

TABLE 4.11.1.1.1-1 (Continued)

TABLE NOTATION

^bA batch release is the discharge of liquid wastes of a discrete volume. Prior to sampling for analyses, each batch shall be isolated, and then thoroughly mixed to assure representative sampling.

^cThe principal gamma emitters for which the LLD specification applies exclusively are the following radionuclides: Mn-54, Fe-59, Co-58, Co-60, Zn-65, Mo-99, Cs-134, Cs-137, Ce-141, and Ce-144. This list does not mean that only these nuclides are to be considered. Other gamma peaks that are identifiable, together with those of the above nuclides, shall also be analyzed and reported in the Semiannual Radioactive Effluent Release Report pursuant to Specification 6.9.1.12.

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^dA composite sample is one in which the quantity of liquid sampled is proportional to the quantity of liquid waste discharged and in which the method of sampling employed results in a specimen that is representative of the liquids released.

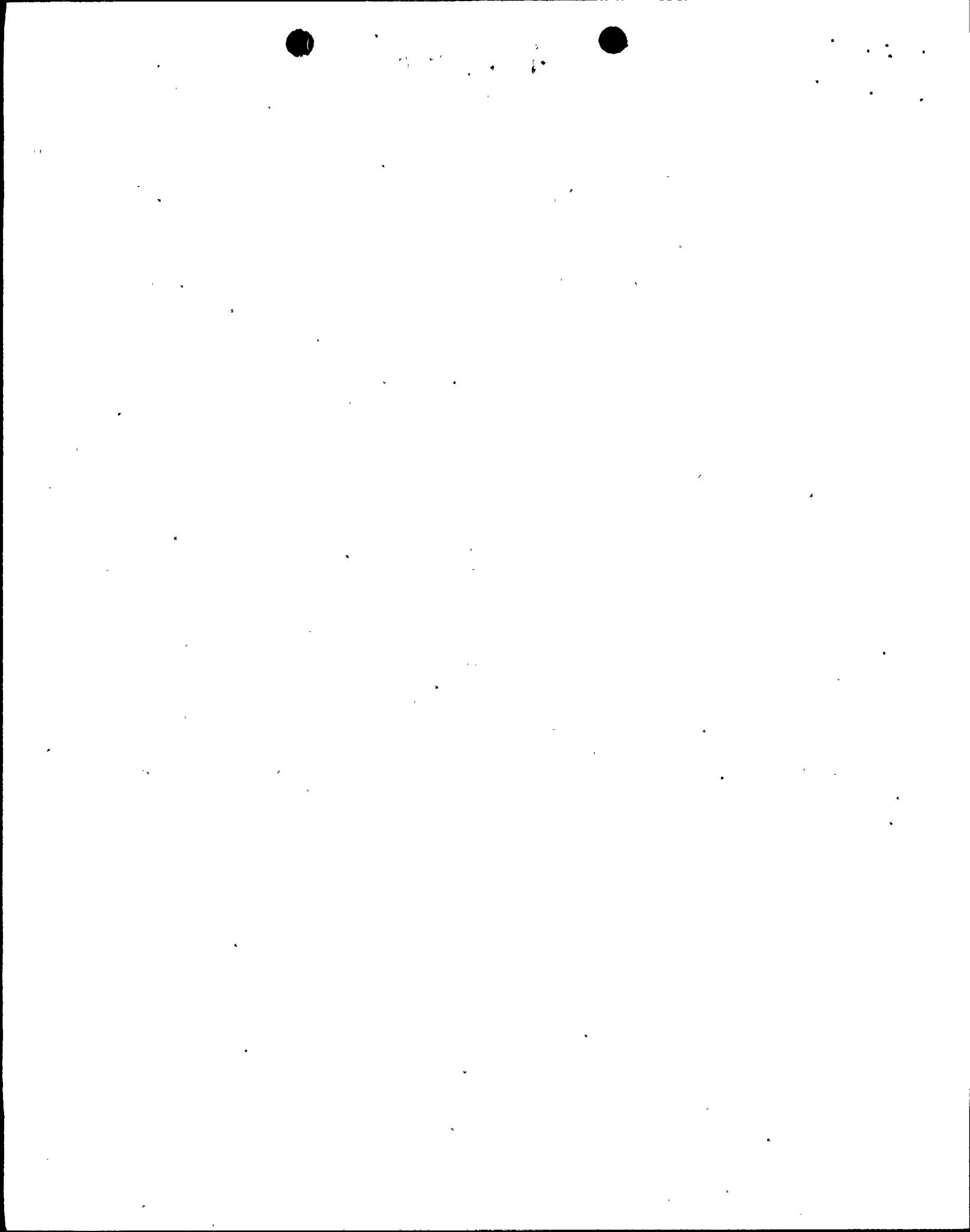
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TABLE 4.11.2.1.2-1 (Continued)TABLE NOTATION

- b. If the iodine or particulate monitoring channel(s) is(are) inoperative, analyses shall also be performed following shutdown, startup, or a THERMAL POWER change exceeding 15 percent of the RATED THERMAL POWER within a one hour period.
- c. Particulate and/or charcoal samples shall be analyzed when an alarm is received indicating rate of activity buildup exceeds 3 times normal
- d. Samples shall be changed at least once per 7 days and analyses shall be completed within 48 hours after changing, or after removal from sampler. If the iodine or particulate monitoring channel(s) is (are) inoperative, sampling shall also be performed at least once per 24 hours for at least 7 days following each shutdown, startup or THERMAL POWER change exceeding 15 percent of RATED THERMAL POWER in one hour and analyses completed within 48 hours of changing. When samples collected for 24 hours are analyzed, the corresponding LLDs may be increased by a factor of 10.
- e. (Deleted)
- f. The ratio of the sample flow rate to the sampled stream flow rate shall be known for the time period covered by each dose or dose rate calculation made in accordance with Specifications 3.11.2.1, 3.11.2.2 and 3.11.2.3.
- g. The principal gamma emitters for which the LLD specification applies exclusively are the following radionuclides: Kr-87, Kr-88, Xe-133, Xe-133m, Xe-135, Xe-135m and Xe-138 for gaseous emissions and Mn-54, Fe-59, Co-58, Co-60, Zn-65, Mo-99, Cs-134, Cs-137, Ce-141 and Ce-144 for particulate emissions. This list does not mean that only these nuclides are to be considered. Other gamma peaks which are identifiable, together with those of the above nuclides, shall also be analyzed and reported in the Semiannual Radioactive Effluent and Release Report, pursuant to Specification 6.9.1.12.

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RADIOLOGICAL ENVIRONMENTAL MONITORING

LIMITING CONDITION FOR OPERATION (Continued)

- c. With milk or fresh leafy vegetable samples unavailable from one or more of the sample locations required by Table 3.12.1-1, identify locations for obtaining replacement samples and add them to the radiological environmental monitoring program within 30 days. The specific locations from which samples were unavailable may then be deleted from the monitoring program. In lieu of a Licensee Event Report and pursuant to Specification 6.9.1.12, identify the cause of the unavailability of samples and identify the new location(s) for obtaining replacement samples in the next Semiannual Radioactive Effluent Release Report and also include in the report a revised figure(s) and table for the ODCM reflecting the new location(s).
- d. The provisions of Specifications 3.0.3 and 3.0.4 are not applicable.

SURVEILLANCE REQUIREMENTS

4.12.1 The radiological environmental monitoring samples shall be collected pursuant to Table 3.12.1-1 from the specific locations given in the table and figure in the ODCM and shall be analyzed pursuant to the requirements of Tables 3.12.1-1, the detection capabilities required by Table 4.12.1-1.

4.12.2 Cumulative potential dose contributions for the current calendar year from radionuclides detected in environmental samples shall be determined in accordance with the methodology and parameters in the ODCM.



TABLE 3.12.1-1 (Continued)

Table Notation

^a Specific parameters of distance and direction sector from the centerline of one reactor, and additional description where pertinent, shall be provided for each and every sample location in Table 3.12.1-1 in a table and figure(s) in the ODCM. Refer to NUREG-0133, "Preparation of Radiological Effluent Technical Specifications for Nuclear Power Plants," October 1978, and to Radiological Assessment Branch Technical Position, Revision 1, November 1979. Deviations are permitted from the required sampling schedule if specimens are unobtainable due to hazardous conditions, seasonal unavailability, malfunction of automatic sampling equipment and other legitimate reasons. If specimens are unobtainable due to sampling equipment malfunction, every effort shall be made to complete corrective action prior to the end of the next sampling period. All deviations from the sampling schedule shall be documented in the Annual Radiological Environmental Operating Report pursuant to Specification 6.9.1.11. It is recognized that, at times, it may not be possible or practicable to continue to obtain samples of the media of choice at the most desired location or time. In these instances suitable alternative media and locations may be chosen for the particular pathway in question and appropriate substitutions made within 30 days in the radiological environmental monitoring program. In lieu of a Licensee Event Report and pursuant to Specification 6.9.1.12, identify the cause of the unavailability of samples for that pathway and identify the new location(s) for obtaining replacement samples in the next Semiannual Radioactive Effluent Release Report and also include in the report a revised figure(s) and table for the ODCM reflecting the new location(s).

^b One or more instruments, such as a pressurized ion chamber, for measuring and recording dose rate continuously may be used in place of, or in addition to, integrating dosimeters. For the purposes of this table, a thermoluminescent dosimeter (TLD) is considered to be one phosphor; two or more phosphors in a packet are considered as two or more dosimeters. Film badges shall not be used as dosimeters for measuring direct radiation. The 40 stations is not an absolute number. The number of direct radiation monitoring stations may be reduced according to geographical limitations; e.g., at an ocean site, some sectors will be over water so that the number of dosimeters may be reduced accordingly. The frequency of analysis or readout for TLD systems will depend upon the characteristics of the specific system used and should be selected to obtain optimum dose information with minimal fading.

^c Methodology to guarantee complete recovery of radioiodine shall be described in the ODCM.

Table 4.12.1-1 (Continued)

TABLE NOTATION

^aThis list does not mean that only these nuclides are to be considered. Other peaks that are identifiable at 95% confidence level together with those of the above nuclides, shall also be analyzed and reported in the Annual Radiological Environmental Operating report pursuant to Specification 6.9.1.11.

^bRequired detection capabilities for thermoluminescent dosimeters used for environmental measurements are given in Regulatory Guide 4.13.

^cThe LLD is defined, for purpose of these specifications, as the smallest concentration of radioactive material in a sample that will yield a net count (above system background) that will be detected with 95% probability with only 5% probability of falsely concluding that a blank observation represents a "real" signal.

For a particular measurement system (which may include radiochemical separation):

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

Where:

LLD is the "a priori" lower limit of detection as defined above (as picocuries 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 disintegration),

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

2.22 is the number of disintegrations per minute per picocurie,

Y is the fractional radiochemical yield (when applicable),

λ is the radioactive decay constant for the particular radionuclide, and

Table 4.12.1-1 (Continued)

TABLE NOTATION

Δt for environmental samples is the elapsed time between sample collection (or end of the sample collection period) and time of counting.

Typical values of E, V, Y, and Δt should be used in the calculation.

It should be recognized that the LLD is defined as a priori (before the fact) limit representing the capability of a measurement system and not as an posteriori (after the fact) limit for a particular measurement. Analyses shall be performed in such a manner that the stated LLDs will be achieved under routine conditions. Occasionally background fluctuations, unavoidably small sample sizes, the presence of interfering nuclides, or other uncontrollable circumstances may render these LLDs unachievable. In such cases, the contributing factors shall be identified and described in the Annual Radiological Environmental Operating Report pursuant to Specification 6.9.1. ~~11~~

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^d LLD for drinking water samples.



RADIOLOGICAL ENVIRONMENTAL MONITORING

3/4.12.2 LAND USE CENSUS

LIMITING CONDITION FOR OPERATION

3.12.2 A land use census shall be conducted and shall identify within a distance of 8 km (5 miles) the location in each of the 16 meteorological sectors of the nearest milk animal, the nearest residence and the nearest garden* of greater than 50 m² (500 ft²) producing broad leaf vegetation.

APPLICABILITY: At all times.

ACTION:

- a. 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, in lieu of a Licensee Event Report, identify the new location(s) in the next Semiannual Radioactive Effluent Release Report, pursuant to Specification 6.9.1.12.
- b. With a land use census identify a location(s) that yields a calculated dose or dose commitment (via the same exposure pathway) 20 percent greater than at a location from which samples are currently being obtained in accordance with Specification 3.12.1, add the new location(s) to the radiological environmental monitoring program within 30 days. The sampling location(s), excluding the control station location, having the lowest calculated dose or dose commitment(s) (via the same exposure pathway) may be deleted from this monitoring program after October 31 of the year in which this land use census was conducted. In lieu of a Licensee Event Report and pursuant to Specification 6.9.1.12, identify the new location(s) in the next Semiannual Radioactive Effluent Release Report and also include in the report a revised figure(s) and table for the ODCM reflecting the new location(s).
- c. The provisions of Specifications 3.0.3 and 3.0.4 are not applicable.

SURVEILLANCE REQUIREMENTS

4.12.2 The land use census shall be conducted during the growing season at least once per 12 months using that information that will provide the best results, such as by a door-to-door survey, aerial survey, or by consulting local agriculture authorities. The results of the land use census shall be included in the Annual Radiological Environmental Operating Report pursuant to Specification 6.9.1.11.

*Broad leaf vegetation sampling of at least three different kinds of vegetation may be performed at the site boundary in each of two different direction sectors with the highest predicted D/Qs in lieu of the garden census. Specifications for broad leaf vegetation sampling in Table 3.12.1-1 item 4c shall be followed, including analysis of control samples.

RADIOLOGICAL ENVIRONMENTAL MONITORING

3/4.12.3 INTERLABORATORY COMPARISON PROGRAM

LIMITING CONDITION FOR OPERATION

3.12.3 Analyses shall be performed on radioactive materials supplied as part of an Interlaboratory Comparison Program which has been approved by the Commission.

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 pursuant to Specification 6.9.1.11.
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- b. The provisions of Specifications 3.0.3 and 3.0.4 are not applicable.

SURVEILLANCE REQUIREMENTS

4.12.3 A summary of the results obtained as part of the above required Interlaboratory Comparison Program shall be included in the Annual Radiological Environmental Operating Report pursuant to Specification 6.9.1.11.
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ADMINISTRATIVE CONTROLS

SEMI-ANNUAL RADIOACTIVE EFFLUENT RELEASE REPORT*

6.9.1.11 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.

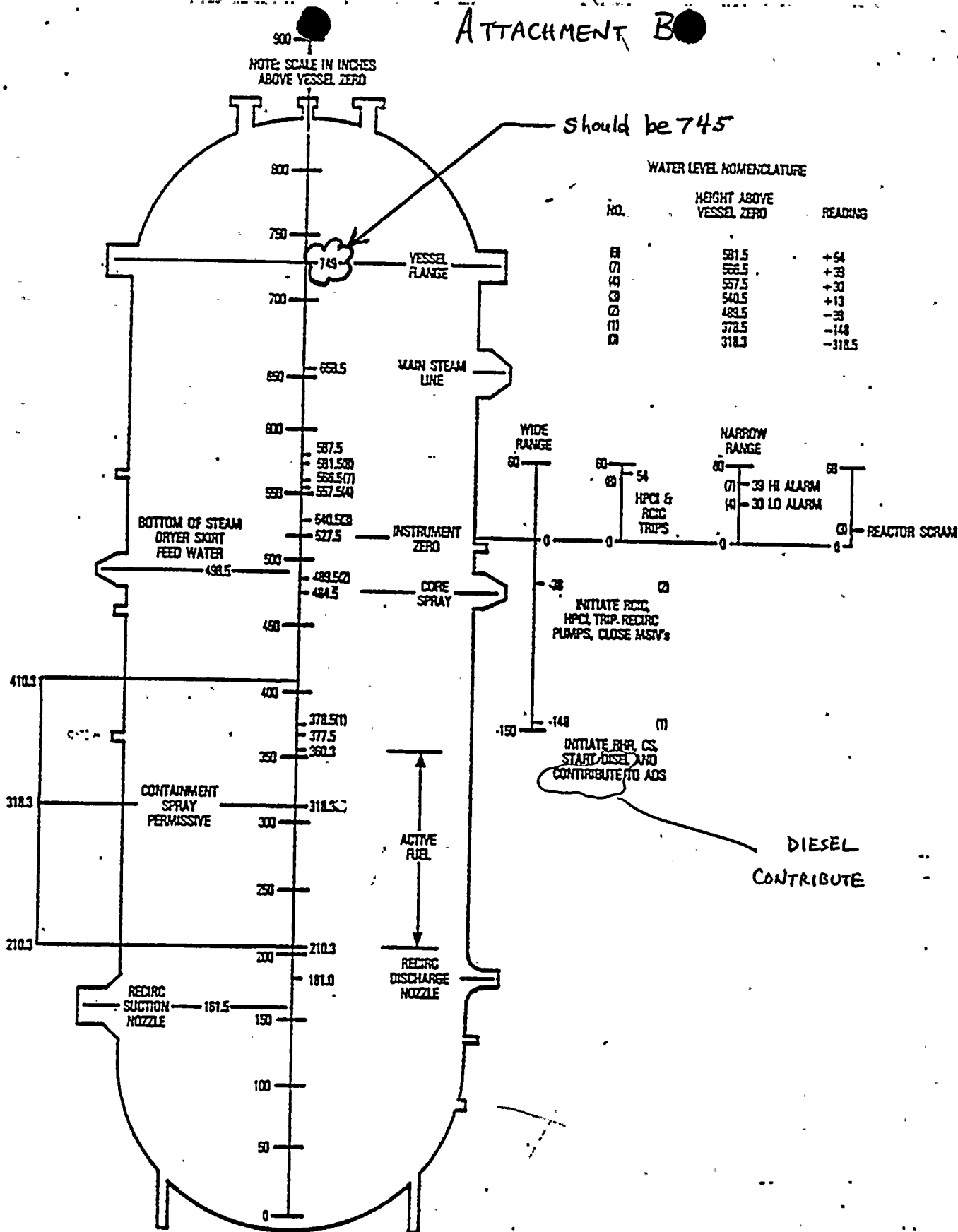
The Radioactive Effluent Release Reports shall include a summary of the quantities of radioactive liquid and gaseous effluents and solid waste released from the facility as outlined in Regulatory Guide 1.21, "Measuring, Evaluating, and Reporting Radioactivity in Solid Wastes and Releases of Radioactive Materials in Liquid and Gaseous Effluents from Light-Water-Cooled Nuclear Power Plants," Revision 1, June 1974, with data summarized on a quarterly basis following the format of Appendix B thereof.

The Radioactive Effluent Release Report to be submitted 60 days after January 1 of each year shall include an annual summary of hourly meteorological data collected over the previous year. This annual summary may be either in the form of an hour-by-hour listing on magnetic tape of wind speed, wind direction and atmospheric stability, and precipitation (if measured), or in the form of joint frequency distributions of wind speed, wind direction, atmospheric stability.** This same report shall include an assessment of the radiation doses due to the radioactive liquid and gaseous effluents released from the unit or station during the previous calendar year. This same report shall also include an assessment of the radiation doses from radioactive liquid and gaseous effluents to MEMBERS OF THE PUBLIC due to their activities inside the SITE BOUNDARY (Figure 5.1-3) during the report period. All assumptions used in making these assessments (i.e., specific activity, exposure time and location) shall be included in these reports. The assessment of radiation doses shall be performed in accordance with the methodology and parameters of the Offsite Dose Calculation Manual (ODCM).

*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.

**In lieu of submission with the first half year Radioactive Effluent Release Report, the licensee has the option of retaining this summary of required meteorological data on site in a file that shall be provided to the NRC upon request.

ATTACHMENT B



Bases Figure B 3/4 3-1
 REACTOR VESSEL WATER LEVEL



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TABLE 3.3.7.9-1

FIRE DETECTION INSTRUMENTATION

FIRE ZONE	INSTRUMENT LOCATION ROOM OR AREA	ROOM NO.	ELEV.	HEAT		IONIZATION		PHOTO-ELECTRIC	
				TOTAL MIN.	MIN.	TOTAL MIN.	MIN.	TOTAL MIN.	MIN.
a. Control Building									
0-24D	Lower Relay Room	G-203	698'-1"	4	2	4	2	NA	NA
0-24D	PGCC		698'-1"	54	27	30	15	NA	NA
0-24G	Lower Relay Room	G-201	698'-1"	4	2	4	2	NA	NA
0-25/E	Lower Cable Spreading Rm.	G-300	714'-0"	26	13	6	3	NA	NA
0-25/A	Lower Cable Spreading Rm.	G-301	714'-0"	20	10	6	3	NA	NA
0-26H	Control Rm. (Under Flr. Unit 1)*	G-409	729'-1"	NA	NA	18	9	NA	NA
0-26H	Control Room (Under Flr. Unit 2)*	G-409	729'-1"	NA	NA	15	7	NA	NA
0-26H	Control Room	G-409	729'-1"	NA	NA	10	5	NA	NA
0-26H	Control Rm. (Above Clg)*	G-409	729'-1"	NA	NA	89	34	NA	NA
0-27C	Upper Cable Spreading Rm.	G-500	753'-0"	25 29	12 14	88	34	NA	NA
0-27B	Upper Cable Spreading Rm.	G-507	753'-0"	24 28	12 14	5	2	NA	NA
0-27E	Upper Relay Room	G-501	754'-1"	2 4	2 2	2	1	NA	NA
0-27E	PGCC		754'-1"	55	27	30	15	NA	NA
0-27A	Upper Relay Room	G-502	754'-1"	2	1	2	1	NA	NA
0-28K	Battery Room	G-600	771'-0"	NA	NA	1	1	NA	NA
0-28L	Battery Room	G-601	771'-0"	NA	NA	1	1	NA	NA
0-28M	Battery Room	G-602	771'-0"	NA	NA	1	1	NA	NA
0-28N	Battery Room	G-603	771'-0"	NA	NA	1	1	NA	NA
0-28I	Battery Room	G-607	771'-0"	NA	NA	1	1	NA	NA
0-28J	Battery Room	G-608	771'-0"	NA	NA	1	1	NA	NA
0-28G	Battery Room	G-609	771'-0"	NA	NA	1	1	NA	NA
0-28F	Battery Room	G-610	771'-0"	NA	NA	1	1	NA	NA
0-28E	Battery Room	G-614	771'-0"	NA	NA	1	1	NA	NA
0-28C	Battery Room	G-615	771'-0"	NA	NA	1	1	NA	NA
0-28D	Battery Room	G-616	771'-0"	NA	NA	1	1	NA	NA
0-28T	Battery Room	G-617	771'-0"	NA	NA	1	1	NA	NA



TABLE 3.3.7.9-1 (Continued)

FIRE DETECTION INSTRUMENTATION

FIRE ZONE	INSTRUMENT LOCATION		INSTRUMENTS OPERABLE						
	ROOM OR AREA	ROOM NO.	ELEV.	HEAT TOTAL MIN.		IONIZATION TOTAL MIN.		PHOTO-ELECTRIC TOTAL MIN.	
b. Reactor Building									
1-1B	Core Spray Pump Room	I-10	645'-0"	NA	NA	5	2	NA	NA
1-1A	Core Spray Pump Room	I-17	645'-0"	NA	NA	7	3	NA	NA
1-1E	RHR Pump Room	I-13	645'-0"	NA	NA	NA	NA	13	7
1-1F	RHR Pump Room	I-14	645'-0"	NA	NA	NA	NA	15	8
1-1D	RCIC Pump Room	I-12	645'-0"	2	1	NA	NA	5	2
1-1C	HPCI Pump Room	I-11	645'-0"	2	1	NA	NA	7	3
1-1G	Sump Room	I-15	645'-0"	NA	NA	2	1	NA	NA
1-2D	Remote Shutdown Panel Rm.	I-109	670'-0"	NA	NA	2	1	NA	NA
1-4C	Switchgear Room	I-406	719'-0"	NA	NA	2	1	NA	NA
1-4D	Switchgear Room	I-407	719'-0"	NA	NA	2	1	NA	NA
1-4A	Containment Access Area	I-401	719'-0"	NA	NA	2717	813	NA4	NA2
1-5F	Load Center Room	I-507	749'-1"	NA	NA	2	1	NA	NA
1-5G	Load Center Room	I-510	749'-1"	NA	NA	2	1	NA	NA
1-2A	Access Area	I-105	670'-0"	NA	NA	74	23	NA	NA
1-3A	Access Area	I-203	683'-0"	NA	NA	74	23	NA	NA
1-3B	Access Area	I-200	683'-0"	NA	NA	128	86	NA	NA
1-3C	Access Area	I-202	683'-0"	NA	NA	NA	NA	13	6
1-4B	Pipe Penetration Room	I-403	719'-1"	NA	NA	12	1	NA	NA
1-4G	Main Steam Piping	I-411	719'-1"	NA	NA	NA	NA	46	23
1-5B	Valve Access Area	I-515	761'-10"	NA	NA	NA	NA	2	1
1-5D	RWCU Pumps & Heat Exchangers	I-501	749'-1"	NA	NA	NA	NA	212	26
1-5E	Penetration Room	I-506	749'-1"	NA	NA	NA	NA	2	1
1-6A	Access Area	I-606	779'-1"	NA	NA	9	4	NA	NA
1-6I	Fuel Pool Holding Pump Room		779'-1"	NA	NA	NA	NA	2	1



TABLE 3.3.7.9-1 (Continued)
FIRE DETECTION INSTRUMENTATION

<u>INSTRUMENT LOCATION</u>		<u>INSTRUMENTS OPERABLE</u>															
<u>FIRE ZONE</u>	<u>ROOM OR AREA</u>	<u>ROOM NO.</u>	<u>ELEV.</u>	<u>HEAT TOTAL MIN.</u>		<u>IONIZATION TOTAL MIN.</u>		<u>PHOTO-ELECTRIC TOTAL MIN.</u>									
<u>Reactor Building (Continued)</u>																	
1-6D	H&V Equipment Room	I-612	779'-1"	NA	NA	12	10	5	6	NA	NA						
1-6E	Recirculation Fans Area	I-615	779'-1"	NA	NA	2	1			NA	NA						
0-6G	Surge Tank Vault	I-601	779'-4"	NA	NA	2	1			NA	NA						
1-7A	H&V Fan and Filter Rooms	I-709	799'-1"	2	2	1	1	8	15	8	7	2	NA	2	NA	2	NA
1-7B	Recirculation Fan Room	I-701	799'-1"	NA	NA	2	1	2	1	NA	NA	NA	NA				
0-8A	Refueling Floor	-	818'-1"	NA	NA	NA	NA			30	15						
c. <u>ESSW Pumphouse</u>																	
0-51	Pump Room	E-1	685'-6"	NA	NA	6	3			NA	NA						
0-52	Pump Room	E-2	685'-6"	NA	NA	6	3			NA	NA						
										<u>INFRA-RED (FLAME) TOTAL MIN.</u>							
d. <u>Diesel Generator Building</u>																	
0-41A	Diesel Generator Rooms and	BG-1 DG-18	660'-0" 677'-0"	22	11	2	1			15	7						
0-41C	Diesel Generator Rooms and	DG-2 DG-17	660'-0" 677'-0"	22	11	2	1			15	7						
0-41B	Diesel Generator Rooms and	BG-3 DG-18	660'-0" 677'-0"	23 22	11	2	1			15	7						
0-41D	Diesel Generator Rooms and	BG-4 DG-19	660'-0" 677'-0"	22	11	2	1			15	7						

*Not accessible.



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