



Florida Power & Light Company, 6501 South Ocean Drive, Jensen Beach, FL 34957

December 28, 2001

L-2001-280
10 CFR 50 Appendix E

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

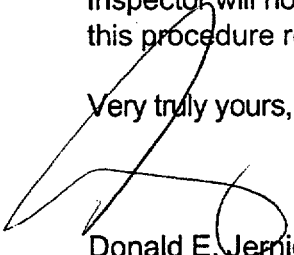
Re: St. Lucie Units 1 and 2
Docket Nos. 50-335 and 50-389
Emergency Plan Implementing Procedure

In accordance with 10 CFR 50 Appendix E, enclosed is a copy of the revised procedure that implements the Emergency Plan as listed below.

<u>Number</u>	<u>Title</u>	<u>Revision</u>	<u>Implementation Date</u>
HP-201	Emergency Personnel Exposure Control	11	December 9, 2001

This revision deleted references to the qualified safety parameter display system (QSPDS) inverter and added "abandoned" on location drawings. NRC Regulatory Issue Summary 2001-05 waived the requirements that multiple copies of documents be submitted to the NRC. Therefore, hard copies usually sent to the Regional Administrator and Senior Resident Inspector will no longer be furnished. Please contact us if there are any questions regarding this procedure revision.

Very truly yours,


Donald E. Jernigan
Vice President
St. Lucie Plant

DEJ/spt

Enclosure

Ap45



FPL

ST. LUCIE PLANT

HEALTH PHYSICS PROCEDURE

SAFETY RELATED

Procedure No.

HP-201

Current Revision No.

11

Effective Date

12/09/01

Title:

EMERGENCY PERSONNEL EXPOSURE CONTROL

Responsible Department: **HEALTH PHYSICS**

REVISION SUMMARY:

Revision 11 – Deleted references to QSPDS inverter and added abandoned on location drawings. (John Brady, 11/08/01)

Revision 10 – Removed reference to Post Accident Sampling System and made administrative and editorial changes. (J. R. Walker, 07/23/01)

Revision 9 – **THIS PROCEDURE HAS BEEN COMPLETELY REWRITTEN.** Deleted exposure guideline basis, added TMI shielding study and made editorial and administrative changes. (J. R. Walker, 06/11/01)

Revision <u>0</u>	FRG Review Date <u>02/01/82</u>	Approved By <u>J. H. Barrow (for)</u> Plant General Manager	Approval Date <u>02/02/82</u>	S__OPS
Revision <u>11</u>	FRG Review Date <u>11/08/01</u>	Approved By <u>R. G. West</u> Plant General Manager N/A Designated Approver N/A Designated Approver (Minor Correction)	Approval Date <u>11/08/01</u>	DATE DOCT DOCN SYS COM ITM
				PROCEDURE HP-201 COMPLETED 11

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1.0 PURPOSE

1.1 This procedure provides the methods to be followed to control radiological exposure of personnel during emergencies.

2.0 REFERENCES

NOTE

One or more of the following symbols may be used in this procedure:

§ Indicates a Regulatory commitment made by Technical Specifications, Condition of License, Audit, LER, Bulletin, Operating Experience, etc. and shall NOT be revised without Facility Review Group review and Plant General Manager approval.

¶ Indicates a management directive, vendor recommendation, plant practice or other non-regulatory commitment that should NOT be revised without consultation with the plant staff.

Ψ Indicates a step that requires a sign off on an attachment.

2.1 10 CFR 20, Standards for Protection Against Radiation.

2.2 St. Lucie Plant Radiological Emergency Plan (E-Plan)

2.3 E-Plan Implementing Procedures (EPIP 00 – 13)

2.4 HP-2, "FPL Health Physics Manual."

2.5 Nuclear Energy Policy on Exposure Limits for Emergency Response Personnel, Revision to Policy Statement, Ltr. No. JNO-HP-94-056, October 26, 1994.

2.6 HPP-30, "Personnel Monitoring."

2.7 HP-33, "Pocket Dosimeters."

2.8 HPP-60, "Respiratory Protection Manual."

2.9 HPP-61, "Use of Respiratory Protective Equipment."

2.10 HPP-63, "DAC-Hour Assessment."

2.11 HP-203, "Personnel Access Control During Emergencies."

2.12 EPA-400-R-92-001, Manual of Protective Action Guides and Protective Actions for Nuclear Incidents.

2.13 FPL TMI Plant Shielding Study

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3.0 RELATED SYSTEM STATUS

NONE

4.0 PRECAUTIONS / LIMITATIONS

4.1 All personnel exposures will be maintained As Low As Reasonably Achievable (ALARA).

4.2 When Health Physics normal operating procedures and emergency procedures differ, the emergency procedures take precedence.

4.3 Entries into radiation areas exceeding 10R/hr should not be made without EC or TSCHPS authorization.

4.4 Emergency response personnel should have their exposures limited to the following doses.

1. 5 rem deep dose equivalent (external exposure) as measured by self-reading dosimeter, or
2. 50 rem to the thyroid from inhalation of iodines.

5.0 RECORDS

5.1 When completed, the forms listed below shall be maintained in the plant files in accordance with QI-17-PSL-1, "Quality Assurance Records."

1. Form HP 203.2, Emergency Access Control Log Sheet.

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6.0 INSTRUCTIONS

6.1 Guidance for controlling exposures under emergency conditions is provided in:

1. Attachment 1, Exposure Limits for Emergency Response Personnel.
2. Attachment 2, FPL TMI Plant Shielding Study – Unit 1.
3. Attachment 3, FPL TMI Plant Shielding Study – Unit 2.

END OF SECTION 6.1

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6.2 Initial Re-Entry Team

1. The initial Re-entry Team shall consist of at least two persons one of whom shall be a Health Physics Technician (HPT).
2. The initial Re-entry Team shall use the protective measures and monitoring equipment as directed by the TSCHPS as indicated on the Evacuated Area Re-entry Authorization, form HP 203.1 (see HP-203, "Personnel Access Control During Emergencies").
3. The initial Re-entry Team members shall carry dosimetry equipment as directed by the TSCHPS as indicated on the Evacuated Area Re-entry Authorization, form HP 203.1 (see HP-203).
4. The Re-entry Team shall be logged in on the Emergency Access Control Log Sheet, HP 203.2 (see HP-203) prior to entering the evacuated area. The TSCHPS and HPOSC Supervisor shall collaborate on assigned initial stay-times based on available dose rate information. The Re-entry Team will frequently check their dosimeters and withdraw to a safe area before exceeding the assigned limits.

END OF SECTION 6.2

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6.3 Subsequent Entries

1. The TSCHPS and HPOSC (HP Supervisor in the Operational Support Center) shall analyze the data obtained from the initial entry and shall set requirements for subsequent entries based on this data. Form HP 203.1 (see HP-203) shall be used for all entries unless otherwise directed by the TSCHPS.
2. All subsequent entries shall be made with health physics coverage until the areas entered are declared open for limited access by the TSCHPS. No areas previously unsurveyed shall be entered without health physics coverage.
3. The Evacuated Area Re-entry Authorization form HP 203.1 (see HP-203) should be completed and doses recorded on an individual before that individual is allowed to enter the area a second time to ensure he does not exceed emergency exposure guidelines.

NOTE

The attachments (2 for Unit 1 and 3 for Unit 2) contain area dose rates of the Reactor Auxiliary Buildings (RABs) based on a Three Mile Island Unit 2 (TMI – 2) type accident. These attachments should be referred to prior to entry into an area where dose rates are unknown. The dose rates may be verified by Area Radiation Monitors (ARMs).

END OF SECTION 6.3

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ATTACHMENT 1
EXPOSURE LIMITS FOR EMERGENCY RESPONSE PERSONNEL
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NOTE

1. Both Total Dose (TEDE) and Thyroid Dose (CDE) should be used for purposes of controlling exposure.
2. Protective clothing, including respirators, should be used where appropriate.

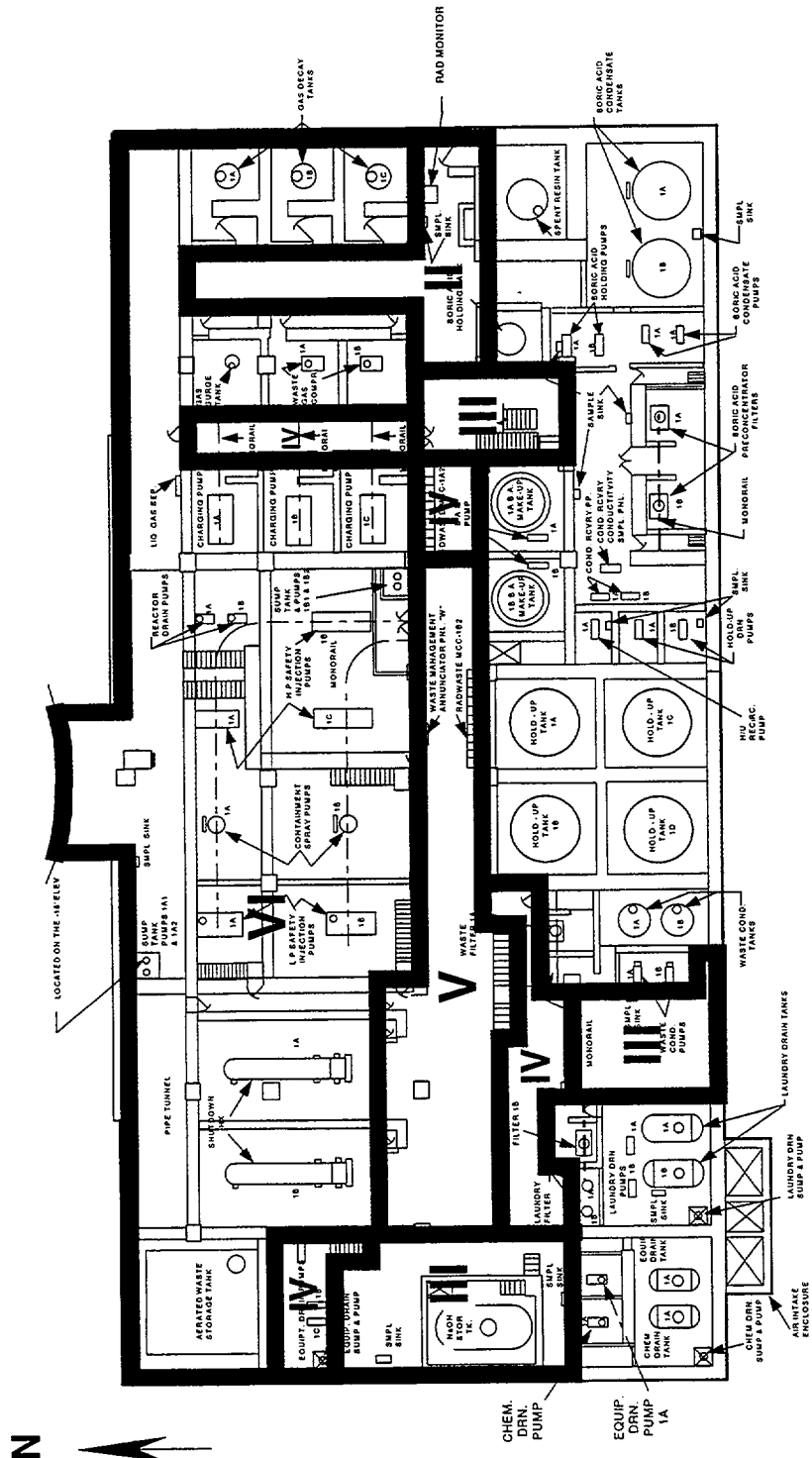
For the following missions, the exposure limit is⁽¹⁾:

	Total Dose ⁽²⁾ (TEDE)	THYROID ⁽³⁾ (CDE)
Performance of actions that would not directly mitigate the event, minimize escalation, or minimize effluent releases.	5 REM	50 REM
Performance of actions that mitigate the escalation to the event, rescue persons from a <u>non-life</u> threatening situation, minimize exposures or minimize effluent releases.	10 REM	100 REM
Performance of actions that decrease the severity of the event or terminate the processes causing the event in an attempt to control effluent releases to avoid extensive exposure of large populations. Also, rescue of persons from a <u>life-threatening</u> situation.	25 REM	250 REM
Rescue of person from a <u>life-threatening</u> situation. (Volunteers ⁽⁴⁾ should be above the age of 45.)	(5)	(5)

- (1) Exposure limits to the lens of the eye are 3 times the Total Dose (TEDE) values listed.
- (2) Total Dose (TEDE) is the total whole body exposure from both external and internal (weighted) sources - Total Effective Dose Equivalent.
- (3) Thyroid Dose (CDE) commitment from internal sources - Committed Dose Equivalent. The same dose limits also apply to other organs (CDE), skin (Shallow Dose Equivalent) and extremities (Extremity Dose Equivalent).
- (4) Volunteers with full awareness of risks involved including numerical levels of dose at which acute effects of radiation will be incurred and numerical estimates of the risk of delayed effects.
- (5) No upper limit for Total Dose (TEDE) and/or Thyroid Dose (CDE) exposure has been established because it is not possible to prejudge the risks that one person should be allowed to take to save the life of another. Also, no specific limit is given for thyroid exposure since in the extreme case, complete thyroid loss might be an acceptable sacrifice for a life saved. This should not be necessary if respirators and/or thyroid protection for rescue personnel are available as the result of adequate planning.

END OF ATTACHMENT 1

ATTACHMENT 2
FPL TMI PLANT SHIELDING STUDY – UNIT 1
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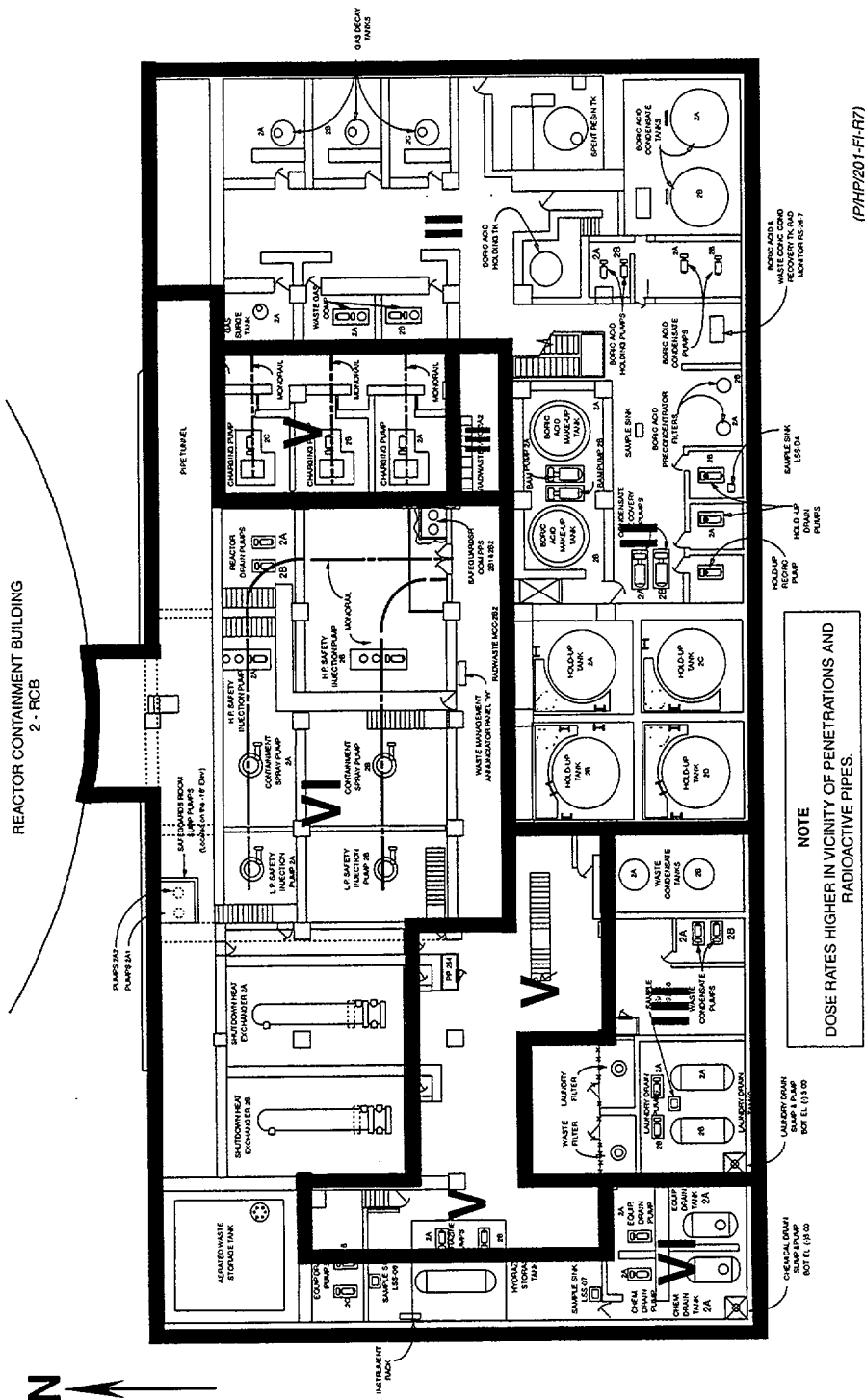
(P/HP201-FA-R7)

UNIT 1 - 0.5' RAB
1 HOUR AFTER ACCIDENT

LEGEND: ZONAL DOSE RATE CLASSIFICATION

ZONE	UPPER LIMIT DOSE RATE
I	< 15 MR/HR
II	15 - 100 MR/HR
III	100 - 1000 MR/HR
IV	1 - 10 R/HR
V	10 - 100 R/HR
VI	> 100 R/HR

ATTACHMENT 3
FPL TMI PLANT SHIELDING STUDY - UNIT 2
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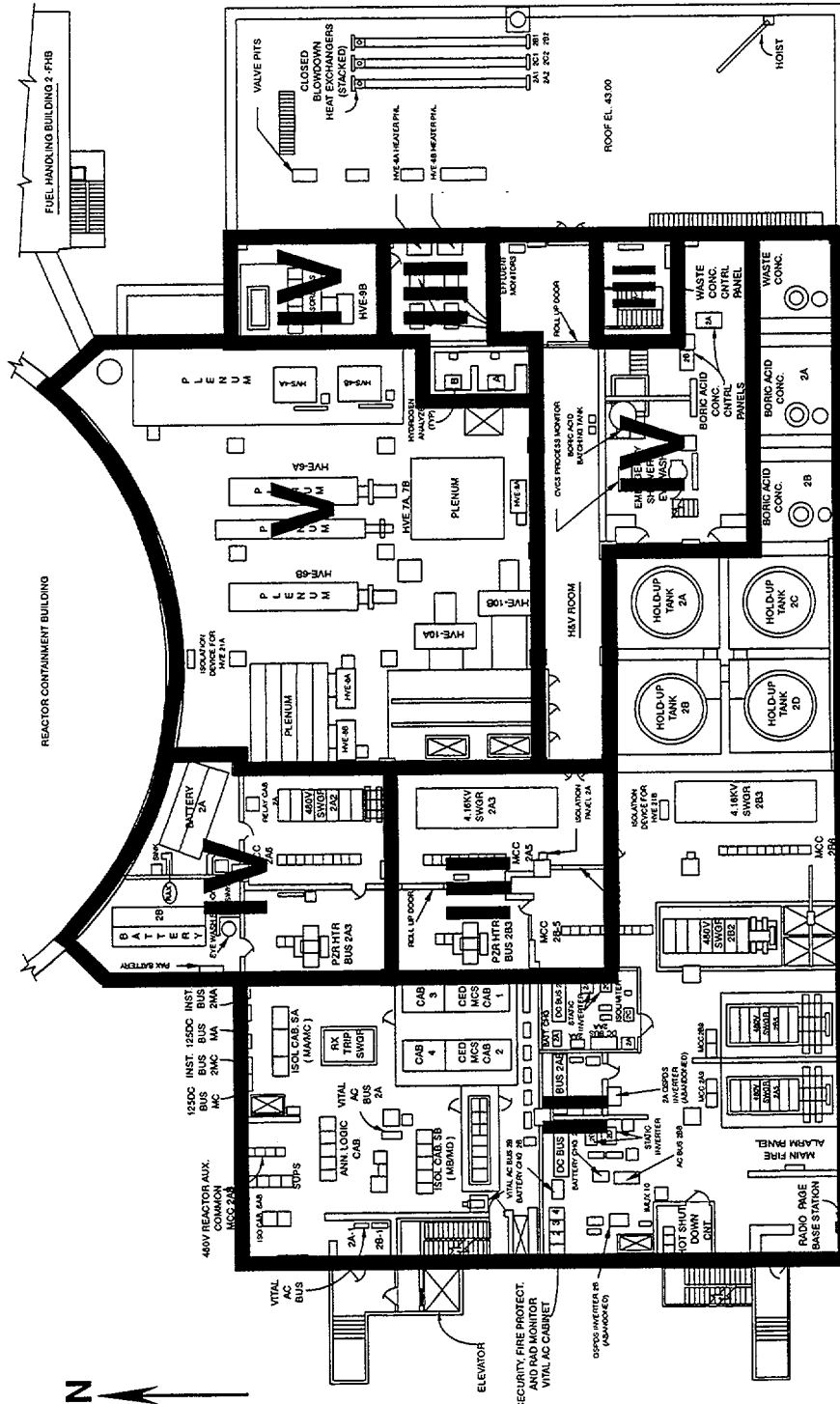
UNIT 2 -0.5' RAB
1 HOUR AFTER ACCIDENT
 (PHP/201-FH7)

LEGEND: ZONAL DOSE RATE CLASSIFICATION

ZONE	UPPER LIMIT DOSE RATE
I	< 15 mR/hr
II	15 - 100 mR/hr
III	100 - 1000 mR/hr
IV	1 - 10 R/hr
V	10 - 100 R/hr
VI	> 100 R/hr

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ATTACHMENT 3
FPL TMI PLANT SHIELDING STUDY – UNIT 2
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(P/HP/201-FK-R7)

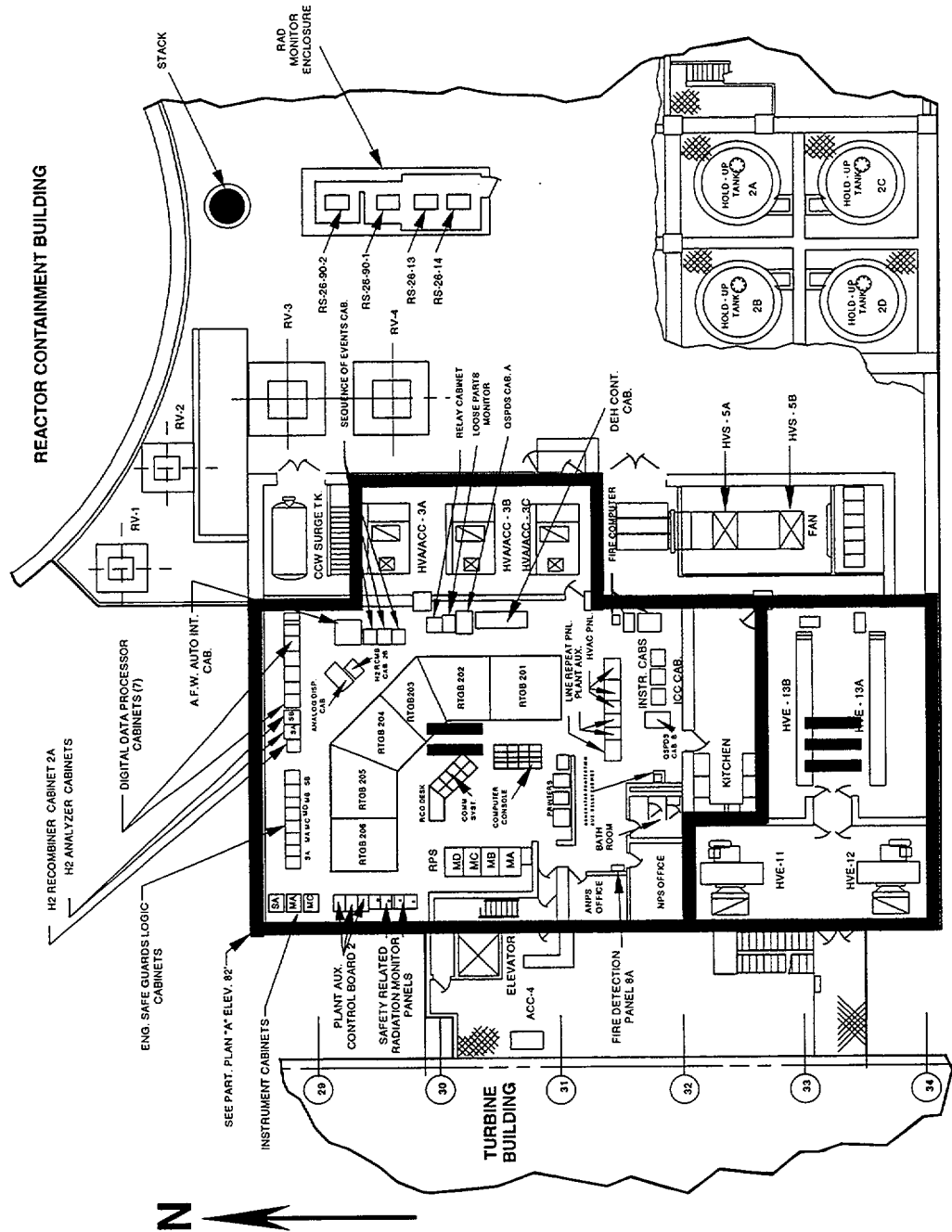
UNIT 2 43' RAB
1 HOUR AFTER ACCIDENT

LEGEND: ZONAL DOSE RATE CLASSIFICATION

ZONE	UPPER LIMIT DOSE RATE
I	< 15 mR/hr
II	15 - 100 mR/hr
III	100 - 1000 mR/hr
IV	1 - 10 R/hr
V	10 - 100 R/hr
VI	> 100 R/hr

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ATTACHMENT 3
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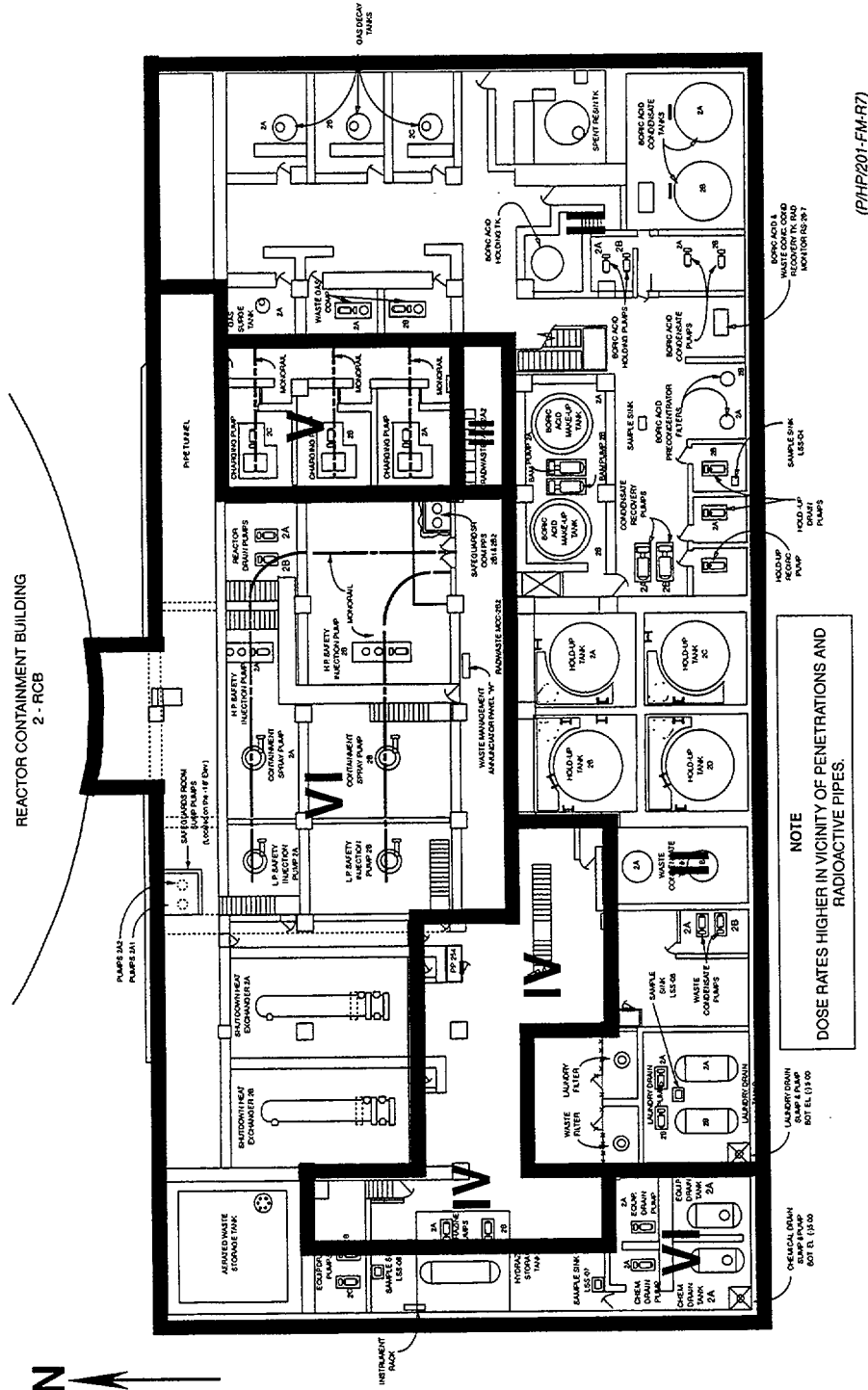
UNIT 2 62' RAB
 1 HOUR AFTER ACCIDENT

LEGEND: ZONAL DOSE RATE CLASSIFICATION

ZONE	UPPER LIMIT DOSE RATE
I	< 15 mR/hr
II	15 - 100 mR/hr
III	100 - 1000 mR/hr
IV	1 - 10 R/hr
V	10 - 100 R/hr
VI	> 100 R/hr

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FPL TMI PLANT SHIELDING STUDY – UNIT 2
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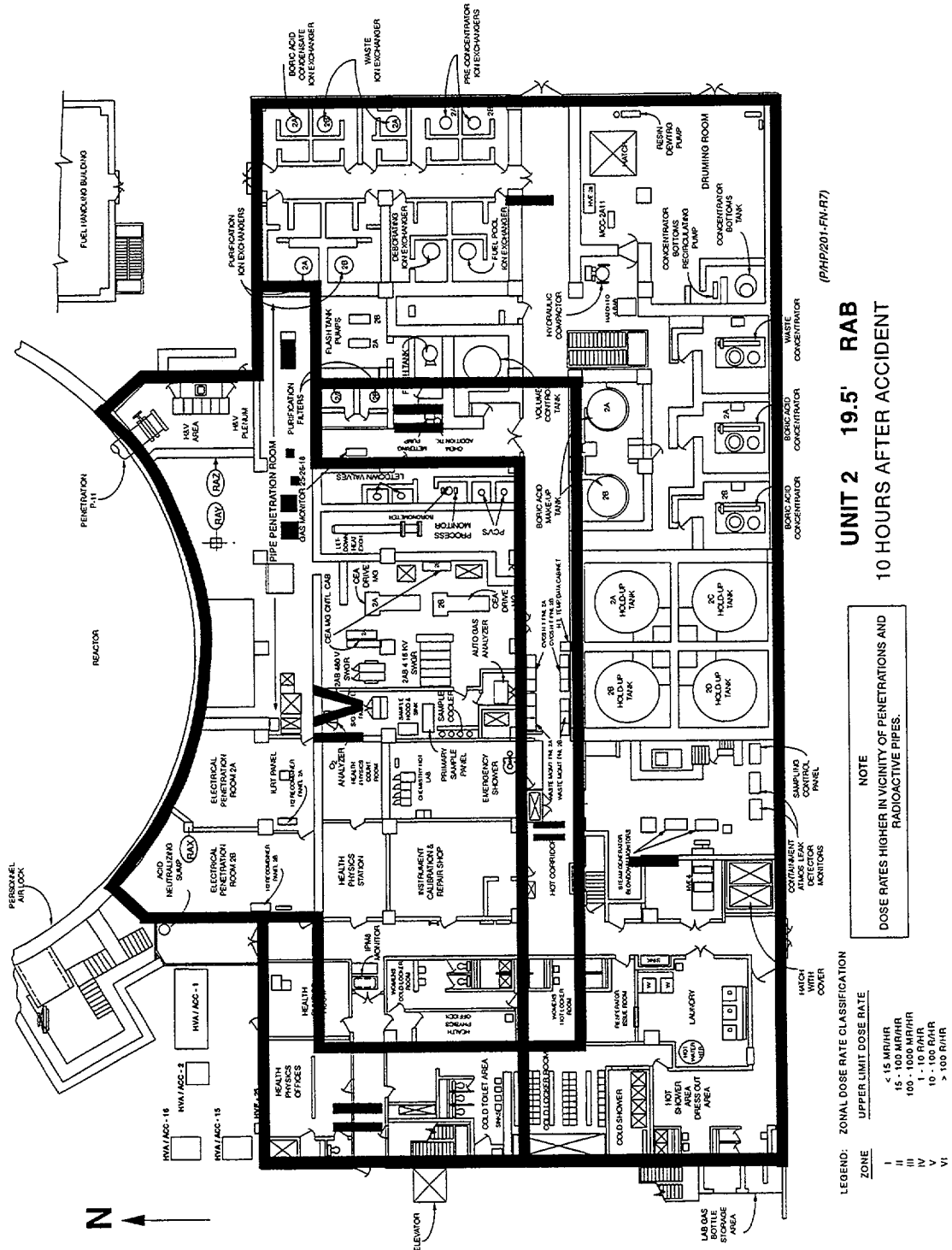
UNIT 2 -0.5' RAB
10 HOURS AFTER ACCIDENT

NOTE
 DOSE RATES HIGHER IN VICINITY OF PENETRATIONS AND
 RADIOACTIVE PIPES.

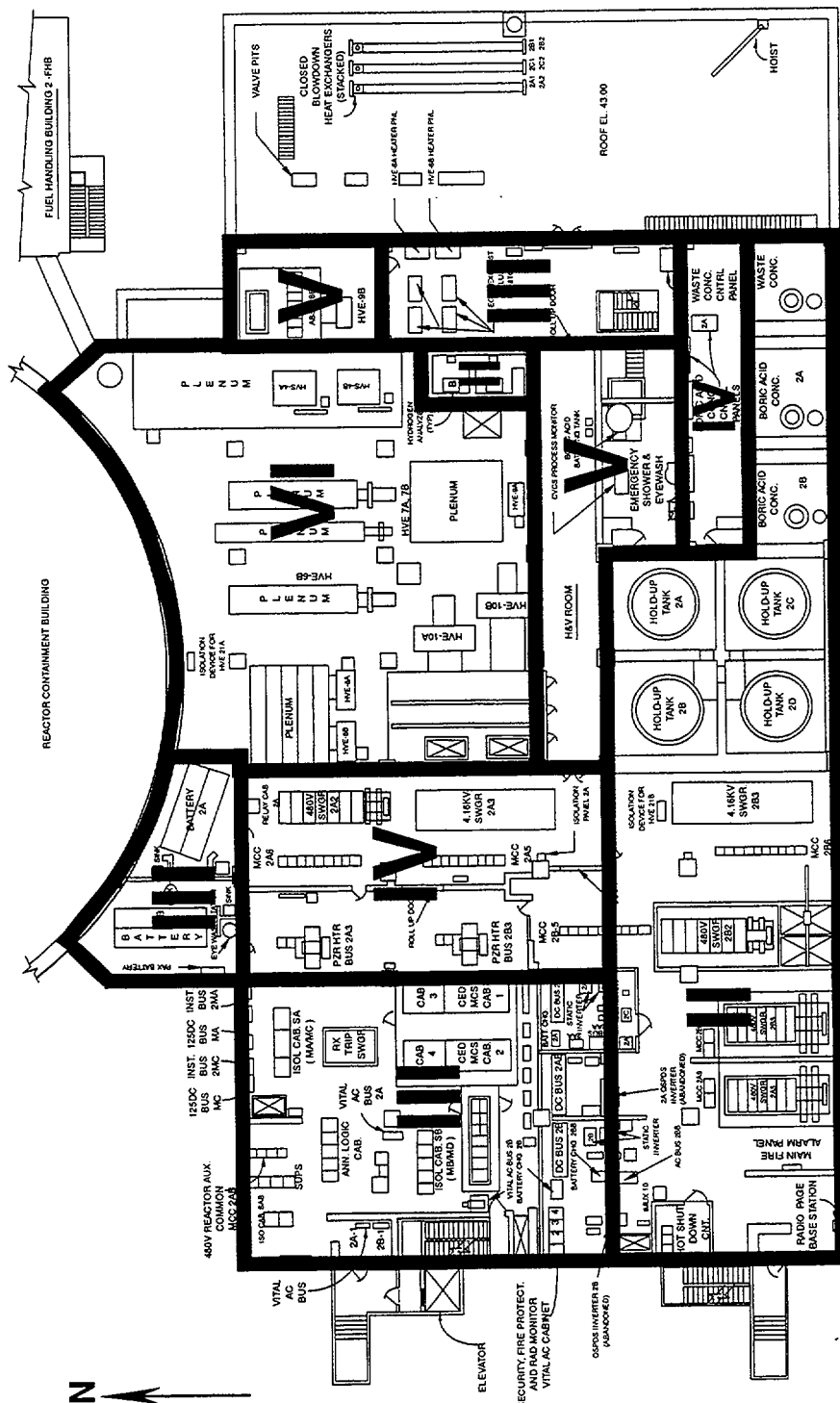
LEGEND: ZONAL DOSE RATE CLASSIFICATION

ZONE	UPPER LIMIT DOSE RATE
I	< 15 MR/HR
II	15 - 100 MR/HR
III	100 - 1000 MR/HR
IV	1 - 10 RI/HR
V	10 - 100 RI/HR
VI	> 100 RI/HR

ATTACHMENT 3
FPL TMI PLANT SHIELDING STUDY – UNIT 2
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ATTACHMENT 3
FPL TMI PLANT SHIELDING STUDY – UNIT 2
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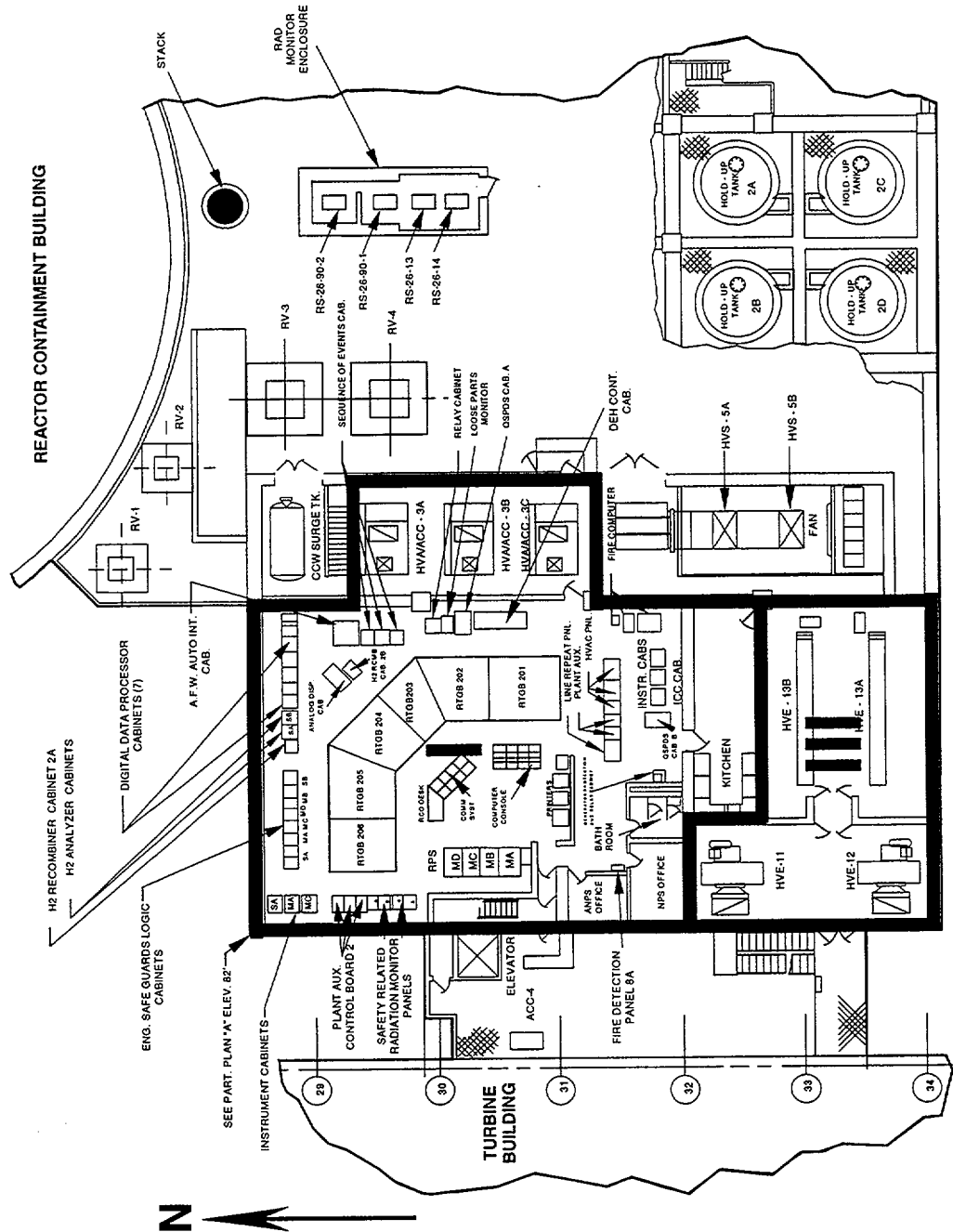
UNIT 2 43' RAB
10 HOURS AFTER ACCIDENT

LEGEND: ZONAL DOSE RATE CLASSIFICATION

ZONE	UPPER LIMIT DOSE RATE
I	< 15 MR/HR
II	15 - 100 MR/HR
III	100 - 1000 MR/HR
IV	1 - 10 R/HR
V	10 - 100 R/HR
VI	> 100 R/HR

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FPL TMI PLANT SHIELDING STUDY – UNIT 2
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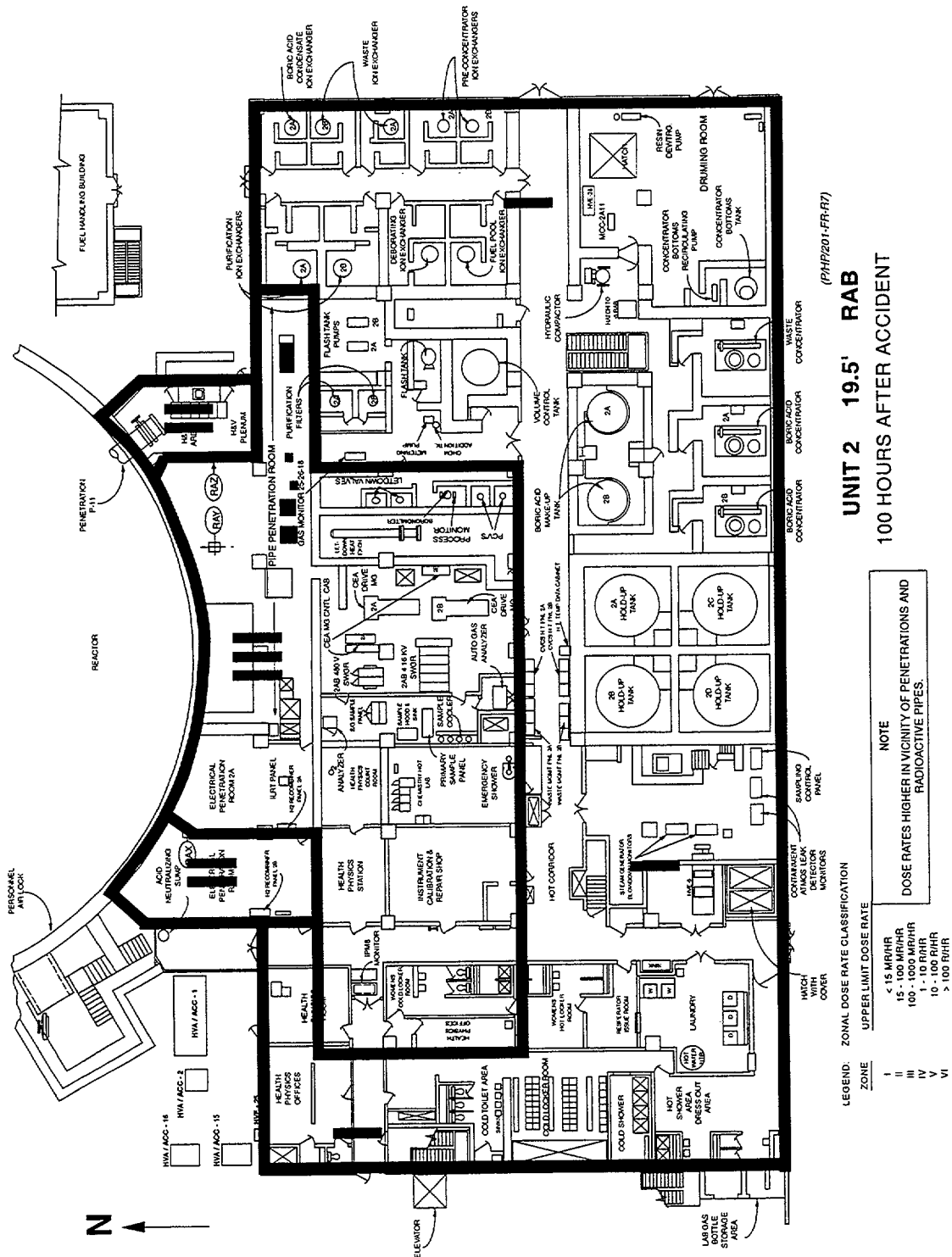
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UNIT 2 62' RAB
10 HOURS AFTER ACCIDENT

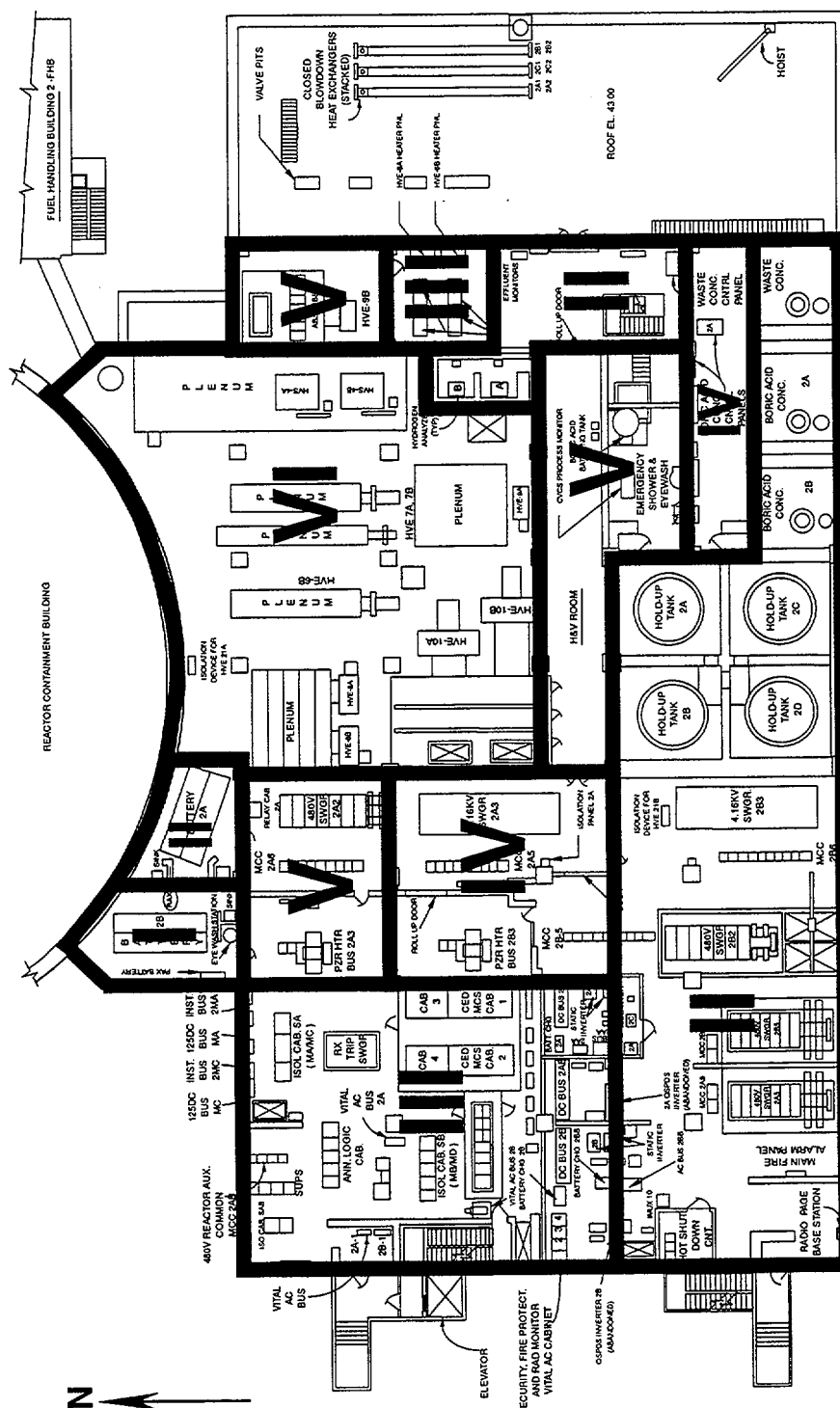
LEGEND: ZONAL DOSE RATE CLASSIFICATION

ZONE	UPPER LIMIT DOSE RATE
I	< 15 mR/hr
II	15 - 100 mR/hr
III	100 - 1000 mR/hr
IV	1 - 10 R/hr
V	10 - 100 R/hr
VI	> 100 R/hr

ATTACHMENT 3
FPL TMI PLANT SHIELDING STUDY – UNIT 2
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ATTACHMENT 3
FPL TMI PLANT SHIELDING STUDY – UNIT 2
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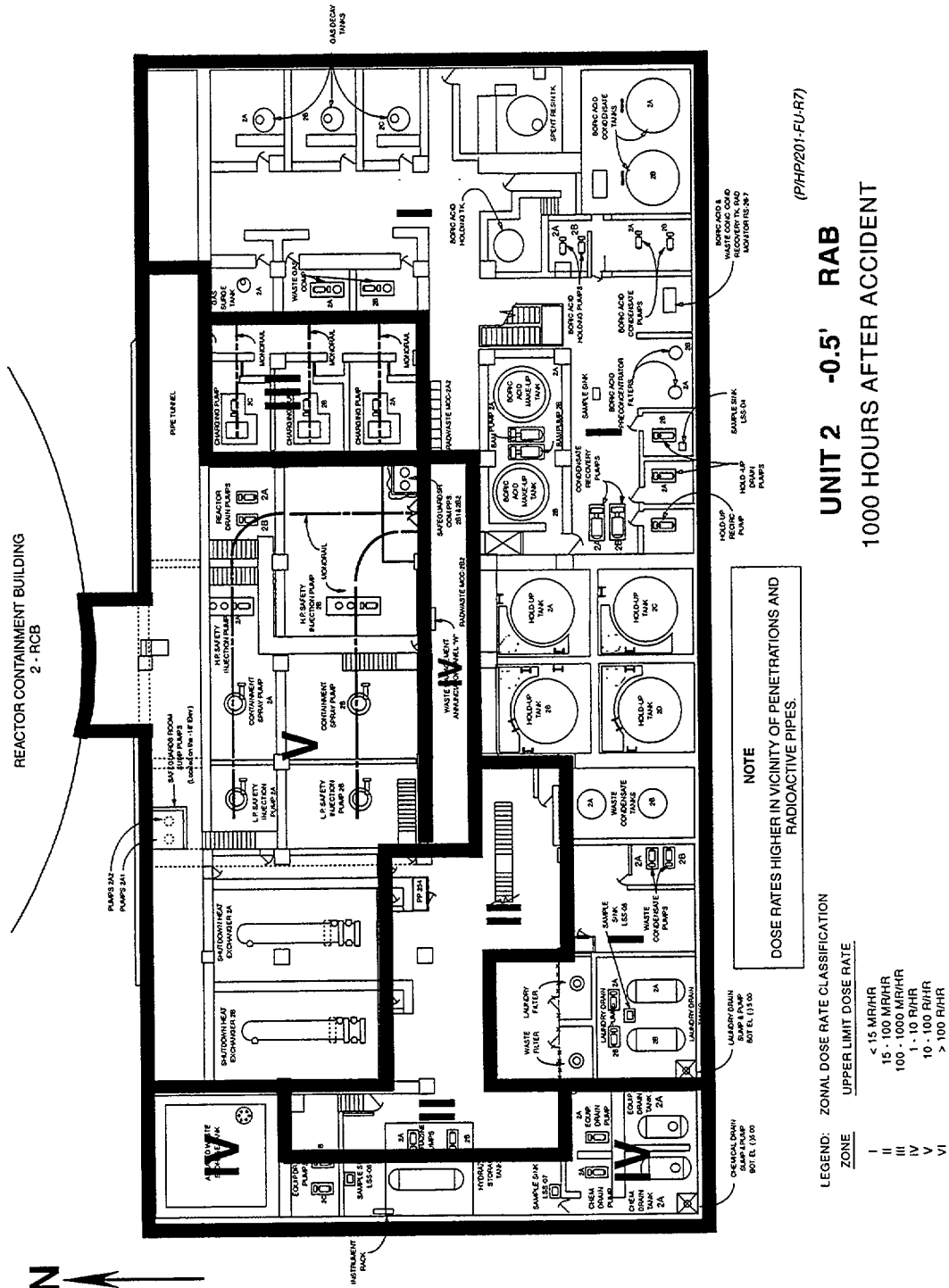
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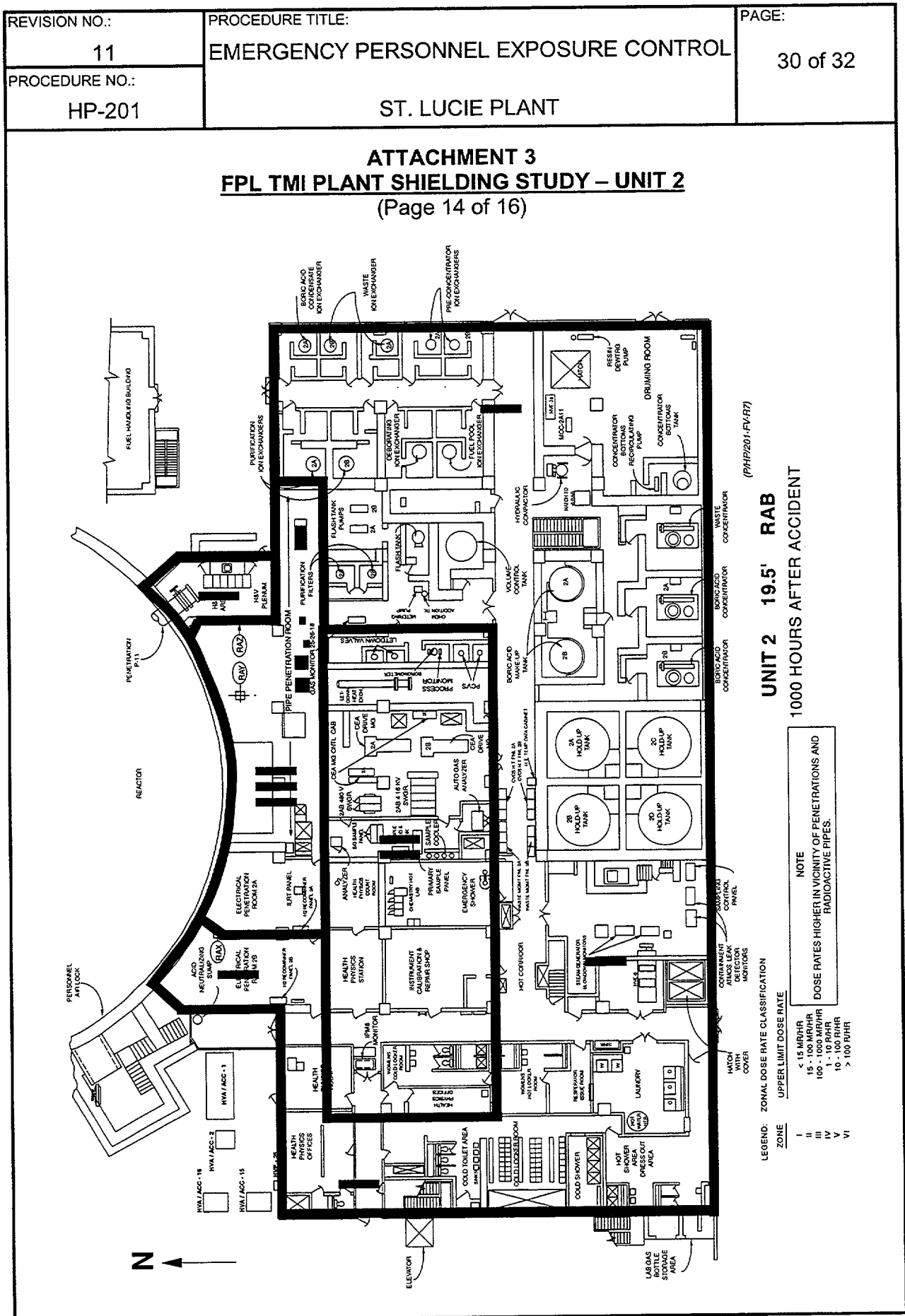
UNIT 2 43' RAB
100 HOURS AFTER ACCIDENT

LEGEND: ZONAL DOSE RATE CLASSIFICATION

ZONE	UPPER LIMIT DOSE RATE
I	< 15 MR/HR
II	15 - 100 MR/HR
III	100 - 1000 MR/HR
IV	1 - 10 R/HR
V	10 - 100 R/HR
VI	> 100 R/HR

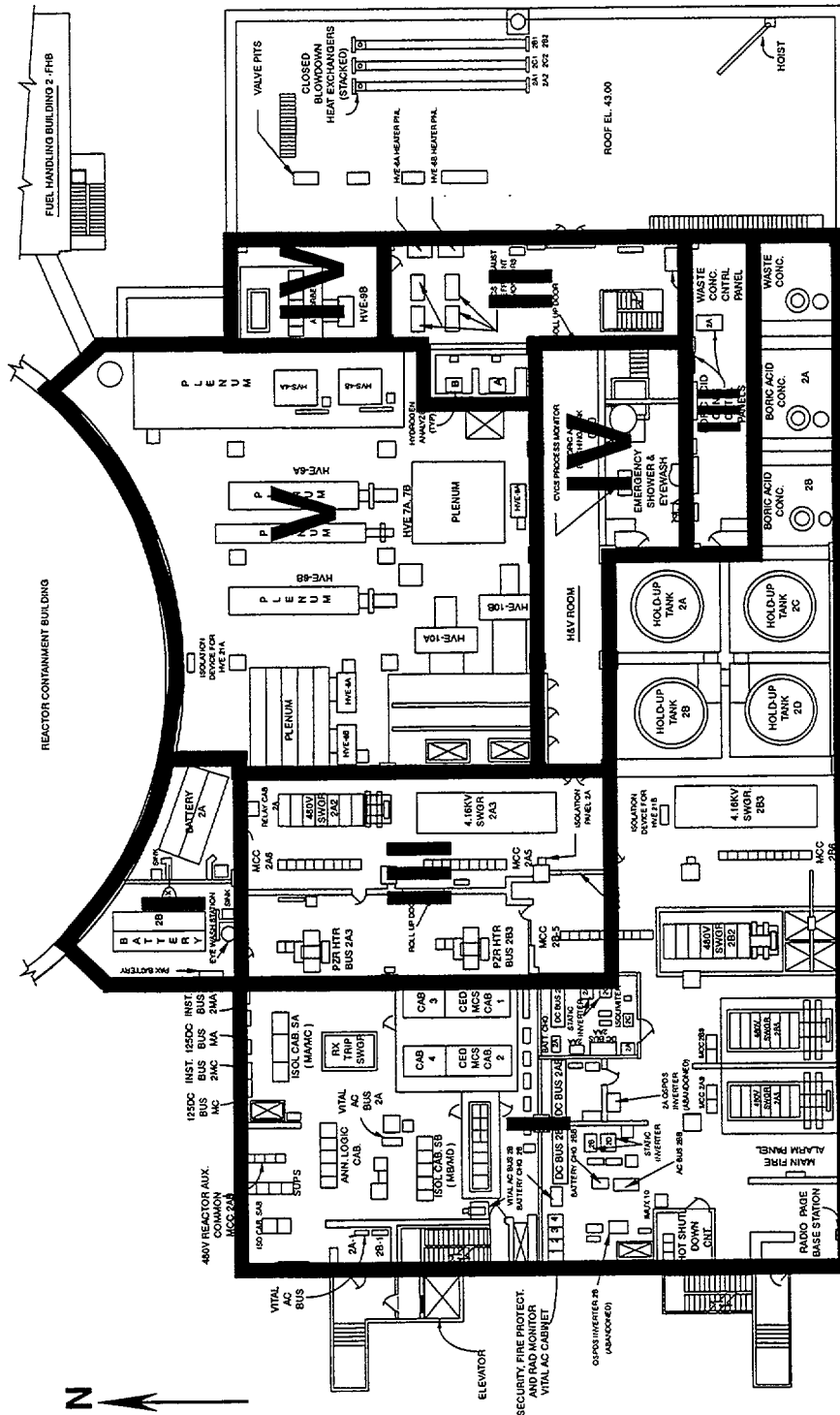
ATTACHMENT 3
FPL TMI PLANT SHIELDING STUDY – UNIT 2
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ATTACHMENT 3
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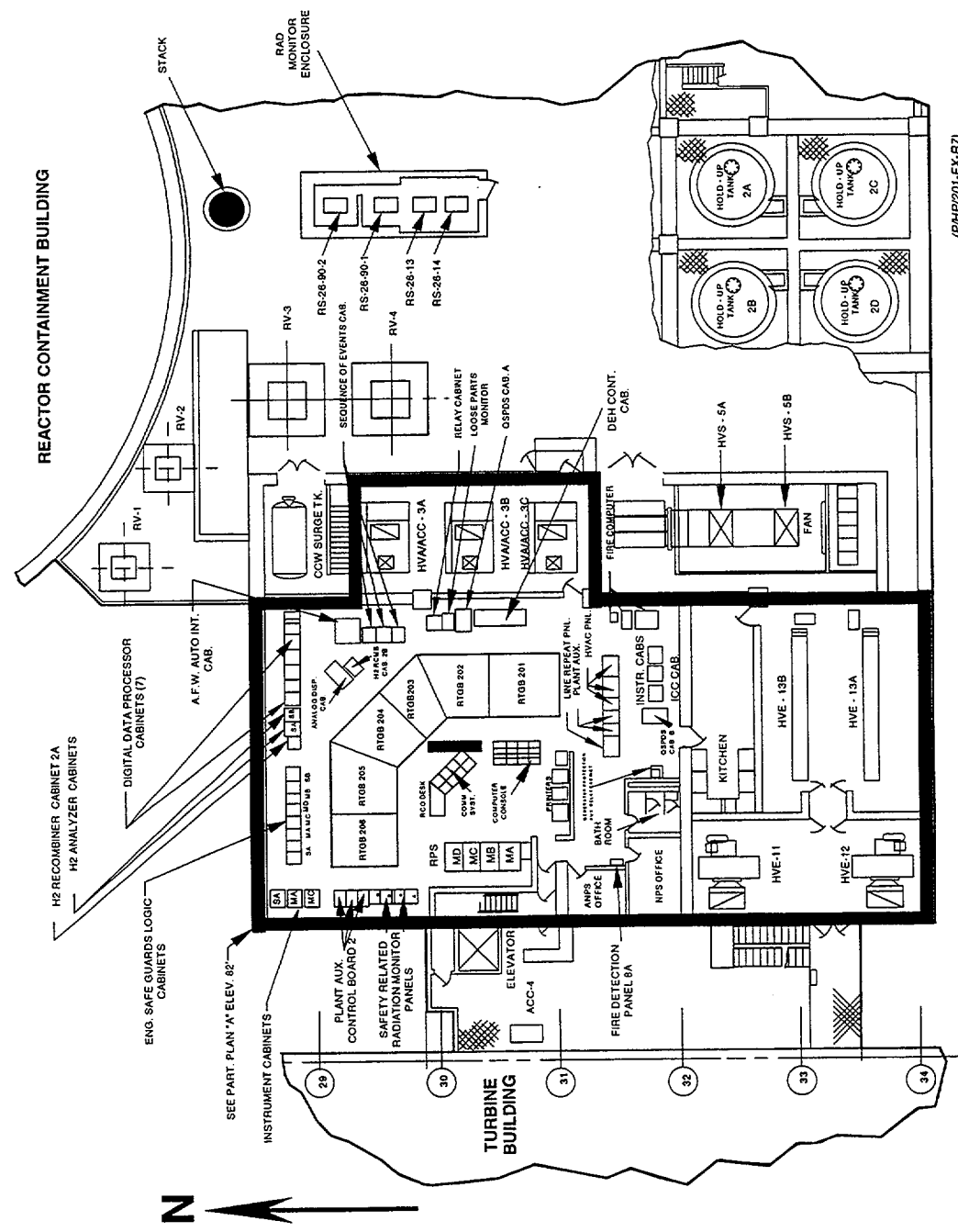
(P/HP/201-FW-R7)

UNIT 2 43' RAB
1000 HOURS AFTER ACCIDENT

LEGEND: ZONAL DOSE RATE CLASSIFICATION

ZONE	UPPER LIMIT DOSE RATE
I	< 15 mR/hr
II	15 - 100 mR/hr
III	100 - 1000 mR/hr
IV	1000 - 10000 mR/hr
V	10 - 100 R/hr
VI	> 100 R/hr

ATTACHMENT 3
FPL TMI PLANT SHIELDING STUDY - UNIT 2
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UNIT 2 62' RAB
1000 HOURS AFTER ACCIDENT

LEGEND: ZONAL DOSE RATE CLASSIFICATION

ZONE	UPPER LIMIT DOSE RATE
I	< 15 MR/HR
II	15 - 100 MR/HR
III	100 - 1000 MR/HR
IV	> 1000 MR/HR
V	10 - 100 R/HR
VI	> 100 R/HR

END OF ATTACHMENT 3