imminent Substantial Core Degradation or Melting with Potential for Loss of Containment Integrity.
Radioactive Effluent (Applicable to any release points(s) and resulting from any initiating event)	Indicated by the following: -High Alarm(s) on stack, vent, or liquid effluent monitor(s), with confirmation by the Chemistry Laboratory, that Tech. Specs. limits have been exceeded when averaged over a period of one (1) hour including any or all contribution from Unit II, Unit I and the J.A. Fitzpatrick Nuclear Power Plant. -Routine or special samples or surveys. Which indicate that Tech. Spec. limits have been exceeded. (The stack and vent monitor alarm is set at a lower value than the Tech. Spec. limit.)	Indicated by the following: -Ten times High Alarm(s) setpoint on stack or vent or ten times the High-High Alarm(s) setpoint on liquid effluent monitor(s), with confirmation by the Chemistry Laboratory that Tech. Specs. limits have been exceeded when averaged over a period of one (1) hour including any or all contribution from Unit II, Unit I, and the J.A. Fitzpatrick Nuclear Power Plant. -Routine or special samples or surveys. (The stack and vent monitor alarm is set at a lower value than the Tech. Spec. limit.)	Indicated by one or more of the following: -Effluent monitors detect levels corresponding to >50mr/hr for 1/2 hr, or or >500 mr/hr whole body for 2 minutes (or 5 times these levels to the thyroid) at the site boundary for adverse meteorology as indicated by, Effluent monitors detect stack release rates in Attachment 2, Figure 2.B.,Data Sources (surveys monitors, etc.) indicate ground level release rates in Attachment 2,Figure 2.C -These dose rates are body projected based on plant parameters or are measured in the environs, -Effluent monitors detect levels such that projected accumulated dose is >1 rem whole body or >5 rem child thyroid at the site boundary for actual meterology.	Indicated by one or more of the following: -Release corresponds to >1000 mrem/hr to Whole Body or >5,000 mrem/hr to child thyroid at site boundary under actual meteorology as confirmed by field sample or lab analysis, -These dose rates are projected based on plant parameters or are measured in the environs, 8 -Off-site dose due to event is projected to exceed 5 rem to whole body or 25 rem to the child thyroid at site boundary under actual meteorology. 8 8

ACTION LEVEL CRITERIA FOR CLASSIFICATION OF EMERGENCY CONDITIONS FOR NMPNS UNIT II

Initiating Condition	Unusual Event	Alert	Site Area Emergency	General Emergency
High Radiation Levels	Indicated by one or more of the following: - Two or more area radiation monitors reach their alarm points (not including the TIP room monitor or a monitor in alarm due to a planned evolution), - Confirmed building ventilation duct airborne activity indicates in excess of MPC values, - SSS decides radiation condition in the station dictates the need for a station evacuation.	Indicated by one or more of the following: - Two or more area radiaction monitors or continuous air monitors indicate greater than 1000 times background, - Confirmed airborne activity greater than 1000 x MPC.	Not Applicable	Indicated by one or more of the following: -Release corresponds to >1000 mrem/hr to whole body or >5000 mrem/hr to child thyroid at site boundary under actual meteorology as confirmed by field sample or lab analysis, -These dose rates are projected based on plant parameters or are measured in the environs, -Off-site dose due to event is projected to exceed 5 rem to the child thyroid at site boundary.
Fuel Damage	Indicated by one or more of the following: - Reactor system activeity exceeds 4.0 µCi/g H_2O dose equivalent I-131. -Annunciation 851253, "Process Gas Rad. Mon. Activated" and both off-gas monitors RE13A and RE13B trip on high alarm.	Indicated by one or more of the following: - Reactor system activevity exceeds 300 µCi/g H_2O total iodine.	Not Applicable	
Spent Fuel Damage	Not Applicable	Indicated by one or more of the following: - Fuel pool water level decreases below low level alarm setting, - Fuel damage accident with release of radioactivity to reactor building as indicated by radiation alarms on 2RMS-RE-111 and/or 112.	Major damage to spent fuel with release of radioactivity as indicated by high radiation alarms on 2RMS-RE-111 and/or 112 AND SGTS auto initiates.	

ACTION LEVEL CRITERIA FOR CLASSIFICATION OF EMERGENCY CONDITIONS FOR NMPNS UNIT II

Initiating Condition	Unusual Event	Alert	Site Area Emergency	General Emergency
Reactor System Integrity	Reactor system leak rated exceeds 5 gpm from an unidentified source or total of 25 gpm as identified by any one of the following: - Any verified pressure boundary leakage, - Drywell floor drain leak rate high (>5 gpm average over 24 hours), - Drywell floor drain leak rate high (>1 gpm above normal).	Reactor system leak rated exceeds 50 gpm from an unidentified source as indicated by any one of the following: -Alarm 873111 Drywell floor drain tank level high-high AND -Reactor building floor drain level high.	Loss of coolant accident which exceeds the make-up pump capacity as indicated by all the following: - Reactor low water level L1 alarms, - high drywell pressure alarm, - high Drywell or Reactor Building floor drain tank level alarm, - HPCS, LPCS, RCIC and/or LPCI auto activation alarm, - Main Steam line isolation valves closure.	-Indicated by one or more of the following: - Loss of 2 of 3 fission product barriers with a potential loss of the third; - Any initiating event that makes release of large amounts of radioactivity probable, i.e. 1. LOCA with failure of ECCS. Loss of containment imminent, 2. LOCA with failure of containment. Potential for loss of ECCS, 3. S/D occurs, but decay heat removal systems fail, 4. Transient occurs plus failure of requisite core S/D systems (Scram and Standby Liquid Control System). - Loss of plant control occurs. - External events which could cause massive common damage to plant systems leading to any of the above.
Reactor Circulating Pump Seizure Leading to Fuel Failure	Not Applicable	Not Applicable	Not Applicable	

ACTION LEVEL CRITERIA FOR CLASSIFICATION OF EMERGENCY CONDITIONS FOR NMPNS UNIT II

Initiating Condition	Unusual Event	Alert	Site Area Emergency	General Emergency
Degraded Core With Possible Loss of Coolable Geometry	Not Applicable	Not Applicable	1. Indicated by all of the following: - Failure of control rods to fully insert on a scram or shutdown as indicated on full core display panel; - Upscale readings on local power range monitor (LPRM) adjacent to not-fully-inserted rods; - Very high coolant activity as determined by sample analysis (greater than or Equal to 300 µCi/gram equivalent of I-131). OR 2. Indicated by all of the following: - Reactor water level at or below top of active fuel core height as indicated by reading on fuel zone level indicator; - Very high coolant activity as determined by sample analysis (greater than or equal to 300µCi/gram equivalent of I-131).	Indicated by one or more of the following: -Loss of 2 of 3 fission product product barriers with a potential loss of the third; - Any initiating event that makes release of large amounts of radioactivity probable, i.e. 1. LOCA with failure of ECCS. Loss of containment imment, 2. LOCA with failure of containment. Potential for loss of ECCS, 3. S/D occurs, but decay heat removal systems fail, 4. Transient occurs plus failure of requisite core S/D systems (Scram and Standby Liquid Control System. - Loss of plant control occurs. - External events which could cause massive common damage to plant systems leading to any of the above.

ACTION LEVEL CRITERIA FOR CLASSIFICATION OF EMERGENCY CONDITIONS FOR NMPNS UNIT II

Initiating Condition	Unusual Event	Alert	Site Area Emergency	General Emergency
Reactor System (RS) Pressure	Reactor system pressure exceeds 1200 psig.	Not Applicable	Not Applicable	Indicated by one or more of the following: - Loss of 2 of 3 fission product barriers with a potential loss of the third; - Any initiating event that makes release of large amounts of radioactivity probable, i.e. 1. LOCA with failure of ECCS. Loss of containment imminent, 2. LOCA with failure of containment. Potential for loss of ECCS, 3. S/D occurs, but decay heat removal systems fail, 4. Transient occurs plus failure of requisite core S/D systems (Scram and Standby Liquid Control System). - Loss of plant control occurs. - External events which could cause massive common damage to plant systems leading to any of the above.
Initiation of ECCS coincident with positive finding that initiation is not spurious and discharge to vessel	Indicated by one of the following: Manual or automatic initiation of: - High Pressure Core Spray System or - Low Pressure Core Spray System or - Low Pressure Coolant Injection Cooling with verification of flow established to the Reactor using Redundant instrument action.	Not Applicable	Not Applicable	
Loss of containment integrity requiring shutdown by Technical Specifications	Same as intitiating event	Not Applicable	Not Applicable	

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ACTION LEVEL CRITERIA FOR CLASSIFICATION OF EMERGENCY CONDITIONS FOR NMPNS UNIT II

Initiating Condition	Unusual Event	Alert	Site Area Emergency	General Emergency
Failure of a Reactor System Safety/ Relief Valve to reseat (exceeding normal leakage)	Failure of a Safety/ Relief Valve would be indicated by all of the following: - Annunciator 601537, "ADS Valves/Safety Valves Leaking" actuates. - Suppression Pool Temperature will rise - Verification with acoustic monitor. - Drop in electrical output, (Approx. 70 MWe), - Slight decrease in reactor level, - SRV discharge tail-pipe temperature increases. - Steam Flow/Feed Flow mismatch.	Not Applicable	Not Applicable	Indicated by one or more of the following: - Loss of 2 of 3 fission product barriers with a potential loss of the third; - Any initiating event that makes release of large amounts of radioactivity probable, i.e. 1. LOCA with failure of ECCS. Loss of containment imminent, 2. LOCA with failure of containment. Potential for loss of ECCS, 3. S/D occurs, but decay heat removal systems fail, 4. Transient occurs plus failure of requisite core S/D systems (Scram and Standby Liquid Control System). - Loss of plant control occurs. - External events which could cause massive common damage to plant systems leading to any of the above.

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ACTION LEVEL CRITERIA FOR CLASSIFICATION OF EMERGENCY CONDITIONS FOR NMPNS UNIT II

Initiating Condition	Unusual Event	Alert	Site Area Emergency	General Emergency
Main Steam Line Break	Not Applicable	Steam line break outside the drywell with proper MSIV function. This could be indicated by one or more of the following: - Main Steam Flow Rate High, - Reactor Pressure decreases, - Main steam tunnel ambient temperature high, - Main steam tunnel differential temperature high, - Main steam tunnel radiation high.	Steam line break outside the drywell with failure of the MSIV. This could be indicated by: - Failure of both MSIVs in the broken line to close or isolate as indicated by position indication accompanied by one or more of the following: - Main steam flow rate high, - Reactor pressure decreases, - Main steam tunnel ambient temp. high, - Main steam tunnel differential temp. high, - Main steam tunnel radiation high.	Indicated by one or more of the following: - Loss of 2 of 3 fission product barriers with a potential loss of the third; - Any initiating event that makes release of large amounts of radioactivity probable, i.e. 1. LOCA with failure of ECCS. Loss of containment imminent, 2. LOCA with failure of containment. Potential for loss of ECCS, 3. S/D occurs, but decay heat removal systems fail, 4. Transient occurs plus failure of requisite core S/D systems (Scram and Standby Liquid Control System). - Loss of plant control occurs. - External events which could cause massive common damage to plant systems leading to any of the above.

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ACTION LEVEL CRITERIA FOR CLASSIFICATION OF EMERGENCY CONDITIONS FOR NMPNS UNIT II

Initiating Condition	Unusual Event	Alert	Site Area Emergency	General Emergency
Loss of all off-site power or loss of on-site AC power capability	Indicated by either one of the following: - Loss of both 115 KV feeders, - Loss of Div. I and Div. II on-site diesel generators.	Not Applicable	Not Applicable	Indicated by one or more of the following: - Loss of 2 of 3 fission product barriers with a potential loss of the third; - Any initiating event that makes releases of large amounts of radioactivity probable, i.e. 1. LOCA with failure of ECCS. Loss of containment imminent, 2. LOCA with failure of containment. Potential for loss of ECCS, 3. S/D occurs, but decay heat removal systems fail, 4. Transient occurs plus failure of requisite core S/D systems (Scram and Standby Liquid Control System). - Loss of plant control occurs. - External events which could cause massive common damage to plant systems leading to any of the above.
Loss of all off-site power and loss of all AC on-site power capability	Not Applicable	Indicated by both of the following: - Loss of both 115 KV feeders, - Loss of Div. I and Div. II on-site diesel generators with scram of the reactor.	Loss of on-site and off-site AC power (as defined by the ALERT) exceeds 15 minutes.	
Loss of On-site Vital DC Power	Indicated by either one of the following: - Loss of Div. I and Div. II emergency system control power, - Loss of control power to safety/ relief valves	Loss of DC power boards 2BYS*SWG002A and 2BYS*SWG002B would be indicated by annunicators on Panel #852: - Alarm 852108 Div I Emergency 125VDC - Alarm 852208 Div II Emergency 125VDC	Loss of DC power (as defined by the ALERT) supplies exceeds 15 minutes.	

ACTION LEVEL CRITERIA FOR CLASSIFICATION OF EMERGENCY CONDITIONS FOR NMPNS UNIT II

Initiating Condition	Unusual Event	Alert	Site Area Emergency	General Emergency
Loss of Engineered Safety Feature or Fire Protection System Function requiring shutdown by Technical Specifications 3.0.3 (e.g. because of malfunction, personnel error or procedural inadequacy	Same as Initiating Event	Not Applicable	Not Applicable	Indicated by one or more of the following: - Loss of 2 of 3 fission product barriers with a potential loss of the third - Any initiating event that makes release of large amounts of radioactivity probable, i.e. 1) LOCA with failure of ECCS. Loss of containment imminent, 2) LOCA with failure of containment. Potential for loss of ECCS, 3) S/D occurs, but decay heat removal systems fail, 4) Transient occurs plus failure of requisite core S/D systems (Scram and Standby Liquid Control System). - Loss of plant control occurs - External events which could cause massive common damage to plant systems leading to any of the above.
Fire	Fire not under control within 10 minutes or requiring assistance of an off-site Fire Dept. to extinguish	Fire confirmed and potentially affecting safe shutdown systems as indicated by: A) Fire resulting in the loss of function of a division of a safe shutdown system, or B) Fire in any fire zone(s) that could impact two (2) redundant divisions involving shutdown cables or equipment. (See Attachment 2, Figure 2.D.)	Fire confirmed resulting in the loss of a safe shutdown system as indicated by Attachment 2, Figure 2.D.	
Loss of Indicators, Annunciators or Alarms	Loss of indicators or alarms on process or effluent parameters not functional in control room to an extent requiring shutdown by Technical Specifications	Loss of all Control Room Alarms (Annunciators)	Either one of the following occurs: - Loss of all alarms for > 60 min. with plant not in cold S/D - Plant transient occurs while all alarms are lost	

ACTION LEVEL CRITERIA FOR CLASSIFICATION OF EMERGENCY CONDITIONS FOR NMPNS UNIT II

Initiating Condition	Unusual Event	Alert	Site Area Emergency	General Emergency
Security Compromise	Security threat or attempted entry or sabotage in accordance with Site Security Plan.	Ongoing security compromise in accordance with Site Security Plan.	Imminent loss of physical control of the plant.	Indicated by one or more of the following: - Loss of 2 of 3 fission product barriers with a potential loss of the third; - Any initiating event that makes release of large amounts of radioactivity probable, i.e. 1. LOCA with failure of ECCS. Loss of containment imminent, 2. LOCA with failure of containment. Potential for loss of ECCS, 3. S/D occurs, but decay heat removal systems fail, 4. Transient occurs plus failure of requisite core S/D systems (Scram and Standby Liquid Control System). - Loss of plant control occurs. - External events which could cause massive common damage to plant systems leading to any of the above.
Natural Phenomenon Earthquake	Any earthquake felt in-plant or detected on Station seismic instrumentation by valid trip of Alarm 842121 on 2CEC-PNL 842.	Earthquake >0.075 g (>OBE) as noted by valid actuations of: Alarm Annunciation 842121 on 2CEC-PNL842 AND of the amber light on response spectrum Annunciator RSA3A AND plant not in cold shutdown.	Earthquake >0.15 g (>SSE) as noted by a valid actuations of: Alarm Annunciation 842121 on 2CEC-PNL842 AND of the Red light on response spectrum annuniator RSA3A AND plant not in cold shutdown.	
Flood, Tsunami, Hurricane Surge, Seiche	Lake water level experienced or projected near design levels.	Lake water level experienced or projected near design levels.	Lake water level experienced or projected greater than design levels or damages vital equipment at lower levels.	
Tornado on-site	Any tornado experienced or projected on-site.	Tornado striking the facility.	Sustained winds in excess of design levels of 100 mph.	
Hurricane	Any hurricane experienced or projected within the 10-mile EPZ.	Experienced or projected hurricane winds approach 100 mph.	Sustained winds in excess of design levels of 100 mph.	

ACTION LEVEL CRITERIA FOR CLASSIFICATION OF EMERGENCY CONDITIONS FOR NMPNS UNIT II

Initiating Condition	Unusual Event	Alert	Site Area Emergency	General Emergency
Turbine	Experienced or projected turbine failure causing rapid plant shutdown.	Turbine failure causing penetration. This would be indicated by one or more of the following: - - Rapid loss of condenser vacuum, - Turbine overspeed, - Loud unusual noises.	Not Applicable	Indicated by one or more of the following: - Loss of 2 of 3 fission product barriers with a potential loss of the third; - Any initiating event that makes release of large amounts of radioactivity probable, i.e. 1. LOCA with failure of ECCS. Loss of containment imminent, 2. LOCA with failure of containment. Potential for loss of ECCS, 3. S/D occurs, but decay heat removal systems fail, 4. Transient occurs plus failure of requisite core S/D systems (Scram and Standby Liquid Control System). - Loss of plant control occurs. - External events which could cause massive common damage to plant systems leading to any of the above.
Missile or Explosion	Explosion or missile experienced or projected within 2 miles of the site.	Experienced or projected known missile or explosion damage to facility affecting plant operation.	Experienced or projected severe damage to safe shutdown equipment and plant not in cold shutdown.	
Aircraft	Either one of the following occurs: - Experienced or projected unusual aircraft activity over the facility, - Aircraft crashes on-site.	Either one of the following occurs: - Aircraft projected to strike a station structure. - Aircraft strikes a station structure.	Aircraft crash causing damage or fire in one or more of the following: - Drywell; - Control Room; - Reactor Bldg; - Waste Bldg; - Turbine Bldg; - Screen House.	
Toxic or Flammable Gases	Toxic or flammable gas releases experienced or projected within 2 miles of the site.	Experienced or projected entry of toxic or flammable gas into facility environs. Presents habitability problems, which are verified by portable instruments.	Experienced or projected entry into vital areas and restricts necessary access.	

ACTION LEVEL CRITERIA FOR CLASSIFICATION OF EMERGENCY CONDITIONS FOR NMPNS UNIT II

Initiating Condition	Unusual Event	Alert	Site Area Emergency	General Emergency
Contaminated Injury	Transportation of Contaminated injured individual from site to off-site hospital.	Not Applicable	Not Applicable	Indicated by one or more of the following: - Loss of 2 of 3 fission product barriers with a potential loss of the third; - Any initiating event that makes release of large amounts of radioactivity probable, i.e. 1. LOCA with failure of ECCS. Loss of containment imminent, 2. LOCA with failure of containment. Potential for loss of ECCS, 3. S/D occurs, but decay heat removal systems fail, 4. Transient occurs plus failure of requisite core S/D systems (Scram and Standby Liquid Control System). - Loss of plant control occurs. - External events which could cause massive common damage to plant systems leading to any of the above.
Nearby Nuclear Emergency	Not Applicable	An emergency situation of an ALERT classification or above at NMP Unit 1 or JAFNPP.	Not Applicable	
Failure to Initiate or Complete a Scram	Not Applicable	Failure of the reactor protection system to initiate and complete a scram. This would be indicated by either of the following: - Positive readings on the SRM, IRM, LPRM, - APRM instrumentation systems above shutdown levels.	Transient requiring operation of shutdown systems with failure to scram. Continued power generation (but no core damage immediately evident) and initiation of liquid poison system is required per EOP's.	
Loss of Plant Control	Not Applicable	Loss of capability to initiate and/or maintain cold shutdown as indicated by all of the following: - Both RHR-A and RHR-B Shutdown Cooling Modes not functional - Recirc. Loop Suction temperature increases to >212°F.	Loss of capability to initiate and/or maintain hot shutdown as indicated by either of the following: - Inability to insert a sufficient number of control rods to bring the reactor subcritical with failure of both SLC loops to inject water into the vessel, - Failure of the SLC system to bring reactor subcritical after poison injection.	

Initiating Condition	Unusual Event	Alert	Site Area Emergency	General Emergency
Control Room Evacuation	Not Applicable	Evacuation of Control Room anticipated or required as determined by the Site Emergency Director, with control of shutdown systems established from local stations.	Evacuation of Control Room as determined by the Site Emergency Director, and control of shutdown systems not established from local stations in 15 minutes.	Indicated by one or more of the following: - Loss of 2 of 3 fission product barriers with a potential loss of the third; - Any initiating event that makes release of large amounts of radioactivity probable, i.e. 1. LOCA with failure of ECCS. Loss of containment imminent, 2. LOCA with failure of containment. Potential for loss of ECCS, 3. S/D occurs, but decay heat removal systems fail, 4. Transient occurs plus failure of requisite core S/D systems (Scram and Standby Liquid Control System).
All other Plant Anomalies	Other plant conditions exist, as determined by the Site Emergency Director, that warrant increased awareness on the part of the plant operating staff or State and/or local off-site authorities. These conditions may include plant shutdown under T.S. requirements or involve other than normal controlled shutdown	Other plant conditions exist, as determined by the Site Emergency Director, that warrant precautionary activation of the Technical Support Center and placing Emergency Operations Facility and other key emergency personnel.	Other plant conditions exist, as determined by the Site Emergency Director, that warrant activation of emergency centers and monitoring teams or a precautionary notification to the public within the 10-mile EPZ.	
Radioactive Off-site Spills and/or Transportation Accident Involving Radioactive Material being Shipped to or from NMPNS	Transportation accident with the release of radioactive material to the environment. environment.	Not Applicable	Not Applicable	- Loss of plant control occurs. - External events which could cause massive common damage to plant systems leading to any of the above.

Attachment 2, Figure 2.B.

Two and Thirty-Minute Site Area Emergency
Source Term Values for NMPNS Unit II Stack Release

Wind Direction from (Degree Range)	Site Boundary Distance (Meters)	Site Boundary Distance (Miles)	Q_2 (CPS)	Q_2 (μCi/sec)	Q_{30} (CPS)	Q_{30} (μCi/sec)
168.75 - 191.25	75	4.66E-2	1.93 E+4	2.42 E+6	1.93 E+3	2.42 E+5
191.25 - 213.75	75	4.66E-2	1.93 E+4	2.42 E+6	1.93 E+3	2.42 E+5
213.75 - 236.25	91	5.03E-2	1.93 E+4	2.42 E+6	1.93 E+3	2.42 E+5
236.25 - 258.75	107	6.64E-2	2.05 E+4	2.57 E+6	2.05 E+3	2.57 E+5
258.75 - 281.25	1555	9.66E-1	2.20 E+5	2.76 E+7	2.20 E+4	2.76 E+6
281.25 - 303.75	1555	9.66E-1	2.15 E+5	2.69 E+7	2.15 E+4	2.69 E+6
303.75 - 326.25	1600	9.94E-1	2.15 E+5	2.69 E+7	2.15 E+4	2.69 E+6
326.25 - 348.75	2134	1.33	2.78 E+5	3.49 E+7	2.78 E+4	3.49 E+6
348.75 - 11.25	2256	1.40	2.85 E+5	3.57 E+7	2.85 E+4	3.57 E+6
11.25 - 33.75	1936	1.20	2.55 E+5	3.20 E+7	2.55 E+4	3.20 E+6
33.75 - 56.25	1615	1.00	2.16 E+5	2.71 E+7	2.16 E+4	2.71 E+6
56.25 - 78.75	405	2.52E-1	6.84 E+4	8.57 E+6	6.84 E+3	8.57 E+5
78.75 - 101.25	117	2.27E-2	2.23 E+4	2.80 E+6	2.23 E+3	2.80 E+5
101.25 - 123.75	98	5.46E-2	1.93 E+4	2.42 E+6	1.93 E+3	2.42 E+5
123.75 - 146.25	81	4.66E-2	1.93 E+4	2.42 E+6	1.93 E+3	2.42 E+5
146.25 - 168.75	75	4.66E-2	1.93 E+4	2.42 E+6	1.93 E+3	2.42 E+5

1. Atmospheric conditions assumed for stack height of 131 meters for releases.

2. Q values are calculated based on the characteristics of the ΔT=0 hrs. post-LOCA distribution of isotopes at the main stack gaseous effluent monitor.

3. Q_2 is based on 500 mr/hr exposure for 2 minutes and the Q_{30} is based on 50 mr/hr exposure for 30 minutes.

4. The Q_2 and Q_{30} values in the table were not corrected for the radioactive decay during the plume travel time from the release point to the receptor under consideration.

5. The Q_2 and Q_{30} values shown are calculated using the most conservative X/Q for each sector. The Site Boundary Distances shown correspond to this X/Q. See Unit II FSAR Table 2F-1 for a summary of Site Boundary Distances.

Attachment 2, Figure 2.C.

Two and Thirty-Minute Site Area Emergency
Source Term Values for NMPNS Unit II Ground Level Release

Wind Direction from (Degree Range)	Site Boundary Distance (Meters)	Site Boundary Distance (Miles)	Q_2 (CPS)	Q_2 (μCi/sec)	Q_{30} (CPS)	Q_{30} (μCi/sec)
168.75 - 191.25	192	1.92E-1	2.25 E+3	2.37 E+5	2.25 E+2	2.37 E+4
191.25 - 213.75	207	1.29E-1	5.13 E+3	5.40 E+5	5.13 E+2	5.40 E+4
213.75 - 236.25	285	1.77E-1	1.28 E+4	1.35 E+6	1.28 E+3	1.35 E+5
236.25 - 258.75	419	2.60E-1	2.40 E+4	2.53 E+6	2.40 E+3	2,40 E+5
258.75 - 281.25	1686	1.05	1.03 E+5	1.09 E+7	1.03 E+4	1.09 E+6
281.25 - 303.75	1686	1.05	1.55 E+5	1.63 E+7	1.55 E+4	1.63 E+6
303.75 - 326.25	1743	1.08	1.55 E+5	1.63 E+7	1.55 E+4	1.63 E+6
326.25 - 348.75	2094	1.30	2.65 E+5	2.80 E+7	2.65 E+4	2.80 E+6
348.75 - 11.25	1945	1.21	7.99 E+4	8.43 E+6	7.99 E+3	8.43 E+5
11.25 - 33.75	1695	1.05	1.58 E+5	1.67 E+7	1.58 E+4	1.67 E+6
33.75 - 56.25	1381	8.58E-1	9.41 E+4	9.92 E+6	9.41 E+3	9.92 E+5
56.25 - 78.75	988	6.14E-1	6.19 E+4	6.53 E+6	6.19 E+3	6.53 E+5
78.75 - 101.25	402	2.50E-1	7.66 E+3	8.08 E+5	7.66 E+2	8.08 E+4
101.25 - 123.75	293	1.82E-1	3.80 E+3	4.02 E+5	3.81 E+2	4.02 E+4
123.75 - 146.25	227	1.41E-1	2.48 E+3	2.61 E+5	2.48 E+2	2.61 E+4
1146.25 - 168.75	187	1.16E-1	1.62 E+3	1.70 E+5	1.62 E+2	1.70 E+4

1. Atmospheric conditions assumed for vent height of 57 meters for releases.

2. Q values are calculated based on the characteristics of the ΔT=0 hrs. post-LOCA distribution of isotopes at the radwaste/reactor building vent gaseous effluent monitor.

3. Q_2 is based on 500 mr/hr exposure for 2 minutes and the Q_{30} is based on 50 mr/hr exposure for 30 minutes.

4. The Q_2 and Q_{30} values in the table were not corrected for the radioactive decay during the plume travel time from the release point to the receptor under consideration.

5. The Q_2 and Q_{30} values shown are calculated using the most conservative X/Q for each sector. The Site Boundary Distances shown correspond to this X/Q. See Unit II FSAR Table 2F-1 for a summary of Site Boundary Distances.

Attachment 2, Figure 2.D.

FIRE RELATED EMERGENCY ACTION LEVELS (UNIT II)
CROSS-REFERENCE INDEX

FIRE RELATED EMERGENCY ACTION LEVELS (UNIT II)

NOTE: For purposes of this Figure 2.D. a Safe Shutdown System for Unit II consists of any one of the following decay heat removal paths; 1) HPCS, S/RV/ADS, RHR Pool Cooling, RHR Shutdown Cooling, 2) RCIC, S/RV/ADS, RHR Pool Cooling, RHR Shutdown Cooling.

DETECTION PANEL	FIRE ZONE	FIRE AREA	FIRE ZONE LOCATION	ALERT		SITE AREA EMERGENCY
	(DIV 1)			Fire confirmed in fire zone AND with either (A) OR (B) listed below:		Fire confirmed resulting in loss of function of a safe shutdown system listed below:
				(A) — OR —	(B)	1a) Loss of HPCS (for more than 30 min.) OR 1b) Loss of RCIC (for more than 30 min.), AND 2a) Loss of A or B loop of RHR pool cooling (for more than 45 min.), OR 2b) Loss of A or B loop of RHR shutdown cooling (for more than 120 min.).
				Resulting in the loss of function of one division of sub-system listed below:	A second fire confirmed involving SSD cables or equipment (in both zones) in any one of the following fire zones:	
PNL 125	402SW	FA28	Div. 1 (EDG-1) Rm	Div. 1 (EDG-1) or SWmov74A, C&E	403SW	
PNL 128	333XL	FA17	Div. 1 Swgr Rm	Div. 1 DC pwr	336XL	
PNL 123	806NZ	FA61	SWP Rm B	SWP A, C & E	802NZ,803NZ,807NZ,	
PNL 101	201SW	FA1	LPCS Room	iv 1 LPCS	206SW,207SW,208SW,	
	203SW	FA1	RHR Hx Rm A	Div 1 RHR-A	214SW,224SW,238SW,	
PNL 103	221SW	FA1	Ax Bay N. El. 215	Div 1 RHR-A	237NZ,323NW,324NW, 326NW,337NW,338NZ, 253XL,255SW,304NW, 309NW,312NW,335NW, 359NW, or 377NW	

FIRE RELATED EMERGENCY ACTION LEVELS (UNIT II)

DETECTION PANEL	FIRE ZONE	FIRE AREA	FIRE ZONE LOCATION	ALERT		SITE AREA EMERGENCY
	(DIV 1)			Fire confirmed in fire zone AND with either (A) OR (B) listed below:		Fire confirmed resulting in loss of function of a safe shutdown system listed below: 1a) Loss of HPCS (for more than 30 min.) OR 1b) Loss of RCIC (for more than 30 min.), AND 2a) Loss of A or B loop of RHR pool cooling (for more than 45 min.), OR 2b) Loss of A or B loop of RHR shutdown cooling (for more than 120 min.).
				(A) - OR - (B)		
				Resulting in the loss of function of one division sub-system listed below	A second fire confirmed involving SSD cables or equipment (in both zones) in any one of the following fire zone:	
PNL 101	204SW	FA2	RCIC Pp Rm 175'	Div. 1 RCIC Pool Lv or Temp indications or LPCS or RHR-A or RCIC or ADS	213SW,223SW, 239SW,245SW, 205NZ,404SW, 327NW,339NZ, 342XL,403SW, 336XL,253XL, 255SW,304NW, 309NW,312NW, 335NW,359NW, or 377NW	
	212SW	FSA34	Rx Bldg. Gen area N. 175/196'			
	202SW	FA1	RHR Hx Rm A			
PNL 103	222SW	FSA34	Rx Bldg. N. 215'			
PNL 104	232SW	FSA34	RX Bldg. N. 240'			
PNL 105	243SW	FSA34	Rx Bldg. N. 261			
PNL 106	252SW	FSA34	Rx Bldg. N. El. 289	Div 1 RHR-A or Div 1 RCIC		
PNL 126	301NW	FA8	Elec Tnnl N El 214			
	302NW	FA7	Elec Tnnl NW El 210			
	303NW	FA10	Elec Tnnl SW El 214			

FIRE RELATED EMERGENCY ACTION LEVELS (UNIT II)

DETECTION PANEL	FIRE ZONE	FIRE AREA	FIRE ZONE LOCATION	ALERT		SITE AREA EMERGENCY
	(DIV 1)			Fire confirmed in fire zone AND with either (A) OR (B) listed below:		Fire confirmed resulting in loss of function of a safe shutdown system listed below: 1a) Loss of HPCS (for more than 30 min.) OR 1b) Loss of RCIC (for more than 30 min.), AND 2a) Loss of A or B loop of RHR pool cooling (for more than 45 min.). OR 2b) Loss of A or B loop of RHR shutdown cooling (for more than 120 min.).
				(A)	(B)	
				Resulting in the loss of function of one division of sub-systems listed below:	A second fire confirmed involving SSD cables or equipment (in both zones) in any one of the following fire zones:	
PNL 126	305NW	FA17	Div 1 cable chase 214'	RHR-A or RCIC	B' or C' or D' (See attached table #2)	
	306NW	FA16	Div 1 cable chase 214'			
PNL 127	236NZ	FA48	Elec TNL Vert 237'			
	321NW	FA16	Div 1 cable chase 240			
	322NW	FA17	Div 1 cable area 237'			
	325NW	FA22	Div 1 cable chase 244'			
PNL 128	332NW	FA16	Div 1 cable chase 261'			
	334NZ	FA17	Div 1 Bat Rm 261'			
	343NZ	FA44	RSS Rm A 261'			
PNL 129	352NW	FA16	Div 1 cable chase 277'			
	371NW	FA16	Div 1 cable chase 306'			

FIRE RELATED EMERGENCY ACTION LEVELS (UNIT II)

DETECTION PANEL	FIRE ZONE	FIRE AREA	FIRE ZONE LOCATION	ALERT		SITE AREA EMERGENCY
	(DIV 1)			Fire confirmed in fire zone AND with either (A) OR (B) listed below:		Fire confirmed resulting in loss of function of a safe shutdown system listed below: 1a) Loss of HPCS (for more than 30 min.) OR 1b) Loss of RCIC (for more than 30 min.), AND 2a) Loss of A or B loop of RHR pool cooling (for more than 45 min.). OR 2b) Loss of A or B loop of RHR shutdown cooling (for more than 120 min.).
				(A) - OR - (B)		
				Resulting in the loss of function of one division of sub-systems listed below:	A second fire confirmed involving SSD cables or equipment (in both zones) in any one of the following fire zones:	
PNL 101	211SW	FA1	Aux Bay N 198'	Not Applicable	Not Applicable	
PNL 104	231SW	FA1	Aux Bay N 240'			
PNL 107	271SW	FSA34	Rx Bldg. NW 328'			
PNL 108	273SW	FSA34	Rx Bldg. NW 328'			
PNL 128	340NZ	FA22	HVAC Rm 261'			
PNL 129	360NZ	FA25	HVAC Rm 288'			
	380NZ	FA76	CB Corridor 306'			

EAP-2, Attachment 2, Figure 2.D. (Cont'd)

FIRE RELATED EMERGENCY ACTION LEVELS (UNIT II)

DETECTION PANEL	FIRE ZONE	FIRE AREA	FIRE ZONE LOCATION	ALERT		SITE AREA EMERGENCY
	(DIV 2)			Fire confirmed in fire zone AND with (A) OR (B) listed below:		Fire confirmed resulting in loss of function of a safe shutdown system listed below: 1a) Loss of HPCS (for more than 30 min.) OR 1b) Loss of RCIC (for more than 30 min.), AND 2a) Loss of A or B loop of RHR pool cooling (for more than 45 min.), OR 2b) Loss of A or B loop of RHR shutdown cooling (for more than 120 min.).
				(A) – OR – (B)		
				Resulting in the loss of function of on division sub-systems listed below:	A second fire confirmed involving SSD cables or equipment (in both zones) in any one of the following fire zones:	
PNL 125	403SW	FA29	Dv 2 DG Rm 261'	Div 2 (EDG-3)	402SW,333XL, 806NZ,212SW, 222SW,232SW, 243SW, or A or B or C (see attached table #2)	
PNL 128	336XL	FA19	CB Swgr Rm 261'			
PNL 123	802NZ	FA71	Intake Area 224'	Div 2 SWP (B,D,&F)		
	803NZ	FA71	SWP Rm A 224'			
	807NZ	FA60	SWP Rm A 224'			
PNL 101	213SW	FSA35	Rx Bldg General Area So 175'/195'	Rx Lv, Pool Lv & temp indication, RHR, & HPCS		
	205NZ	FA4	HPCS Rm 175'	HPCS		
PNL 125	404SW	FA30	Dv 3 (EDG-2) Rm			
PNL 127	327NW	FA21	HPCS Cable Area 244'			
PNL 128	339NZ	FA75	Dv 3 Bat Rm 261'			
	342XL	FA21	HPCS Swgr Rm 261'			
PNL 103	223SW	FSA35	RX Bldg So 215'	Pool Lv & Pool temp Indication	F or D (see attached table #2)	
PNL 104	239SW	FA3	Aux Bay So 240'			
PNL 105	245SW	FSA35	Rx Bldg So. 261'			

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FIRE RELATED EMERGENCY ACTION LEVELS (UNIT II)

DETECTION PANEL	FIRE ZONE	FIRE AREA	FIRE ZONE LOCATION	ALERT		SITE AREA EMERGENCY
	(DIV 2)			Fire confirmed in fire zone AND with (A) OR (B) listed below:		Fire confirmed resulting in loss of function of a safe shutdown system listed below: 1a) Loss of HPCS (for more than 30 min.) OR 1b) Loss of RCIC (for more than 30 min.), AND 2a) Loss of A or B loop of RHR pool cooling (for more than 45 min.), OR 2b) Loss of A or B loop of RHR shutdown cooling (for more than 120 min.).
				(A) - OR - (B)		
				Resulting in the loss of function of one division of sub-systems listed below:	A second fire confirmed involving SSD cables or equipment (in both zones) in any one of the following fire zones:	
PNL 101	206SW	FA3	Ax B So RHR/HxRM B 175	RHR - B,C	A + C (See attached table #2)	
	207SW	FA3	Ax B So 175 RHR Pp Rm B			
	208SW	FA3	Ax B So 175 RHR Pp Rm C			
	214SW	FA6	Ax B So 198'			
PNL 103	224SW	FA3	Ax Bay So 215'			
PNL 104	238SW	FSA35	Rx Bldg 240'			
PNL 127	323NW	FA19	Div 2 Cable Area 237'			
	324NW	FA18	Div 2 Cable Area 240'			
	326NW	FA23	Div 2 Cable Area 244'			
PNL 128	337NW	FA18	Cable Chase E 261'			
	338NZ	FA34	RSS Rm B 261'			

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FIRE RELATED EMERGENCY ACTION LEVELS (UNIT II)

DETECTION PANEL	FIRE ZONE	FIRE AREA	FIRE ZONE LOCATION	ALERT		SITE AREA EMERGENCY
	(DIV 2)			Fire confirmed in fire zone AND with either (A) OR (B) listed below:		Fire confirmed resulting in loss of function of a safe shutdown system listed below:
				(A) - OR - (B)		
				Resulting in the loss of function of on division sub-systems listed below:	A second fire confirmed involving SSD cables or equipment (in both zones) in any one of the following fire zones:	1a) Loss of HPCS (for more than 30 min.) OR 1b) Loss of RCIC (for more than 30 min.), AND 2a) Loss of A or B loop of RHR pool cooling (for more than 45 min.), OR 2b) Loss of A or B loop of RHR shutdown cooling (for more than 120 min.).
PNL 106	253XL	FA81	Rx B N 289 600V Swgr Rm	RHR - B,C or HPCS	A or B or D or C or F (See attached table #2)	
	255SW	FSA35	Rx Bldg. S. 289'			
PNL 126	304NW	FA9	Elec Tunnel 214' SE			
	309NW	FA18	Div 2 Cable chase 214'			
	312NZ	FA16	Div 2 Cable chase 214'			
PNL 128	335NZ	FA14	Div 2 Bat Rm 261'			
PNL 129	359NW	FA18	Div 2 Cable chase 288'			
	377NW	FA18	Div 2 Cable chase 306'			
PNL 107	272SW	FSA35	Rx Bldg S.W. 328'	Not Applicable	Not Applicable	
PNL 108	274SW	FSA35	Rx B Gen Area E 328'			
	281NZ	FSA35	Rx B N 253'			
PNL 123	361NZ	FA55	Pipe Tunnel 245' S			
	362NZ	FA55	Pipe Tunnel 244' NE			
	363NZ	FA55	Pipe Tunnel 245' W			
PNL 128	341NZ	FA23	CB Div 2 HVAC Rm 261'			
	331NW	FA17	DG-CB Corridor 261'			
PNL 129	351NZ	FA72	CB Corr & Inst Shop 288'			
	378NZ	FA72	CB Dv 2 HVAC 306'			

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FIRE RELATED EMERGENCY ACTION LEVELS (UNIT II)

DETECTION PANEL	FIRE ZONE	FIRE AREA	FIRE ZONE LOCATION	ALERT	SITE AREA EMERGENCY
PNL 105	256NZ	--	Drywell (Div I, II, & III)	Fire confirmed involving SSD cables or equipment	Fire confirmed resulting in loss of function of a safe shutdown system listed below: 1a) Loss of HPCS (for more than 30 min.) OR 1b) Loss of RCIC (for more than 30 min.) AND 2a) Loss of A or B loop of RHR pool cooling (for more than 45 min.), OR 2b) Loss of A or B loop of RHR shutdown cooling (for more than 120 min.).
PNL 125	401NZ	FA28 FA29 FA30	Diesel Generator Control Room (Div I, II, & III)	Fire confirmed in a fire zone resulting in the loss of function of any DG OR Fire confirmed in any 2 of 3 fire areas involving SSD cables or equipment	
PNL 129	353SG 354SG 356NZ 357XG 358XG 362SG	FA24	Relay Room (Div I, II, & III)	Fire confirmed involving SSD cables or equipment OR Fire confirmed resulting in the evacuation of the control room	
	373NZ 374SG 375SG 381SG	FA26	Main Control Room (Div I, II, & III)		

EAP-2, Attachment 2, Figure 2.D. Table 2

FIRE RELATED EMERGENCY ACTION LEVELS (UNIT II)

DIVISION I	DIVISION II	SYSTEM	RELATED FIRE ZONES
A		LPCS, RHR-A (Div AC Pwr)	201SW, 203SW, 221SW, (402SW, 333XL)
B		RCIC	204SW
C		RHR-A & RCIC	202SW, 252SW, 301NW, 302NW, 303NW, 305NW, 306NW, 236NZ, 321NW, 322NW, 325NW, 332NW, 334NZ, 343NZ, 352NZ, 371NW
D		Rx Lv, Pool Lv & Temp indication,RCIC & LPCS	212SW
E		SWP Div 1 (A, C, F)	806NZ
F		Rx Lv, Pool Lv & Temp indication RCIC,ADS,CRD	222SW, 232SW, 243SW
G		N/A	211SW, 231SW, 271SW, 273SW, 260NZ, 340NZ, 360NZ, 380NZ
	A'	RHR-B, C & (Div II AC Pwr)	206SW, 207SW, 208SW, 214SW, 224SW, 238SW, 238SW, 237NZ, 323NW, 324NW, 326NW, 337NW, 338NZ, (403SW, 336XL)
	B'	HPCS	205NZ, 404SW, 327NW, 339NZ, 342XL
	C'	RHRPB, C & HPCS	253XL, 255SW, 304NW, 309NW, 312NW, 335NW, 359NW, 377NW
	D'	Rx Lv, Pool Lv & Temp indication RHR & HPCS	213SW
	E'	SWP Div II (B, D, F)	802NZ, 803NZ, 807NZ
	F'	Pool Lv & Temp indication	223SW, 239SW, 234SW
	G'	N/A	272SW, 274SW, 281NZ, 361NZ, 362NZ, 363NZ, 331NZ, 341NZ, 351NZ, 378NZ, 331NW
Both Divs.		Drywell	256NZ, 244NZ, 354NZ
Both Divs.		DG 1, 2, & 3 Control Rms	401NZ
Both Divs.		Relay Room	353SG, 354SG, 355NZ, 356NZ, 357XG, 358XG, 362SG
Both Divs.		Control Room	372NZ, 373NZ, 374SG, 375SG, 376SG, 381SG

NINE MILE POINT NUCLEAR STATION

EMERGENCY PLAN AND PROCEDURES

PROCEDURE NO. EPP-22

DAMAGE CONTROL

APPROVALS	SIGNATURES	DATE AND INITIALS REVISION 1	REVISION 2	REVISION 3
Chemistry & Radiation Management Superintendent E. W. Leach		8/16/82	6/1/83	
Maintenance Superintendent K. A. Dahlberg		8/23/82 KAD	6/1/83 KAD	4/16/84 KAD
Station Superintendent NMPNS T. W. Roman			6/6/83	4/19/84
General Superintendent Nuclear Generation Chairman of S.O.R.C. T. J. Perkins		8/17/82 TJP	6/1/83 TJP	4/19/84 TJP

Summary of Pages

REVISION 3 (Effective 4/23/84).

PAGE	DATE
i, 1-15	January 1984

NIAGARA MOHAWK POWER CORPORATION

THIS PROCEDURE NOT TO BE USED AFTER APRIL 1986 SUBJECT TO PERIODIC REVIEW.

Superseded per Rev. 5 to EIP dtd 7/1/87 SD-220

EPP-22

DAMAGE CONTROL

TABLE OF CONTENTS

EPP-22

Damage Control

1.0 PURPOSE

The purpose of this procedure is to define the actions necessary to provide for the assessment, repair and maintenance of equipment/components during an emergency.

2.0 REFERENCES

2.1 EAP-1 "Activation and Direction of Emergency Plan"

2.2 EAP-3 "Emergency Personnel Action Procedures"

2.3 EPP-15 "Health Physics Procedure"

2.4 Damage Repair Procedures N1-DRP-1 thru N1-DRP-7

2.5 EPMP-2 "Emergency Equipment Inventory and Checklists" | 3

3.0 RESPONSIBILITIES

3.1 Station Shift Supervisor

a. Assumes the role of Site Emergency Director, until properly relieved by a ranking site supervisor. | 3

b. Evaluates the consequences of a radiological emergency, as it pertains to nuclear safety and the overall operation of the plant; including the use of Damage Control Teams to minimize, control, or terminate the emergency condition.

3.2 Maintenance Coordinator

The Maintenance Coordinator is responsible to the Site Emergency Director for the management of efforts to: | 3

a) Repair equipment during an emergency;
b) Maintain equipment during an emergency;
c) Install emergency structures, systems, and components;
d) Perform mitigation and clean up activities during an emergency.

These responsibilities also include providing technical and administrative direction to the Damage Control Teams per EAP-3, Enclosure 7.

3.3 Instrumentation and Control Coordinator

The Instrumentation and Control Coordinator is responsible to the Site Emergency Director for the management of efforts to:

a) Repair I&C equipment during an emergency.
b) Maintain I&C equipment during an emergency.
c) Install emergency I&C components
d) Perform mitigation and clean up activities during an emergency.

These responsibilities also include providing technical and administrative direction to the Damage Control Teams per EAP-3, Enclosure 4.

3.4 Damage Control Team Coordinator

The Damage Control Team Coordinator is responsible to the Operations Support Center Coordinator for:

3.4.1 Providing technical and administrative direction to Damage Control Teams as directed by the OSC Coordinator and/or the Maintenance Coordinator. S

3.4.2 Providing an assessment of any damaged equipment and necessary personnel or equipment needs to effect emergency repairs.

3.4.3 Keeping OSC personnel appriased of Damage Control and Repair activities.

3.5 OSC Instrumentation and Control Coordinator

The OSC I&C Coodinator is responsible to the Operations Support Center Coordinator for:

3.5.1 Providing technical and administrative direction to the I&C members of Damage Control Teams as directed by the OSC Coordinator and/or the I&C Coordinator.

3.5.2 Coordinating with the Damage Control Team Coordinator on assessment of any damaged I&C related equipment and necessary repairs.

3.5.3 Keeping OSC personnel appraised of I&C Damage Control and Repair activities.

3.6 Damage Control Team

The Damage Control Team is responsible to the Maintenance Coordinator and/or I&C Coordinator for conducting assessment, repair, and maintenance operations during an emergency.

4.0 EQUIPMENT

The equipment which may be used to perform damage control actions can be found in the following kits/locations:

Communications Equipment - OSC Emergency Equipment Cabinet
Fire Kits - Locker Room - 261' Elevation
Turbine Bldg - 261' Elevation
277' Elevation
300' Elevation
Off Gas Bldg - 261' Elevation
Reactor Bldg - 237' Elevation
261' Elevation

Inplant Survey Kit - OSC Emergency Equipment Cabinet
Protection Gear - OSC Emergency Equipment Cabinet
Rescue Kit - Maintenance Shop
Tools - Maintenance Shop
Damage Repair Supplies - Storeroom, Screen House

3

The complete description of the equipment contained within these kits can be found in EPMP-2 "Emergency Equipment Inventories and Checklists". In addition, equipment may also be made available from the Maintenance Shop, Storeroom or other station equipment storage area.

3

5.0 DAMAGE CONTROL TEAM COMPOSITION

Damage Control Teams during normal working hours will typically consist of a Maintenance Supervisor or Chief Mechanic/Electrician, a Chemistry and Radiation Protection Technician, and necessary Maintenance, Operations and Instrumentation & Control personnel. During off hours the team shall consist of two (2) operators, a Radiation Protection Technician and any available Maintenance or I&C personnel.

3

6.0 PROCEDURE

6.1 Damage Control Teams

6.1.1 Obtain a briefing from the Site Emergency Director, Maintenance Coordinator, I&C Coordinator, Damage Control Team Coordinator or the OSC I&C Coordinator regarding:

3

a) Required damage assessment and repair activities
b) Anticipated levels of radiation and contamination en route
c) Suggested routes
d) Required protective gear
e) Exposure limits allowed for work.
f) Tools and equipment required

3

6.1.2 Obtain needed emergency equipment from the OSC emergency cabinets, Maintenance Shop, Storeroom or from normal station supplies. This equipment should include:

a) Appropriate tools for the task/mission.

b) Appropriate Respiratory Protection Equipment

c) Appropriate Protection Clothing

d) Communications Equipment (radios should be used on Channel #2) 3

e) Necessary Damage Repair Equipment

6.1.3 Prior to leaving equipment storage location, perform a check on equipment to ensure their operability.

6.1.4 Review the Radiation Work Permit and Work Procedure (if applicable) that have been written for the mission.

6.2 Damage Control Team Coordinator

6.2.1 In conjunction with the Maintenance Coordinator, select personnel needed to complete identified tasks and coordinate the staffing of such teams per Section 5, Damage Control Team Composition.

6.2.2 Brief Damage Control Teams on their mission and record on Figure 1.

6.2.3 Provide technical and administrative direction to Damage Control Teams as required.

6.2.4 Assist Damage Control Teams in performing a "dry run" mission prior to being dispatched, if required.

6.2.5 Dispatch Damage Control Teams when appropriate and record on Figure 1.

6.2.6 Provide an assessment of any damaged equipment and necessary personnel or equipment needs to effect emergency repairs.

6.2.7 Inform OSC personnel and the Maintenance Coordinator of Damage Control activities. 8

6.2.8 Distribute Figure 1 as follows:

a. Forward first (original) copy to the Maintenance Coordinator after the form is completed.

b. Retain second copy.

6.3 Maintenance Coordinator

6.3.1 Confer with Site Emergency Director and other staff members in TSC to determine Damage Repair and Inspection Needs.

6.3.2 Define the missions or tasks to be completed and document on Fig. 1 "Emergency Damage Control Summary Sheet".

6.3.3 Establish communications with the OSC Coordinator and/or the OSC Damage Control Team Coordinator. Assess the availability of personnel for staffing Damage Control Teams.

6.3.4 Select or have the OSC Damage Control Team Coordinator select personnel needed to complete the tasks identified and coordinate the staffing of such teams per Section 5. Document the Damage Control Team members on Figure 1.

NOTE: Ensure that training, qualifications, number needed and remaining authorized exposure are addressed when selecting personnel.

6.3.5 Identify and document the tools, equipment and supplies required to complete the mission on Figure 1, especially items that would not normally be found in a mechanic's or electrician's tool box. If the mission requires entry into or through a hazardous area, ensure coordination with the Radiological Assessment Coordinator or the Station Survey/Sample Team Coordinator.

6.3.6 In consultation with the Radiological Assessment Coordinator or Station Survey/Sample Team Coordinator initiate a Radiation Work Permit to cover the task or mission. In this document define preferred and alternate ingress and egress routes. If available, provide maps or plant maps or plant drawings showing such routes.

6.3.7 Review, modify, write and/or implement any procedure(s) to be used for the mission in light of current conditions. Figure 2 provides a list of specific Damage Repair Procedures that can be utilized.

6.3.8 Ensure that the mission and any special or modified procedures are approved, reviewed and appropriate personnel notified as indicated on Figure 1

NOTE: NRC and QA review may be deferred until after the mission.

6.3.9 Brief or ensure Damage Control Team is briefed on their mission and recorded on Figure 1.

6.3.10 Distribute Figure 1 as follows:

a) Retain third copy of triplicate form
b) Forward first and second copy to OSC Coordinator
c) Ensure the first (original) copy is returned to TSC after form is completed

6.3.11 Direct the Damage Control Team to carry out a dry run of the mission, if such is deemed necessary as determined through the review and approval process.

6.3.12 Direct the Damage Control Team to carry out their mission via the OSC Coordinator or Damage Control Team Coordinator.

NOTE: Communications with the Damage Control Teams will be initially through the OSC Damage Control Team Coordinator or OSC Coordinator (via telephone or TSC-OSC dedicated line). Once Teams have been dispatched, communications should be maintained directly with the Teams preferentially via radio.

6.3.13 Contamination Control Activites

Whenever the actual repair or damaged equipment is not practical or feasible during the course of a declared emergency, or following severe plant contamination, the approach in Steps 6.3.1 thru 6.3.12 may be used to develop a "Contamination Control Mission". |8

Examples of such a mission are:

1. Isolation of the offending system, subsystem or component.
2. Manually assuring containment isolation.
3. Isolation of a severely contaminated room.
4. Performance of radiological clean-up operations.
5. Pumping of spills to radwaste system.
6. Contingency for dealing with exceeding the capacity of the radwaste system.

NOTE: Ensure that all contamination control activities are coordinated with and documented in the Radiological Assessment Coordinator's or Station Survey/Sample Team Coordinator's Log.

6.3.14 Installation of Special Structures, Systems, and Components

Whenever the installation of special structures, systems, and components is required during the course of a declared emergency, the approach in Step 6.3.1 thru 6.3.12 may be used to develop an "Installation Mission".

Examples of such a mission are:

1. Installation of additional Radwaste Demineralizers and Filters.
2. Construction of temporary shield walls.

NOTE: Ensure that all installation activities are documented in the Maintenance Coordinator's Log.

6.4 Instrumentation and Control Coordinator

6.4.1 Confer with Site Emergency Director and other staff members in TSC to determine I&C Damage Repair and Inspection needs.

6.4.2 Define the missions or tasks to be completed and document on Figure 1, "Emergency Damage Control Summary Sheet."

6.4.3 Establish communications with the OSC Coordinator and/or the OSC Instrumentation and Control Coordinator. Assess the availability of personnel for staffing Damage Control Teams.

6.4.4 Select or have the OSC I&C Coordinator select personnel needed to complete the tasks identified and coordinate the staffing of such teams per Section 5. Document the Damage Control Team members on Figure 1.

NOTE: Ensure that training, qualifications, number needed and remaining authorized exposure are addressed when selecting personnel.

6.4.5 Identify and document the tools, equipment and supplies required to complete the mission on Figure 1, especially items that would not normally be found in a technician's tool box. If the mission requires entry into or through a hazardous area, ensure coordination with the Radiological Assessment Coordinator or the Station Survey/Sample Team Coordinator.

6.4.6 In consultation with the Radiological Assessment Coordinator or Station Survey/Sample Team Coordinator, initiate a Radiation Work Permit to cover the task or mission. In this document, define preferred and alternate ingress and egress routes. If available, provide maps or plant maps or plant drawings showing such routes.

S

6.4.7 Review, modify, write and/or implement any procedure(s) to be used for the mission in light of current conditions. Figure 2 provides a list of specific Damage Repair Procedures that can be utilized.

6.4.8 Ensure that the mission and any special or modified procedures are reviewed and approved as indicated on Figure 1.

NOTE: NRC and QA review may be deferred until after the mission.

6.4.9 Brief or ensure Damage Control Team is briefed on their mission.

6.4.10 Distribute Figure 1 as follows:

a) Retain third copy of triplicate form
b) Forward first and second copy to OSC Coordinator
c) Ensure the first (original) copy is returned to TSC after form is completed

6.4.11 Direct the Damage Control Team to carry out a dry run of the mission, if such is deemed necessary as determined through the review and approval process.

6.4.12 Direct the Damage Control Team to carry out their mission via the OSC Coordinator or OSC I&C Coordinator.

NOTE: Communications with the Damage Control Teams will be initially through the OSC I&C Coordinator or OSC Coordinator (via telephone or TSC-OSC dedicated line). Once Teams have been dispatched, communications should be maintained directly with the Teams preferentially via radio.

6.5 OSC Instrumentation and Control Coordinator

6.5.1 In conjunction with the Instrumentation and Control Coordinator, select personnel needed to complete identified tasks and coordinate the staffing of such teams per Section 5, Damage Control Team Composition.

6.5.2 Brief Damage Control Teams on their mission and record on Figure 1.

6.5.3 Provide technical and administrative direction to Damage Control Teams as required. 3

6.5.4 Assist Damage Control Teams in performing a "dry run" mission prior to being dispatched, if required.

6.5.5 Dispatch Damage Control Teams when appropriate and record on Figure 1.

6.5.6 Provide an assessment of any damaged I&C equipment and necessary personnel or equipment needs to effect emergency repairs.

6.5.7 Inform OSC personnel and the Instrumentation and Control Coordinator of Damage Control activities.

6.5.8 Distribute Figure 1 as follows:

a. Forward first (original) copy to the Instrumentation and Control Coordinator after the form is completed.

b. Retain second copy.

7.0 GUIDELINE FOR PERSONNEL SAFETY DURING DAMAGE CONTROL OPERATIONS

7.1 Fire

a. Wear the proper protective clothing.

b. Use the proper extinguishing material for the material that is burning.

c. Wear self-contained breathing apparatus.

7.2 Radiological

a. High Radiation Levels

1. If the degree of urgency permits, thoroughly survey the area to be entered to determine radiation levels.

2. Wear a TLD and 0-5 R direct-reading dosimeter.

3. Minimize time, maximize distance, and maximize shielding from the source whenever possible to minimize exposure to damage control personnel. | 3

4. If beta radiation levels are high, wear heavy protective clothing and eye protection, if not already being worn, for shielding.

5. If personnel exposures are expected to exceed 10CFR20 limits refer to EPP-15 for emergency exposure criteria and control.

b. High Airborne Radioactivity Concentrations

1. If the degree of urgency permits, take air samples in the area to be entered to determine airborne radioactivity concentrations.

2. Wear protective clothing, as required.

3. Wear respiratory protective equipment commensurate with the airborne concentration in the area. If the concentration in the area is unknown, wear self-contained breathing apparatus.

c. High Surface Contamination Levels

1. If the degree of urgency permits, survey the area to be entered to determine the surface contamination levels.

2. Wear protective clothing commensurate with the contamination levels known or expected to exist in the area.

3. Wear respiratory protective equipment if contamination levels are unknown or significantly exceed about 25,000 dpm/100 cm^2.

7.3 Toxic Gas or Chemicals

a. If the degree of urgency permits, survey the area to be entered to determine the type (if unknown) and concentration of toxic gas.

b. Wear protective clothing as required.

c. Wear respiratory protective equipment, as required.

EPP-22

FIGURE 1

EMERGENCY DAMAGE CONTROL SUMMARY FORM

Date: _____

I. Mission/Task/Location

_____

_____

_____

II. Damage Control Team Designation: _____

TITLE	NAME	DEPT.	AUTH.
Team Leader			
Rad Protection Tech.			

III. Equipment

Tools and Equipment Required: ☐ Tool Cart/Box
☐ Other _____

Protective Gear/Dosimetry Required: ☐ As Required Per RWP
☐ Other _____

IV. References

RWP # _____ Maps: ☐ Ingress/Egress Route & Alt.(s)
☐ As Required Per RWP
☐ Other _____

V. Approval/Notification/Review

Initial/Time

_____/_____ Approved: Maintenance Coordinator
_____/_____ Radiological Assessment Coordinator
_____/_____ Site Emergency Director

_____/_____ Notified: Station Superintendent

_____/_____ Reviewed: Quality Assurance Representative
_____/_____ NRC Representative

NOTE: QA and NRC review may be deferred until after mission.

VI. Team Briefing

Maintenance Personnel By: _____/_____
Chemistry/Rad Protection Personnel By: _____/_____
I&C Personnel By: _____/_____
Other: _____ By: _____/_____
Other: _____ By: _____/_____

Time Dispatched: _____ Time Returned: _____

VII. Remarks:

_____

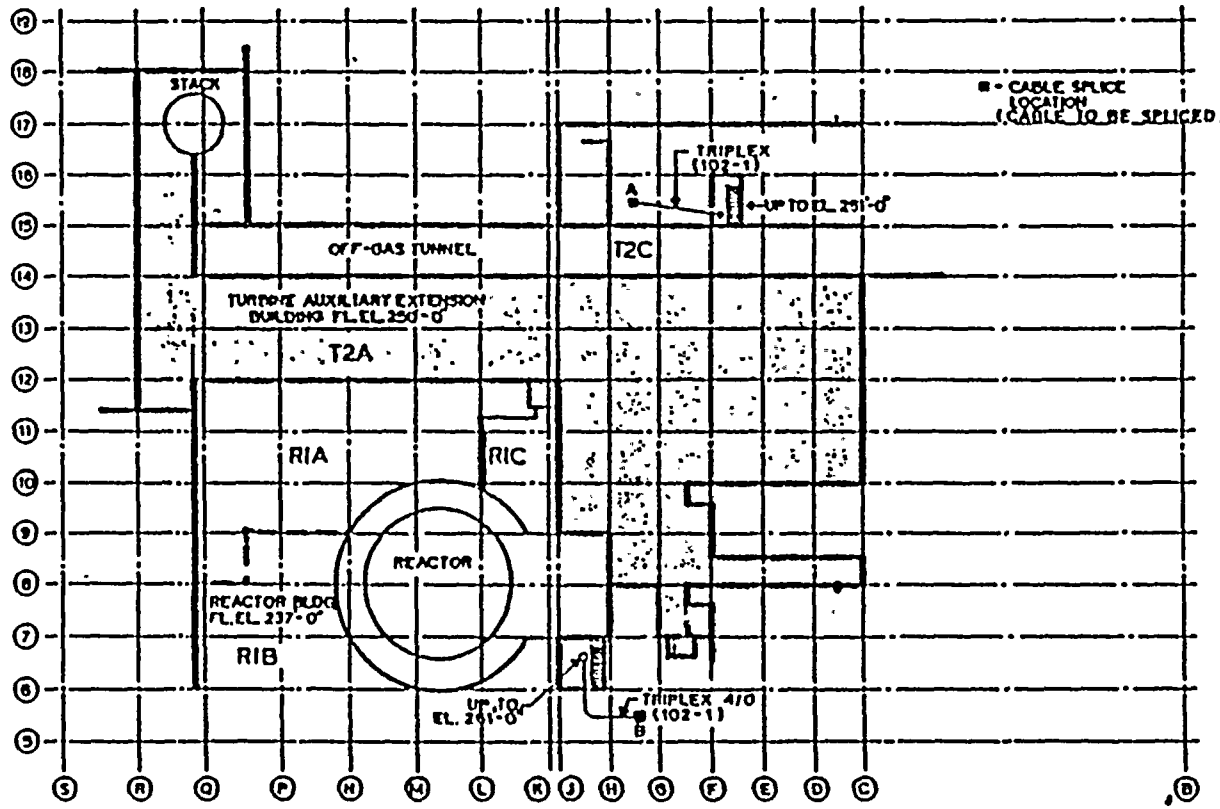
_____

_____

FIGURE 2

LIST OF DAMAGE REPAIR PROCEDURES

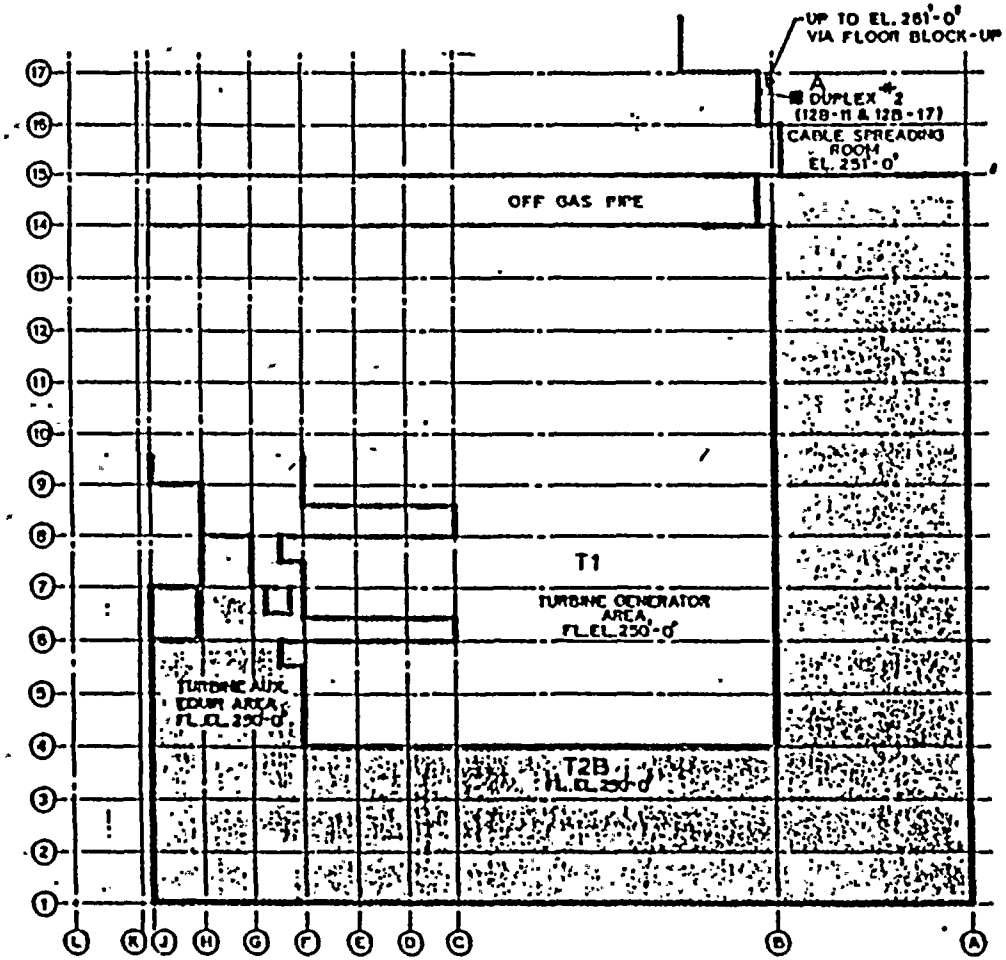
DAMAGE REPAIR PROCEDURE NO.	SUMMARY OF POTENTIAL DAMAGE	ZONE DESCRIPTION	FIRE ZONE	DETECTOR ZONE NO.
N1-DRP-1	A fire could cause loss of both Emergency Diesel Generators 102 & 103	Turbine Building El 250'-0" (Figure 2, Attachment 1)	T2A	DA-2013S DA-2013N
N1-DRP-2	A fire could cause loss of both Emergency Diesel Generators 102 & 103	Turbine Building El 250'-0" (Figure 2, Attachment 2)	T2B	DA-2051E DA-2051W DA-2022S DA-2022N
N1-DRP-3	A fire could cause loss of both Emergency Diesel Generators 102 & 103	Turbine Building El 250'-0" Off-Gas Tunnel (Figure 2, Attachment 3)	T2C	No Detector
N1-DRP-4	A fire could cause loss of both Emergency Diesel Generators 102 & 103	Turbine Building El 250'-0" (Figure 2, Attachment 4)	T2D	DA-2031
N1-DRP-5	A fire could cause loss of both Emergency Diesel Generators 102 & 103	Turbine Building above El 250'-0"	5	DA-2234 DA-2081S DA-2161E DA-2083N DA-2224
N1-DRP-6	A fire could cause loss of Emergency Diesel Generator 103 & 102	Cable Spreading Room	C1	DX-3011A DX-3011B
N1-DRP-7	A fire could cause loss of both Emergency Diesel Generator 102 & 103	Screen and Pump House	S1	D-5013



NIAGARA MOHAWK POWER CORP.
SYRACUSE, NY
NINE MILE POINT NUCLEAR STATION
UNIT-1

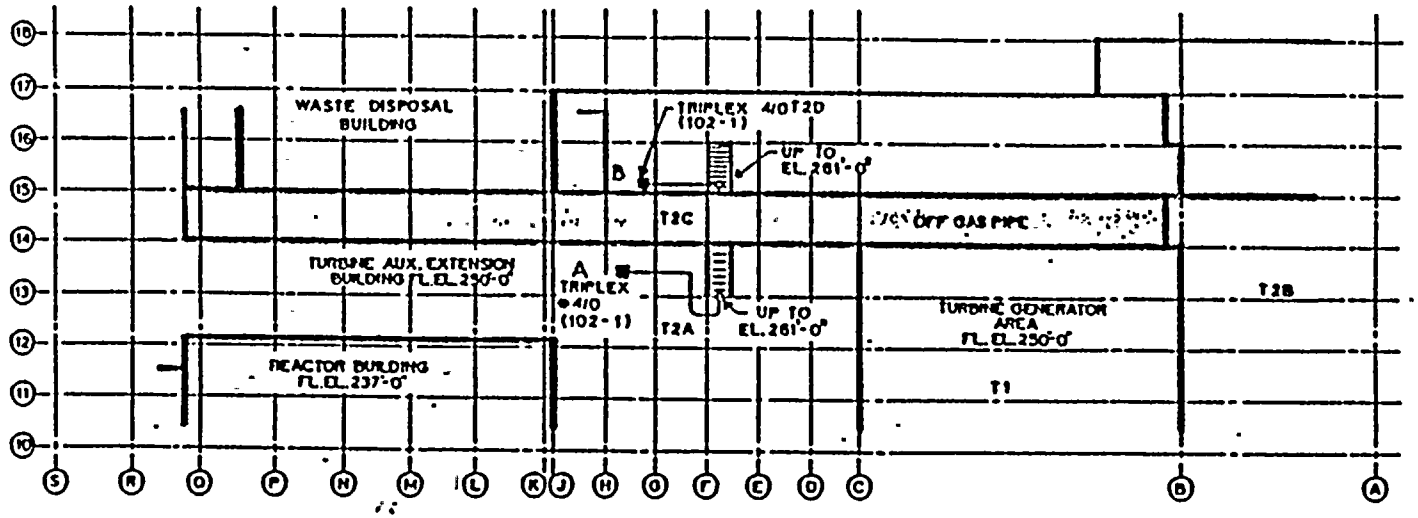
FIGURE 2.0 Attachment 1

■ - CABLE SPLICE LOCATION
(CABLE TO BE SPLICED)

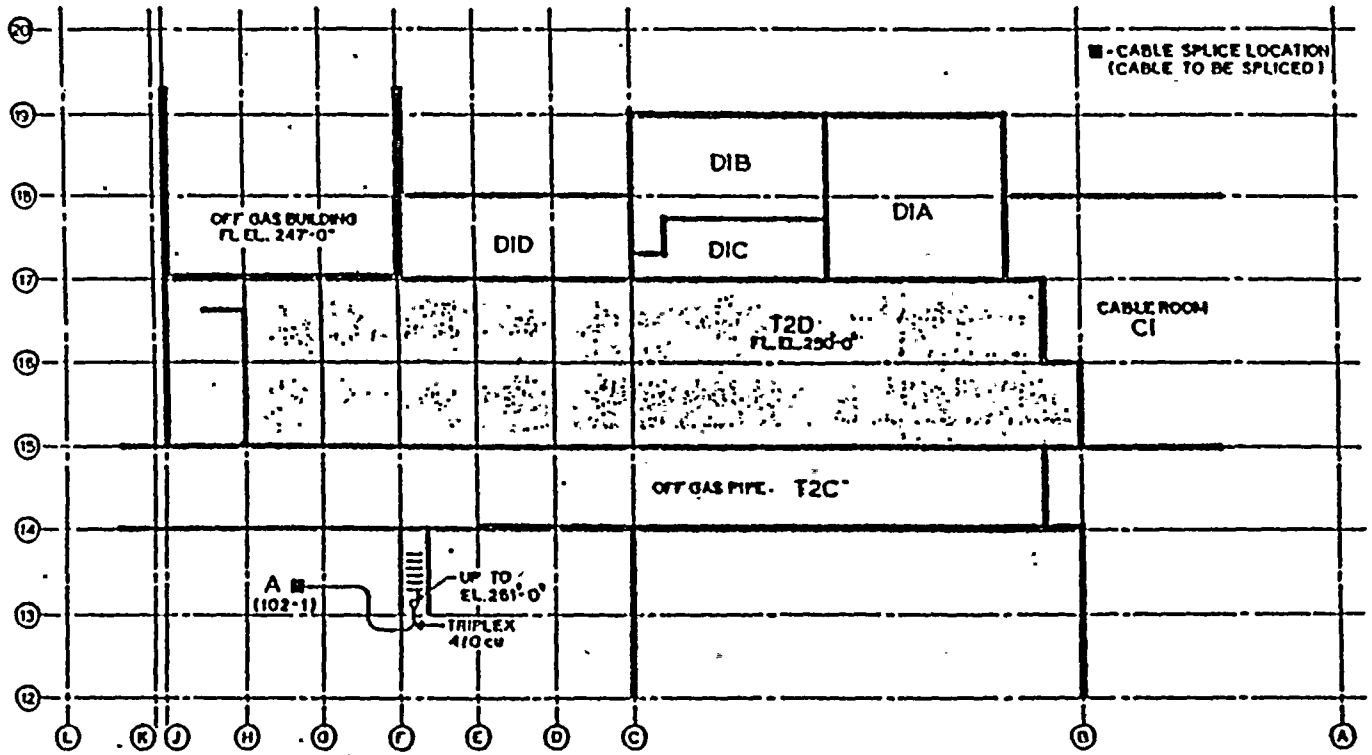


NIAGARA MOHAWK POWER CORP.
SYRACUSE, NY.
NINE MILE POINT NUCLEAR STATION
UNIT-1
FIGURE 2:0 Attachment 2

■ - CABLE SPLICE LOCATION
(CABLE TO BE SPLICED)



NIAGARA MOHAWK POWER CORP.
SYRACUSE, N.Y.
NINE MILE POINT NUCLEAR STATION
UNIT-1
FIGURE 2.0 Attachment 3



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NINE MILE POINT NUCLEAR STATION
UNIT-1
FIGURE 2.0 Attachment 4

NINE MILE POINT NUCLEAR STATION

EMERGENCY PLAN IMPLEMENTING PROCEDURES

PROCEDURE NO. EPP-15

HEALTH PHYSICS PROCEDURE

APPROVALS	SIGNATURES	DATE AND INITIALS REVISION 7	REVISION 8	REVISION 9
Supervisor Radiological Support P. Volza	P. Volza	5/7/87 PV		
Station Superintendent NMPNS Unit 1 T. W. Roman	T. W. Roman	5/8/87		
Station Superintendent NMPNS Unit 2 R. B. Abbott	RB Abbott	5/11/87 RBA		
General Superintendent Nuclear Generation T. J. Perkins		5/11/87 RBA for TJP		

INFORMATION ONLY

Summary of Pages

Revision 7 (Effective 5/12/87)

PAGES	DATE
17,22,23,26,28-52	April 1986
20	December 1986 (Reissue)
i,1-16,18,19,21,24, 25,27, 53-60	March 1987

NIAGARA MOHAWK POWER CORPORATION

THIS PROCEDURE NOT TO BE USED AFTER May1989
SUBJECT TO PERIODIC REVIEW

Proprietary information removed from page 14.

EPP-15

HEALTH PHYSICS PROCEDURE

EPP-15

HEALTH PHYSICS PROCEDURE

1.0 PURPOSE

This procedure describes the health physics requirements to be followed by Station personnel, visitors and contractors during an emergency. It specifically details personnel actions and responsibilities for providing radiological controls in the following areas:

a. Emergency Exposure Control

b. Emergency Dosimetry Control

c. Emergency Respiratory Protection

d. Radioprotective Drug Distribution

e. Personnel, Equipment and Area Decontamination

2.0 REFERENCES

2.1 10CFR20 - Standards for Protection Against Radiation

2.2 NUREG-0737, Clarification of TMI Action Plan Requirements, November 1980. | 7

2.3 NUREG-0041. | 7

2.4 US NRC Regulatory Guide 8.15.

2.5 EPA-520/1-75-001, Manual of Protective Action Guides and Protective Actions for Nuclear Incidents, September 1975. | 7

2.6 NCRP Report No. 55, Protection of the Thyroid Gland in the Event of Releases of Radioiodine.

2.7 ANSI N13.12, Control of Radioactive Surface Contamination on materials, Equipment and Facilities to be Released for Uncontrolled Use. | 7

2.8 AP-7.1, Procedure For Control of the Use and Transfer of Organic Materials. | 7

2.9 EPP-4, Personnel Injury or Illness | 7

2.10 EPP-8, On-Site and Off-Site Dose Assessment Procedure

2.11 S-RP-1, Access and Radiological Control

2.12 S-RP-3, Performance of Radiological Surveys

2.13 S-RP-5, Radiation and Radioactive Contamination Control

2.14 S-RTP-61, Procedure for the Selection of Respiratory Equipment

2.15 S-RTP-62, Respiratory Equipment Assembly, Test & Inspection, Storage

2.16 S-RTP-63, Laundering of Respiratory Equipment 7

2.17 Nuclear Energy Services, Inc, "Shielding Design Review for the Nine Mile Point Nuclear Station Unit 1".

2.18 Nine Mile Point Unit 2 FSAR, Section 12.3.1.3 "Post-Accident Access and Shielding Design Review".

2.19 Correspondence, W. R. Yaeger to R. B. Abbott, NMP2-287, February 19, 1987.

3.0 RESPONSIBILITIES

3.1 Site Emergency Director

a. Coordinates the implementation of the NMPNS Site Emergency Plan and Procedures.

b. Authorizes the use of emergency:

1. Exposure control limits
2. Respiratory protection limits
3. Radioprotective drugs
4. Contamination control limits 7

3.2 Radiological Assessment Manager

The Radiological Assessment Manager (RAM) is responsible to the Site Emergency Director for: 7

a. Managing the radiological monitoring and assessment aspects of the station's emergency response.

b. Managing activities to control radiation.

c. Providing technical and administrative direction to emergency personnel relative to the following areas:

a. Emergency exposure control

b. Emergency dosimetry control

c. Emergency respiratory protection

d. Radioprotective drug distribution

e. Personnel, equipment and area decontamination

4.0 EMERGENCY EXPOSURE CONTROL

4.1 Objective

a. This section provides guidance and criteria for emergency situations when it may be necessary for an individual or individuals to exceed established quarterly and annual radiation exposure limits to save a life or to minimize the possible consequences of an emergency situation.

b. The Site Emergency Director (directly or through the RAM) is the only individual authorized, at his discretion, to waive or modify the established station exposure control criteria and methods in accordance with the provisions of this procedure. This may occur if necessary operations require personnel exposures in excess of normal guides or limits, or if normal station access control and radiological control work practices may result in unacceptable delays. In any case the personnel exposures authorized should not exceed the planned radiation exposure criteria established in this procedure. 7

4.2 Emergency Exposure Criteria

4.2.1 EPP-15, Figure 1 summarizes the emergency exposure criteria for entry or re-entry into areas for the purposes of undertaking protective or corrective actions. Two classifications of emergency exposure are identified: corrective actions and lifesaving actions.

4.2.2 Lifesaving actions include actions such as rescue, first aid, personnel decontamination, medical transport, and medical treatment services, when such actions are immediately necessary to save a life.

4.2.3 Corrective actions include surveillance and/or assessment actions and plant operations necessary to minimize further deterioration of the level of plant safety or to mitigate the consequences of the accident, if failure to perform these actions could result in a significant increase in off-site exposures.

4.2.4 Personnel exposures received performing emergency measures, other than those identified above, shall be limited pursuant to 10CFR20.

4.3 Procedure

4.3.1 General

a. The provisions of this procedure are applicable only in actual emergency situations, and are applicable only to NMPNS personnel, contractors and off-site emergency response personnel performing emergency tasks.

b. The radiation exposure to emergency personnel shall be maintained, if possible, as low as reasonably achievable and should be maintained within the NMPNS administrative exposure guides and/or less than the radiation exposure limits in 10CFR20. (See NMPNS Radiation Protection Procedure RP-1.)

4.3.1 (Cont.)

c. To maintain personnel exposures within established guides and limits, administrative methods used during normal station operations to control and minimize exposures, such as radiation work permits, exposure clearances and ALARA measures, should remain in force during an emergency condition to the degree consistent with timely implementation of emergency measures.

d. The Site Emergency Director (directly or through the RAM and his staff) shall be responsible for the transfer of exposure and dose information between emergency centers. 7

4.3.2 Emergency Pre-exposure Evaluation

The following prerequisites shall be satisfied, time permitting, by the Site Emergency Director or the RAM prior to authorizing entry into an affected area. 7

a. To the degree possible, the probability of success of the proposed action requiring emergency exposure shall be weighed against the projected element of risk.

b. Personnel receiving exposures which may or will exceed 10CFR20 limits shall be volunteers.

1. Volunteers should be more than 45 years of age.
2. All volunteers shall be briefed on potential biological consequences prior to receiving such exposure.
3. Emergency exposures should be limited to one occurrence in a lifetime.
4. Women of child-bearing age shall not be permitted to receive exposures which exceed 10CFR20 limits.

c. Personnel shall not be permitted to enter any area where dose rates are unknown.

d. Dosimetry equipment capable of measuring the anticipated maximum exposure and type of radiation(s) shall be worn by personnel receiving emergency exposure per EPP-15, Section 5.0. Reasonable measures shall be taken to minimize skin contamination and the intake of radioactive materials.

e. A review of the Unit I and Unit II Radiation Zone Maps (EPP-15, Figures 10, 11 and 12 respectively) shall be performed to assess its applicability in determining personnel access to critical plant areas.

f. Dose calculations for a post-design basis accident, have shown that access to the Unit II Radwaste Control Room may be prohibitive for approximately one hour following the accident. This period may be used for planning purposes but current ARM, process monitor and survey readings should be utilized prior to entry. 7

4.3.3 Emergency Exposure Documentation

The following actions shall be performed to document emergency radiation exposure. Although it is preferable to perform these steps before the exposure is received, the Site Emergency Director may, at his discretion, verbally authorize the emergency exposure with documentation to be completed at a later time.

a. Time permitting, a RWP shall be completed for any emergency survey or damage control operations using the normal station issuance process. If this may result in an unacceptable delay in emergency response, the normal RWP processing may be modified as directed by the Site Emergency Director. Furthermore, pre-exposure surveys may be waived when a survey team accompanies damage control teams during emergency activities.

b. The Site Emergency Director or the RAM shall complete or have completed per a designee Section A of the Emergency Exposure Authorization Form (EPP-15, Figure 2). 7

c. The individual who will receive the emergency exposure shall complete Section B of the form (EPP-15, Figure 2). 7

d. Prior to entry into the affected area, the individual shall be briefed on the radiological conditions and other conditions known or expected to exist in the area, the task(s) to be performed, ALARA measures applicable to the task(s), and any contingency measures.

e. Following the exposure, the Site Emergency Director, RAM, or their designee shall complete or have completed Section C and D of the form. 7

f. Any dose received during the emergency shall be added to the workers occupational dose history. 7

4.3.4 Emergency Post-exposure Evaluations

a. Individuals receiving emergency exposure shall be restricted from further occupational radiation exposure pending the outcome of exposure evaluations and, if necessary, medical surveillance.

b. An exposure evaluation shall be performed per procedure(s) to determine a dose equivalent of the emergency exposure. This evaluation shall be based on measured area dose rates, airborne radioactivity measurements, dosimetry results and contamination surveys including surface/skin contamination measurements, body cavity smears, and invivo and invitro analyses as applicable.

c. If an individual's dose equivalent exceeds 10 rem for the whole body, 60 rem for the skin, and/or 150 rem for an extremity (two times the annual dose equivalent limits), the details of the exposure shall be brought to the attention of a physician. The physician shall determine the degree of injury through clinical, biological and/or biochemical examinations of the injured individual. Based upon the results of these tests additional treatment will be developed for the personnel involved.

4.3.4 (Cont.)

NOTE: Whole body includes: head and trunk; active blood forming organs; lens of eyes; or gonads.
Extremity includes: hands and forearms; feet and ankles.
Skin is the skin of the whole body.

d. If an individual's dose equivalent exceeds 25 rem for the whole body, 150 rem for the skin, and/or 375 rem for an extremity (5 times the annual dose equivalent limits) the individual shall be examined by a physician. The physician shall determine the need for, extent and nature of any clinical, biological, or biochemical examinations and any necessary medical surveillance.

NOTE: The dose equivalent is equal to the total risk to the organ of interest, be it from internal exposure, external exposure or both.

5.0 EMERGENCY DOSIMETRY CONTROL

5.1 Objective

a. This section provides guidance and criteria for the selection, use and distribution of dosimetry during emergency situations.

b. The Site Emergency Director (directly or through the RAM) is responsible for determining (or having determined through the Site Dosimetry Coordinator) the proper dosimetry to be worn by emergency personnel.

5.2 Personnel Dosimetry Guidelines

5.2.1 Dosimetry equipment capable of measuring the anticipated maximum exposure and types of radiation shall be worn by personnel receiving emergency exposure.

5.2.2 Survey instruments accompanying emergency workers shall not substitute for any personnel dosimetry but shall be considered complimentary.

5.2.3 The types of dosimetry available for use on-site include:

- Film badges
- Self-reading pocket dosimeters (0-500 mr, 0-1 R, 0-5R, 0-50R and 0-200R)
- Thermoluminescent dosimeters (TLD's)
- Neutron dosimeters (Neutrak-ER, a combination of Neutrak 144 and albedo dosimetry) for detection of thermal and fast neutrons
- Audible Alarming Dosimeters
- Extremity Dosimeters (ring TLDs)

5.2.4 The type of dosimetry to be used shall be selected so as to accurately measure all types of radiation expected (e.g., gamma, beta X-ray, neutron).

5.2.5 Extremity dosimetry will be issued on corrected dose rates as described in S-RP-1, Section 5.4. 7

5.3 Procedure

5.3.1 The RAM shall direct a designated staff member (preferably the Site Dosimetry Coordinator) to set up a dosimetry issue area in the Operations Support Center (or where designated by the RAM). This dosimetry area should contain the following items: 7

a. TLD's (whole body and extremity)

b. Film badges

c. Self-Reading Pocket Dosimeters (all ranges)

d. Emergency Exposure Authorization Forms (EPP-15, Figure 2)

e. Pencils and/or pens

f. A sign explaining the steps for issuing dosimetry

g. Automatic or manual TLD reader

NOTE: Until this dosimetry area is set up, sufficient numbers of self-reading pocket dosimeters are available in the OSC emergency cabinets to handle immediate needs.

5.3.2 As inplant dose rates are made available and/or estimated per EPP-8, the RAM will ensure that this information is transmitted to the Dosimetry Coordinator. This information and that provided on RWP's will be used by the Dosimetry Coordinator to determine the type and range of dosimetry to be provided to survey and damage control teams. 7

5.3.3 The Site Dosimetry Coordinator shall utilize current NMPNS Radiation Protection Procedures for controlling dosimetry issuance, maintenance and record keeping during emergencies. 7

6.0 EMERGENCY RESPIRATORY PROTECTION CONTROL

6.1 Objective

a. This section provides guidance and criteria for the selection and use of respiratory equipment against airborne contaminants during an emergency condition.

6.1 (Cont)

b. The Site Emergency Director (directly or through the RAM) is the only individual authorized, at his discretion, to waive or modify the established station Respiratory Protection Program in accordance with the provisions of this procedure. This may occur if necessary operations require personnel exposure in excess of normal guides or limits or if normal respiratory protection work practices may result in unacceptable delays. 7

6.2 Emergency Respiratory Protection Guidelines

6.2.1 The NMPNS Respiratory Protection Program, which is responsive to US NRC Regulatory Guide 8.15 and NUREG-0041 shall apply to all usage and distribution of respiratory protection equipment during emergency conditions (see NMPNS S-RTP-61, 62, and 63). 7 7

6.2.2 Three exceptions to the normal respiratory protection practices which may be instituted by the Site Emergency Director or the RAM are as follows: 7

a. Extension of Normal Uptake Limits

1. Exposure limits and respirator selection shall be based on potential 80 hours per week usage, similar to controls applied during outage periods (see EPP-15, Figure 3 "Respirator Selection - Emergency Periods").

2. Under these provisions internal exposure is controlled such that the total dose commitment due to internal and external exposure does not exceed the emergency exposure limit established in EPP-15, Figure 1.

b. Use of Iodine Sorbent Canisters in Respirators

1. During emergencies, an iodine sorbent canister may be used in full face filter respirators with credit taken for a protection factor of 50.

2. If Iodine-131 airborne activity in the occupied area exceeds 4.5 E-7 Ci/m^3 ($\mu Ci/cc$) or if airborne activity was not documented, a post-exposure evaluation shall be performed in accordance with EPP-15, Section 4.3.4.

3. As a minimum, any individual using an iodine sorbent canister and exposed to an iodine-131 airborne activity greater than 10xMPC (9E-8 Ci/m^3) should have a whole body count performed by the Chemistry and Radiation Management group, time permitting.

c. Use of Thyroid Prophylaxis

1. Potassium iodide (KI) is provided for use by emergency workers who must remain in an affected area and for which other means of respiratory protection are not available, practical or sufficient. 7

2. Potassium iodide shall be administered per the requirements and guidance set forth in EPP-15, Section 7.0.

7.0 RADIOPROTECTIVE DRUG DISTRIBUTION

7.1 Objective

a. This section provides guidance for determining when potassium iodide (KI) should be issued to NMPNS personnel, contractors and corporate emergency support personnel on a voluntary basis for thyroid blocking in order to minimize Iodine-131 uptake by the thyroid.

b. The Site Emergency Director or the RAM, in consultation with the Niagara Mohawk Power Corporation medical consultant (EPP-15, Section 8.3.12, if available) and in accordance with the provisions of this procedure, shall be responsible for the administration of KI at the Nine Mile Point Nuclear Station during an emergency condition. The Emergency Planning Coordinator shall ensure an adequate inventory of potassium iodide tablets is maintained in the NMPNS First Aid Room for emergency use. 7 7

7.2 Potassium Iodide Distribution Guidelines

7.2.1 Unless medical personnel are available to administer potassium iodide (KI), the Site Emergency Director shall designate an individual to administer KI to emergency personnel from its storage location in the Unit 1 Administration Building First Aid Room, 261' elevation. 7

7.2.2 KI shall be administered only when the thyroid dose is estimated to be 10 rads or greater based on estimated or measured I-131 airborne concentrations or if airborne I-131 concentration is estimated or measured to be greater than 9E-5 µCi/cc.

NOTE: 9E-5 µCi/cc is the maximum level of activity for which a self-contained breathing apparatus (SCBA) provides adequate protection.

7.2.3 Only one 130 mg KI tablet shall be administered daily to each individual involved.

7.2.4 After KI administration has been initiated for an individual, daily KI administration shall continue for the individual for at least 6 additional consecutive days but in no case shall the total length of administration exceed 10 consecutive days (for a total iodide dose of about 1 gram).

7.2.5 The maximum efficiency for thyroid blocking is achieved if KI is administered before an I-131 uptake occurs or within two hours after an I-131 uptake occurs. KI administration is of some value for thyroid blocking as long as 12 hours after an I-131 uptake occurs but is of little value thereafter.

7.2.6 The administration of KI must be documented.

7.2.7 KI administration to emergency personnel shall be on a voluntary basis.

7.2.8 Followup medical surveillance is required for individuals who take KI.

7.3 Procedure

7.3.1 Determining the Need for KI Distribution

The Site Emergency Director or the RAM shall determine the need for KI administration prior to a planned uptake or after an uptake has occurred, as follows: 7

a. Determine by estimation or actual measurement the I-131 airborne concentration in the area of interest.

b. Divide the I-131 airborne concentration by the protection factor (PF) of the respiratory protective equipment used. If respiratory protective equipment is not used, the PF=1.

NOTE: 9E-5 µCi/cc is the maximum level of activity for which a self-contained breathing apparatus (SCBA) provides adequate protection. At this level, KI will be administered regardless of residence time and the following steps.

c. Determine the residency time of the individual(s) in the area.

d. Find the time determined in EPP-15, Step 7.3.1c on the vertical "Minutes" axis of the graph in EPP-15, Figure 4, Potassium-Iodine Determination Curve. 7

e. Find the I-131 concentration determined in EPP-15, Step 7.3.1b on the horizontal "I-131 CONCENTRATION (µCi/cc)" axis on the graph in EPP-15, Figure 4 and follow the line vertically until it intersects the time line located in EPP-15, Step 7.3.1d 7

f. If the point of intersection is to the left of the curve on the graph in EPP-15, Figure 4, the projected dose to the thyroid is less than 10 rad and no further action is required as thyroid blocking is unnecessary. 7

g. Using the graph in EPP-15, Figure 4, if the point of intersection lies on the curve or the right of the curve, the projected dose to the thyroid is 10 Rad or more and thyroid blocking is necessary. Review EPP-15, Section 4.2 for additional guidance. 7

7.3.2 Administering KI

A person designated by the Site Emergency Director or the Radiological Assessment Manager shall administer KI to emergency personnel as follows: 7

a. Instruct individual that the KI is being distributed on a voluntary basis and hand him a copy of the patient package insert (see EPP-15, Figure 5).

b. Enter the name and social security number of each individual who will receive a KI tablet on a KI Issue Record form (see EPP-15, Figure 6).

7.3.2 (Cont.)

c. Enter the date of the first administration and the initials of the individual who is dispensing the KI tablets in the first column on the form.

d. Give one KI tablet to each individual requiring KI.

e. Continue to dispense one KI tablet each day to each individual on the form for at least 6 additional consecutive days but in no case for greater than a total of 10 consecutive days.

7.3.3 Medical Surveillance

Medical surveillance is required for any individual(s) administered KI. The surveillance program will be established by the Chemistry and Radiation Management Department through the NMPC Medical Consultant.

8.0 PERSONNEL, EQUIPMENT AND AREA DECONTAMINATION

8.1 Objective

The following section provides guidelines for the decontamination of any individual, equipment and/or areas contaminated by radioiodine or other particulates as a result of an emergency condition at the NMPNS. 7

8.2 Personnel Decontamination Guidelines

8.2.1 Decontamination Facilities:

a. On-Site

1. Direct or assist the person who is found to be contaminated from the restricted area to a decontamination room. One room is located near the main exit near the Unit I Radiation Protection Office. Other rooms are located at the Unit 2 Elevation 306 Turbine Bldg. and Elevation 250 Turbine Building. In addition, supplementary decontamination supplies are available in the OSC emergency cabinets. 7

8.2.1 (Cont.)

2. Decontamination of large numbers of personnel (>10) whether at Unit I or II, will be performed in the employee locker room immediately adjacent to the Unit I Radiation Protection Office. Decontamination supplies to assist in this effort are available from the normal decontamination facility and the Station Storeroom. Prior to the commencement of decontamination activities in this facility the Radiological Assessment Manager or his designee shall request the Maintenance Coordinator to assure that a sufficient volume exists in the non-controlled shower hold-up tanks. If not, tanks should be pumped down. In addition, the pump should be de-energized to prevent the inadvertent pumping of the liquids to the sewage treatment facility so that the liquid wastes generated from these operations can be contained. 7

3. The volume of the liquids in the shower hold-up tank shall be monitored to avoid overloading the shower hold-up tanks. The liquid wastes shall be analyzed and routed to its normal discharge path or the radioactive waste processing system as determined by the Radiological Assessment Manager. The volume of liquids used during large scale decontamination operations must be kept small to avoid overloading the liquid waste processing system. 7

b. Off-Site

1. Personnel decontamination equipment and supplies are available at the primary off-site assembly area (Volney Service Center). In addition, a portable decontamination kit is available in the OSC emergency cabinets for distribution to alternate off-site assembly areas. A complete description of decontamination equipment and supplies is contained in EPMP-2, Emergency Equipment Inventories and Checklists. 7

2. When decontaminating personnel off-site, waste liquids shall not be permitted to discharge into a public sewer system or other disposal system unless approved by the Site Emergency Director or the Radiological Assessment Manager. Waste liquid that cannot be immediately released shall be collected in temporary holdup containers (e.g., buckets, tanks, drums) and brought back to the NMPNS for analysis and proper disposal. 7

8.2.3 The actual method or combination of methods to be used for personnel decontamination can be evaluated only after the specific conditions of the contamination occurrence are known. The general approach to personnel decontamination should be to use the simplest, mildest method first before proceeding to harsher methods. EPP-15, Figure 7, Personnel Decontamination Methods describes decontamination methods in increasing order of severity and complexity.

8.2.4 Personnel monitoring prior to and during decontamination should be adjusted according to the number of individuals involved. This may include:

a. Performing an initial frisk to establish contamination levels.

b. Segregating individuals per gross levels.

c. Full whole body frisk prior to release.

8.2.5 The use of absolute numerical values for acceptable levels of decontamination may not always be practical. In some cases even after repeated decontamination efforts, the acceptable levels of contamination specified in this procedure may not be attained. In these cases, it may be necessary to release an individual with higher levels of contamination after an evaluation of the potential dose to the individual and risk to others. The Site Emergency Director, with guidance from the Chemistry and Radiation Management Staff shall make this determination as well as the need for medical advise or assistance. (This may also be necessary in cases where decontamination would have an adverse or highly undesirable effect, or upon the individual's objection to further treatment.)

8.2.6 Should additional supplies and/or manpower be necessary to support decontamination operation, the Radiological Assessment Manager or his designee shall contact appropriate individuals at the James A. FitzPatrick Nuclear Power Plant or the Robert E. Ginna Nuclear Power Station for assistance.

8.3 Procedure-Personnel Decontamination

8.3.1 Prior to commencing decontamination inspect for minor wounds such as cuts and abrasions. If they are found, refer to EPP-4 for decontamination of injured personnel. If no wounds are found, decontaminate using one of the approved methods listed in EPP-15, Figure 7.

8.3.2 Decontamination of localized contamination should be performed carefully to prevent the spread of contamination to lesser contaminated or uncontaminated areas. High activity areas should be decontaminated first.

8.3.3 Any decontamination agent or method which appears to cause skin reddening or irritation should be discontinued immediately.

NOTE: Any chemical/material that is to be used for decontamination and may enter into the station water system is to be on the approved list (AP-7.1).

8.3.4 Exercise caution during the decon process to prevent decon liquids from entering body cavities.

8.3.5 The temperature of the water used with decon solutions and for rinsing should be slightly warm to prevent opening skin pores.

8.3.6 Protective clothing should be worn as appropriate for the degree of contamination involved.

8.3.7 Care should be taken anytime contaminated skin is rubbed to prevent imbedding the contamination in the skin.

8.3.8 Contaminated skin areas should be surveyed frequently during decon efforts, using a count rate instrument with a thin window GM detector (such as an HP-210), to determine decontamination effectiveness. All such surveys should be made in a low background area and preferably in an area when the liquid decontaminate may be collected or drained into the Rad Waste System.

8.3.9 If contamination levels after decontamination do not exceed 100 cpm above background (1000 dpm on a 15 cm^2 probe area) no further action is required.

8.3.10 All decontamination should be documented on a Skin Contamination Record form (see Sample EPP-15, Figure 8). 7

8.3.11 For cases of severe and/or persistent personnel contamination, medical advice and/or direct assistance may be necessary to assure effective safe decon. The need for medical advice and/or direct assistance shall be communicated to the Site Emergency Director or his designee by the individual responsible for personnel decontamination.

7

8.3.12 The Site Emergency Director, Radiological Assessment Manager or their designee shall call the following physician/medical consultant for medical advice and/or direct assistance.

	Office Phone	Home Phone

7

*On off-hours this number is answered by an answering service. 7

If unable to contact medical consultant and are requested to leave a message, ask that the medical consultant call the Control Room (either Unit I or Unit II, as appropriate) at:

Unit I Control Room
or Unit II Control Room

8.3.13 Further decon efforts will follow the advice of the physician/consultant or will be performed with direct assistance by the physician/consultant. If necessary, follow-up bioassays will be performed in accordance with established station procedures.

8.4 Equipment, Tool, Floor and Area Decontamination

8.4.1 General Guidelines

a. Techniques used for the decontamination of equipment, tools, floors and areas shall vary with the level and extent of contamination. The general approach to decontaminating these items should be to use the least expensive but effective method available. In addition the method chosen should minimize the spread of contamination if possible. EPP-15, Figure 9 describes various decontamination methods which may be employed during emergency conditions.

b. Decontamination should proceed from areas of least to greatest contamination to reduce the chance of spreading contamination.

c. For high level contamination it may be advisable to cut levels down to a manageable level by cleaning areas of greatest contamination first, then proceed from areas of least to greatest contamination.

d. All waste generated during the decontamination process should be collected and disposed of as radioactive waste.

e. The volume of liquids used during decontamination should be minimized to avoid overloading the liquid waste processing system. Any chemical/material that is used for decontamination and may enter into the station water system is to be on the approved list (AP-7.1). 7

8.4.2 Procedure-Equipment and Tools

a. Equipment and tools may be decontaminated at the work locations or they may be brought into the equipment decontamination area, time and contamination or radiation levels permitting.

b. Whenever possible equipment may be decontaminated utilizing installed decontamination connections or piping, if available, by flushing demineralized water or service water through the piping or equipment to assist in reducing the amount of radioactive material deposited on internal surfaces .

c. A typical technique for equipment and tool decontamination would be:

1. Place plastic sheeting under the equipment to be decontaminated. This sheeting should be extended two to three feet in each direction to assure that the floor is not contaminated.

2. Soak a bundle of 12 atomic wipes with water; squeeze out excess water. Sprinkle wet pads with a detergent to cut oily film if present. 7

8.4.2 (Cont.)

3. Using an individual pad, rub an area approximately 6" x 6" and then place the used pad in a plastic bag.

NOTE: This technique of wiping small areas reduces the chance of spreading contamination from areas of high contamination to areas of low contamination.

4. Using a dry pad, wipe up the detergent-water residue and then place the used pad in the plastic bag.

5. Repeat 3 and 4 in a new area. (Intermittent surveys with an appropriate radiation-detecting instrument will show which areas must be cleaned again.)

8.4.3 Procedure-Floors and Areas

a. During the decontamination process, floor areas should be segregated and roped off to prevent recontamination until cleared by Chemistry and Radiation Protection technicians.

b. If possible, high traffic areas should be cleaned and cleared first to allow the movement of personnel through this area without interfering with the cleaning process.

c. For low level contamination of large areas, a scrubbing machine or mop is used with water and detergent. In addition a masslin cloth used with a sweeping pad may be used for decontaminating large areas.

d. For high level or spotting contamination, techniques employed should avoid spreading the contamination to clean areas.

8.5 Contamination Control Limits

EPP-15, Figure 13 provides the contamination control limits and shall be applied by the Site Emergency Director or Radiological Assessment Manager at his discretion if normal station radiological contamination controls would result in an unacceptable delay in performing emergency actions. 7

FIGURE 1

EMERGENCY EXPOSURE GUIDELINES FOR PLANNED ACTIONS[1]

Organ	Protective or Corrective Actions[2]	Lifesaving Actions[3]
Whole Body	25 rem	75 rem
Hands and Forearms (includes whole body exposure)	100 rem	300 rem
Thyroid	125 rem	No Limit[4]

NOTES:

1. Planned actions are actions which are performed intentionally. The degree of planning may be a simple decision to perform the action ranging to detailed planning, as time permits. The term planned actions is not meant to infer administrative actions such as ALARA reviews, radiation work permits or other similar work planning actions.

2. Protective or corrective actions are actions necessary to mitigate the consequences of the emergency such as to eliminate the further release of effluent or to control fires.

3. Lifesaving actions are actions related to the search for and rescue of injured persons, or corrective or protective actions to mitigate conditions which could result in imminent injury or substantial overexposure to numbers of individuals.

4. No limit is specified for thyroid exposure for lifesaving actions because the complete loss of a thyroid may be considered an acceptable risk for saving life. However, thyroid exposure should be minimized by the use of respirators and/or thyroid prophylaxis.

EPP-15

FIGURE 2

EMERGENCY EXPOSURE AUTHORIZATION FORM

SECTION A

Name of Individual to Receive Exposure:_____

SSN:_____

Film Badge/TLD Badge No:_____

Employer/NMPC Department:_____

Date of Authorization:_____

Authorized Exposure Limit:_____

Radiological Assessment Manager:_____ Date:_____
(Signature)

Site Emergency Director:_____ Date:_____
(Signature)

SECTION B

I have volunteered to perform the task(s) during which I will receive the emergency exposure and I have been briefed on the potential biological consequences of the proposed emergency exposure.

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

SECTION C (Attach Exposure Evaluation Records)

Film Badge/TLD/Direct-Reading Dosimeter Results:_____

FIGURE 2 (Cont.)

EMERGENCY EXPOSURE AUTHORIZATION FORM

SECTION C (Cont.)

Bioassay or Whole Body Counting Results: _____

_____

_____

Medical Evaluation/Action: _____

_____

_____

_____

Dose Equivalent Assigned to Individual: _____

_____

_____

Radiological Assessment Manager: _____ Date: _____
(Signature)

7

_____

_____

SECTION D

Disposition (Allow additional exposure, restrict access, etc.):

_____

_____

_____

_____

Radiological Assessment Manager: _____ Date: _____
(Signature)

7

FIGURE 3

RESPIRATOR SELECTION - EMERGENCY PERIODS (80 HOUR WEEK)

Contaminant	P.F. Span	Respiratory Requirement
Particulate	<0.25	No mask required
	0.25-0.5	1/2 Mask with HEPA Cartridge
	0.5-25	Full Mask with HEPA Canister
	25-1000	Air-line mask in P.D. Mode* Supplied Air Hood
	>1000	Scott SCBA in P.D. mode only
Iodine	<0.10	No mask required
	0.10-0.25	1/2 Mask with sorbent cartridge
	0.25-0.50	Full mask with sorbent canister**
	0.5-1000	air-lined mask in P.D. Mode Supplied Air Hood
	>1000	Scott SCBA in P.D. mode only
O_2 Deficiency	<19.5% O_2	Scott SCBA in P.D. mode only
Particulate/Iodine Combination	Varies with Concentration of Particulate Component vs. Iodine Component	Based on P.F. of the component requiring the greatest protection, as long as PF of the other components and the sum of all components is satisfied.

Any deviations to the above guidelines will be approved by Chemistry and Radiation Management Supervisor.

* Scott SKA-PAK may be used for entry to and exit from an area as long as the air line mask is used in the area.

** During emergency conditions when the use of air-line masks and Scott SCBA are inappropriate due to lack of supplies, space or time, a protection factor of 50 will be used for respiratory protection.

FIGURE 4

POTASSIUM-IODIDE DETERMINATION CURVE

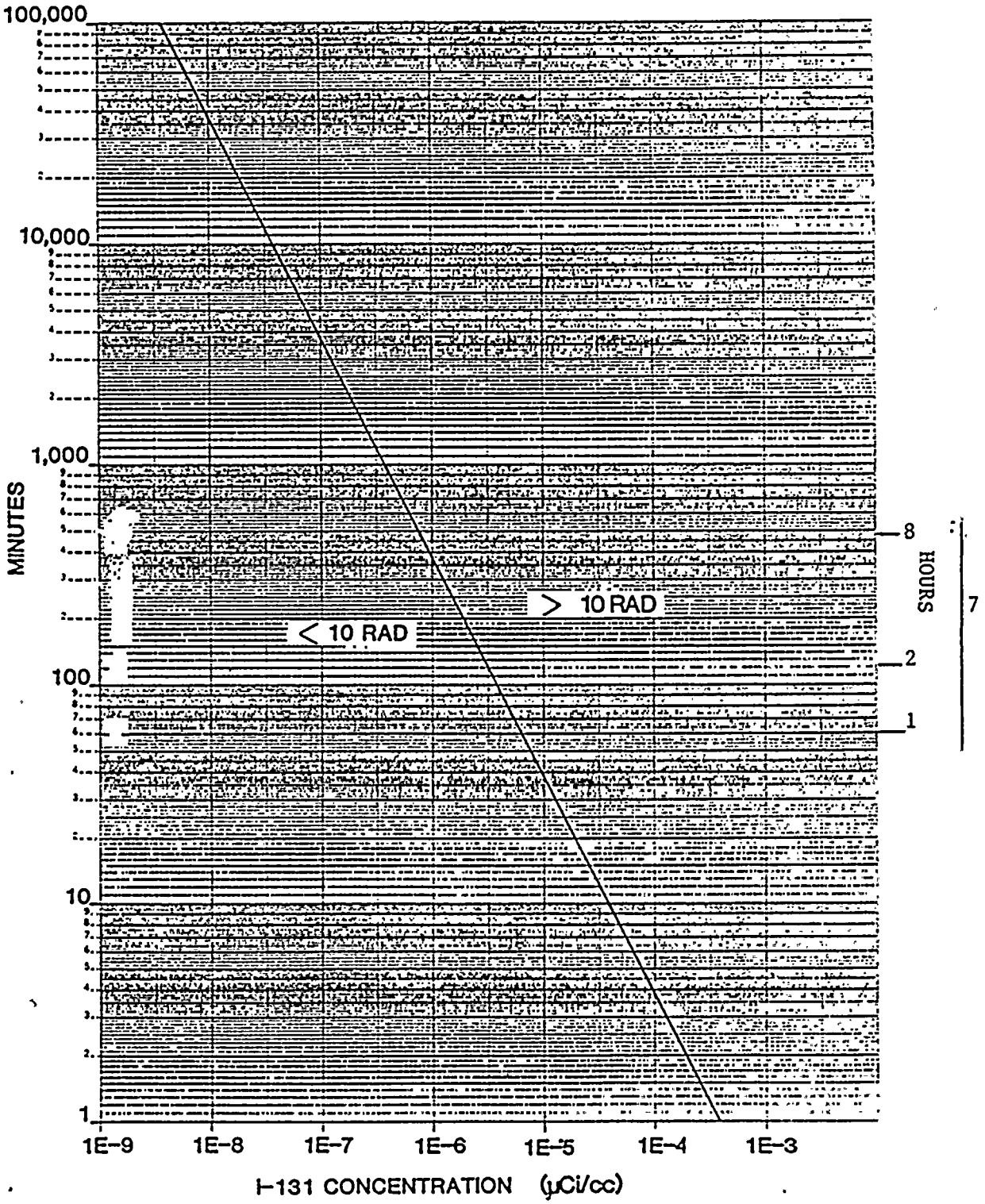

Figure 5

Potassium Iodide (KI) Patient Package Insert

Patient Package Insert For

THYRO-BLOCK™

(POTASSIUM IODIDE)
(pronounced poe-TASS-e-um EYE-oh-dyed)
(abbreviated: KI)
TABLETS and SOLUTION U.S.P.

TAKE POTASSIUM IODIDE ONLY WHEN PUBLIC HEALTH OFFICIALS TELL YOU. IN A RADIATION EMERGENCY, RADIOACTIVE IODINE COULD BE RELEASED INTO THE AIR. POTASSIUM IODIDE (A FORM OF IODINE) CAN HELP PROTECT YOU.

IF YOU ARE TOLD TO TAKE THIS MEDICINE, TAKE IT ONE TIME EVERY 24 HOURS. DO NOT TAKE IT MORE OFTEN. MORE WILL NOT HELP YOU AND MAY INCREASE THE RISK OF SIDE EFFECTS. *DO NOT TAKE THIS DRUG IF YOU KNOW YOU ARE ALLERGIC TO IODIDE.* (SEE SIDE EFFECTS BELOW.)

INDICATIONS

THYROID BLOCKING IN A RADIATION EMERGENCY ONLY.

DIRECTIONS FOR USE

Use only as directed by State or local public health authorities in the event of a radiation emergency.

DOSE

Tablets:
ADULTS AND CHILDREN 1 YEAR OF AGE OR OLDER: One (1) tablet once a day. Crush for small children.
BABIES UNDER 1 YEAR OF AGE: One-half (1/2) tablet once a day. Crush first.

Solution:
ADULTS AND CHILDREN 1 YEAR OF AGE OR OLDER: Add 6 drops to one-half glass of liquid and drink each day.
BABIES UNDER 1 YEAR OF AGE: Add 3 drops to a small amount of liquid once a day.

For all dosage forms: Take for 10 days unless directed otherwise by State or local public health authorities.

Store at controlled room temperature between 15° and 30°C (59° to 86°F). Keep container tightly closed and protect from light. Do not use the solution if it appears brownish in the nozzle of the bottle.

WARNING

Potassium iodide should not be used by people allergic to iodide. Keep out of the reach of children. In case of overdose or allergic reaction, contact a physician or the public health authority.

DESCRIPTION

Each THYRO-BLOCK™ TABLET contains 130 mg of potassium iodide.

Each drop of THYRO-BLOCK™ SOLUTION contains 21 mg of potassium iodide.

HOW POTASSIUM IODIDE WORKS

Certain forms of iodine help your thyroid gland work right. Most people get the iodine they need from foods, like iodized salt or fish. The thyroid can "store" or hold only a certain amount of iodine.

In a radiation emergency, radioactive iodine may be released in the air. This material may be breathed or swallowed. It may enter the thyroid gland and damage it. The damage would probably not show itself for years. Children are most likely to have thyroid damage.

If you take potassium iodide, it will fill-up your thyroid gland. This reduces the chance that harmful radioactive iodine will enter the thyroid gland.

WHO SHOULD NOT TAKE POTASSIUM IODIDE

The only people who should not take potassium iodide are people who know they are allergic to iodide. You may take potassium iodide even if you are taking medicines for a thyroid problem (for example, a thyroid hormone or antithyroid drug). Pregnant and nursing women and babies and children may also take this drug.

HOW AND WHEN TO TAKE POTASSIUM IODIDE

Potassium Iodide should be taken as soon as possible after public health officials tell you. You should take one dose every 24 hours. More will not help you because the thyroid can "hold" only limited amounts of iodine. Larger doses will increase the risk of side effects. You will probably be told not to take the drug for more than 10 days.

SIDE EFFECTS

Usually, side effects of potassium iodide happen when people take higher doses for a long time. You should be careful not to take more than the recommended dose or take it for longer than you are told. Side effects are unlikely because of the low dose and the short time you will be taking the drug.

Possible side effects include skin rashes, swelling of the salivary glands, and "iodism" (metallic taste, burning mouth and throat, sore teeth and gums, symptoms of a head cold, and sometimes stomach upset and diarrhea).

A few people have an allergic reaction with more serious symptoms. These could be fever and joint pains, or swelling of parts of the face and body and at times severe shortness of breath requiring immediate medical attention.

Taking iodide may rarely cause overactivity of the thyroid gland, underactivity of the thyroid gland, or enlargement of the thyroid gland (goiter).

WHAT TO DO IF SIDE EFFECTS OCCUR

If the side effects are severe or if you have an allergic reaction, stop taking potassium iodide. Then, if possible, call a doctor or public health authority for instructions.

HOW SUPPLIED

THYRO-BLOCK™ TABLETS (Potassium Iodide, U.S.P.) bottles of 14 tablets (NDC 0037-0472-20.) Each white, round, scored tablet contains 130 mg potassium iodide.

THYRO-BLOCK™ SOLUTION (Potassium Iodide Solution, U.S.P.) 30 ml (1 fl. oz.) light-resistant, measured-drop dispensing units (NDC 0037-4287-25). Each drop contains 21 mg potassium iodide.

WALLACE LABORATORIES
Division of
CARTER-WALLACE, INC.
Cranbury, New Jersey 08512

CW—107915—10/79 Issue 10/79

EPP-15

FIGURE 6

POTASSIUM IODIDE KI ISSUE RECORD

	KI Administration									
	1	2	3	4	5	6	7	8	9	10
	Date	Date	Date	Date	Date	Date	Date	Date	Date	Date
	Init.	Init.	Init.	Init.	Init.	Init.	Init.	Init.	Init.	Init.
Name:										
SS No.:										
Name:										
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FIGURE 7

PERSONNEL DECONTAMINATION METHODS

Method*	Surface	Action	Technique	Advantages	Disadvantages
Soap and water	Skin and hands	Emulsifies and dissolves contaminant.	Wash 2-3 minutes and monitor. Do not wash more than 3-4 times.	Readily available and effective for most radioactive contamination.	Continued washing will defat the skin. Indiscriminate washing of other than affected parts may spread contamination.
Soap and water	Hair	Same as above.	Wash several times. If contamination is not lowered to acceptable levels, shave the head and apply skin decontamination methods.		
Waterless handcleaning cream	Skin and Hands	Emulsifies and dissolves contaminate.	Wash several times.	Good for grease. Less irritating than scrubbing methods.	

Use Lanolin hand cream between washes. Apply to prevent skin irritation from heavy scrubbing.

*Begin with the first-listed method and then proceed step by step to the more severe methods, as necessary.

FIGURE 7
(continued)

PERSONNEL DECONTAMINATION METHODS

Method*	Surface	Action	Technique	Advantages	Disadvantages
Detergent (plain)	Skin and Hands	Emulsifies and dissolves contaminate.	Make into a paste. Use with additional water with a mild scrubbing action. Use care not to erode the skin.	Slightly more effective than washing with soap.	Will defat and abrade skin and must be used with care.
Flushing	Wounds	Physical removal by flushing	Wash wound with large amounts of water and spread edges to stimulate bleeding, if not profuse. If profuse stop bleeding first, clean edges of wound bandage, and if any contamination remains, it may be removed by normal cleaning methods, as above.	Quick and efficient if wound not severe.	May spread contamination to other areas of body if not done carefully.

*Begin with the first-listed method and then proceed step by step to the more severe methods, as necessary.

FIGURE 7
(continued)

PERSONNEL DECONTAMINATION METHODS

Method*	Surface	Action	Technique	Advantages	Disadvantages
Sweating	Skin of elbows, knees and feet	Physical removal by sweating	Place hand or foot in plastic glove or booty. Tape shut. Place near source of heat for 10-15 minutes or until hand or foot is sweating profusely. Remove glove and then wash using standard techniques or gloves can be worn for several hours using only body heat.	Cleansing action is from inside out. Hand does not dry out.	If glove or booty is not removed shortly after profuse sweating starts and part washed with soap and water immediately, contamination may seep into the pores.
Flushing	Eyes, ears, nose and mouth	Physical removal by flushing.	Roll back the eyelid as far as possible flush with large amounts of water. If isotonic irrigants are available obtain them without delay. Apply to eye continually and then flush with large amounts of water. Further decontamination should be done under medical supervision.	If used immediately will remove contamination. May also be used for ears, nose and throat.	When using for nose and mouth, contaminated individual should be warned not to swallow the rinses.

*Begin with the first-listed method and then proceed step by step to the more severe methods, as necessary.

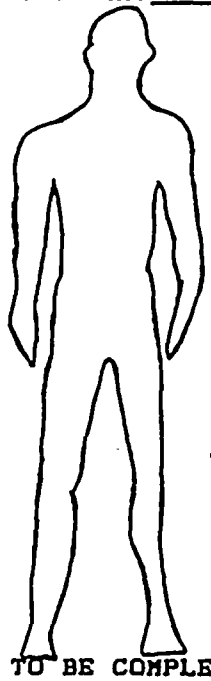
**Last resort method. Seek medical supervision.

FIGURE 8

Unit No._____ SKIN CONTAMINATION RECORD SCR NO._____
Sheet____of____

TO BE COMPLETED BY SURVEYING TECH:

Name:_____ Rate Meter Type:_____No._____
Company:_____ Efficiency:_____cpm/dpm
Job Title:_____ Background:_____cpm
Film Badge No:_____ Probe No:_____
Soc. Sec. No:_____ Sector Code:_____
Leadman:_____ Supervisor:_____



AREA: 1._____ 2._____ 3._____ 4._____

INITIAL SURVEY (>30,000 CPM USE ABSORBER):

CPM				
AREA SIZE	cm^2	cm^2	cm^2	cm^2
SKIN COND				
TIME				
ABSORBER				

AFTER DECON:

CPM				
AREA SIZE	cm^2	cm^2	cm^2	cm^2
DECON AGENT				
SKIN COND				
TIME				
ABSORBER				

SURVEYING TECH:_____

* Additional Decons or Areas, Record on Separate Sheet

TO BE COMPLETED BY JOB TECH:

DESCRIBE OCCURRENCE:_____
_____
_____

OCCURRENCE DATE:_____ TIME:_____ RWP NO:_____ JOB TECH:_____N/A___

TO BE COMPLETED BY R.P. FOREMAN OR ON-DUTY TECH:
SDC WORKSHEET ATTACHED: YES____ NO ____
IS WBC REQUIRED PER S-RTP-10, SECTION 5.2.1? YES___ NO___ RECOMMENDED____
ADDITIONAL AREA SURVEY NO:_____ FOREMAN/TECH_____

TO BE COMPLETED BY RP SUPERVISOR:
WBC COMPLETED: YES ____ NO ____ N/A ____
SKIN DOSE CALC COMPLETED: YES ____
NET NO:_____ N/A ____
UNIT RP SUPERVISOR REVIEW:_____ DATE:_____

FIGURE 9

DECONTAMINATION METHODS

Method	Advantages	Disadvantages	Miscellaneous
Manual Cleaning (i.e. wiping, scrubbing, mopping etc.)	-Effective in removing low or or moderate levels of contami- contamination. -Presents minimal airborne and surface contamination control problems.	-Time consuming in some instances	Can be used in conjunction with water, detergents, solvents, chelating agents, and other chemicals.
Mechanical Cleaning			
1) Vacuuming, wet or dry	-Effective in removing loose particulate contamination.	-Vacuum systems must be properly filtered to prevent the spread of contamination to surrounding areas and to reduce the hazard of airborne contamination. -Concentration of radioactive material in vacuum system may create an unusual radiation exposure source to personnel if not emptied in a timely fashion.	-Frequently used as an initial decontamination step in preparation for manual cleaning.
2) Jet Cleaning	-Effective in attaining high decontamination factor. -Ideally suited for remote operation and for cleaning large surface areas.	-High pressure jet cleaning has the disadvantage of spreading contamination over a large area.	-High pressure steam and water can be used alone or mixed with chemicals and detergents. -More effective when used in a cave or cell designed to minimize spread of contamination.
3) Soaking and Spraying	-Spraying has the advantage of combining mechanical as well as chemical action. -Soaking provides good access to surfaces. -Together very effective in removing contamination.	-Both methods make use of chemical solutions and may require support features such as catch tanks, liquid recycle ability, and filtered ventilation systems. -In some cases the shape of the object being sprayed prevents cleaning action on all surfaces. -Soaking by itself does not provide good mechanical action.	-Used extensively for decontamination of small and moderate size material and and equipment.

FIGURE 9 (Cont.)

DECONTAMINATION METHODS

Method	Advantages	Disadvantages	Miscellaneous
Mechanical Cleaning			
4) Ultrasonic Cleaning	-Combines the advantage of chemical action and mechanical energy for cleaning. -Offers advantage of remote operation. -Rapidly decontaminates objects with irregular shapes and crevices.	--	--
Grinding	-Effective means of decontaminating metal and concrete surfaces. -Produces a high decontamination factor.	-Wears down surface being cleaned. -Inherently leaves residual contamination on the surface of the object which must therefore require final cleaning by some other method (i.e. vacuuming, wiping etc.) -Frequently produces particulate airborne activity and is generally not economical for large surface areas.	-Usually limited to small objects or isolated spots of contamination where all the surface is reasonably smooth.
Abrasive Blasting	-Very rapid means of removing contamination. -Effective on metal and concrete surfaces. -Provides a high decontamination factor. -Effective on irregular shaped surfaces. -Can be used on large areas.	-Usually generates high airborne contamination and spreads surface contamination.	-Abrasive blasting makes use of a large variety of abrasives (sand, shells, glassheads, metal, etc.) with velocity, shape and size of the abrasive influency surface - removal characteristics. -Airborne and surface contamination problems can be minimized by wet blasting techniques, vacuum systems, or filtered enclosures.

FIGURE 9 (Cont.)

DECONTAMINATION METHODS

Method	Advantages	Disadvantages	Miscellaneous
Destructive Decontamination	-Harsher chemicals may be used.	-Changes surface characteristics possibly resulting in removal of surface defects of analytical value.	-Physical removal of contaminated parts or sections with little or no effort made to clean the parts prior to disposal as waste. -Containment and other radiological controls associated with destructive clearly dependent on contamination levels, the nature of the contaminant, and the physical characteristics of the parts being removed.

3.5.4 Preparation of Radiation Zone Maps

The Radiation Zone Maps were constructed to show both known danger areas and areas which could become dangerous. Any area labeled as restricted access would not normally contain any large source of radiation. Such areas have the possibility of becoming inaccessible through additional equipment failure, e.g., leakage at the main steam or feedwater isolation valves). Restricted areas must be regarded as potentially dangerous until surveyed and proved otherwise.

The zone maps are plant elevations divided into three zones: prohibited access, restricted access, and unrestricted access. These areas are defined as follows:

Prohibited Access

Extensive Health Physics sampling and surveys are required prior to entry.

Restricted Access

Potential degradation of equipment requires periodic Health Physics surveys in post-LOCA conditions.

Unrestricted Access

Area dose rates are not anticipated to exceed 15 mr/hr. Periodic Health Physics surveys are recommended.

FIGURE 10

UNIT I RADIATION ZONE MAP

DOSE RATES TO AREAS OR ITEMS IDENTIFIED FOR ACCESS
(Excluding airborne doses)

	Dose Point Location	Location	Source	t = 30' (Rem/Hr)	t = 24 hrs (Rem/Hr)
1.	Power Boards 161-A & 161-B	Reactor Bldg. Elev. 261'	Shutdown HX, pumps, and associated piping	322+ 30.6*	140+ 13.3*
2.	Reactor Water Sampling Station	Reactor Bldg. Elev. 261'	Reactor Water	4.3+ 410mRem/hr*	1.09+ 105mRem/hr*
3.	Power Boards: a. 155 b. 167	Reactor Bldg. Elev. 281'	Containment Spray Lines	 836 109	 353 45
4.	Stairwell SE	Reactor Bldg. Elev. 281'	Containment Spray Lines	323	135
5.	Power Board 16	Reactor Bldg. Elev. 281'	Containment Spray Lines	667	280
6.	Boron Tank	Reactor Bldg. Elev. 298'	Drywell	13mRem/hr	<1mRem/hr
7.	H_2-O_2 Monitoring Panel	Turbine Bldg. Elev. 291'	Drywell Air	6	2

+ Without containment spray
* With containment spray

NOTES:

1. Dose rates for these access items were not calculated for times after 24 hours since their access will probably precluded by airborne dose rates.
2. Dose rate calculations were performed at the worst case point about a foot away from the access item.
3. Dose rate calculations were performed only for those items which are located in the direct line of a source; other items not listed in this table are hampered from access by the airborne dose rates.

NUCLEAR ENERGY SERVICES, INC.

FIGURE 10

UNIT I RADIATION ZONE MAP

DOSE RATES FROM REACTOR BUILDING EMERGENCY VENTILATION FILTERS

ELEVATION 289'

WITH CAD (Rem/Hr)

Dose Point Location	t = 30 min.	t = 24 hr.	t = 2 day	t = 3 day	t = 7 day	t = 11 day	t = 30 day	t = 100 day
8. 18" from midplane of charcoal filters	157	42,300	87,500	123,000	168,000	152,000	38,100	230
9. Eye level below charcoal filters on El. 261'	6.19	753	1,560	2,190	2,980	2,710	678	4.10
10. Screenhouse-Turbine-Aux. Bldg. doorway	1.17	125	258	363	495	449	112	0.68
11. Waste Bldg. Control Room Door	0.27	61.6	127	179	244	222	55.4	0.34

WITHOUT CAD (Rem/Hr) 1

Dose Point Location	t = 30 min.	t = 24 hr.	t = 2 day	t = 3 day	t = 7 day	t = 11 day	t = 30 day	t = 100 day
8. 18" from midplane of charcoal filters	161	41,200	70,700	88,400	89,500	68,200	12,100	74.2
9. Eye level below charcoal filters on El. 261'	2.88	732	1,260	1,570	1,600	1,210	214	1.32
10. Screenhouse-Turbine-Aux. Bldg. doorway	.48	121	209	261	264	201	35.4	0.22
11. Waste Bldg. Control Room Door	.24	59.7	103	129	131	99.1	17.4	0.11

NUCLEAR ENERGY SERVICES, INC.

FIGURE 10

UNIT I RADIATION ZONE MAP

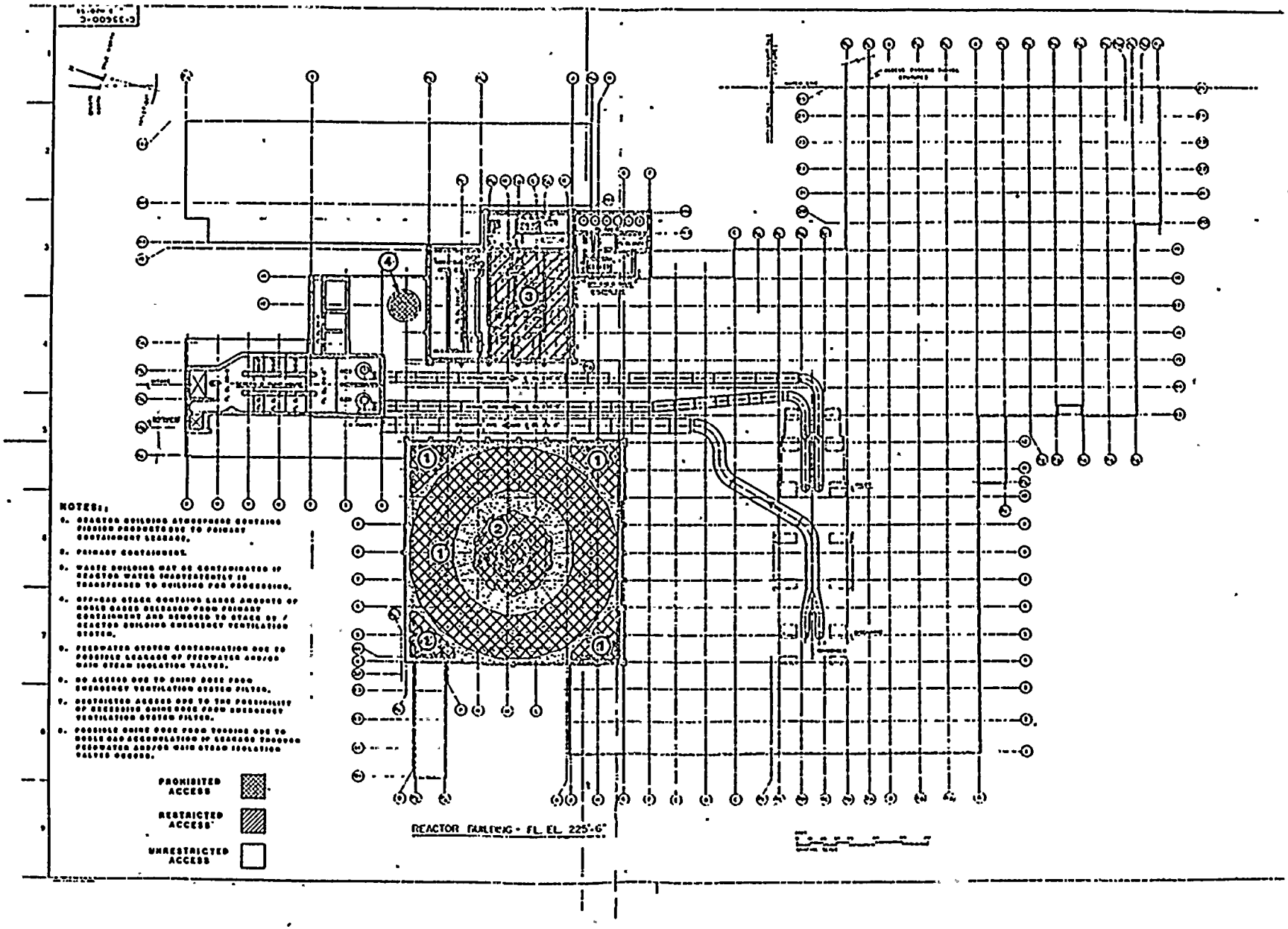


FIGURE 10 (cont.)

UNIT I RADIATION ZONE MAP

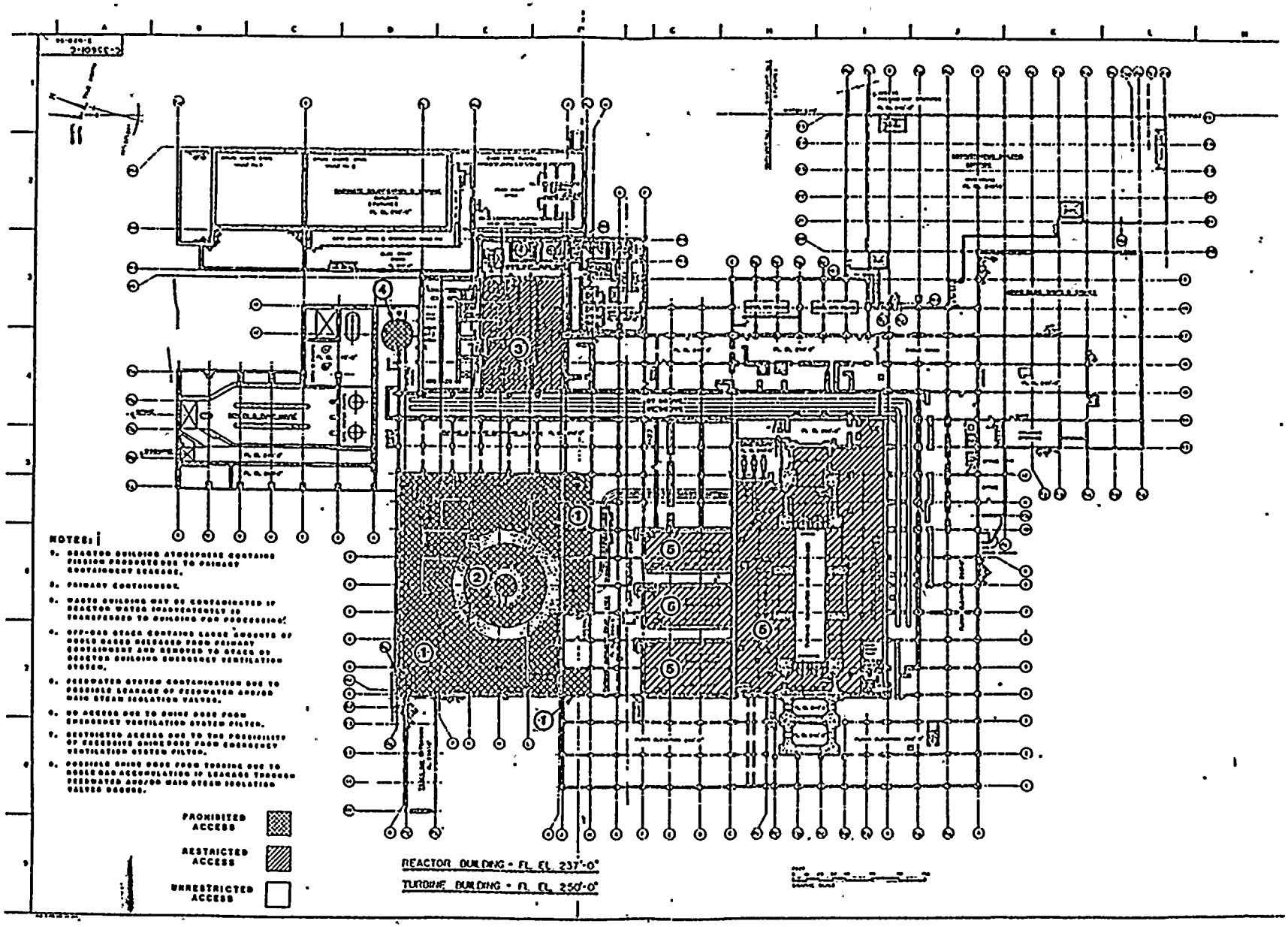


FIGURE 10 (cont.)

UNIT I RADIATION ZONE MAP

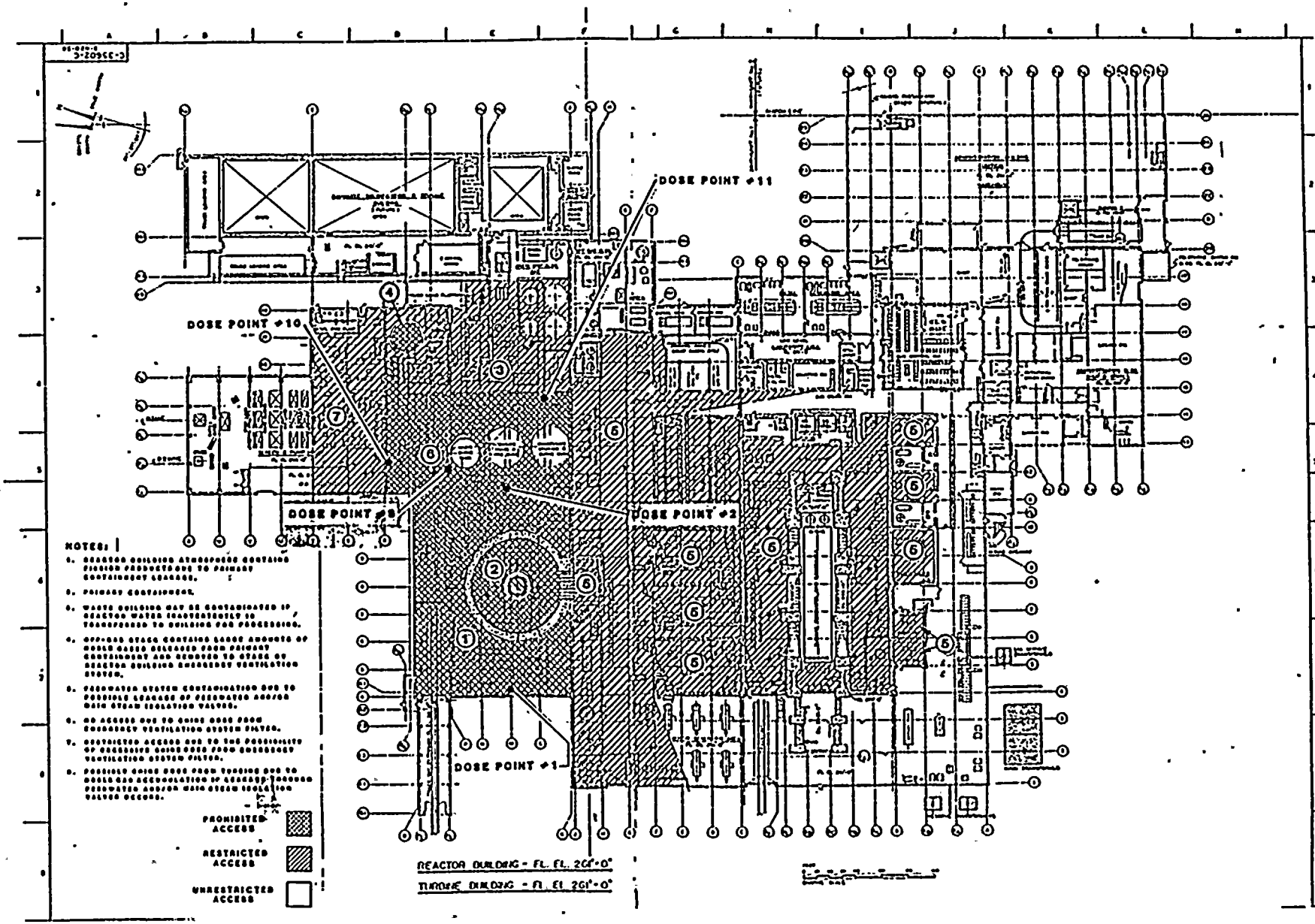


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FIGURE 10 (cont.)

UNIT I RADIATION ZONE MAP

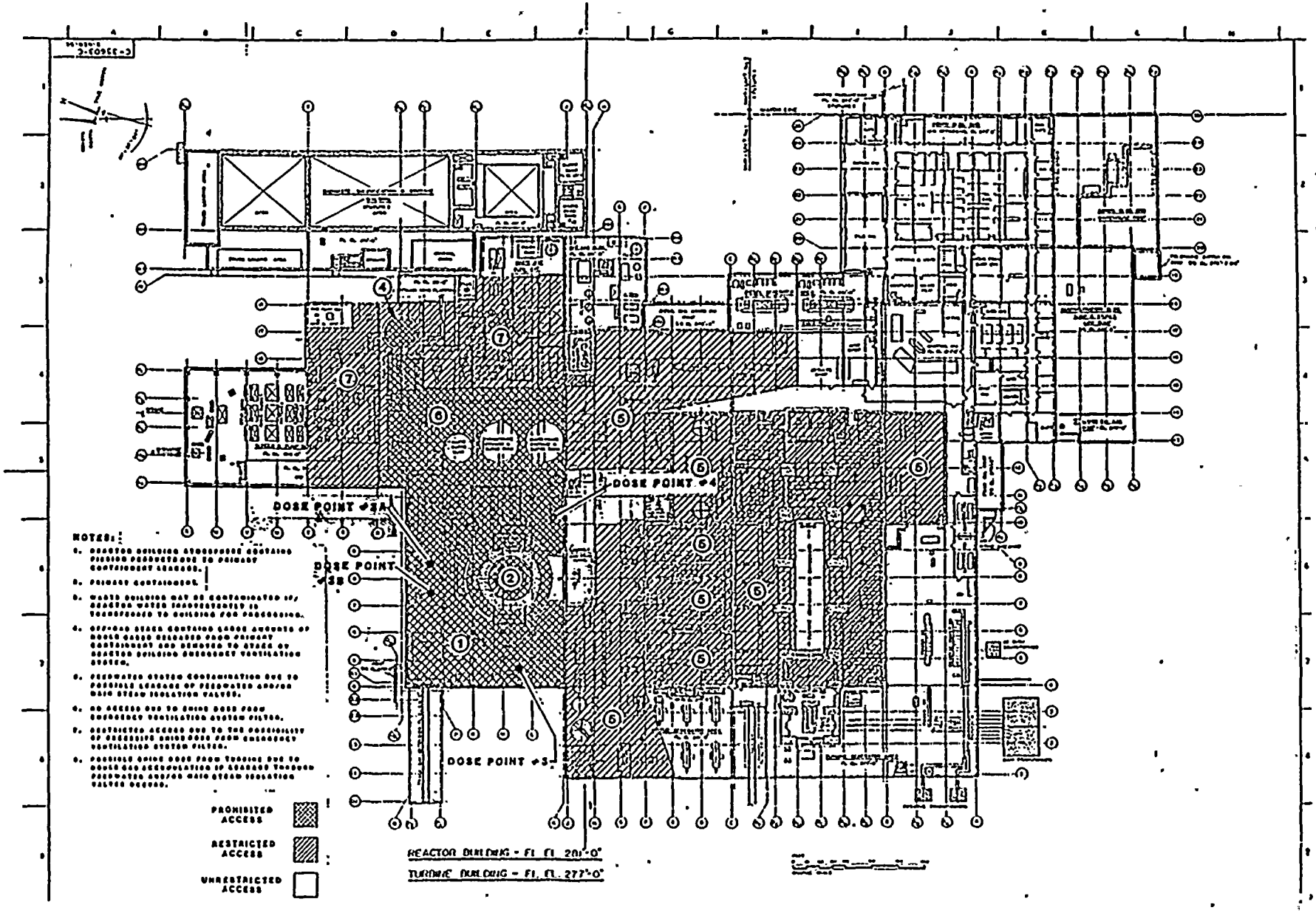

FIGURE 10 (cont.)

UNIT I RADIATION ZONE MAP

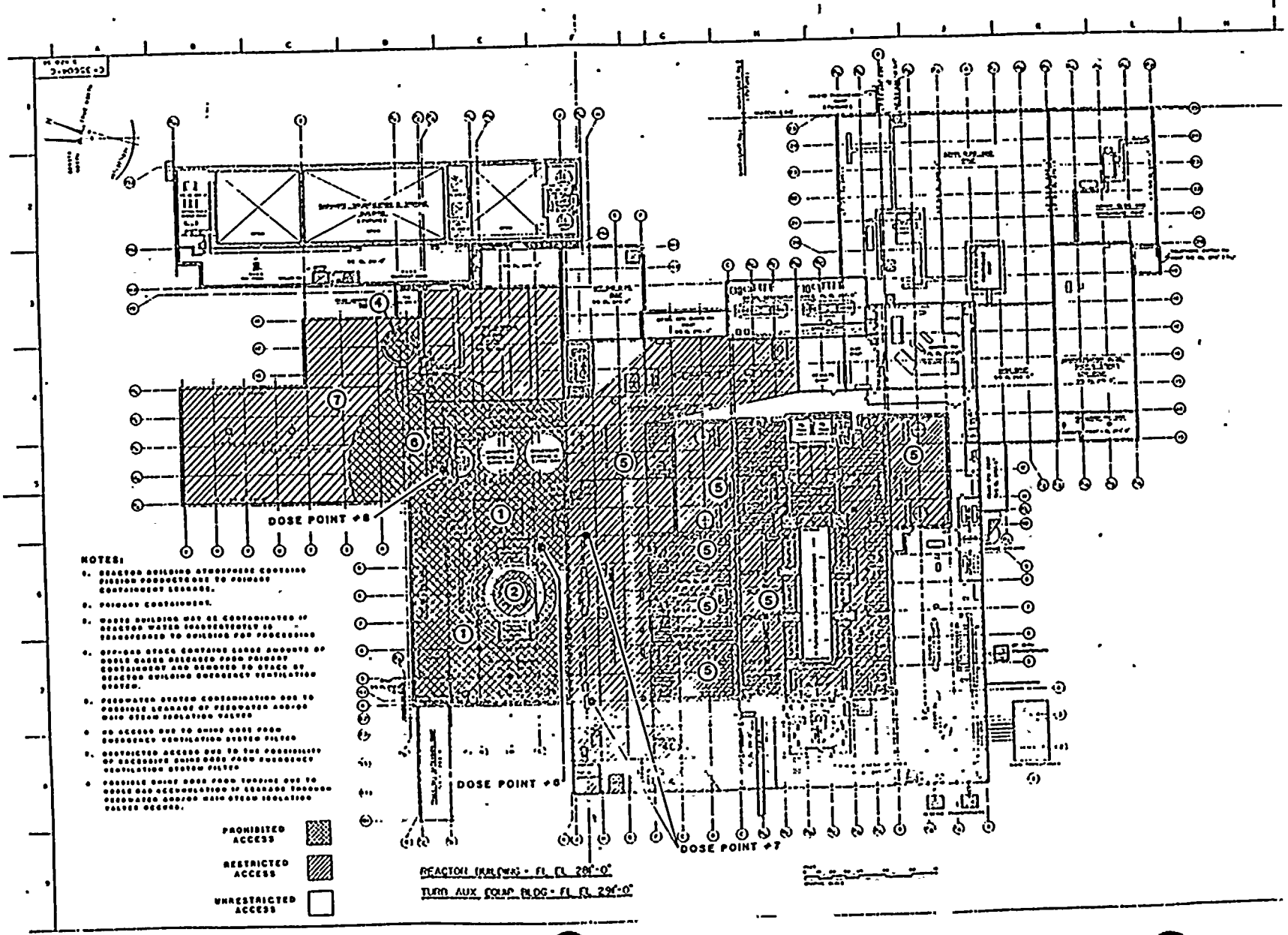

FIGURE 10 (cont.)

UNIT I RADIATION ZONE MAP

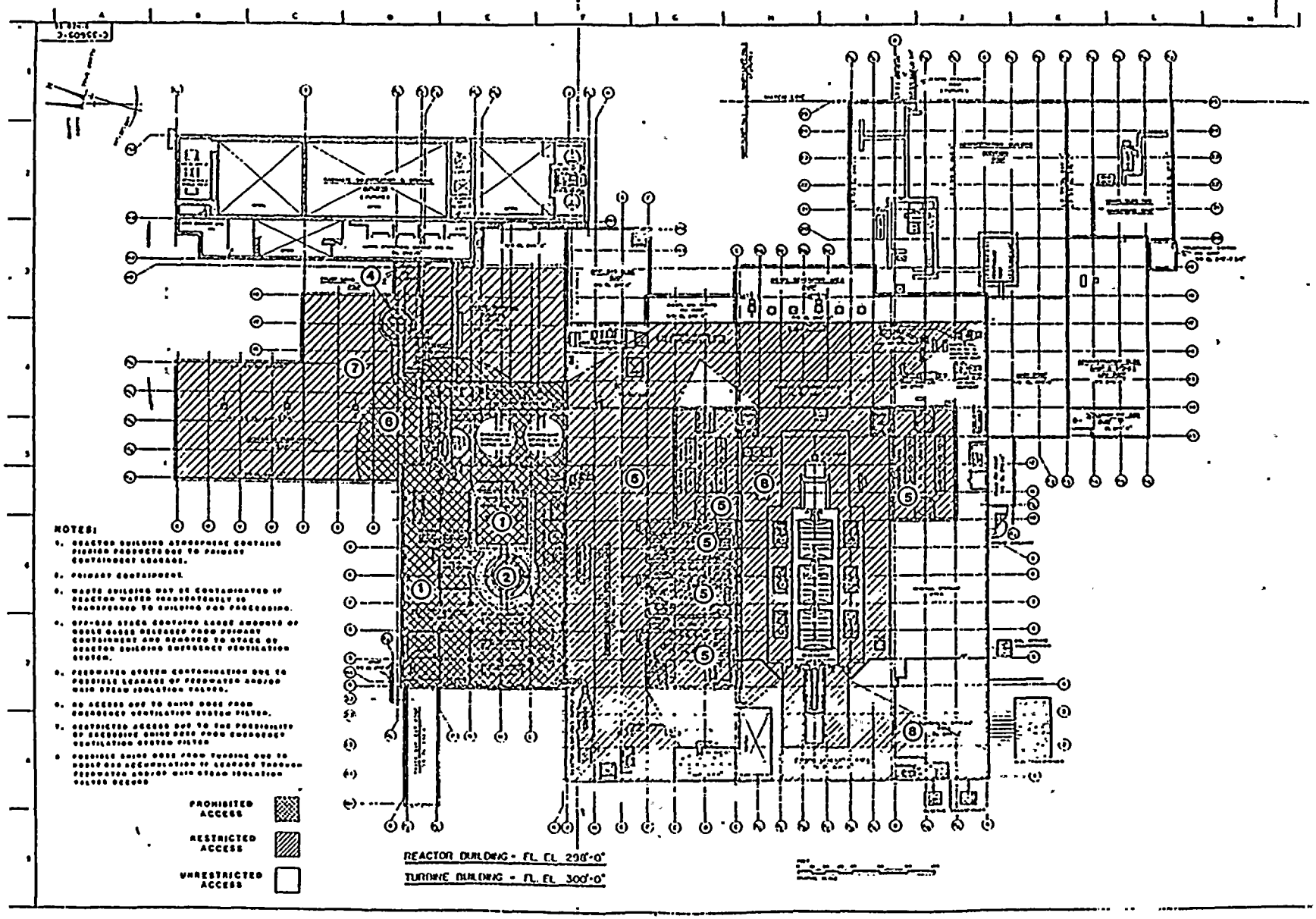

FIGURE 10 (cont.)

UNIT I RADIATION ZONE MAP

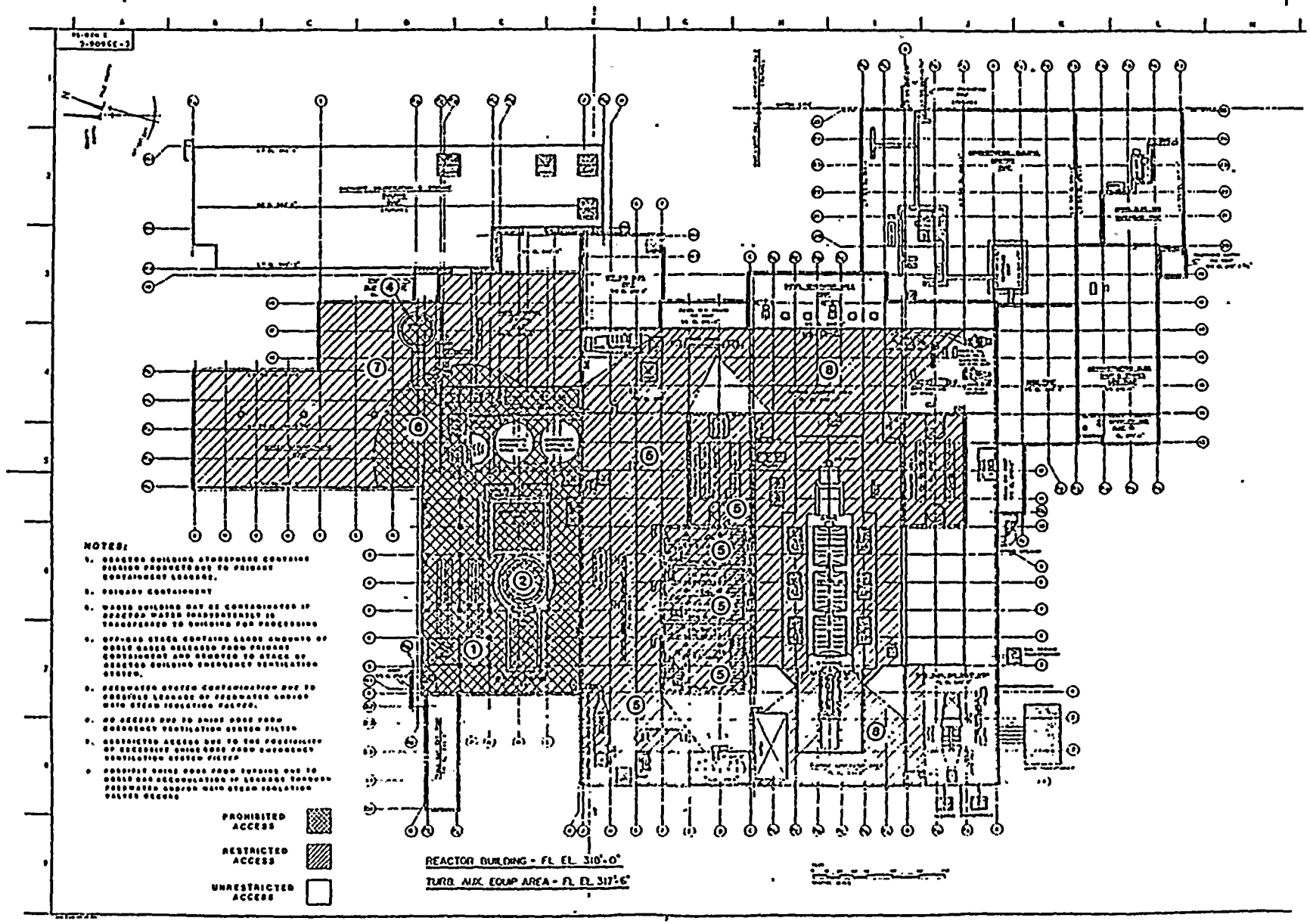

FIGURE 10 (cont.)

UNIT I RADIATION ZONE MAP

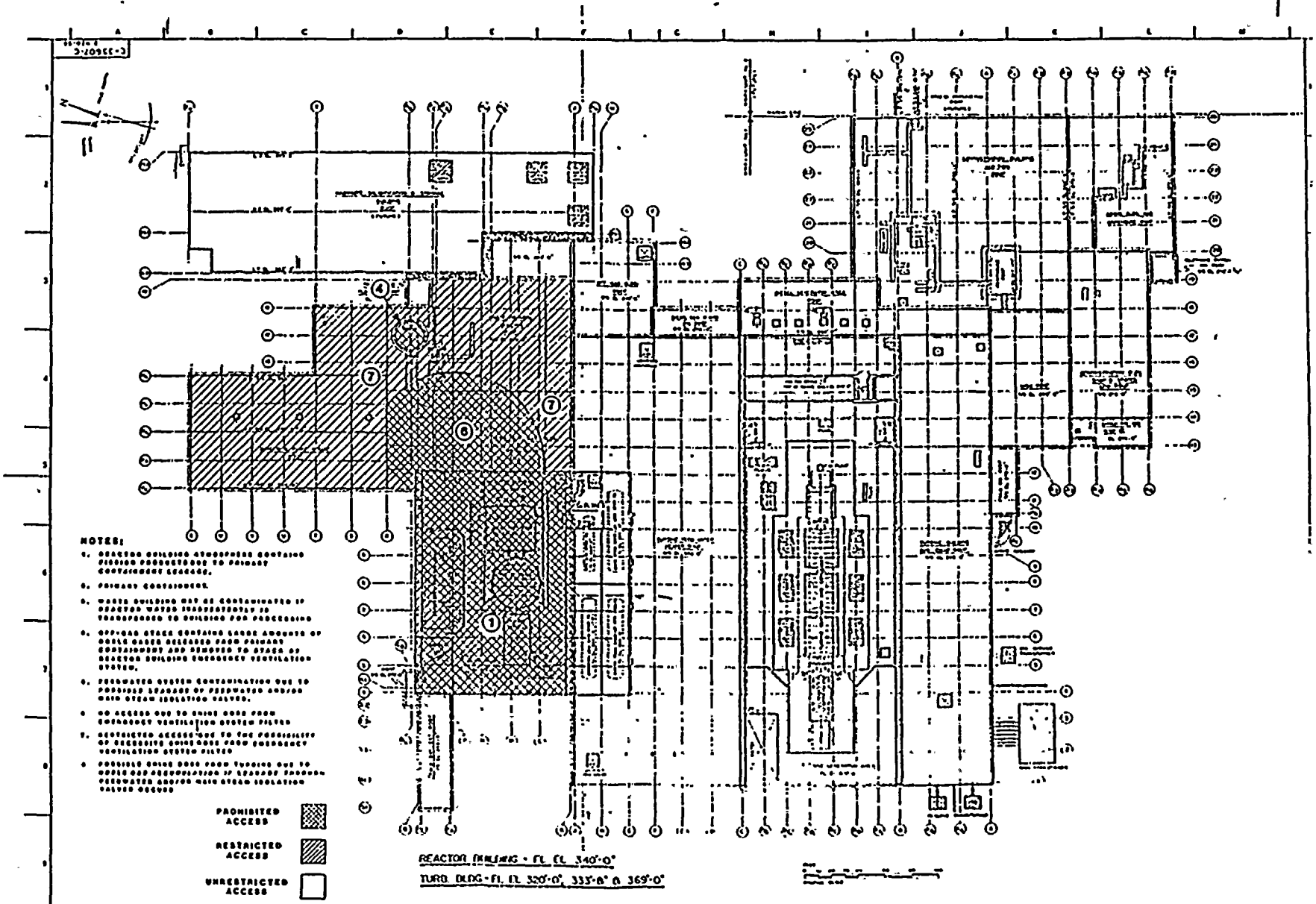

FIGURE 11

UNIT II RADIATION ZONE MAP

Nine Mile Point Unit 2 FSAR

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12.3.1.3 Post-Accident Access and Shield Design Review

A post-accident access and shield design review was performed in accordance with NUREG-0737, Item II.B.2 to ensure personnel accessibility to vital areas following a design basis accident (DBA). The DBA considered in this analysis is the loss-of-coolant accident (LOCA). The source terms used are those specified in Regulatory Guide 1.3 and discussed in Section 15.6.5.5.2.

FIGURE 11

UNIT II RADIATION ZONE MAP

Nine Mile Point Unit 2 FSAR

The plant is designed so that access after an accident is essential in only a limited number of areas. All Unit 2 post-accident vital access areas are listed as follows:

1. Main control room - control building, el 306 ft
2. Relay and computer room - control building, el 288 ft 6 in
3. Health physics/counting room - Unit 1 turbine building, el 261 ft

6

EPP-15

FIGURE 11

UNIT II RADIATION ZONE MAP

Nine Mile Point Unit 2 FSAR

6

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4. Radwaste sample room (post-accident sampling) - turbine building, el 261 ft

5. Online isotopic monitors - turbine building, el 306 ft and main stack, el 261 ft

6. Radwaste control room - turbine building, el 279 ft

7. Technical support center (TSC) - Unit 1 administration building

13 8. Chemistry laboratory - Unit 1 turbine building, el 261 ft

9. Associated connecting access paths

Other post-accident vital access areas suggested by NUREG-0737 either do not apply to Unit 2, or access to them is not required at Unit 2. 6

The doses received by individuals working in or traveling between the various vital areas in performing necessary tasks are presented in Table 12.3-3. The tasks to be performed in the area, the occupancy times in the area including travel time to and from the area, and the doses received in performance of each task are presented for each vital area. The following radiation sources contribute to the doses received for each task:

1. Direct shine from secondary containment

2. Airborne releases (described in Section 15.6.5.5.3)

13 3. Air-scattered radiation from secondary containment (sky shine)

Additional dose contributions from localized sources (e.g., post-accident samples) are accounted for on a case-specific basis.

Dose rates as a function of time at various areas requiring possible occupancy following an accident are presented in Table 12.3-4 and on Figure 12.3-69.

The calculated doses received in performing vital post-accident functions were determined based on the following:

1. Unless otherwise specified, tasks are assumed to be performed at the time post-accident at which the

highest dose rates occur in order to provide a maximum possible dose for the task.

2. Allowable dose limits are based on 10CFR50 Appendix A, General Design Criterion 19, as specified by NUREG-0737.

3. Personnel transit times are based on:

   a. A constant walking speed of 3 ft/sec, or

   b. A constant driving speed of 15 miles/hr (22 ft/sec)

4. Areas requiring continuous occupancy are analyzed to ensure that the 30-day average dose rates are less than 15 mRem/hr, specified by NUREG-0737.

5. The source terms used to calculate the dose contribution due to the samples during operation of the post-accident sampling system (PASS) are as follows: 6

Source	Source Term (% of core inventory)
Pressurized reactor coolant	100 noble gases 50 halogens 50 cesium 1 remaining isotopes
Depressurized reactor coolant	0 noble gases 50 halogens 50 cesium 1 remaining isotopes
Containment atmosphere	100 noble gases 25 halogens

6. Other than the main control room and the technical support center (TSC), no vital area requires access within the first hour after the accident.

7. The starting and ending point for all post-accident activities is the Operational Support Center located in the Unit 1 administration building.

Descriptions of the post-accident vital areas and tasks to be performed are provided as follows. Area numbers correspond with those provided above.

1&2. Main Control Room/Relay and Computer Room - Together, these two areas make up the control room emergency zone. Continuous occupancy for 30 days is required to execute safe shutdown of the plant. Shielding and ventilation system designs ensure habitability for 30 days within the dose limits of GDC 19. See Section 6.4 for details of this habitability analysis.

3. Health Physics/Counting Room - Intermittent occupancy is required to perform routine health physics functions and analyze radioactive grab samples. Since a specific stay time in this area is not defined, the maximum dose is calculated based on full-time occupancy for a standard 8-hr workday.

4&8. Radwaste Sample Room/Unit 1 Chemistry Lab - Intermittent occupancy is required to obtain, transport, and analyze post-accident samples. The samples are assumed to be taken at t=1 hr post-LOCA. See Section 1.10, Item II.B.3, for details of the sampling and analysis procedure. 6

5a. Turbine Building Online Isotopic Monitor - One-time access could be required at 22 days post-LOCA to replace the 160 liter liquid nitrogen supply dewar that feeds the three small dewars on the monitor skid. The stay time at the monitor location is assumed to be 15 minutes. 13

5b. Main Stack Online Isotopic Monitor - As above, one-time access could be required at 22 days to replace the 160 liter liquid nitrogen dewar. Also, due to the increased radioactivity concentration in the stack effluent after an accident, access could be required as frequently as every 6 hr throughout the accident to refill the sample cartridge supply hoppers. It is assumed that the person servicing the stack monitor will drive from the administration building to the stack to perform these functions. Assuming both tasks must be performed during the same trip, the stay time is 15 min plus 5 min for the cartridge refill, for a total of 20 min.

6a. Radwaste Control Room - One-time access is required to turn off reactor building equipment and floor drain pumps in order to prevent the discharge of post-LOCA fluids to the radwaste building. Although this task will probably be performed early

in the accident, the dose is calculated using worst-case dose rates to provide a conservative dose. The stay time for this task is assumed to be 5 minutes.

6b. Access is also required at t=1 hr and again at t=12 hr post-LOCA to service the emergency response facility (ERF) computer system. Again, one dose is calculated using worst-case dose rates to provide a conservative dose. The stay time for each task is 15 minutes.

7. Technical Support Center - Continuous occupancy for 30 days is required to:

   a. Provide plant management and technical support to plant operations personnel during emergency conditions

   b. Relieve the reactor operators of peripheral duties and communications not directly related to reactor system manipulations

   c. Prevent congestion in the control room

   d. Perform emergency operations facility (EOF) functions for the alert emergency class, the site emergency class, and the general emergency class events until the EOF is functional.

9. Associated Connected Access Paths - All pathways used to perform vital post-accident functions are shown on Figure 12.3-69. Calculated doses, except for those continuously occupied areas, include the dose received for a round trip between the OSC and the vital area based on the average dose rate for the path at the appropriate time post-LOCA.

FIGURE 11

UNIT II RADIATION ZONE MAP

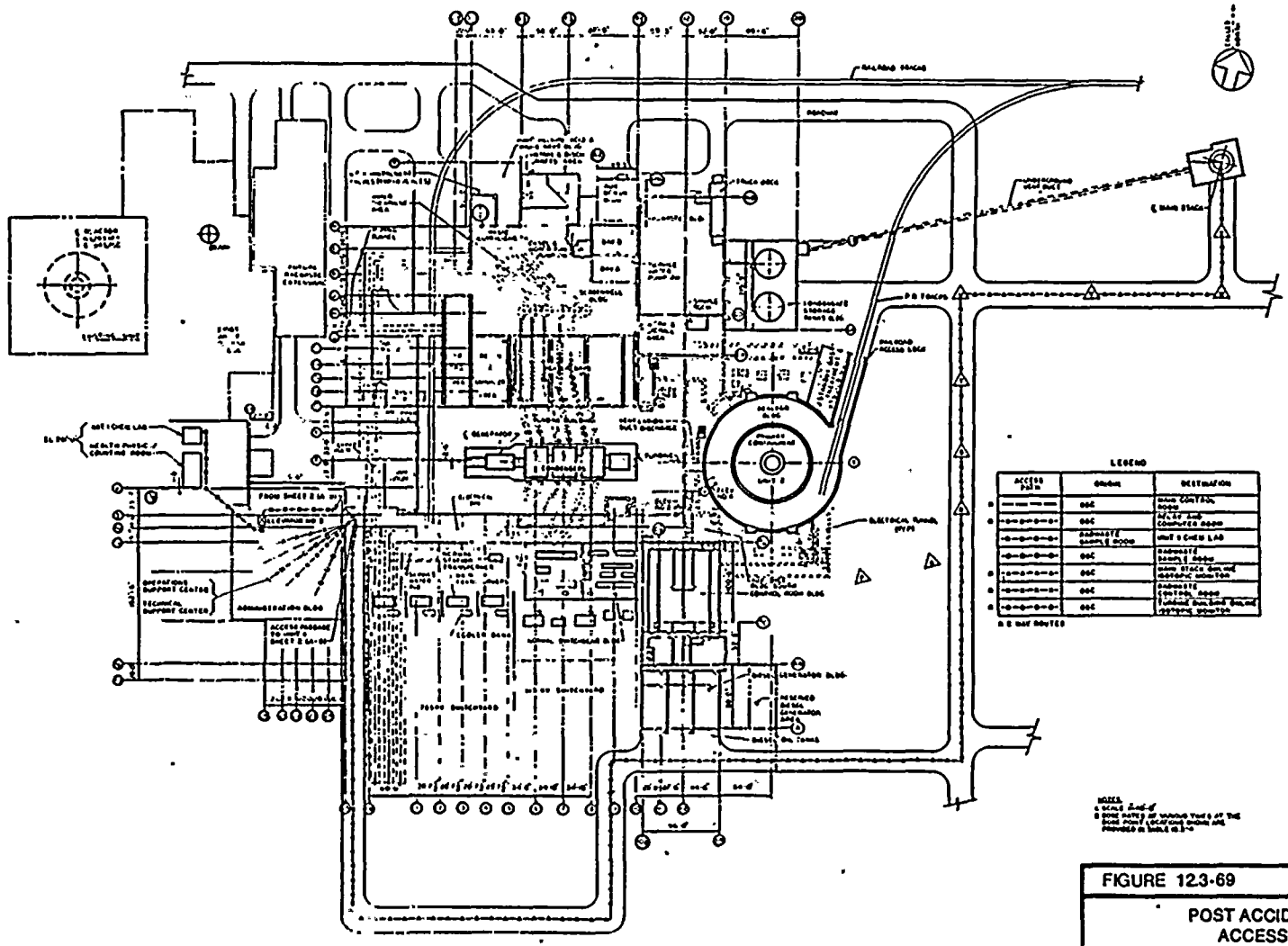

FIGURE 12.3-69

POST ACCIDENT VITAL
ACCESS AREAS
SHEET 1 OF 4

NIAGARA MOHAWK POWER CORPORATION
NINE MILE POINT-UNIT 2
FINAL SAFETY ANALYSIS REPORT

EPP-15

FIGURE 11

UNIT II RADIATION ZONE MAP

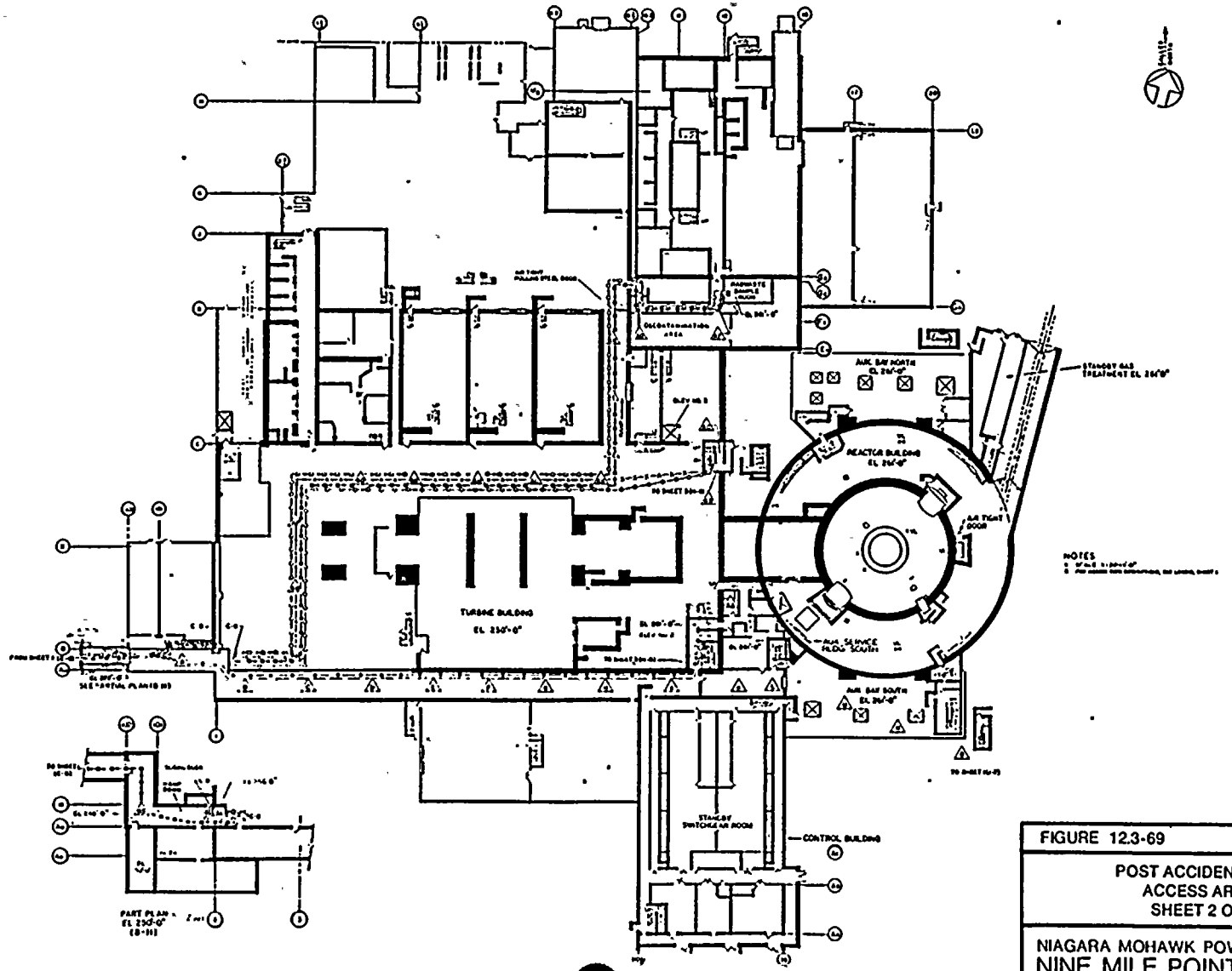

FIGURE 12.3-69

POST ACCIDENT VITAL
ACCESS AREAS
SHEET 2 OF 4

NIAGARA MOHAWK POWER CORPORATION
NINE MILE POINT-UNIT 2
FINAL SAFETY ANALYSIS R

FIGURE 11

UNIT II RADIATION ZONE MAP

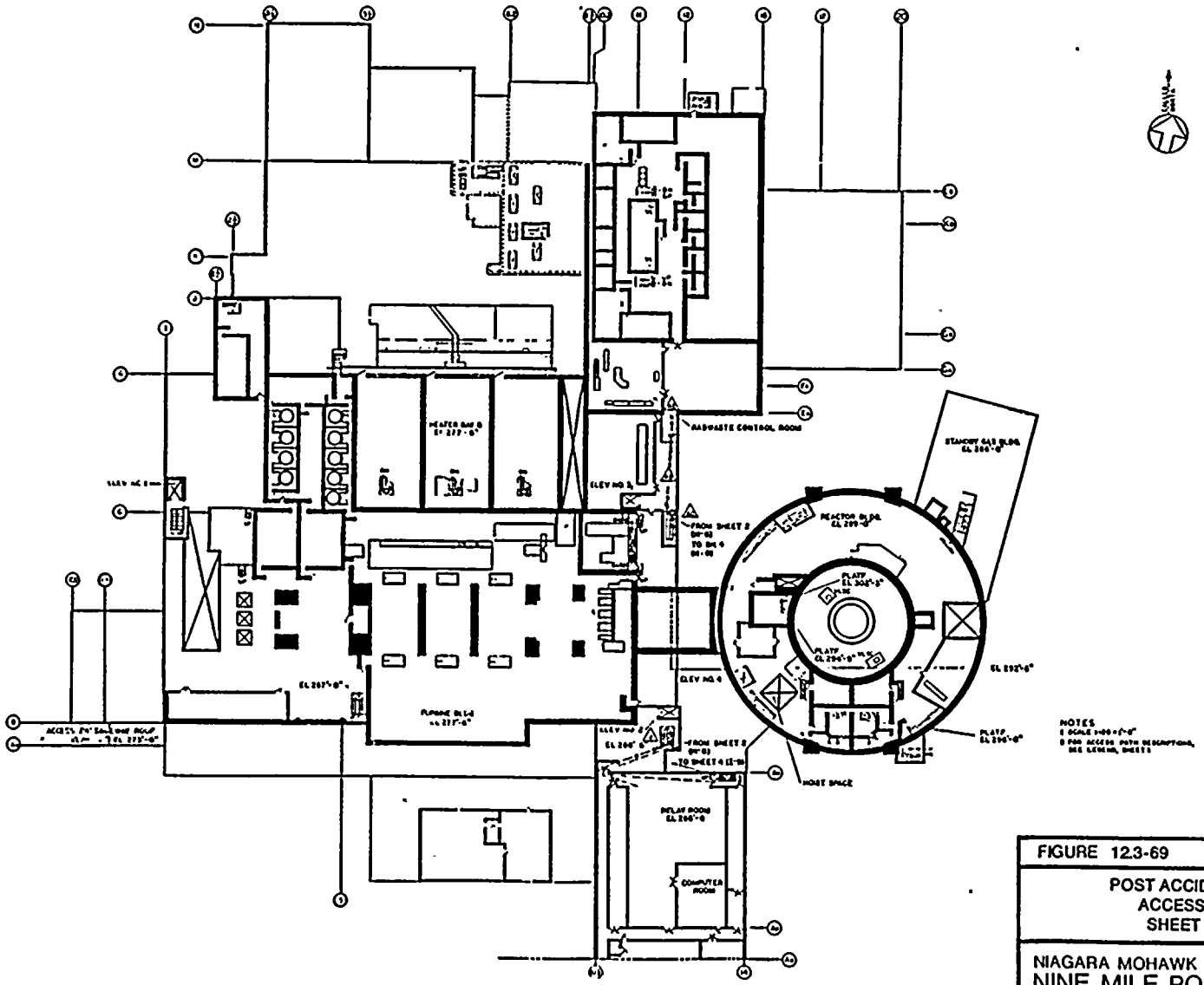

FIGURE 12.3-69

POST ACCIDENT VITAL
ACCESS AREAS
SHEET 3 OF 4

NIAGARA MOHAWK POWER CORPORATION
NINE MILE POINT-UNIT 2
FINAL SAFETY ANALYSIS REPORT

EPP-15

FIGURE 11

UNIT II RADIATION ZONE MAP

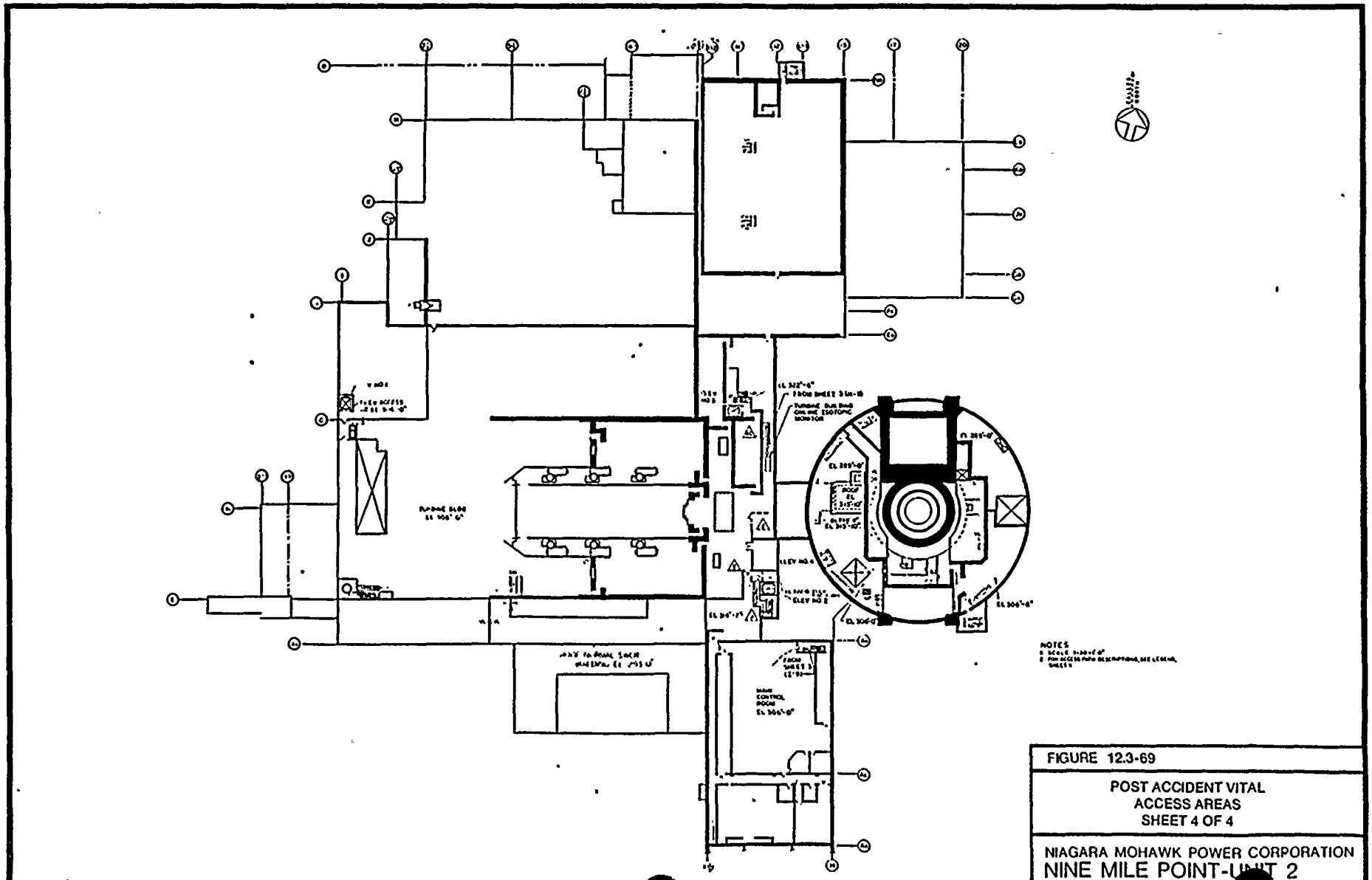

FIGURE 12.3-69

POST ACCIDENT VITAL
ACCESS AREAS
SHEET 4 OF 4

NIAGARA MOHAWK POWER CORPORATION
NINE MILE POINT-UNIT 2
FINAL SAFETY ANALYSIS R[illegible]

FIGURE 12

Nine Mile Point Unit 2 FSAR

TABLE 12.3-3

PERSONNEL DOSES FOR REQUIRED OCCUPANCY TIMES IN VITAL AREAS

Vital Area	Task Performed	Occupancy Time	Dose (rem)	Notes
Main control room and relay and computer room	Execute the safe shutdown of the plant	Continuous for 30 days	1.15+0	30-day average dose rate = 1.60 mRem/hr
Health physics/ counting room Unit 1	Perform routine health physics functions and analyze radioactive grab samples	8 hr	1.46+0	Dose based upon continuous occupancy for an 8-hr workday at the time of maximum dose rate
Radwaste sample room/ Unit 1 chemistry lab (PASS)(1)	a) Obtain and perform general isotopic and Boron analysis of dilute reactor coolant sample(2)	55 min	1.09+0 1.24+0	Whole body Extremity
	b) Obtain and perform isotopic analysis of containment atmosphere sample(2)	1 hr	1.40+0 2.63+0	Whole body Extremity
	c) Determine level of dissolved gases (e.g, H_2) in reactor coolant	2 hr, 5 min	5.89-1 5.93-1	Whole body Extremity
	d) Obtain and perform chloride analysis of undiluted reactor coolant sample(2)	1 hr, 30 min	2.47+0 1.66+1	Whole body Extremity
Turbine building online isotopic monitor	Replace large liquid nitrogen dewar(3)	1 or 2 min	2.79+0	Dose includes dose received for one round trip between the OSC and the monitor location
Main stack online isotopic monitor	Replace large liquid nitrogen dewar and refill sample cartridge feed hopper(3)	24 min	2.74+0	Dose includes dose received for one round trip between the OSC and the monitor location
Radwaste control room	a) Turn off reactor building equipment and floor drain pumps	12 min	8.26-1	Dose includes dose received for one round trip between the OSC and the radwaste control room

FIGURE 12 (Cont.)

Nine Mile Point Uni 2 FSAR

TABLE 12.3-3 (Cont)

Vital Area	Task Performed	Occupancy Time	Dose (rem)	Notes
	b) Service ERF computer system	22 min	1.18+0	
Round trip between the OSC and the control room emergency zone	For information only	6 min	1.60+0	
Technical support center	Per NUREG-0696	Continuous for 30 days	Later	

(1) t = 1 hr source terms used. See Section 1.10, Item II.B.3, for specific information on the post-accident sampling system and Table II.B.3-1 for a breakdown of the tasks and required occupancy times.
(2) Dose includes exposure received for one round trip from the OSC, to the radwaste sample room, to the Unit 1 chem lab, and back to the OSC.
(3) This assumes that the spare dewar is stored at the monitor location.

FIGURE 12 (Cont.)

Nine Mile Point Unit 2 FSAR

TABLE 12.3-4

DOSE RATE (REM/HR) AT LOCATION:*

Time Post-LOCA (Hr)	A	B	C	D	E	F	G	H	I
1	2.85+0	3.16+0	3.49+0	3.93±0	4.29+0	4.86+0	5.14+0	5.32+0	5.31+0
3	3.17+0	3.75+0	4.48+0	5.43+0	6.15+0	7.01+0	7.46+0	7.90+0	7.75+0
6	4.29+0	5.03+0	6.01+0	7.03+0	7.73+0	8.91+0	9.49+0	1.01+1	1.00+1
9	4.35+0	5.30+0	6.32+0	7.47+0	8.07+0	9.51+0	1.02+1	1.08+1	1.05+1
12	4.61+0	5.78+0	7.01+0	7.99+0	8.99+0	1.05+1	1.13+1	1.18+1	1.14+1
18	5.26+0	6.36+0	7.82±0	9.23+0	1.01+1	1.20+1	1.26+1	1.33+1	1.30+1
24	5.90+0	7.30+0	8.77+0	1.03+1	1.12+1	1.28+1	1.44+1	1.46+1	1.45+1
30	6.09+0	7.50+0	8.98+0	1.04+1	1.14+1	1.32+1	1.44+1	1.46+1	1.46+1
50	6.69+0	8.11+0	9.69+0	1.11+1	1.21+1	1.42+1	1.44+1	1.57+1	1.46+1
75	7.36+0	8.69+0	1.03+1	1.21+1	1.26+1	1.44+1	1.56+1	1.69+1	1.58+1
100	8.06+0	9.72+0	1.17+1	1.38+1	1.48+1	1.67+1	1.69+1	1.82+1	1.71+1
200	9.53+0	1.16+1	1.37+1	1.63+1	1.73+1	1.93+1	2.07+1	2.10+1	2.09+1
400	8.23+0	9.79+0	1.17+1	1.37+1	1.47+1	1.66+1	1.79+1	1.81+1	1.71+1
550	5.84+0	6.90+0	8.31+0	9.57+0	1.05+1	1.16+1	1.24+1	1.28+1	1.21+1
720	4.27+0	4.74+0	5.54+0	6.27+0	6.77+0	7.59+0	8.02+0	8.14+0	7.80+0

	J	K	L	M	N	O	P	Q	R
1	4.87+0	3.17+0	2.51+0	3.41+0	3.61+0	5.05+0	5.74+0	6.33+0	6.23+0
3	7.31+0	4.10+0	2.92+0	4.37+0	4.87+0	7.46+0	8.30+0	8.48+0	8.28+0
6	8.79+0	4.66+0	3.18+0	5.20+0	5.80+0	8.91+0	1.04+1	1.03+1	1.02+1
9	9.20+0	4.11+0	2.63+0	5.13+0	5.83+0	9.20+0	1.10+1	1.03+1	1.00+1
12	1.02+1	4.53+0	2.79+0	5.59+0	6.49+0	1.02+1	1.18+1	1.13+1	1.11+1
18	1.16+1	4.78+0	3.16+0	6.46+0	7.66+0	1.16+1	1.34+1	1.27+1	1.25+1
24	1.22+1	5.05+0	3.19+0	6.88+0	8.08+0	1.22+1	1.47+1	1.44+1	1.34+1
30	1.27+1	5.06+0	3.29+0	7.09+0	8.59+0	1.27+1	1.47+1	1.44+1	1.34+1
50	1.32+1	5.18+0	3.30+0	7.60+0	9.30+0	1.32+1	1.58+1	1.44+1	1.44+1
75	1.44+1	5.32+0	3.46+0	8.26+0	9.86+0	1.44+1	1.60+1	1.56+1	1.56+1
100	1.57+1	5.62+0	3.65+0	9.25+0	1.07+1	1.57+1	1.83+1	1.69+1	1.69+1
200	1.83+1	6.62+0	4.38+0	1.12+1	1.25+1	1.83+1	2.11+1	2.07+1	2.07+1
400	1.46+1	5.48+0	3.63+0	9.43+0	1.07+1	1.46+1	1.82+1	1.79+1	1.69+1
550	1.06+1	3.94+0	2.59+0	6.69+0	7.69+0	1.06+1	1.26+1	1.23+1	1.23+1
720	7.09+0	2.66+0	1.78+0	4.38+0	5.18+0	7.09+0	8.09+0	8.02+0	7.92+0

*Refer to Figure 12.3-69.

FIGURE 12 (Cont.)

Nine Mile Point Unit 2 FSAR

TABLE 12.3-4 (Cont)

Time Post-LOCA (Hr)	S	T	U	V	W	X	Y	Z
1	6.33+0	6.15+0	5.98+0	4.91+0	3.95+0	3.81+0	4.59+0	3.54+0
3	8.38+0	7.76+0	7.44+0	4.96+0	3.64+0	3.43+0	6.49+0	4.71+0
6	1.03+1	9.87+0	8.81+0	6.11+0	4.04+0	3.71+1	7.82+0	5.64+0
9	1.01+1	9.70+0	8.06+0	4.99+0	2.57+0	1.93+0	8.02+0	5.64+0
12	1.13+1	1.08+1	9.08+0	5.27+0	2.80+0	2.36+0	9.03+0	6.39+0
18	1.26+1	1.21+1	1.01+1	6.05+0	3.13+0	2.68+0	1.03+1	7.46+0
24	1.44+1	1.31+1	1.13+1	6.89+0	3.45+0	2.89+0	1.09+2	7.89+0
30	1.44+1	1.32+1	1.14+1	7.10+0	3.65+0	2.99+0	1.14+1	8.29+0
50	1.44+1	1.42+1	1.21+1	7.71+0	3.85+0	2.98+0	1.23+1	8.90+0
75	1.56+1	1.54+1	1.26+1	8.29+0	4.29+0	3.51+0	1.25+1	9.56+0
100	1.69+1	1.67+1	1.48+1	9.22+0	4.75+0	4.16+0	1.37+1	1.05+1
200	2.07+1	2.03+1	1.73+1	1.11+1	5.72+0	4.50+0	1.62+1	1.25+1
400	1.79+1	1.66+1	1.47+1	9.39+0	4.93+0	4.05+0	1.37+1	1.04+1
550	1.24+1	1.20+1	1.05+1	6.60+0	3.58+0	2.94+0	9.74+0	7.49+0
720	8.02+0	7.69+0	6.77+0	4.54+0	2.24+0	1.45+0	6.46+0	4.98+0

	AA	AB	AC	AD	AE	AF	AG	AH	AI
1	2.62+0	2.49+0	4.39+0	3.37+0	3.58+0	3.07+0	3.04+0	2.81+0	2.87+0
3	3.01+0	2.69+0	6.06+0	4.10+0	4.46+0	3.61+0	3.55+0	3.29+0	3.43+0
6	3.24+0	2.82+0	7.29+0	4.62+0	5.03+0	3.95+0	3.88+0	3.59+0	3.77+0
9	2.64+0	2.02+0	7.42+0	4.01+0	4.45+0	3.18+0	3.10+0	2.91+0	3.10+0
12	2.79+0	2.13+0	8.33+0	4.07+0	4.62+0	3.36+0	3.28+0	3.09+0	3.29+0
18	3.16+0	2.28+0	9.58+0	4.36+0	4.84+0	3.60+0	3.50+0	3.29+0	3.50+0
24	3.19+0	2.35+0	1.02+1	4.46+0	5.05+0	3.71+0	3.62+0	3.39+0	3.62+0
30	3.29+0	2.36+0	1.05+1	4.38+0	4.97+0	3.73+0	3.63+0	3.41+0	3.63+0
50	3.30+0	2.38+0	1.14+1	4.41+0	4.90+0	3.77+0	3.67+0	3.44+0	3.67+0
75	3.46+0	2.52+0	1.21+1	4.59+0	5.11+0	3.99+0	3.88+0	3.64+0	3.88+0
100	3.75+0	2.72+0	1.27+1	4.86+0	5.41+0	4.31+0	4.19+0	3.93+0	4.19+0
200	4.38+0	3.22+0	1.52+1	5.64+1	6.37+0	5.11+0	4.97+0	4.66+0	4.97+0
400	3.63+0	2.68+0	1.27+1	4.71+0	5.35+0	4.24+0	4.13+0	3.87+0	4.13+0
550	2.69+0	1.94+0	9.24+0	3.42+0	3.85+0	3.08+0	2.99+0	2.81+0	2.99+0
720	1.78+0	1.26+0	6.16+0	2.23+0	2.50+0	1.99+0	1.94+0	1.82+0	1.94+0

*Refer to Figure 12.3-69.

FIGURE 12 (Cont.)

Nine Mile Point Unit 2 FSAR

TABLE 12.3-4 (Cont)

Time Post-LOCA (Hr)	AJ	AK	AL	AM	AN	AO	AP	AQ
1	2.92+0	2.84+0	2.76+0	2.58+0	2.41+0	2.18+0	2.04+0	2.04+0
3	3.49+0	3.38+0	3.24+0	2.93+0	2.63+0	2.47+0	2.22+0	2.22+0
6	3.84+0	3.73+0	3.55+0	3.16+0	2.79+0	2.66+0	2.34+0	2.34+0
9	3.18+0	3.11+0	2.92+0	2.49+0	2.08+0	2.07+0	1.72+0	1.72+0
12	3.37+0	3.29+0	3.09+0	2.63+0	2.19+0	2.19+0	1.81+0	1.81+0
18	3.60+0	3.51+0	3.30+0	2.81+0	2.34+0	2.33+0	1.92+0	1.92+0
24	3.71+0	3.62+0	3.39+0	2.89+0	2.40+0	2.40+0	1.97+0	1.97+0
30	3.73+0	3.63+0	3.41+0	2.90+0	2.40+0	2.40+0	1.98+0	1.98+0
50	3.77+0	3.67+0	3.44+0	2.93+0	2.42+0	2.42+0	1.99+0	1.99+0
75	3.99+0	3.88+0	3.64+0	3.10+0	2.56+0	2.56+0	2.10+0	2.10+0
100	4.31+0	4.19+0	3.93+0	3.35+0	2.76+0	2.76+0	2.26+0	2.26+0
200	5.11+0	4.97+0	4.66+0	3.97+0	3.27+0	3.27+0	2.68+0	2.68+0
400	4.24+0	4.13+0	3.87+0	3.30+0	2.71+0	2.71+0	2.23+0	2.23+0
550	3.08+0	2.99+0	2.81+0	2.39+0	1.97+0	1.97+0	1.61+0	1.61+0
720	1.99+0	1.94+0	1.82+0	1.55+0	1.27+0	1.27+0	1.04+0	1.04+0

Time Post-LOCA (Hr)	AR	AS	Health Physics/ Counting Room Unit 2	Turbine Building Radwaste Sample Room	Online Isotopic Monitor	Main Stack Online Isotopic Monitor
1	2.04+0	1.91+0	4.25-2	2.76-1	4.19+0	1.78+0
3	2.22+0	1.94+0	3.19-2	2.40-1	5.79+0	2.52+0
6	2.34+0	2.04+0	2.61-2	2.09-1	7.02+0	3.69+0
9	1.72+0	1.41+0	4.38-4	6.74-2	7.22+0	2.92+0
12	1.81+0	1.45+0	3.45-4	5.99-2	8.03+0	2.99+0
18	1.92+0	1.50+0	2.30-4	4.76-2	9.28+0	3.17+0
24	1.97+0	1.55+0	1.68-4	3.88-2	9.85+0	2.41+0
30	1.98+0	1.53+0	7.07-5	3.25-2	1.03+1	3.31+0
50	1.99+0	1.51+0	3.45-5	2.24-2	1.10+1	3.24+0
75	2.10+0	1.57+0	2.21-5	1.84-2	1.17+1	3.37+0
100	2.26+0	1.67+0	7.72-6	1.71-2	1.25+1	3.66+0
200	2.68+0	1.97+0	5.07-6	1.73-2	1.52+1	4.08+0
400	2.23+0	1.64+0	3.51-6	1.48-2	1.26+1	2.90+0
550	1.61+0	1.19+0	2.50-6	1.11-2	9.04+0	2.01+0
720	1.04+0	7.84-1	1.64-6	7.34-3	6.06+0	1.66+0

*Refer to Figure 12.3-69.

FIGURE 12 (Cont.)

Nine Mile Point Unit 2 FSAR

TABLE 12.3-4 (Cont)

Time Post-LOCA (Hr)	Radwaste Control Room	Unit 1 Chemistry Lab
1	1.43+0	9.00-2
3	1.89+0	6.87-2
6	2.08+0	5.65-2
9	1.96+0	3.17-3
12	1.95+0	2.62-3
18	1.93+0	1.84-3
24	1.90+0	1.36-3
30	1.87+0	9.41-4
50	1.73+0	5.15-4
75	1.72+0	3.58-4
100	1.83+0	2.85-4
200	2.09+0	2.58-4
400	1.71+0	2.24-4
550	1.26+0	1.69-4
720	8.15-1	1.13-4

*Refer to Figure 12.3-69.

FIGURE 13

CONTAMINATION CONTROL GUIDES

		NORMAL STATION CONTROL LEVELS	EMERGENCY STATION CONTROL LEVELS
Unrestricted Areas and Release of Material, Equipment, Tools, Vehicles, etc. to Unrestricted Areas	Transferable	<100dpm ß- γ per 100cm^2 (disc smear) <1000dpm ß- γ per ft^2 (wipe) <10dpm α per 100cm^2 (disc smear)	<1000dpm ß- γ per 100cm^2 (disc smear) <10,000dpm ß- γ per ft^2 (wipes) <10dpm α per 100cm^2 (disc smear)
	Fixed	No activity above background (Background must be <300cpm)	<1 mrad/hr
Restricted Areas	Transferable	<400dpm ß- γ per 100cm^2 (disc smear) <4000dpm ß- γ per ft^2 (wipe) <40dpm α per 100cm^2 (disc smear)	<4000dpm ß- γ per 100cm^2 (disc smear) <40,000dpm ß- γ per ft^2 (wipe) <40 dpm α per 100cm^2 (disc smear)
	Fixed	<5mrad/hr at contact	<5mrad/hr at contact
Restricted Area Equipment and Tools	Transferable	<400dpm ß- γ per 100cm^2 (disc smear) <4000dpm ß- γ per ft^2 (wipe) <40dpm α per 100cm^2 (disc smear)	<4000dpm ß- γ per 100cm^2 (disc smear) <40,000dpm ß- γ per ft^2 (wipe) <40 dpm α per 100cm^2 (disc smear)
	Fixed	<5mrad/hr at contact	<5mrad/hr at contact
Respiratory Equipment (except hoses and manifolds - see "Equipment and Tools")	Transferable	<400dpm ß- γ per 100cm^2 (disc smear) <40dpm α per 100cm^2	<400dpm ß- γ per 100cm^2 (disc smear) <40 dpm α per 100cm^2 (disc smear)
	Fixed	<800cpm, 1.4-2.0mg/cm^2 probe	<800cpm, 1.4-2.0mg/cm^2 probe

EPP-15

FIGURE 13

CONTAMINATION CONTROL GUIDES (Cont.)

	NORMAL STATION CONTROL LEVELS	EMERGENCY STATION CONTROL LEVELS
Personnel Decontamination (Personnel Clothing, Shoes)	<100 cpm or 1000 dpm/15cm^2 (probe area) (Background < 500 cpm)	<1000 cpm or 10,000 dpm/15cm^2 (probe area) (Background < 500 cpm)

NOTES:
1. During emergency situations, if decontamination is warranted and possible contamination levels should be brought down below normal station control levels.
2. Once the emergency has been terminated, all tools, equipment and areas released under emergency guidelines shall be resurveyed and decontaminated (if necessary) to be brought back into compliance with normal station control levels.