



Georgia Power

Member of the Southern Company

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Director of Nuclear Reactor Regulation
U. S. Nuclear Regulatory Commission
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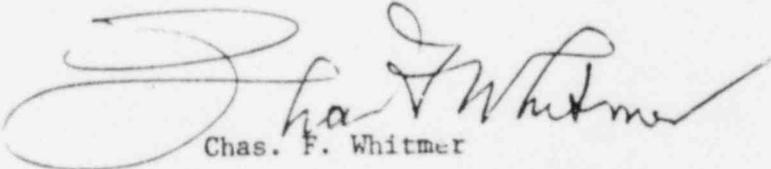
NRC DOCKETS 50-321, 50-366
OPERATING LICENSES DPR-57, NPF-5
EDWIN I. HATCH NUCLEAR PLANT UNITS 1, 2
COMMENTS ON NRC DRAFT APPENDIX I TECHNICAL SPECIFICATIONS

Gentlemen:

Georgia Power Company is reviewing the draft Appendix I model Technical Specification issued by your July 11, 1978, letter. We understand that the NRC is working to revise the draft technical specifications and will issue the revision in the future. We have performed our preliminary review of the draft and have developed some specific comments. We believe the results of our review, along with other industry comments, may be beneficial in the development of a revised draft.

The attached mark-up of sections of the draft NUREG-0473 contains the specific comments as they would apply to Plant Hatch. Application of the specifications would, of course, vary from plant site to plant site, depending on the specific needs of each. Comments on the remaining sections will be provided as our review continues. Should you have questions concerning any of the comments attached, we will be pleased to work with you in this area.

Yours very truly,


Chas. F. Whitmer

RDB/mb

xc: Mr. Ruble A. Thomas
George F. Trowbridge, Esquire

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1.0 DEFINITIONS

CHANNEL CALIBRATION

1.9 A CHANNEL CALIBRATION shall be the adjustment, as necessary, of the channel output such that it responds with the necessary range and accuracy to known values of the parameter which the channel monitors. The CHANNEL CALIBRATION shall encompass the entire channel including the sensor and alarm and/or trip functions, and shall include the CHANNEL FUNCTIONAL TEST. The CHANNEL CALIBRATION may be performed by any series of sequential, overlapping or total channel steps such that the entire channel is calibrated.

CHANNEL CHECK

1.10 A CHANNEL CHECK shall be the qualitative assessment of channel behavior during operation by observation. This determination shall include, where possible, comparison of the channel indication and/or status with other indications and/or status derived from independent instrumentation channels measuring the same parameter.

CHANNEL FUNCTIONAL TEST

1.11 A CHANNEL FUNCTIONAL TEST shall be:

- a. Analog channels - the injection of a simulated signal into the channel as close to the sensor as practicable to verify OPERABILITY including alarm and/or trip functions.
- b. Bistable channels - the injection of a simulated signal into the sensor to verify OPERABILITY including alarm and/or trip functions.

SOURCE CHECK

1.29 A SOURCE CHECK shall be the qualitative assessment of channel response when the channel sensor is exposed to a radioactive source.

PROCESS CONTROL PROGRAM

1.30 A PROCESS CONTROL PROGRAM shall be the operating procedure and process parameters within which SOLIDIFICATION of radioactive wastes from liquid systems is assured.

SOLIDIFICATION

1.31 SOLIDIFICATION shall be the conversion of radioactive wastes from liquid systems to a nonhomogeneous, monolithic, immobilized solid with definite volume and shape, bounded by a stable surface of distinct outline on all sides (free-standing) and containing less than 1% free liquid, by volume.

TABLE 1.2

FREQUENCY NOTATION

<u>NOTATION</u>	<u>FREQUENCY</u>
S	At least once per 12 hours.
D	At least once per 24 hours.
W	At least once per 7 days.
M	At least once per 31 days.
Q	At least once per 92 days.
SA	At least once per 184 days.
R	At least once per 18 months.
S/U	Prior to each reactor startup.
P	Within 4 hours Prior to each release.
N.A.	Not applicable.

INSTRUMENTATION

RADIOACTIVE LIQUID EFFLUENT INSTRUMENTATION

LIMITING CONDITION FOR OPERATION

3.3.3.8 The radioactive liquid effluent monitoring instrumentation channels shown in Table 3.3-11 shall be OPERABLE with their alarm/trip setpoints ~~within the specified limits, determined in accordance with plant procedures.~~ *plant procedures shall include methodology to assure that the limits of 3.11.1.1 are not exceeded.*

APPLICABILITY: As shown in Table 3.3-11.

ACTION:

- a. With a radioactive liquid effluent monitoring instrumentation channel alarm/trip setpoint less conservative than ~~the value~~ *required* ~~shown in Table 3.3-11,~~ immediately, suspend the release of radioactive liquid effluents monitored by the affected channel or declare the channel inoperable.
- b. With one or more radioactive liquid effluent monitoring instrumentation channels inoperable, take the ACTION shown in Table 3.3-11.
- c. The provisions of Specifications 3.0.3 and 3.0.4 are not applicable.

SURVEILLANCE REQUIREMENTS

4.3.3.8 Each radioactive liquid effluent monitoring instrumentation channel shall be demonstrated OPERABLE by performance of the CHANNEL CHECK, SOURCE CHECK, CHANNEL CALIBRATION and CHANNEL FUNCTIONAL TEST operations during the MODES and at the frequencies shown in Table 4.3-11.

TABLE 3.3-11

RADIOACTIVE LIQUID EFFLUENT MONITORING INSTRUMENTATION

<u>INSTRUMENT</u>	<u>MINIMUM CHANNELS OPERABLE</u>	<u>APPLICABILITY</u>	<u>ALARM/TRIP SETPOINT</u>	<i>delete</i> <u>MEASUREMENT RANGE</u>	<u>ACTION</u>
1. Gross Activity Monitors Providing Automatic Isolation					
a. Liquid Radwaste Effluent Line	(1)	*	≤ (___ cpm)	(1-10 ⁵ cpm)	18
2. Gross Activity Monitors Not Providing Automatic Isolation Control					
a. Service Water Effluent Line	(1)	*	≤ (___ cpm)	(1-10 ⁵ cpm)	20
b. <i>Reactor Bldg Close</i> Component Cooling Water System	(1)	*	≤ (___ cpm)	(1-10 ⁵ cpm)	20

* During releases via this pathway

TABLE 3.3-11 (Continued)

RADIOACTIVE LIQUID EFFLUENT MONITORING INSTRUMENTATION

<u>INSTRUMENT</u>	<u>MINIMUM CHANNELS OPERABLE</u>	<u>APPLICABILITY</u>	<u>ALARM/TRIP SETPOINT</u>	<u>MEASUREMENT RANGE</u>	<u>ACTION</u>
3. Flow Rate Monitors					
a. Liquid Radwaste Effluent Line	(1)	*	> (___ gpm)	(0- ___ gpm)	21
b. Discharge ^{Pipe} Canal	(1)	*	< (___ gpm)	(0- ___ gpm)	21
4. Activity Recorders-					
a. Liquid Radwaste Effluent Line	(1)	*	N.A.	(1-10⁵ cpm)	23-

delete

*During releases via this pathway

TABLE 3.3-11 (Continued)

RADIOACTIVE LIQUID EFFLUENT MONITORING INSTRUMENTATION

<u>INSTRUMENT</u>	<u>MINIMUM CHANNELS OPERABLE</u>	<u>APPLICABILITY</u>	<u>ALARM/TRIP SETPOINT</u>	<u>MEASUREMENT RANGE</u>	<u>ACTION</u>
5. Tank Level Monitors (for tanks outside the buildings)					
a. _____	(1)	**	\leq (___ ft ³)	(0-1000 ft ³)	22
b. _____	(1)	**	\leq (___ ft ³)	(0-1000 ft ³)	22
c. _____	(1)	**	\leq (___ ft ³)	(0-1000 ft ³)	22
d. _____	(1)	**	\leq (___ ft ³)	(0-1000 ft ³)	22

delete

**During liquid addition to the tank.

TABLE 3.3-11 (Continued)

TABLE NOTATION

- ACTION 18 - With the number of channels OPERABLE less than required by the Minimum Channels OPERABLE requirement, effluent releases from the tank may continue for up to ~~72 hours~~ ^{14 days} provided that prior to initiating the release:
1. At least two independent samples of the tank's contents are analyzed, and
 2. At least two ^{plant personnel} ~~technically qualified members of the facility staff independently~~ verify the release rate calculations and discharge line valving;
- otherwise, suspend release of radioactive effluents via this pathway.
- ACTION 20 - With the number of channels OPERABLE less than required by the Minimum Channels OPERABLE requirement, effluent releases via this pathway may continue for up to ~~7~~ ¹⁴ days provided that at least once per 8 hours grab samples are analyzed for gross radioactivity (beta or gamma) at a limit of detection of at least 10^{-7} $\mu\text{Ci}/\text{ml}$, based on Cs-137 source.
- ACTION 21 - With the number of channels OPERABLE less than required by the Minimum Channels OPERABLE requirement, effluent releases via this pathway may continue for up to ~~7~~ ¹⁴ days provided the flow rate is estimated at least once per 4 ~~hours~~, batch release.
- ~~ACTION 22 - With the number of channels OPERABLE less than required by the Minimum Channels OPERABLE requirement, liquid additions to this tank may continue for up to 7 days provided the tank liquid level is estimated during all liquid additions to the tank.~~
- ~~ACTION 23 - With the number of channels OPERABLE less than required by the Minimum Channels OPERABLE requirement, effluent releases via the affected pathway may continue for up to 7 days provided the gross radioactivity level is recorded at least once per 4 hours.~~

TABLE 4.3-11

RADIOACTIVE LIQUID EFFLUENT MONITORING INSTRUMENTATION SURVEILLANCE REQUIREMENTS

<u>INSTRUMENT</u>	<u>CHANNEL CHECK</u>	<u>SOURCE CHECK</u>	<u>CHANNEL CALIBRATION</u>	<u>CHANNEL FUNCTIONAL TEST</u>	<u>MODES IN WHICH SURVEILLANCE REQUIRED</u>
1. Gross Activity Monitors Providing Automatic Isolation					
a. Liquid Radwaste Effluents Line	D -P	S M	R(3)	Q(1)	*
2. Gross Activity Monitors Not Providing Automatic Isolation Control					
a. Service Water Effluent Line	D	M	R(3) ⁴	Q(2)	*
b. Component Cooling Water Reactor Bldg Close System	D	M	R(3) ⁴	Q(2)	*
3. Flow Rate Monitors					
a. Liquid Radwaste Effluent Line	D	N.A.	R	Q	*
B. Discharge Canal	D	N.A.	R	Q	*

TABLE 4.3-11 (Continued)

RADIOACTIVE LIQUID EFFLUENT MONITORING INSTRUMENTATION SURVEILLANCE REQUIREMENTS

<u>INSTRUMENT</u>	<u>CHANNEL CHECK</u>	<u>SOURCE CHECK</u>	<u>CHANNEL CALIBRATION</u>	<u>CHANNEL FUNCTIONAL TEST</u>	<u>MODES IN WHICH SURVEILLANCE REQUIRED</u>
4. Activity Recorders					
a. Liquid Radwaste Effluent Line	D	N.A.	R	Q	*
5. Tank Level Monitors (for tanks outside the building)					
a. _____	D	N.A.	R	Q	**
b. _____	D	N.A.	R	Q	**
c. _____	D	N.A.	R	Q	**
d. _____	D	N.A.	R	Q	**

delete

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TABLE 4.3-11 (Continued)

TABLE NOTATION

* - ~~During releases via~~ ^{If} this pathway, is to be used for release.

** - ~~During liquid additions to the tank.~~

(1) - The CHANNEL FUNCTIONAL TEST shall also demonstrate that automatic isolation of this pathway and control room alarm annunciation occurs if any of the following conditions exist:

1. Instrument indicates measured levels above the alarm/trip setpoint.
2. Circuit failure.
3. Instrument indicates a downscale failure.
4. Instrument controls not set in operate mode.

(2) - The CHANNEL FUNCTIONAL TEST shall also demonstrate that control room alarm annunciation occurs if any of the following conditions exist:

1. Instrument indicates measured levels above the alarm/trip setpoint.
2. Circuit failure.
3. Instrument indicates a downscale failure.
4. Instrument controls not set in operate mode.

(3) - The CHANNEL CALIBRATION shall include the use of a known ~~(traceable to the National Bureau of Standards radiation measurement system)~~ liquid radioactive source, ^{shall} positioned in a reproducible geometry with respect to the sensor and ~~emitting~~ ^{shall} beta and gamma radiation with the fluences and energies in the ranges measured by the channel during normal operation.

which has been calibrated to a NBS source. This known source shall be

(4) The CHANNEL CALIBRATION shall include the use of a Cs-137 source which has been calibrated to a NBS source. This Cs-137 source shall be positioned in a reproducible geometry with respect to the sensor.

INSTRUMENTATION

RADIOACTIVE GASEOUS EFFLUENT INSTRUMENTATION

LIMITING CONDITION FOR OPERATION

3.3.3.9 The radioactive gaseous effluent monitoring instrumentation channels shown in Table 3.3-12 shall be OPERABLE with their alarm/trip setpoints ~~within the specified limits~~, *determined in accordance with plant procedures. plant procedures shall include methodology to assure that the limits of 3.11.2.1 are not exceeded.*

APPLICABILITY: As shown in Table 3.3-12

ACTION:

- a. With a radioactive gaseous effluent monitoring instrumentation channel alarm/trip setpoint less conservative than ~~the value required~~ *shown in Table 3.3-12, immediately*, suspend the release of radioactive gaseous effluents monitored by the affected channel or declare the channel inoperable.
- b. With one or more radioactive gaseous effluent monitoring instrumentation channels inoperable, take the ACTION shown in Table 3.3-12.
- c. The provisions of Specifications 3.0.3 and 3.0.4 are not applicable.

SURVEILLANCE REQUIREMENTS

4.3.3.9 Each radioactive gaseous effluent monitoring instrumentation channel shall be demonstrated OPERABLE by performance of the CHANNEL CHECK, SOURCE CHECK, CHANNEL CALIBRATION and CHANNEL FUNCTIONAL TEST operations during the MODES and at the frequencies shown in Table 4.3-12.

TABLE 3.3-12

RADIOACTIVE GASEOUS EFFLUENT MONITORING INSTRUMENTATION

INSTRUMENT	MINIMUM CHANNELS OPERABLE	APPLICABILITY	ALARM/TRIP SETPOINT	MEASUREMENT RANGE	ACTION
1. Waste Gas Holdup System					
a. Noble Gas Activity Monitor	(1)	*	\leq (___ cpm)	(10-10 ⁶ cpm)	27 ²⁴
b. Noble Gas Activity Recorder	(1)	*	N.A.	(10-10 ⁶ cpm)	23
c. Iodine Sampler	(1)	*	N.A.	N.A.	27
d. Particulate Sampler	(1)	*	N.A.	N.A.	27
b. Flow Rate Monitor	(1)	*	\geq (___ cfm)	(0-___ cfm)	26 ²³
f. Sampler Flow Rate Monitor	(1)	*	\geq (___ cfm)	(0-___ cfm)	26
c. Hydrogen Monitor	(1)	**	\leq (4%) by volume	(0-20%) by volume	29 ²⁵
h. Hydrogen Monitor (alternate)					
1) alarm	2	**	\leq (2%) by volume	(0-20%) by volume	30
2) alarm and initiate automatic control function	2	*	\leq (4%) by volume	(0-20%) by volume	30

delete

* During releases via this pathway.

**During waste gas holdup system (treatment for condenser evacuation system offgases) operation.

TABLE 3.3-12 (Continued)

RADIOACTIVE GASEOUS EFFLUENT MONITORING INSTRUMENTATION

<u>INSTRUMENT</u>	<u>MINIMUM CHANNELS OPERABLE</u>	<u>APPLICABILITY</u>	<u>ALARM/TRIP SETPOINT</u>	<u>MEASUREMENT RANGE</u>	<u>ACTION</u>
1. Waste Gas Holdup System (continued)					
i. Oxygen Monitor	(1)	**	≤ (4%) by volume	(0-25%) by volume	29
j. Oxygen Monitor (alternate)		**			
1) alarm	(2)		≤ (2%) by volume	(0-25%) by volume	30
2) alarm and initiate automatic control function	(2)		≤ (4%) by volume	(0-25%) by volume	30
2. Condenser Evacuation System					
a. Noble Gas Activity Monitor	(1)	*	≤ (____) cpm	(10-10 ⁶) cpm	25
b. Noble Gas Activity Recorder	(1)	*	N.A.	(10-10 ⁶) cpm	23

Delete

* During releases via this pathway.

**During waste gas holdup system (treatment for condenser evacuation system offgases) operation.

TABLE 3.3-12 (Continued)

RADIOACTIVE GASEOUS EFFLUENT MONITORING INSTRUMENTATION

INSTRUMENT	MINIMUM CHANNELS OPERABLE	APPLICABILITY	ALARM/TRIP SETPOINT	MEASUREMENT RANGE	ACTION
23. Main Stack System <i>(includes turbine gland seal, mechanical vacuum pump exhaust and waste gas treatment bldg ventilation)</i>					
a. Noble Gas Activity Monitor (1)	(1)	*	≤ (___ cpm)	(10-10 ⁶ cpm)	27 ²⁴
b. Noble Gas Activity Recorder (1)	(1)	*	N.A.	(10-10 ⁶ cpm)	23
bd. Iodine Sampler (1)	(1)	*	N.A.	N.A.	27 ²⁴
cd. Particulate Sampler (1)	(1)	*	N.A.	N.A.	27 ²⁴
da. Flow Rate Monitor (1)	(1)	*	≥ (___ cfm)	(0-___ cfm)	26 ²³
f. Sampler Flow Rate Monitor (1)	(1)	*	≥ (___ cfm)	(0-___ cfm)	26
4. Containment Purge System					
a. Noble Gas Activity Monitor (1)	(1)	*	≤ (___ cpm)	(10-10 ⁶ cpm)	28
b. Noble Gas Activity Recorder (1)	(1)	*	N.A.	(10-10 ⁶ cpm)	23
c. Iodine Sampler (1)	(1)	*	N.A.	N.A.	28
d. Particulate Sampler (1)	(1)	*	N.A.	N.A.	28
e. Flow Rate Monitor (1)	(1)	*	≤ (___ cfm)	(0-___ cfm)	26
f. Sampler Flow Rate Monitor (1)	(1)	*	≤ (___ cfm)	(0-___ cfm)	26

* During releases via this pathway.

TABLE 3.3-12 (Continued)

RADIOACTIVE GASEOUS EFFLUENT MONITORING INSTRUMENTATION

<u>INSTRUMENT</u>	<u>MINIMUM CHANNELS OPERABLE</u>	<u>APPLICABILITY</u>	<u>ALARM/TRIP SETPOINT</u>	<u>MEASUREMENT RANGE</u>	<u>ACTION</u>
5. Auxiliary Building Ventilation System					
a. Noble Gas Activity Monitor	(1)	*	\leq (___ cpm)	(10-10⁶ cpm)	27
b. Noble Gas Activity Recorder	(1)	*	N.A.	(10-10⁶ cpm)	23
c. Iodine Sampler	(1)	<i>delete</i> *	N.A.	N.A.	27
d. Particulate Sampler	(1)	*	N.A.	N.A.	27
e. Flow Rate Monitor	(1)	*	\geq (___ cfm)	(0- ___ cfm)	26
f. Sampler Flow Rate Monitor	(1)	*	\geq (___ cfm)	(0- ___ cfm)	26
6. Fuel Storage Area Ventilation System					
a. Noble Gas Activity Monitor	(1)	*	\leq (___ cfm)	(10-10⁶ cpm)	27
b. Noble Gas Activity Recorder	(1)	*	N.A.	(10-10⁶ cpm)	23
c. Iodine Sampler	(1)	*	N.A.	N.A.	27
d. Particulate Sample	(1)	*	N.A.	N.A.	27
e. Flow Rate Monitor	(1)	*	\geq (___ cfm)	(0- ___ cfm)	26
f. Sampler Flow Rate Monitor	(1)	*	\geq (___ cfm)	(0- ___ cfm)	26

* During releases via this pathway.

TABLE 3.3-12 (Continued)

RADIOACTIVE GASEOUS EFFLUENT MONITORING INSTRUMENTATION

INSTRUMENT	MINIMUM CHANNELS OPERABLE	APPLICABILITY	ALARM/TRIP SETPOINT	MEASUREMENT RANGE	ACTION
<i>delete</i>					
7. Radwaste Area Ventilation System					
a. Noble Gas Activity Monitor	(1)	*	\leq (___ cfm)	(10-10 ⁶ cpm)	27
b. Noble Gas Activity Recorder	(1)	*	N.A.	(10-10 ⁶ cpm)	23
c. Iodine Sampler	(1)	*	N.A.	N.A.	27
d. Particulate Sampler	(1)	*	N.A.	N.A.	27
e. Flow Rate Monitor	(1)	*	\geq (___ cfm)	(0-___ cfm)	26
f. Sampler Flow Rate Monitor	(1)	*	\geq (___ cfm)	(0-___ cfm)	26
38. ^{Reactor} Turbine Building Ventilation System (includes turbine and radwaste bldg)					
a. Noble Gas Activity Monitor	(1)	*	\leq (___ cfm)	(10-10 ⁶ cpm)	27 ²⁷
b. Noble Gas Activity Recorder	(1)	*	N.A.	(10-10⁶ cpm)	23
b.c. Iodine Sampler	(1)	*	N.A.	N.A.	27 ²⁷
c.d. Particulate Sampler	(1)	*	N.A.	N.A.	27 ²⁴
d.e. Flow Rate Monitor	(1)	*	\geq (___ cfm)	(0-___ cfm)	26 ²³
f. Sampler Flow Rate Monitor	(1)	*	\geq (___ cfm)	(0-___ cfm)	26

* During release via this pathway.

TABLE 3.3-12 (Continued)

RADIOACTIVE GASEOUS EFFLUENT MONITORING INSTRUMENTATION

<u>INSTRUMENT</u>	<u>MINIMUM CHANNELS OPERABLE</u>	<u>APPLICABILITY</u>	<u>ALARM/TRIP SETPOINT</u>	<u>MEASUREMENT RANGE</u>	<u>ACTION</u>
<i>delete</i>					
9. Turbine Gland Seal Condenser Vent and Mechanical Vacuum Pump Exhaust					
a. Noble Gas Activity Monitor	(1)	*	≤ (___ cfm)	(10-10 ⁶ cpm)	27 ²⁷
b. Noble Gas Activity Recorder	(1)	*	N.A.	(10-10 ⁶ cpm)	23
b α. Iodine Sampler	(1)	*	N.A.	N.A.	27 ²⁷
C d. Particulate Sampler	(1)	*	N.A.	N.A.	27 ²⁷
e. Flow Rate Monitor	(1)	*	≥ (___ cfm)	(0-___ cfm)	26
f. Sampler Flow Rate Monitor	(1)	*	≥ (___ cfm)	(0-___ cfm)	26

* During releases via this pathway.

TABLE 3.3-12 (Continued)

TABLE NOTATION

ACTION 23 - With the number of channels OPERABLE less than required by the Minimum Channels OPERABLE requirement, effluent releases via the affected pathway may continue for up to 7 days provided the gross radioactivity level is recorded at least once per 4 hours.

ACTION 25 - With the number of channels OPERABLE less than required by the Minimum Channels OPERABLE requirement, gases from the condenser evacuation system may be released to the environment for up to 48 hours provided:

delete

1. The waste gas holdup system is not bypassed, and
2. The waste gas holdup system noble gas activity monitor is OPERABLE:

otherwise, be in at least HOT STANDBY within 12 hours.

ACTION 26²³ - With the number of channels OPERABLE less than required by the Minimum Channels OPERABLE requirement, effluent releases via this pathway may continue ~~for up to 7 days~~ provided the flow rate is estimated, ~~at least once per 4 hours~~.

ACTION 27²⁴ - With the number of channels OPERABLE less than required by the Minimum Channels OPERABLE requirement, effluent releases via this pathway may continue ~~for up to 7 days~~ provided grab samples are taken ~~at least once per 4 hours~~ and ~~these samples are analyzed for gross activity at least once per 24 hours~~.

~~ACTION 28 - With the number of channels OPERABLE less than required by the Minimum Channels OPERABLE requirement, suspend release of radioactive effluents via this pathway.~~

ACTION 29²⁵ - With the number of channels OPERABLE less than required by the Minimum Channels OPERABLE requirement, operation of this waste gas holdup system may continue for up to 14 days provided gas samples are analyzed at least once per 4 hours.

~~ACTION 30 - With the number of channels OPERABLE one less than required by the Minimum Channels OPERABLE requirement, operation of this waste gas holdup system may continue for up to 14 days. With both channels inoperable, immediately suspend operation of this waste gas holdup system.~~

TABLE 4.3-12

RADIOACTIVE GASEOUS EFFLUENT MONITORING INSTRUMENTATION SURVEILLANCE REQUIREMENTS

<u>INSTRUMENT</u>	<u>CHANNEL CHECK</u>	<u>SOURCE CHECK</u>	<u>CHANNEL CALIBRATION</u>	<u>CHANNEL FUNCTIONAL TEST</u>	<u>MODES IN WHICH SURVEILLANCE REQUIRED</u>
1. Waste Gas Holdup System					
a. Noble Gas Activity Monitor Post-treatment Off-gas	P^D	P^M	R(3)	Q(1)	*
b. Noble Gas Activity Recorder	D	N.A.	R	Q	*
c. Iodine Sampler	D	N.A.	N.A.	N.A.	*
d. Particulate Sampler	D	N.A.	N.A.	N.A.	*
e. Flow Rate Monitor	P^D	N.A.	R	Q	*
f. Sampler-Recorder Monitor	D	N.A.	R	Q	*
g. Hydrogen Monitor	D	N.A.	Q(4)	M	**
h. Hydrogen Monitor (alternate)	D	N.A.	Q(4)	M	**
i. Oxygen Monitor	D	N.A.	Q(5)	M	**
j. Oxygen Monitor (alternate)	D	N.A.	Q(5)	M	**

TABLE 4.3-12 (Continued)

RADIOACTIVE GASEOUS EFFLUENT MONITORING INSTRUMENTATION SURVEILLANCE REQUIREMENTS

<u>INSTRUMENT</u>	<u>CHANNEL CHECK</u>	<u>SOURCE CHECK</u>	<u>CHANNEL CALIBRATION</u>	<u>CHANNEL FUNCTIONAL TEST</u>	<u>MODES IN WHICH SURVEILLANCE REQUIRED</u>
2. Condenser Evacuation System					
a. Noble Gas Activity Monitor	D	M	R(3)	Q(2)	*
b. Noble Gas Activity Recorder	D	N.A.	R	Q	*
23. Main Stack System (<i>includes turbine gland seal, mechanical vacuum pump exhaust and waste gas treatment bldg ventilation</i>)					
a. Noble Gas Activity Monitor	D	M	R(3)	Q(2)	*
b. Noble Gas Activity Recorder	D	N.A.	R	Q	*
b c. Iodine Sampler	D	N.A.	N.A.	N.A.	*
c d. Particulate Sampler	D	N.A.	N.A.	N.A.	*
d e. Flow Rate Monitor	D	N.A.	R	Q	*
f. Sampler Flow Rate Monitor	D	N.A.	R	Q	*

TABLE 4.3-12 (Continued)

RADIOACTIVE GASEOUS EFFLUENT MONITORING INSTRUMENTATION SURVEILLANCE REQUIREMENTS

<u>INSTRUMENT</u>	<u>CHANNEL CHECK</u>	<u>SOURCE CHECK</u>	<u>CHANNEL CALIBRATION</u>	<u>CHANNEL FUNCTIONAL TEST</u>	<u>MODES IN WHICH SURVEILLANCE REQUIRED</u>
4. Containment Purge System		<i>delete</i>			
a. Noble Gas Activity Monitor	D	P	R(3)	Q(1)	*
b. Noble Gas Activity Recorder	D	N.A.	R	Q	*
c. Iodine Sampler	D	N.A.	N.A.	N.A.	*
d. Particulate Sampler	D	N.A.	N.A.	N.A.	*
e. Flow Rate Monitor	D	N.A.	R	Q	*
f. Sampler Flow Rate Monitor	D	N.A.	R	Q	*
5. Auxiliary Building Ventilation System					
a. Noble Gas Activity Monitor	D	M	R(3)	Q(2)	*
b. Noble Gas Activity Recorder	D	N.A.	R	Q	*
c. Iodine Sampler	D	N.A.	N.A.	N.A.	*
d. Particulate Sampler	D	N.A.	N.A.	N.A.	*
e. Flow Rate Monitor	D	N.A.	R	Q	*
f. Sampler Flow Rate Monitor	D	N.A.	R	Q	*

TABLE 4.3-12 (Continued)

RADIOACTIVE GASEOUS EFFLUENT MONITORING INSTRUMENTATION SURVEILLANCE REQUIREMENTS

<u>INSTRUMENT</u>	<u>CHANNEL CHECK</u>	<u>SOURCE CHECK</u>	<u>CHANNEL CALIBRATION</u>	<u>CHANNEL FUNCTIONAL TEST</u>	<u>MODES IN WHICH SURVEILLANCE REQUIRED</u>
6. Fuel Storage Area Ventilation System		<i>Delete</i>			
a. Noble Gas Activity Monitor	D	M	R(3)	Q(1)	*
b. Noble Gas Activity Recorder	D	N.A.	R	Q	*
c. Iodine Sampler	D	N.A.	N.A.	N.A.	*
d. Particulate Sampler	D	N.A.	N.A.	N.A.	*
e. Flow Rate Monitor	D	N.A.	R	Q	*
f. Sampler Flow Rate Monitor	D	N.A.	R	Q	*
7. Radwaste Area Ventilation System					
a. Noble Gas Activity Monitor	D	M	R(3)	Q(2)	*
b. Noble Gas Activity Recorder	D	N.A.	R	Q	*
c. Iodine Sampler	D	N.A.	N.A.	N.A.	*
d. Particulate Sampler	D	N.A.	N.A.	N.A.	*
e. Flow Rate Monitor	D	N.A.	R	Q	*
f. Sampler Flow Rate Monitor	D	N.A.	R	Q	*

TABLE 4.3-12 (Continued)

RADIOACTIVE GASEOUS EFFLUENT MONITORING INSTRUMENTATION SURVEILLANCE REQUIREMENTS

INSTRUMENT	CHANNEL CHECK	SOURCE CHECK	CHANNEL CALIBRATION	CHANNEL FUNCTIONAL TEST	MODES IN WHICH SURVEILLANCE REQUIRED
38. Reactor Turbine Building Ventilation System (includes turbine and radwaste bldg)					
a. Noble Gas Activity Monitor	D	M	R(3)	Q(2)	*
b. Noble Gas Activity Recorder	D	N.A.	R	Q	*
b α. Iodine Sampler	⊕W	N.A.	N.A.	N.A.	*
c δ. Particulate Sampler	⊕W	N.A.	N.A.	N.A.	*
d θ. Flow Rate Monitor	D	N.A.	R	Q	*
f. Sampler Flow Rate Monitor	D	N.A.	R	Q	*
49. Recombiner Bldg ventilation system (HNP-1) Turbine Gland Seal Condenser Vent and Mechanical Vacuum Pump Exhaust					
a. Noble Gas Activity Monitor	D	M	R(3)	Q(2)	*
b. Noble Gas Activity Recorder	D	N.A.	R	Q	*
b δ. Iodine Sampler	⊕W	N.A.	N.A.	N.A.	*
c δ. Particulate Sampler	⊕W	N.A.	N.A.	N.A.	*
e. Flow Rate Monitor	D	N.A.	R	Q	*
f. Sampler Flow Rate Monitor	D	N.A.	R	Q	*

TABLE 4.3-12 (Continued)

TABLE NOTATION

If

- * ~~During releases via this pathway, is to be used for release.~~
- ** ~~During waste gas holdup system operation.~~
- (1) - The CHANNEL FUNCTIONAL TEST shall also demonstrate that automatic isolation of this pathway and control room alarm annunciation occurs if any of the following conditions exist:
 1. Instrument indicates measured levels above the alarm/trip setpoint.
 2. Circuit failure.
 3. Instrument indicates a downscale failure.
 4. Instrument controls not set in operate mode.
- (2) - The CHANNEL FUNCTIONAL TEST shall also demonstrate that control room alarm annunciation occurs if any of the following conditions exist:
 1. Instrument indicates measured levels above the alarm/trip setpoint.
 2. Circuit failure.
 3. Instrument indicates a downscale failure.
 4. Instrument controls not set in operate mode.
- (3) - The CHANNEL CALIBRATION shall include the use of a known ~~(traceable to the National Bureau of Standards radiation measurement system) gaseous radioactive source~~, positioned in a reproducible geometry with respect to the sensor and ^{shall} emitting beta and gamma radiation with fluences and energies in the ranges measured by the channel during normal operation.

which has been calibrated to a NBS source. This known source shall be

TABLE 4.3-12 (Continued)

TABLE NOTATION

- (4) - The CHANNEL CALIBRATION shall include the use of standard gas samples containing a nominal:
- ~~1. One volume percent hydrogen, balance nitrogen, and~~
 2. Four volume percent hydrogen, balance nitrogen.
- ~~(5) - The CHANNEL CALIBRATION shall include the use of standard gas samples containing a nominal:~~
- ~~1. One volume percent oxygen, balance nitrogen, and~~
 - ~~2. Four volume percent oxygen, balance nitrogen.~~

INSTRUMENTATION

BASES

3/4.3.3.8 RADIOACTIVE LIQUID EFFLUENT INSTRUMENTATION

The radioactive liquid effluent instrumentation is provided to monitor and control, as applicable, the releases of radioactive materials in liquid effluents during actual or potential releases of liquid effluents. ~~The alarm/trip setpoints for these instruments are provided to ensure that the alarm/trip will occur prior to exceeding the limits of 10 CFR Part 20.~~ The OPERABILITY and use of this instrumentation is consistent with the requirements of General Design Criteria 60, 63 and 64 of Appendix A to 10 CFR Part 50.

3/4.3.3.9 RADIOACTIVE GASEOUS EFFLUENT INSTRUMENTATION

The radioactive gaseous effluent instrumentation is provided to monitor and control, as applicable, the releases of radioactive materials in gaseous effluents during actual or potential releases of gaseous effluents. ~~The alarm/trip setpoints for these instruments are provided to ensure that the alarm/trip will occur prior to exceeding the limits of 10 CFR Part 20.~~ This instrumentation also includes provisions for monitoring (and controlling) the concentrations of potentially explosive gas mixtures in the waste gas holdup system. The OPERABILITY and use of this instrumentation is consistent with the requirements of General Design Criteria 60, 63 and 64 of Appendix A to 10 CFR Part 50.

RADIOACTIVE EFFLUENTS

EXPLOSIVE GAS MIXTURE (Systems designed to withstand a hydrogen explosion)

LIMITING CONDITION FOR OPERATION

3.11.2.5 The concentration of {hydrogen or oxygen} ^{downstream of the recombiners} in the waste gas holdup system shall be limited to $\leq 4\%$ by volume.

APPLICABILITY: At all times.

ACTION:

- ^{downstream of the recombiners}
- a. With the concentration of {hydrogen or oxygen} ^{in the waste gas holdup system exceeding the limit, restore the concentration to within the limit within 48 hours.}
 - b. The provisions of Specifications 3.0.3 and 3.0.4 are not applicable.

SURVEILLANCE REQUIREMENTS

4.11.2.5 The concentration of {hydrogen or oxygen} ^{downstream of the recombiners} in the waste gas holdup system shall be determined to be within the above limits by continuously monitoring the waste gases in the waste gas holdup system with the {hydrogen or oxygen} monitors required OPERABLE by Table 3.3-12 of Specification 3.3.3.9.

Delete

RADIOACTIVE EFFLUENTS

EXPLOSIVE GAS MIXTURE (Systems not designed to withstand a hydrogen explosion)

LIMITING CONDITION FOR OPERATION

3.11.2.5A The concentration of (hydrogen and/or oxygen) in the waste gas holdup system shall be limited to $\leq 2\%$ by volume.

APPLICABILITY: At all times.

ACTION:

- a. With the concentration of (hydrogen and/or oxygen) in the waste gas holdup system $> 2\%$ by volume, but $\leq 4\%$ by volume, restore the concentration of (hydrogen and/or oxygen) to within the limit within 48 hours.
- b. With the concentration of (hydrogen and/or oxygen) in the waste gas holdup system $> 4\%$ by volume, immediately suspend all additions of waste gases to the system and reduce the concentration of (hydrogen and/or oxygen) to $\leq 2\%$ within 48 hours.
- c. The provisions of Specifications 3.0.3 and 3.0.4 are not applicable.

SURVEILLANCE REQUIREMENTS

4.11.2.5A The concentrations of (hydrogen and/or oxygen) in the waste gas holdup system shall be determined to be within the above limits by continuously monitoring the waste gases in the waste gas holdup system with the (hydrogen and/or oxygen) monitors required OPERABLE by Table 3.3-12 of Specification 3.3.3.9.

RADIOACTIVE EFFLUENTS

MAIN CONDENSER

LIMITING CONDITION FOR OPERATION

each reactor's

3.11.2.6 The gross ^{gamma}radioactivity (beta and/or gamma) rate of noble gases from the main condenser evacuation system shall be limited to $\leq (340,000)$ $\mu\text{Ci/sec}$ as indicated at the pretreatment monitor.

APPLICABILITY: At all times.

ACTION:

reactor's

With the gross ^{gamma}radioactivity (beta and/or gamma) rate of noble gases from either the main condenser evacuation system exceeding $(340,000)$ $\mu\text{Ci/sec}$, restore the gross radioactivity rate to within its limit within 48 hours or be subject to in at least HOT-STANDBY within the next 12 hours. Special Report to the Commission within 10 days pursuant to Specification 6.9.2 identifying the causes of this ^{reactor's} violation.

SURVEILLANCE REQUIREMENTS

each reactor's

4.11.2.6 The gross ^{gamma}radioactivity (beta and/or gamma) rate of noble gases from the main condenser evacuation system shall be determined to be within the above limit at the following frequencies by performing an isotopic analysis of a representative sample of gases taken at the ^{pretreatment} discharge (prior to dilution and/or discharge) of the main condenser evacuation system: monitor downstream of the recombiners

- a. At least once per 31 days when the plant is operating.
- b. Within 4 hours following an increase, as indicated by the ^{Pretreatment} Condenser Evacuation System Noble Gas Activity Monitor, of greater than 50%, after factoring out increases due to changes in THERMAL POWER level, in the nominal steady state fission gas release from the primary coolant.

Delete

RADIOACTIVE EFFLUENTS

MARK I or II CONTAINMENT (Optional)

LIMITING CONDITION FOR OPERATION

3.11.2.7 The Mark I or II containment drywell shall be purged through the Standby Gas Treatment System.

APPLICABILITY: Whenever the drywell is purged:

ACTION:

- a. With the requirements of the above specification not satisfied, suspend all purging of the drywell.
- b. The provisions of Specifications 3.0.3 and 3.0.4 are not applicable.

SURVEILLANCE REQUIREMENTS

3.11.2.7 The containment drywell shall be determined to be aligned for purging through the Standby Gas Treatment System within 4 hours prior to start of and at least once per 12 hours during purging of the drywell.

RADIOACTIVE EFFLUENTS

BASES

3/4.11.2.5 EXPLOSIVE GAS MIXTURE

This specification is provided to ensure that the concentration of potentially explosive gas mixtures contained in the waste gas holdup system is maintained below the flammability limits of hydrogen and oxygen. (Automatic control features are included in the system to prevent the hydrogen and oxygen concentrations from reaching these flammability limits.) These automatic control features include isolation of the source of hydrogen, and/or oxygen, automatic diversion to recombiners, or injection of dilutants to reduce the concentration below the flammability limits.) Maintaining the concentration of hydrogen and oxygen below their flammability limits provides assurance that the releases of radioactive materials will be controlled in conformance with the requirements of General Design Criterion 60 of Appendix A to 10 CFR Part 50. *its*

3/4.11.2.6 MAIN CONDENSER

Restricting the gross radioactivity rate of noble gases from the main condenser provides reasonable assurance that the total body exposure to an individual at the exclusion area boundary will not exceed a small fraction of the limits of 10 CFR Part 100 in the event this effluent is inadvertently discharged directly to the environment without treatment. This specification implements the requirements of General Design Criteria 60 and 64 of Appendix A to 10 CFR Part 50.

3/4.11.2.7 MARK I CONTAINMENT (OPTIONAL)

delete → This specification provides reasonable assurance that releases from drywell purging operations will not exceed the annual dose limits of 10 CFR Part 20 for unrestricted areas.

3/4.11.3 SOLID RADIOACTIVE WASTE

later → The OPERABILITY of the solid radwaste system ensures that the system will be available for use whenever solid radwastes require processing and packaging prior to being shipped offsite. This specification implements the requirements of 10 CFR Part 50.36a and General Design Criteria 60 of Appendix A to 10 CFR Part 50. The process parameters included in establishing the PROCESS CONTROL PROGRAM may include, but are not limited to waste type, waste pH, waste/liquid/solidification agent/catalyst ratios, waste oil content, waste principal chemical constituents, mixing and curing times.

3/4.12 RADIOLOGICAL ENVIRONMENTAL MONITORING*

3/4.12.1 MONITORING PROGRAM

LIMITING CONDITION FOR OPERATION

3.12.1 The radiological environmental monitoring program shall be conducted as specified in Table 3.12-1.

APPLICABILITY: At all times.

ACTION:

- a. ~~With the radiological environmental monitoring program not from that being conducted as specified in Table 3.12-1, prepare and shall be submit to the Commission, in the Annual Radiological Operating Surveillance Report; a description of the reasons for not conducting these deviation program as required and the plans for preventing a recurrence shall be~~ *any significant deviations in conducting*
- b. ~~With the levels of radioactivity in an environmental sampling medium at one or more of the locations specified in Table 3.12-1 exceeding the limits of Table 6.9-2 when averaged over any calendar quarter, prepare and submit to the Commission within 30 days from the end of the affected calendar quarter, or after a Special Report which includes an evaluation of any release conditions, environmental factors or other aspects which may have caused the limits of Table 6.9-2 to be exceeded. This report is not required if the measured level of radioactivity was not the result of plant effluents; however, in such an event, the condition shall be reported and described in the Annual Radiological Environmental Operating Report.~~ *are determined to* (3.12-2)
- c. ~~With milk or fresh leafy vegetable samples unavailable from any of the sample locations required by Table 3.12-1, prepare and submit to the Commission within 30 days. Pursuant to Specification 6.9.2, a Special Report which identifies the cause of the unavailability of samples and identifies locations for obtaining replacement samples. The locations from which samples were unavailable may then be deleted from Table 3.12-1 and Figure 3.12-1 provided the locations from which the replacement samples were obtained are added to the environmental monitoring program as replacement locations. Subsequent replacement locations shall be documented in the Annual Environmental Surveillance Report.~~ *grass (during the growing season)* (3.12-2)
- d. ~~The provisions of Specifications 3.0.3 and 3.0.4 are not applicable.~~

and any appropriate program as required and the plans for preventing a recurrence shall be stated.

are determined to

pursuant to Specification 6.9.2.

confirmation which is late,

This report shall

Insert from page 3/4 12-2.

I adequate samples of

shall be submitted

deleted and any locations

or additional locations

longer be obtained, efforts shall be made to find replacement locations.

* This Radiological Environmental Monitoring Program serves both units at the site

**A confirmatory reanalysis of the original, a duplicate, or a new sample may be desirable, as appropriate. The results of the confirmatory analysis shall be completed at the earliest time consistent with the analysis, but in any case within 30 days.

RADIOLOGICAL ENVIRONMENTAL MONITORING

SURVEILLANCE REQUIREMENTS

4.12.1.1 The radiological environmental monitoring samples shall be collected pursuant to Table 3.12-1 ~~from the locations shown on Figure 3.12-1~~ and shall be analyzed pursuant to the requirements of Tables 3.12-1 and 4.12-1.

4.12.1.2 Reports - The results of analyses performed on the radiological environmental monitoring samples shall be summarized in the Annual Radiological Environmental ~~Operating~~ Report.

Surveillance

Insert in Specification 3.12.1.b on page 3/4 12-1



When more than one of the radionuclides in Table ~~6.9-2~~ 3.12-2 are detected in the sampling medium, this report shall be submitted if:

$$\frac{\text{concentration (1)}}{\text{Limit level (1)}} + \frac{\text{concentration (2)}}{\text{Limit level (2)}} + \dots \geq 1.0$$

When radionuclides other than those in Table ~~6.9-2~~ ^{3.12-2} are detected and are the result of plant effluents, this report shall be submitted if the potential annual dose to an individual is equal to or greater than the calendar ~~year~~ ^{quarter} limits of Specifications 3.11.1.2, 3.11.2.2 and 3.11.2.3.

3/4.12 RADIOLOGICAL ENVIRONMENTAL MONITORING*

3/4.12.1 MONITORING PROGRAM

referred to classify

LIMITING CONDITION FOR OPERATION

3.12.1 The radiological environmental monitoring program shall be conducted as specified in Table 3.12-1.

APPLICABILITY: At all times.

ACTION:

- a. Any significant deviations in conducting the radiological environmental monitoring program from that as specified in Table 3.12-1 shall be documented in the Annual Radiological Surveillance Report; the reasons for these deviations and any appropriate plans for preventing a recurrence shall be stated.
- b. If the confirmed** measured levels of radioactivity in an environmental sampling medium at one or more of the locations specified in Table 3.12-1 are determined to exceed the limits of Table 3.12-2 when averaged over any calendar quarter, submit to the Commission within 30 days from the end of the affected calendar quarter, or after confirmation whichever is later, a Special Report pursuant to Specification 6.9.2. When more than one of the radionuclides in Table 3.12-2 are detected in the sampling medium, this report shall be submitted if:

$$\frac{\text{level (1)}}{\text{limit level (1)}} + \frac{\text{level (2)}}{\text{limit level (2)}} + \dots \geq 1.0$$

When radionuclides other than those in Table 3.12-2 are detected and are the result of plant effluents, this report shall be submitted if the potential annual dose to an individual is equal to or greater than the ~~calendar~~ *quarter* ~~limits~~ of Specifications 3.11.1.2, 3.11.2.2 and 3.11.2.3. This report shall include an evaluation of any release conditions, environmental factors or other aspects which may have caused the limits of Table 3.12-2 to have been exceeded. This report is not required if the measured level of radioactivity was not the result of plant effluents; however, in such an event, the condition shall be reported and described in the Annual Radiological Environmental Surveillance Report.

*This Radiological Environmental Monitoring Program serves both units at the site.

**A confirmatory reanalysis of the original, a duplicate, or a new sample may be desirable, as appropriate. The results of the confirmatory analysis shall be completed at the earliest time consistent with the analysis, but in any case within 30 days.

3/4.12 RADIOLOGICAL ENVIRONMENTAL MONITORING

3/4.12.1 MONITORING PROGRAM

retyped to verify

LIMITING CONDITION FOR OPERATION (Continued)

- c. If adequate samples of milk or grass (during the growing season) from any of the sample locations required by Table 3.12-1, can no longer be obtained, efforts shall be made to find replacement locations. Pursuant to Specification 6.9.2, a Special Report which identifies the cause of the unavailability of samples and identifies the locations to be deleted and any locations for obtaining replacement samples shall be submitted to the Commission within 30 days. Subsequent replacement or additional locations shall be documented in the Annual Environmental Surveillance Report.
- d. The provisions of Specification 3.0.3 and 3.0.4 are not applicable.

a. Deviations are permitted from the specified sampling schedule if specimens are unobtainable due to hazardous conditions, inclement weather, reasonable unavailability, malfunction of equipment or other legitimate reasons.

TABLE 3.12-1

RADIOLOGICAL ENVIRONMENTAL MONITORING PROGRAM^a

<u>Exposure Pathway and/or Sample</u>	<u>Number of Samples and Sample Locations**</u>	<u>Sampling and Collection Frequency</u>	<u>Type and Frequency of Analysis</u>
---------------------------------------	---	--	---------------------------------------

1. AIRBORNE

a. Radioiodine and Particulates (~~Locations 1-5~~)

Indicator Stations:

- #9 Dead River Road (NE - 1.9 miles)
- #17 Site Boundary (SE - 1.2 miles)
- #21 Site Boundary (W SIV - 1.0 miles)

Control Stations:

- #1 State Prison (ENE - 11 miles)
- #5 Baxley (S - 10 miles)

Continuous operation of sampler with sample collection as required by dust loading but at least once per 7 days.

Radioiodine canister: Analyze ~~at least once per 7 days~~ for I-131 following *canister change*.
 Particulate sampler: Analyze for gross beta radioactivity ≥ 24 hours following filter change; Perform gamma isotopic analysis on each sample when gross beta activity is > 10 times the mean of control samples; ~~for any medium~~. Perform gamma isotopic analysis on *quarterly composite (by location) for sample at least once each per 92 days. location.*

2. DIRECT RADIATION

(~~Locations 1-8~~)
 ≥ 2 dosimeters or $\rightarrow 1$ instrument for continuously measuring and recording dose rate at each location.

Same as airborne stations plus the following three indicator locations

- #119 Site Boundary (ESE - 1.1 miles)
- #126 Site Boundary (S - 0.9 miles)
- #113 Site Boundary (W - 1.0 miles)

~~At least once per 31 days.~~

or

At least once per 92 days. (~~Read-out frequencies are determined by type of dosimeters selected.~~)

~~Gamma dose. At least once per 31 days.~~

or

~~Gamma dose. At least once per 92 days.~~

** Sample locations are shown on Figure 3-12-1.

111-STS-1

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TABLE 3.12-1 (Continued)

RADIOLOGICAL ENVIRONMENTAL MONITORING PROGRAM

RMP-STS-1

Exposure Pathway and/or Sample	Number of Samples and Sample Locations**	Sampling and Collection Frequency	Type and Frequency of Analysis
3. WATERBORNE			
a. Surface	(Locations 9 and 10)	Composite* sample collected over a period of ≤ 31 days.	<p><i>monthly</i></p> <p>Gamma isotopic analysis of each composite sample. Tritium analysis of composite sample, at least once per 92 days <i>each quarterly</i></p>
<p>Indicator Station: #172 (approximately 3 miles upstream) Control Station: #170 (approximately 1 mile downstream)</p>			
b. Ground	(Locations 11 and 12)	At least once per 92 days.	Gamma isotopic and tritium analyses of each sample.
<p>Indicator Station: Outfall of subsurface drainage ditch on north side of plant yard Control Station: Well at Deen's Landing, approximately 2 miles west</p>			
c. Drinking	(Locations 13-15)	Composite* sample collected over a period of < 14 days, if I-131 analysis is performed; or	I-131 analysis of each composite sample; and
		Composite* sample collected over a period of ≤ 31 days.	Gross beta and gamma isotopic analysis of each composite sample. Tritium analysis of composite sample at least once per 92 days.
c. d. Sediment from Shoreline	(Locations 18)	At least once per 184 days <i>year during summer</i>	Gamma isotopic analysis of each sample.
<p>Indicator Station #172 (approximately 3 miles downstream)</p>			

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* Composite samples shall be collected by collecting an aliquot at intervals not exceeding 2 hours. Should the automatic sampling equipment become inoperative, grab samples will be collected weekly or at other appropriate intervals and composited.

** Sample locations are shown on Figure 3.12-1.

IR-515-1

TABLE 3.12-1 (Continued)

RADIOLOGICAL ENVIRONMENTAL MONITORING PROGRAM

<u>Exposure Pathway and/or Sample</u>	<u>Number of Samples and Sample Locations**</u>	<u>Sampling and Collection Frequency</u>	<u>Type and Frequency of Analysis</u>
---------------------------------------	---	--	---------------------------------------

4. INGESTION

a. Milk ~~(Locations 17-20)~~

Indicator Station: ^{*}Stones Dairy (SW - 6.5 miles)
Control Station: State Prison (ENE - 11 miles)

At least once per 15 days when animals are on pasture; at least once per 31 days at other times.

Gamma isotopic and I-131 analysis of each sample.

b. Fish and Invertebrates ~~(Locations 21 and 22)~~

American Shad From area of discharge structure

One sample in-season, or at least once per 184 days if not seasonal. One sample of each of the following species:

Gamma isotopic analysis on edible portions.

1.  During the spring
2.  spawning period

c. Food Products ~~(Locations 23-25)~~

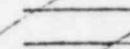
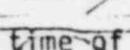
Asiatic Clams

At time of harvest. One sample of each of the following classes of food products:

Gamma isotopic analysis on edible portion.

Indicator Station: #172 (approximately 3 miles downstream)
Control Station: #170 (approximately 1 mile upstream)

Twice per year separated by 4 to 8 months intervals as the river permits

1. 
2. 
3. 

d. Grass ~~(Location 26)~~

#21 Site Boundary (WSW - 1.0 miles)

At time of harvest. One sample of broad leaf vegetation

I-131 analysis.

At least once per 31 days during the growing season

**Sample locations are shown on Figure 3.12-1.

*Stones Dairy has been the closest reliable station. Up to three additional sampling locations within 5 miles north-south of the site will be utilized as available

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3.12-2
TABLE 6.9-2

REPORTING LEVELS FOR RADIOACTIVITY CONCENTRATIONS IN ENVIRONMENTAL SAMPLES

Reporting Levels

Analysis	Water (pCi/l)	Airborne Particulate or Gases (pCi/m ³)	Fish (pCi/Kg, wet)	Milk (pCi/l)	Vegetables ^{Trace} (pCi/Kg, wet)
H-3	3 x 10 ^{4.5}				
Mn-54	2 x 10 ³		7 x 10 ⁴		
Fe-59	8 x 10 ²		3 x 10 ⁴		
Co-58	2 x 10 ³		6 x 10 ⁴		
Co-60	7 x 10 ²		2 x 10 ⁴		
Zn-65	1 x 10 ³		6 x 10 ⁴		
Zr-Nb-95	9 x 10 ²				
I-131	2 *	2. 0.9		7	2 x 10 ²
Cs-134	9/30	30 10	6 x 10 ³	1 x 10 ²	1 x 10 ³
Cs-137	1 x 10 ²	30 20	9 x 10 ³	2 x 10 ²	2 x 10 ²
Ba-La-140	4 x 10 ²			5.3 x 10 ²	

* Should drinking water sampling become appropriate, the report level for I-131 is 4 pCi/l.

3/4 12-5A

W-100

6-22

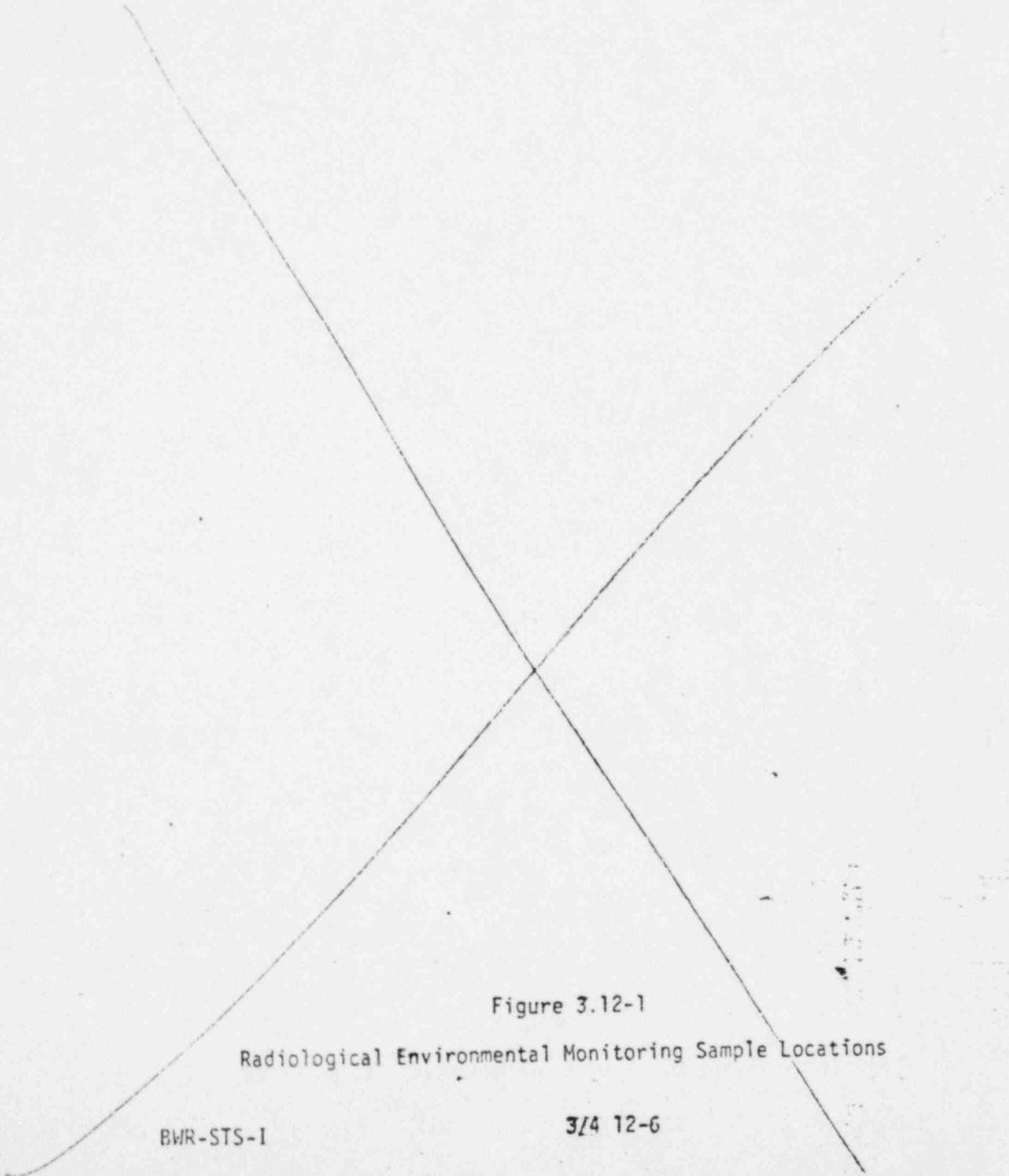


Figure 3.12-1

Radiological Environmental Monitoring Sample Locations

BWR-STS-1

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TABLE 4.12-1

NOMINAL
 * MAXIMUM VALUES FOR THE LOWER LIMITS OF DETECTION (LLD)^a

Analysis	Water (pCi/l)	Airborne Particulate or Gas (pCi/m ³)	Fish (pCi/kg, wet)	Milk (pCi/l)	Mass Food Products (pCi/kg, wet)	Sediment (pCi/kg, dry)
gross beta	2 ^b **	5.7 X 10 ⁻²				
³ H	330 2000					
⁵⁴ Mn	18		130			
⁵⁹ Fe	30		260			
^{58,60} Co	15		130			
⁶⁵ Zn	30		260			
⁹⁵ Zr-11b	10 30					
¹³¹ I	0.5 ^c **	7 X 10 ⁻²		1.5 0-8 ^e	60 25 ^d	
^{134,137} Cs	15	5.7 X 10 ⁻²	130	15	80-	150
¹³⁷ Cs	18	6 X 10 ⁻²	160	18		140
¹⁴⁰ Ba-La	15 75			25		

These are the usual detection capabilities expected to be achieved; occasional failures to achieve these values are also expected.

** Should drinking water sampling become appropriate, the LLD for I-131 is 1.5 pCi/l and the LLD for gross beta is 5 A.C. 10

TABLE 4.12-1 (Continued)

TABLE NOTATION

a - The LLD is the smallest concentration of radioactive material in a sample that will be detected with 95% probability with only 5% probability of falsely concluding its presence.

For a particular measurement system (which may include radio-chemical separation):

$$LLD = \frac{4.66 s_b}{E \cdot V \cdot 2.22 \cdot Y \cdot \exp(-\lambda \Delta t)}$$

where

LLD is the lower limit of detection as defined above (as pCi per unit mass or volume)

s_b is the standard deviation of the background counting rate or of the counting rate of a blank sample as appropriate (as counts per minute)

E is the counting efficiency (as counts per transformation)

V is the sample size (in units of mass or volume)

2.22 is the number of transformation per minute per picocurie

Y is the fractional radiochemical yield (when applicable)

λ is the radioactive decay constant for the particular radionuclide

Δt is the elapsed time between sample collection and analysis *(at end of the sample collection period) and time of counting*
The value of s_b used in the calculation of the LLD for a detection system shall be based on the actual observed variance of the background counting rate or of the counting rate of the blank samples (as appropriate) rather than on an unverified theoretically predicted variance. In calculating the LLD for a radionuclide determined by gamma-ray spectrometry, the background shall include the typical contributions of other radionuclides normally present in the samples (e.g., potassium-40 in milk samples).

TABLE 4.12-1 (Continued)

TABLE NOTATION

~~b - LLD for drinking water.~~

~~c - LLDs for I-131 in water, milk and other food products correspond to one-quarter of the Appendix I (10 CFR Part 50) design objective dose-equivalent of 15 mrem/year for atmospheric releases and 10 mrem/year for liquid releases to the most sensitive organ and individual using the assumptions given in Regulatory Guide 1.109.~~

~~d - LLD for leafy vegetables.~~

a - continued

Measurements of principal gamma emitters for liquid and gaseous effluent analyses shall be performed using measurement systems and methods which have the following minimum performance specifications:

1. Gamma-ray energy resolution < 3.0 keV FWHM for the 1332 keV gamma-ray of Co-60.
2. Interference-free LLD capabilities of 5×10^7 $\mu\text{Ci/ml}$ for Tc-99m and Co-60 (liquid) and 1×10^{-4} $\mu\text{Ci/ml}$ for Xe-133 and Ar-41 (gases).

The LLD capability shall be attainable for the sample geometry, background, counting time, and counting conditions which are representative of actual effluent activity analysis conditions.

Background count rate is calculated from the background counts determined to be within ± 0.1 FWHM energy band about the energy of the gamma ray peak used for quantitative analysis for that radionuclide.

RADIOLOGICAL ENVIRONMENTAL MONITORING

3/4.12.2 LAND USE CENSUS

LIMITING CONDITION FOR OPERATION

(Permanent)

3.12.2 A land use census shall be conducted and shall identify the location of the nearest milk animal^{and} the nearest residence ~~and the nearest garden* of greater than 500 square feet producing fresh leafy vegetables~~ in each of the 16 meteorological sectors within a distance of five miles. ~~(For elevated releases as defined in Regulatory Guide 1.111, March 1976. The land use census shall also identify the locations of all milk animals and all gardens of greater than 500 square feet producing fresh leafy vegetables in each of the 16 meteorological sectors within a distance of three miles.)~~

APPLICABILITY: At all times.

ACTION:

- a. *Should* ~~With~~ a land use census identifying a location(s) which yields a calculated dose or dose commitment greater than the values currently being calculated in Specification ~~4.11.2.3.1, 3.11.2.3,~~ *3.11.2.3,* prepare and submit to the Commission within 30 days, pursuant to Specification 6.9.2, a Special Report which identifies the new location(s).
- b. *Should* ~~With~~ a land use census identifying a location(s) which yields a calculated dose or dose commitment (via the same exposure pathway) greater than at a location from which samples are currently being obtained in accordance with Specification 3.12.1, prepare and submit to the Commission within 30 days, pursuant to Specification 6.9.2, a Special Report which identifies the new location. The new location shall be added to the ⁽⁶⁰⁾ radiological environmental monitoring program within ~~30~~ *days if sample* ~~are available.~~ The sampling location having the lowest calculated dose or dose commitment (via the same exposure pathway) may ^(then) be deleted from this monitoring program, after ~~(October 31)~~ *of the year in which this land use census was conducted.*
- c. The provisions of Specifications 3.0.3 and 3.0.4 are not applicable.

~~*Broad leaf vegetation sampling may be performed at the site boundary in the direction sector with the highest D/Q in lieu of the garden census.~~

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* A milk animal is a cow or goat that is producing milk for human consumption.

RADIOLOGICAL ENVIRONMENTAL MONITORING

SURVEILLANCE REQUIREMENTS

4.12.2.1 The land use census shall be conducted at least once per 12 months ~~between the dates of (June 1 and October 1)~~ by a door-to-door ~~survey~~ ^{survey, visual} survey, aerial survey, ~~or~~ by consulting local agriculture authorities, ~~or by~~ ^{some combination of these methods}

4.12.2.2 Reports - The results of the land use census shall be included in the Annual Radiological Environmental ~~Operating~~ Report.

Surveillance

RADIOLOGICAL ENVIRONMENTAL MONITORING

3/4.12.3 CROSSCHECK PROGRAM

LIMITING CONDITION FOR OPERATION

3.12.3 Analyses shall be performed on radioactive materials supplied as part of the Environmental Protection Agency's (EPA's) Environmental Radioactivity Laboratory Intercomparisons Studies (Crosscheck) Program that are also included in Table 3.12-1.

APPLICABILITY: At all times.

ACTION:

- a. With analyses not being performed as required above, report the corrective actions taken to prevent a recurrence to the Commission in the Annual Radiological Environmental Operating Report.
- b. The provisions of Specifications 3.0.3 and 3.0.4 are not applicable.

SURVEILLANCE REQUIREMENTS

4.12.3 The results of analyses performed as part of the above required crosscheck program shall be included in the Annual Radiological Environmental Operating Report.

3/4.12 RADIOLOGICAL ENVIRONMENTAL MONITORING

BASES

3/4.12.1 MONITORING PROGRAM

The radiological monitoring program required by this specification provides measurements of radiation and of radioactive materials in those exposure pathways and for those radionuclides, which lead to the highest potential radiation exposures of individuals resulting from the station operation. This monitoring program thereby supplements the radiological effluent monitoring program by ~~verifying that the measuring~~ *able concentrations of radioactive materials and levels of radiation* ~~are~~ *which m.* ~~not higher than expected on the basis of the effluent measurements and modeling of the environmental exposure pathways.~~ *The initially specified monitoring program will be effective for at least the first three years of commercial operation. Following this period, program changes may be initiated based on operational experience.*

are compared with the
The detection capabilities required by Table 4.12-1 are *nominally within the* state-of-the-art for routine environmental measurements in industrial laboratories. The specified lower limits of detection for I-131 in water, milk and other food products *are within* ~~correspond to approximately one-quarter of the Appendix I to 10 CFR Part 50 design objective dose-equivalent of 15 mrem/year for atmospheric releases and 10 mrem/year for liquid releases to the most sensitive organ and individual. They are based on the assumptions given in Regulatory Guide 1.109, "Calculation of Annual Doses to Man from Routine Releases of Reactor Effluents for the Purpose of Evaluating Compliance with 10 CFR Part 50, Appendix I," March 1976, except the change for an infant consuming 330 liters/year of drinking water instead of 510 liters/year.~~ *October 1977.*

3/4.12.2 LAND USE CENSUS

(Rev. 1),
This specification is provided to ensure that changes in the use of unrestricted areas are identified and that modifications to the monitoring program are made if required by the results of this census. This census satisfies the requirements of Section IV.B.3 of Appendix I to 10 CFR Part 50. *Restricting the census to gardens of greater than 500 square feet provides assurance that significant exposure pathways via leafy vegetables will be identified and monitored since a garden of this size is the minimum required to produce the quantity (26 kg/year) of leafy vegetables assumed in Regulatory Guide 1.109 for consumption by a child. To determine this minimum garden size, the following assumptions were used, 1) that 20% of the garden was used for growing broad leaf vegetation (i.e., similar to lettuce and cabbage), and 2) a vegetation yield of 2 kg/square meter.*

RADIOLOGICAL ENVIRONMENTAL MONITORING

BASES

3/4.12.3 CROSSCHECK PROGRAM

The requirement for participation in the EPA crosscheck program is provided to ensure that independent checks on the precision and accuracy of the measurements of radioactive material in environmental sample matrices are performed as part of the quality assurance program for environmental monitoring in order to demonstrate that the results are reasonably valid.

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STANDARD

TECHNICAL SPECIFICATIONS

SECTION 6.0

ADMINISTRATIVE CONTROLS

except for portions of the radiological environmental monitoring program as described below.

6.0 ADMINISTRATIVE CONTROLS

6.1 RESPONSIBILITY

6.1.1 The ^{Plant Manager} ~~(Plant Superintendent)~~ shall be responsible for overall unit operation and shall delegate in writing the succession to this responsibility during his absence.

6.1.2 The Manager of Environmental Affairs is responsible for sampling ^{The fish, invertebrates and shoreline sediment described in Specification 3/4.12.1 and for conducting the land use census described in Specification 3/4.12.2}

6.2 ORGANIZATION

OFFSITE

6.2.1 The offsite organization for unit management and technical support shall be as shown on Figure ~~6.2-1~~ 6.2.1-1.

UNIT STAFF

6.2.2 The unit organization shall be as shown on Figure ~~6.2-2~~ ^{6.2.2-1} and:

- a. Each on duty shift shall be composed of at least the minimum shift crew composition shown in Table ~~6.2-1~~ 6.2.2-1
- b. At least one licensed Operator shall be in the control room when fuel is in the reactor.
- c. At least two licensed Operators shall be present in the control room during reactor start-up, scheduled reactor shutdown and during recovery from reactor trips.
- d. An individual qualified in radiation protection procedures shall be on site when fuel is in the reactor.
- e. All CORE ALTERATIONS shall be directly supervised by either a licensed Senior Reactor Operator or Senior Reactor Operator Limited to Fuel Handling who has no other concurrent responsibilities during this operation.
- f. A ^{Fire Team} ~~site Fire Brigade~~ of at least ^{Team} 5 members shall be maintained onsite at all times. The ~~Fire Brigade~~ shall not include ~~(3)~~ ^{members} of the minimum shift crew necessary for safe shutdown of the unit and any personnel required for other essential functions during a fire emergency.

6.1.3 The Nuclear Engineer is responsible for assessing the results of the radiological environmental monitoring program and for writing the annual radiological environmental surveillance report.

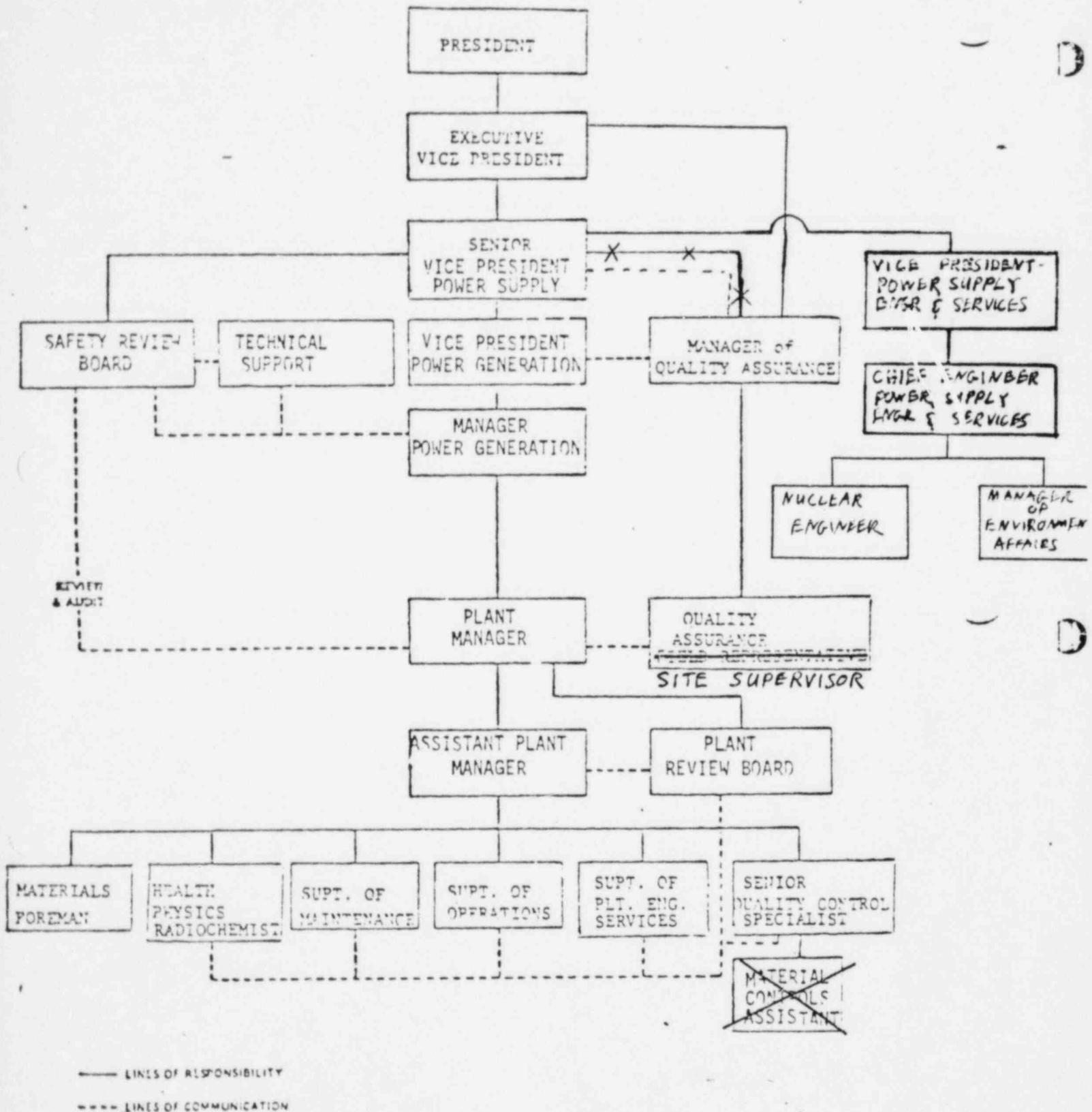
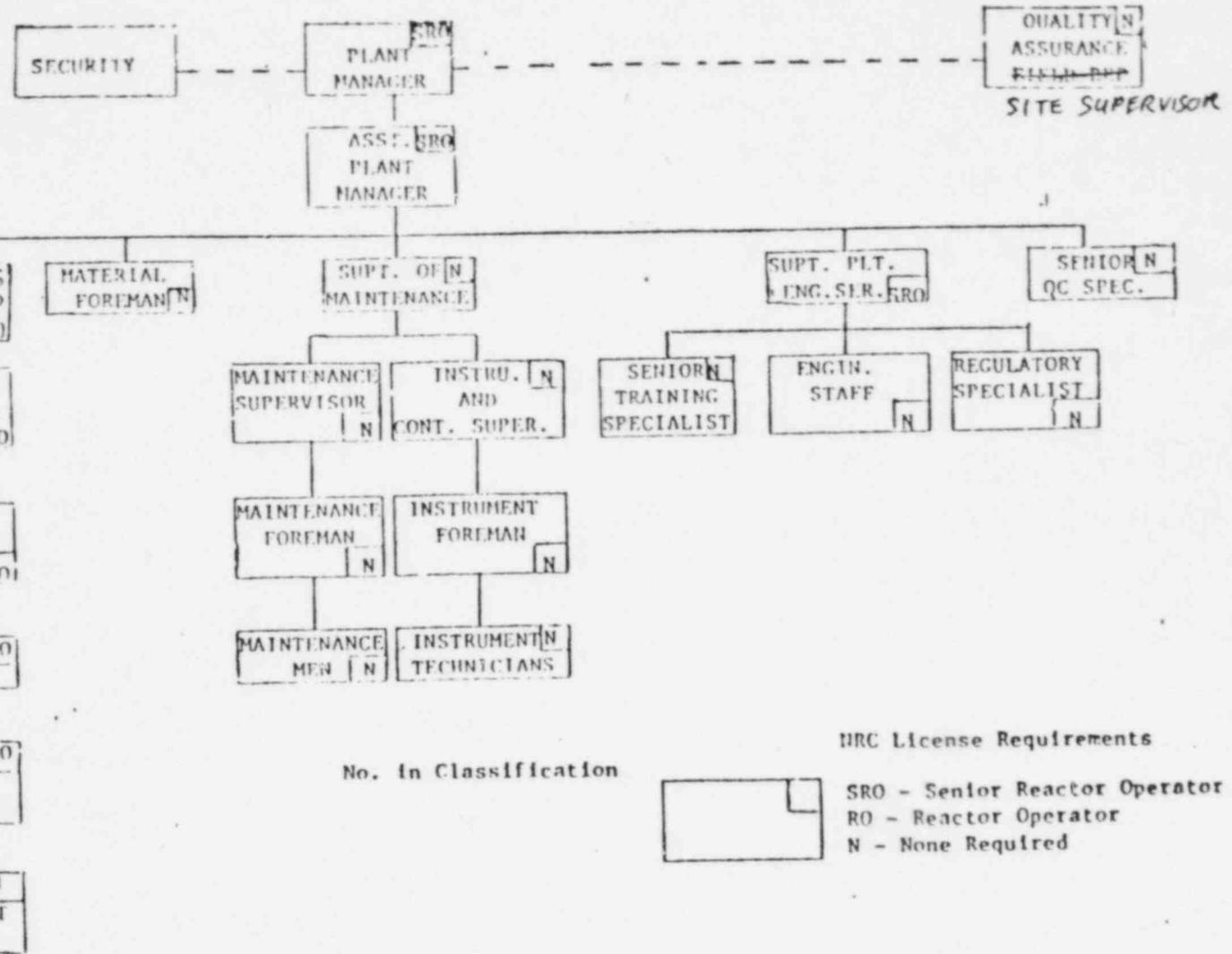


Figure 6.2.1-1
OFFSITE ORGANIZATION

HATCH - UNIT 2

6-3



No. in Classification

IRC License Requirements

SRO - Senior Reactor Operator
 RO - Reactor Operator
 N - None Required

Either the Plant Manager or Assistant Plant Manager will obtain a Senior Reactor Operator's License.

_____ Lines of Responsibility

- - - - - Lines of Communication

Figure 6.2.2-1

UNIT ORGANIZATION

TABLE ~~6.2.1~~ 6.2.2-1

MINIMUM SHIFT CREW COMPOSITION#

Condition of Unit 2 - Unit 1 in Reactor Power Operation, Hot Standby or Hot Shutdown Condition

LICENSE CATEGORY	APPLICABLE MODES	
	1, 2, 3 4	4 & 5 6
SOL **	+ 2	+ 2*
OL **	+ 3	+ 2
Non-Licensed	+ 3	+ 3

Including an individual qualified in radiation protection procedures

*Does not include the licensed Senior Reactor Operator or Senior Reactor Operator Limited to Fuel Handling, supervising CORE ALTERATIONS.

** Assumes each individual is licensed on both units.

#Shift crew composition may be less than the minimum requirements for a period of time not to exceed 2 hours in order to accommodate unexpected absence of on duty shift crew members provided immediate action is taken to restore the shift crew composition to within the minimum requirements of Table ~~6.2.1~~ 6.2.2-1.

Condition of Unit 2 - Unit 1 in Cold Shutdown Condition or Refuel Mode

LICENSE CATEGORY	APPLICABLE MODES	
	1, 2, 3	4 & 5
SOL **	2	1*
OL **	2	2
Non-Licensed	3	3

Condition of Unit 2 - No Fuel in Unit 1

LICENSE CATEGORY	APPLICABLE MODES	
	1, 2, 3	4 & 5
SOL	1	1*
OL	2	1
Non-Licensed	2	1

ADMINISTRATIVE CONTROLS

6.3 UNIT STAFF QUALIFICATIONS

Minimum qualifications for members of the unit staff may be specified by use of an overall qualification statement referencing ANSI N18.1-1971 or alternately by specifying individual position qualifications. Generally, the first method is preferable; however, the second method is adaptable to those unit staffs requiring special qualification statements because of a unique organizational structure.

6.3.1 Each member of the unit staff shall meet or exceed the minimum qualifications of ANSI N18.1-1971 for comparable positions, except for the ~~(Radiation Protection Manager)~~ who shall meet or exceed the qualifications of Regulatory Guide 1.8, September 1975.

Health Physicist - Radiochemist

6.4 TRAINING

6.4.1 A retraining and replacement training program for the unit staff shall be maintained under the direction of the ~~(position title)~~ and shall meet or exceed the requirements and recommendations of Section 5.5 of ANSI N18.1-1971 and Appendix "A" of 10 CFR Part 55.

Senior Methods and Training Specialist

6.4.2 A training program for ~~the Fire Brigade~~ shall be maintained under the direction of the ~~(position title)~~ and shall meet or exceed the requirements of Section 27 of ~~the NEPA Code - 1975~~, except for ~~Fire Brigade~~ *fire protection* training sessions which shall be held at least once per 92 days.

Fire Protection

Senior Regulatory Specialist

6.5 REVIEW AND AUDIT

The method by which independent review and audit of facility operations is accomplished may take one of several forms. The licensee may either assign this function to an organizational unit separate and independent from the group having responsibility for unit operation or may utilize a standing committee composed of individuals from within and outside the licensee's organization.

Irrespective of the method used, the licensee shall specify the details of each functional element provided for the independent review and audit process as illustrated in the following example specifications.

6.5.1 ~~UNIT REVIEW GROUP (URG)~~ **PLANT REVIEW BOARD (PRB)**

FUNCTION

PRB

Plant Manager

6.5.1.1 The ~~(Unit Review Group)~~ shall function to advise the ~~(Plant Superintendent)~~ on all matters related to nuclear safety.

ADMINISTRATIVE CONTROLS

COMPOSITION

PRB

6.5.1.2 The ~~(Unit Review Group)~~ shall be composed of the:

Chairman:	(Plant Superintendent) Plant Manager
Member: Vice Chairman	(Operations Supervisor) Assistant Plant Manager
Member:	(Technical Supervisor) Operations Superintendent
Member: Superintendent	(Maintenance Supervisor) Plant Engineering Services
Member: Maintenance Superintendent	(Plant Instrument and Control Engineer) ent
Member: Senior Quality	(Plant Nuclear Engineer) Control Specialist
Member:	{Health Physicist} - Radiochemist

ALTERNATES

PRB

6.5.1.3 All alternate members shall be appointed in writing by the ~~(URG)~~ Chairman to serve on a temporary basis; however, no more than two alternates shall participate as voting members in ~~(URG)~~ activities at any one time. PRB

MEETING FREQUENCY

PRB

6.5.1.4 The ~~(URG)~~ shall meet at least once per calendar month and as convened by the ~~(URG)~~ Chairman or his designated alternate. PRB

QUORUM

PRB

PRB

6.5.1.5 The minimum quorum of the ~~(URG)~~ necessary for the performance of the ~~(URG)~~ responsibility and authority provisions of these Technical Specifications shall consist of the Chairman or his designated alternate and ~~four~~ three members including alternates.

RESPONSIBILITIES

Plant Review Board

6.5.1.6 The ~~(Unit Review Group)~~ shall be responsible for:

- Review of (1) all procedures required by Specification 6.8 and changes thereto, (2) any other proposed procedures or changes thereto as determined by the ~~(Plant Superintendent)~~ to affect nuclear safety. Plant Manager
- Review of all proposed tests and experiments that affect nuclear safety.

except for those procedures of 6.8.1.6 which are not under the cognizance of the Plant Manager,

ADMINISTRATIVE CONTROLS

Manager of Power Generation

- c. Review of all proposed changes to Appendix "A" Technical Specifications.
- d. Review of all proposed changes or modifications to unit systems or equipment that affect nuclear safety.
- e. Investigation of all violations of the Technical Specifications including the preparation and forwarding of reports covering evaluation and recommendations to prevent recurrence to the ~~(Superintendent of Power Plants)~~ and to the ~~(Company Nuclear Review and Audit Group)~~. *Safety Review Board (SRB).*
- f. Review of events requiring 24 hour written notification to the Commission.
- g. Review of unit operations to detect potential nuclear safety hazards.
- h. Performance of special reviews, investigations or analyses and reports thereon as requested by the ~~(Plant Superintendent)~~ or the ~~(Company Nuclear Review and Audit Group)~~. *SRB.*
- i. Review of the Security Plan and implementing procedures and shall submit recommended changes to the ~~(Company Nuclear Review and Audit Group)~~. *SRB.*
- j. Review of the Emergency Plan and implementing procedures and shall submit recommended changes to the ~~(Company Nuclear Review and Audit Group)~~. *SRB.*

AUTHORITY

PRB

6.5.1.7 The ~~(Unit Review Group)~~ shall:

- a. Recommend ^{*in writing to the Plant Manager*} ~~to the (Plant Superintendent)~~ written approval or disapproval of items considered under 6.5.1.6(a) through (d) above.
- b. Render determinations in writing with regard to whether or not each item considered under 6.5.1.6(a) through (e) above constitutes an unreviewed safety question.
- c. Provide written notification within 24 hours to the ~~(Superintendent of Power Plants)~~ and the ~~(Company Nuclear Review and Audit Group)~~ of disagreement between the ~~(URG)~~ and the ~~(Plant Superintendent)~~; however, the ~~(Plant Superintendent)~~ shall have responsibility for resolution of such disagreements pursuant to 6.1.1 above. *Plant Manager* *SRB*

Plant Manager

Manager of Power Generation

ADMINISTRATIVE CONTROLS

RECORDS

Plant Review Board

PRB 6.5.1.8 The ~~(Unit Review Group)~~ shall maintain written minutes of each ~~(URG)~~ meeting that, at a minimum, document the results of all ~~(URG)~~ PRB activities performed under the responsibility and authority provisions of these Technical Specifications. Copies shall be provided to the ~~(Superintendent of Power Plants)~~ and the ~~(Company Nuclear Review and Audit Group)~~. *Manager of Power Generation* *Safety Review Board.*

SAFETY REVIEW BOARD (SRB)

6.5.2 ~~COMPANY NUCLEAR REVIEW AND AUDIT GROUP (CNRAG)~~

FUNCTION

SRB

6.5.2.1 The ~~(Company Nuclear Review and Audit Group)~~ shall function to provide independent review and audit of designated activities in the areas of:

- a. nuclear power plant operations
- b. nuclear engineering
- c. chemistry and radiochemistry
- d. metallurgy
- e. instrumentation and control
- f. radiological safety
- g. mechanical and electrical engineering
- h. quality assurance practices
- i. ~~(other appropriate fields associated with the unique characteristics of the nuclear power plant)~~

ADMINISTRATIVE CONTROLS

COMPOSITION

6.5.2.2 The ^{SRB} ~~(CNRAG)~~ shall be composed of ~~that~~ a minimum of seven persons who as a group provide the expertise to review and audit the operation of a nuclear ~~power plant~~. The Chairman and Vice Chairmen ~~Director:~~ ~~(Position Title)~~ and other members shall be appointed by the ~~Member:~~ ~~(Position Title)~~ Company Senior Vice President, Power Supply or ~~Member:~~ ~~(Position Title)~~ such other person as he shall designate. ~~Member:~~ ~~(Position Title)~~ The composition of the SRB shall meet the requirements of ANSI N18.7-1976.

ALTERNATES

6.5.2.3 All alternate members shall be appointed in writing by the absent ~~(CNRAG) Director~~ to serve on a temporary basis; however, no more than two alternates shall participate as ~~voting members~~ in ^{SRB} ~~(CNRAG)~~ activities at any one time.

CONSULTANTS

6.5.2.4 Consultants shall be utilized as determined by the ^{SRB Chairman or} ~~(CNRAG) Director~~ to provide expert advice to the ^{SRB} ~~(CNRAG) Vice Chairman~~.

MEETING FREQUENCY

6.5.2.5 The ^{SRB} ~~(CNRAG)~~ shall meet at least once per calendar quarter during the initial year of unit operation following fuel loading and at least once per six months thereafter.

QUORUM

6.5.2.6 ^{SRB} The minimum quorum of the ^{SRB} ~~(CNRAG)~~ necessary for the performance of the ~~(CNRAG)~~ review and audit functions of these Technical Specifications shall consist of the ~~Director or his designated alternate~~ and ~~at least 4 (CNRAG) members, including alternates~~. No more than a minority of the quorum shall have line responsibility for operation of the ~~facility~~. ^{3 SRB} ~~Chairmen or Vice Chairmen~~ ^{Unit.}

ADMINISTRATIVE CONTROLS

REVIEW

- 6.5.2.7 The ^{SRB}~~(CNRAG)~~ shall review:
- a. The safety evaluations for 1) changes to procedures, equipment or systems and 2) tests or experiments completed under the provision of Section 50.59, 10 CFR, to verify that such actions did not constitute an unreviewed safety question.
 - b. Proposed changes to procedures, equipment or systems which involve an unreviewed safety question as defined in Section 50.59, 10 CFR.
 - c. Proposed tests or experiments which involve an unreviewed safety question as defined in Section 50.59, 10 CFR.
 - d. Proposed changes to Technical Specifications ^fof this Operating License.
 - e. Violations of codes, regulations, orders, Technical Specifications, license requirements, or of internal procedures or instructions having nuclear safety significance.
 - f. Significant operating abnormalities or deviations from normal and expected performance of unit equipment that affect nuclear safety.
 - g. Events requiring 24 hour written notification to the Commission.
 - h. All recognized indications of an unanticipated deficiency in some aspect of design or operation of structures, systems, or components that could affect nuclear safety.
 - i. Reports and meetings minutes of the ~~(Unit Review Group)~~.
 [^] Plant Review Board.

ADMINISTRATIVE CONTROLS

AUDITS

6.5.2.8 Audits of unit activities shall be performed under the cognizance of the ~~(CNRAG)~~. These audits shall encompass:

- a. The conformance of unit operation to provisions contained within the Technical Specifications and applicable license conditions at least once per 12 months.
- b. The performance, training and qualifications of the entire unit staff at least once per 12 months.
- c. The results of actions taken to correct deficiencies occurring in unit equipment, structures, systems or method of operation that affect nuclear safety at least once per 6 months.
- d. The performance of activities required by the ~~Operational~~ Quality Assurance Program to meet the criteria of Appendix "B", 10 CFR 50, at least once per 24 months.
- e. The Emergency Plan and implementing procedures at least once per 24 months.
- f. The Security Plan and implementing procedures at least once per 24 months.

k. ~~g.~~ Any other area of unit operation considered appropriate by the ~~(CNRAG)~~ or the ~~(Vice President Operations)~~.
SRB Senior Vice President - Power Supply.

g. ~~h.~~ The Fire Protection Program and implementing procedures at least once per 24 months.

h. ~~i.~~ An independent fire protection and loss prevention inspection and audit shall be performed annually utilizing either qualified offsite licensee personnel or an outside fire protection firm.

i. ~~j.~~ An inspection and audit of the fire protection and loss prevention program shall be performed by an outside qualified fire consultant at intervals no greater than 3 years.

j. ~~k.~~ The radiological environmental monitoring program and the results thereof at least once per ~~12~~ months.
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ADMINISTRATIVE CONTROLS

AUTHORITY

6.5.2.9 The ^{SRB}(CNRAG) shall report to and advise the ^{Senior Vice President - Power Supply}(~~Vice President Operations~~) on those areas of responsibility specified in Sections 6.5.2.7 and 6.5.2.8.

RECORDS

6.5.2.10 Records of ^{SRB}(~~CNRAG~~) activities shall be prepared, approved and distributed as indicated below:

- a. Minutes of each ^{SRB}(~~CNRAG~~) meeting shall be prepared, approved and forwarded to the ^{Senior}(~~Vice President Operations~~) within 14 days following each meeting. ^{Power Supply}
- b. Reports of reviews encompassed by Section 6.5.2.7 above, shall be prepared, approved and forwarded to the ^{Senior}(~~Vice President Operations~~) within 14 days following completion of the review. ^{Power Supply}
- c. Audit reports encompassed by Section 6.5.2.8 above, shall be forwarded to the ^{Senior}(~~Vice President Operations~~) and to the management positions responsible for the areas audited within 30 days after completion of the audit. ^{Power Supply}

6.6 REPORTABLE OCCURRENCE ACTION

6.6.1 The following actions shall be taken for REPORTABLE OCCURRENCES:

- a. The Commission shall be notified and/or a report submitted pursuant to the requirements of Specification 6.9.
- b. Each REPORTABLE OCCURRENCE requiring 24 hour notification to the Commission shall be reviewed by the ^{SRB}(~~URG~~) and submitted to the ^{SRB}(~~CNRAG~~) and the ^{Manager of Power Generation}(~~Superintendent of Power Plants~~).

ADMINISTRATIVE CONTROLS

6.7 SAFETY LIMIT VIOLATION

6.7.1 The following actions shall be taken in the event a Safety Limit is violated:

- SHUT DOWN*
- a. The unit shall be placed in at least HOT ~~STANDBY~~ within ~~one hour, two hours.~~
 - b. The Safety Limit violation shall be reported to the Commission, the ~~(Superintendent of Power Plants)~~ and to the ~~(CNRAG)~~ within 24 hours. *Manager of Power Generation* *SRB*
 - c. A Safety Limit Violation ^{*SRB*} Report shall be prepared. The report shall be reviewed by the ~~(URG)~~. This report shall describe (1) applicable circumstances preceding the violation, (2) effects of the violation upon facility components, systems or structures, and (3) corrective action taken to prevent recurrence.
 - d. The Safety Limit ^{*SRB*} Violation Report shall be submitted to the Commission, the ~~(CNRAG)~~ and the ~~(Superintendent of Power Plants)~~ within 14 days of the violation. *Manager of Power Generation*

6.8 PROCEDURES

6.8.1 Written procedures shall be established, implemented and maintained covering the activities referenced below.

- a. The applicable procedures recommended in Appendix "A" of Regulatory Guide 1.33, Revision ~~2, February 1978.~~ *1, January 1977.*
- b. The radiological environmental monitoring program.
- c. Refueling operations.
- d. Surveillance and test activities of safety related equipment.
- e. Security Plan implementation.
- f. Emergency Plan implementation.
- g. Fire Protection Program implementation.
- h. Offsite releases of gaseous and liquid effluents containing radioactive materials.
- i. The PROCESS CONTROL PROGRAM for solidification of radioactive waste.
- j. *The Off Site Dose Calculation Manual; for calculations to demonstrate compliance with 10 CFR 20, Appendix I to 10 CFR 50, and 40 CFR 190.*

except for those procedures of 6.8.1.b which are not under the cognizance of the Plant Manager,

ADMINISTRATIVE CONTROLS

6.8.2 Each procedure of 6.8.1 above, and changes thereto, shall be reviewed by the ^{PRB}~~(URC)~~ and approved by the ^{Plant Manager}~~(Plant Superintendent)~~ prior to implementation and reviewed periodically as set forth in administrative procedures. *The remaining procedures of 6.8.1.b and changes thereto shall be reviewed and approved by the Manager of Environmental Affairs or the Nuclear Engineer*
6.8.3 Temporary changes to procedures of 6.8.1 above may be made provided:

- a. The intent of the original procedure is not altered.
- b. The change is approved by two members of the plant management staff, at least one of whom holds a Senior Reactor Operator's License on the unit affected.
- c. The change is documented, reviewed by the ^{PRB}~~(URC)~~ and approved by the ^{Plant Manager}~~(Plant Superintendent)~~ within 14 days of implementation.

6.9 REPORTING REQUIREMENTS

ROUTINE REPORTS AND REPORTABLE OCCURRENCES

6.9.1 In addition to the applicable reporting requirements of Title 10, Code of Federal Regulations, the following reports shall be submitted to the Director of the Regional Office of Inspection and Enforcement unless otherwise noted.

STARTUP REPORT

6.9.1.1 A summary report of plant startup and power escalation testing shall be submitted following (1) receipt of an operating license, (2) amendment to the license involving a planned increase in power level, (3) installation of fuel that has a different design or has been manufactured by a different fuel supplier, and (4) modifications that may have significantly altered the nuclear, thermal, or hydraulic performance of the plant.

6.9.1.2 The startup report shall address each of the tests identified in the FSAR and shall include a description of the measured values of the operating conditions or characteristics obtained during the test program and a comparison of these values with design predictions and specifications. Any corrective actions that were required to obtain satisfactory operation shall also be described. Any additional specific details required in license conditions based on other commitments shall be included in this report.

ADMINISTRATIVE CONTROLS

6.9.1.3 Startup reports shall be submitted within (1) 90 days following completion of the startup test program, (2) 90 days following resumption or commencement of commercial power operation, or (3) 9 months following initial criticality, whichever is earliest. If the Startup Report does not cover all three events (i.e., initial criticality, completion of startup test program, and resumption or commencement of commercial power operation), supplementary reports shall be submitted at least every three months until all three events have been completed.

ANNUAL REPORTS^{1/}

6.9.1.4 Annual reports covering the activities of the unit as described below for the previous calendar year shall be submitted prior to March 1 of each year. The initial report shall be submitted prior to March 1 of the year following initial criticality.

6.9.1.5 Reports required on an annual basis shall include:

- a. A tabulation on an annual basis of the number of station, utility and other personnel (including contractors) receiving exposures greater than 100 mrem/yr and their associated man rem exposure according to work and job functions,^{2/} e.g., reactor operations and surveillance, inservice inspection, routine maintenance, special maintenance (describe maintenance), waste processing, and refueling. The dose assignment to various duty functions may be estimates based on pocket dosimeter, TLD, or film badge measurements. Small exposures totalling less than 20% of the individual total dose need not be accounted for. In the aggregate, at least 80% of the total whole body dose received from external sources shall be assigned to specific major work functions.
- ~~b. The results of steam generator tube inservice inspections performed during the report period. (CE, W & B&W units only)~~
- ~~c. The results of the core barrel movement monitoring activities performed during the report period. (CE units only)~~
- b d. ^{3/}Any other unit unique reports required on an annual basis.^{3/}

^{1/} A single submittal may be made for a multiple unit station. The submittal should combine those sections that are common to all units at the station.

^{2/} This tabulation supplements the requirements of §20.407 of 10 CFR Part 20.

ADMINISTRATIVE CONTROLS

SURVEILLANCE

ANNUAL RADIOLOGICAL ENVIRONMENTAL ~~OPERATING~~ REPORT^{2/}

6.9.1.6 Routine radiological environmental ^{Plant} ~~operating~~ ^{Surveillance} reports covering the operation of the ~~unit~~ during the previous calendar year shall be submitted prior to May 1 of each year. ~~The initial report shall be A single report submitted prior to May 1 of the year following initial criticality.~~ ~~report fulfils the requirements for both units at the site.~~

6.9.1.7 The annual radiological environmental, ^{Surveillance} ~~operating~~ reports shall include summaries, interpretations, and statistical evaluation of the results of the radiological environmental surveillance activities for the report period, including a comparison with preoperational studies, operational controls (as appropriate), and previous environmental surveillance reports and an assessment of the observed impacts of the plant operation on the environment. The reports shall also include the results of ^{the} ~~land use censuses~~ required by Specification 3.12.2. ~~if harmful effects or evidence of irreversible damage are detected by the monitoring, the report shall provide an analysis of the problem and a planned course of action to alleviate the problem.~~

The annual radiological environmental, ^{Surveillance} ~~operating~~ reports shall include summarized and tabulated results in the format of Table 6.9-1 of all radiological environmental samples taken during the report period. In the event that some results are not available for inclusion with the report, the report shall be submitted noting and explaining the reasons for the missing results. The missing data shall be submitted as soon as possible in a supplementary report.

~~The reports shall also include the following: a summary description of the radiological environmental monitoring program including sampling methods for each sample type, size and physical characteristics of each sample type, sample preparation methods, analytical methods, and measuring equipment used; a map of all sampling locations keyed to a table giving distances and directions from one reactor; the results of land use censuses required by the Specification 3.12.2; and the results of licensee participation in the Environmental Protection Agency's Environmental Radioactivity Laboratory Intercomparisons Studies (Crosscheck) Program required by Specification 3.12.3.~~

SEMIANNUAL RADIOACTIVE EFFLUENT RELEASE REPORT^{3/}

6.9.1.8 Routine radioactive effluent release reports covering the operation of the unit during the previous 6 months of operation shall be submitted within 60 days after January 1 and July 1 of each year. ~~The period of the first report shall begin with the date of initial criticality.~~

^{3/} A single submittal may be made for a multiple unit station. The submittal should combine those sections that are common to all units at the station; however, for units with separate radwaste systems, the submittal shall specify the releases of radioactive material from each unit.

TABLE 6.9-1

ENVIRONMENTAL RADIOLOGICAL MONITORING PROGRAM SUMMARY

Name of Facility _____ Docket No. _____

Location of Facility _____ Reporting Period _____
(County, State)

Medium or Pathway Sampled (Unit of Measurement)	Type and Total Number of Analyses Performed	Lower Limit of Detection ^a (LLD)	All Indicator Locations Mean (f) ^b Range ^b	Location with Highest Annual Mean		Control Locations Mean (f) ^b Range ^b	Number of REPORTABLE OCCURRENCES
				Name Distance and Direction	Mean (f) ^b Range ^b		
Air Particulates (pCi/m ³)	Gross β 416	0.003	0.08 (200/312) (0.05-2.0)	Middletown 5 miles 340°	0.10 (5/52) (0.08-2.0)	0.08 (8/104) (0.05-1.40)	1
	γ -Spec. 32						
	¹³⁷ Cs	0.003	0.05 (4/24) (0.03-0.13)	Smithville 2.5 miles 160°	0.08 (2/4) (0.03-0.13)	<LLD	4
	¹⁴⁰ Ba	0.003	0.03 (2/24) (0.01-0.08)	Podunk 4.0 miles 270°	0.05 (2/4) (0.01-0.08)	0.02 (1/8)	1
	⁸⁹ Sr 40	0.002	<LLD	-	-	<LLD	0
Fish pCi/kg (dry weight)	⁹⁰ Sr 40	0.0003	<LLD	-	-	<LLD	0
	γ -Spec. 8						
	¹³⁷ Cs	80	<LLD	-	<LLD	90 (1/4)	0
	¹³⁴ Cs	80	<LLD	-	<LLD	<LLD	0
	⁶⁰ Co	80	120 (3/4) (90-200)	River Mile 35 Podunk River	See column 4	<LLD	0

^aNominal Lower Limit of Detection (LLD) as defined in table notation s. of Table 4.12-1 of Specification 4.12.1.1.^bMean and range based upon detectable measurements only. Fraction of detectable measurements at specified locations is indicated in parentheses. (f)^dNote: The example data are provided for illustrative purposes only.Example Data Presentation^d

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6.9.1.9 The radioactive effluent release reports shall include a summary of the quantities of radioactive liquid and gaseous effluents - and solid waste released from the unit as outlined in Regulatory Guide 1.21, "Measuring, Evaluating, and Reporting Radioactivity in Solid Wastes and Releases of Radioactive Materials in Liquid and Gaseous Effluents from Light-Water-Cooled Nuclear Power Plants," with data summarized on a quarterly basis following the format of Appendix B thereof.

The radioactive effluent release reports shall include a summary of the meteorological conditions ~~concurrent with the release of gaseous effluents during each quarter as outlined in Regulatory Guide 1.21,~~ with data summarized on a quarterly basis following the format of Appendix B ~~thereof~~ of Regulatory Guide 1.21, Rev. 1.

~~The radioactive effluent release reports shall include an assessment of the radiation doses from radioactive effluents to individuals due to their activities inside the unrestricted area boundary (Figure 5.1-1) during the report period. All assumptions used in making these assessments (e.g., specific activity, exposure time and location) shall be included in these reports.~~

The radioactive effluent release reports shall include the following information for all unplanned offsite releases of radioactive materials in gaseous and liquid effluents:

- a. A description of the event and equipment involved.
- b. Cause(s) for the unplanned release.
- c. Actions taken to prevent recurrence.
- d. Consequences of the unplanned release.

The radioactive effluent release reports shall include an ^{estimate} assessment of the radiation doses ~~from the radioactive liquid and gaseous effluents released from the unit during each calendar quarter, as outlined in Regulatory Guide 1.21.~~ In addition, the unrestricted area boundary ^{maximum} noble gas gamma air and beta air doses shall be evaluated. ~~The meteorological conditions concurrent with the releases of effluents shall be used for determining the gaseous pathway doses. The assessment of radiation doses shall be performed in accordance with NUREG 0133.~~ The assessment of radiation doses shall be performed in accordance with the Off Site Dose Calculation Manual.

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MONTHLY ~~REACTOR~~ OPERATING REPORT

6.9.1.10 Routine reports of operating statistics and shutdown experience shall be submitted on a monthly basis to the Director, Office of Management and Program Analysis, U.S. Nuclear Regulatory Commission, Washington, D.C. 20555, with a copy to the Regional Office of Inspection and Enforcement, no later than the 15th of each month following the calendar month covered by the report.

REPORTABLE OCCURRENCES

6.9.1.11 The REPORTABLE OCCURRENCES of Specifications 6.9.1.12 and 6.9.1.13 below, including corrective actions and measures to prevent recurrence, shall be reported to the NRC. Supplemental reports may be required to fully describe final resolution of occurrence. In case of corrected or supplemental reports, a licensee event report shall be completed and reference shall be made to the original report date.

PROMPT NOTIFICATION WITH WRITTEN FOLLOWUP

6.9.1.12 The types of events listed below shall be reported within 24 hours by telephone and confirmed by telegraph, mailgram, or facsimile transmission to the Director of the Regional Office, or his designate no later than the first working day following the event, with a written followup report within 14 days. The written followup report shall include, as a minimum, a completed copy of a licensee event report form. Information provided on the licensee event report form shall be supplemented, as needed, by additional narrative material to provide complete explanation of the circumstances surrounding the event.

- a. Failure of the reactor protection system or other systems subject to limiting safety system settings to initiate the required protective function by the time a monitored parameter reaches the setpoint specified as the limiting safety system setting in the technical specifications or failure to complete the required protective function.
- b. Operation of the unit or affected systems when any parameter or operation subject to a limiting condition for operation is less conservative than the least conservative aspect of the limiting condition for operation established in the technical specifications.
- c. Abnormal degradation discovered in fuel cladding, reactor coolant pressure boundary, or primary containment.

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- d. Reactivity anomalies involving disagreement with the predicted value of reactivity balance under steady state conditions during power operation greater than or equal to 1% $\Delta k/k$; a calculated reactivity balance indicating a SHUTDOWN MARGIN less conservative than specified in the technical specifications; short-term reactivity increases that correspond to a reactor period of less than 5 seconds or, if subcritical, an unplanned reactivity insertion of more than 0.5% $\Delta k/k$; or occurrence of any unplanned criticality.
- e. Failure or malfunction of one or more components which prevents or could prevent, by itself, the fulfillment of the functional requirements of system(s) used to cope with accidents analyzed in the SAR.
- f. Personnel error or procedural inadequacy which prevents or could prevent, by itself, the fulfillment of the functional requirements of systems required to cope with accidents analyzed in the SAR.
- g. Conditions arising from natural or man-made events that, as a direct result of the event require unit shutdown, operation of safety systems, or other protective measures required by technical specifications.
- h. Errors discovered in the transient or accident analyses or in the methods used for such analyses as described in the safety analysis report or in the bases for the technical specifications that have or could have permitted reactor operation in a manner less conservative than assumed in the analyses.
- i. Performance of structures, systems, or components that requires remedial action or corrective measures to prevent operation in a manner less conservative than assumed in the accident analyses in the safety analysis report or technical specifications bases; or discovery during unit life of conditions not specifically considered in the safety analysis report or technical specifications that require remedial action or corrective measures to prevent the existence or development of an unsafe condition.
- ~~j. Occurrence of an unusual or important event that causes a significant environmental impact, that affects potential environmental impact from unit operation, or that has high public or potential public interest concerning environmental impact from unit operation.~~
- ~~k. Occurrence of radioactive material contained in liquid or gaseous holdup tanks in excess of that permitted by the limiting condition for operation established in the technical specifications.~~

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THIRTY DAY WRITTEN REPORTS

6.9.1.13 The types of events listed below shall be the subject of written reports to the Director of the Regional Office within thirty days of occurrence of the event. The written report shall include, as a minimum, a completed copy of a licensee event report form. Information provided on the licensee event report form shall be supplemented, as needed, by additional narrative material to provide complete explanation of the circumstances surrounding the event.

- a. Reactor protection system or engineered safety feature instrument settings which are found to be less conservative than those established by the technical specifications but which do not prevent the fulfillment of the functional requirements of affected systems.
- b. Conditions leading to operation in a degraded mode permitted by a limiting condition for operation or plant shutdown required by a limiting condition for operation.
- c. Observed inadequacies in the implementation of administrative or procedural controls which threaten to cause reduction of degree of redundancy provided in reactor protection systems or engineered safety feature systems.
- d. Abnormal degradation of systems other than those specified in 6.9.1.12.c above designed to contain radioactive material resulting from the fission process.
- e. An unplanned offsite release of ^(excluding dissolved and entrained noble gases) 1) more than 1 curie of radioactive material in liquid effluents, 2) more than 150 curies of noble gas in gaseous effluents, or 3) more than 0.05 curies of radioiodine in gaseous effluents. The report of an unplanned offsite release of radioactive material shall include the following information:
 1. A description of the event and equipment involved.
 2. Cause(s) for the unplanned release.
 3. Actions taken to prevent recurrence.
 4. Consequences of the unplanned release.

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- f. Measured levels of radioactivity in an environmental sampling medium determined to exceed the reporting level values of Table 6.9-2 when averaged over any calendar quarter sampling period. When more than one of the radionuclides in Table 6.9-2 are detected in the sampling medium, this report shall be submitted if:

$$\frac{\text{concentration (1)}}{\text{limit level (1)}} + \frac{\text{concentration (2)}}{\text{limit level (2)}} + \dots \geq 1.0$$

When radionuclides other than those in Table 6.9-2 are detected and are the result of plant effluents, this report shall be submitted if the potential annual dose to an individual is equal to or greater than the calendar year limits of Specifications 3.11.1.2, 3.11.2.2 and 3.11.2.3. This report is not required if the measured level of radioactivity was not the result of plant effluents; however, in such an event, the condition shall be reported and described in the Annual Radiological Environmental Operating Report.

SPECIAL REPORTS

Special reports may be required covering inspections, test and maintenance activities. These special reports are determined on an individual basis for each unit and their preparation and submittal are designated in the Technical Specifications.

6.9.2 Special reports shall be submitted to the Director of the Office of Inspection and Enforcement Regional Office within the time period specified for each report.

- f. Occurrence of an unusual or important event which causes a significant environmental impact. Excluded from this specification is reporting of the detection of evidence of nuclear weapons detonations.

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TABLE 6.9-2

REPORTING LEVELS FOR RADIOACTIVITY CONCENTRATIONS IN ENVIRONMENTAL SAMPLES

Reporting Levels

Analysis	Water	Airborne Particulate or Gases (pCi/m ³)	Fish (pCi/Kg, wet)	Milk (pCi/l)	Vegetables (pCi/Kg, wet)
H-3	3×10^4				
Mn-54	1×10^3		3×10^4		
Fe-59	4×10^2		1×10^4		
Co-58	1×10^3		3×10^4		
Co-60	3×10^2		1×10^4		
Zn-65	3×10^2		2×10^4		
Zr-Nb-95	4×10^2				
I-131	2	0.9		3	1×10^2
Cs-134	30	10	1×10^3	60	1×10^3
Cs-137	50	20	2×10^3	70	2×10^3
Ba-La-140	2×10^2			3×10^2	



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6.10 RECORD RETENTION

In addition to the applicable record retention requirements of Title 10, Code of Federal Regulations, the following records shall be retained for at least the minimum period indicated.

6.10.1 The following records shall be retained for at least five years:

- a. Records and logs of unit operation covering time interval at each power level.
- b. Records and logs of principal maintenance activities, inspections, repair and replacement of principal items of equipment related to nuclear safety.
- c. ALL REPORTABLE OCCURRENCES submitted to the Commission.
- d. Records of surveillance activities, inspections and calibrations required by these Technical Specifications.
- e. Records of changes made to the procedures required by Specification 6.8.1.
- f. Records of radioactive shipments.
- g. Records of sealed source and fission detector leak tests and results.
- h. Records of annual physical inventory of all sealed source material of record.

6.10.2 The following records shall be retained for the duration of the Unit Operating License:

- a. Records and drawing changes reflecting unit design modifications made to systems and equipment described in the Final Safety Analysis Report.
- b. Records of new and irradiated fuel inventory, fuel transfers and assembly burnup histories.
- c. Records of radiation exposure for all individuals entering radiation control areas.
- d. Records of gaseous and liquid radioactive material released to the environs.

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- e. Records of transient of operational cycles for those unit components identified in Table ~~5.7-1~~ 5.7.1-1.
- f. Records of reactor tests and experiments.
- g. Records of training and qualification for current members of the unit staff.
- h. Records of in-service inspections performed pursuant to these Technical Specifications.
- i. Records of Quality Assurance activities required by the QA Manual.
- j. Records of reviews performed for changes made to procedures or equipment or reviews of tests and experiments pursuant to 10 CFR 50.59.
- k. Records of meetings of the ^{PRB}~~(URC)~~ and the ^{SRB}~~(CNRAG)~~.

6.11 RADIATION PROTECTION PROGRAM

Procedures for personnel radiation protection shall be prepared consistent with the requirements of 10 CFR Part 20 and shall be approved, maintained and adhered to for all operations involving personnel radiation exposure.

6.12 HIGH RADIATION AREA (OPTIONAL)

6.12.1 In lieu of the "control device" or "alarm signal" required by paragraph 20.203(c)(2) of 10 CFR 20, each high radiation area in which the intensity of radiation is greater than 100 mrem/hr but less than 1000 mrem/hr shall be barricaded and conspicuously posted as a high radiation area and entrance thereto shall be controlled by requiring issuance of a Radiation Work Permit*. Any individual or group of individuals permitted to enter such areas shall be provided with or accompanied by one or more of the following:

- a. A radiation monitoring device which continuously indicates the radiation dose rate in the area.

*Health Physics personnel or personnel escorted by Health Physics personnel in accordance with approved emergency procedures shall be exempt from the RWP issuance requirement during the performance of their radiation protection duties, provided they comply with approved radiation protection procedures for entry into high radiation areas.

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- b. A radiation monitoring device which continuously integrates the radiation dose rate in the area and alarms when a preset integrated dose is received. Entry into such areas with this monitoring device may be made after the dose rate level in the area has been established and personnel have been made knowledgeable of them.
- c. An individual qualified in radiation protection procedures who is equipped with a radiation dose rate monitoring device. This individual shall be responsible for providing positive control over the activities within the area and shall perform periodic radiation surveillance at the frequency specified ~~by the facility Health Physicist~~ in the Radiation Work Permit.

6.12.2 The requirements of 6.12.1, above, shall also apply to each high radiation area in which the intensity of radiation is greater than 1000 mrem/hr. In addition, locked doors shall be provided to prevent unauthorized entry into such areas and the keys shall be maintained under the administrative control of the Shift ~~Supervisor~~ ^{Foreman} on duty and/or the Plant Health Physicist.