Docket No. 50-245

ATTACHMENT 1

MILLSTONE NUCLEAR POWER STATION, UNIT NO. 1

PROPOSED REVISIONS TO TECHNICAL SPECIFICATIONS

RADIOLOGICAL EFFLUENT TECHNICAL SPECIFICATIONS

REVISION 1

AUGUST, 1982

D.D. RADIOACTIVE WASTE TREATMENT SYSTEMS

RADIOACTIVE WASTE TREATMENT SYSTEMS are those liquid, gaseous, and solid waste systems which are required to maintain control over radioactive material in order to meet the LCOs set forth in the Specifications.

E.E. MAJOR CHANGES TO RADIOACTIVE WASTE TREATMENT SYSTEMS (SOLIDS, LIQUIDS AND GASES)

MAJOR CHANGES TO RADIOACTIVE WASTE TREATMENT SYSTEMS shall include:

1) Major changes in process equipment, components, structures and effluent monitoring instrumentation from those described in the FSAR,

2) Major changes in the design of radwaste treatment systems (liquid, gaseous and solid) that could significantly alter the characteristics and/or quantities of effluents released or volumes of solid waste stored or shipped offsite from those previously considered in the FSAR, and

3) Changes in the system design which may invalidate the accident analysis as described in the FSAR.

F.F. OFFSITE DOSE CALCULATION MANUAL (ODCM)

An OFFSITE DOSE CALCULATION MANUAL (ODCM) shall be a manual containing the methodology and parameters to be used in the calculation of offsite doses due to radioactive gaseous and liquid effluents and in the calculation of gaseous and liquid effluent monitoring instrumentation alarm/trip setpoints and in the conduct of environmental radiological monitoring. Requirements of the ODCM are provided in Specification 6.16.

G.G. OFF-GAS SYSTEM

An OFF-GAS SYSTEM is any system designed and installed to reduce radioactive gaseous effluents by collecting primary coolant system offgases from the primary system and providing for delay or holdup for the purpose of reducing the total radioactivity prior to release to the environment.

H.H. RADWASTE VENTILATION EXHAUST TREATMENT SYSTEM

The RADWASTE VENTILATION EXHAUST TREATMENT SYSTEM is designed and installed to reduce radioactive material in particulate form in effluents by passing ventilation exhaust gases through HEPA filters for the purpose of removing particulates from the gaseous exhaust stream prior to the release to the environment. Such a system is not considered to have any effect on noble gas effluents.

I.I. PROCESS CONTROL PROGRAM (PCP)

A PROCESS CONTROL PROGRAM shall contain sampling, analysis, and formulation determination by which SOLIDIFICATION of radioactive wastes from liquid systems is assured.

J.J. SOLIDIFICATION

SOLIDIFICATION shall be the conversion of wet radioactive wastes into a form that meets shipping and burial ground requirements.

K.K. PURGE - PURGING

PURGE or PURGING is the controlled process of discharging air or gas from a confinement to maintain temperature, pressure, humidity, concentration or other operating condition, in such a manner that replacement air or gas is required to purify the confinement.

L.L. VENTING

VENTING is the controlled process of discharging air or gas from a confinement to maintain temperature, pressure, humidity, concentration or other operating condition, in such a manner that replacement air or gas is not provided or required during venting. Vent, used in system names, does not imply a VENTING process.

M.M MEMBER(S) OF THE PUBLIC

MEMBER(S) OF THE PUBLIC shall include all persons who are not occupationally associated with the plant. This category does not include employees of the utility, its contractors or its vendors. Also excluded from this category are persons who enter the sit to service equipment or to make deliveries. This category does include persons who use portions of the site for recreational, occupational or other purposed not associated with the plant.

The term "REAL MEMBER OF THE PUBLIC" means an individual who is exposed to existing dose pathways at one particular location.

N.N. SITE BOUNDARY

The SITE BOUNDARY shall be that line beyond which the land is not owned, leased or otherwise controlled by the licensee.

O.O. UNRESTRICTED AREA

An UNRESTRICTED AREA shall be any area at or beyond the site boundary to which access is not controlled by the licensee for purposes of protection of individuals from exposure to radiation and radioactive materials or any area within the site boundary used for residential quarters or industrial, commercial institutional and/or recreational purposes.

LIMITING CONDITION FOR OPERATION	SURVEILLANCE REQUIREMENT
J. Condensate Demineralizers	J. Condensate Demineralizers
1. Regeneration of a condensate demineralizing resin change shall occur before the unused capacity of the resin reaches a minimum value of 30 pounds as chloride ions.	1. The percent of the remaining ion exchange capacity of the anion resins shall be calculated and logged:
2. Anion resins in the condensate demineralizing system shall have a minimum salt-splitting capacity of 0.75 milliequivalents per milliliter in the wet, chloride form. Anion resins which do not have a capacity of 0.75 milliequivalents per milliliter will be replaced with new resin as will the cation resin which occupies the same bed.	a. Weekly when the influent conductivity is between 0.055 and 0.3 μmho/cm;
3. At least one condensate demineralizer influent conductivity instrument shall be operable.	b. Daily when the influent conductivity is equal to or greater than 0.3 μmho/cm.
4. Whenever a demineralizer is on-line, the conductivity of either its effluent or the condensate-booster pump discharge shall be continuously monitored.	2. Anion resins in all condensate demineralizer charges shall be analyzed quarterly for salt-splitting capacity.
5. Flow rate and/or integrating flow instrumentation shall be operable and recorded for each demineralizer.	K. Mechanical Condenser Vacuum Pump
K. Mechanical Condenser Vacuum Pump	At least once during each operating cycle, verify automatic securing and isolation of the mechanical condenser vacuum pump.
1. The mechanical condenser vacuum pump shall be capable of being isolated and secured on a signal of high radioactivity whenever the main steam line isolation valves are open.	

LIMITING CONDITION FOR OPERATION	SURVEILLANCE REQUIREMENT
B. Standby Gas Treatment System	B. Standby Gas Treatment System
1. Except as specified in Specifications 3.7.B.3 and 3.7.B.4 below, both circuits of the standby gas treatment system and the emergency power sources required for operation of such circuits shall be operable at all times when secondary containment integrity is required.	1. At least once per operating cycle, the following conditions shall be demonstrated:
2. a. The results of the in-place cold DOP and halogenated hydrocarbon tests, at minimum flow rate of 500 SCFM, on HEPA, filters and charcoal adsorber banks shall show $\geq$ 99% DOP removal and $\geq$ 99% halogenated hydrocarbon removal.	a. Pressure drop across the combined HEPA filters and charcoal adsorber banks is less than 7 inches of water at the system design flow rate (1100 SCFM).
	b. Inlet heater output is at least 5KW.
	c. Air distribution is uniform with $\pm$ 20% of the averaged flow per unit across the HEPA filters and charcoal adsorbers.
b. The results of laboratory carbon sample analysis shall show $\geq$ 90% radioactive methyl iodide removal at a velocity within 20% of actual system design, 0.5 to 1.5 mg/m^3 inlet methyl iodide concentration, $\geq$ 95% R.H. and $\geq$ 190°F.	2. a. The tests and sample analysis of Specification 3.7.B.2 shall be performed initially and at least once per year for standby service or after 720 hours of system operation and following painting, fire or chemical release in any ventilation zone communicating with the system that could contaminate the HEPA filters or charcoal adsorbers.
c. Fans shall be shown to operate within $\pm$ 10% design flow.	b. Cold DOP testing shall be performed after each complete or partial replacement of the HEPA filter bank or after any structural maintenance on the system housing.

LIMITING CONDITION FOR OPERATION	SURVEILLANCE REQUIREMENT
3. From and after the date that one circuit of the standby gas treatment system is made or found to be inoperable for any reason, reactor operation and fuel handling is permissible only during the succeeding seven days unless such circuit is sooner made operable, provided that during such seven days all active components of the other standby gas treatment circuit shall be operable.	c. Halogenated hydrocarbon testing shall be performed after each complete or partial replacement of the charcoal adsorber bank or after any structural maintenance on the system housing.
4. During fuel handling both circuits of the standby gas treatment system shall be operable, except as stated in paragraph 3.7.B.3. In addition, there shall be operable either (a) two sources of offsite power (two 345KV or one 27.6KV and one 345KV) and one emergency power source, or (b) one source of offsite power (345KV or 27.6KV) and two emergency power sources to operate components required in paragraph 3.7.B.3.	
5. If the above cannot be met, procedures shall be initiated immediately to establish the conditions listed in 3.7.C.1A through d and compliance shall be completed within 24 hours thereafter.	
6. Primary containment shall be purged through the standby gas treatment system at all times when primary containment integrity is required.	

LIMITING CONDITION FOR OPERATION	SURVEILLANCE REQUIREMENTS
3.8 RADIOACTIVE MATERIALS	
3.8.A RADIOACTIVE LIQUID EFFLUENT INSTRUMENTATION	4.8.A RADIOACTIVE LIQUID EFFLUENT INSTRUMENTATION
3.8.A.1 The radioactive liquid effluent monitoring instrumentation channels shown in Table 3.8-1 shall be OPERABLE with applicable alarm/trip setpoints set to ensure that the limits of Specification 3.8.C.1 are not exceeded. The setpoints shall be determined in accordance with procedures as described in the ODCM. Applicability: As shown in Table 3.8-1. Action: 1. With the number of channels less than the minimum channels operable requirement, take the action shown in Table 3.8-1. 2. In the event a limiting condition for operation and/or associated action requirement cannot be satisfied, this shall not require unit shutdown or prevent a change in operational modes. 3. Restore the inoperable monitor to OPERABLE status within 30 days or, in lieu of any other report required by Specification 6.9.1, submit a report via the Semi Annual Effluent Release Report whenever an instrument is inoperable for 30 days or more outlining the reasons for the inoperability and the plans for returning the monitor to OPERABLE status. Releases need not be terminated after the time frame specified in the Action Statement, provided the specified ACTION is continued.	4.8.A.1 Each radioactive liquid effluent monitoring instrumentation channel shall be demonstrated OPERABLE by performance of the INSTRUMENT CHECK, INSTRUMENT CALIBRATION, and INSTRUMENT FUNCTIONAL TEST operations at the frequencies shown in Table 4.8-1.

TABLE 3.8-1

RADIOACTIVE LIQUID EFFLUENT MONITORING INSTRUMENTATION

	Instrument	Minimum # Operable	Alarm Setpoints Required	Applicability	Action
1.	Gross Radioactivity Monitors Providing Automatic Termination of Release				
	a. Liquid Radwaste Effluent Line	1	Yes	*	A
2.	Gross Radioactivity Monitors Not Providing Automatic Termination of Release				
	a. Service Water Effluent Line	1	Yes	*	B
3.	Flow Rate Measurement Devices				
	a. Liquid Radwaste	1	No	*	C
	b. Dilution Water Flow	**	No	*	NA

* - At all times - which means that channels shall be OPERABLE and in service on a continuous, uninterrupted basis, except that outages are permitted, within the time frame of the specified ACTION statement, for the purpose of maintenance and performance of required tests, checks and calibrations.

** - Dilution water flow is determined by the use of condenser cooling water and service water pump status. Pump status is only reviewed for purposes of determining flows.

NA - Not Applicable.

TABLE 3.8-1 (Continued)

ACTION STATEMENTS

Action A

With the number of channels OPERABLE less than required by the Minimum Channels OPERABLE requirement, effluent releases may continue provided that best efforts are made to repair the instrument within 30 days and that prior to initiating a release:

1. At least two independent samples are analyzed in accordance with Specification 4.8.C.1.1 and;

2. The release rate calculations and discharge valving are verified.

Action B

With the numbers of channels OPERABLE less than required by the Minimum Channels OPERABLE requirement, effluent releases via this pathway may continue provided that best efforts are made to repair the instrument within 30 days and that once per 24 hours grab samples are collected and analyzed for gross radioactivity (beta or gamma) at a lower limit of detection of at least $5X10^{-7}$ uCi/ml.

Action C

With the number of channels OPERABLE less than required by the Minimum Channels OPERABLE requirement, effluent releases via this pathway may continue provided that best efforts are made to repair the instrument within 30 days and that the flow rate is estimated once per 4 hours during actual releases.

TABLE 4.8-1

RADIOACTIVE LIQUID EFFLUENT MONITORING
INSTRUMENTATION SURVEILLANCE REQUIREMENTS

	Instrument	Instrument Check	Instrument Calibration	Instrument Functional
1.	Gross Radioactivity Monitors Providing Alarm and Automatic Termination of Release			
	a. Liquid Radwaste Effluent Line	D (1)	R (2)	Q (3)
2.	Gross Radioactivity Monitors Providing Alarm But Not Providing Automatic Termination of Release			
	a. Service Water Effluent Line	D (1)	R (2)	Q (3)
3.	Flow Rate Measurement Devices			
	a. Liquid Radwaste Effluent Line	D (1)	R	Q (5)
	b. Dilution Water Flow	D (4)	NA	NA

D = Daily
R = Once every 18 months
Q = Once every 3 months
NA = Not Applicable

TABLE 4.8-1 (Continued)

TABLE NOTATION

(1) Instrument check shall consist of verifying indication of flow during periods of discharge. Instrument check need only be performed daily when discharges are made from this pathway.

(2) Calibration shall include the use of a radioactive solid source, the activity of which can be traced to an NBS source. The radioactive source shall be in a known, reproducible geometry.

(3) The INSTRUMENT 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. Instrument indicates a downscale failure or circuit failure.

3. Instrument controls not set in operate mode.

* Automatic isolation shall also be demonstrated for the liquid radwaste effluent line.

(4) Pump status shall be checked daily.

(5) The quarterly functional test for the liquid radwaste flow monitor shall consist only of a comparison of the calculated volumes discharged by using the measured flow rate versus the tank level decrease. This surveillance is not required if no waste was discharged during the quarter.

LIMITING CONDITION FOR OPERATION	SURVEILLANCE REQUIREMENTS
3.8.B Radioactive Gaseous Effluent Monitoring Instrumentation	4.8.B Radioactive Gaseous Effluent Instrumentation
3.8.B.1 The radioactive gaseous effluent monitoring instrumentation channels shown in Table 3.8-2 shall be OPERABLE with applicable alarm/trip setpoints set to ensure that the limits of Specification 3.8.D.1 are not exceeded. The setpoints shall be determined in accordance with procedures as described in the ODCM.	4.8.B.1 Each radioactive gaseous effluent monitoring instrumentation channel shall be demonstrated OPERABLE by performance of the INSTRUMENT CHECK, INSTRUMENT CALIBRATION, and INSTRUMENT FUNCTIONAL TEST operations at the frequencies shown in Table 4.8-2.
Applicability: As shown in Table 3.8-2.	
Action:	
1. With the number of channels less than the minimum channels operable requirement, take the action shown in Table 3.8-2.	
2. In the event of a limiting condition for operation and/or associated action requirement cannot be satisfied, this shall not require unit shutdown or prevent a change in operational modes, except for Table 3.8.2 action B statement for SJAE off-gas monitor.	
3. Restore the inoperable monitor to OPERABLE status within 30 days or, in lieu of any other report required by Specification 6.9.1, submit a report via the Semi Annual Effluent Release Report whenever an instrument is inoperable for 30 days or more outlining the reasons for the inoperability and the plans for returning the monitor to OPERABLE status. Releases need not be terminated after the time frame specified in the Action Statement, provided the specified actions are continued.	

TABLE 3.8-2

RADIOACTIVE GASEOUS EFFLUENT MONITORING INSTRUMENTATION

	Instrument	Minimum # Operable	Alarm Setpoints	Applicability	Action
1.	Main Condenser Augmented Offgas Treatment System Explosive Gas Monitor (For System Designed to Withstand Effects of a Hydrogen Explosion)				
	(a) Hydrogen Monitor	1	Yes	**	A
2.	Condenser Air Ejector Noble Gas Activity Monitor				
	(a) SJAE Off-Gas Monitor	2	Yes	*	B
3.	MP1 Main Stack				
	(a) Noble Gas Activity Monitor	1	Yes	*	C
	(b) Iodine Sampler	1	No	*	D
	(c) Particulate Sampler	1	No	*	D
	(d) Stack Flow Rate Monitor	1	No	*	E
	(e) Sampler Flow Rate Monitor	1	Yes	*	E

* - At all times which means that channels shall be OPERABLE and in service on a continuous, uninterrupted basis, except that outages are permitted, within the time-frame of the specified action statement, for the purpose of maintenance and performance of required tests, checks and calibrations.

** - During augmented off-gas treatment system (recombiner) operation.

TABLE 3.8-2 (Continued)

ACTION STATEMENTS

Action A

With the number of channels OPERABLE less than required by the Minimum Channels OPERABLE requirement, operation of the main condenser augmented offgas treatment system may continue provided that best efforts are made to repair the instrument within 30 days and that gas samples are collected once per 12 hours and analyzed for hydrogen within the ensuing 4 hours.

Action B

With one monitor inoperable, releases via this pathway may continue provided the inoperable monitor is placed in the tripped position. With both monitors inoperable, releases may continue for up to 72 hours provided the augmented offgas system is not bypassed and the main stack monitor is operable, otherwise, be in at least HOT STANDBY within 12 hours.

Action C

With the number of channels OPERABLE less than required by the Minimum Channels OPERABLE requirement, effluent releases via this pathway may continue provided that best efforts are made to repair the instrument within 30 days and that grab samples are taken once per 12 hours and these samples are analyzed for gross activity within 24 hours.

Action D

With the number of samplers OPERABLE less than required by the Minimum number OPERABLE requirement, effluent releases via this pathway may continue provided that best efforts are made to repair the instrument within 30 days and that samples are continuously collected with auxiliary sampling equipment for periods of seven (7) days and analyzed for principle gamma emitters with half lives greater than 8 days within 48 hours after the end of the sampling period.

Action E

With the number of channels OPERABLE less than required by the Minimum Channels OPERABLE requirement, effluent releases via this pathway may continue provided that best efforts are made to repair the instrument within 30 days and that the flow rate is estimated once per 4 hours.

TABLE 4.8-2

RADIOACTIVE GASEOUS EFFLUENT MONITORING
INSTRUMENTATION SURVEILLANCE REQUIREMENTS

	Instrument	Instrument Check	Instrument Calibration	Instrument Functional
1.	Main Condenser Augmented Off-Gas Treatment System Explosive Gas Monitor			
	(a) Hydrogen Monitor	D (1)	Q (2)	M
2.	Condenser Air Ejector Noble Gas Activity Monitor			
	(a) SJAE Off-Gas Monitor	D (3)	R (4)	Q (5)
3.	Ml Main Stack			
	(a) Noble Gas Activity Monitor	D (3)	R (6)	Q (7)
	(b) Iodine Sampler	NA	NA	NA
	(c) Particulate Sampler	NA	NA	NA
	(d) Stack Flow Rate Monitor	D (3)	R	Q (7)
	(e) Sampler Flow Rate	D	R	NA

D = Daily
Q = Once every 3 months
M = Once every month
R = Once every 18 months
NA = Not Applicable

TABLE 4.8-2 (Continued)

TABLE NOTATION

(1) Instrument check daily only when the augmented off-gas treatment system is in operation.

(2) The INSTRUMENT 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.

(3) Instrument check daily only when there exist releases via this pathway.

(4) Calibration shall include the use of a known source whose strength has been determined through the use of a condenser R meter traceable to the NBS. The source and detector should be in a known reproducible geometry.

(5) The instrument functional test shall also demonstrate the following:

1. Automatic isolation of the off-gas line occurs within 15 minutes if any of the following conditions exist:

a. Both monitors indicate measured levels above the trip setpoint.

b. One monitor indicates measured levels above the trip setpoint, and the other indicates a downscale trip.

2. Control room alarm annunciation occurs if any of the following conditions exist:

a. Either monitor indicates measured levels above the alarm/trip setpoint.

b. Either monitor indicates a downscale failure.

c. Instrument controls are not set in the operate mode.

(6) Calibration shall include the use of a known source whose strength is determined by a detector which has been calibrated to an NBS source. These sources shall be in a known reproducible geometry.

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

TABLE 4.8-2 (Continued)

TABLE NOTATION

1. Instrument indicates measured levels above the alarm/trip setpoint.*

2. Instrument indicates a downscale failure.

3. Instrument controls not set in operate mode.

* - Not applicable for stack flow rate monitor.

LIMITING CONDITION FOR OPERATION	SURVEILLANCE REQUIREMENTS
3.8.C Radioactive Liquid Effluents	4.8.C Radioactive Liquid Effluents
3.8.C.1 Liquid Effluents Concentration	4.8.C.1 Liquid Effluents Concentration
3.8.C.1.1 The concentration of radioactive material released from the site (see Figure 3.8-1) shall not exceed the concentrations specified in 10 CFR Part 20, Appendix B, Table II, Column 2 for radionuclides other than dissolved or entrained noble gases. For dissolved or entrained noble gases, the concentration shall not exceed 2×10^{-4} uCi/ml total activity.	4.8.C.1.1 Radioactive liquid wastes shall be sampled and analyzed according to the sampling and analysis program of Table 4.8-3.
APPLICABILITY: At all times.	4.8.C.1.2 The results of radioactive analysis shall be used in accordance with the methods of the ODCM to assure that the concentrations at the point of release are maintained within the limits of Specification 3.8.C.1.1.
ACTION:	
With the concentration of radioactive material released from the site exceeding the above limits, restore the concentration within the above limits within 15 minutes.	

TABLE 4.8-3

RADIOACTIVE LIQUID WASTE SAMPLING AND ANALYSIS PROGRAM

Liquid Release Type	Sampling Frequency	Analysis Frequency	Type of Activity Analysis	Lower Limit of Detection (LLD) (μCi/ml)[a]
A. Batch Tanks:[f]				
Waste Sample Tanks Floor Drain Sample Tank Decon Solution Tank	Prior to Each Batch Release	Prior to Each Batch Release	Principal Gamma[b] Emitters	5×10^{-7}
			I-131, Mo-99, Ce-144	1×10^{-6}
	P One Batch/M	M	Dissolved and Entrained Gases	1×10^{-5}
	Prior to Each Batch Release	M Composite	H-3	1×10^{-5}
			Gross Alpha	1×10^{-7}
	Prior to Each Batch Release	Q Composite	Sr-89, Sr-90	5×10^{-8}
			Fe-55	1×10^{-6}
B. Continuous Release:	Grab[D] Sample[d]	W Composite[c]	Priciple Gamma[b] Emitters	5×10^{-7}
			I-131, Mo-99, Ce-144	1×10^{-6}
Service Water	Grab[M] Sample	M	Dissolved and[e] Entrained Gases	1×10^{-5}
	Grab[W] Sample	M Composite[c]	H-3[e]	1×10^{-5}
			Gross Alpha[e]	1×10^{-7}
	Grab[W] Sample	Q Composite[c]	Sr-89[e], Sr-90[e]	5×10^{-8}
			Fe-55[e]	1×10^{-6}

TABLE 4.8-3 (Continued)

TABLE NOTATIONS

a. The LLD is the smallest concentration of radioactive material in a sample that will be detected with 95% probability, with 5% probability of falsely concluding that a blank observation represents a "real" signal.

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

$$LLD = \frac{4.66\ s_b}{E * V * 2.22 \times 10^6 * Y * \exp(-\lambda \Delta t)}$$

where

LLD is the lower limit of detection as defined above (as uCi 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)

2.22×10^6 is the number of transformation per minute per microcurie

Y is the fractional radiochemical yield (when applicable)

λ is the radioactive decay constant for the particular radionuclide

Δt is the elapsed time between midpoint of sample collection and midpoint of time of counting

It should be recognized that the LLD is defined as an a priori (before the fact) limit representing the capability of a measurement system and not as a 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 interferring nuclides, or other uncontrollable circumstances may render these LLDs unachievable.

TABLE 4.8-3 (Continued)

TABLE NOTATIONS

b. The LLD will be 5×10^{-7} μCi/ml. The principal gamma emitters for which this LLD applies are exclusively the following radionuclides: Mn-54, Fe-59, Co-58, Co-60, Zn-65, Cs-134, Cs-137, and Ce-141.

This list does not mean that only these nuclides are to be detected and reported. Other peaks which are measurable and identifiable, together with the above nuclides, shall also be identified and reported. Nuclides which are below the LLD for the analyses should not be reported as being present at the LLD level. When unusual circumstances result in a prior: LLD's higher than required, the reasons shall be documented on the particular analysis sheet.

c. A 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 which is representative of the liquids released.

Prior to analysis, all samples taken for the composite shall be thoroughly mixed in order for the composite sample to be representative of the effluents release.

d. Daily grab sample for service water taken at least five days per week.

e. These analyses are required only if weekly gamma analysis indicates a gamma activitiy greater than 5×10^{-7} μCi/ml.

f. A batch release is the discharge of liquid wastes of a discrete volume. Prior to sampling, each batch shall be isolated and at least two tank/sump volumes shall be recirculated or equivalent mixing provided.

LIMITING CONDITION FOR OPERATION	SURVEILLANCE REQUIREMENTS
3.8.C.2 Liquid Effluents - Dose	4.8.C.2 Liquid Effluent - Dose
3.8.C.2.1 The dose or dose commitment to any REAL MEMBER OF THE PUBLIC from radioactive materials in liquid effluents from Unit 1 released from the site. (See Figure 3.8-1) shall be limited: a. During any calendar quarter to $\leq$ 1.5 mrem to the total body and to $\leq$ 5 mrem to any organ; and, b. During any calendar year to $\leq$ 3 mrem to the total body and to $\leq$ 10 mrem to any organ. APPLICABILITY: At all times. ACTION: a. With the calculated dose from the release of radioactive materials in liquid effluents exceeding any of the above limits, in lieu of any other report required by Specification 6.9.1, prepare and submit to the Commission within 30 days, pursuant to Specification 6.9.2, a Special Report which identifies the cause(s) for exceeding the limit(s) and defines the corrective actions to be taken to reduce the releases of radioactive materials in liquid effluents during the remainder of the current calendar quarter and the calendar year so that the cumulative dose or dose commitment to any REAL MEMBER OF THE PUBLIC from such releases during the calendar year is within 3 mrem to the total body and 10 mrem to any organ.	4.8.C.2.1 Dose Calculations. Cumulative dose contributions from liquid effluents shall be determined in accordance with the Offsite Dose Calculation Manual (ODCM) once per 31 days.

LIMITING CONDITION FOR OPERATION	SURVEILLANCE REQUIREMENTS
3.8.C.3 Liquid Effluents - Waste Treatment	4.8.C.3 Liquid Effluents - Waste Treatment
3.8.C.3.1 The following RADIOACTIVE WASTE TREATMENT SYSTEMS equipment shall be operated: Waste concentrator A or B, and Waste Demineralizer A or B This equipment shall be used to reduce the radioactive materials in liquid wastes prior to their discharge. APPLICABILITY: Whenever the projected dose due to liquid effluent releases from Unit 1 averaged over 31 days would exceed 0.06 mrem to the total body or 0.2 mrem to any organ. **ACTION:** **a. With radioactive liquid waste being discharged without all applicable treatment*by the equipment identified above, and in excess of the above limits, in lieu of any other report required by Specification 6.9.1, prepare and submit to the Commission within 30 days, pursuant to Specification 6.9.2, a Special Report which includes the following information:** **1. Identification of the appropriate equipment or subsystems not OPERABLE and the reason for inoperability.** **2. Action(s) taken to restore the inoperable equipment to OPERABLE status.** **3. Summary description of action(s) taken to prevent a recurrence.** **The term "all applicable treatment" under the action statement shall mean use of applicable treatment equipment only in such cases in which the dose attributed to a particular waste stream is responsible for an appreciable portion (greater than ~ 10%) of the total projected dose.**	4.8.C.3.1 Doses due to liquid releases from the site from Unit 1 shall be projected once per 31 days, in accordance with the ODCM.

LIMITING CONDITION FOR OPERATION	SURVEILLANCE REQUIREMENTS
3.8.D Radioactive Gaseous Effluents	4.8.D Radioactive Gaseous Effluents
3.8.D.1 Gaseous Effluents - Dose Rate	4.8.D.1 Gaseous Effluents - Dose Rate
3.8.D.1.1 The instantaneous dose rate offsite (see Figure 3.8-1) due to radioactive materials released in gaseous effluents from the site shall be limited to the following values: a. The dose rate limit for noble gases shall be $\leq$ 500 mrem/yr to the total body and $\leq$ 3000 mrem/yr to the skin; and, b. The dose rate limit for Iodine-131 and Iodine-133, for all radioactive materials in particulate form with half lives greater than 8 days and for radionuclides other than noble gases with half lives greater than 8 days shall be $\leq$ 1500 mrem/yr to any organ. APPLICABILITY: At all times. ACTION: With the dose rate(s) exceeding the above limits, decrease the release rate to comply with the limit(s) given in Specification 3.8.D.1.1 within 15 minutes.	4.8.D.1.1 The instantaneous release rate corresponding to the above dose rate shall be determined in accordance with the methodology in the ODCM. 4.8.D.1.2 The instantaneous release rates shall be monitored in accordance with the requirements of Table 3.8-2. 4.8.D.1.3 Sampling and analysis shall be performed in accordance with Table 4.8-4 to assure that the limits of specification 3.8.D.1.1 are met.

TABLE 4.8-4

RADIOACTIVE GASEOUS WASTE SAMPLING AND ANALYSIS PROGRAM

Gaseous Release Type	Sampling Frequency	Analysis Frequency	Type of Activity Analysis	Lower Limit of Detection (LLD) (uCi/cc)[a]
A. Steam Jet Air Ejector Discharge	Monthly[c]-Gaseous Grab Sample	Monthly[c]	Principal Gaseous Gamma[b] Emitters	1×10^{-4}
B. Main Stack	Monthly-Gaseous Grab Sample	Monthly	Principal Gaseous Gamma[b] Emitters	1×10^{-4}
			H-3	1×10^{-6}
	Continuous[d]	Weekly[f] Charcoal Sample	I-131	1×10^{-12}
			I-133[e]	1×10^{-10}
	Continuous[d]	Weekly[f] Particulate Sample	Principal Particulate[b] Gamma Emitters Half Lives Greater Than 8 Days	1×10^{-11}
	Continuous[d]	Monthly Composite Particulate Sample	Gross Alpha	1×10^{-11}
		Quarterly Composite Particulate Sample	Sr 89, Sr 90	1×10^{-11}
	Continuous[d]	Noble Gas Monitor	Noble Gases-Gross Activity	1×10^{-6}

TABLE 4.8-4 (Continued)

TABLE NOTATION

a. The lower limit of detection (LLD) is defined in Table Notation a of Table 4.8-3.

b. For gaseous samples, the LLD will be 1×10^{-11}, µCi/cc and for particulate samples, the LLD will be 1×10^{-11} µCi/cc. The principal gamma emitters for which these LLDs applies are exclusively the following radionuclides: Kr-87, Kr-88, Xe-133, Xe-133m, Xe-135 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 detected and reported. Other peaks which are measurable and identifiable, together with the above nuclides, shall also be identified and reported. Nuclides which are below the LLD for the analyses should not be reported as being present at the LLD level for that nuclide. When unusual circumstances result in a prior: LLD's higher than required, the reasons shall be documented on the particular analysis sheet.

c. Analyses shall also be done within 24 hours following an increase, as indicated by the steam jet air ejector off-gas monitor, of greater than 50%, after factoring out increases due to changes in THERMAL POWER level.

d. The ratio of the sample flow rate to the sampled stream flow rate shall be known.

e. Analysis for I-133 will not be performed on each charcoal sample. Instead, at least once per month, the ratio of I-133 to I-131 will be determined from a charcoal sample changed after approximately 24 hours of sampling. This ratio, along with the routine I-131 activity determination will be used to determine the release rate of I-133.

f. Samples shall be changed at least once per 7 days and analyses shall be completed within 48 hours after changing. Special sampling and analysis of iodine and particulate filters shall also be performed whenever reactor coolant I-131 samples which are taken 2-6 hours following a THERMAL POWER change exceeding 15 percent RATED THERMAL POWER in one hour, show an increase of greater than a factor of 10. These filters shall be changed following such a ten-fold increase in coolant activity and every 24 hours thereafter until the reactor coolant I-131 levels are less than a factor of 10 greater than the original coolant levels. Sample analysis shall be completed within 48 hours of changing. The LLD's may be increased by a factor of 10 for these samples.

LIMITING CONDITION FOR OPERATION	SURVEILLANCE REQUIREMENTS
3.8.D.2 Gaseous Effluents Dose, Noble Gases	4.8.D.2 Gaseous Effluents - Dose, Noble Gases
3.8.D.2.1 The air dose offsite (see Figure 3.8-1) due to noble gases released in gaseous effluents from Unit 1 shall be limited to the following: a. During any calendar quarter, to $\leq$ 5 mrad for gamma radiation and $\leq$ 10 mrad for beta radiation; b. During any calendar year, to $\leq$ 10 mrad for gamma radiation and $\leq$ 20 mrad for beta radiation; APPLICABILITY: At all times. ACTION: With the calculated air dose from radioactive noble gases in gaseous effluents exceeding any of the above limits, in lieu of any other report required by Specification 6.9.1, prepare and submit to the Commission within 30 days, pursuant to Specification 6.9.2, a Special Report which identifies the cause(s) for exceeding the limit(s) and defines the corrective actions to be taken to reduce the releases of radioactive noble gases in gaseous effluents during the remainder of the current calendar quarter and the calendar year so that the cumulative dose during the calendar year is within 10 mrad for gamma radiation and 20 mrad for beta radiation.	4.8.D.2.1 Dose Calculations - Cumulative dose contributions for the total time period shall be determined in accordance with the Offsite Dose Calculation Manual (ODCM) once every 31 days.

LIMITING CONDITION FOR OPERATION	SURVEILLANCE REQUIREMENTS
3.8.D.3 Gaseous Effluents - Dose Radioiodines, Radioactive Material In Particulate Form, and Radionuclides Other Than Noble Gases	4.8.D.3 Gaseous Effluents - Dose, Radioiodines, Radioactive Material In Particulate Form, and Radionuclides Other Than Noble Gases
3.8.D.3.1 The dose to any REAL MEMBER OF THE PUBLIC from Iodine-131, Iodine-133, radioactive materials in particulate form with half lives greater than eight days, and radionuclides other than noble gases with half-lives greater than 8 days in gaseous effluents released offsite from Unit 1 (see Figure 3.8.1) shall be limited to the following:	4.8.D.3.1 Dose Calculations - Cumulative dose contributions for the total time period shall be determined in accordance with the ODCM once every 31 days.
a. During any calendar quarter to $\leq$ 7.5 mrem;	
b. During any calendar year to $\leq$ 15 mrem;	
APPLICABILITY: At all times.	
ACTION:	
a. With the calculated dose from the release of radioiodines, radioactive materials in particulate form, or radionuclides other than noble gases in gaseous effluents exceeding any of the above limits, in lieu of any other report required by Specification 6.9.1, prepare and submit to the Commission within 30 days, pursuant to Specification 6.9.2, a Special Report which identifies the cause(s) for exceeding the limit and defines the corrective actions to be taken to reduce the releases during the remainder of the current calendar quarter and the calendar year so that the cumulative dose or dose commitment to any REAL MEMBER OF THE PUBLIC from such releases during the calendar year is within 15 mrem to any organ.	

LIMITING CONDITION FOR OPERATION	SURVEILLANCE REQUIREMENTS
3.8.D.4. Gaseous Effluents - Waste Treatment	4.8.D.4 Gaseous Effluents - Waste Treatment
3.8.D.4.1 The following RADIOACTIVE WASTE TREATMENT SYSTEMS equipment shall be operated: . Offgas System - Recombiner Train A or B (includes preheater, recombiner, condenser, jet-compressor, and after-condenser), Charcoal Bed Train A or B, and the stack HEPA filter. . Radwaste Ventilation Exhaust Treatment System - Radwaste ventilation HEPA filters.	4.8.D.4.1 Doses due to Unit 1 gaseous releases offsite shall be projected once per 31 days in accordance with the ODCM.
PPLICABILITY: The off-gas system shall be used henever the main condenser air ejector is in operation nd the projected offsite gaseous effluent doses due to nit 1 noble gas releases from the steam jet air jector, averaged over 31 days, exceeds 0.2 mrad for amma radiation and 0.4 mrad for beta radiation. he radwaste ventilation exhaust treatment system shall e used at all times when the projected offsite gaseous ffluent doses due to Unit 1 particulate releases veraged over 31 days exceeds 0.3 mrem to any organ. he term "all applicable treatment" under the ACTION tatement shall mean use of applicable treatment quipment only in such cases in which the dose attributed o a particular waste stream is responsible for an ppreciable (greather than ~ 10%) of the total projected ose.	

LIMITING CONDITION FOR OPERATION	SURVEILLANCE REQUIREMENTS
ACTION: a. With gaseous waste being discharged without all appreciable treatment by the equipment identified above and in excess of the above limits, in lieu of any other report required by Specification 6.9.1, prepare and submit to the Commission within 30 days, pursuant to Specification 6.9.2, a Special Report which includes the following information: 1. Identification of the appropriate equipment of subsystems not OPERABLE and the reason for inoperability. 2. Action(s) taken to restore the inoperable equipment to OPERABLE STATUS. 3. Summary description of action(s) taken to prevent a recurrence.	

LIMITING CONDITION FOR OPERATION	SURVEILLANCE REQUIREMENTS
3.8.D.5 Radioactive Effluents - Total Dose 3.8.D.5.1 The dose or dose commitment to any REAL MEMBER OF THE PUBLIC from the Millstone Site is limited to $\leq$ 25 mrem to the total body or any organ (except the thyroid, which is limited to $\leq$ 75 mrem) over a period of 12 consecutive months. APPLICABILITY: At all times. ACTION: a. With the calculated dose from the release of radioactive materials in liquid or gaseous effluents exceeding twice the limits of Specifications 3.8.C.2, 3.8.D.2, or 3.8.D.3, in lieu of any other report required by Specification 6.9.1, prepare and submit a Special Report to the Commission within 30 days pursuant to Specification 6.9.2 and limit the subsequent releases such that the dose or dose commitment to any REAL MEMBER OF THE PUBLIC from the Millstone Site is limited to $\leq$25 mrem to the total body or any organ (except thyroid, which is limited to $\leq$75 mrem) over 12 consecutive months. This Special Report shall include an analysis which demonstrates that radiation exposures to any REAL MEMBER OF THE PUBLIC from the Millstone Site (including all effluent pathways and direct radiation) are less than the 40 CFR Part 190 Standard. Otherwise, obtain a variance from the Commission to permit releases which exceed the 40 CFR Part 190 Standard.	4.8.D.5 Radioactive Effluents - Total Dose 4.8.D.5.1 Cumulative dose contributions from liquid and gaseous effluents and direct radiation from the Millstone site shall be determined in accordance with the ODCM once per 31 days.

LIMITING CONDITION FOR OPERATION	SURVEILLANCE REQUIREMENTS
3.8.D.6 Explosive Gas Mixture	4.8.D.6 Explosive Gas Mixture
3.8.D.6.1 The concentration of hydrogen in the main condenser offgas treatment system, downstream of the recombiners, shall be limited to $\leq$ 4% by volume.	4.8.D.6.1 The concentration of hydrogen shall be determined to be within the above limits by continuously monitoring the waste gases with the hydrogen monitors required OPERABLE by Table 3.8-2.
APPLICABILITY: At all times	
ACTION:	
a. With the concentration of hydrogen greater than 4% but less than or equal to 8%, restore the concentration to within the limit within 48 hours. With the concentration of hydrogen greater than 8%, terminate use of the augmented OFF-GAS SYSTEM.	

LIMITING CONDITION FOR OPERATION	SURVEILLANCE REQUIREMENTS
3.8.D.7 Steam Jet Air Ejector Noble Gas Activity	4.8.D.7 Steam Jet Air Ejector Noble Gas Activity
3.8.D.7.1 In the main condenser OFF-GAS SYSTEM, the noble-gas in-process activity rate shall not exceed 1.47×10^6 μCi/sec averaged over 15 minutes as measured at the off-gas monitor.	4.8.D.7.1 The noble-gas in-process activity rate shall be continuously monitored by the steam jet air ejector off-gas monitor required OPERABLE in Table 3.8-2.
APPLICABILITY: At all times	4.8.D.7.2 The noble-gas in-process activity rate shall be determined to be within the above limit by performance of the steam jet air ejector sampling required in Table 4.8-4.
ACTION:	
With the noble gas activity exceeding the above limit, reduce the activity rate to within the limit within 72 hours or be in at least HOT STANDBY within the next 12 hours.	

LIMITING CONDITION FOR OPERATION	SURVEILLANCE REQUIREMENTS
3.8.E SOLID WASTE PROGRAM	4.8.E SOLID WASTE PROGRAM
3.8.E.1 The solid radwaste system shall be OPERABLE and used, as applicable in accordance with a PROCESS CONTROL PROGRAM, for the SOLIDIFICATION and packaging of radioactive wastes to ensure meeting the requirements of 10 CFR Part 20 and of 10 CFR Part 71 prior to shipment of radioactive wastes from the site.	4.8.E.1 The solid radwaste system shall be demonstrated OPERABLE by:
APPLICABILITY: At all times	a. Operating the solid radwaste system in accordance with the PROCESS CONTROL PROGRAM at least once within 30 days prior to processing waste for SOLIDIFICATION or,
ACTION:	b. Verification of the existence of a valid contract for SOLIDIFICATION to be performed by a contractor in accordance with a PROCESS CONTROL PROGRAM.
a. With the packaging requirements of 10 CFR Part 20 and/or 10 CFR Part 71 not satisfied prior to shipment, suspend shipments of defectively packaged solid radioactive wastes from the site until corrective actions have been completed and verified in accordance with the PROCESS CONTROL PROGRAM. In lieu of any other report required by Specification 6.9.1, prepare and submit to the Commission within 30 days pursuant to Specification 6.9.2, a Special Report summarizing the problem and corrective action(s) taken.	4.8.E.2 THE PROCESS CONTROL PROGRAM shall be used to verify the SOLIDIFICATION of at least one representative test specimen from at least every tenth batch of each type of wet radioactive waste.
	a. If any test specimen fails to verify SOLIDIFICATION, the SOLIDIFICATION of the batch under test shall be suspended until such time as additional test specimens can be obtained, alternative SOLIDIFICATION parameters can be determined in accordance with the PROCESS CONTROL PROGRAM, and a subsequent test verifies SOLIDIFICATION. SOLIDIFICATION of the batch may then be resumed using the alternative SOLIDIFICATION parameters determined by the PROCESS CONTROL PROGRAM.

LIMITING CONDITION FOR OPERATION	SURVEILLANCE REQUIREMENTS
3.8.F RADIOLOGICAL ENVIRONMENTAL MONITORING	4.8.F.1 Monitoring Program
3.8.F.1 Monitoring Program	4.8.F.1.1 The radiological environmental monitoring samples shall be collected and analyzed pursuant to the requirements of Tables 3.8-5 and 3.8-6.
3.8.F.1 The radiological environmental monitoring program shall be conducted as specified in Table 3.8-5 for the locations given in the ODCM. (Deviations are permitted from the required sampling schedule if specimens are unobtainable due to hazardous conditions, seasonal unavailability, or to malfunction of automatic sampling equipment. If the latter, every effort shall be made to complete corrective action prior to the end of the next sampling period.)	
APPLICABILITY: At all times.	
ACTION:	
ACTION:	
a. If the radiological environmental monitoring program is not being conducted as specified in Table 3.8-5 in lieu of any report required by Specification 6.9.1 and 6.9.2, prepare and submit to the Commission, in the Annual Radiological Environmental Operating Report, a description of the reasons for not conducting the program as required and the plans for preventing a recurrence.	
b. If the level of radioactivity in an environmental sampling medium at one or more of the locations specified in Table 3.8-5 exceeds the report levels of Table 3.8-7 when averaged over any calendar quarter, in lieu of any other report required by Specification 6.9.1, prepare and submit to the Commission within 30 days from the end of the affected calendar quarter, pursuant to Specification 6.9.2, a Special Report which includes an evaluation of any release conditions, environmental factors or other aspects which caused the limits of Table 3.8-7 to be exceeded.	

LIMITING CONDITION FOR OPERATION	SURVEILLANCE REQUIREMENTS
When more than one of the radionuclides in Table 3.8-7 are detected in the sampling medium, this report shall be submitted if: $\frac{\text{concentration (1)}}{\text{reporting level (1)}} + \frac{\text{concentration (2)}}{\text{reporting level (2)}} + \ldots \geq 1.0$ When radionuclides other than those in Table 3.8-7 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 appropriate calendar year limit of Specifications 3.8.C.2, 3.8.D.2 or 3.8.D.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. c. If milk samples are unavailable from any one or more of the sample locations required by Table 3.8-5, a grass sample shall be substituted until a suitable milk location is evaluated as a replacement or until milk is available from the original location. Such an occurrence will be documented in the Annual Radiological Environmental Operating Report in lieu of any report required by Specification 6.9.1 and 6.9.2.	

TABLE 3.8-5

MILLSTONE RADIOLOGICAL ENVIRONMENTAL MONITORING PROGRAM

	Exposure Pathway and/or Sample	Number of Locations	Sampling and Collection Frequency	Type and Frequency of Analysis
1.a.	Gamma Dose-Environmental TLD	17	Monthly	Gamma Dose - Monthly
1.b.	Gamma Dose-Accident TLD	22	Quarterly[(a)]	N/A[(a)]
2.	Airborne Particulate	8	Continuous Sampler-Weekly Filter Change	Gross Beta - Weekly Gamma Spectrum-Monthly on Composite (by location), and on Individual Sample if Gross beta is greater than 10 times mean of the weekly control station gross Beta Results
3.	Airborne Iodine	8	Continuous Sampler-Weekly Canister Change	I-131 - Weekly
4.	Vegetation	4	One Sample Near Middle and One End of Growing Season	Gamma Isotopic on Each Sample
5.	Milk	6	Monthly For All Animals Except Semimonthly for Goats When on Pasture	Gamma Isotopic, I-131, Sr-89 and Sr-90 on Each Sample
6.	Sea Water	2	Quarterly - Composite of 6 Weekly Grab Samples	Quarterly - Fractional Beta, Gamma Isotopic, Tritium
7.	Bottom Sediment	7	Semi-Annual	Gamma Isotopic on Each Sample
8.	Fin Fish-Flounder and One Other Type of Edible Fin Fish	2	Quarterly	Gamma Isotopic on Each Sample

TABLE 3.8-5 (Continued)

MILLSTONE RADIOLOGICAL ENVIRONMENTAL MONITORING PROGRAM

	Exposure Pathway and/or Sample	Number of Locations	Sampling and Collection Frequency	Type and Frequency of Analysis
9.	Mussels	2	Quarterly	Gamma Isotopic on Each Sample
10	Oysters	4	Quarterly	Gamma Isotopic on Each Sample
11.	Clams	2	Quarterly	Gamma Isotopic on Each Sample
12.	Lobster	3	Quarterly	Gamma Isotopic on Each Sample

(a) Accident monitoring TLDs to be dedosed at least quarterly after location backgrounds have been determined.

TABLE 3.8-6
MAXIMUM VALUES FOR LOWER LIMITS OF DETECTION (LLD)[a]

Analysis	Sea Water (pCi/l)	Airborne Particulate or Gas (pCi/m^3)	Fish, Shellfish (pCi/kg, wet)	Milk (pCi/l)	Food Products (pCi/kg, wet)	Sediment (pCi/kg, dry)
gross beta		1×10^{-2}				
fractional beta	4					
^{3}H	2000					
^{54}Mn	30[c]		130			
^{59}Fe	60[c]		260			
$^{58,60}Co$	30[c]		130			
^{65}Zn	60[c]		260			
^{95}Zr	60[c]					
^{95}Nb	30[c]					
^{131}I	d	7×10^{-2}		1	60[b]	
^{134}Cs	30[c]	5×10^{-2}	130	15	60	150
^{137}Cs	40[c]	6×10^{-2}	150	18	80	180
^{140}Ba	120[c, e]			70		
^{140}La	30[c, e]			25		

TABLE 3.8-6 (Continued)

TABLE NOTATION

a. The LLD is the smallest concentration of radioactive material in a sample that will be detected with 95% probability, with 5% probability of falsely concluding that a blank observation represents a "real signal."

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

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

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 (or end of the sample collection period) and time of counting

It should be recognized that the LLD is defined as an a prior (before the fact) limit representing the capability of a measurement system and not as a 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 interferring nuclides, or other uncontrollable circumstances may render these LLDs unachievable. In such cases, the contributing factors will be identified and described in the Annual Radiological Environmental Operating Report.

b. LLD for leafy vegetables.

c. To be reduced by a factor of two if any parts of the fractional beta for the sample exceeds 15 pCi/l.

d. Level for I-131 not included since no radioactivity discharged to any drinking water pathway.

e. From end of sample period.

TABLE 3.8-7

REPORTING LEVELS FOR RADIOACTIVITY CONCENTRATIONS IN ENVIRONMENTAL SAMPLES

	Reporting Levels				
Analysis	Water pCi/l	Airborne Particulate or Gases (pCi/m^3)	Fish, Shellfish (pCi/Kg, wet)	Milk (pCi/l)	Vegetables (pCi/Kg, wet)
H-3	2×10^4 (a)				
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		
I-131	(b)	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-140	2×10^2			3×10^2	
La-140	2×10^2			3×10^2	
Zr-95	4×10^2				
Nb-95	4×10^2				

(a) For drinking water samples. This is 40CFR Part 141 value.
(b) Level for I-131 not included since no radioactivity discharged to any drinking water pathways; other reporting levels are included for trending of long lived isotopes only.

LIMITING CONDITION FOR OPERATION	SURVEILLANCE REQUIREMENTS
3.8.F.2 **Land Use Census**	4.8.F.2 **Land Use Census**
3.8.F.2.1 The land use census shall be maintained and shall identify the location of the milk animals in each of the 16 meteorological sectors within a distance of five miles from the Millstone Site.*	4.8.F.2.1 The validity of the land use census shall be verified at least once per 12 months by either a door-to-door survey, aerial survey, consulting local agriculture authorities, or any combination of these methods.*
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 doses currently being calculated in the ODCM, make the appropriate changes in the ODCM.	
b. With a land use census identifying a location(s) which has a higher D/Q than a current indicator location the following shall apply:	
(1) If the D/Q is at least 20% greater than the previously highest D/Q, replace one of the present sample locations with the new one within 30 days if milk is available.	
(2) If the D/Q is not 20% greater than the previously highest D/Q, consider both direction, distance, availability of milk, and D/Q in deciding whether to replace one of the existing sample locations. If applicable, replacement should be within 30 days. If no replacement is made, sufficient justification should be given in the annual report.	
In lieu of any report required by Specification 6.9.1 or 6.9.2, sample location changes shall be noted in the Annual Radiological Environmental Operating Report.	

*Broad leaf vegetation is sampled at the site boundary in the direction sector with the highest D/Q in lieu of a garden census.

LIMITING CONDITION FOR OPERATION	SURVEILLANCE REQUIREMENTS
3.8.F.3 Interlaboratory Comparison Program	4.8.F.3 Interlaboratory Comparison Program
3.8.F.3 Analyses shall be performed on radioactive materials supplied as part of an Interlaboratory Comparison Program which has been approved by the Commission.	4.8.F.3.1 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.
APPLICABILITY: As samples are received.	
ACTION:	
a. With analyses not being performed as required above, in lieu of any report required by Specification 6.9.1 or 6.9.2, report the corrective actions taken to prevent a recurrence to the Commission in the Annual Radiological Environmental Operating Report.	

K. Mechanical Condenser Vacuum Pump

The purpose of selecting the mechanical condenser vacuum pump line is to limit the release of activity from the main condenser in the unlikely event of a control rod drop accident. During the postulated accident, fission products would be transported from the reactor to the main steamlines to the main condenser. The fission product radioactivity would be sensed by the main steamline radioactivity monitors and isolation would be initiated.

3.8 BASES

A. 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. The alarm/trip setpoints for these instruments shall be calculated in accordance with approved methods in the ODCM 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.

B. 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. The alarm/trip setpoints for these instruments shall be calculated in accordance with approved methods in the ODCM 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.

C. Radioactive Liquid Effluents

1. This specification is provided to ensure that the concentration of radioactive materials released in liquid waste effluents from the site will be less than the concentration levels specified in 10 CFR Part 20, Appendix B, Table II. This instantaneous limitation provides additional assurance that the levels of radioactive materials in bodies of water outside the site will result in exposures within (1) the Section II.A design objectives of Appendix I, 10 CFR Part 50, to an individual and (2) the limits of 10 CFR Part 20.106(e) to the population. The concentration limit for dissolved or entrained noble gases is based upon the assumption that Xe-135 is the controlling radioisotope and its MPC in air (submersion) was converted to an equivalent concentration in water using the methods described in International Commission on Radiological Protection (ICRP) Publication 2.

2. This specification is provided to implement the requirements of Sections II.A, III.A and IV.A of Appendix 1, 10 CFR Part 50. The Limiting Condition for Operation implements the guides set forth in Section II.A of Appendix 1. The ACTION statements provide the required operating flexibility and at the same time implement the guides set forth in Section IV.A of Appendix I to assure that the releases of radioactive material in liquid effluents will be kept "as low as is reasonably achievable." The dose calculations in the ODCM implement the requirements in Section III.A of Appendix I that conformance with the guides of Appendix I is to be shown by calculational procedures based on models and data such that the actual exposure of an individual through appropriate pathways is unlikely to be substantially underestimated. The equations specified in the ODCM for calculating the doses due to the actual release rates of radioactive materials in liquid effluents will be consistent with the methodology provided 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, "Revision 1, October 1977, and Regulatory Guide 1.113, "Estimating Aquatic Dispersion of Effluents from Accidental and Routine Reactor Releases for the Purpose of Implementing Appendix I," April 1977.

3. The OPERABILITY of the liquid radwaste treatment system ensures that this system will be available for use whenever liquid effluents require treatment prior to release to the environment. The requirements that the appropriate portions of this system be used when specified provides assurance that the releases of radioactive materials in liquid effluents will be kept "as low as is reasonably achievable." This specification implements the requirements of 10 CFR Part 50.36a, General Design Criterion 60 of Appendix A to 10 CFR Part 50 and design objective Section II.D of Appendix A to 10 CFR Part 50. The specified limits governing the use of appropriate portions of the liquid radwaste treatment system were specified as a suitable fraction of the guide set forth in Section II.A of Appendix I, 10 CFR Part 50, for liquid effluents.

D. Radioactive Gaseous Effluents

1. This specification is provided to ensure that the dose rate at any time from gaseous effluents from all units on the site will be within the annual dose limits of 10 CFR Part 20 for all areas offsite. The annual dose limits are the doses associated with the concentrations of 10 CFR Part 20, Appendix B, Table II. These limits provide reasonable assurance that radioactive material discharged in gaseous effluents will not result in the exposure of an individual offsite to annual average concentrations exceeding the limits specified in Appendix B, Table II of 10 CFR Part 20 (10 CFR Part 20.106(b)). For individuals who may at times be within the site boundary, the occupancy of the individual will be sufficiently low to compensate for any increase in the atmospheric diffusion factor above that for the site boundary. The specified release rate limits restrict, at all times, the corresponding gamma and beta dose rates above background to an individual at or beyond the site boundary to $\leq$ 500 mrem/year to the total body or to $\leq$ 3000 mrem/year to the skin. These release rate limits also restrict, at all times, the corresponding thyroid dose rate above background to an infant via the cow-milk-infant pathway to $\leq$ 1500 mrem/year for the nearest cow to the plant.

2. This specification is provided to implement the requirements of Sections II.B, III.A and IV.A of Appendix I, 10 CFR Part 50. The Limiting Condition for Operation implements the guides set forth in Section II.B of Appendix I. The ACTION statements provide the required operating flexibility and at the same time implement the guides set forth in Section IV.A of Appendix I to assure that the releases of radioactive material in gaseous effluents will be kept "as low as is reasonably achievable". The Surveillance Requirements implement the requirements in Section III.A of Appendix I that conformance with the guides of Appendix I is to be shown by calculational procedures based on models and data such that the actual exposure of an individual through the appropriate pathways is unlikely to be substantially underestimated. The dose calculations established in the ODCM for calculating the doses due to the actual release rates of radioactive noble gases in gaseous effluents will be consistent with the methodology provided 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", Revision 1, October 1977 and Regulatory Guide 1.111, "Methods for

Estimating Atmospheric, Transport and Dispersion of Gaseous Effluents in Routine Releases from Light-Water-Cooled Reactors", Revision 1, July 1977.

The ODCM equations provided for determining the air doses at the site boundary are based upon utilizing successively more realistic dose calculational methodologies. More realistic dose calcuational methods are used whenever simplified calculations indicate a dose approaching a substantial portion of the regulatory limits. The methods used, in order are, previously determined air dose per released activity ratio, historical meteorological data and actual radionuclide mix released, or real time meteorology and actual radionuclides released.

3. This specification is provided to implement the requirements of Sections II.C, III.A and IV.A of Appendix I, 10 CFR Part 50. The Limiting Conditions for Operation are the guides set forth in Section II.C of Appendix I. The ACTION statements provide the required operating flexibility and at the same time implement the guides set forth in Section IV.A of Appendix I to assure that the releases of radioactive materials in gaseous effluents will be kept "as low as is reasonably achievable". The ODCM calculational methods specified in the surveillance requirements implement the requirements in Section III.A of Appendix I that conformance with the guides of Appendix I be shown by calculational procedures based on models and data such that the actual exposure of an individual through appropriate pathways is unlikely to be substantially underestimated. The ODCM calculational methods for calculating the doses due to the actual release rates of the subject materials will to be consistent with the methodology provided in Regulatory Guide 1.109, "Calculating of Annual Doses to Man from Routine Releases of Reactor Effluents for the Purpose of Evaluating Compliance with 10 CFR Part 50, Appendix I, "Revision 1, October 1977 and Regulatory Guide 1.111, "Methods for Estimating Atmospheric Transport and Dispersion of Gaseous Effluents in Routine Releases from Light-Water-Cooled Reactors", Revision 1, July 1977. These equations provide for determining the doses based upon either conservative atmospheric dispersion and an assumed critical nuclide mix or using real time meteorology and specific nuclides released. The release rate specifications for radioiodines, radioactive material in particulate form and radionuclides other than noble gases are dependent on the existing radionuclide pathways to man. The pathways which are examined in the development of these calculations are: 1) individual inhalation of airborne radionuclides, 2) deposition of radionuclides onto green leafy vegetation with subsequent consumption by man, 3) deposition onto grassy areas where milk animals and meat producing animals graze with consumption of the milk and meat by man, and 4) deposition on the ground with subsequent exposure of man.

4. The OPERABILITY of the gaseous radwaste treatment system and the ventilation exhaust treatment system ensures that the systems will be available for use whenever gaseous effluents require treatment prior to release to the environment. The requirement that the appropriate portions of these sytems be used when specified provides reasonable assurance that the releases of radioactive materials in gaseous effluents will be kept "as low as is reasonably achievable". This specification implements the requirements of 10 CFR Part 50.36a, General Design Criterion 60 of Appendix A to 10 CFR Part 50, and design objective Section IID of Appendix I to 10 CFR Part 50. The specified limits governing the use of appropriate portions of the systems were specified as a suitable fraction of the guide set forth in Sections II.B and II.C of Appendix I, 10 CFR Part 50, for gaseous effluents.

5. This specification is provided to meet the reporting requirements of 40 CFR 190. For the purpose of the Special Report, it may be assumed that the dose commitment to any REAL MEMBER OF THE PUBLIC from other fuel cycle sources is negligible, with the exception that dose contributions from other nuclear fuel cycle facilities at the same site or within a radius of 5 miles must be considered.

6. This specification is provided to ensure that the concentration of potentially explosive gas mixtures contained in the waste gas treatment system is maintained below the flammability limits of hydrogen and oxygen. 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.

7. 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.

E. Solid Waste Program

This specification implements the requirements of appropriate regulations (10 CFR Part 20 and 20 CFR Part 71) on radioactive waste shipments.

F. Radilogical Environmental Monitoring

1. 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 measurable concentrations of radioactive materials and levels of radiation are not higher

than expected on the basis of the effluent measurements and modeling of the environmental exposure pathways. Program changes may be made based on operational experience.

The detection capabilities required by Table 3.8-6 are state-of-the-art for routine environmental measurements in industrial laboratories. It should be recognized that the LLD is defined as an "a priori" (before the fact) limit representing the capability of a measurement system and not as "a posteriori" (after the fact) limit for a particular measurement. A 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 will be identified and described in the Annual Radiological Environmental Operating Report.

2. 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.

   Broad leaf vegetation is sampled at the site boundary in the direction of highest D/Q in lieu of a garden census.

3. The requirement for participation in an Interlaboratory Comparison 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 a quality assurance program for environmental monitoring in order to demonstrate that the results are reasonably valid.

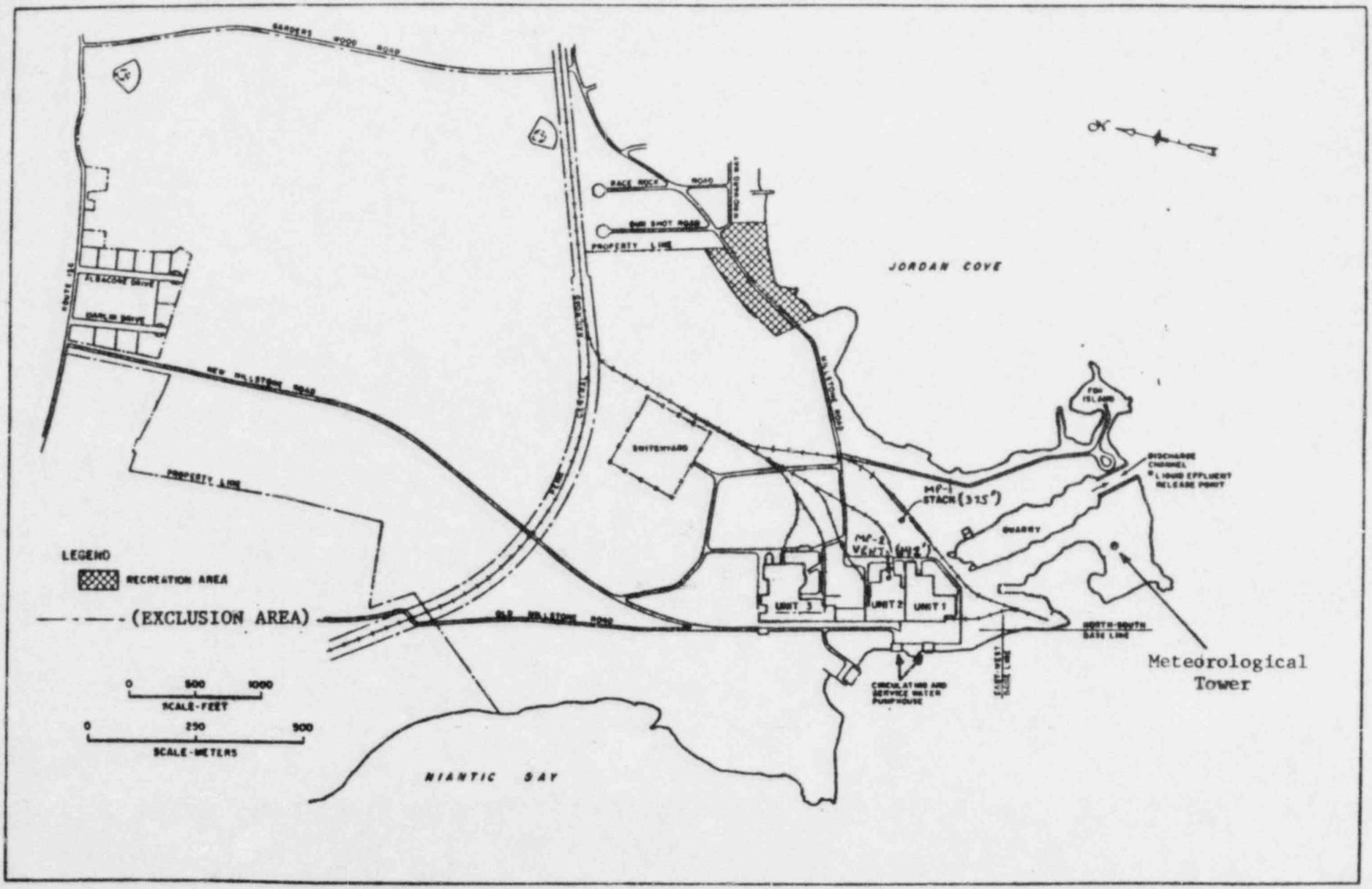

Figure 3.8-1

Site Boundary for Liquid and Gaseous Effluents

MEETING FREQUENCY

6.5.4.5 The SNRB shall meet at least once per calendar year and as convened by the SNRB Chairman.

QUORUM

6.5.4.6 A quorum of SNRB shall consist of the Chairman or his designated alternate and four SNRB members including alternates. No more than a minority of the quorum shall have line responsibility for operation of the Station.

REVIEW

6.5.4.7 The SNRB shall review:

a. Proposed changes in Section 6.0 of these Technical Specifications or Licenses common to all Units.

b. Any indication of an unanticipated deficiency in some aspect of design or operation of safety related structures, systems or components common to all Units.

c. Reports and meeting minutes of the SORC.

AUDITS

6.5.4.8 Audits of site activities shall be performed under the cognizance of the SNRB. These audits shall encompass:

a. The performance of all activities required by the Quality Assurance Program to meet the criteria of Appendix "B", 10 CFR 50, at least once per year.

b. The Site Emergency Plan and implementing procedures at least once per two years.

c. The Site Security Plan and implementing procedures at least once per two years.

d. The Facility Fire Protection Program and implementing procedures at least once per 24 months.

e. An inspection and audit of the fire protection and loss prevention program shall be performed annually by an outside firm experienced in fire protection and loss prevention.

f. The Radiological Environmental Monitoring Program and the results thereof at least once per 12 months.

g. The performance of activities in accordance with the OFFSITE DOSE CALCULATION MANUAL and PROCESS CONTROL PROGRAM at least once per 24 months.

h. The performance of activities required by the Quality Controls Section of Regulatory Guides 1.21 Rev. 1, June 1974 and 4.1 Rev 1, April 1975 at least once per 12 months.

SAFETY LIMIT VIOLATION (Continued)

b. The NRC Operations Center shall be notified by telephone as soon as possible and in all cases within one hour. The Vice President Nuclear Operations and the NRB shall be notified within 24 hours.

c. A Safety Limit Violation Report shall be prepared. The report shall be reviewed by the PORC. 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 Violation Report shall be submitted to the Commission, the NRB and the Vice President Nuclear Operations within 14 days of the violations.

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, November, 1972.

b. Refueling operations.

c. Surveillance activities of safety related equipment.

d. Security Plan implementation.

e. Emergency Plan implementation.

f. Fire Protection Program implementation.

g. Quality Controls for effluent monitoring using the guidance in Regulatory Guide 1.21 Rev. 1, June 1974.

h. Offsite Dose Calculation Manual and Process Control Program implementation.

6.8.2 Each procedure and administrative policy of 6.8.1 above, and changes thereto, shall be reviewed by the PORC/SORC, as applicable, and approved by the Unit Superintendent/Station Superintendent prior to implementation and reviewed periodically as set forth in each document.

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 PORC/SORC, as applicable, and approved by the Unit Superintendent/Station Superintendent within 14 days of implementation.

6.8.4 Written procedures shall be established, implemented and maintained covering the quality controls for the Radiological Environmental Monitoring program using the guidance in Regulatory Guide 4.1, Rev. 1, April 1975.

6.8.5 All procedures and procedure changes required for 6.8.4 and Section 3.8.F of these Technical Specifications (Radiological Environmental Monitoring) shall be reviewed by an individual other than the author, of the Radiological Assessment Branch or Production Operation Services Laboratory (POSL) and approved by appropriate supervision.

Temporary changes may be made provided the intent of the original procedure is not altered and the change is documented and reviewed by an individual, other than the author of the Radiological Assessment Branch or POSL, and approved by appropriate supervision 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.

THIRTY-DAY WRITTEN REPORTS (Continued)

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 features 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 features systems.

d. Abnormal degradation of systems other than those specified in 6.9.1.8.c, above, designed to contain radioactive material resulting from the fission process.

e. In addition to 10CFR50.72(a)(8) reporting requirements, an unplanned off-site release of 1) more than 1 curie of radioactive material in liquid effluents excluding tritium and dissolved noble gases, 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 off-site 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.

ANNUAL RADIOLOGICAL ENVIRONMENTAL OPERATING REPORT

6.9.1.10 Routine Annual Radiological Environmental Operating reports covering the operation of the unit during the previous calendar year shall be submitted prior to May 1 of each year.

The Annual Radiological Environmental Operating Report shall include summaries, interpretations, and statistical evaluation of the results of the radiological environmental surveillance activities for the report period, including a comparison with 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 3.8.F.2. If harmful effects 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 report shall include a summary table of all radiological environmental samples which shall include the following information for each pathway sampled and each type of analysis:

(1) Total number of analyses performed at indicator locations.

(2) Total number of analyses performed at control locations.

(3) Lower limit of detection (LLD).

(4) Mean and range of all indicator locations together.

(5) Mean and range of all control locations together.

(6) Name, distance and direction from discharge, mean and range for the location with the highest annual mean (indicator or control).

(7) Number of nonroutine reported measurements as defined in these specifications.

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 report shall also include a map of sampling locations keyed to a table giving distances and directions from the discharge; the report shall also include a summary of the Interlaboratory Comparison Data required by Specification 3.8.F.3.

SEMIANNUAL 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 with 60 days after January 1 and July 1 of each year.

The report shall include a summary of the quantities of radioactive liquid and gaseous effluents released from the unit as outlined in Regulatory Guide 1.21, Revision 1, June 1974, with data summarized on a quarterly basis following the format of Appendix B thereof.

In addition, the 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 shall be in the form of joint frequency distributions of wind speed, wind direction, and atmospheric stability. This same report shall include an assessment of the radiation doses due to the radioactive liquid and gaseous effluents released from the site during the previous calendar year. The meteorological conditions concurrent with the time of release of radioactive material in gaseous

effluents shall be used for determining the gaseous pathway doses. Dose calculations shall be performed in accordance with the offsite dose calculation manual.

In addition, the report to be submitted 60 days after January 1 of each year shall include an assessment of radiation doses to the likely most exposed REAL MEMBER OF THE PUBLIC from the site for the previous 12 consecutive months to show conformance with 40CFR190. Doses shall be calculated in accordance with the Offsite Dose Calculation Manual.

The semiannual effluent report shall also include a summary of each type of solid radioactive waste shipped offsite during the report period. This summary shall include the following information for each type of waste:

a. Type of waste (e.g. - spent resin, compacted dry waste, etc.)
b. Solidification agent (e.g., cement)
c. Total curies
d. Total volume and typical container volumes
e. Principal radionuclides (those greater than 10% of total activity)
f. Types of containers used (e.g., LSA, Type A, etc.)

The semiannual effluent report shall include the following information for all unplanned releases from the site to unrestricted areas 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.

Any changes to the OFFSITE DOSE CALCUATION MANUAL shall be submitted in the Semiannual Radioactive Effluent Release Report.

SPECIAL REPORTS

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. These reports shall be submitted covering the activities identified below pursuant to the requirements of the applicable reference specification:

a. In-service Inspection Results, Specification 4.6.F.

b. Primary Containment Leak Rate Test Results, Specification 4.7.A.2.

c. Secondary Containment Leak Rate Test Results, Specification 4.7.C.

d. Materials Radiation Surveillance Specimen Examination and Results, Specification 4.6.B.3.

e. Fire detection instrumentation, Specification (3.12.E.2).

f. Fire suppression systems, Specifications (3.12.A.2, 3.12.B.2 and 3.12.C.2).

g. Radiological Effluent Reports required by Specifications in 3.8.C.2, 3.8.C.3, 3.8.D.2, 3.8.D.3, 3.8.D.4, and 3.8.D.5.

h. Radiological Environmental Monitoring Program Reports required by Specification 3.8.F.

i. Solid Waste Programs, Specification 3.8.E.

6.16 OFFSITE DOSE CALCULATION MANUAL (ODCM)

The ODCM shall describe the methodology and parameters to be used in the calculation of offsite doses due to radioactive gaseous and liquid effluents and in the calculation of gaseous and liquid effluent monitoring instrumentation alarm/trip setpoints consistent with the applicable LCOs contained in these technical specifications. In addition, the environmental monitoring program sampling locations and accompanying maps are contained in the ODCM.

Changes in the ODCM shall be reviewed by SORC prior to implementation. All such changes shall be submitted to the Commission by inclusion in the Semiannual Effluent Release Report covering the period in which the change was approved by the Station Superintendent and should include sufficiently detailed information to support the rationale for the change.

6.17 MAJOR CHANGES TO RADIOACTIVE WASTE TREATMENT SYSTEMS (Liquid, Gaseous and Solid)

1) The Commission shall be informed in writing within 30 days of implementation of a "major change" to the RADIOACTIVE WASTE TREATMENT SYSTEMS.

   If applicable, the discussion of each change shall contain:

   a. sufficiently-detailed information to totally support the reason for the change without benefit of additional or supplemental information;

   b. a detailed description of the equipment, components and processed involved and the interfaces with other plant systems;

   c. an evaluation of the change which shows the predicted releases of radioactive materials in liquid and gaseous effluents and/or quantity of solid waste from those previously predicted in the license application and amendments thereto;

   d. an evaluation of the change which shows the expected maximum exposures to individual in the unrestricted area and to the general population from those previously estimated in the license application and amendments thereto;

   e. an estimate of the exposure to plant operating personnel as a result of the change.

Docket No. 50-336

ATTACHMENT 2

MILLSTONE NUCLEAR POWER STATION, UNIT NO. 2

PROPOSED REVISIONS TO TECHNICAL SPECIFICATIONS

RADIOLOGICAL EFFLUENT TECHNICAL SPECIFICATIONS

REVISION 1

AUGUST, 1982

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AZIMUTHAL POWER TILT - T_q

1.18 AZIMUTHAL POWER TILT shall be the maximum difference between the power generated in any core quadrant (upper or lower) and the average power of all quadrants in that half (upper or lower) of the core divided by the average power of all quadrants in that half (upper or lower) of the core.

$$\text{AZIMUTHAL POWER TILT} = \frac{\text{Power in any core quadrant (upper or lower)}}{\max \text{ Average power of all quadrants (upper or lower)}} - 1$$

DOSE EQUIVALENT I-131

1.19 DOSE EQUIVALENT I-131 shall be that concentration of I-131 (microcurie/gram) which alone would produce the same thyroid dose as the quantity and isotopic mixture of I-131, I-132, I-133, I-134 and I-135 actually present. The thyroid dose conversion factors used for this calculation shall be those listed in Regulatory Guide 1.109 Rev. 1, "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."

$\bar{E}$-AVERAGE DISINTEGRATION ENERGY

1.20 $\bar{E}$ shall be the average sum of the beta and gamma energies per disintegration (in MEV) for isotopes, other than iodines, with half lives greater than 15 minutes, making up at least 95% of the total non-iodine activity in the coolant.

STAGGERED TEST BASIS

1.21 A STAGGERED TEST BASIS shall consist of:

a. A test schedule for n systems, subsystems, trains or other designated components obtained by dividing the specified test interval into n equal subinterval, and

b. The testing of one system, subsystem, train or other designated component at the beginning of each subinterval.

FREQUENCY NOTATION

1.22 The FREQUENCY NOTATION specified for the performance of Surveillance Requirements shall correspond to the intervals defined in Table 1.2.

ENGINEERED SAFETY FEATURE RESPONSE TIME - (Continued)

performing its safety function (i.e., the valves travel to their required positions, pump discharge pressures reach their required values, etc.). Times shall include diesel generator starting and sequence loading delays where applicable.

PHYSICS TESTS

1.28 PHYSICS TESTS shall be those tests performed to measure the fundamental nuclear characteristics of the reactor core and related instrumentation and 1) described in Chapter 13.0 of the FSAR, 2) authorized under the provisions of 10 CFR 50.59, or 3) otherwise approved by the Commission.

UNRODDED INTEGRATED RADIAL PEAKING FACTOR - F_r

1.29 The UNRODDED INTEGRATED RADIAL PEAKING FACTOR is the ratio of the peak pin power to the average pin power in an unrodded core, excluding tilt.

SOURCE CHECK

1.30 A SOURCE CHECK shall be the qualitative assessment of channel response when the channel sensor is exposed to radiation.

OFFSITE DOSE CALCULATION MANUAL (ODCM)

1.31 An OFFSITE DOSE CALCULATION MANUAL (ODCM) shall be a manual containing the methodology and parameters to be used in the calculation of offsite doses due to radioactive gaseous and liquid effluents and in the calculation of gaseous and liquid effluent monitoring instrumentation alarm/trip setpoints and in the conduct of environmental radiological monitoring. Requirements of the ODCM are provided in Specification 6.16.

GASEOUS RADWASTE TREATMENT SYSTEM

1.32 A GASEOUS RADWASTE TREATMENT SYSTEM is any system designed and installed to reduce radioactive gaseous effluents by collecting reactor coolant system offgases from the primary system and providing for delay or holdup for the purpose of reducing the total radioactivity prior to release to the environment.

VENTILATION EXHAUST TREATMENT SYSTEM

1.33 A VENTILATION EXHAUST TREATMENT SYSTEM is any system designed and installed to reduce gaseous radioiodine or radioactive material in particulate form in effluents by passing ventilation or vent exhaust gases through charcoal adsorbers and/or HEPA filters for the purpose of removing iodines or particulates from the gaseous exhaust stream prior to the release to the environment. Such a system is not considered to have any effect on noble gas effluents. Engineered Safety Feature (ESF)

atmospheric cleanup systems are not considered to be VENTILATION EXHAUST TREATMENT SYSTEM components.

RADIOACTIVE WASTE TREATMENT SYSTEMS

1.34 RADIOACTIVE WASTE TREATMENT SYSTEMS are those liquid, gaseous and solid waste systems which are required to maintain control over radioactive material in order to meet the LCOs set forth in these specifications.

MAJOR CHANGES TO RADIOACTIVE WASTE TREATMENT SYSTEMS (SOLIDS, LIQUIDS AND GASEOUS)

1.35 MAJOR CHANGES TO RADIOACTIVE WASTE TREATMENT SYSTEMS shall include:

1) Major changes in process equipment, components, structures and effluent monitoring instrumentation from those described in the FSAR,

2) Major changes in the design of radwaste treatment systems (liquid, gaseous and solid) that could significantly alter the characteristics and/or quantities of effluents released or volumes of solid waste stored or shipped offsite from those previously considered in the FSAR and

3) Changes in system design which may invalidate the accident analysis as described in the FSAR.

PROCESS CONTROL PROGRAM (PCP)

1.36 The PROCESS CONTROL PROGRAM shall contain sampling, analysis, and formulation determination by which SOLIDIFICATION of radioactive wastes from liquid systems is assured.

SOLIDIFICATION

1.37 SOLIDIFICATION shall be the conversion of wet radioactive wastes into a form that meets shipping and burial ground requirements.

PURGE - PURGING

1.38 PURGE or PURGING is the controlled process of discharging air or gas from a confinement to maintain temperature, pressure, humidity, concentration or other operating condition, in such a manner that replacement air or gas is required to purify the confinement.

VENTING

1.39 VENTING is the controlled process of discharging air or gas from a confinement to maintain temperature, pressure, humidity, concentration or other operating condition, in such a manner that replacement air or gas is not provided or required during venting. Vent, used in system names, does not imply a VENTING process.

MEMBER(S) OF THE PUBLIC

1.40 MEMBER(S) OF THE PUBLIC shall include all persons who are not occupationally associated with the plant. This category does not include employees of the utility, its contractors or its vendors. Also excluded from this category are persons who enter the site to service equipment or to make deliveries. This category does include persons who use portions of the site for recreational, occupational or other purposes not associated with the plant.

The term "REAL MEMBER OF THE PUBLIC" means an individual who is exposed to existing dose pathways at one particular location.

SITE BOUNDARY

1.41 The SITE BOUNDARY shall be that line beyond which the land is not owned, leased or otherwise controlled by the licensee.

UNRESTRICTED AREA

1.42 An UNRESTRICTED AREA shall be any area at or beyond the site boundary to which access is not controlled by the licensee for purposes of protection of individuals from exposure to radiation and radioactive materials or any area within the site boundary used for residential quarters or industrial, commercial institutional and/or recreational purposes.

TABLE 1.1

OPERATIONAL MODES

MODE	REACTIVITY CONDITION, K_{eff}	% RATED THERMAL POWER*	AVERAGE COOLANT TEMPERATURE
1. POWER OPERATION	$\geq$ 0.99	$>$ 5%	$\geq$ 300°F
2. STARTUP	$\geq$ 0.99	$\leq$ 5%	$\geq$ 300°F
3. HOT STANDBY	$<$ 0.99	0	$\geq$ 300°F
4. HOT SHUTDOWN	$<$ 0.99	0	300°F $>$ T_{avg} $>$ 200°F
5. COLD SHUTDOWN	$<$ 0.98	0	$\leq$ 200°F
6. REFUELING**	$\leq$ 0.95	0	$\leq$ 140°F

*Excluding decay heat.

**Fuel in the reactor vessel with the vessel head closure bolts less than fully tensioned or with the head removed.

TABLE 1.2

FREQUENCY NOTATION

NOTATION	FREQUENCY
S	Once per 12 hours.
D	Once per 24 hours.
W	Once per 7 days.
M	Once per 31 days.
Q	Once per 92 days.
SA	Once per 6 months.
R	Once per 18 months.
S/U	Prior to each reactor startup.
P	Prior to each release.
N.A.	Not applicable.

INSTRUMENTATION

RADIOACTIVE LIQUID EFFLUENT INSTRUMENTATION

LIMITING CONDITION FOR OPERATION

3.3.3.9 The radioactive liquid effluent monitoring instrumentation channels shown in Table 3.3-12 shall be OPERABLE with applicable alarm/trip setpoints set to ensure that the limits of Specification 3.11.1.1 are not exceeded. The setpoints shall be determined in accordance with procedures as described in the ODCM.

APPLICABILITY: As shown in Table 3.3-12.

ACTION:

a. With the number of channels less than the minimum channels operable requirement, take the ACTION shown in Table 3.3-12.

b. Restore the inoperable monitor to OPERABLE status within 30 days or, in lieu of a report required by Specification 6.9.1, submit a report via the Semi-Annual Effluent Release Report whenever an instrument is inoperable for 30 days or more, outlining the reasons for the inoperability, and the plans for returning the monitor to operable status. Releases need not be terminated provided the specified ACTION is continued.

c. The provisions of Specifications 3.0.3 and 3.0.4 are not applicable.

SURVEILLANCE REQUIREMENTS

4.3.3.9.1 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 at the frequencies shown in Table 4.3-12.

TABLE 3.3-12

RADIOACTIVE LIQUID EFFLUENT MONITORING INSTRUMENTATION

INSTRUMENT	MINIMUM # OPERABLE	ALARM SETPOINT REQUIRED	APPLICABILITY	ACTION
1. Gross Radioactivity Monitors Providing Automatic Termination of Release				
a. Clean Liquid Radwaste Effluent Line	1	Yes	*	1
b. Aerated Liquid Radwaste Effluent Line	1	Yes	*	1
c. Steam Generator Blowdown Monitor or Condenser Air Ejector Monitor	1**	Yes	***	2
d. Condensate Polishing Facility Waste Neut Sump	1	Yes	***	1
2. Gross Radioactivity Monitors Not Providing Automatic Termination of Release				
a. Reactor Building Closed Cooling Water Monitor#	1	Yes	*	3
3. Flow Rate Measurements				
a. Clean Liquid Radwaste Effluent Line	1	No	*	4
b. Aerated Liquid Radwaste Effluent Line	1	No	*	4
c. Condensate Polishing Facility Waste Neut Sump Discharge Line	1	No	*	4
d. Dilution Water Flow	##	No	*	NA
e. Steam Generator Blowdown Line	###	No	*	NA

TABLE 3.3-12 (Continued)

RADIOACTIVE LIQUID EFFLUENT MONITORING INSTRUMENTATION

Table Notes

* - At all times - which means that channels shall be OPERABLE and in service on a continuous, uninterrupted basis, except that outages are permitted, within the time frame of the specified ACTION statement, for the purpose of maintenance and performance of required tests, checks and calibrations.

** - Although both monitors are normally operable, only one is necessary as the activity measured by each can be related to the other, and both monitors are capable of automatically isolating the steam generator blowdown.

*** - Modes 1-5 and Mode 6 when pathway is being used except that outages are permitted within the time frame of the specified ACTION statement for the purpose of maintenance and performance of required tests, checks and calibrations.

\# - Since the only source of service water contamination is the reactor building closed cooling water, monitoring of the closed cooling water and conservative leakage assumptions will provide adequate control of service water effluents.

- The dilution water flow is determined by the use of condenser cooling water and service water pump status. Pump status is only reviewed for purposes of determining flows.

- Determined by the use of valve curves and/or make up water flow rates for the purpose of determining flows only.

NA - Not Applicable.

TABLE 3.3-12
(Continued)

ACTION STATEMENTS

ACTION 1: With the number of channels OPERABLE less than required by the Minimum Channels OPERABLE requirements, effluent releases may continue provided that best efforts are made to repair the instrument within 30 days and that prior to initiating a release:

1. At least two independent samples are analyzed in accordance with Specification 4.11.1.1.1, and;

2. The release rate calculations and discharge valving are verified.

ACTION 2: With the number of channels OPERABLE less than required by the Minimum Channels OPERABLE requirement, effluent releases via this pathway may continue provided that best efforts are made to repair the instrument within 30 days and that grab samples are analyzed for gross radioactivity (beta or gamma) at a lower limit of detection of at least 5×10^{-7} μCi/ml;

1. Once per 12 hours when the specific activity of the secondary coolant is $>$ 0.01 μCi/ml DOSE EQUIVALENT I-131.

2. Once per 24 hours when the specific activity of the secondary coolant is $\leq$ 0.01 μCi/ml DOSE EQUIVALENT I-131.

ACTION 3: With the number of channels OPERABLE less than required by the Minimum Channels OPERABLE requirement, effluent releases via this pathway may continue provided that best efforts are made to repair the instrument within 30 days and that once per 24 hours grab samples of the service water effluent are collected and analyzed for gross radioactivity (beta or gamma) at a lower limit of detection of at least 5×10^{-7} μCi/ml.

ACTION 4: With the number of channels OPERABLE less than required by the Minimum Channels OPERABLE requirement, effluent releases via this pathway may continue provided that best efforts are made to repair the instrument within 30 days and that the flow rate is estimated once per 4 hours during actual releases.

TABLE 4.3-12

RADIOACTIVE LIQUID EFFLUENT MONITORING INSTRUMENTATION SURVEILLANCE REQUIREMENTS

INSTRUMENT	CHANNEL CHECK	SOURCE CHECK	CHANNEL CALIBRATION	CHANNEL FUNCTIONAL
1. GROSS RADIOACTIVITY MONITORS PROVIDING ALARM AUTOMATIC TERMINATION OF RELEASE				
a. Clean Liquid Radwaste Effluent Line	D*	R	R(1)	Q(2)
b. Aerated Liquid Radwaste Effluent Line	D*	R	R(1)	Q(2)
c. Steam Generator Blowdown Monitor	D*	R	R(1)	Q(2)
d. Condenser Air Ejector Monitor	D*	M	R(3)	Q(2)
e. Condensate Polishing Facility - Waste Neut Sump	D*	P	R(1)	Q(2)
2. GROSS RADIOACTIVITY MONITORS PROVIDING ALARM BUT NOT PROVIDING AUTOMATIC TERMINATION OF RELEASE				
a. Reactor Building Closed Cooling Water	D*	R	R(1)	Q(2)
3. FLOW RATE MEASUREMENT DEVICES				
a. Clean Liquid Radwaste Line	D*	NA	R	Q
b. Aerated Liquid Radwaste Line	D*	NA	R	Q
c. Condensate Polishing Facility - Waste Neut Sump Line	D*	NA	R	Q
d. Dilution Water Flow	D(4)	NA	NA	NA
e. Steam Generator Blowdown Line	D(4)	NA	NA	NA

TABLE 4.3-12
(Continued)

TABLE NOTATIONS

* - During releases via this pathway and when the monitor is required operable per Table 3.3-12. The channel check should be done when the discharge is in progress.

NA - Not Applicable.

(1) - Calibration shall include the use of a known radioactive liquid or solid source. The radioactive sources shall be in a known, reproducible geometry.

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

a. Instrument indicates measured levels above the alarm/trip setpoint.

b. Instrument indicates a downscale or circuit failure.

- Automatic isolation of the discharge stream shall also be demonstrated for this case for each monitor except the reactor building closed cooling water monitor. For the condenser air ejector monitor it is the isolation of the steam generator blowdown that shall be demonstrated.

(3) - Calibration shall be performed using a known source whose strength is determined by a detector which has been calibrated to an NBS source. The source shall be in a known reproducible geometry.

(4) - Pump or valve status, as appropriate, shall be checked daily for the purposes of determining flow rates.

INSTRUMENTATION

RADIOACTIVE GASEOUS EFFLUENT MONITORING INSTRUMENTATION

LIMITING CONDITION FOR OPERATION

3.3.3.10 The radioactive gaseous effluent monitoring instrumentation channels shown in Table 3.3-13 shall be OPERABLE with applicable alarm/trip setpoints set to ensure that the limits of Specification 3.11.2.1 are not exceeded. The setpoints shall be determined in accordance with procedures as described in the ODCM.

APPLICABILITY: As shown in Table 3.3-13.

ACTION:

a. With the number of channels less than the minimum channels operable requirement, take the ACTION shown in Table 3.3-13.

b. Restore the inoperable monitor to OPERABLE status within 30 days or, in lieu of a report required by Specification 6.9.1, submit a report via the Semi-Annual Effluent Release Report whenever an instrument is inoperable for 30 days or more outlining the reasons for the inoperability and the plans for returning the monitor to operable status. Releases need not be terminated provided the specified ACTION is continued.

c. The provisions of Specifications 3.0.3 and 3.0.4 are not applicable.

SURVEILLANCE REQUIREMENTS

4.3.3.10.1 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 at the frequencies shown in Table 4.3-13.

TABLE 3.3-13

RADIOACTIVE GASEOUS EFFLUENT INSTRUMENTATION

INSTRUMENT	MINIMUM CHANNELS OPERABLE	ALARM SETPOINTS REQUIRED	APPLICABILITY	ACTION
1. MP2 STACK				
a. Noble Gas Activity Monitor	1	Yes	**	1
b. Iodine Sampler	1	No	**	2
c. Particulate Sampler	1	No	**	2
d. Stack Flow Rate Monitor	1	No	**	3
e. Sampler Flow Rate Monitor	1	No	**	3
2. MP1 MAIN STACK				
a. Noble Gas Activity Monitor	1	Yes	**	5
b. Iodine Sampler	1	No	**	2
c. Particulate Sampler	1	No	**	2
d. Stack Flow Rate Monitor	1	No	**	3
e. Sampler Flow Rate Monitor	1	No	**	3
3. WASTE GAS HOLDUP SYSTEM - NOBLE GAS MONITOR	1	Yes	**	4

* - During waste gas holdup system operations.

** - At all times which means that channels shall be OPERABLE and in service on a continuous, uninterrupted basis, except that outages are permitted, within the time frame of the specified action statement, for the purpose of maintenance and performance of required tests, checks and calibrations.

TABLE 3.3-13
(Continued)

ACTION STATEMENTS

ACTION 1: With the number of channels OPERABLE less than required by the Minimum Channels OPERABLE requirement, effluent releases via this pathway may continue provided that best efforts are made to repair the instrument within 30 days and that grab samples are taken once per 12 hours and these samples are analyzed for gross activity within 24 hours.

ACTION 2: With the number of channels OPERABLE less than required by the Minimum Channels OPERABLE requirement, effluent releases via this pathway may continue provided that best efforts are made to repair the instrument within 30 days and that samples are continuously collected with auxiliary sampling equipment for periods of seven (7) days and analyzed for principle gamma emitters with half lives greater than 8 days within 48 hours after the end of the sampling period.

ACTION 3: With the number of channels OPERABLE less than required by the Minimum Channels OPERABLE requirement, effluent releases via this pathway may continue provided that the best efforts are made to repair the instrument within 30 days and that the flow rate is estimated once per 4 hours.

ACTION 4: With the number of channels OPERABLE less than required by the minimum channels OPERABLE requirement:

Releases from the Millstone Unit 2 waste gas system may continue provided that best efforts are made to repair the instrument within 30 days and that prior to initiating the release:

(a) At least two independent samples of the tank's contents are analyzed; and,

(b) The release rate calculations and discharge valve lineups are verified.

Otherwise, suspend releases from the waste gas holdup system.

ACTION 5: With the number of channels OPERABLE less than required by the minimum channels OPERABLE requirement, Millsone Unit 2 releases via the Millstone Unit 1 stack may continue provided that best efforts are made to repair the instrument within 30 days and that grab samples are taken once per 12 hours and these samples are analyzed for gross radioactivity within 24 hours.

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TABLE 4.3-13

RADIOACTIVE GASEOUS EFFLUENT MONITORING INSTRUMENTATION SURVEILLANCE REQUIREMENTS

INSTRUMENT	CHANNEL CHECK	SOURCE CHECK	CHANNEL CALIBRATION	CHANNEL FUNCTIONAL
1. MP2 STACK				
a. Noble Gas Activity Monitor	D	M	R(1)	Q(2)
b. Iodine Sampler	NA	NA	NA	NA
c. Particulate Sampler	NA	NA	NA	NA
d. Stack Flow Rate Monitor	D	NA	R	Q
e. Sampler Flow Rate Monitor	D	NA	R	NA
2. MP1 MAIN STACK				
a. Noble Gas Activity Monitor	D	M	R(3)	Q(2)
b. Iodine Sampler	NA	NA	NA	NA
c. Particulate Sampler	NA	NA	NA	NA
d. Stack Flow Rate Monitor	D	NA	R	Q(2)
e. Sampler Flow Rate Monitor	D	NA	R	NA
3. WASTE GAS SYSTEM NOBLE GAS MONITOR	P	P	R(1)	Q(2)

NA = Not Applicable.

TABLE 4.3-13
(Continued)

TABLE NOTATION

(1) Calibration shall include the use of a known source whose strength is determined by a detector which has been calibrated to an NBS source. These sources shall be in a known, reproducible geometry.

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

a. Instrument indicates measured levels above the alarm/trip setpoint.

b. Instrument indicates a downscale failure.

*Also demonstrate automatic isolation for the waste gas system noble gas monitor.

(3) Calibration shall include the use of a known source whose strength is determined by a detector which has been calibrated to an NBS source. These sources shall be in a known reproducible geometry.

3/4.11 RADIOACTIVE EFFLUENTS

3/4.11.1 LIQUID EFFLUENTS

CONCENTRATION

LIMITING CONDITION FOR OPERATION

3.11.1.1 The concentration of radioactive material released from the site (see Figure 5.1-1) shall not exceed the concentrations specified in 10 CFR Part 20, Appendix B, Table II, Column 2 for radionuclides other than dissolved or entrained noble gases. For dissolved or entrained noble gases, the concentration shall not exceed 2×10^{-4} μCi/ml total activity.

APPLICABILITY: At all times.

ACTION:

With the concentration of radioactive material released from the site exceeding the above limits, restore the concentration to within the above limits within 15 minutes.

SURVEILLANCE REQUIREMENTS

4.11.1.1.1 Radioactive liquid wastes shall be sampled and analyzed to the sampling and analysis program of Table 4.11-1.

4.11.1.1.2 The results of radioactive analysis shall be used in accordance with the methods of the ODCM to assure that the concentration of the point of release are maintained within the limits of Specification 3.11.1.1.

TABLE 4.11-1

RADIOACTIVE LIQUID WASTE SAMPLING AND ANALYSIS PROGRAM

LIQUID RELEASE TYPE	SAMPLING FREQUENCY	MINIMUM ANALYSIS FREQUENCY	TYPE OF ACTIVITY ANALYSIS	LOWER LIMIT OF DETECTION (LLD) (μCi/ml)
A. Batch Release[b]	P Each Batch	P Each Batch	Principal Gamma[c] Emitters	5×10^{-7}
1. Coolant Waste Monitor Tank			I-131, Mo-99, Ce-144	1×10^{-6}
2. Aerated Waste Monitor Tank	P One Batch/M	M	Dissolved and[d] Entrained Gases	1×10^{-5}
3. Condensate Polishing Facility - Waste Neut. Sump[e]				
4. Turbine Building Sumps[h]	P Each Batch	M Composite[f,g]	H-3[d] Gross alpha[d]	1×10^{-5} 1×10^{-7}
	P Each Batch	Q Composite[f,g]	Sr-89[d], Sr-90[d] Fe-55[d]	5×10^{-8} 1×10^{-6}
B. CONTINUOUS RELEASE				
1. Steam Generator Blowdown[h]	D Grab Sample[i]	W Composite[g]	Principal Gamma[c] Emitters	5×10^{-7}
2. Service Water Effluent			I-131, Mo-99, Ce-144	1×10^{-6}
	M Grab Sample	M	Dissolved and[j] Entrained Gases	1×10^{-5}
	W Grab Sample	M Composite[g]	H-3[j] Gross alpha[j]	1×10^{-5} 1×10^{-7}
	W Grab Sample	Q Composite[g]	Sr-89[j], Sr-90[j] Fe-55[j]	5×10^{-8} 1×10^{-6}

TABLE 4.11-1
(Continued)

Table Notations

a. The LLD is the smallest concentration of radioactive material in a sample that will be detected with 95% probability, with 5% probability of falsely concluding that a blank observation represents a "real" signal.

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

$$LLD = \frac{4.66\ s_b}{E * V * 2.22 \times 10^6 * Y * \exp(-\lambda \Delta t)}$$

where

LLD is the lower limit of detection as defined above (as μCi 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)

2.22×10^6 is the number of transformation per minute per microcurie

Y is the fractional radiochemical yield (when applicable)

λ is the radioactive decay constant for the particular radionuclide

Δt is the elapsed time between midpoint of sample collection and midpoint of counting time

It should be recognized that the LLD is defined as an a priori (before the fact) limit representing the capability of a measurement system and not as a 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 interferring nuclides, or other uncontrollable circumstances may render these LLDs unachievable. In such cases, the contributing factors will be identified and recorded on the analysis sheet for the particular sample.

TABLE 4.11-1
(Continued)

Table Notations

b. A batch release is the discharge of liquid wastes of a discrete volume. Prior to sampling, each batch shall be isolated and at least two tank/sump volumes shall be recirculated or equivalent mixing provided.

c. The LLD will be 5×10^{-7} μCi/ml. The principal gamma emitters for which this LLD applies are exclusively the following radionuclides: Mn-54, Fe-59, Co-58, Co-60, Zn-65, Cs-134, Cs-137, and Ce-141.

This list does not mean that only these nuclides are to be detected and reported. Other peaks which are measurable and identifiable, together with the above nuclides, shall also be identified and reported. Nuclides which are below the LLD for the analyses should not be reported as being present at the LLD level. When unusual circumstances result in a priori LLD's higher than required, the reasons shall be documented on the particular analysis sheet.

d. For the Condensate Polishing Facility (CPF) - Waste Neutralization Sump, these analyses are only required if the gamma analysis of the CPF - Waste Neutralization Sump indicates a gamma activity greater than 5×10^{-7} μCi/ml.

e. For the Condensate Polishing Facility - Waste Neutralization Sump, analyses are only required when the steam generator gross activity (sampled and analyzed 3 times per week as per Table 4.7-2) exceeds 1×10^{-5} μCi/ml.

f. A 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 which is representative of the liquids released.

g. Prior to analysis, all samples taken for the composite shall be thoroughly mixed in order for the composite sample to be representative of the effluents release.

h. For the Steam Generator Blowdown, and Turbine Building Sump, analyses are only required when the steam generator gross activity (sampled and analyzed 3 times per week as per Table 4.7-2) exceeds 5×10^{-7} μCi/ml.

i. Daily grab sample for the service water taken at least 5 days per week.

j. For the Service Water, these analyses are only required if a weekly gamma analyses indicates a gamma activity greater than 5×10^{-7} μCi/ml.

RADIOACTIVE EFFLUENTS

DOSE, LIQUIDS

LIMITING CONDITION FOR OPERATION

3.11.1.2 The dose or dose commitment to any REAL MEMBER OF THE PUBLIC from radioactive materials in liquid effluents from Unit 2 released from the site (see Figure 5.1-1) shall be limited:

a. During any calendar quarter to $\leq$ 1.5 mrem to the total body and to $\leq$ 5 mrem to any organ, and

b. During any calendar year to $\leq$ 3 mrem to the total body and to $\leq$ 10 mrem to any organ.

APPLICABILITY: At all times.

ACTION:

a. With the calculated dose from the release of radioactive materials in liquid effluents exceeding any of the above limits, in lieu of any other report required by Specification 6.9.1, prepare and submit to the Commission within 30 days, pursuant to Specification 6.9.2, a Special Report which identifies the cause(s) for exceeding the limit(s) and defines the corrective actions to be taken to reduce the releases of radioactive materials in liquid effluents during the remainder of the current calendar quarter and during the remainder of the calendar year so that the cumulative dose or dose commitment to any REAL MEMBER OF THE PUBLIC from such releases during the calendar year is within 3 mrem to the total body and 10 mrem to any organ.

b. The provisions of Specifications 3.0.3 and 3.0.4 are not applicable.

SURVEILLANCE REQUIREMENTS

4.11.1.2.1 Dose Calculations. Cumulative dose contributions from liquid effluents shall be determined in accordance with the Offsite Dose Calculation Manual (ODCM) once per 31 days.

RADIOACTIVE EFFLUENTS

LIQUID WASTE TREATMENT

LIMITING CONDITION FOR OPERATION

3.11.1.3 The following RADIOACTIVE WASTE TREATMENT SYSTEMS equipment shall be operated: degasifier, clean liquid primary demineralizer, boric acid evaporator, clean liquid secondary demineralizer, and the aerated waste demineralizer.

APPLICABILITY: Whenever the projected dose due to liquid effluents releases (excluding steam generator blowdown) from Unit 2 averaged over 31 days would exceed 0.06 mrem to the total body or 0.2 mrem to any organ.

ACTION:

a. With radioactive liquid waste being discharged without all applicable treatment* by the equipment identified above, and in excess of the above limits, in lieu of any other report required by Specification 6.9.1, prepare and submit to the Commission within 30 days, pursuant to Specification 6.9.2, a Special Report which includes the following information:

1. Identification of equipment or subsystems not OPERABLE and the reason for inoperability.

2. Action(s) taken to restore the inoperable equipment to OPERABLE status.

3. Summary description of action(s) taken to prevent a recurrence.

b. The provisions of Specifications 3.0.3 and 3.0.4 are not applicable.

SURVEILLANCE REQUIREMENTS

4.11.1.3.1 Doses due to liquid releases (excluding steam generator blowdown) from the site from Unit 2 shall be projected once per 31 days, in accordance with the ODCM.

*The term "all applicable treatment" under the ACTION statement shall mean use of applicable treatment equipment only in such cases in which the dose attributed to a particular waste stream is responsible for an appreciable portion (greather than ~ 10%) of the total projected dose.

RADIOACTIVE EFFLUENTS

3/4.11.2 GASEOUS EFFLUENTS

DOSE RATE

LIMITING CONDITION FOR OPERATION

3.11.2.1 The dose rate, at any time, offsite (see Figure 5.1-1) due to radioactive materials released in gaseous effluents from the site shall be limited to the following values:

a. The dose rate limit for noble gases shall be $\leq$ 500 mrem/yr to the total body and $\leq$ 3000 mrem/yr to the skin, and

b. The dose rate limit due to inhalation for iodine-131 and iodine-133, for all radioactive materials in particulate form with half lives greater than 8 days and radionuclides other than noble gases with half lives greater than 8 days shall be $\leq$ 1500 mrem/yr to any organ.

APPLICABILITY: At all times.

ACTION:

With the dose rate(s) exceeding the above limits, decrease the release rate within 15 minutes to comply with the limit(s) given in Specification 3.11.2.1.

SURVEILLANCE REQUIREMENTS

4.11.2.1.1 The release rate, at any time, of noble gases in gaseous effluents shall be controlled by the offsite dose rate as established above in Specification 3.11.2.1. The corresponding release rate shall be determined in accordance with the methodology in the ODCM.

4.11.2.1.2 The noble gas effluent monitors as required by Table 3.3-13, shall be used to control release rates to limit offsite doses within the values established in Specification 3.11.2.1.

4.11.2.1.3 The release rate of radioactive materials in gaseous effluents shall be determined by obtaining representative samples and performing analyses in accordance with the sampling and analysis program, specified in Table 4.11-2. The corresponding dose rate shall be determined using the methodology given in the ODCM.

TABLE 4.11-2

RADIOACTIVE GASEOUS WASTE SAMPLING AND ANALYSIS PROGRAM

GASEOUS RELEASE TYPE	SAMPLING FREQUENCY	MINIMUM ANALYSIS FREQUENCY	TYPE OF ACTIVITY ANALYSIS	LOWER LIMIT[a] OF DETECTION (LLD) (μCi/ml)
A. Waste Gas Storage Tank[h]	P	P Each Tank	Principal Gamma Emitters[b]	1×10^{-4}
			H-3	1×10^{-6}
B. Containment Purge	P	P Each Purge	Principal Gamma Emitters[b]	1×10^{-4}
			H-3	1×10^{-6}
C. Unit 2 Stack	M[c] Grab Samples -Gases	M[c]	Principal Gamma Emitters[b]	1×10^{-4}
			H-3[g]	1×10^{-6}
	Continuous[d]	W[f] Charcoal Sample	I-131	1×10^{-12}
			I-133[e]	1×10^{-10}
	Continuous[d]	W[f] Particulate Sample	Principal Gamma Emitters[b] (I-131, Others, Half Lives > 8 days)	1×10^{-11}
	Continuous[d]	M Composite Particulate Sample	Gross Alpha	1×10^{-11}
	Continuous[d]	Q Composite Particulate Sample	Sr-89, Sr-90	1×10^{-11}
	Continuous[d]	Noble Gas Monitor	Noble Gases -Gross Activity	1×10^{-6}

TABLE 4.11-2
(Continued)

Table Notation

a. The lower limit of detection (LLD) is defined in Table Notation of Table 4.11-1 1.

b. For gaseous samples, the LLD will be 1×10^{-4} μCi/cc, and for particulate samples, the LLD will be 1×10^{-11} μCi/cc. The principal gamma emitters for which these LLD's applies are exclusively the following radionuclides: Kr-87, Kr-88, Xe-133, Xe-133m, Xe-135 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 detected and reported. Other peaks which are measurable and identifiable, together with the above nuclides, shall also be identified and reported. Nuclides which are below the LLD for the analyses should not be reported as being present at the LLD level for that nuclide. When unusual circumstances result in a priori LLD's higher than required, the reasons shall be documented on the particular analysis sheet.

c. Analyses shall also be performed within 24 hours following an unexplained increase, as indicated by the Unit 2 stack noble gas monitor, of greater than 50%, after factoring out increases due to changes in THERMAL POWER levels, containment purges, or other explainable increases.

d. The ratio of the sample flow rate to the sampled stream flow rate shall be known.

e. Analysis for I-133 will not be performed on each charcoal sample. Instead, at least once per month, the ratio of I-133 to I-131 will be determined from a charcoal sample changed after 24 hours of sampling. This ratio, along with the routine I-131 activity determination will be used to determine the release rate of I-133.

f. Samples shall be changed at least once per 7 days and analyses shall be completed within 48 hours after changing. Special sampling and analysis of iodine and particulate filters shall also be performed whenever reactor coolant I-131 samples, which are taken 2-6 hours following a THERMAL POWER change exceeding 15 percent of RATED THERMAL POWER in one hour, show an increase of greater than a factor of 10. These filters shall be changed following such a ten-fold increase in coolant activity and every 24 hours thereafter until the reactor coolant I-131 levels are less than a factor of 10 greater than the original coolant levels. Sample analysis shall be completed within 48 hours of changing. The LLD's may be increased by a factor of 10 for these samples.

g. Grab samples for Tritum shall be taken weekly whenever the refueling cavity is flooded and there is fuel in the cavity. The grab sample

TABLE 4.11-2
(Continued)

Table Notation

shall be taken from the stack (Unit 1 or Unit 2) where the containment ventilation is being discharged at the time of sampling.

h. Waste Gas Storage Tanks are normally released on a batch basis. However, for the purposes of tank maintenance, inspection, or reduction of oxygen concentration, a waste gas tank may be continuously purged with nitrogen provided the following conditions are met:

(1) The previous batch of radioactive waste gas has been discharged to a final tank pressure of less than 5 PSIG.

(2) No radioactive waste gases have been added to the tank since the previous discharge.

(3) Valve lineups are verified to ensure that no radioactive waste gases will be added to the tank.

(4) After pressurizing the tank with nitrogen, a sample of the gas in the tank will be taken and analyzed for any residual gamma emitters and tritium prior to initiation of the nitrogen purge. The measured activity will be used to calculate the amount of activity released during the purge.

RADIOACTIVE EFFLUENTS

DOSE, NOBLE GASES

LIMITING CONDITION FOR OPERATION

3.11.2.2 The air dose offsite (see Figure 5.1-1) due to noble gases released from Unit 2 in gaseous effluents shall be limited to the following:

a. During any calendar quarter, to $\leq$ 5 mrad for gamma radiation and $\leq$ 10 mrad for beta radiation;

b. During any calendar year, to $\leq$ 10 mrad for gamma radiation and $\leq$ 20 mrad for beta radiation;

APPLICABILITY: At all times.

ACTION:

a. With the calculated air dose from radioactive noble gases in gaseous effluents exceeding any of the above limits, in lieu of any other report required by Specification 6.9.1, prepare and submit to the Commission within 30 days, pursuant to Specification 6.9.2, a Special Report which identifies the cause(s) for exceeding the limit(s) and defines the corrective actions to be taken to reduce the releases of radioactive noble gases in gaseous effluents during the remainder of the current calendar quarter and during the remainder of the calendar year so that the cumulative dose during the calendar year is within 10 mrad for gamma radiation and 20 mrad for beta radiation.

b. The provisions of Specifications 3.03 and 3.0.4 are not applicable.

SURVEILLANCE REQUIREMENTS

4.11.2.2.1 Dose Calculations Cumulative dose contributions for the total time period shall be determined in accordance with the Offsite Dose Calculation Manual (ODCM) once every 31 days.

RADIOACTIVE EFFLUENTS

DOSE, RADIOIODINES, RADIOACTIVE MATERIAL IN PARTICULATE FORM, AND RADIONUCLIDES OTHER THAN NOBLE GASES

LIMITING CONDITION FOR OPERATION

3.11.2.3 The dose to any REAL MEMBER OF THE PUBLIC from iodine-131, iodine-133, radioactive materials in particulate form with half lives greater than 8 days and radionuclides other than noble gases with half-lives greater than 8 days in gaseous effluents from Unit 2 released offsite (see Figure 5.1-1) shall be limited to the following:

a. During any calendar quarter to $\leq$ 7.5 mrem to any organ;

b. During any calendar year to $\leq$ 15 mrem to any organ.

APPLICABILITY: At all times.

ACTION:

a. With the calculated dose from the release of radioiodines, radioactive materials in particulate form, or radionuclides other than noble gases in gaseous effluents exceeding any of the above limits, in lieu of any other report required by Specification 6.9.1, prepare and submit to the Commission within 30 days, pursuant to Specification 6.9.2, a Special Report which identifies the cause(s) for exceeding the limit and defines the corrective actions to be taken to reduce the releases during the remainder of the current calendar quarter and during the remainder of the calendar year so that the cumulative dose or dose commitment to any REAL MEMBER OF THE PUBLIC from such releases during the calendar year is within 15 mrem to any organ.

b. The provisions of Specifications 3.0.3 and 3.0.4 are not applicable.

SURVEILLANCE REQUIREMENTS

4.11.2.3.1 Dose Calculations Cumulative dose contributions for the total time period shall be determined in accordance with the ODCM once every 31 days.

RADIOACTIVE EFFLUENTS

GASEOUS RADWASTE TREATMENT

LIMITING CONDITION FOR OPERATION

3.11.2.4 The following RADIOACTIVE WASTE TREATMENT SYSTEMS equipment shall be operated:

a. GASEOUS RADWASTE TREATMENT SYSTEM:

At least two waste gas decay tanks, the waste gas filter and one waste gas compressor.

b. VENTILATION EXHAUST TREATMENT SYSTEM:

Auxiliary building ventilation HEPA filter (L26), containment purge HEPA filter (L25).

APPLICABILITY:

a. The GASEOUS RADWASTE TREATMENT SYSTEM shall be used when the projected gaseous effluent air doses due to Unit 2 gaseous effluent releases offsite (see Figure 5.1-1) averaged over 31 days would exceed 0.2 mrad for gamma radiation and 0.4 mrad for beta radiation.

b. VENTILATION EXHAUST TREATMENT SYSTEM shall be used when the projected doses due to Unit 2 gaseous effluent particulate releases offsite (see Figure 5.1-1) averaged over 31 days would exceed 0.3 mrem to any organ.

ACTION:

a. With gaseous waste being discharged without all applicable treatment* by the equipment identified above, and in excess of the above limits, in lieu of any other report required by Specification 6.9.1, prepare and submit to the Commission within 30 days, pursuant to Specification 6.9.2, a Special Report which includes the following information:

1. Identification of equipment of subsystems not OPERABLE and the reason for inoperability.

2. Action(s) taken to restore the inoperable equipment to OPERABLE STATUS.

*The term "all applicable treatment" under the ACTION statement shall mean use of applicable treatment equipment only in such cases in which the dose attributed to a particular waste stream is responsible for an appreciable portion (greather than ~ 10%) of the total projected dose.

GASEOUS RADWASTE TREATMENT

3. Summary description of action(s) taken to prevent a recurrence.

b. The provisions of Specifications 3.0.3 and 3.0.4 are not applicable.

SURVEILLANCE REQUIREMENTS

4.11.2.4.1 Doses due to Unit 2 gaseous releases offsite shall be projected once per 31 days, in accordance with the ODCM.

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RADIOACTIVE EFFLUENTS

GAS STORAGE TANKS

LIMITING CONDITION FOR OPERATION

3.11.2.6 The quantity of radioactivity contained in each gas storage tank shall be limited to less than or equal to 9.92×10^4 curies of noble gases (considered as dose equivalent Xe-133).

APPLICABILITY: At all times.

ACTION:

a. With the quantity of radioactive material in any gas storage tank exceeding the above limit, within 15 minutes suspend all additions of radioactive material to the tank and within 48 hours reduce the tank contents to within the limit.

b. The provisions of Specifications 3.0.3 and 3.0.4 are not applicable.

SURVEILLANCE REQUIREMENT

4.11.2.6.1 The quantity of radioactive material contained in a gas storage tank shall be determined to be within the above limit at least once per 24 hours whenever radioactive materials are being added to the tank and primary coolant activity is such that the following exists:

$$\frac{\mu Ci/ml\ (Xe133)}{15.2} + \frac{\mu Ci/ml\ (Xe135)}{33.8} + \frac{\mu Ci/ml\ (Kr88)}{13.3} > 1.0$$

RADIOACTIVE EFFLUENTS

3/4.11.3 SOLID RADIOACTIVE WASTE

LIMITING CONDITION FOR OPERATION

3.11.3 The solid radwaste system shall be OPERABLE and used, as applicable in accordance with a PROCESS CONTROL PROGRAM, for the SOLIDIFICATION and packaging of radioactive wastes to ensure meeting the requirements of 10 CFR Part 20 and of 10 CFR Part 71 prior to shipment of radioactive wastes from the site.

APPLICABILITY: At all times.

ACTION:

a. With the packaging requirements of 10 CFR Part 20 and/or 10 CFR Part 71 not satisfied prior to shipment, suspend shipments of defectively packaged solid radioactive wastes from the site until corrective actions have been completed and verified in accordance with the PROCESS CONTROL PROGRAM.

   In lieu of any other report required by Specification 6.9.1, prepare and submit to the Commission within 30 days pursuant to Specification 6.9.2 a Special Report summarizing the problem and corrective action(s) taken.

b. The provisions of Specifications 3.0.3 and 3.0.4 are not applicable.

SURVEILLANCE REQUIREMENTS

4.11.3.1 The solid radwaste system shall be demonstrated OPERABLE by:

a. Operating the solid radwaste system in accordance with the Process Control Program at least once within 30 days prior to processing waste for SOLIDIFICATION or,

b. Verification of the existence of a valid contract for SOLIDIFICATION to be performed by a contractor in accordance with a PROCESS CONTROL PROGRAM.

SURVEILLANCE REQUIREMENTS (Continued)

4.11.3.2 THE PROCESS CONTROL PROGRAM shall be used to verify the SOLIDIFICATION of at least one representative test specimen from at least every tenth batch of each type of wet radioactive waste.

a. If any test specimen fails to verify SOLIDIFICATION, the SOLIDIFICATION of the batch under test shall be suspended until such time as additional test specimens can be obtained, alternative SOLIDIFICATION parameters can be determined in accordance with the PROCESS CONTROL PROGRAM, and a subsequent test verifies SOLIDIFICATION. SOLIDIFICATION of the batch may then be resumed using the alternative SOLIDIFICATION parameters determined by the PROCESS CONTROL PROGRAM.

RADIOACTIVE EFFLUENTS

3/4.11.4 TOTAL DOSE

LIMITING CONDITION FOR OPERATION

3.11.4 The dose or dose commitment to a REAL MEMBER OF THE PUBLIC from the Millstone Site is limited to $\leq$ 25 mrem to the total body or any organ (except the thyroid, which is limited to $\leq$ 75 mrem) over a period of 12 consecutive months.

APPLICABILITY: At all times.

ACTION:

a. With the calculated dose from the release of radioactive materials in liquid or gaseous effluents exceeding twice the limits of Specifications 3.11.1.2, 3.11.2.2, or 3.11.2.3, in lieu of any other report required by Specification 6.9.1, prepare and submit a Special Report to the Commission pursuant to Specification 6.9.2 and limit the subsequent releases such that the dose or dose commitment to any REAL MEMBER OF THE PUBLIC from the Millstone Site is limited to $\leq$ 25 mrem to the total body or any organ (except thyroid, which is limited to $\leq$ 75 mrem) over 12 consecutive months. This Special Report shall include an analysis which demonstrates that radiation exposures to any REAL MEMBER OF THE PUBLIC from the Millstone Site (including all effluent pathways and direct radiation) are less than the 40 CFR Part 190 Standard. Otherwise, obtain a variance from the Commission to permit releases which exceed the 40 CFR Part 190 Standard.

b. The provisions of Specification 3.0.3 and 3.0.4 are not applicable.

SURVEILLANCE REQUIREMENTS

4.11.4 Dose Calculations Cumulative dose contributions from liquid and gaseous effluents and direct radiation from the Millstone site shall be determined in Specifications 4.11.1.2, 4.11.2.2 and 4.11.2.3 and in accordance with the Offsite Dose Calculation Manual (ODCM) once per 31 days.

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 for the locations shown in the ODCM. (Deviations are permitted from the required sampling schedule if specimens are unobtainable due to hazardous conditions, seasonal unavailability, or to malfunction of automatic sampling equipment. If the latter, every effort shall be made to complete corrective action prior to the end of the next sampling period.)

APPLICABILITY: At all times.

ACTION:

a. If the Radiological Environmental Monitoring Program is not conducted as specified in Table 3.12-1 in lieu of Specifications 6.9.1 and 6.9.2 prepare and submit to the Commission, in the Annual Radiological Environmental Operating Report, a description of the reasons for not conducting the program as required and the plans for preventing a recurrence.

b. If the level of radioactivity in an environmental sampling medium at one or more of the locations specified in Table 3.12-1 exceeds the report levels of Table 3.12-2 when averaged over any calendar quarter, in lieu of any other report required by Specification 6.9.1, prepare and submit to the Commission within 30 days from the end of the affected calendar quarter, pursuant to Specification 6.9.2, a Special Report which includes an evaluation of any release conditions, environmental factors or other aspects which caused the limits of Table 3.12-2 to be exceeded. When more than one of the radionuclides in Table 3.12-2 are detected in the sampling medium, this report shall be submitted if:

$$\frac{\text{concentration (1)}}{\text{reporting level (1)}} + \frac{\text{concentration (2)}}{\text{reporting level (2)}} + \ldots \geq 1.0$$

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 appropriate calendar year limit of Specifications 3.11.1.2, 3.11.2.2 or 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.

MONITORING PROGRAM

c. If milk samples are unavailable from any one or more of the milk sample locations required by Table 3.12-1, a grass sample shall be substituted until a suitable milk location is evaluated as a replacement or until milk is available from the original location. Such an occurrence will be documented in the Annual Radiological Environmental Operating Report in lieu of Specifications 6.9.1 and 6.9.2.

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 and analyzed pursuant to the requirements of Tables 3.12-1 and 4.12-1.

TABLE 3.12-1

MILLSTONE RADIOLOGICAL ENVIRONMENTAL MONITORING PROGRAM

	EXPOSURE PATHWAY AND/OR SAMPLE	NUMBER OF LOCATIONS	SAMPLING AND COLLECTION FREQUENCY	TYPE AND FREQUENCY OF ANALYSIS
1.a.	Gamma Dose-Environmental TLD	17	Monthly	Gamma Dose - Monthly
1.b.	Gamma Dose-Accident TLD	22	Quarterly[(a)]	N/A[(a)]
2.	Airborne Particulate	8	Continuous Sampler-Weekly Filter Change	Gross Beta - Weekly Gamma Spectrum-Monthly on Composite (by location), and on Individual Sample if Gross beta is greater than 10 times mean of the weekly control station gross Beta Results
3.	Airborne Iodine	8	Continuous Sampler-Weekly Canister Change	I-131 - Weekly
4.	Vegetation	4	One Sample Near Middle and One End of Growing Season	Gamma Isotopic on Each Sample
5.	Milk	6	Monthly For All Animals Except Semimonthly for Goats When on Pasture	Gamma Isotopic, I-131, Sr-89 and Sr-90 on Each Sample
6.	Sea Water	2	Quarterly - Composite of 6 Weekly Grab Samples	Quarterly - Fractional Beta, Gamma Isotopic, Tritium
7.	Bottom Sediment	7	Semi-Annual	Gamma Isotopic on Each Sample
8.	Fin Fish-Flounder and One Other Type of Edible Fin Fish	2	Quarterly	Gamma Isotopic on Each Sample

TABLE 3.12-1 (Continued)

MILLSTONE RADIOLOGICAL ENVIRONMENTAL MONITORING PROGRAM

	EXPOSURE PATHWAY AND/OR SAMPLE	NUMBER OF LOCATIONS	SAMPLING AND COLLECTION FREQUENCY	TYPE AND FREQUENCY OF ANALYSIS
9.	Mussels	2	Quarterly	Gamma Isotopic on Each Sample
10	Oysters	4	Quarterly	Gamma Isotopic on Each Sample
11.	Clams	2	Quarterly	Gamma Isotopic on Each Sample
12.	Lobster	3	Quarterly	Gamma Isotopic on Each Sample

(a) Accident monitoring TLDs to be dedosed at least quarterly after location backgrounds have been determined.

TABLE 3.12-2

REPORTING LEVELS FOR RADIOACTIVITY CONCENTRATIONS IN ENVIRONMENTAL SAMPLES

	REPORTING LEVELS				
ANALYSIS	WATER (pCi/l)	AIRBORNE PARTICULATE OR GASES (pCi/m^3)	FISH, SHELLFISH (pCi/Kg, WET)	MILK (pCi/l)	VEGETABLES (pCi/Kg, WET)
H-3	2×10^4(a)		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		
I-131	(b)	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-140	2×10^2			3×10^2	
La-140	2×10^2			3×10^2	
Zr-95	4×10^2				
Nb-95	4×10^2				

(a) For drinking water samples. This is 40 CFR Part 141 value.

(b) Level for I-131 not included since no radioactivity is discharged to any drinking water pathways; other reporting levels are included for trending of long-lived isotopes only.

TABLE 4.12-1

MAXIMUM VALUES FOR LOWER LIMITS OF DETECTION (LLD)[a]

ANALYSIS	WATER (pCi/l)	AIRBORNE PARTICULATE OR GAS (pCi/m^3)	FISH, SHELLFISH (pCi/Kg, WET)	MILK (pCi/l)	FOOD PRODUCTS (pCi/Kg, WET)	SEDIMENT (pCi/Kg, DRY)
gross beta		1×10^{-2}				
fractional beta	4					
^{3}H	2000					
^{54}Mn	30[c]		130			
^{59}Fe	60[c]		260			
$^{58,60}Co$	30[c]		130			
^{65}Zn	60[c]		260			
^{95}Zr	60[c]					
^{95}Nb	30[c]					
^{131}I	d	7×10^{-2}		1	60[b]	
^{134}Cs	30[c]	5×10^{-2}	130	15	60	150
^{137}Cs	40[c]	6×10^{-2}	150	18	80	180
^{140}Ba	120[c,e]			70		
^{140}La	30[c,e]			25		

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 5% probability of falsely concluding that a blank observation represents a "real signal."

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

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

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 (or end of the sample collection period) and time of counting

It should be recognized that the LLD is defined as an a prior (before the fact) limit representing the capability of a measurement system and not as a 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 interferring nuclides, or other uncontrollable circumstances may render these a priori LLDs unachievable. In such cases, the contributing factors will be identified and described in the Annual Radiological Environmental Operating Report.

b. LLD for leafy vegetables.

c. To be reduced by a factor of two if the fractional beta for the sample exceeds 15 pCi/l.

d. Level for I-131 not included since no radioactivity discharged to any drinking water pathway.

e. From end of sample period.

RADIOLOGICAL ENVIRONMENTAL MONITORING

3/4.12.2 LAND USE CENSUS

LIMITING CONDITION FOR OPERATION

3.12.2 The land use census shall be maintained and shall identify the location of the milk animals in each of the 16 meteorological sectors within distance of five miles.*

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 doses currently being calculated in the ODCM, make the appropriate changes in the ODCM.

b. With a land use census identifying a location(s) which has a higher D/Q than a current indicator location the following shall apply:

(1) If the D/Q is at least 20% greater than the previously highest D/Q, replace one of the present sample locations with the new one within 30 days if milk is available.

(2) If the D/Q is not 20% greater than the previously highest D/Q, consider both direction, distance, availability of milk, and D/Q in deciding whether to replace one of the existing sample locations. If applicable, replacement should be within 30 days. If no replacement is made, sufficient justification should be given in the annual report.

c. The provisions of Specifications 3.0.3 and 3.0.4 are not applicable.

Sample location changes shall be noted in the Annual Radiological Environmental Operating Report.

SURVEILLANCE REQUIREMENTS

4.12.2 The validity of the land use census shall be verified at least once per 12 months by either a door-to-door survey, aerial survey, consulting local agriculture authorities, or any combination of these methods.*

*Broad leaf vegetation is sampled at the site boundary in the direction sector with the highest D/Q in lieu of a garden census.

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: As samples are received.

ACTION:

a. With analyses not being performed as required above, in lieu of any report required by Specifications 6.9.1 or 6.9.2, 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 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.

3/4.3.3.9 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. The alarm/trip setpoints for these instruments shall be calculated in accordance with approved methods in the ODCM 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. Monitoring of the turbine building sumps and condensate polishing facility floor drains is not required due to relatively low concentrations of radioactivity possible.

3/4.3.3.10 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. The alarm/trip setpoints for these instruments shall be calculated in accordance with approved methods in the ODCM 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.

There are a number of gaseous release points which could exhibit very low concentrations of radioactivity. For all of these release paths, calculations prove that any dose consequences, would be insignificant due to the intermittant nature of the release and/or the extremely low concentrations of radioactivity. Since it is not cost-beneficial (nor in many cases practical due to the nature of the release (steam) or the impossibility of detecting such low levels), to monitor these pathways, it has been determined that these release paths require no monitoring nor sampling.

These release paths include:

Turbine building ventilation, atmospheric steam dumps, steam generator safety values, condensate surge tank vent, refueling water storage tank vent, warehouse #5 ventilation, steam generator blowdown steam vent, and Terry turbine exhaust.

3/4.11 RADIOACTIVE EFFLUENTS

BASES

3/4.11.1 LIQUID EFFLUENTS

3/4.11.1.1 CONCENTRATION

This specification is provided to ensure that the concentration of radioactive materials released in liquid waste effluents from the site will be less than the concentration levels specified in 10 CFR Part 20, Appendix B, Table II. This limitation provides additional assurance that the levels of radioactive materials in bodies of water outside the site will result in exposures within (1) the Section II.A design objectives of Appendix I, 10 CFR Part 50, to an individual and (2) the limits of 10 CFR Part 20.106(e) to the population. The concentration limit for noble gases is based upon the assumption that Xe-135 is the controlling radioisotope and its MPC in air (submersion) was converted to an equivalent concentration in water using the methods described in International Commission on Radiological Protection (ICRP) Publication 2.

3/4.11.1.2 DOSE

This specification is provided to implement the requirements of Sections II.A, III.A and IV.A of Appendix I, 10 CFR Part 50. The Limiting Condition for Operation implements the guides set forth in Section II.A of Appendix I. The ACTION statements provide the required operating flexibility and at the same time implement the guides set forth in Section IV.A of Appendix I to assure that the releases of radioactive material in liquid effluents will be kept "as low as is reasonably achievable". The dose calculations in the ODCM implement the requirements in Section III.A of Appendix I that conformance with the guides of Appendix I is to be shown by calculational procedures based on models and data such that the actual exposure of an individual through appropriate pathways is unlikely to be substantially underestimated. The equations specified in the ODCM for calculating the doses due to the actual release rates of radioactive materials in liquid effluents will be consistent with the methodology provided 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," Revision 1, October 1977, and Regulatory Guide 1.113, "Estimating Aquatic Dispersion of Effluents from Accidental and Routine Reactor Releases for the Purpose of Implementing Appendix I," April 1977.

3/4.11.1.3 LIQUID WASTE TREATMENT

The operation of the liquid radwaste treatment system (does not include treatment of steam generator blowdown) ensures that this system will be available for use whenever liquid effluents require treatment prior to release to the environment. The requirements that the appropriate portions of these systems be used when specified provides assurance that the releases of radioactive materials in liquid efflents will be kept "as low as is reasonably achievable." This specification implements the requirements of 10 CFR Part 50.36a, General Design Criterion 60 of Appendix A to 10 CFR Part 50 and design objective Section II.D of Appendix A to 10 CFR Part 50. The specified limits governing the use of appropriate portions of the liquid radwaste treatment system were specified as a suitable fraction of the guide set forth in Section II.A of Appendix I, 10 CFR Part 50, for liquid effluents.

3/4.11.2 GASEOUS EFFLUENTS

3/4.11.2.1 DOSE RATE

This specification is provided to ensure that the dose rate at anytime from gaseous effluents from all units on the site will be within the annual dose limits of 10 CFR Part 20 for all areas offsite. The annual dose limits are the doses associated with the concentrations of 10 CFR Part 20, Appendix B, Table II. These limits provide reasonable assurance that radioactive material discharged in gaseous effluents will not result in the exposure of an individual offsite to annual average concentrations exceeding the limits specified in Appendix B, Table II of 10 CFR Part 20 (10 CFR Part 20.106(b)). For individuals who may at times be within the site boundary, the occupancy of the individual will be sufficiently low to compensate for any increase in the atmospheric diffusion factor above that for the site boundary. The specified release rate limits restrict, at all times, the corresponding gamma and beta dose rates above background to an individual at or beyond the site boundary to $\leq$ 500 mrem/year to the total body or to $\leq$ 3000 mrem/year to the skin. These release rate limits also restrict, at all times, the corresponding thyroid dose rate above background to an infant via the cow-milk-infant pathway to $\leq$ 1500 mrem/year for the nearest cow to the plant.

3/4.11.2.2 DOSE, NOBLE GASES

This specification is provided to implement the requirements of Sections II.B., III.A and IV.A of Appendix I, 10 CFR Part 50. The Limiting Condition for Operation implements the guides set forth in Section II.B of Appendix I. The ACTION statements provide the required operating flexibility and at the same time implement the guides set forth in Section IV.A of Appendix I assure that the releases of radioactive material in gaseous effluents will be kept "as low as is reasonably achievable." The Surveillance Requirements implement the requirements in

Section III.A of Appendix I that conform with the guides of Appendix I to be shown by calculational procedures based on models and data such that the actual exposure of an individual through the appropriate pathways is unlikely to be substantially underestimated. The dose calculations established in the ODCM for calculating the doses due to the actual release rates of radioactive noble gases in gaseous effluents will be consistent with the methodology provided 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," Revision 1, October 1977 and Regulatory Guide 1.111, "Methods for Estimating Atmospheric Transport and Dispersion of Gaseous Effluents in Routine Releases from Light-Water-Cooled Reactors," Revision 1, July 1977.

The ODCM equations provided for determining the air doses at the site boundary are based upon utilizing successively more realistic dose calculational methodologies. More realistic dose calculational methods are used whenever simplified calculations indicate a dose approaching a substantial portion of the regulatory limits. The methods used, in order are, previously determined air dose per released activity ratio, historical meteorological data and actual radionuclide mix released, or real time meteorology and actual radionuclides released.

3/4.11.2.3 DOSE, RADIOIODINES, RADIOACTIVE MATERIAL IN PARTICULATE FORM AND RADIONUCLIDES OTHER THAN NOBLE GASES

This specification is provided to implement the requirements of Sections II.C, III.A and IV.A of Appendix I, 10 CFR Part 50. The Limiting Conditions for Operation are the guides set forth in Section II.C of Appendix I. The ACTION statements provide the required operating flexibility and at the same time implement the guides set forth in Section IV.A of Appendix I to assure that the releases of radioactive materials in gaseous effluents will be kept "as low as is reasonably achievable." The ODCM calculational methods specified in the surveillance requirements implement the requirements in Section III.A of Appendix I that conformance with the guides of Appendix I be shown by calculational procedures based on models and data such that the actual exposure of an individual through appropriate pathways is unlikely to be substantially underestimated. The ODCM calculational methods for calculating the doses due to the actual release rates of the subject materials will be consistent with the methodology provided 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," Revision I, October 1977 and Regulatory Guide 1.111, "Methods for Estimating Atmospheric Transport and Dispersion of Gaseous Effluents in Routine Releases from Light-Water-Cooled Reactors," Revision 1, July 1977. The release rate specifications for radioiodines, radioactive material in particulate form and radionuclides other than noble gases are dependent on the existing radionuclide pathways to man. The pathways which are examined in the development of these

calculations are: 1) individual inhalation of airborne radionuclides, 2) deposition of radionuclides onto green leafy vegetation with subsequent consumption by man, 3) deposition onto grassy areas where milk animals and meat producing animals graze with consumption of the milk and meat by man, and 4) deposition on the ground with subsequent exposure of man.

3/4.11.2.4 GASEOUS WASTE TREATMENT

The OPERABILITY of the gaseous radwaste treatment system and the ventilation exhaust treatment systems ensures that the systems will be available for use whenever gaseous effluents require treatment prior to release to the environment. The requirement that the appropriate portions of these systems be used when specified provides reasonable assurance that the releases of radioactive materials in gaseous effluents will be kept "as low as is reasonably achievable." This specification implements the requirements of 10 CFR Part 50.36a, General Design Criterion 60 of Appendix A to 10 CFR Part 50, and design objective Section IID of Appendix I to 10 CFR Part 50. The specified limits governing the use of appropriate portions of the systems were specified as a suitable fraction of the guide set forth in Sections II.B and II.C of Appendix I, 10 CFR Part 50, for gaseous effluents.

3/4.11.2.6 GAS STORAGE TANKS

The isotopic saturation activity in a waste gas decay tank (WGDT) may conservatively be calculated based upon LCO reactor coolant concentrations assuming all activity is due to noble gas, TID 14844 T = 0 mix of fission gases, maximum letdown rate, and 100% removal of noble gas by the degasifier. The maximum allowable activity in a WGDT which, in the event of an uncontrolled release of the tank contents, will not result in a whole body dose at the nearest site boundary exceeding 500 mrem may be determined from NUREG 0133, 5.6.1, PWR gas storage tank specification 3.11.2.7. With the 0-2 hour design basis accident ground level X/Q of 5.4×10^{-4} sec/m^3 and NUREG 0133 curie limit expression, the maximum allowable single isotope activity may be calculated. The allowable coolant activity for each isotope is computed by adjusting the LCO coolant concentrations by the ratio of the maximum allowable tank activity to the saturation activity in the tank. The allowable limit for each isotope is much greater than the saturation level in the WGDT except for Kr-85, Kr-87, Kr-88, Xe-133 and Xe-135. Kr-85 may be eliminated due to the very slow approach of its saturation limit, while Kr-87 will add a small fraction of the total dose. The concentration limits for Kr-88, Xe-133 and Xe-135 are reduced by 25% to account for the other isotopes which make up a small fraction of the total potential dose (e.g., Kr-87). The surveillance

limit is therefore based upon the combined coolant concentration limits of the three significant isotopes Kr-88, Xe-133 and Xe-135.

Restricting the quantity of radioactivity contained in waste gas storage tanks provides assurance that in the event of an uncontrolled release of the tank's contents, the resulting total body exposure to an individual at the nearest exclusion area boundary will not exceed 0.5 rem. This is consistent with Standard Review Plan 15.7.1, "Waste Gas System Failure."

3.4.11.3 SOLID RADIOACTIVE WASTE

This specification implements the requirements of appropriate regulations (10CFR Part 20 and 10CFR Part 71) on radioactive waste shipments.

3.4.11.4 TOTAL DOSE

This specification is provided to meet the reporting requirements of 40 CFR 190. For the purposes of the Special Report, it may be assumed that the dose commitment to any REAL MEMBER OF THE PUBLIC from other fuel cycle sources is negligible, with the exception that dose contributions from other nuclear fuel cycle facilities at the same site or within a radius of 5 miles must be considered.

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 measurable concentrations of radioactive materials and levels of radiation are not higher than expected on the basis of the effluent measurements and modeling of the environmental exposure pathways. Program changes may be made based on operational experience.

The detection capabilities required by Table 4.12-1 are state-of-the-art for routine environmental measurements in industrial laboratories. It should be recognized that the LLD is defined as an "a priori" (before the fact) limit representing the capability of a measurement system and not as "a posteriori" (after the fact) limit for a particular measurement. An 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 will be identified and described in the Annual Radiological Environmental Operating Report.

3/4.12.2 LAND USE CENSUS

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.

Broad leaf vegetation is sampled at the site boundary in the direction of highest D/Q in lieu of a garden census as set forth in NUREG 0472.

3/4.12.3 INTERLABORATORY COMPARISON PROGRAM

The requirement for participation in an Interlaboratory Comparison 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 a quality assurance program for environmental monitoring in order to demonstrate that the results are reasonably valid.

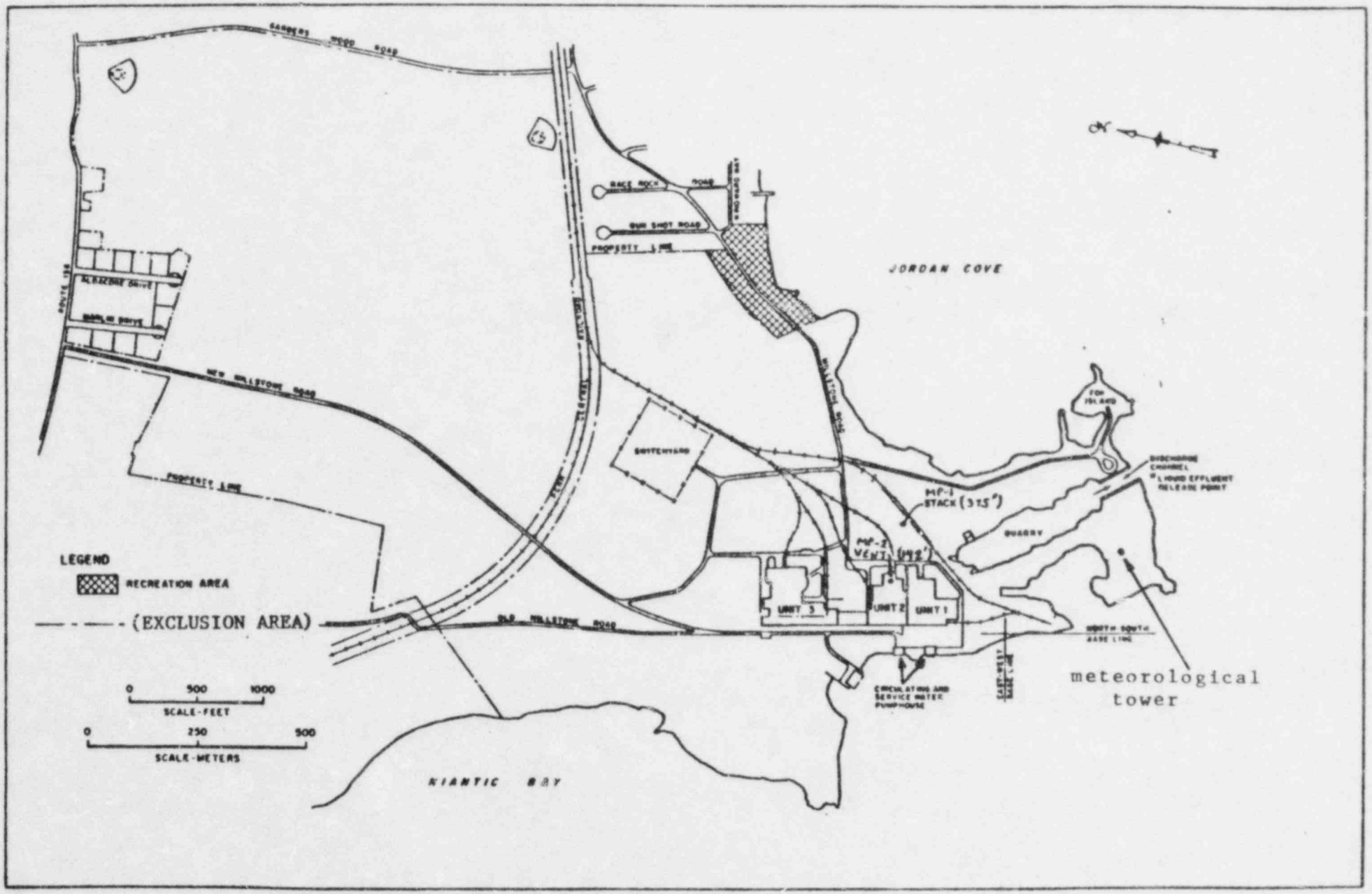

Figure 5.1-1

Site Boundary for Liquid and Gaseous Effluents

MEETING FREQUENCY

6.5.4.5 The SNRB shall meet at least once per calendar year and as convened by the SNRB Chairman.

QUORUM

6.5.4.6 A quorum of SNRB shall consist of the Chairman or his designated alternate and four SNRB members including alternates. No more than a minority of the quorum shall have line responsibility for operation of the Station.

REVIEW

6.5.4.7 The SNRB shall review:

a. Proposed changes in Section 6.0 of these Technical Specifications or Licenses common to all Units.

b. Any indication of an unanticipated deficiency in some aspect of design or operation of safety related structures, systems or components common to all Units.

c. Reports and meeting minutes of the SORC.

AUDITS

6.5.4.8 Audits of site activities shall be performed under the cognizance of the SNRB. These audits shall encompass:

a. The performance of all activities required by the Quality Assurance Program to meet the criteria of Appendix "B", 10 CFR 50, at least once per year.

b. The Site Emergency Plan and implementing procedures at least once per two years.

c. The Site Security Plan and implementing procedures at least once per two years.

d. The Facility Fire Protection Program and implementing procedures at least once per 24 months.

e. An inspection and audit of the fire protection and loss prevention program shall be performed annually by an outside firm experienced in fire protection and loss prevention.

f. The Radiological Environmental Monitoring Program and the results thereof at least once per 12 months.

g. The performance of activities in accordance with the OFFSITE DOSE CALCULATION MANUAL and PROCESS CONTROL PROGRAM at least once per 24 months.

h. The performance of activities required by the quality controls section of Regulatory Guides 1.21, Rev. 1, June 1974 and 4.1, Rev. 1, April 1975, at least once per 12 months.

SAFETY LIMIT VIOLATION - (Continued)

b. The NRC Operations Center shall be notified by telephone as soon as possible and in all cases within one hour. The Vice President Nuclear Operations and the NRB shall be notified within 24 hours.

c. A Safety Limit Violation Report shall be prepared. The report shall be reviewed by the PORC. 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 Violation Report shall be submitted to the Commission, the NRB and the Vice President Nuclear Operations within 14 days of the violations.

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, November 1972.

b. Refueling operations.

c. Surveillance activities of safety related equipment.

d. Security Plan implementation.

e. Emergency Plan implementation.

f. Fire Protection Program implementation.

g. Quality controls for effluent monitoring, using the guidance in Regulatory Guide 1.21, Rev. 1, June 1974.

h. Offsite Dose Calculation Manual and Process Control Program implementation.

6.8.2 Each procedure and administrative policy of 6.8.1 above, and changes thereto, shall be reviewed by the PORC/SORC, as applicable, and approved by the Unit Superintendent/Station Superintendent prior to implementation and reviewed periodically as set forth in each document.

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 PORC/SORC, as applicable, and approved by the Unit Superintendent/Station Superintendent within 14 days of implementation.

6.8.4 Written procedures shall be established, implemented and maintained covering the quality controls for the Radiological Environmental Monitoring Program using the guidance in Regulatory Guide 4.1, Rev. 1, April 1975.

6.8.5 All procedures and procedure changes required for 6.8.4 and for Section 3/4.12 of these Technical Specifications (Radiological Environmental Monitoring) shall be reviewed by an individual other than the author, of the Radiological Assessment Branch or Production Operation Services Laboratory (POSL) and approved by appropriate supervision.

Temporary changes may be made provided the intent of the original procedure is not altered and the change is documented and reviewed by an individual, other than the author of the Radiological Assessment Branch or POSL, and approved by appropriate supervision 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.

THIRTY-DAY WRITTEN REPORTS - (Continued)

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 features 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 features systems.

d. Abnormal degradation of systems other than those specified in 6.9.1.8.c, above, designed to contain radioactive material resulting from the fission process.

e. In addition to 10CFR50.72(a)(8) reporting requirements, an unplanned off-site release of 1) more than 1 curie of radioactive material in liquid effluents excluding tritium and dissolved noble gases, 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 off-site 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.

ANNUAL RADIOLOGICAL ENVIRONMENTAL OPERATING REPORT

6.9.1.10 Routine Annual Radiological Environmental Operating Reports covering the operation of the unit during the previous calendar year shall be submitted prior to May 1 of each year.

The Annual Radiological Environmental 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 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 3/4.12.2. If harmful effects 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 report shall include a summary table of all radiological environmental samples which shall include the following information for each pathway sampled and each type of analysis:

(1) Total number of analyses performed at indicator locations.

(2) Total number of analyses performed at control locations.

(3) Lower limit of detection (LLD).

(4) Mean and range of all indicator locations together.

(5) Mean and range of all control locations together.

(6) Name, distance and direction from discharge, mean and range for the location with the highest annual mean (indicator or control).

(7) Number of nonroutine reported measurements as defined in these specifications.

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 report shall also include a map of sampling locations keyed to a table giving distances and directions from the discharge; the report shall also include a summary of the Interlaboratory Comparison Data required by Specification 3/4.12.3.

SEMIANNUAL 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 report shall include a summary of the quantities of radioactive liquid and gaseous effluents released from the unit as outlined in Regulatory Guide 1.21, Revision 1, June 1974, with data summarized on a quarterly basis following the format of Appendix B thereof.

In addition, the 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 shall be in the form of joint frequency distributions of wind speed, wind direction, and atmospheric stability. This same report shall include an assessment of the radiation doses due to the radioactive liquid and gaseous effluents released from the site during the previous calendar year. The meteorological conditions concurrent with the time of release of radioactive material in gaseous effluents shall be used for determining the gaseous pathway doses. Dose calculations shall be performed in accordance with the Offsite Dose Calculation Manual.

In addition, the report to be submitted 60 days after January 1 of each year shall include an assessment of radiation doses to the likely most exposed REAL MEMBER OF THE PUBLIC from the site for the previous 12 consecutive months to show conformance with 40CFR190. Doses shall be calculated in accordance with the Offsite Dose Calculation Manual.

The semiannual effluent report shall also include a summary of each type of solid radioactive waste shipped offsite for burial or final disposal during the report period. This summary shall include the following information for each type of waste:

a. Type of waste (e.g., spent resin, compacted dry waste, irradiated components, etc.).

b. Solidification agent (e.g., cement).

c. Total curies.

d. Total volume and typical container volumes.

e. Principal radionuclides (those greater than 10% of total activity).

f. Types of containers used (e.g., LSA, Type A, etc.).

The semiannual effluent report shall include the following information for all unplanned releases from the site to unrestricted areas 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.

Any changes to the OFFSITE DOSE CALCULATION MANUAL shall be submitted in the Semiannual Radioactive Effluent Release Report.

SPECIAL REPORTS

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. These reports shall be submitted covering the activities identified below pursuant to the requirements of the applicable reference specification:

a. Inoperable Seismic Monitoring Instrumentation, Specification 3.3.3.3.

b. Inoperable Meteorological Monitoring Instrumentation, Specification 3.3.3.4.

c. Safety Class 1 Inservice Inspection Program Review, Specification 4.4.10.1.

d. Core Barrel Movement, Specifications 3.4.11 and 4.4.11.

e. ECCS Actuation, Specifications 3.5.2 and 3.5.3.

f. Fire Detection Instrumentation, Specification 3.3.3.7.

g. Fire Suppression Systems, Specifications 3.7.9.1 and 3.7.9.2.

h. RCS Overpressure Mitigation, Specification 3.4.9.3.

i. Radiological Effluent Reports required by Specifications 3.11.1.2, 3.11.1.3, 3.11.2.2, 3.11.2.3, 3.11.2.4, and 3.11.4.

j. Radiological Environmental Monitoring Program Reports required by Specification 3.12.1.

k. Solid Radioactive Waste, Specification 3.11.3.

6.10 RECORD RETENTION

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

a. Records and logs of facility 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 reactor tests and experiments.

f. Records of changes made to operating procedures.

g. Records of radioactive shipments.

h. Records of sealed source leak tests and results.

i. 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 facility operating license:

a. Records and drawing changes reflecting facility 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 facility radiation and contamination surveys.

d. Records of radiation exposure for all individuals entering radiation control areas.

e. Records of gaseous and liquid radioactive material released to the environs.

f. Records of transient or operational cycles for those facility components designed for a limited number of transients or cycles.

g. Records of training and qualification for current members of the plant staff.

h. Records of inservice 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 Part 50.59.

k. Records of meetings of the PORC, the NRB, the SORC and the SNRB.

l. Records of Environmental Qualification which are covered under the provisions of paragraph 6.13.

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

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.

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.

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

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 in the Radiation Work Permit. The surveillance frequency shall be established by the Health Physics Supervisor.

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 on duty and/or the Health Physics Supervisor.

6.13 ENVIRONMENTAL QUALIFICATION

6.13.1 By no later than June 30, 1982 all safety-related electrical equipment in the facility shall be qualified in accordance with the provisions of: Division of Operating Reactors "Guidelines for Evaluating Environmental Qualifications of Class IE Electrical Equipment in Operating Reactors" (DOR Guidelines); or NUREG-0588 "Interim Staff Position on Environmental Qualification of Safety-Related Electrical Equipment", December 1979. Copies of these documents are attached to Order for Modification of License DPR-65 dated October 24, 1980.

6.13.2 By no later than December 1, 1980, complete and auditable records must be available and maintained at a central location which describe the environmental qualification method used for all safety-related electrical equipment in sufficient detail to document the degree of compliance with the DOR Guidelines or NUREG-0588. Thereafter, such records should be updated and maintained current as equipment is replaced, further tested, or otherwise further qualified.

6.14 SYSTEMS INTEGRITY

The licensee shall implement a program to reduce leakage from systems outside containment that would or could contain highly radioactive fluids during a serious transient or accident to as low as practical levels. This program shall include the following:

1. Provisions establishing preventive maintenance and periodic visual inspection requirements, and

2. Integrated leak test requirements for each system at a frequency not to exceed refueling cycle intervals.

6.15 IODINE MONITORING

The licensee shall implement a program which will ensure the capability to accurately determine the airborne iodine concentration in vital areas under accident conditions. This program shall include the following:

1. Training of personnel,

2. Procedures for monitoring, and

3. Provisions for maintenance of sampling and analysis equipment.

6.16 OFFSITE DOSE CALCULATION MANUAL (ODCM)

The ODCM shall describe the methodology and parameters to be used in the calculation of offsite doses due to radioactive gaseous and liquid effluents and in the calculation of gaseous and liquid effluent monitoring instrumentation alarm/trip setpoints consistent with the applicable LCOs contained in these technical specifications. In addition, the environmental monitoring program sampling locations and accompanying maps are contained in the ODCM.

The ODCM and changes in the ODCM shall be reviewed by SORC prior to implementation. All such changes shall be submitted to the Commission by inclusion in the Semiannual Effluent Release Report covering the period in which the change was approved by the Station Superintendent and should include sufficiently detailed information to support the rationale for the change.

6.17 MAJOR CHANGES TO RADIOACTIVE WASTE TREATMENT SYSTEMS (Liquid, Gaseous and Solid)

The Commission shall be informed in writing within 30 days of implementation of a "major change" to the RADIOACTIVE WASTE TREATMENT SYSTEMS.

If applicable, the discussion of each change shall contain:

a) Sufficient detailed information to totally support the reason for the change without benefit of additional or supplemental information;

b) A detailed description of the equipment, components and processes involved and the interfaces with other plant systems;

c) An evaluation of the change which shows the predicted releases of radioactive materials in liquid and gaseous effluents and/or quantity of solid waste from those previously predicted in the license application and amendments thereto;

d) An evaluation of the change which shows the expected maximum exposures to individual in the unrestricted area and to the general population from those previously estimated in the license application and amendments thereto;

e) An estimate of the exposure to plant operating personnel as a result of the change.

Docket Nos. 50-245
50-336

ATTACHMENT 3

MILLSTONE NUCLEAR POWER STATION, UNIT NOS. 1 AND 2

PROPOSED REVISIONS TO

ENVIRONMENTAL TECHNICAL SPECIFICATIONS

AUGUST, 1982

The following is a listing of the proposed deletions from the Millstone Unit Nos. 1 and 2 Environmental Technical Specifications including the revised pages.

Section Number	Section Title	Page Nos.	Change
Table of Contents	---	ii, iii	Delete Sections 2.4 and 3.2 from Table of Contents
List of Figures	---	v	Delete Fig. 3.2-1, 3.2-2, and 3.2-3 from list
List of Tables	---	vi.	Delete entire page
1.0	Definitions and Abbreviations	1.1-1, 1.2-1	Delete definition c MPC, blowdown, and Known Radioactive Source and abbrev. of MPC
2.4	Radioactive Effluents	2.4-1 through 2.4-24	Delete Entire Section
3.2	Radiological Environmental Monitoring	3.2-1 through 3.2-8	Delete Entire Section
5.6	Plant Reporting Requirements	5.6-1 through 5.6-5	Delete 5.6.1a - Part B - Radiological Report Delete 5.6.1.b - Radioactive Effluents Release Report Delete 5.6.2.b - Nonroutine Radiological Environmental Operating Report Delete 5.6.2.c - Nonroutine Radioactive Effluent Report Delete Table 5.6-1

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1.0 DEFINITIONS AND ABBREVIATIONS

1.1 Definitions

A Channel Calibration shall be the adjustment of the channel output such that it responds with specified range and accuracy to a known value of the parameter which the channel monitors. The Channel Calibration shall encompass the entire channel from the sensor up to and including alarm and/or trip functions, and shall include the Channel Functional Test.

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 with other indications derived from independent instrument channels measuring the same parameter.

A Channel Functional Test shall be the injection of a simulated signal into the channel as close to the primary sensor as practicable to verify operability including alarm and/or trip functions.

Combined Available Chlorine is chlorine present in water as monochloramine, dichloramine and trichloramine (nitrogen trichloride).

Deicing is that operation performed by recirculating water from the discharge side of the condenser(s) to the intake structure for the purpose of removing or preventing the formation of ice.

Discharge temperature is that temperature of the condenser cooling water measured at the point of discharge (Quarry Cut) into the Long Island Sound.

Fish impingement refers to the process by which fish are trapped on vertical traveling screens at the condenser cooling water intake.

Free Available Chlorine is chlorine present in water in the form of hypochlorous acid and/or hypochlorite ion.

Intake temperature is the temperature of the water measured at the intake structure. Because of the hydrology of the area a true ambient water temperature varies with location.

1.2 Abbreviations

CONVEX - Connecticut Valley Electric Exchange
DBH - Diameter at Breast Height
El - Elevation above mean sea level
ERB - Environmental Review Board
FSAR - Final Safety Analysis Report
I&E - U. S. Nuclear Regulatory Commission, Office of Inspection and Enforcement
ID - Inner Diameter
MLW - Mean Low Water

NNECO - Northeast Nuclear Energy Company
NPDES - National Pollution Discharge Elimination System
NRC - U. S. Nuclear Regulatory Commission
NRB - Nuclear Review Board
NUSCO - Northeast Utilities Service Company
PORC - Plant Operations Review Committee
SORC - Site Operations Review Committee

5.6 Plant Reporting Requirement

5.6.1 Routine Reports

a. Annual Environmental Operating Report

Part A: Nonradiological Report. A report on the environmental surveillance programs for the previous 12 months of operation shall be submitted to the Director of the Regional Office of Inspection and Enforcement (with copy to the Director, Division of Reactor Licensing) as a separate document within 90 days after January 1 of each year. The period of the first report shall begin on January 1, 1975. The report shall include summaries, interpretations, and statistical evaluation of the results of the nonradiological environmental surveillance activities (Section 3.0) and the environmental monitoring programs required by limiting conditions for operation (Section 2.0) 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. If harmful effects or evidence of irreversible damage are detected by the monitoring, the licensee shall provide an analysis of the problem and a proposed course of action to alleviate the problem.

5.6.2 Nonroutine Reports

a. Nonroutine Environmental Operating Reports

A report shall be submitted in the event that (a) a limiting condition for operation is exceeded (as specified in Section 2.0, "Limiting Conditions for Operation"), (b) a report level is reached (as specified in Section 3.0, "Environmental Surveillance"), or (c) an unusual or important event occurs that causes a significant environmental impact, that affects potential environmental impact from plant operation, or that has high public or potential public interest concerning environmental impact from plant operation. The licensee shall submit an analysis and a proposed course of action to prevent any harmful effects or evidence of irreversible damage which is detected by the monitoring program. Reports shall be submitted under one of the report schedules described below.

(1) Prompt Report. Those events requiring prompt reports within 24 hours by telephone, telegraph, or facsimile transmission to the Director of the Regional Office of Inspection and Enforcement and within 10 days by a written report to the Director of the Regional Office of Inspection and Enforcement (with copy to the Director, Division of Reactor Licensing).

(2) 30-Day Report. Those events not requiring prompt report shall be reported within 30 days by a written report to the Director of the Regional Office of Inspection and Enforcement (with copy to the Director, Division of Reactor Licensing).

The reporting schedule for reports concerning limiting conditions for operation and report levels shall be specified in the licensee's technical specifications. Reports concerning unusual or important events shall be reported on the prompt schedule.

Written 10-day and 30-day reports and, to the extent possible, the preliminary telephone, telegraph, or facsimile reports shall (a) describe, analyze, and evaluate the occurrence, including extent and magnitude of the impact, (b) describe the cause of the occurrence, and (c) indicate the corrective action (including any significant changes made in procedures) taken to preclude repetition of the occurrence and to prevent similar occurrences involving similar components or systems.

The significance of an unusual or apparently important event with regard to environmental impact may not be obvious or fully appreciated at the time of occurrence. In such cases, the NRC shall be informed promptly of changes in the licensee's assessment of the significance of the event and a corrected report shall be submitted as expeditiously as possible.

5.6.3 Changes in Environmental Technical Specifications

a. A report shall be made to the NRC prior to implementation of a change in plant design, in plant operation, or in procedures described in Section 5.5 if the change would have a significant effect on the environment or involves an environmental matter or question not previously reviewed and evaluated by the NRC. The report shall include a description and evaluation of the changes and a supporting benefit-cost analysis.

b. Request for changes in environmental technical specifications shall be submitted to the Office of Nuclear Reactor Regulation, Director, Division of Reactor Licensing, for review and authorization. The request shall include an evaluation of the environmental impact of the proposed change and a supporting benefit-cost analysis.

c. Changes or additions to permits and certificates required by federal, state, local, and regional authorities for the protection of the environment will be reported. When the required changes are submitted to the concerned agency for approval, they shall also be submitted to the Office of Nuclear Reactor Regulation, Director, Division of Reactor Licensing, for information. The submittal shall include an evaluation of the environmental impact of the change.

Docket Nos. 50-245
50-336

ATTACHMENT 4

MILLSTONE NUCLEAR POWER STATION, UNIT NO. 1 AND 2

PROPOSED IMPLEMENTATION SCHEDULE

RADIOLOGICAL EFFLUENT TECHNICAL SPECIFICATIONS

AUGUST, 1982

The following schedule is proposed by Northeast Nuclear Energy Company for implementing the Radiological Effluent Technical Specifications at Millstone Unit Nos. 1 and 2. The staggered schedule is necessitated due to the large number of procedures which will need to be written or revised as well as personnel training which is required prior to using the new Technical Specifications.

NNECO proposes to implement the Technical Specifications related to liquid effluents and total dose commitment by October 1, 1982. The remaining Radiological Effluent Technical Specifications proposed herein will be implemented on January 1, 1983. This will facilitate the transition from our activity to dose commitment basis in the semi-annual effluent reports and permit timely implementation of the requirements of the Radiological Environmental Monitoring Program.

The implementation dates outlined herein represent a realistically attainable schedule by which NNECO can comply with the requirements delineated within the attached Technical Specifications.

A. OCTOBER 1, 1982

1. Radiological Effluent Technical Specifications which become effective:

Millstone Unit No. 1	Millstone Unit No. 2
Definitions	Definitions
3/4.8.C.2	3/4.11.1.2
3/4.8.C.3	3/4.11.1.3
3/4.8.D.5	3/4.11.4
6.8.1.h*	6.8.1.h*
6.9.2.g	6.9.2.i
6.16**	6.16**
6.17	6.17

*ODCM only
**Applicable liquid portions

2. Environmental Technical Specifications which are deleted:

Millstone Unit Nos. 1 and 2

2.4.1.1	Table 2.4-1
2.4.1.2	Table 2.4-3
2.4.1.3	

B. January 1, 1983

1. Radiological Effluent Technical Specifications which become effective:

Millstone Unit No. 1	Millstone Unit No. 2
3/4.8.A	3/4.3.3.9
3/4.8.B	3/4.3.3.10
3/4.8.C.1	3/4.11.1.1
3.4/8.D.1	3/4.11.2.1
3/4.8.D.2	3/4.11.2.2
3/4.8.D.3	3/4.11.2.3
3/4.8.D.4	3/4.11.2.4
3/4.8.D.6	3/4.11.2.6
3/4.8.D.7	3/4.11.3
3/4.8.E	3/4.12.1
3/4.8.F.1	3/4.12.2
3/4.8.F.2	3/4.12.3
3/4.8.F.3	6.5.4.8.f
6.5.4.8.f	6.5.4.8.g
6.7.4.8 g	6.5.4.8.h
6.5.4.8.h	6.8.1.g
6.8.1.g	6.8.4
6.8.4	6.8.5
6.8.5	6.9.1.9.e
6.9.1.9.e	6.9.1.10
6.9.1.10	6.9.1.11
6.9.1.11	6.9.2.i
6.9.2.g	6.9.2.j
6.9.2.h	6.9.2.k
6.9.2.i	6.16
6.16	

2. Environmental Technical Specifications which are deleted.

Millstone Unit Nos. 1 and 2

2.4.2.1
2.4.2.2
2.4.2.3
2.4.3
3.2
Figure 3.2-1
Figure 3.2-2
Figure 3.2-3
Talbes 2.4-3 2.4-4 3.2-1
2.4-5 3.2-2
5.6-1

5.6.1.a Part B
5.6.1.b
5.6.2.b
5.6.2.c