ATTACHMENT I

PROPOSED RADIOLOGICAL EFFLUENT TECHNICAL SPECIFICATIONS (RETS)

POWER AUTHORITY OF THE STATE OF NEW YORK
JAMES A. FITZPATRICK NUCLEAR POWER PLANT
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RADIOLOGICAL EFFLUENT TECHNICAL SPECIFICATIONS

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RADIOLOGICAL EFFLUENT TECHNICAL SPECIFICATIONS

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1.0 DEFINITIONS

Dose Equivalent I-131

The Dose Equivalent I-131 is the 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 Table III of TID-14844, "Calculation of Distance Factors for Power and Test Reactor Sites" or in NRC Regulatory Guide 1.109, Revision 1, October 1977.

Instrument Channel Calibration

See Appendix A Technical Specifications.

Instrument Channel Functional Test

See Appendix A Technical Specifications.

Instrument Check

See Appendix A Technical Specifications.

Member(s) of the Public

Member(s) of the Public includes all persons who are not occupationally associated with the facilities on the PASNY/NMPC site. This category does not include their contractors or 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 plants.

Offgas System

The Offgas System is the system designed and installed to reduce radioactive gaseous effluents. It collects reactor coolant system offgases and delays this release in order to reduce the total radioactivity prior to release to the environment.

Offsite Dose Calculation Manual (ODCM)

The ODCM describes 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 effluents monitoring instrumentation alarm/trip set points.

Operable

See Appendix A Technical Specifications.

Process Control Program (PCP)

The PCP is a document which identifies the current formulas, sampling methods, analyses, tests, and determinations used to control the processing and packaging of solid radioactive wastes. The PCP controls these activities in such a way as to assure compliance with 10 CFR 20, 10 CFR 71 and other applicable regulatory requirements governing the disposal of the radioactive waste.

Rated Thermal Power

See Rated Power, Appendix A Technical Specifications.

Site Boundary

The Site Boundary is that line beyond which the land is not owned, leased, or otherwise controlled by PASNY and NMPC. Refer to the ODCM for maps of the site boundary with regard to liquid and gaseous releases.

Solidification

Solidification is the conversion of wet wastes into a form that meets shipping and burial ground requirements.

Source Check

A Source Check is the qualitative assessment of channel response when the channel sensor is exposed to a source of increased radioactivity.

Treatment

Any process which effectively reduces the concentration of radioactive material per unit measure released to the environment. This includes such processes as filtration, evaporation/condensation, settling/decanting, and solidification.

Unrestricted Area

An unrestricted area shall be any area at or beyond the site boundary access to which is not controlled by PASNY 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 for industrial, commercial, institutional, and/or recreational purposes.

The definition of unrestricted area used in implementing the Radiological Effluent Technical Specifications has been expanded over that in 10 CFR 20.3(a)(17). The unrestricted area boundary may coincide with the exclusion (fenced) area boundary, as defined in 10 CFR 100.3(a), but the unrestricted area does not include areas over water bodies. The concept of unrestricted areas, established at or beyond the site boundary, is utilized in the Limiting Conditions for Operation to keep levels of radioactive materials in liquid and gaseous effluents as low as is reasonably achievable, pursuant to 10 CFR 50.36a.

LIMITING CONDITIONS FOR OPERATION	SURVEILLANCE REQUIREMENTS

2.0 LIQUID EFFLUENTS

2.1 LIQUID EFFLUENT MONITORS

Applicability

Applies to instrumentation required for monitoring radioactive liquid effluent discharges to the environment.

Objective

To assure that radioactive liquid effluent discharges are properly monitored and recorded during release.

Specifications

a. Liquid radwaste effluent radioactivity and flow rate shall be continuously monitored and recorded during release. If this specification cannot be met, continued release of liquid radwaste effluents shall be permitted provided that:

   1. Two independent samples of each tank are analyzed; and

   2. Two plant personnel independently check valving prior to discharge.

   NOTE: Discharge canal flow rate is based on design pump flow rates.

b. The liquid radwaste effluent monitor shall be set to alarm and automatically close the waste discharge valve prior to exceeding

2.1 LIQUID EFFLUENT MONITORS

Applicability

Applies to instrumentation for monitoring radioactive liquid effluent discharges.

Objective

To ensure that instrumentation required for radioactive liquid effluent discharges are maintained and calibrated.

Specifications

a. Operation of the radioactive liquid effluent monitor shall be verified as follows:

   1. An instrument check shall be performed prior to each release.

   2. An instrument channel functional test shall be performed quarterly.

   3. An instrument channel calibration shall be performed quarterly with a known radioactive source.

b. The operability of automatic waste discharge valves and the annunciation of alarms shall be demonstrated prior to each release.

LIMITING CONDITIONS FOR OPERATION	SURVEILLANCE REQUIREMENTS
the limits specified in Specification 2.2. The set point for the liquid radwaste effluent monitor shall be determined in accordance with methodology described in the ODCM. With a radioactive liquid waste effluent monitoring instrumentation channel alarm/trip set point less conservative than required by the ODCM: 1. The release of radioactive liquid effluents monitored by the affected channel shall be suspended; or 2. The channel shall be declared inoperable; or 3. The set point shall be changed so it is conservative.	
c. The service water system effluent pathway shall be continuously monitored for radioactivity during system operation. If this specification cannot be met, operations may continue provided that: 1. At least once per 12 hours grab samples are collected and analyzed for gross radioactivity at a Lower Limit of Detection (LLD) of at least 5×10^{-7} µCi/ml for Cs-137; and 2. Efforts are exerted to return the instrument to operable status within 30 days and, if unsuccessful, an explanation is to be included in the next Semiannual Radioactive Effluent Release Report explaining why the inoperability was not corrected in 30 days.	c. Operation of the service water monitor shall be verified as follows: 1. An instrument check shall be performed daily during system operation. 2. An instrument channel functional test shall be performed quarterly. 3. An instrument channel calibration shall be performed quarterly with a known radioactive source.

LIMITING CONDITIONS FOR OPERATION	SURVEILLANCE REQUIREMENTS

2.2 CONCENTRATION OF LIQUID EFFLUENTS

Applicability

Applies to the concentration of radioactive materials in liquid effluents.

Objective

To ensure that the concentrations of radioactive materials in liquid effluents are kept to acceptable levels.

Specifications

a. The concentration of radioactive materials released to the unrestricted areas shall not exceed the values specified in 10 CFR 20.106(e). For dissolved or entrained noble gases the concentration shall be limited to 2×10^{-4} µCi/ml.

b. With the concentration of radioactive material released from the plant to unrestricted areas exceeding the above limits:

   1. Restore the concentration to within the above limits; and

   2. Perform calculations to demonstrate compliance with unrestricted area radioactive material concentrations specified in 10 CFR 20.106(e).

2.2 CONCENTRATION OF LIQUID EFFLUENTS

Applicability

Applies to the analysis of radioactive liquid wastes from the plant through a liquid pathway to an unrestricted area.

Objective

To ensure that analyses are performed and concentration determined for radioactive liquid releases.

Specifications

a. Radioactive liquid wastes shall be sampled and analyzed according to the sampling and analyses program of Table 2.2-1.

b. The results of the radioactivity analyses shall be used in accordance with the methods in the ODCM to assure that the concentrations at the point of release are maintained within the limits of Specification 2.2.a.

TABLE 2.2-1

RADIOACTIVE LIQUID WASTE SAMPLING AND ANALYSIS PROGRAM

Liquid Release Type	Sampling Frequency	Minimum Analysis Frequency	Type of Activity Analysis	Lower Limit of Detection (LLD)[a] (μCi/ml)
A. Batch Waste				
Release Tanks[b]	Each Batch	Each Batch	Principal Gamma Emitters[c]	5×10^{-6}
			I-131	1×10^{-6}
	One Batch/M	Monthly	Dissolved and Entrained Gases (Gamma Emitters)	1×10^{-5}
	Each Batch	Quarterly Composite[d]	H-3	1×10^{-5}
			Gross Alpha	1×10^{-7}
	Each Batch	Quarterly Composite[d]	Sr-89, Sr-90	5×10^{-8}
			Fe-55	1×10^{-5}

TABLE NOTATIONS

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

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

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

Where:

LLD is the a priori lower limit of detection, as defined above (in microcuries 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 (in counts per minute);

E is the counting efficiency (in counts per disintegration);

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

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

Y is the fractional radiochemical yield (when applicable);

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

Δt for plant effluents is the elapsed time between the midpoint of sample collection and time of counting.

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

It should be recognized that the LLD is defined as an a priori (before the fact) limit representing the capability of a measurement system and not as an a posteriori (after the fact) limit for a particular measurement.

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

c. The principal gamma emitters for which the LLD specification applies exclusively are the following radionuclides: Mn-54, Fe-59, Co-58, Co-60, Zn-65, Mo-99, Cs-134, and Cs-137. This list does not mean that only these nuclides are to be detected and reported. Other peaks that are measurable and identifiable, together with the above nuclides, shall also be identified and reported in the Semiannual Radioactive Effluent Release Report.

d. 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 that is representative of the liquids released.

LIMITING CONDITIONS FOR OPERATION	SURVEILLANCE REQUIREMENTS

2.3 DOSE FROM LIQUID EFFLUENTS

Applicability

Applies to radiation doses from liquid effluents containing radioactive materials.

Objective

To assure that the dose limitations of 10 CFR 50 Appendix I for liquids are met.

Specifications

a. The dose to a member of the public from radioactive materials released from the plant in liquid effluents to unrestricted areas shall be limited as follows:

   1. During any calendar quarter, limited to less than or equal to 1.5 mrem to the whole body and to less than or equal to 5 mrem to any organ; and,

   2. During any calendar year, limited to less than or equal to 3 mrem to the whole body and to less than or equal to 10 mrem to any organ.

b. With the calculated dose from the release of radioactive materials in liquid effluents exceeding any of the above limits, the following shall be done:

2.3 DOSE FROM LIQUID EFFLUENTS

Applicability

Applies to the calculation of the radiation dose from liquid effluents containing radioactive materials.

Objective

To ensure that the radiation dose from radioactive liquid effluents is determined.

Specifications

a. Cumulative dose contributions from liquid effluents shall be determined in accordance with the ODCM at least monthly.

LIMITING CONDITIONS FOR OPERATION	SURVEILLANCE REQUIREMENTS

1. Make an investigation to identify the causes for such release rates;

2. Define and initiate a program of corrective action; and

3. In lieu of a Licensee Event Report, prepare and submit a report to the NRC within 30 days from the end of the quarter during which such releases occurred.

LIMITING CONDITIONS FOR OPERATION	SURVEILLANCE REQUIREMENTS
2.4 LIQUID RADIOACTIVE WASTE TREATMENT SYSTEM OPERATIONS	2.4 LIQUID RADIOACTIVE WASTE TREATMENT SYSTEM OPERATIONS
Applicability	Applicability
Applies to the operability of radioactive liquid processing equipment.	Dose projections apply to liquid effluents released to unrestricted areas.
Objective	Objective
To ensure liquid radwaste treatment system(s) are operated to prevent exceeding the dose limits of Specification 2.3.	To ensure that action levels to require operation of waste treatment systems are determined.
Specifications	Specifications
a. The liquid radioactive waste treatment system shall be used when the projected dose from untreated liquid releases, over a 31 day period, to a member of the public would exceed: 1. 0.06 mrem to the whole body; or, 2. 0.2 mrem to any organ.	a. Doses to individuals in unrestricted areas due to liquid releases shall be projected at least monthly in accordance with ODCM.
b. With radioactive liquid waste being discharged in excess of the above limits, in lieu of a Licensee Event Report, prepare and submit to the Commission within 30 days a report that includes the following information: 1. Explanation if liquid radwaste was being discharged without treatment; and if so:	

2. Identification of any inoperable equipment or subsystems and the reason for the inoperability;

3. Action(s) taken to restore the inoperable equipment to operable status; and

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

LIMITING CONDITIONS FOR OPERATION	SURVEILLANCE REQUIREMENTS
2.5 MAXIMUM ACTIVITY IN OUTSIDE TANKS	2.5 MAXIMUM ACTIVITY IN OUTSIDE TANKS
Applicability	Applicability
Applies to tanks located outdoors.	Applies to outdoor tanks.
Objective	Objective
To ensure that in the event of an uncontrolled release of the tank's contents, the resulting concentrations would be less than the limits of 10 CFR 20, Appendix B, Table II, Column 2, at the nearest surface water supply in an unrestricted area.	To ensure that the radioactivity contained in outdoor tanks is kept within applicable limits.
Specifications	Specifications
a. The quantity of liquid radioactive material contained in a condensate storage tank or any outside temporary tank shall be limited to 10 curies, excluding Tritium and dissolved or entrained noble gases.	a. The quantity of radioactive material contained in a condensate storage tank or any outside temporary tank shall be determined by analyzing a liquid sample of the tank's contents weekly when radioactive liquid is being added to the tank.
b. With the quantity of liquid radioactive material in a tank above this limit, reduce the tank's radioactive contents to within the limit within 48 hours; and	
c. In lieu of a Licensee Event Report, describe the events leading to this condition in the next Semiannual Effluent Release Report.	

2.0 LIQUID EFFLUENTS

2.1 LIQUID EFFLUENT MONITORS

The radioactive liquid effluent instrumentation is provided to monitor and control the releases of radioactive materials in liquid effluents during planned or unplanned releases. The alarm/trip set points for these instruments shall be calculated in accordance with methods in the ODCM to ensure that the alarm/trip will occur prior to exceeding the limits of 10 CFR 20. The operability and use of this instrumentation is consistent with the requirements of 10 CFR 50, Appendix A, General Design Criteria 60, 63 and 64.

2.2 CONCENTRATION OF LIQUID EFFLUENTS

This specification is provided to ensure that the concentration of radioactive materials released in liquid waste effluents to unrestricted areas will be less than the concentration levels specified in 10 CFR 20, Appendix B, Table II, Column 2. This limitation provides additional assurance that the levels of radioactive materials in bodies of water outside the site will not result in exposure above (1) the design objectives of 10 CFR 50, Appendix I, Section II.A, to a member of the public and (2) the limits of 10 CFR 20.106(e) to the population. The concentration limit for dissolved or entrained noble gases is based on Xe-135 as the controlling radioisotope and its MPC in air (submersion) was converted to an equivalent concentration in water using the methods described in ICRP Publication 2.

2.3 DOSE FROM LIQUID EFFLUENTS

This specification is provided to assure that the requirements of 10 CFR 50, Appendix I, Section II.A, III.A and IV.A are met. The Limiting Conditions for Operation assures that the guides set forth in Appendix I, Section II.A are met. The specifications provide the required operating flexibility and, at the same time, implement the guides set forth in Appendix I, Section IV.A, to assure that the releases of radioactive material in liquid effluents will be kept "as low as is reasonably achievable."

2.4 LIQUID RADIOACTIVE WASTE TREATMENT SYSTEM OPERATIONS

The requirement 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 assures that the requirements of 10 CFR 50.36a, 10 CFR 50, Appendix A, General Design Criterion 60, and design objective of 10 CFR 50, Appendix I, Section II.D are met. The specified limits governing the use of appropriate portions of the liquid radwaste treatment system were specified as a suitable fraction of the dose design objectives set forth in 10 CFR 50, Appendix I, Section II.A, for liquid effluents.

2.5 MAXIMUM ACTIVITY IN OUTSIDE TANKS

Restricting the quantity of radioactive material contained in the specified tanks provides assurance that, in the event of an uncontrolled release of the tank's contents, the resulting concentrations would be less than the limits of 10 CFR 20, Appendix B, Table II, Column 2, at the nearest drinking water supply currently in use and at the nearest surface water supply in an unrestricted area.

LIMITING CONDITIONS FOR OPERATION	SURVEILLANCE REQUIREMENTS

3.0 GASEOUS EFFLUENTS

3.1 GASEOUS EFFLUENT MONITORS

Applicability

These requirements apply to instruments which monitor the gaseous radioactivity effluent pathways to the environment.

Objective

To assure that radioactive gaseous effluent discharges are properly monitored and recorded during release.

Specifications

a. Radioactive gaseous wastes released to the environment via the below listed pathways shall be monitored and recorded during release from the respective pathway.

   1. Main stack
   2. Refuel floor vent
   3. Reactor building vent
   4. Turbine building vent
   5. Radwaste building vent

3.1 GASEOUS EFFLUENT MONITORS

Applicability

Applies to instrumentation listed in Specification 3.1.a and analyses of gaseous effluent releases.

Objective

To ensure that instrumentation required for gaseous effluent releases is maintained and calibrated and the radioactivity of gaseous releases is determined.

Specifications

a. Operation of the gaseous effluent monitors listed in Specification 3.1.a shall be verified as follows:

   1. An instrument check shall be performed daily during release from each respective pathway.
   2. An instrument channel functional test and a source check shall be performed quarterly.
   3. An instrument channel calibration shall be performed quarterly with a known radioactive source.

LIMITING CONDITIONS FOR OPERATION	SURVEILLANCE REQUIREMENTS
b. Each pathway listed in a. above, shall also be sampled for iodine and particulate radioactivity on a continuous basis during release from the respective pathway.	b. The iodine cartridge and the particulate filter for each pathway listed in Specification 3.1.a shall be changed out at least weekly.
c. If Specifications 3.1.a and b., above, cannot be met, effluent releases may continue via the respective pathway provided gaseous grab samples are collected in the case of a monitor out of service and auxiliary samplers are used in case a particulate or iodine sampler is out of service; 1. Return the instrument to operable status within 30 days; or 2. Provide an explanation in the next Semiannual Radioactive Release Report as to why the inoperability was not corrected within 30 days.	c. Grab samples, when required, shall be collected at least once per 12 hours and analyzed within 24 hours of collection. Auxiliary samplers shall run continuously and be changed out at least weekly.
d. Alarm/trip set points shall be determined in accordance with the ODCM and set to ensure that the limits of Specification 3.2 are not exceeded. With a radioactive gaseous effluent monitoring instrumentation channel alarm/trip set point less conservative than required by the above specification: 1. Suspend the release of radioactive gaseous effluents monitored by the affected channel; or 2. Declare the channel inoperable; or 3. Change the set point so it is acceptably conservative.	

LIMITING CONDITIONS FOR OPERATION	SURVEILLANCE REQUIREMENTS
3.2 GASEOUS DOSE RATES	3.2 GASEOUS DOSE RATES
Applicability	Applicability
Applies to the radiation dose from radioactive material in gaseous effluents from the plant.	Applies to the calculation of the dose rates from radioactive materials in gaseous effluents from the plant.
Objective	Objective
To ensure that the dose rates at or beyond the site boundary from gaseous effluents do not exceed the annual dose limits of 10 CFR 20 for unrestricted areas.	To ensure that appropriate calculations are performed to determine the dose rates from gaseous effluents from the plant.
Specifications	Specifications
a. The annual dose rate at or beyond the site boundary due to radioactive materials released from the plant in gaseous effluents shall be limited as follows: 1. ≤500 mrem to the whole body and ≤3000 mrem to the skin from noble gases; and, 2. ≤1500 mrem to any organ from Iodine-131, Iodine-133, Tritium and for radioactive materials in particulate form with half-lives greater than 8 days.	a. The dose rate due to noble gases in gaseous effluents shall be determined to be continuously within the limits of Specification 3.2.a, in accordance with the methods and procedures of the ODCM.
b. With the dose rate(s) exceeding the above limits, restore the release rate to within the above limits.	b. The dose rate due to Iodine-131, Iodine-133, Tritium and to radionuclides in particulate form with half-lives greater than 8 days in

LIMITING CONDITIONS FOR OPERATION	SURVEILLANCE REQUIREMENTS
	gaseous effluents, shall be determined to be within the above limits in accordance with the methods and procedures of the ODCM. This will be done by obtaining representative samples and performing analyses in accordance with the sampling and analyses program specified in Table 3.2-1.

TABLE 3.2-1

RADIOACTIVE GASEOUS WASTE SAMPLING AND ANALYSIS PROGRAM

Gaseous Release Type	Sampling Frequency	Minimum Analysis Frequency	Type of Activity Analysis	Lower Limit of Detection (LLD)[a] (μCi/ml)
Main Stack and Refuel Floor Vent and Reactor Building Vent and Turbine Building Vent and Radwaste Building Vent	Monthly Grab Sample	Monthly	Noble Gas Emitters[b]	1×10^{-4}
	Quarterly Grab Sample	Quarterly	H-3	1×10^{-6}
	Continuous[c]	Weekly Charcoal Sample	I-131	1×10^{-12}
	Continuous[c]	Weekly Particulate Sample	Principal Gamma Emitters[b] (I-131, others)	1×10^{-11}
	Continuous[c]	1 Wk/Mo Particulate Sample	Gross Alpha	1×10^{-11}
	Continuous[c]	4 Wk/Qr Composite Particulate Sample	Sr-89, Sr-90	1×10^{-11}
	Continuous[c]	Noble Gas Monitor	Noble Gases Gross Beta or Gamma	1×10^{-5}

TABLE NOTATIONS

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

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

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

Where:

LLD is the a priori lower limit of detection, as defined above (in microcuries 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 (in counts per minute);

E is the counting efficiency (in counts per disintegration);

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

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

Y is the fractional radiochemical yield (when applicable);

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

Δt for plant effluents is the elapsed time between the midpoint of sample collection and time of counting.

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

It should be recognized that the LLD is defined as an a priori (before the fact) limit representing the capability of a measurement system and not as an a posteriori (after the fact) limit for a particular measurement.

b. The principal gamma emitters for which the LLD specification applies exclusively are the following radionuclides: Kr-87, Kr-88, Xe-133, Xe-133m, Xe-135, Xe-135m, and Xe-138 for gaseous emissions; and, Mn-54, Fe-59, Co-58, Co-60, Zn-65, Mo-99, Cs-134, and Cs-137 for particulate emissions. This list does not mean that only these nuclides are to be detected and reported. Other peaks that are measurable and identifiable, together with the above nuclides, shall also be identified and reported.

c. The ratio of the sample flow rate to the sampled stream flow rate shall be known for the time period covered by each dose or dose rate calculation made in accordance with Specifications. This determination shall be made using design flow rates if flow meters are not provided or are inoperable.

LIMITING CONDITIONS FOR OPERATION	SURVEILLANCE REQUIREMENTS

3.3 AIR DOSE, NOBLE GASES

Applicability

Applies to the air dose due to noble gases released from the plant.

Objective

To assure that the noble gas dose limitations of 10 CFR 50, Appendix I, are met.

Specifications

a. The air dose to areas at or beyond the site boundary from noble gases released from the plant in gaseous effluents shall be limited:

   1. During any calendar quarter, to less than or equal to 5 mrad from gamma radiation, and less than or equal to 10 mrad from beta radiation; and,

   2. During any calendar year, to less than or equal to 10 mrad from gamma radiation and less than or equal to 20 mrad from beta radiation.

b. With the calculated air dose from radioactive noble gases in gaseous effluents exceeding any of the above limits, in lieu of a Licensee Event Report, prepare and submit to the Commission, within 30 days, a report that:

3.3 AIR DOSE, NOBLE GASES

Applicability

Applies to the calculation of the air dose due to noble gas effluent.

Objective

To ensure that appropriate calculations are performed to determine the air dose from noble gas effluents.

Specifications

a. Cumulative air dose contributions for noble gases shall be calculated at least monthly in accordance with the ODCM.

1. Identifies the cause(s) for exceeding the limit(s); and

2. Defines the corrective actions that have been taken to reduce the releases; and

3. Identifies the proposed corrective actions to be taken to assure than subsequent releases will be in compliance with the above limits.

LIMITING CONDITIONS FOR OPERATION	SURVEILLANCE REQUIREMENTS
3.4 DOSE DUE TO IODINE-131, IODINE-133, TRITIUM AND RADIONUCLIDES IN PARTICULATE FORM	3.4 DOSE DUE TO IODINE-131, IODINE-133, TRITIUM AND RADIONUCLIDES IN PARTICULATE FORM
Applicability	Applicability
Applies to the cumulative dose from Iodine-131, Iodine-133, Tritium, and radionuclides in particulate form in gaseous effluents.	Applies to the calculation of the dose due to Iodine-131, Iodine-133, Tritium, and radionuclides in particulate form in gaseous effluents.
Objective	Objective
To assure that the dose limitations of 10 CFR 50, Appendix I, are met.	To ensure that appropriate calculations are performed to determine the dose from Iodine-131, Iodine-133, Tritium, and radionuclides in particulate form.
Specifications	Specifications
a. The dose to a member of the public at or beyond the site boundary from Iodine-131, Iodine-133, Tritium, and radionuclides in particulate form with half-lives greater than 8 days released from the plant in gaseous effluents shall be limited: 1. During any calendar quarter to less than or equal to 7.5 mrem to any organ; and, 2. During any calendar year to less than or equal to 15 mrem to any organ.	a. Cumulative dose contributions shall be calculated at least monthly in accordance with the ODCM.
b. With the calculated dose from the release of Iodine-131, Iodine-133, Tritium, and radionuclides in particulate form with half-lives greater than 8 days, in gaseous effluents	

exceeding any of the above limits, in lieu of a Licensee Event Report, prepare and submit to the Commission within 30 days a report that:

1. Identifies the cause(s) for exceeding the limit; and

2. Defines the corrective actions that have been taken to reduce the releases; and

3. Identifies the proposed corrective actions to be taken to assure that subsequent releases will be in compliance with the above limits.

LIMITING CONDITIONS FOR OPERATION	SURVEILLANCE REQUIREMENTS
3.5 MAIN CONDENSER STEAM JET AIR EJECTOR (SJAE)	3.5 MAIN CONDENSER STEAM JET AIR EJECTOR (SJAE)
Applicability	Applicability
Applies to main condenser offgas discharge rate for noble gases.	Applies to the point of discharge at the SJAE.
Objective	Objective
To ensure that the SJAE release rates are maintained at a level compatible for further treatment and release.	To ensure that the SJAE release rates are properly monitored.
Specifications	Specifications
a. The gross radioactivity (beta and/or gamma) rate of noble gases measured at the SJAE shall be limited to less than 500,000 μCi/sec.	a. The gross radioactivity (beta and/or gamma) rate of noble gases from the SJAE shall be determined to be within the limits of Specification 3.5.a by performing an isotopic analysis of a representative sample of gases taken at the discharge (prior to dilution and/or discharge) of the SJAE as follows:
1. With the gross radioactivity exceeding the above limit, bring the SJAE release rate within the above limit within 72 hours or be in at least hot standby within the next 12 hours.	1. At least monthly.
	2. Within 4 hours following an increase as indicated by the SJAE Monitor, of greater than 50% (after factoring out increases due to changes in thermal power level) in the nominal steady state fission gas release from the primary coolant.

LIMITING CONDITIONS FOR OPERATION	SURVEILLANCE REQUIREMENTS
b. Except as specified in 1. below, both SJAE system radiation monitors shall be operable during reactor power operation. The trip time delay setting for closure of the SJAE isolation valve shall not exceed 15 min.	b. Operation of the SJAE radioactive offgas monitors shall be verified as follows:
1. In the event that one of the two SJAE radiation monitors is made or found to be inoperable, continued reactor power operation is permissible provided that the inoperable monitor is tripped in the downscale position.	1. An instrument check shall be performed daily during release from each respective pathway.
2. Upon the loss of both SJAE system radiation monitors, either temporary monitors shall be used to monitor radiation releases to the environs, or initiate an orderly shutdown and have the main steam isolation valves closed within 8 hours.	2. An instrument channel calibration shall be performed quarterly.
	3. An instrument channel functional test shall be performed semiannually.

LIMITING CONDITIONS FOR OPERATION	SURVEILLANCE REQUIREMENTS

3.6 OFFGAS SYSTEM

Applicability

Applies to the system installed for reduction of radioactive materials in gaseous waste prior to discharge.

Objective

To minimize concentration of radioactive materials released from the site.

Specifications

a. The offgas treatment system shall be used to reduce the concentration of radioactive materials in gaseous effluents prior to release from the plant, when the projected air dose, over a 31 day period, to areas at and beyond the site boundary, would exceed:

   1. 0.2 mrad for gamma radiation; or,

   2. 0.4 mrad for beta radiation; or,

   3. 0.3 mrem to any organ.

b. With gaseous waste being discharged in excess of the above limits, in lieu of a Licensee Event Report, prepare and submit to the Commission within 30 days a report that includes the following information:

3.6 OFFGAS SYSTEM

Applicability

Applies to the calculation of the radiation dose from gaseous effluents containing radioactive materials.

Objective

To ensure that treatment of gaseous wastes by the offgas system is implemented when required.

Specifications

a. Doses due to gaseous releases from the site shall be projected at least monthly in accordance with the ODCM.

1. Identification of the causes, including any inoperable equipment or subsystems, and the reason for their inoperability;

2. Action(s) taken to restore release to within the above limits and/or restore any inoperable equipment to operable status; and

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

LIMITING CONDITIONS FOR OPERATION	SURVEILLANCE REQUIREMENTS
3.7 OFFGAS TREATMENT SYSTEM EXPLOSIVE GAS MIXTURE INSTRUMENTATION	3.7 OFFGAS TREATMENT SYSTEM EXPLOSIVE GAS MIXTURE INSTRUMENTATION
Applicability	Applicability
Applies to the condenser offgas treatment system recombiner operation.	Applies to the offgas treatment system instrumentation, which monitors the critical operating parameters of the primary recombiner.
Objective	Objective
To ensure proper conditions for the offgas recombiner to operate at design efficiency in order to prevent an explosive mixture of gases in the charcoal treatment system.	To ensure that instrumentation required for automatic isolation is maintained and calibrated.
Specifications	Specifications
a. The following instrumentation shall be operational and capable of providing automatic isolation of the offgas treatment system under the following conditions:	a. Operation of the explosive gas mixture instruments listed in Specification 3.7.a shall be verified.
1. The offgas dilution steam flow instrumentation shall alarm and automatically isolate the offgas treatment system at low flow less than 6000 pounds per hour or high flow greater than 7200 pounds per hour.	1. An instrument check shall be performed daily when the offgas treatment system is in operation.
2. The offgas inlet temperature sensor shall alarm and automatically isolate the offgas treatment system at a temperature less than 125°C.	2. An instrument channel functional test shall be performed once per operating cycle.
	3. An instrument channel calibration shall be performed once per operating cycle.

LIMITING CONDITIONS FOR OPERATION	SURVEILLANCE REQUIREMENTS
3. The primary offgas recombiner outlet temperature shall alarm and automatically isolate the offgas treatment system on a temperature less than 150°C.	
b. The concentration of hydrogen in the condenser offgas treatment system recombiner discharge shall be limited to less than or equal to 4% by volume.	b. With condenser offgas treatment system recombiner in service, the hydrogen content shall be verified weekly to be ≤4% by volume.
c. With the requirements of the above specifications not satisfied, restore the system to within operating specifications or suspend use within 48 hours.	

3.0 GASEOUS EFFLUENTS

3.1 GASEOUS EFFLUENT MONITORS

The radioactive gaseous effluent instrumentation is provided to monitor and control the releases of radioactive materials in gaseous effluents during planned or unplanned releases. The alarm/trip set points for these instruments shall be calculated in accordance with methods in the ODCM to ensure that the alarm/trip will occur prior to exceeding the limits of 10 CFR 20.

The operability and use of this instrumentation is consistent with the requirements of 10 CFR 50, Appendix A, General Design Criteria 60, 63 and 64.

3.2 GASEOUS DOSE RATES

This specification is provided to ensure that the dose at or beyond the site boundary from gaseous effluents will be within the annual dose limits of 10 CFR 20. The annual dose limits are the doses associated with the concentrations of 10 CFR 20, Appendix B, Table II, Column 1. These limits provide reasonable assurance that radioactive material discharges in gaseous effluents will not result in the exposure of a member of the public to annual average concentrations exceeding the limits specified in 10 CFR 20, Appendix B, Table II (10 CFR 20.106[b]). The specified limits restrict, at all times, corresponding gamma and beta dose above background to an individual at or beyond the exclusion area boundary to ≤500 mrem/year to the total body or to ≤3000 mrem/year to the skin. These limits also restrict the corresponding thyroid dose above background to an infant via the cow-milk-infant pathway to ≤1500 mrem/year for the cow nearest to the plant.

3.3 AIR DOSE, NOBLE GASES

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

3.4 DOSE DUE TO IODINE-131, IODINE-133, TRITIUM AND RADIONUCLIDES IN PARTICULATE FORM

This specification is provided to assure that the requirements of 10 CFR 50, Appendix I, Section II.C, III.A and IV.A are met. The Limiting Conditions for Operation are the guides set forth in Appendix I, Section II.C. The specifications provide the required operating flexibility and,

at the same time, implement the guides set forth in Appendix I, Section IV.A, to assure that the releases of radioactive materials in gaseous effluents will be kept "as low as is reasonably achievable."

3.5 MAIN CONDENSER STEAM JET AIR EJECTOR (SJAE)

This specification is provided to assure that remedial action is taken to limit the noble gas release rate at the SJAE. The requirement provides reasonable assurance that the amount of noble gas that must be treated and/or released is controlled to a level that prevents exceeding the limits specified in 10 CFR 20, Appendix B, Table II.

3.6 OFFGAS SYSTEM

This specification is provided to ensure that the system will be available for use when required to reduce projected quarterly and annual doses due to gaseous releases. This specification assures that the requirements of 10 CFR 50.36a, 10 CFR 50, Appendix A, General Design Criterion 60, and design objective in 10 CFR 50, Appendix I, Section II.D are met. The specified limits governing the use of appropriate portions of the systems are specified as a suitable fraction of the guide values set forth in 10 CFR 50, Appendix I, Sections II.B and II.C, for gaseous effluents.

3.7 OFFGAS TREATMENT SYSTEM EXPLOSIVE GAS MIXTURE INSTRUMENTATION

This specification is provided to ensure that the concentration of potentially explosive gas mixtures contained in portions of the offgas treatment system not designed to withstand a hydrogen explosion is maintained below the lower explosive limit of hydrogen. The proper operation of the primary recombiner ensures that the charcoal contained in the condenser offgas treatment system is not exposed to an explosive mixture of gases. Thus it provides assurance that the releases of radioactive materials will be controlled in conformance with the requirements of 10 CFR 50, Appendix A, General Design Criterion 60.

LIMITING CONDITIONS FOR OPERATION	SURVEILLANCE REQUIREMENTS

4.0 SOLID RADIOACTIVE WASTE

4.1 PROCESS CONTROL PROGRAM

Applicability

Applies to radioactive solid waste packages for offsite shipment.

Objective

To ensure that the applicable requirements of 10 CFR 20 and 10 CFR 71 are met prior to shipment.

Specifications

a. The solid radwaste system shall be used in accordance with the PCP to process wet radioactive wastes to meet shipping and burial ground requirements.

4.1 PROCESS CONTROL PROGRAM

Applicability

Applies to the solidification system utilized for wet solid wastes.

Objective

To ensure that solidification of wet solid wastes is performed in accordance with the PCP.

Specifications

a. The PCP 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.

   1. If any test specimen fails to verify solidification, the solidification of the batch under test shall be suspended until the following are completed:

      a) Additional test specimens can be obtained;

      b) Alternative solidification parameters can be determined in accordance with the PCP; and

LIMITING CONDITIONS FOR OPERATION	SURVEILLANCE REQUIREMENTS
	c) A subsequent test verifies solidification. Solidification of the batch may then be resumed using the parameters determined by the PCP. 2. If the initial test specimen from a batch of waste fails to verify solidification, the PCP shall provide for the collection and testing of representative test specimens from each consecutive batch of the same type of wet waste until at least 3 consecutive initial test specimens demonstrate solidification. The PCP shall be modified as required, to assure solidification of subsequent batches of waste.
b. With the provisions of the PCP not satisfied, suspend shipments of affected packaged solid radioactive wastes from the site.	

4.0 SOLID RADIOACTIVE WASTE

This specification assures that the requirements of 10 CFR 50.36a and 10 CFR 50, Appendix A, General Design Criterion 60 are met. The process parameters included in establishing a PCP may include, but are not limited to: waste type, waste pH, waste/liquid/solidification/agent/catalyst ratios, waste oil content, waste principal chemical constituents, mixing and curing times.

LIMITING CONDITIONS FOR OPERATION	SURVEILLANCE REQUIREMENTS

5.0 TOTAL DOSE

5.1 TOTAL DOSE FROM URANIUM FUEL CYCLE

Applicability

Applies to radiation dose from releases of radioactivity and radiation from uranium fuel cycle sources.

Objective

To assure that the requirements of 40 CFR 190 are met.

Specifications

a. The annual (calendar year) dose or dose commitment to any member of the public, due to releases of radioactivity and radiation, from uranium fuel cycle sources shall be limited as follows:

   1. Less than or equal to 25 mrem to the whole body; and,

   2. Less than or equal to 25 mrem to any organ except the thyroid which shall be limited to less than or equal to 75 mrem.

b. With the calculated doses from the release of radioactive materials in liquid or gaseous effluents exceeding twice the limits

5.1 TOTAL DOSE FROM URANIUM FUEL CYCLE

Applicability

Applies to the calculation of total dose due to releases of radioactivity and radiation from uranium fuel cycle sources.

Objective

To ensure that appropriate calculations are performed to determine total dose to a member of the public.

Specifications

a. Dose Calculations Cumulative dose contributions from liquid and gaseous effluents shall be determined in accordance with Specifications 2.3.a, 3.3.a, and 3.4.a and in accordance with the ODCM.

of Specification 2.3.a or 3.3.a or 3.4.a, calculations shall be made to determine whether the limits of 5.1 have been exceeded. If this is the case, in lieu of a Licensee Event Report: a report defining corrective actions to be taken to reduce subsequent releases to levels within limits, along with a schedule for achieving conformance, shall be prepared and submitted to the Commission within 30 days. This report, as defined in 10 CFR 20.405c, shall include estimates of the radiation exposure (dose) to a member of the public from uranium fuel cycle sources, including all effluent pathways and direct radiation, for the calendar year that includes the release(s) covered by this report. It shall also describe levels of radiation and concentration of radioactive material involved, and the cause of the exposure levels or concentrations. If the estimated dose(s) exceed(s) the above limits, and if the release condition resulting in violation of 40 CFR 190 has not already been corrected, the report shall include a request for variance in accordance with the provisions of 40 CFR 190. Submittal of the report is considered a timely request, and a variance is granted until staff action on the request is complete.

5.0 TOTAL DOSE

This specification is provided to meet the dose limitations of 40 CFR 190. This specification requires the preparation and submittal of a report whenever the calculated dose from plant radioactive effluents exceed twice the design objective doses of 10 CFR 50, Appendix I. The report will describe a course of action that should result in the limitation of the annual dose to a member of the public to within the 40 CFR 190 limits. For the purpose of the report, it may be assumed the dose commitment to the member of the public from other uranium fuel cycle sources is negligible. However, dose contributions from other nuclear fuel cycle facilities at the same site or within a radius of 8 km must be considered. If the dose to any member of the public is estimated to exceed the requirements of 40 CFR 190, the report, with a request for variance (provided the release conditions resulting in a violation of 40 CFR 190 have not already been corrected), shall be submitted in accordance with provisions of 40 CFR 190.11 and 10 CFR 20.405c. This request is considered a timely request and fulfills the requirements of 40 CFR 190 until NRC staff action is completed. The variance only relates to the limits of 40 CFR 190 and does not apply in any way to the requirements for dose limitation addressed in Specifications 2.0 and 3.0. An individual is not considered a member of the public during any period in which he/she is engaged in carrying out any operation that is part of the nuclear fuel cycle.

LIMITING CONDITIONS FOR OPERATION	SURVEILLANCE REQUIREMENTS

6.0 RADIOLOGICAL ENVIRONMENTAL MONITORING

6.1 MONITORING PROGRAM

Applicability

At all times.

Objective

To evaluate the effects of plant operation on the environs and to verify the effectiveness of the controls on radioactive material.

Specifications

a. With the radiological environmental monitoring program not being conducted as specified in Table 6.1-1, in lieu of a Licensee Event Report 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.

   (Deviations are permitted from the required sampling schedule if samples are unobtainable due to hazardous conditions, seasonal unavailability, theft, uncooperative residents, or to malfunction of automatic sampling equipment. If the latter, efforts shall be made to complete corrective action prior to the end of the next sampling period.)

6.1 MONITORING PROGRAM

The radiological environmental monitoring samples shall be collected, pursuant to Table 6.1-1, from the locations given in the table and figure(s) in the ODCM and shall be analyzed pursuant to the requirements of Table 6.1-1, and the detection capabilities required by Table 6.1-3.

b. With the level of radioactivity (as the result of plant effluents) in an environmental sampling medium exceeding the reporting levels of Table 6.1-2 when averaged over any calendar quarter, in lieu of a Licensee Event Report, prepare and submit to the Commission within thirty (30) days from the end of the affected calendar quarter a report. This report shall identify the cause(s) for exceeding the limit(s) and define the corrective action(s) to be taken to reduce radioactive effluents so that the calculated annual dose to a member of the public is less than the calendar year limits of Specifications 2.3, 3.3, and 3.4. When more than one of the radionuclides in Table 6.1-2 are detected in the sampling medium, this report shall be submitted if:

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

When radionuclides other than those in Table 6.1-2 are detected and are the result of plant effluents, this report shall be submitted if the calculated annual dose to an individual is equal to or greater than the calendar year limits of Specification 2.3, 3.3, and 3.4.

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. With milk or fresh leafy vegetable samples unavailable from one or more of the sample locations required by Table 6.1-1, locations for obtaining replacement samples shall be identified and added to the radiological environmental monitoring program within 30 days. The specific locations from which samples were unavailable may then be deleted from the monitoring program. In lieu of a Licensee Event Report, the cause of the unavailability of samples and the new location(s) for obtaining replacement samples shall be identified in the next Semiannual Radioactive Effluent Release Report. Also included in the report shall be a revised figure(s) and table for the ODCM reflecting the new location(s).

TABLE 6.1-1

OPERATIONAL RADIOLOGICAL ENVIRONMENTAL MONITORING PROGRAM

Exposure Pathway and/or Sample	Number of Samples[a] and Locations	Sampling and Collection Frequency[a]	Type and Frequency of Analysis
AIRBORNE			
Radioiodine and Particulates	Samples from 5 locations: a. 3 samples from offsite locations in different sectors of the highest calculated site average D/Q (based on all licensed site reactors). b. 1 sample from the vicinity of a community having the highest calculated site average D/Q (based on all licensed site reactors). c. 1 sample from a control location 9 to 20 miles distant and in the least prevalent wind direction[d].	Continuous sample operation with sample collection weekly or as required by dust loading, whichever is more frequent.	Radioiodine Canisters: Analyze weekly for I-131. Particulate Samples: Gross beta radioactivity following filter change[b], composite (by location)[c] for gamma isotopic quarterly (as a minimum).
Direct Radiation[e]	32 stations with two or more dosimeters placed as follows: An inner ring of stations in the general area of the site boundary and an outer ring in the 4 to 5 mile range from the site with a station in each of the land based sectors of each ring. There are 16 land based sectors in the inner ring and 8 land based sectors in the outer ring. The balance of the stations (8) are placed in special interest areas such as population centers, nearby residencies, schools, and in 2 or 3 areas to serve as control stations.	Quarterly	Gamma dose monthly or quarterly.

TABLE 6.1-1 (continued)

Exposure Pathway and/or Sample	Number of Samples[a] and Locations	Sampling and Collection Frequency[a]	Type and Frequency of Analysis
WATERBORNE			
Surface[f]	a. 1 sample upstream. b. 1 sample from the site's most downstream cooling water intake.	Composite sample over one month period[g].	Gamma isotopic analysis monthly composite for Tritium analysis quarterly.
Sediment from Shoreline	1 sample from a downstream area with existing or potential recreational value.	Twice per year.	Gamma isotopic analysis semiannually.
Discharge Canal[h]	a. 1 sample from the discharge canal.	Composite sample over one month period[g].	Gamma isotopic analysis quarterly.
INGESTION			
Milk	a. Samples from milch animals in 3 locations within 3.5 miles distant having the highest calculated site average D/Q. If there are none, then 1 sample from milch animals in each of 3 areas 3.5 to 5.0 miles distant having the highest calculated site average D/Q (based on all licensed site reactors). b. 1 sample from milch animals at a control location (9 to 20 miles distant and in a less prevalent wind direction)[d].	Twice per month, April through December (samples will be collected in January through March if I-131 is detected in November and December of the preceding year).	Gamma isotopic and I-131 analysis twice per month when milch animals are on pasture (April through December); monthly (January through March), if required.

TABLE 6.1-1 (continued)

Exposure Pathway and/or Sample	Number of Samples[a] and Locations	Sampling and Collection Frequency[a]	Type and Frequency of Analysis
Fish	a. 1 sample of each of 2 commercially or recreationally important species in the vicinity of a site discharge point.	Twice per year.	Gamma isotopic analysis of edible portions.
	b. 1 sample of each of 2 species (same as in a. above or of a species with similar feeding habits) from an area at least 5 miles distant from the site[d].		
Food Products	a. 3 samples of broad leaf vegetation grown at the nearest offsite locations of highest calculated site average D/Q if milk sampling is not performed (based on all licensed site reactors).	Monthly when available.	Gamma isotopic analysis.
	b. In lieu of a garden census as specified in 6.2, 3 samples of broad leaf vegetables shall be collected from available offsite locations of highest calculated site average D/Q for elevated release points. In addition, 3 samples will be collected from available offsite locations of highest calculated site average D/Q for ground level release points (based on all licensed site reactors).	Once, during harvest season.	Gamma isotopic analysis. (Isotopic to include I-131.)
	c. 1 sample of each of similar broad leaf vegetation grown 9 to 20 miles distant in a less prevalent wind direction[d].	Once, during harvest season.	Gamma isotopic analysis. (Isotopic to include I-131.)

TABLE NOTATIONS

(a) It is recognized that, at times, it may not be possible or practical to obtain samples of the media of choice at the most desired location or time. In these instances suitable alternative media and locations may be chosen for the particular pathway in question. Actual locations (distance and directions) from the site shall be provided in the Annual Radiological Environmental Operating Report. Calculated site averaged D/Q values and meteorological parameters are based on historical data (specified in the ODCM) for all licensed site reactors.

(b) Particulate sample filters should be analyzed for gross beta 24 hours or more after sampling to allow for radon and thoron daughter decay. If gross beta activity in air is greater than 10 times a historical yearly mean of control samples, gamma isotopic analysis shall be performed on the individual samples.

(c) Gamma isotopic analysis means the identification and quantification of gamma emitting radionuclides that may be attributable to the effluents from the plant.

(d) The purpose of these samples is to obtain background information. If it is not practical to establish control locations in accordance with the distance and wind direction criteria, other sites which provide valid background data may be substituted.

(e) One or more instruments, such as a pressurized ion chamber, for measuring and recording dose rate continuously may be used in place of, or in addition to, integrating dosimeters. For the purpose of this table, a thermoluminescent dosimeter may be considered to be one phosphor and two or more phosphors in a pocket may be considered as two or more dosimeters. Film badges shall not be used for measuring direct radiation.

(f) The "upstream sample" shall be taken at a distance beyond significant influence of the discharge. The "downstream sample" shall be taken in an area beyond, but near, the mixing zone, if practical.

(g) Composite samples should be collected with equipment (or equivalent) which is capable of collecting an aliquoit at time intervals which are very short (e.g., hourly) relative to the compositing period (e.g., monthly) in order to assure that a representative sample is obtained.

(h) Reporting Levels for Radioactivity Concentrations in Environmental Samples (Table 6.1-2) are not applicable to discharge canal samples.

TABLE 6.1-2
REPORTING LEVEL FOR RADIOACTIVITY CONCENTRATIONS IN ENVIRONMENTAL SAMPLES
REPORTING LEVELS

Analysis	Water (pCi/l)	Airborne Particulate or Gases (pCi/m^3)	Fish (pCi/kg, wet)	Milk (pCi/l)	Food Products (pCi/kg, wet)
H-3	30,000				
Mn-54	1,000		30,000		
Fe-59	400		10,000		
Co-58	1,000		30,000		
Co-60	300		10,000		
Zn-65	300		20,000		
Zr/Nb-95	400				
I-131	2	0.9		3	100
Cs-134	30	10	1,000	60	1,000
Cs-137	50	20	2,000	70	2,000
Ba/La-140	200			300	

TABLE 6.1-3
DETECTION CAPABILITIES FOR ENVIRONMENTAL SAMPLE ANALYSIS [a]
LOWER LIMIT OF DETECTION (LLD) [b]

Analysis	Water (pCi/l)	Airborne Particulate or Gases (pCi/m^3)	Fish (pCi/kg, wet)	Milk (pCi/l)	Food Products (pCi/kg, wet)	Sediment (pCi/kg, dry)
gross beta	4	0.01				
H-3	3,000					
Mn-54	15		130			
Fe-59	30		260			
Co-58, 60	15		130			
Zn-65	30		260			
Zr/Nb-95	15					
I-131	1 [c]	0.07		1	60	
Cs-134	15	0.05	130	15	60	150
Cs-137	18	0.06	150	18	80	180
Ba/La-140	15			15		

TABLE 6.1-3 (continued)

TABLE NOTATIONS

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

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

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

Where:

LLD is the a priori lower limit of detection, as defined above (in picocurie 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 (in counts per minute);

E is the counting efficiency (in counts per transformation);

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

2.22 is the number of transformations 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.

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

(b) 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 an 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, unavoidable small sample sizes, the presence of interfering nuclides, or other uncontrollable circumstances may render these LLDs unachievable. In such cases, the contributing factors shall be identified and described in the Annual Radiological Environmental Operating Report.

(c) LLD for drinking water samples. If no drinking water pathway exists, the LLD of the gamma isotopic analysis may be used.

LIMITING CONDITIONS FOR OPERATION	SURVEILLANCE REQUIREMENTS

6.2 LAND USE CENSUS PROGRAM

Applicability

At all times.

Objective

To identify locations of milch animals and gardens of greater than 50 square meters within 3 miles of the site.

Specifications

a. A land use census shall be conducted and shall identify the locations of all milch animals, the nearest residence, and all gardens* of greater than 50 square meters producing fresh leafy vegetables, in each of the 16 meteorological sectors within a distance of 5 miles from the site.

b. With a land use census identifying a milch animal in a location(s) which represents a calculated D/Q value greater than the values currently being used in calculating Surveillance Requirement 3.4, in lieu of a Licensee Event Report, identify the new location(s) in the next Semiannual Radioactive Effluent Release Report.

6.2 LAND USE CENSUS PROGRAM

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

* Broad leaf vegetation sampling may be performed in lieu of the garden census as specified in Table 6.1-1.

c. With the land use census identifying a milch animal location(s) that represents a calculated D/Q (via the same exposure pathway) significantly greater (5 times) than at a location from which samples are currently being obtained in accordance with Table 6.1-1, add the new location(s) to the radiological environmental monitoring program within 30 days. The sampling location(s), excluding the control station location, having the lowest calculated D/Q (via the same exposure pathway) may be deleted from this monitoring program after (October 31) of the year in which this land use census is conducted. In lieu of a Licensee Event Report, identify the new location(s) in the next Semiannual Radioactive Effluent Release Report and include the additions in the ODCM.

LIMITING CONDITIONS FOR OPERATION	SURVEILLANCE REQUIREMENTS

6.3 INTERLABORATORY COMPARISON PROGRAM

Applicability

At all times.

Objective

To provide quality control of environmental sample analyses.

Specifications

a. Analyses shall be performed on radioactive materials supplied as part of an Interlaboratory Comparison Program which has been approved by the Commission. Participation in this program shall include all media for which samples are routinely collected and for which intercomparison samples are available.

b. With analyses not being performed as required in 6.3.a above, report the corrective actions taken to prevent a recurrence in the Annual Radiological Environmental Operating Report.

6.3 INTERLABORATORY COMPARISON PROGRAM

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 (or participants in the EPA cross-check program may provide the EPA program code designation for the unit in lieu of providing the results).

6.0 RADIOLOGICAL ENVIRONMENTAL MONITORING

6.1 MONITORING PROGRAM

The radiological environmental monitoring program required by this specification provides measurements of radiation and of radioactive materials in those exposure pathways and for those radionuclides that lead to the highest potential radiation exposures to members of the public resulting from station operation. This monitoring program assures that 10 CFR 50, Appendix I, Section IV.B.2 is met. It 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, based on the effluent measurements and the modeling of the environmental exposure pathways. The initial specified monitoring program will be effective for at least the first three years of commercial operation. Following this period, program changes may be initiated based on operational experience.

The required detection capabilities for environmental sample analyses are tabulated in terms of the Lower Limit of Detection (LLDs). The LLDs required by Table 6.1-3 are considered optimum 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. The LLD is not an a posteriori (after the fact) limit for a particular measurement.

6.2 LAND USE CENSUS

This specification is provided to ensure that changes in the use of areas at and beyond the site boundary are identified and that modifications to the monitoring program are made if required by the results of this census. The best survey information, such as that from door to door surveys, aerial surveys, consultations with local agricultural authorities, etc., shall be used. This census satisfies the requirements of 10 CFR 50, Appendix I, Section IV.B.3. Restricting the census to gardens of greater than $50 m^2$ provides assurance that significant exposure pathways via leafy vegetables will be identified and monitored since a garden of this size is the minimum required to produce the quantity (26 kg/year) of leafy vegetables assumed in Regulatory Guide 1.109, Revision 1, October 1977, for consumption by a child. To determine this minimum garden size, the following assumptions were made: (1) 20% of the garden was used for growing broad leaf vegetation (i.e., similar to lettuce and cabbage), and, (2) a vegetable yield of 2 kg/m^2. In lieu of the garden census the significance of the garden exposure pathway can be evaluated by the sampling of green leafy vegetables as specified in Table 6.1-1.

6.3 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 the environmental sample matrices are performed as part of the quality assurance program for environmental monitoring.

7.0 ADMINISTRATIVE CONTROLS

7.1 RESPONSIBILITY

a. The Resident Manager shall have direct responsibility for assuring the operation of the James A. FitzPatrick Plant is conducted in such a manner as to provide continuing protection to the environment. During periods when the Resident Manager is unavailable, he may delegate his responsibilities to the Superintendent of Power, or in his absence, to other qualified supervisory personnel.

b. Implementation of the Radiological Effluent Technical Specifications is the responsibility of the Superintendent of Power, with the assistance of the plant staff organization.

7.2 PROCEDURES

Written procedures and administrative policies shall be established, implemented and maintained that meet or exceed the requirements and recommendations of Section 5 "Facility Administrative Policies and Procedures" of ANSI 18.7-1972 and Regulatory Guide 1.33, November 1972, Appendix A. In addition, procedures shall be established, implemented and maintained for the PCP, ODCM, and Quality Control Program for effluent and environmental monitoring using the guidance in Regulatory Guide 4.1, Revision 1.

7.3 REPORTING REQUIREMENTS

a. Planned Liquid and Gaseous Releases

The limits for radioactive materials contained in liquid and gaseous effluents are contained in Specifications 2.3, 3.3 and 3.4.

b. Environmental Samples Exceeding Limits of Table 6.1-2

When the limits of Table 6.1-2 are exceeded, refer to Specification 6.1.b for reporting requirements.

c. Semiannual Radioactive Effluent Release Report

Routine Radioactive Effluent Release Reports covering the operation of the unit during the previous 6 months of operation shall be submitted within 60 days after January 1 and July 1 of each year. The period of the first report shall begin with the date of initial criticality.

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

2. The Radioactive Effluent Release Report to be submitted within 60 days after January 1 of each year may include an annual summary of meteorological data collected over the previous year. If the meteorological data is not included, the licensee shall retain it on file and provide it to the U.S. Nuclear Regulatory Commission upon request. This same report shall include an assessment of the radiation doses due to the radioactive liquid and gaseous effluents released from the unit or station during the previous calendar year to the public. All assumptions used in making these assessments (i.e., specific activity, exposure time and location) shall be included in these reports. The assessment of radiation doses shall be performed in accordance with the ODCM.

3. The Radioactive Effluent Release Reports shall include any change to the PCP or the ODCM made during the reporting period.

4. The Radioactive Effluent Release Report to be submitted 60 days after January 1 of each year shall also include an assessment of radiation doses to the likely most exposed member of the public from reactor releases and other nearby uranium fuel cycle sources (including doses from primary effluent pathways and direct radiation) during the previous calendar year, to show conformance with 40 CFR 190, Environmental Radiation Protection Standards for Nuclear Power Operation. This assessment of radiation doses is performed in accordance with the ODCM and in lieu of the requirements contained in Regulatory Guide 1.21, Revision 1, June 1974, Appendix B, Section E.

5. The Radioactive Effluent Release Reports shall include the following information for each class of solid waste shipped offsite during the report period:

   Container volume;

   Total curie quantity (specify whether determined by measurement or estimate);

   Principal radionuclides (specify whether determined by measurement or estimate);

   Source of waste and processing employed (e.g., dewatered spent resin, compacted dry waste, evaporator bottoms);

   Type of container (e.g., LSA, Type A, Large Quantity); and

   Solidification agent or absorbent (e.g., cement, Dow media, etc.).

6. The Radioactive Effluent Release Reports shall include a list and description of unplanned releases, to unrestricted areas of radioactive materials in gaseous and liquid effluents made during the reporting period.

7. The Radioactive Effluent Release Report shall contain the cause for unavailability of any environmental sample required by Table 6.1-1 and shall identify the locations for obtaining replacement samples. This shall also include a revised figure(s) and table for the ODCM reflecting the new location(s). Refer to Specification 6.1.c.

8. The Radioactive Effluent Release Report shall contain new locations identified in the land use census in accordance with Specifications 6.2.b or 6.2.c.

9. The Radioactive Effluent Release Report shall contain the events leading to the condition which resulted in exceeding 10 curies for tanks specified in the Limiting Conditions for Operation, Section 2.5.a

d. Annual Radiological Environmental Operating Report

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

The Annual Radiological Environmental Operating Reports shall include summaries, interpretations, and an analysis of trends of the results of the radiological environmental surveillance activities for the report period. The report shall include a comparison with preoperational studies, operational controls (as appropriate), and environmental surveillance reports from the previous five years, 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 Census required by Specification 6.2.

The Annual Radiological Environmental Operating Reports shall include the results of analysis of all radiological environmental samples and of all measurements taken during the period pursuant to Table 6.1-1, as well as summarized and tabulated results of these analyses and measurements in the format of the table in the Radiological Assessment Branch Technical Position, Revision 1, November 1979. In the event that some individual results are not available for inclusion in the report, the report shall note and explain the reasons for the missing results. The missing data shall be submitted as soon as possible in a supplementary report.

The reports shall also include the following: A summary description of the Radiological Environmental Monitoring Program; at least two legible maps* covering all sampling locations and keyed to a table giving distances and directions from the centerline of the reactor; the results of participation in the Interlaboratory Comparison Program required by Specification 6.3 (or appropriate EPA cross-check program code), and discussion of all analyses in which the LLD's required by Table 6.1-3 were not routinely achievable.

* One map shall cover stations near the site boundary; a second shall include the more distant stations.

ATTACHMENT II

PROPOSED CHANGES TO APPENDIX A ACCOMPANYING THE
RADIOLOGICAL EFFLUENT TECHNICAL SPECIFICATIONS (RETS)

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Y. Purge-Purging

Purge or Purging is the controlled process of discharging air or gas from a confinement in such a manner that replacement air or gas is required to purify the confinement.

Z. Venting

Venting is the controlled process of releasing air or gas form a confinement in such a manner that replacement air or gas is not provided or required.

3.2 (cont'd)

controls are required to be operable as specified in Specification 3.5.

C. Control Rod Block Actuation

1. The limiting conditions of operation for the instrumentation that initiates control rod block are given in Table 3.2-3.

2. The minimum number of operable instrument channels specified in Table 3.2-3 for the rod block monitor may be reduced by one in one of the trip systems for maintenance and/or testing, provided that this condition does not last longer than 24 hr. in any 30-day period.

D. Radiation Monitoring Systems - Isolation & Initiation Functions

1. Deleted

2. Standby Gas Treatment System

The limiting conditions for operation are given in Table 3.2-4.

4.2 (cont'd)

System logic shall be functionally tested as indicated in Table 4.2-2.

C. Control Rod Block Actuation

Instrumentation shall be functionally tested, calibrated, and checked as indicated in Table 4.2-3.

System logic shall be functionally tested as indicated in Table 4.2-3.

D. Radiation Monitoring Systems - Isolation and Initiation Functions

1. Deleted.

2. Standby Gas Treatment System

System logic shall be functionally tested as indicated in Table 4.2-4.

Page 51 intentionally left blank.

Page 52 intentionally deleted.

3.2 (cont'd)

3. Deleted.

4. Deleted.

5. Main Control Room Ventilation Isolation

   The limiting conditions for operation are given on Table 3.2-4.

6. Mechanical Vacuum Pump Isolation

   (1) The mechanical vacuum pump shall be capable of being automatically isolated and secured by a signal of high radiation in the main steam line tunnel whenever the main steam isolation valves are open.

   (2) If the limits of Table 3.2-4 are not met, the vacuum pump shall be isolated.

4.2 (cont'd)

3. Deleted

4. Deleted

5. Main Control Room Ventilation Isolation

   The instrument surveillance requirements are given on Table 4.2-4.

6. Mechanical Vacuum Pump Isolation

   The instrument surveillance requirements are given on Table 4.2-4.

the specification are adequate to assure the above criteria are met. The specification preserves the effectiveness of the system during periods of maintenance, testing, or calibration, and also minimizes the risk of inadvertent operation; i.e, only one instrument channel out of service.

Flow integrators are used to record the integrated flow of liquid from the drywell sumps. The alarm unit in each integrator is set to annunciate before the values specified in Specification 3.6.D are exceeded.

For each parameter monitored, as listed in Table 3.2-6, by comparing the reading of each channel to the reading on redundant or related instrument channel a near continuous surveillance of instrument performance is available. Any deviation in readings will initiate any early recalibration thereby maintaining the quality of the instrument readings.

Table 3.2-4
RADIATION MONITORING SYSTEMS THAT INITIATE AND/OR ISOLATE SYSTEMS

Minimum of Of Operable Instrument Channels (1)	Trip Function	Trip Level Setting	Total Number of Instrument Channels Provided By Design For Both Channels	Action (2)
1	Main Control Room Ventilation Monitor	$\leq 4 \times 10^3$ cpm (6)	1 Inst. Channel	A
2	Mechanical Vacuum Pump Isolation	$\leq$3 times normal full power background	4 Inst. Channels	B

NOTES FOR TABLE 3.2-4

1. Whenever the systems are required to be operable, there shall be two operable or tripped instrument channels per trip system. From and after the time it is found that this cannot be met, the indicated action shall be taken.

2. Action

   A. Control Room Isolation is manually initiated.

   B. Uses same sensors as Primary Containment Isolation on high main steam line radiation. Table 3.2-1.

TABLE 4.2-4

MINUMUM TEST AND CALIBRATION FREQUENCY FOR RADIATION MONITORING SYSTEMS

Instrument Channels	Instrument Functional Test	Calibration	Instrument Check (2) (9)
1) Main Control Room Ventilation Monitor	(1)	Once/3 months	Once/day
2) Mechanical Vacuum Pump Isolation	(8)		

Logic System Functional Test (4) (6)	Frequency
1) Reactor Building Isolation	Once/6 months
2) Standby Gas Treatment System Actuation	Once/6 months
3) Steam Jet Air Ejector Off-Gas Line Isolation	Once/6months
4) Mechanical Vacuum Pump Isolation	Once/Operating Cycle

Note: See listing of notes following Table 4.2-6 for the notes referenced herein.

8. Review the Emergency Plan and implementing procedures annually.

9. Perform special review and/or investigations at the request of the Resident Manager.

10. Review of those reportable occurrences requiring 24 hour notification to the NRC, in accordance with Specification 6.9.

11. Review the Offsite Dose Calculation Manual (ODCM) and implementing procedures at least once per 24 months.

12. Review the Process Control Program (PCP) at least once per 24 months.

(F) Authority

The PORC shall function to advise the Resident Manager on all matters related to nuclear safety and environmental operations. The PORC shall recommend approval or disapproval to the Resident Manager of those items considered in 6.5 1E (1) through (4) and determine if items considered in 6.5 1E (1) through (5) constitute unreviewed safety questions, as defined in 10 CFR 50.59.

In the event of a disagreement between the PORC and the Resident Manager, the Chairman of the SRC and the Sr. Vice President-Nuclear Generation or their designated alternates shall be notified within 24 hours and written notification provided on the next business day; however, the Resident Manager shall have responsibility for resolution of such disagreement pursuant to Section 6.1.

(G) Records

Minutes of all meetings of the PORC shall be recorded and numbered. Copies will be retained in file. Copies will be forwarded to the Chairman of the SRC and the Sr. Vice President - Nuclear Generation.

(H) Procedures

Conduct of the PORC and the mechanism for implementation of its responsibilities and authority are defined in the pertinent Administrative Procedures.

6.5.2 SAFETY REVIEW COMMITTEE (SRC)

FUNCTION

6.5.2.1 The SRC shall collectively have the competence required to review problems in the following areas:

a. Nuclear power plant operations

b. Nuclear engineering

c. Chemistry and radiochemistry

d. Metallurgy

e. Instrumentation and control

CHARTER

6.5.2.11. Conduct of the committee will be in accordance with a charter approved by the Senior Vice President-Nuclear Generation setting forth the mechanism for implementation of the committee's responsibilities and authority.

6.6. REPORTABLE OCCURRENCE ACTION

(A) In the event of a Reportable Occurrence, the NRC shall be notified and/or a report submitted pursuant to the requirements of Specication 6.9.

(B) Each Reportable Occurrence requiring 24 hours notification to the NRC shall be reviewed timely by the PORC and a report submitted by the Resident Manager to the Senior Vice President-Nuclear Generation and the SRC.

6.7. SAFETY LIMIT VIOLATION

(A) If a safety limit is exceeded, the reactor shall be shut down and reactor operation shall only be resumed in accordance with the provisions of 10 CFR 50.36 (c) (i).

(B) An immediate report of each safety limit violation shall be made to the NRC by the Resident Manager. The Senior Vice President-Nuclear Generation and Chairman of the SRC will be notified within 24 hours.

(C) The PORC shall prepare a complete investigative report of each safety limit violation and include appropriate analysis and evaluation of: (1) applicable circumstances preceding the occurrence; (2) effects of the occurrence upon facility component systems or structures; and (3) corrective action required to prevent recurrence. The Resident Manager shall forward this report to the Senior Vice President-Nuclear Generation, Chairman of the SRC and the NRC.

6.8 PROCEDURES

(A) Written procedures and administrative policies shall be established, implemented and maintained that meet or exceed the requirements and recommendations of Section 5 "Facility Administrative Policies and Procedures" of ANSI 18.7-1972 and Appendix A of Regulatory Guide 1.33, November 1972. In addition, procedures shall be established, implemented and maintained for the Fire Protection Program and other programs, as specified in Appendix B of these Technical Specifications, Section 7.2.

(B) Those procedures affecting nuclear safety shall be reviewed by PORC and approved by the Resident Manager prior to implementation.

(C) Temporary changes to nuclear-related procedures may be made provided:

1. The intent of the original procedure is not altered.

6.16 Process Control Program (PCP)

A. The PCP shall be a manual, as defined in Appendix B of these Technical Specifications, Section 1.0.

B. The PCP shall be maintained at the plant consistent with these Technical Specifications and with approved plant procedures.

C. Revisions of the PCP.

1. Revisions of the PCP shall be submitted to the Commission in the Semiannual Radioactive Effluent Release Report for the period in which the revisions were made. This submittal shall contain:

a. sufficiently detailed information to support the rationale for the revisions without benefit of additional information.

b. a determination that the revision did not reduce the overall conformance of the solidified waste product to existing criteria for solid wastes; and

c. documentation that the revision has been reviewed and found acceptable by the PORC.

2. Revisions of the PCP shall become effective upon issue following review and acceptance by the PORC.

D. Temporary changes to the PCP may be made only in accordance with the requirements of Section 6.8.C.

6.17. Offsite Dose Calculation Manual (ODCM)

A. The ODCM is defined in Appendix B of these Technical Specifications, Section 1.0.

B. The ODCM shall be maintained at the plant and shall reflect accepted methodologies and calculational procedures.

C. Revisions of the ODCM.

1. Revisions of the ODCM shall be submitted to the Commission in the Semiannual Radioactive Effluent Release Report for the period in which the revisions were made effective. This submittal shall contain:

a. sufficiently detailed information to support the rationale for the revisions without benefit of additional information (information submitted shall consist of revised pages of the ODCM, with each page numbered and provided with an approval and date box, together with appropriate evaluations justifying the revisions).

b. a determination that the revisions will not reduce the accuracy or reliability of dose calculations or setpoint determinations; and

c. documentation that the revisions have been reviewed and found acceptable by the PORC.

2. Revisions of the ODCM shall become effective upon issue following review and acceptance by the PORC.

D. Temporary changes to the ODCM may be made only in accordance with the requirements of Section 6.8.C.

6.18 Major modifications to radioactive waste systems (liquid, gaseous and solid).

A. Major modifications to radioactive waste systems shall be reported to the Commission in accordance with 10 CFR 50.59 or 10 CFR 50.71e.

ATTACHMENT III

SAFETY EVALUATION FOR PROPOSED RADIOLOGICAL EFFLUENT TECHNICAL SPECIFICATIONS AND ASSOCIATED CHANGES

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I. Description of the Changes

The proposed Radiological Effluent Technical Specifications (RETS) replace all of Appendix B of the FitzPatrick Technical Specifications. Previously, non-radiological specifications in Appendix B were deleted (Reference 1) with an amendment package approved by the NRC (Reference 2).

The proposed RETS include or expand upon existing radiological specifications in Appendix B. Subsection 2.3 of Appendix B, "Radioactive Discharge," is replaced by RETS Sections 2.0 (Liquid Effluents) and 3.0 (Gaseous Effluents). Subsection 4.3 of Appendix B, "Radiological Environmental Monitoring," is replaced by RETS Section 6.0 (Radiological Environmental Monitoring). Section 5.0 of Appendix B, "Administrative Controls," is replaced by RETS Section 7.0 (Administrative Controls).

The two organization charts now in Appendix B (Figures 5.2-1 and 5.2-2) are not included in the proposed RETS.

RETS contains additional sections which are not now included in Appendix B. These are Section 4.0 (Solid Radioactive Waste) and Section 5.0 (Total Dose). Furthermore, RETS refers to an Offsite Dose Calculation Manual (ODCM) for calculating offsite doses. FitzPatrick's ODCM will be submitted to the NRC for approval under a separate cover.

Several specifications in Appendix A are added, deleted or changed to accommodate the proposed RETS. Two definitions, "Purge-Purging" and "Venting", are added to the definitions section on page 6a.

In Subsection 3.2.D on pages 50-53, all references to the Steam Air Ejector Offgas System, Radiation Monitoring Systems and Liquid Radwaste Discharge are deleted. Accordingly, the portions of the Bases addressing these items on page 59 are deleted.

In Table 3.2-4 on page 74, six of the eight monitor specifications listed are deleted. Similarly for Table 4.2-4 on page 82, four of the six monitor specifications listed are deleted, and one of the logic system functional test requirements is deleted. These deleted specifications are now addressed in the proposed RETS.

In subsection 6.5.1.E on page 250, requirements for review of the ODCM and the FitzPatrick Process Control Program (as addressed in RETS Section 4.0) are added to the responsibilities of the Plant Operating Review Committee.

Reference is made, in Subsection 6.8A on page 253, to procedures specified in RETS Subsection 7.2. Two new reporting requirements, for radioactivity in liquid holdup tanks and for offsite releases, are added on page 254e.

Lastly, three new subsections, regarding the Process Control Program, changes to the ODCM, and major modifications of radioactive waste systems, are added to the Administrative Controls section of Appendix A.

II. Purpose of the Changes

The RETS and accompanying changes to Appendix A of the Technical Specifications are being proposed to assure that the requirements of 10 CFR 20 and 10 CFR 50, Appendix I, that radiological releases and doses be kept "as low as is reasonably achievable", are met.

III. Impact of the Changes

The proposed RETS and accompanying changes to Appendix A are designed to further insure the health and safety of the public by requiring that radioactive effluent releases and offsite doses be kept as low as is reasonably achievable. In many cases, RETS imposes radiological monitoring, analysis, control and reporting requirements over and above those now specified in Appendix B.

IV. Implementation of the Changes

Implementation of the changes, as proposed, will not adversely impact the ALARA or Fire Protection programs at FitzPatrick. Moreover, the changes will not adversely impact the environment.

V. Conclusion

The incorporation of these changes: a) will not increase the probability or the consequences of an accident or malfunction of equipment important to safety as previously evaluated in the Safety Analysis Report; b) will not increase the possibility of an accident or malfuntion of a type other than that evaluated previously in the Safety Analysis Report; c) will not reduce the margin of safety as defined in the basis for any Technical Specification; and d) does not constitute an unreviewed safety question.

VI. References

1) PASNY Letter, J.P. Bayne to Domenic B. Vassallo, dated February 10, 1983 (JPN-83-13).

2) NRC Letter, Domenic B. Vassallo to Leroy W. Sinclair, dated March 11, 1983 (JAF-83-089).

3) PASNY Proposed Radiological Effluent and Monitoring Technical Specifications, submitted by letter Paul J. Early to Thomas A. Ippolito, dated May 2, 1979 (JPN-79-26).

4) NRC revised Technical Evaluation Report, "Comparison of Plant and Model Radiological Effluent Technical Specifications," transmitted by letter Domenic B. Vassallo to Leroy W. Sinclair, dated August 25, 1982 (JAF-82-216).

5) NRC NUREG-0473, Rev. 3, Draft 7", "Standard Radiological Effluent Technical Specifications for Boiling Water Reactors," issued January 1983.

6) PASNY letter, J.P. Bayne to Domenic B. Vassallo, dated November 22, 1982 (JPN-82-85).

7) PASNY letter, J. P. Bayne to Domenic B. Vassallo, dated February 10, 1983 (JPN-83-12).

8) PASNY letter, J.P. Bayne to Domenic B. Vassallo, dated March 9, 1983 (JPN-83-20).