

APPENDIX B
TO FACILITY OPERATING LICENSE NO. NPF-7
NORTH ANNA POWER STATION
UNIT 2

VIRGINIA ELECTRIC AND POWER COMPANY
DOCKET NO. 50-339

ENVIRONMENTAL TECHNICAL SPECIFICATIONS
PART I - RADIOLOGICAL

8009160 663

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DEFINITIONS

Accuracy: Refers to the deviation of a result obtained by a particular method from the value accepted as true.

Annually: Annually is once per calendar year at intervals of twelve calendar months, plus or minus 30 days.

Batch Release: A batch release is the discharge of fluid wastes of a discrete volume.

Calibration: An instrument or device calibration shall be the adjustment, as necessary, of the output such that it responds with the necessary range and accuracy to known values of the parameter(s) which the instrument sensor or device monitors. The calibration shall encompass the entire circuit including the sensor, indicatory control feature, alarm and/or trip function(s), and shall include the functional test. The calibration may be performed by any series of sequential, overlapping or total circuit steps such that the entire circuit is calibrated as specified.

Composite Sample: A combination of individual samples obtained at regular intervals over a time period. The volume of each individual sample is proportional to the flow rate discharge at the time of sampling or the number of equal volume samples is proportional to the time period used to produce the composite.

Condenser Discharge Structure: Located at the beginning of canal "A". Effluent water from Unit Nos. 1 and 2 exits through this structure to canal "A".

Continuous Monitors: As applied to in place monitors and flow indicators does not prevent the devices from being periodically taken out of service for calibration or maintenance for periods not to exceed four hours.

Continuous Release: A continuous release is the discharge of fluid waste of a non-discrete volume, e.g., from a volume or system that has an input flow during the continuous release.

Daily Average Concentration: Daily average concentration means the arithmetic average of all daily determinations of concentration made during a calendar month. Daily determinations of concentration using a composite sample shall be the concentration of the composite sample. When grab samples are used, the daily determination of concentration shall be the arithmetic average of all the samples collected during that calendar day.

Daily Maximum Concentration: Daily maximum concentration means the maximum concentration recorded for any calendar day.

Functional Check: A functional check shall be the qualitative assessment of channel behavior during operation by observation. This determination shall include, where possible, comparison of the channel indication and/or status with other indications and/or status derived from independent instrument channels measuring the same parameter.

Functional Test: A 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.

Grab Sample: A grab sample is an individual sample collected in less than fifteen minutes.

Monthly: Monthly is once during every calendar month at intervals of 30 days plus or minus three days.

Normal Operation: Operation of the station at greater than 5% of rated thermal power in other than a safety emergency situation.

Precision: Relates to the reproducibility of measurements within a set, that is, to the scatter or dispersion of a set about its central value.

Quarterly: Quarterly is once during each successive three month period of the calendar year, counting from January 1, at intervals of 13 weeks plus or minus 9 days.

Semi-Monthly: Semi-monthly is twice during each calendar month at intervals of 15 days plus or minus 2 days.

Spectral Band: A width, generally expressed in wavelength or frequency of a particular portion of the electromagnetic spectrum. A given sensor (e.g., radiometer detector or camera film) is designed to measure or be sensitive to energy received from that part of the spectrum.

Station and Unit: Station refers to North Anna Power Station, Units Nos. 1 and 2. Unit refers only to Unit No. 1 or Unit No. 2.

Weekly: Weekly is once during each calendar week at intervals of 7 days plus or minus 1 days.

2.0 LIMITING CONDITIONS FOR OPERATION -

2.1 Non-Radiological - None

2.2 Radioactive Effluents

Objective

To define the limits and conditions for the release of radioactive materials in liquid and gaseous effluents to the environs to ensure that these releases are as low as is reasonably achievable in conformance with 10 CFR Part 50.34a, and to ensure that concentrations of radioactive materials in effluents released to unrestricted areas are within the limits specified in 10 CFR Part 20.

To ensure that the releases of radioactive material above background to unrestricted areas be as low as is reasonably achievable, the following design objectives, as defined in the Annex to Appendix I to 10 CFR Part 50 apply:

- a. The annual dose above background to the total body or any organ of an individual from liquid releases from all reactors at a site should not exceed 5 mrem in an unrestricted area.
- b. The annual total quantity of radioactive materials in liquid releases, excluding tritium and dissolved gases, discharged from each reactor should not exceed 5 Ci.
- c. The annual total quantity of noble gases above background discharged in gaseous effluents from the site should result in an air dose due to gamma radiation of less than 10 mrad, and an air dose due to beta radiation of less than 20 mrad, at any location near ground level which could be occupied by individuals at or beyond the boundary of the site.
- d. The annual total quantity in gaseous effluents of all radioiodines and radioactive material in particulate forms with half-lives greater than eight days, above background, from all reactors at a site should not result in an annual dose to any organ of an individual in an unrestricted area from all pathways of exposure in excess of 15 mrem.
- e. The annual total quantity of iodine-131 discharged in gaseous releases from each reactor at a site should not exceed 1 Ci.

2.2.1 Specifications for Liquid Waste Effluents

- a. The concentration of radioactive materials released in liquid waste effluents to unrestricted areas from all reactors at the site shall not exceed the values specified in 10 CFR Part 20, Appendix B, Table II, Column 2, for radionuclides other than noble gases and 4×10^{-5} uCi/ml for noble gases.
- b. The cumulative release of radioactive materials in liquid waste effluents, excluding tritium and dissolved gases, shall not exceed 10 Ci/reactor/calendar quarter.
- c. The cumulative release of radioactive materials in liquid waste effluents, excluding tritium and dissolved gases, shall not exceed 20 Ci/reactor in any 12 consecutive months.
- d. During release of radioactive wastes, the clarifier effluent monitor shall be set to alarm and to initiate the automatic closure of the clarifier discharge valve (LW-115) prior to exceeding the limits specified in 2.2.1.a above.
- e. The operability of valve LW-115 in the liquid radwaste discharge lines shall be demonstrated at least quarterly.
- f. The equipment installed in the liquid radioactive waste system shall be maintained and shall be operated to process radioactive liquid wastes prior to their discharge when the projected cumulative release could exceed 1.25 Ci/reactor/calendar quarter, excluding tritium and dissolved gases.
- g. The maximum radioactivity to be contained in any liquid radwaste tank that can be discharged directly to the environs shall not exceed 10 Ci, excluding tritium and dissolved gases.
- h. If the cumulative release of radioactive materials in liquid effluents, excluding tritium and dissolved gases, exceeds 2.5 Ci/reactor/calendar quarter, the licensee shall make an investigation to identify the causes for such releases, define and initiate a program of action to reduce such releases to the design objective levels listed in Section 2.2, and report these actions to the NRC in accordance with Specification 5.6.2.2.c(1).
- i. An unplanned or uncontrolled offsite release of radioactive materials in liquid effluents in excess of 0.5 curies requires notification. This notification shall be in accordance with Specification 5.6.2.2.c(3).

2.2.2 Specifications for Liquid Waste Sampling and Monitoring

- a. Station records shall be maintained of the radioactive concentration and volume before dilution of liquid waste intended for discharge and the average dilution flow and length of time over which each discharge occurred. Sample analysis results and other reports shall be submitted as required by Section 5.6.1 of these Specifications. Estimates of the sampling and analytical errors, as described in Regulatory Guide 1.21, associated with each reported value shall be included.
- b. A continuous representative sample of all radioactive liquid waste shall be taken at the liquid waste disposal-clarifier system release point and analyzed for the concentration of each significant gamma energy peak in accordance with Table 2.2-1 to demonstrate compliance with Specification 2.2.1 using the flow rate into which the waste is discharged during the period of discharge. If the continuous representative sample system is inoperative, an alternate fixed flow sampler shall be provided to collect continuous samples in the continuous representative sample collection tanks and the proportion of sample to effluent determined each 2 hours, or valve LW-115 shall be closed.
- c. Sampling and analysis of undiluted liquid radioactive waste shall be performed in accordance with Table 2.2-1. Prior to taking samples from a continuous representative sample collection tank, the tank shall be mixed for at least 10 minutes using the mixer provided in the tank.
- d. The radioactivity in undiluted liquid wastes including steam generator blowdown shall be continuously monitored and the gross activity (gamma) recorded during release. Whenever this monitor is inoperative, valve LW-115 shall be closed, or any clarifier treatment system bypass shall be terminated and grab samples shall be taken at the liquid waste disposal-clarifier system release point and analyzed every 2 hours to demonstrate compliance with Specification 2.2.1.a. If this monitor is inoperative for a period exceeding 72 hours, valve LW-115 shall be closed and these releases terminated.
- e. The flow rate of undiluted liquid radioactive waste shall be continuously measured and recorded during release. The total dilution water flow will be calculated based on pump run times and known circulating water pump characteristics.
- f. The clarifier effluent radiation monitor shall be calibrated at least quarterly by means of a known radioactive source. All laboratory analyses and other liquid effluent radiation monitors shall be calibrated at least once per 18 months by means of a known radioactive source. The source used to calibrate the known source shall be calibrated by a measurement system which is traceable to the National Bureau of Standards. Each monitor shall also have a functional test at least monthly and an instrument check prior to making a release.

TABLE 2.2-1
RADIOACTIVE LIQUID WASTE SAMPLING AND ANALYSIS

Liquid Release Type	Sampling Frequency	Analysis Frequency ^c	Type of Activity Analysis	Detection Capabilities (μCi/ml) ^a
Plant Releases including Steam Generator Blowdown	Continuous ^d	Daily Composite ^d	Principal Gamma Emitters	5×10^{-7} ^b
			Ba-La-140, I-131	10^{-6}
	Grab Sample	Monthly	Dissolved and Entrained Gases	10^{-5}
	Continuous ^d	Monthly Composite ^d	H-3	10^{-5}
			Gross α	10^{-7}
Continuous ^d	Quarterly Composite ^d	P-32	5×10^{-7}	
		Sr-89, Sr-90	5×10^{-8}	

^aThe nominal lower limit of detection is defined in HASL 300 (Rev. 8/74), pp. D-08-01, 02, 03 at the 95% confidence level. The LLD levels are decay corrected to the end of the total sampling period. The LLD for radionuclides analyzed by gamma spectrometry will vary according to the number of radionuclides encountered in effluent samples. These LLD levels should be used as minimum criteria for objectives for instrumentation and analytical procedure selection.

^bFor certain mixtures of gamma emitters, it may not be possible to measure radionuclides in concentrations near their sensitivity limits when other nuclides are present in the same sample in much greater concentrations. Under these circumstances, it will be more appropriate to calculate the concentrations of such radionuclides using measured ratios with those radionuclides which are routinely identified and measured.

^cA 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.

^dTo be representative of the average quantities and concentrations of radioactive materials in liquid effluents, samples should be continuously collected in proportion to the rate of flow of the effluent stream. Prior to analyses, all samples taken for the composite should be thoroughly mixed in order for the composite sample to be representative of the average effluent release.

- g. The manual valve on the 4-inch-diameter LW-221-152 line shall be closed and locked whenever a release is in progress. The position of this valve shall be checked and recorded each shift unless otherwise secured in position (i.e., locked or sealed).
- h. Samples shall be taken from the Liquid Waste Evaporator Test, Contaminated Drain and Low Level Waste Drain Tanks and from releases from the Steam Generator Blowdown System and analyzed at least weekly for principal gamma emitters. Samples shall be taken from the clarifier and analyzed at least daily for principal gamma emitters.

Bases

The release of radioactive materials in liquid waste effluents to unrestricted areas shall not exceed the concentration limits specified in 10 CFR Part 20 and should be as low as is reasonably achievable in accordance with the requirements of 10 CFR Part 50.34a. These specifications provide reasonable assurance that the resulting annual dose to the total body or any organ of an individual in an unrestricted area will not exceed 5 mrem. At the same time, these specifications permit the flexibility of operation, compatible with considerations of health and safety, to assure that the public is provided a dependable source of power under unusual operating conditions which may temporarily result in releases higher than the design objective levels but still within the concentration limits specified in 10 CFR Part 20. It is expected that by using this operational flexibility under unusual operating conditions, and exerting every effort to keep levels of radioactive material in liquid wastes as low as is reasonably achievable, the annual release will not exceed a small fraction of the concentration limits specified in 10 CFR Part 20.

The design objectives have been developed based on operating experience, taking into account a combination of variables including defective fuel, primary system leakage, primary to secondary leakage, steam generator blowdown and the performance of the various waste treatment systems, and are consistent with Appendix I to 10 CFR Part 50.

Specification 2.2.1.a requires the licensee to limit the concentration of radioactive materials in liquid waste effluents released from the site to levels specified in 10 CFR Part 20, Appendix B, Table II, Column 2, for unrestricted areas. This specification provides assurance that no member of the general public will be exposed to liquid containing radioactive materials in excess of limits considered permissible under the Commission's Regulations.

Specifications 2.2.1.b and 2.2.1.c establish the upper limits for the release of radioactive materials in liquid effluents. The interest of these Specifications is to permit the licensee the flexibility of operation to assure that the public is provided a dependable source of power under unusual operating conditions which may temporarily result in releases higher than the levels normally achievable when the plant

and the liquid waste treatment systems are functioning as designed. Releases of up to these levels will result in concentrations of radioactive material in liquid waste effluents at small percentages of the limits specified in 10 CFR Part 20.

Consistent with the requirements of 10 CFR Part 50, Appendix A, Design Criterion 64, Specifications 2.2.1.d and 2.2.1.e require operation of suitable equipment to control and monitor the releases of radioactive materials in liquid wastes during any period that these releases are taking place.

Specification 2.2.1.f requires that the licensee maintain and operate the equipment installed in the liquid waste systems to reduce the release of radioactive materials in liquid effluents to as low as is reasonably achievable consistent with the requirements of 10 CFR Part 50.34a. Normal use and maintenance of installed equipment in the liquid waste system provides reasonable assurance that the quantity released will not exceed the design objective. In order to keep releases of radioactive materials as low as is reasonably achievable, the specification requires operation of equipment whenever it appears that the projected cumulative discharge rate will exceed one-fourth of this design objective annual quantity during any calendar quarter.

Specification 2.2.1.g restricts the amount of radioactive material that could be inadvertently released to the environment to an amount that will not exceed the Technical Specification limit.

In addition to limiting conditions for operation listed under Specifications 2.2.1.b and 2.2.1.c, the reporting requirements of Specification 2.2.1.h delineate that the licensee shall identify the cause whenever the cumulative release of radioactive materials in liquid waste effluents exceeds one-half the design objective annual quantity during any calendar quarter and describe the proposed program of action to reduce such releases to design objective levels on a timely basis. This report must be filed within 30 days following the calendar quarter in which the release occurred as required by Specification 5.6.2 of these Technical Specifications.

Specification 2.2.1.i provides for reporting spillage or release events which, while below the limits of 10 CFR Part 20, could result in releases higher than the design objectives.

The sampling and monitoring requirements given under Specification 2.2.2 provide assurance that radioactive materials in liquid wastes are properly controlled and monitored in conformance with the requirements of Design Criteria 60 and 64. These requirements provide the data for the licensee and the Commission to evaluate the plant's performance relative to radioactive liquid wastes released to the environment. Reports on the quantities of radioactive materials released in liquid waste effluents are furnished to the Commission according to Section 5.6.1 of these Technical Specifications. On the basis of such reports and any additional information the Commission may obtain from the licensee or others, the Commission may from time to time require the licensee to take such action as the Commission deems appropriate.

The points of release to the environment to be monitored in Section 2.2.2 include all the monitored release points as provided for in Table 2.2-2.

2.2.3 Specifications for Gaseous Waste Effluents

The terms used in these Specifications are as follows:

Subscripts v, refers to vent releases from the Process Vent and the Building Ventilation Vent

i, refers to individual noble gas nuclide (Refer to Table 2.2-3 for the noble gas nuclides considered)

Q_T = the total noble gas release rate (Ci/sec)

= $\sum_i Q_i$ sum of the individual noble gas radionuclides determined to be present by isotopic analysis

\bar{K} = the average total body dose factor due to gamma emission (rem/yr per Ci/sec)

\bar{L} = the average skin dose factor due to beta emissions (rem/yr per Ci/sec)

\bar{M} = the average air dose factor due to beta emissions (rad/yr per Ci/sec)

\bar{N} = the average air dose factor due to gamma emissions (rad/yr per Ci/sec)

The values of \bar{K} , \bar{L} , \bar{M} and \bar{N} are to be determined each time isotopic analysis is required as delineated in Specification 2.2.4. Determine the following using the results of the noble gas radionuclide analysis:

$$\bar{K} = (1/Q_T) \sum_i Q_i K_i$$

$$\bar{L} = (1/Q_T) \sum_i Q_i L_i$$

$$\bar{M} = (1/Q_T) \sum_i Q_i M_i$$

$$\bar{N} = (1/Q_T) \sum_i Q_i N_i$$

where the values of K_i , L_i , M_i , N_i are provided in Table 2.2-3, and are site dependent gamma and beta dose factors.

Q = the measured release rate of the radionuclides and radioactive materials in particulate forms with half-lives greater than eight days (Ci/sec).

TABLE 2.2-2

NORTH ANNA POWER STATION LIQUID WASTE SYSTEM
 LOCATION OF PROCESS AND EFFLUENT MONITORS AND DEVICES REQUIRED BY TECHNICAL SPECIFICATIONS

Process System or Release Point	Continuous Monitoring Instrumentation					Grab Sample Station	Release Point Continuous Composite Sampler	High Liquid Level or Overflow Alarm	Radiation Monitor Plant Instrument Number
	Gross Activity Recorder	Gross Activity Recorder	Radiation Alarm	Auto Control to Isolation Valve	Flow Rate Indicator				
Component Cooling System	X	X	X			X			CC-120
Refueling Water Stg. Tanks						X		X	
Boron Recovery Test Tanks						X		X	
PG Water Storage Tanks						X		X	
LW Evaporator Test Tanks						X		X	
Contaminated Drain Tanks						X		X	
Low Level Waste Drain Tanks						X		X	
Steam Generator Blowdown	X	X	X		X	X			a
Service Water Discharge	X	X	X		X ^c	X			SW-108
Turbine Building Floor Drain Sumps						X ^b		X	
Liquid Radwaste Effluent Line, LW-220	X	X	X	X	X	X	X		LW-111

X-Required

a-Six monitors: SS-122, SS-123, SS-124, SS-222, SS-223, SS-224

b-Whenever the secondary coolant activity exceeds 10^{-5} $\mu\text{C}/\text{ML}$ the sump pumps shall be placed in manual operation and samples shall be taken and analyzed prior to release.

c-Determined by monitoring pump run times.

TABLE 2.2-3

GAMMA AND BETA DOSE FACTORS FOR
NORTH ANNA POWER STATION, UNIT NOS. 1 AND 2

$X/O = 1.3 \times 10^{-6} \text{ sec/m}^3$ at 1370 meters NNE direction

Dose Factors for Vent

Noble Gas Radionuclide	K_{iv}	L_{iv}	M_{iv}	N_{iv}
	Total Body rem/yr Ci/sec	Skin rem/yr Ci/sec	Beta Air rad/yr Ci/sec	Gamma Air rad/yr Ci/sec
Kr-83m	6.4E-05	0	0.38	0.0034
Kr-85m	0.75	1.9	02.6	0.78
Kr-85	0.0091	1.8	2.6	0.0097
Kr-87	2.2	13.	13.	2.4
Kr-88	5.7	3.1	3.8	6.0
Kr-89	0.72	13.	14.	0.76
Xe-131m	0.27	0.62	1.5	0.34
Xe-133m	0.21	1.3	1.9	0.28
Xe-133	0.24	0.40	1.4	0.30
Xe-135m	0.87	0.93	0.97	0.93
Xe-135	1.1	2.4	3.2	1.2
Xe-137	0.10	16.	17.	0.11
Xe-138	2.0	5.4	6.2	2.1

- a. (1) The release rate limit of noble gases from the site shall be such that

$$2.0[Q_{TV} \bar{K}_V] \leq 1$$

and

$$0.33[Q_{TV} (\bar{L}_V + 1.1 \bar{N}_V)] \leq 1$$

- (2) The release rate limit of all radioiodine and radioactive materials in particulate form with half-lives greater than eight days, released to the environs as part of the gaseous wastes from the site, shall be such that

$$4.1[10^5 Q_V] \leq 1$$

- b. (1) The average release rate of noble gases from the site during any calendar quarter shall be such that

$$13[Q_{TV} \bar{N}_V] \leq 1$$

and

$$6.3[Q_{TV} \bar{M}_V] \leq 1$$

- (2) The average release rate of noble gases from the site during any 12 consecutive months shall be

$$25[Q_{TV} \bar{N}_V] \leq 1$$

and

$$13[Q_{TV} \bar{M}_V] \leq 1$$

- (3) The average release rate per site of all radioiodines and radioactive materials in particulate form with half-lives greater than eight days during any calendar quarter shall be such that

$$13[4.1 \times 10^5 Q_V] \leq 1$$

- (4) The average release rate per site of all radioiodines and radioactive materials in particulate form with half-lives greater than eight days during any period of 12 consecutive months shall be such that

$$25[4.1 \times 10^5 Q_V] \leq 1$$

- (5) The amount of iodine-131 released during any calendar quarter shall not exceed 2 Ci/reactor.

- (6) The amount of iodine-131 released during any period of 12 consecutive months shall not exceed 4 Ci/reactor.
- c. Should any of the conditions of 2.2.3.c(1), (2) or (3) listed below exist, the licensee shall make an investigation to identify the causes of the release rates, define and initiate a program of action to reduce the release rates to design objective levels listed in Section 2.2. A written report of these actions shall be submitted to the NRC within 30 days from the end of the quarter during which the release occurred.
- (1) If the average release rate of noble gases from the site during any calendar quarter is such that
- $$50[Q_{TV} \bar{N}_V] > 1$$
- or
- $$25[Q_{TV} \bar{M}_V] > 1$$
- (2) If the average release rate per site of all radionuclides and radioactive materials in particulate form with half-lives greater than eight days during any calendar quarter is such that
- $$50[4.1 \times 10^5 Q_V] > 1$$
- (3) If the amount of iodine-131 released during any calendar quarter is greater than 0.5 Ci/reactor.
- d. During the release of gaseous wastes from the waste gas decay tank the process vent monitor (as listed in Table 2.2-4) shall be operating and set to alarm and to initiate automatically the closure of the waste gas discharge valve prior to exceeding the limits specified in 2.2.3.a above. The operability of each automatic isolation valve shall be demonstrated at least at least quarterly.
- e. The maximum activity to be contained in one waste gas storage tank shall not exceed 25,000 curies (considered as Xe-133).
- f. An unplanned or uncontrolled offsite release of radioactive materials in gaseous effluents in excess of 150 curies of noble gas or 0.05 curie of radioiodine in gaseous form requires notification. This notification shall be in accordance with Specification 5.6.2.2.c(3).

POOR ORIGINAL

TABLE 2.2-4

WORTH ANNA POWER STATION GASEOUS WASTE SYSTEM
 LOCATION OF PROCESS AND EFFLUENT MONITORS AND SAMPLERS REQUIRED BY TECHNICAL SPECIFICATIONS

Process Stream or Release Point	Continuous Monitoring Instrumentation					Release Point Continuous Sampler		Grab Sample Station	Radiation Monitor Plant Instrumentation No.
	Particulate Noble Gas Activity	Activity Recorder	Radiation Alarm	Auto Control to Isolation Valve	Flow Rate Indicator	I	Particulate		
Process Vent ^a	X	X	X	X	X	X	X	X	GW-101 ^f , Particulate GW-102 ^f , Gaseous
Ventilation Vent A ^b	X	X	X		X ^d	X	X	X	VG-103 ^f , Particulate VG-104 ^f , Gaseous
Ventilation Vent B ^c	X	X	X		X ^d	X	X	X	VG-112 ^f , Particulate VG-113 ^f , Gaseous
Reactor Containment (During Purging)	X	X	X	X					RMS-159, 259 Particulate RMS-160, 260 Gaseous
Condenser Air Ejector	X	X	X	X				X	SV-121, 221 Gross Activity
Steam Generator Blowdown Tank Condenser Vent								X ^e	

X - Required

a - Exhausts waste gas decay tank and waste evaporator condenser

b - Exhausts Auxiliary Building Central and General Areas, Hot Laboratory.

c - Exhausts Safeguards Areas, Decon Bldg., Solidification Bldg., Reactor Containment and Fuel Bldg.

d - Flow element and recorder and integrator provided.

e - Radioiodine and Particulate samples shall be continuously collected and analyzed daily whenever the secondary coolant activity exceeds 10^{-5} $\mu\text{C}/\text{ml}$.

f - These instruments are common to both Unit Nos. 1 and 2.

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2.2.4 Specifications for Gaseous Waste Sampling and Monitoring

- a. Station records shall be maintained and reports of the sampling and analyses results shall be submitted in accordance with Section 5.6 of these Specifications. Estimates of the sampling and analytical error, as described in Regulatory Guide 1.21 (Rev. 1), associated with each reported value should be included.
- b. Gaseous releases to the environment, except from the turbine building ventilation exhaust and as noted in Specification 2.2.4.c, shall be continuously monitored for gross radioactivity and the flow continuously measured (see footnote d in Table 2.2-4) and recorded. Whenever these monitors are inoperable, grab samples shall be taken and analyzed daily for gross radioactivity. If these monitors are inoperable for more than seven days, these releases shall be terminated.
- c. During the release of gaseous wastes from the primary system waste gas decay tank, the process vent monitor shall be operating.
- d. All waste gas decay tank effluent monitors shall be calibrated at least quarterly by means of a known radioactive source. All laboratory analyses and other waste gas effluent monitors shall be calibrated at least every 18 months by means of a known radioactive source. The source used to calibrate the known source shall be calibrated by a measurement system which is traceable to the National Bureau of Standards. Each monitor shall have a functional test at least monthly and instrument check at least daily.
- e. Sampling and analysis of radioactive material in gaseous waste, including particulate forms and radioiodines shall be performed, at least as frequently as required by Table 2.2-5.
- f. During the release of gaseous wastes from the primary system waste gas decay tank, the iodine collection device and particulate collection device shall be operating.

Bases

The release of radioactive materials in gaseous waste effluents to unrestricted areas shall not exceed the concentration limits specified in 10 CFR Part 20 and should be as low as is reasonably achievable in accordance with the requirements of 10 CFR Part 50.34a. These specifications provide reasonable assurance that the resulting annual air dose from the site due to gamma radiation will not exceed 10 mrad, and an annual air dose from the site due to beta radiation will not exceed 20 mrad from noble gases, that no individual in an unrestricted area will receive an annual dose to the total body greater than 5 mrem or an

TABLE 2.2-5
RADIOACTIVE GASEOUS WASTE SAMPLING AND ANALYSIS

Gaseous Release Type	Sampling Frequency	Analysis Frequency	Type of Activity Analysis	Detection Capabilities ($\mu\text{Ci/ml}$) ^a
A. Waste Gas Decay Tank	Each Tank Grab Sample	Each Tank	Principal Gamma Emitters	10^{-4b}
			H-3	10^{-6}
B. Containment Purge	Each Purge ^e Grab Sample	Each Purge ^c	Principal Gamma Emitters	10^{-4}
			H-3	10^{-6}
C. Process Vent	Monthly ^c Grab Sample	Monthly ^c	Principal Gamma Emitters	10^{-4b}
			H-3	10^{-6}
D. Ventilation Vents A and B	Monthly ^c Grab Sample	Monthly ^c	Principal Gamma Emitters	10^{-4b}
			H-3	10^{-6}
E. Process Vent and Ventilation Vents A and B	Continuous ^d	Weekly Charcoal Sample	I-131	10^{-12}
			I-133	10^{-10}
			Continuous ^d	Weekly Particulate Sample
	Continuous ^d	Quarterly Particulate	Sr-89, Sr-90	10^{-11}

^aThe nominal lower limit of detection is defined in HASL 300 (Rev. 8/74), pp. D-08-01, 02, 03 at the 95% confidence level. The LLD levels are decay corrected to the end of the total sampling period. The LLD for radionuclides analyzed by gamma spectrometry will vary according to the number of radionuclides encountered in effluent samples. These LLD levels should be used as minimum criteria for objectives for instrumentation and analytical procedure selection.

^bFor certain mixtures of gamma emitters, it may not be possible to measure radionuclides at levels near their sensitivity limits when other nuclides are present in the sample at much higher levels. Under these circumstances, it will be more appropriate to calculate the levels of such radionuclides using observed ratios with those radionuclides which are measurable.

^cAnalyses shall also be performed weekly, for two weeks, for principal gamma emitters, following each shutdown, startup, or similar operational occurrence which could alter the mixture of radionuclides.

^dThe ratio of the sample volume to the sampled stream volume shall be known for the sampling time period consistent with the analyses frequency.

^ePrior to release.

annual skin dose greater than 15 mrem from fission product noble gases, and that the annual dose to any organ of an individual from radionuclides and radioactive material in particulate form with half-lives greater than eight days will not exceed 15 mrem per site.

At the same time these specifications permit the flexibility of operation, compatible with considerations of health and safety, to assure that the public is provided with a dependable source of power under unusual operating conditions which may temporarily result in releases higher than the design objective levels but still within the concentration limits specified in 10 CFR Part 20.

Even with this operational flexibility under unusual operating conditions, if the licensee exerts every effort to keep levels of radioactive material in gaseous waste effluents as low as is reasonably achievable, the annual releases will not exceed a small fraction of the concentration limits specified in 10 CFR Part 20.

The design objectives have been developed based on operating experience taking into account a combination of system variables including defective fuel, primary system leakage, primary to secondary system leakage, steam generator blowdown and the performance of the various waste treatment systems.

Specification 2.2.3.a(1) limits the release rate of noble gases from the site so that the corresponding annual gamma and beta dose rate above background to an individual in an unrestricted area will not exceed 500 mrem to the total body or 2000 mrem to the skin in compliance with the limits of 10 CFR Part 20.

For specification 2.2.3.a(1), gamma and beta dose factors for the individual noble gas radionuclides have been calculated for the plant gaseous release points and are provided in Table 2.2-3. The expressions used to calculate these dose factors are based on dose models derived in Section 7 of Meteorology and Atomic Energy-1968 and model techniques provided in Regulatory Guide 1.109.

Dose calculations have been made to determine the site boundary location with the highest anticipated dose rate from noble gases using onsite meteorological data and the dose expressions provided in Regulatory Guide 1.109. The dose expression considers the release point location, building wake effects, and the physical characteristics of the radionuclides.

The offsite location with the highest anticipated annual dose from released noble gases is 1370 meters in the NNE direction.

The release rate Specifications for a radioiodine and radioactive material in particulate form with half-lives greater than eight days are dependent on existing radionuclide pathways to man. The pathways which were examined for these Specifications are: 1) individual inhalation of airborne radionuclides, 2) deposition of radionuclides onto green leafy vegetation with subsequent consumption by man, and 3) deposition onto grassy areas where milch animals graze with consumption of the milk by man. Methods for estimating doses to the thyroid via these pathways are described in Regulatory Guide 1.109. The offsite location with the highest anticipated thyroid dose rate from radioiodines and radioactive material in particulate form with half-lives greater than eight days was determined using onsite meteorological data and the expressions described in Regulatory Guide 1.109.

Specification 2.2.3.a(2) limits the release rate of radioiodines and radioactive material in particulate form with half-lives greater than eight days so that the corresponding annual thyroid dose via the most restrictive pathway is less than 1500 mrem.

For radioiodines and radioactive material in particulate form with half-lives greater than eight days, the most restrictive location is a dairy farm located 2990 meters in the east direction (vent X/Q - 3.19×10^{-7} sec/m³).

Specification 2.2.3.b establishes upper offsite levels for the releases of noble gases and radioiodines and radioactive material in particulate form with half-lives greater than eight days at twice the design objective annual quantity during any calendar quarter, or four times the design objective annual quantity during any period of 12 consecutive months. In addition to the limiting conditions for operation of Specifications 2.2.3.a and 2.2.3.b, the reporting requirements of 2.2.3.c provide that the cause shall be identified whenever the release of gaseous effluents exceeds one-half the design objective annual quantity during any calendar quarter and that the proposed program of action to reduce such release rates to the design objectives shall be described.

Specification 2.2.3.d requires that suitable equipment to monitor and control the radioactive gaseous releases are operating during any period these releases are taking place.

Specification 2.2.3.e limits the maximum quantity of radioactive gas that can be contained in a waste gas storage tank. The calculation of this quantity should assume instantaneous ground release, a X/Q based on 5 percent meteorology, the average gross energy is 0.19 Mev per disintegration (considering Xe-133 to be the principal emitter) and exposure occurring at the minimum site boundary radius using a semi-infinite cloud model. The calculated quantity will limit the offsite dose above background to 0.5 rem or less, consistent with Commission guidelines.

Specification 2.2.3.f provides for reporting release events which, while below the limits of 10 CFR Part 20, could result in releases higher than the design objectives.

The sampling and monitoring requirements given under Specification 2.2.4 provide assurance that radioactive materials released in gaseous waste effluents are properly controlled and monitored in conformance with the requirements of Design Criteria 60 and 64. These requirements provide the data for the licensee and the Commission to evaluate the plant's performance relative to radioactive waste effluents released to the environment. Reports on the quantities of radioactive materials released in gaseous effluents are furnished to the Commission on the basis of Section 5.6.1 of these Technical Specifications. On the basis of such reports and any additional information the Commission may obtain from the licensee or others, the Commission may from time to time require the licensee to take such action as the Commission deems appropriate.

The points of release to the environment to be monitored in Section 2.2.4 include all the monitored release points as provided for in Table 2.2-4.

Specification 2.2.4.b excludes monitoring the turbine building ventilation exhaust since this release is expected to be a negligible release point. Many PWR reactors do not have turbine building enclosures. To be consistent in this requirement for all PWR reactors, the monitoring of gaseous releases from turbine buildings is not required.

2.2.5 Specifications for Solid Waste Handling and Disposal

- a. Measurements shall be made to determine or estimate the total curie quantity of all radioactive solid waste shipped offsite.
- b. Estimates shall be made of the principal radionuclide composition of all radioactive solid waste shipped offsite.
- c. Reports of the radioactive solid waste shipments, volumes, principal radionuclides, and total curie quantity, shall be submitted in accordance with Section 5.6.1.

Bases

The requirements of solid radioactive waste handling and disposal given under Specification 2.2.5 provide assurance that solid radioactive materials stored at the plant and shipped offsite are packaged in conformance with 10 CFR Part 20 and 10 CFR Part 71.

3.0 ENVIRONMENTAL SURVEILLANCE

3.1 Nonradiological Surveillance

3.1.1 Abiotic - Aquatic

None

3.1.2 Biotic Aquatic

None

3.1.3 Abiotic - Terrestrial

Addressed in Part II, Section 4.2.

3.1.4 Onsite Meteorology Monitoring

Objective

The objective of onsite meteorological monitoring is to adequately measure and document meteorological conditions at the site, specifically at heights above ground that are representative of atmospheric conditions that exist at all effluent release points.

Specifications

The onsite meteorological monitoring program, at the location(s) identified in the Environmental Report, shall conform to the recommendations and intent of Regulatory Guide 1.23, Onsite Meteorological Programs (February 1972), and include instruments to sense wind speed and direction at 10 meters and 49 meters, vertical temperature gradient between 10 meters and 49 meters, ambient temperature at 10 meters, and precipitation near the ground. Observations of cooling system impact on local meteorology (e.g., fogging, icing, precipitation, etc.) shall be made at appropriate locations, as identified in the Environmental Report, where this impact is attributable to plant operation.

Reporting Requirements

Meteorological data shall be summarized and reported consistent with the recommendations of Regulatory Guide 1.21, Section C.1 (June 1974) and Regulatory Guide 1.23, February 17, 1972, and meteorological

observations in a form consistent with National Weather Service procedures. Summaries of all data and observations shall be available to the NRC upon request. If the outage of any meteorological instrument(s) exceeds seven consecutive days, the total outage time, the dates of outage, the cause of the outage, and instrument(s) involved shall be reported within 30 days in accordance with Section 5.6.2.2.

Any modification to the onsite meteorological monitoring program as described above, or planned alterations of the area in the vicinity of the meteorological tower(s) that would interfere with the measurement of meteorological conditions representative of the site, will require written approval in accordance with Section 5.6.3.

Bases

The collection of meteorological data at the plant site will provide information which will be used to develop atmospheric diffusion parameters to estimate potential radiation doses to the public resulting from actual routine or abnormal releases of radioactive materials to the atmosphere, and to assess the actual impact of the plant cooling system on the atmospheric environment of the site area. A meteorological data collection program as described above is necessary to meet the requirements of subparagraph 50.36(a)(2) of 10 CFR Part 50, Appendix E to 10 CFR Part 50, and 10 CFR Part 51.

3.2 Radiological Environmental Monitoring

Objectives

The overall objectives of the radiological environmental monitoring survey program are to identify changes in radioactivity in the vicinity of the station, and to provide information on the type and quantity of radiation in certain indicator organisms or critical pathways which can be used as a basis for evaluating radiation exposures resulting from station operation.

Specifications

Radiological environmental monitoring shall be performed according to Table 3.2-1.

The location of monitoring stations is presented in Fig. 3.2-1 and 3.2-2.

The sensitivities (L.L.D.) of the analyses of environmental samples are presented in Tables 3.2-2 and 3.2-3.

Deviations are permitted from the required sampling schedule if specimens are unobtainable due to hazardous conditions, seasonal unavailability or malfunction of in-place equipment. Deviations are permitted

TABLE 3.2-1

NORTH ANNA POWER STATION
OPERATIONAL RADIOLOGICAL ENVIRONMENTAL MONITORING PROGRAM

EXPOSURE PATHWAY AND/OR SAMPLE	SAMPLE LOCATION AND/OR MAP NUMBER DESIGNATION	SAMPLING AND COLLECTION FREQUENCY	TYPE AND FREQUENCY OF ANALYSIS
AIRBORNE*			
Particulates	Site or site boundary: 1,21, 22, 23 Communities: 3,5,7 Control: 24	Continuous sampler (2/3 running time cycle), changes weekly	Weekly gross beta on each filter, quarterly gamma isotopic on each location composite, Sr-89-90 on second quarter composite, I-131 on radioiodine weekly.
Radioiodine	3,21,23,24		
Soil	1,3,4,5,6,7,21,22,23,24	Once per 3 years	Gamma isotopic on each, Sr 89-90 on 1,21,22, 23, 24 (on collection)
DIRECT	1,3,4,5,6,7,21,22,23,24	Quarterly	Gamma dose quarterly
WATERBORNE			
	Reservoir: 9 Discharge: 8	Monthly	Gamma isotopic radio- iodine ^e H-3 quarterly composite, Sr 89-90 second quarter composite
	North Anna River: ^d 11 Ground (well): 1A	Quarterly	Gamma isotopic, H-3 on collection, Sr 89-90 second quarter sample

TABLE 3.2-1 (Continued)

NORTH ANNA POWER STATION
OPERATIONAL RADIOLOGICAL ENVIRONMENTAL MONITORING PROGRAM

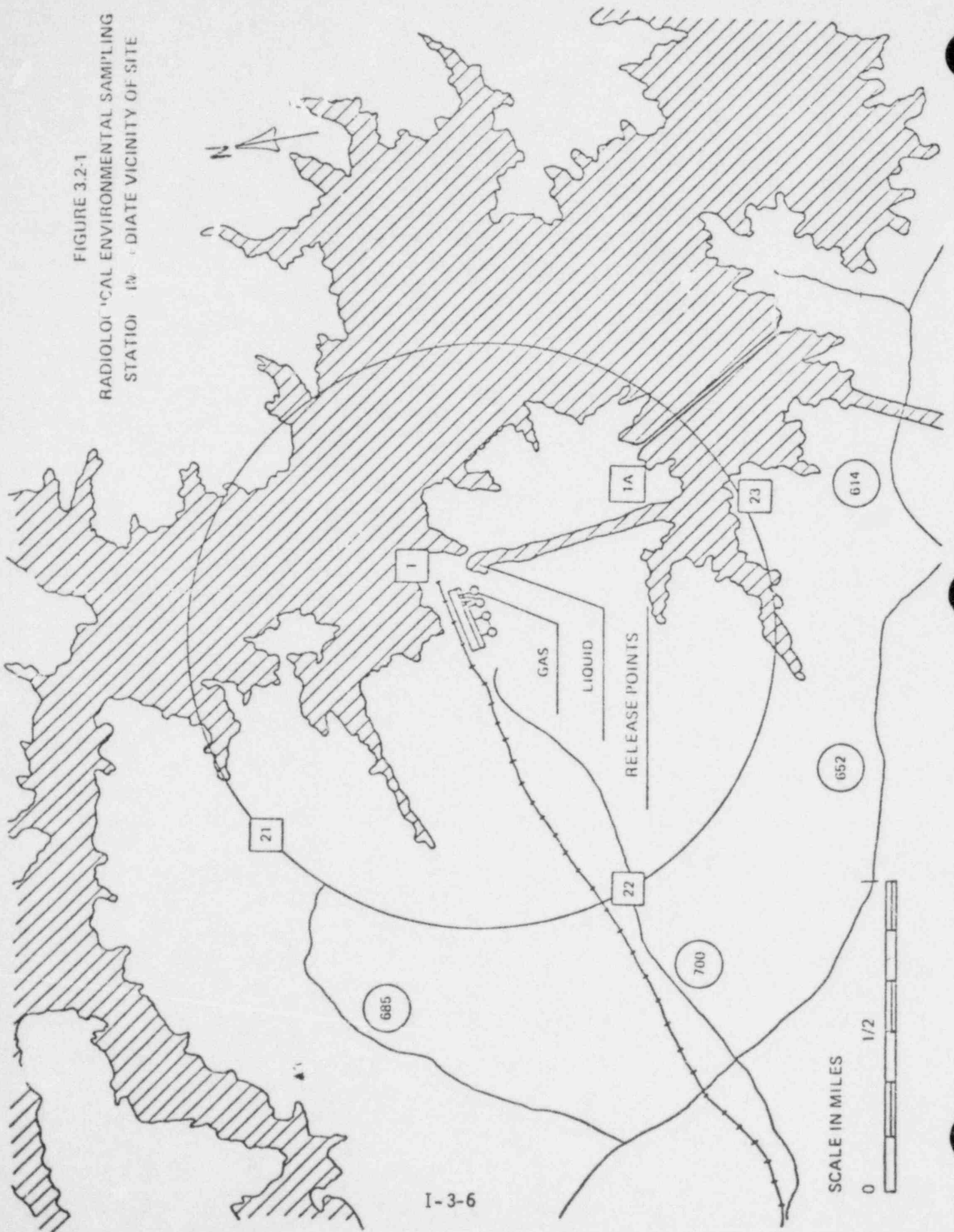
EXPOSURE PATHWAY AND/OR SAMPLE	SAMPLE LOCATION AND/OR MAP NUMBER DESIGNATION	SAMPLING AND COLLECTION FREQUENCY	TYPE AND FREQUENCY OF ANALYSIS
AQUATIC Sediment	Reservoir: 9 Discharge: 8 North Anna River: 11	Semiannually	Gamma isotopic on collection, Sr 89-90 annually
Shoreline	Vicinity of: 9		
INGESTION milk	Nearest Dairies: 12, 13, 14	Monthly ^a	Radioiodine ^{a,e} , Gamma isotopic monthly, Sr 89-90 quarterly
	Non-dairy activity ^b	Calculated dose dependent ^b	Radioiodine ^{b,e} , Gamma isotopic ^b Sr 89-90 ^b
Fish (Bass, or sunfish or crappie and catfish)	Reservoir: 9 Discharge: 8	Annually, near beginning of season	Gamma isotopic
Green Leafy vegetation, cultivated or weeds. Natural'y occurring	21, 23	Annually during harvest ^c	Gamma isotopic on collection

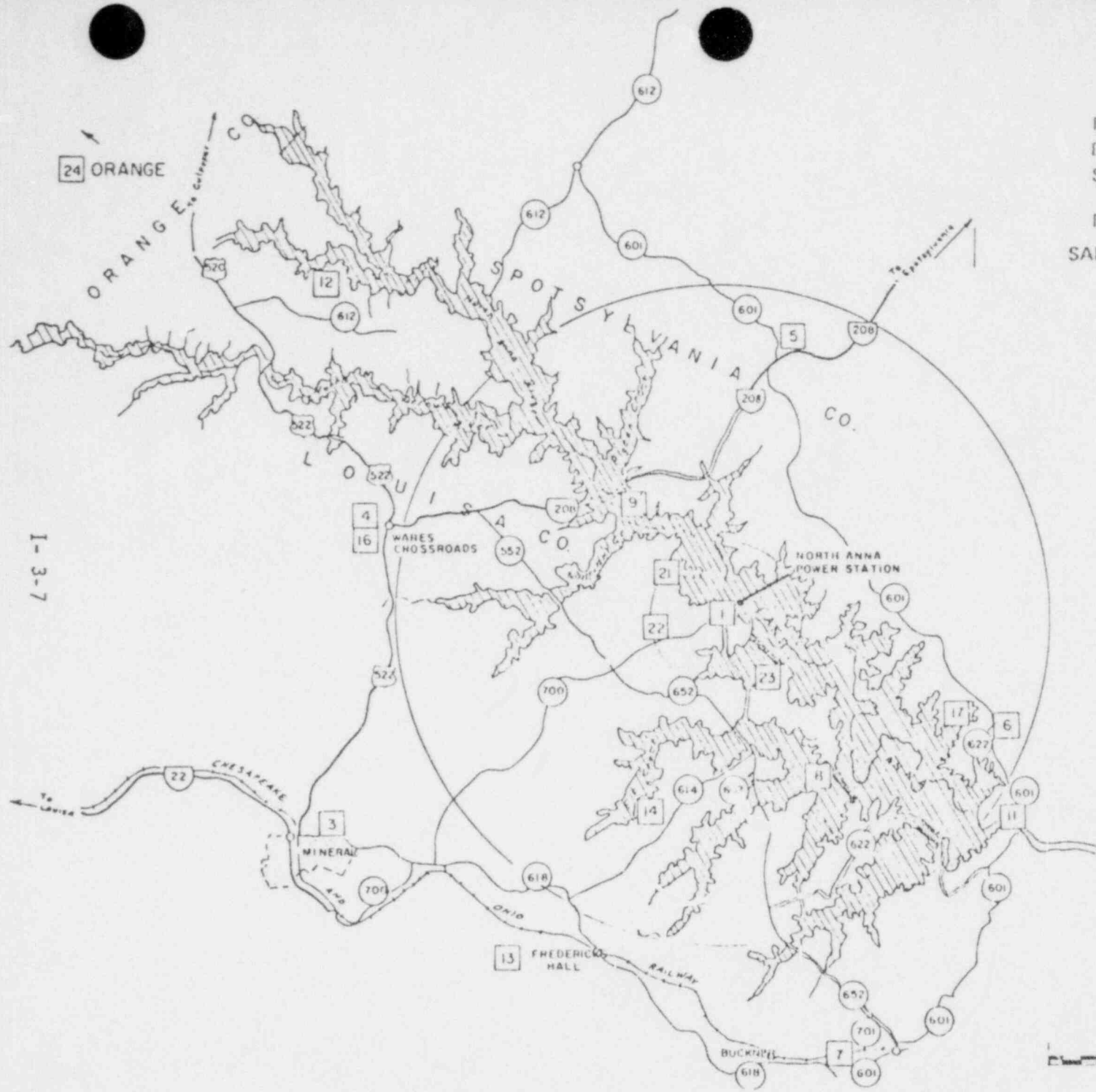
TABLE 3.2-1 (Continued)

NORTH ANNA POWER STATION
OPERATIONAL RADIOLOGICAL ENVIRONMENTAL MONITORING PROGRAM

EXPOSURE PATHWAY AND/OR SAMPLE	SAMPLE LOCATION AND/OR MAP NUMBER DESIGNATION	SAMPLING AND COLLECTION FREQUENCY	TYPE AND FREQUENCY OF ANALYSIS
a.	Once each month 1 and 2 mrem thyroid isodose lines will be calculated using the previous month's release data based on the cow-milk-child pathway. Should a dairy be located within the 1 mrem isodose line the sampling and analysis frequency for radioiodine will be modified to semimonthly for the month following the month for which the calculation was made. A similar sampling program will be for the 2 mrem isodose line except on a weekly frequency.		
b.	Monthly updates of the current year's annual accumulated calculated thyroid 15 mrem isodose lines based on the goat-milk-child and the cow-milk-child pathway will be done. Should the isodose line extend beyond the site boundary, a survey to locate goats or cows within the isodose line will be carried out within 30 days. Should goats or cows be observed, efforts to obtain samples from the owners of the animals will be put forth. If samples are obtainable, a sampling program similar to "a" above will be initiated. If samples are unobtainable, the annual report will document such and include the calculated doses.		
c.	Monthly updates of an annual 15 mrem isodose line (using release data and maximum organ dose in each of the 16 sectors) based on the grass-cattle-beef-man pathway will be done. Should the isodose line extend beyond the site boundary, sampling and analyses will be modified to monthly for the current year.		
d.	Samples will be taken from the Environmental Laboratory well.		
e.	Radioiodine analyses will be done by chemical separation.		

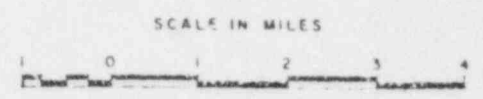
FIGURE 3.2-1
RADIOLOGICAL ENVIRONMENTAL SAMPLING
STATION IN VICINITY OF SITE





RADIOLOGICAL ENVIRONMENTAL SAMPLING STATIONS

FIGURE 3.2-2
SAMPLE LOCATIONS - □



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TABLE 3.2-2
 LOWER LIMITS OF DETECTION BY HIGH RESOLUTION
 Ge(Li) GAMMA SPECTROSCOPY
 ENVIRONMENTAL SAMPLES

Nuclide	Water (1 liter) <u>pCi/l</u>	Soil & Vegetation (400 gm) <u>pCi/gm</u>	Filters <u>pCi/total filter</u>
Be ⁷	8E+01	2E-01	2E+01
K ⁴⁰	2E+02	5E-01	5E+01
Cr ⁵¹	4E+01	2E-01	8E+01
Mn ⁵⁴	8	2E-02	2
Co ⁵⁸	8	2E-02	2
Fe ⁵⁹	1E+01	4E-02	3
Co ⁶⁰	8	2E-02	2
Zr ⁹⁵	1E+01	4E-02	3
Ru ¹⁰³	8	2E-02	2
Ru ¹⁰⁶	8E+01	2E-01	8E+01
I ¹³¹	10	3E-02	2
Cs ¹³⁴	9	2E-02	2
Cs ¹³⁷	9	2E-02	2
Ba ¹⁴⁰	3E+01	8E-02	6
La ¹⁴⁰	2E+01	4E-02	2E+01
Ce ¹⁴¹	2E+01	4E-02	3
Ce ¹⁴⁴	8E+01	2E-01	2E+01
Ra ²²⁶	6E+01	1E-01	1E+01
Th ²²⁸	1E+01	2E-02	1E+01

TABLE 3.2-3
LOWER LIMITS OF DETECTION

<u>Sample Analysis</u>	<u>L.L.D. & Reporting Units</u>	<u>Sampled Volume Required</u>
1. Airborne Particulate Gross Alpha Gross Beta Ge(Li) γ -isotopic	2.5×10^{-3} pCi/m ³ 7.6×10^{-3} pCi/m ³ See Table 3.2-2	125 m ³
2. Airborne Iodine Charcoal Cartridge I-131	2.4×10^{-2} pCi/m ³	125 m ³
3. Direct Radiation TLD Environmental Badge	2mR \pm 2mR	
4. Milk Sr-90 I 131 by Chemical Separation Total Calcium Ge(Li) γ -isotopic (Cs-137) Cs-137 Chemical Separation	0.8 pCi/l 0.5 pCi/l See Table 3.2-2 3 pCi/l	4 liters
5. Well Water Gross Alpha Gross Beta Tritium (gas count) Ge(Li) γ -isotopic	.5 pCi/l 0.5 pCi/l 100 pCi/l See Table 3.2-2	2 liters
6. Surface Water Gross Beta Tritium (gas count) Ge(Li) γ -isotopic	0.5 pCi/l 100 pCi/l See Table 3.2-2	2 liters
7. Fish: Flesh Gross Beta plus K-40 Ge(Li) γ -isotopic Sr-89 Sr-90	0.1 pCi/gm wet See Table 3.2-2 0.8 pCi/gm* 0.5 pCi/gm*	(2) 1 Kg

TABLE 3.2-3 (Continued)
 LOWER LIMITS OF DETECTION

<u>Sample Analysis</u>	<u>L.L.D. & Reporting Units</u>	<u>Sampled Volume Required</u>
8. Vegetation Samples		(2) 1 Kg
A. Corn Ge(Li) γ -isotopic Sr-90	See Table 3.2-2 0.5 pCi/gm*	
B. Leaf Vegetation Ge(Li) Sr-89 Sr-90	See Table 3.2-2 0.8 pCi/gm* 0.5 pCi/gm*	(2) 1 Kg
C. Food/Garden Crops (e.g. Lettuce) Ge(Li) Sr-89 Sr-90	See Table 3.2-2 0.8 pCi/gm* 0.5 pCi/gm*	(2) 1 Kg
D. Terrestrial Vegetation Ge(Li)	See Table 3.2-2	1 Kg
E. Aquatic Vegetation Ge(Li) γ -isotopic Sr-89 Sr-90	See Table 3.2-2 0.8 pCi/gm* 0.5 pCi/gm*	
9. Soil Ge(Li) γ -isotopic	See Table 3.2-2	1 Kg
10. Silt Ge(Li) γ -isotopic Sr-89 Sr-90	See Table 3.2-2 0.8 pCi/gm 0.5 pCi/gm	(2) 1 Kg

* Detection limits as stated are per gram of ashed material. The actual detection limits in pCi/gm (wet) will vary by a factor of 10-100, depending on the wet versus ash weight factor.

on stated sensitivities and sample size up to a 25% deviation. All deviations from the sampling schedule shall be described in the annual report.

Reporting Requirement

Routine and nonroutine reports shall be submitted in accordance with the requirements of Section 5.

Bases

These specifications ensure that releases of radionuclides to the environment are properly controlled and monitored. The data obtained as a result of these requirements enable the licensee and the Commission to evaluate the performance of the station in terms of radionuclides released to the environment.

The environmental monitoring program requires sufficient numbers, types of samples, and sensitivity of analysis which, with preoperational and background data, will provide verification of the effectiveness of station effluent control, an indication of measureable changes in radiation and radioactivity levels in the environment.

4.0

SPECIAL SURVEILLANCE AND STUDY ACTIVITIES

None.

5.0 ADMINISTRATIVE CONTROLS

Administrative controls below apply to Appendix B Part I only.

5.1 Responsibility

The responsibility for implementing the Environmental Technical Specifications is assigned to the Manager-Nuclear Operations and Maintenance at the corporate level and to the Station Manager at the station level. The Superintendent - Operations shall be responsible for ensuring that the station is operated in accordance with the Limiting Conditions of Operation. The Station Supervisor - Health Physics shall be responsible for the radiological environmental surveillance requirements. The executive Manager of Environmental Services shall be responsible for providing services which will fulfill the non-radiological environmental surveillance requirements.

5.2 Organization

The relationship between the Nuclear Operations Department and the Environmental Services Department is shown in Figure 5.2-1.

5.3 Review and Audit

5.3.1 Station Nuclear Safety and Operating Committee (SNSOC)

5.3.1.1 Function

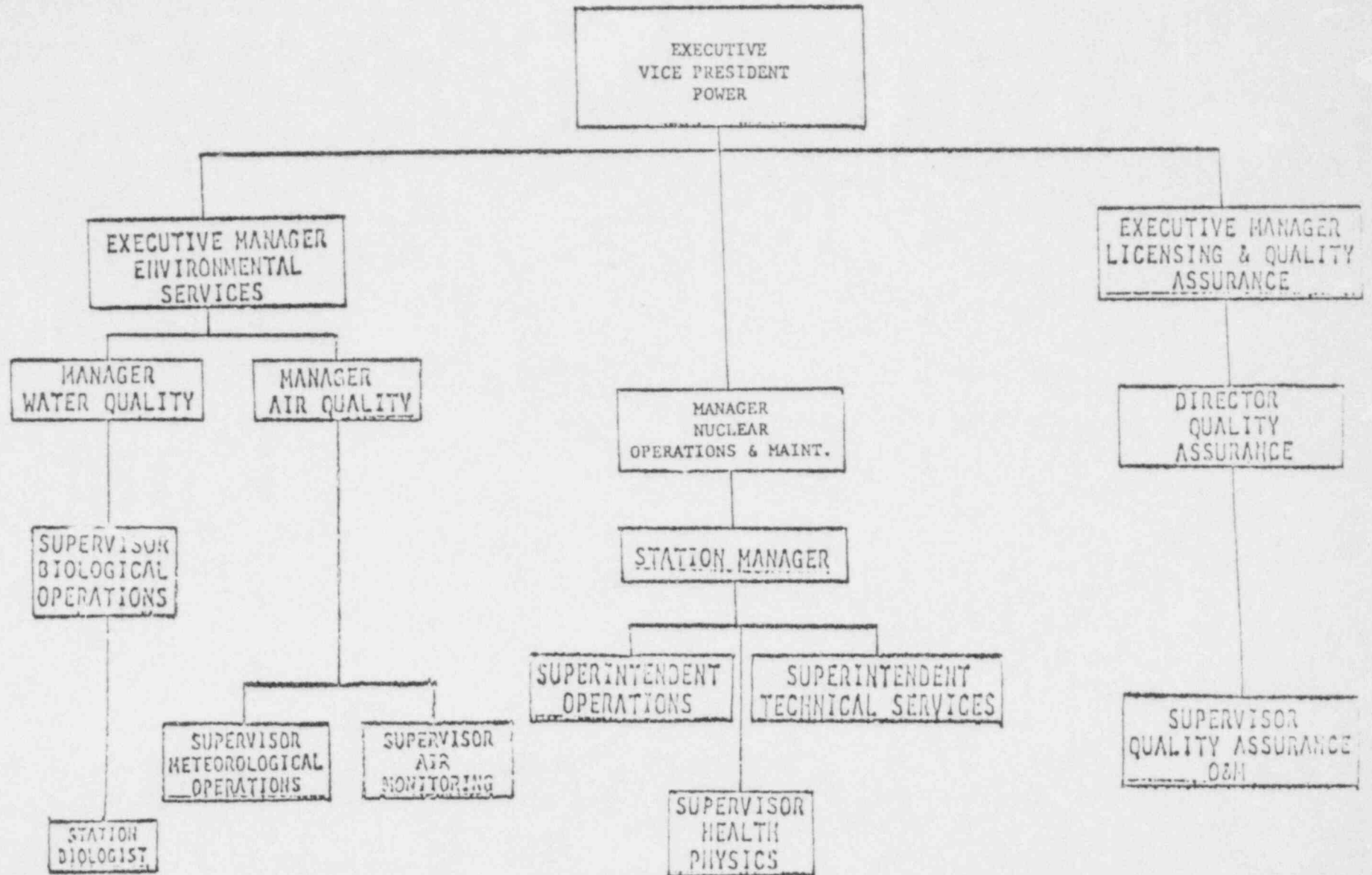
The SNSOC, as described in Section 6.5.1 of Appendix A of this license, shall function to advise the Station Manager on matters related to the environmental impact of the station. When the SNSOC is exercising its responsibility for non-radiological aspects of the ETS, the Station Biologist or his alternate shall be consulted.

5.3.1.2 Responsibility

The SNSOC shall be responsible for:

- a. Coordination of the Environmental Technical Specifications with the Safety Technical Specifications (Appendix A) to avoid conflicts and maintain consistency.
- b. Review of changes to the Environmental Technical Specifications and the evaluation of the environmental impact of the change.

Figure 5.2-1
ORGANIZATION CHART
ENVIRONMENTAL TECH SPEC IMPLEMENTATION



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- c. Review of proposed written procedures required by Sections 5.5.2 and 5.5.3 below and changes thereto, which affect the environmental impact of the station.
- d. Review of proposed changes to station systems to determine the environmental impact of the changes.
- e. Investigation of all reported instances of violation of the Environmental Technical Specifications; and where the investigation indicates, evaluation and formulation of recommendations to prevent recurrence.
- f. Review of environmental monitoring programs to detect potential or existing significant adverse environmental impacts that have not been evaluated, or that are significantly greater than that evaluated by the Commission.

5.3.1.3 Authority

The SNSOC shall:

- a. Review the environmental evaluation of all changes described in Section 5.3.1.2 a, b and c, above. When the evaluation indicates that such activity may result in a significant adverse environmental impact that was not evaluated, or that is significantly greater than that evaluated by the Commission, the SNSOC shall ensure that a written evaluation of such activities is provided to and prior approval is obtained from the Director of Nuclear Reactor Regulation for the activities.
- b. If the SNSOC determines that unexpected harmful effects or evidence of irreversible damage are occurring as a result of operation of the station, the SNSOC shall ensure that an acceptable analysis of the problem and a plan of action to eliminate or significantly reduce the harmful effects or damage is submitted to the Commission for review and approval.
- c. Review written reports prepared as a result of investigations and reviews conducted under 5.3.1.2 a, e and f.

5.3.1.4 Records

The SNSOC shall maintain written minutes of each meeting and copies shall be provided to the Chairman of the System Nuclear Safety and Operating Committee (SyNSOC).

5.3.2 Supervisor, Quality Assurance, Operations and Maintenance

5.3.2.1 Function

The Supervisor, Quality Assurance, Operations and Maintenance shall perform independent audits of the implementation of the Environmental Technical Specifications.

5.3.2.2 Audits

The following audits shall be completed:

- a. The conformance of facility operation to provisions contained within these Environmental Technical Specifications and applicable license conditions at least once per 12 months.
- b. The performance, training and qualifications of the facility staff involved in ensuring and monitoring compliance with these Environmental Technical Specifications at least once per 12 months.
- c. The results of actions taken to correct deficiencies occurring in facility equipment, structures, systems or method of operation that affect the environmental impact of the station at least once per 12 months.

5.3.2.3 Records

Provide a written report of the results of the audits required by 5.3.2.2 above to the SNSOC, the SyNSOC and the Station Manager.

5.3.3 System Nuclear Safety and Operating Committee (SyNSOC)

5.3.3.1 Function

The SyNSOC as described in Section 6.5.2 of Appendix A of this license, shall function to provide independent review of designated activities related to the environmental impact of the station.

5.3.3.2 Review

The SyNSOC shall review and, where necessary, comment on the results of the reviews conducted by the SNSOC and the independent audits conducted by the Supervisor, Quality Assurance, Operations and Maintenance.

5.3.3.3 Responsibility

The SyNSOC has the responsibility for ensuring that the station is operated in accordance with the requirements of this license and applicable NRC regulations.

5.3.3.4 Authority

The SyNSOC shall report to and advise the Executive Manager-Licensing and Quality Assurance, who shall advise the Executive Vice President-Power on those areas relating to the environmental impact of the station.

5.3.3.5 Records

The SyNSOC shall maintain written minutes of each meeting and a copy shall be provided to the committee members and the Executive Vice President-Power on those areas relating to the environmental impact of the station.

5.4 State and Federal Permits and Certificates

None

5.5 Procedures

5.5.1 Written Procedures

Detailed written procedures, including applicable checklists and instructions, shall be prepared and followed for all activities involved in carrying out the Environmental Technical Specifications as defined in Sections 5.5.2, 5.5.3, and 5.5.4, below. Procedures shall include sampling, data recording and storage, instrument calibration, measurements and analyses, and actions to be taken when limits are approached or exceeded. Testing frequency of any alarm shall be included. These frequencies shall be determined from experience with similar instruments in similar environments and from manufacturer's technical manuals.

5.5.2 Operating Procedures

Plant standard operating procedures shall include provisions, in addition to the procedures specified in Section 5.5.1, to ensure that all plant systems and components are operated in compliance with the Limiting Conditions of Operations established as part of the Environmental Technical Specifications.

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5.5.3 Procedures for Environmental Surveillance - Radiological

Procedures to implement the radiological environmental monitoring program shall be prepared and maintained in a manual for that purpose. Securing samples, scheduling, transporting of samples, required analysis and reporting will be included.

5.5.4 Procedures for Environmental Surveillance - Nonradiological

Not applicable.

5.5.5 Quality Assurance of Program Results

The procedures document shall provide for assurance of the quality of program results, including analytical measurements. This portion of the procedures document shall document the program in policy directives, designate a responsible organization or individuals, include purchased services (e.g., contractual lab or other contract services), include audits by licensee personnel, and include procedures for revising programs, systems to identify and correct deficiencies, investigate anomalous or suspect results, and review and evaluate program results and reports.

5.5.6 Changes in Procedures, Station Design or Operation

Changes in procedures, station design or operation may be made subject to conditions described below, provided such changes are approved by the SNSOC (Review and Audit responsibility per Section 5.3).

- a. The licensee may (1) make changes in the station design and operation as described in the FES, FES Addendum and the Environmental Report, (2) make changes in the procedures described in the document developed in accordance with Subsection 5.5, and (3) conduct tests and experiments not described in the document developed in accordance with Subsection 5.5, without prior Commission approval, unless the proposed change, test or experiment involves a change in the objectives of the ETS, an unreviewed environmental question of substantive impact, or affects the requirements of Subsection 5.5.7 of these ETS.
- b. A proposed change, test, or experiment shall be deemed to involve an unreviewed environmental question (1) if the probability of magnitude of environmental impact may be increased; or (2) if a possibility for a substantive environmental impact of a different type than any evaluated previously in the FES or FES Addendum may be created.

- c. The licensee shall maintain records of changes in procedures and in facility design or operation made pursuant to this Subsection, to the extent that such changes constitute changes in procedures as described in the document developed in accordance with Section 5.5 or in the FES, FES Addendum and EP. The licensee shall also maintain records of tests and experiments carried out pursuant to paragraph "a" of this Subsection. These records shall include a written evaluation which provides the bases for the determination that the change, test, or experiment does not involve an unreviewed environmental question of substantive impact or constitute a change in the objectives of these ETS, or affect the requirements of Section 5.5.7 of these ETS. The licensee shall furnish to the Commission, annually or at such shorter intervals as may be specified in the license, a report containing descriptions, analyses, interpretations, and evaluations of such changes, tests and experiments.
- d. Changes in the procedures developed in accordance with Subsection 5.5 which affect sampling frequency, location, gear, or replication shall be reported to the NRC within 30 days after their implementation. These reports shall describe the changes made, the reasons for making the changes, an evaluation of the environmental impact of these changes, and the statement required under the provisions of Subsection 5.5.7.

5.5.7 Consistency with Initially Approved Programs

Any modifications or changes of the procedures developed in accordance with Subsection 5.5 must be governed by the need to maintain consistency with previously used procedures so that direct comparisons of data are technically valid. Such modifications or changes must be justified and supported by adequate comparative sampling programs or studies demonstrating the comparability of results or which provide a basis for making adjustments that would permit direct comparisons.

These demonstrations of comparability shall be submitted to the NRC in accordance with the provision of Subsection 5.5.6 and 5.6.1 of these ETS.

5.6 Station Reporting Requirements

5.6.1 Routine Reports

5.6.1.1 Annual Environmental Operating Report

A report on the radiological environmental surveillance programs for the previous calendar year shall be submitted to the Director of the NRC Region II Office (with a copy to the Director, Office of Nuclear Reactor Regulation) as a separate document by April 1 of each year. The period of the first report shall begin with the date of initial criticality of Unit No. 1. The reports shall include summaries, interpretations, and statistical evaluation of the results of the radiological

environmental surveillance activities for the report period, including a comparison with preoperational studies, operational controls (as appropriate), and previous environmental surveillance reports and an assessment of the observed impacts of the plant operation on the environment. The reports shall also include the results of any land use censuses required by Section 5.6.1.2. 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.

Results of all radiological environmental samples taken shall be summarized and tabulated on an annual basis. In the event that some results are not available within the 90-day period, 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.

5.6.1.2 Radioactive Effluent Release Report

A report on the radioactive discharges released from the site for the previous semi-annual period (January-June and July-December) shall be submitted to the Director of the NRC Region II Office (with a copy to the Director, Office of Nuclear Reactor Regulation) by March 1 and September 1 of each year. The period of the first report shall begin with the date of the initial criticality of Unit 1. The report shall include a summary of the quantities of radioactive liquid and gaseous effluents and solid waste released from the station as outlined in Regulatory Guide 1.21, "Measuring, Evaluating, and Reporting Radioactivity in Solid Wastes and Releases of Radioactive Materials in Liquid Gaseous Effluents from Light-Water-Cooled Nuclear Power Plants," with data summarized on a quarterly basis. The necessary data and format are listed in Appendix B, Tables 1A, 1C, 2A, 2B, and 3 of Regulatory Guide 1.21. Table 4A should be duplicated for continuous and intermittent releases, so that the appropriate correlation of effluents with meteorological data can be made in the calculation of offsite doses.

The report shall include a summary of the meteorological conditions concurrent with the release of gaseous effluents during each quarter as outlined in Regulatory Guide 1.21, with data summarized on a quarterly basis following the format of Appendix B thereof. The licensee will follow Reg Guides 1.21 and 1.109 through 1.113 (revisions in effect at the beginning of the report period) to calculate and report the exposures to individuals and populations from the effluents. In connection with this, the locations of the following critical receptors should be redetermined at the beginning of the growing/grazing season in each sector (out to five miles from Unit 1), the nearest housing unit (including trailers and summer homes), garden, cow, and meat animal (including chickens where they are used extensively for food).

5.6.2 Nonroutine Reports

5.6.2.1 Nonroutine Non-Radiological Environmental Operating Report

None.

5.6.2.2 Nonroutine Radiological Environmental Operating Reports

- a. Anomalous Measurement Report. If a confirmed measured level of radioactivity in any environmental medium exceeds ten times the control station value, a written report shall be submitted within 30 days after confirmation.* This report shall include an evaluation of any release conditions, environmental factors, or other aspects necessary to explain the anomalous result.
- b. Pathway Measurement Report. If pathway samples collected over a calendar quarter show average levels of radioactivity greater than 10 times the trend established by previous monitoring, a written report shall be included in the report required by Section 5.6.1.2.
- c. Nonroutine Radioactive Effluent Reports
 - (1) PWR Liquid Radioactive Wastes Report. If the cumulative releases of radioactive materials in liquid effluents, excluding tritium and dissolved gases, should exceed one-half the design objective annual quantity during any calendar quarter, the licensee shall make an investigation to identify the causes of such releases and define and initiate a program of action to reduce such releases to the design objective levels. A written report of these actions shall be submitted to the NRC within 30 days from the end of the quarter during which the release occurred.
 - (2) PWR Gaseous Radioactive Wastes Report. See Section 2.2.3c.

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

(3) PWR Unplanned or Uncontrolled Release Report. Any unplanned or uncontrolled offsite release of radioactive materials in excess of 0.5 Curie in liquid or in excess of 150 Curies of noble gases or 0.05 Curie of radioiodines in gaseous form requires notification. This notification must be made by a written report within 30 days to the NRC. The report shall describe the event, identify the causes of the unplanned or uncontrolled release and report actions taken to prevent recurrence.

d. Written 30-day reports will be submitted to the following addresses:

- (1) Region II, Office of Inspection and Enforcement, USNRC, Atlanta, Georgia (2 copies)
- (2) Director, Office of Inspection and Enforcement, USNRC, Washington, D. C. (20 copies)
- (3) Director, Office of Management Information and Program Control, USNRC, Washington, D. C. (2 copies)
- (4) Director, Office of Nuclear Reactor Regulation, USNRC, Washington, D. C. (1 copy)

5.6.3 Changes in Environmental Technical Specifications

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 change and a supporting benefit-cost analysis.

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

5.6.4 Changes in Permits and Certifications

None.

5.7 Records Retention

Records and logs relative to the following areas shall be made and retained for the life of the station:

- a. Records and drawings detailing plant design changes and modifications made to systems and equipment as described in Section 5.6.3.
- b. Reports from environmental monitoring, surveillance, and special surveillance and study activities required by these Environmental Technical Specifications.

APPENDIX B
TO FACILITY OPERATING LICENSE NO. NPF-7
NORTH ANNA POWER STATION
UNIT 2

VIRGINIA ELECTRIC AND POWER COMPANY
DOCKET NO. 50-339

ENVIRONMENTAL TECHNICAL SPECIFICATIONS
PART II - NON-RADIOLOGICAL

NORTH ANNA POWER STATION
UNIT 2
ENVIRONMENTAL TECHNICAL SPECIFICATIONS
(NON-RADIOLOGICAL)

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1. DEFINITIONS

Annually: Annually is once per calendar year at intervals of twelve calendar months + 30 days.

Clean Water Act: Federal Water Pollution Control Act (FWPCA) as amended.

NPDES Permit: NPDES permit is the National Pollutant Discharge Elimination System Permit No. VA0052451 issued by the Commonwealth of Virginia to Virginia Electric and Power Company (VEPCO). This permit authorizes VEPCO to discharge controlled waste water from the North Anna Power Station into waters of the Commonwealth of Virginia.

Site: Onsite includes any area within the 1075 acre site and exclusion area as specifically described in the North Anna EIS Section 2.1. Offsite includes all other areas.

Station: Station refers to North Anna Power Station Units 1 and 2.

Unit: Unit refers only to Unit 1 or Unit 2 of the North Anna Power Station, as defined by its usage.

2. LIMITING CONDITIONS FOR OPERATION

None required.*

*In consideration of the provisions of the Clean Water Act (33 USC § 1251, et seq.) and in the interest of avoiding duplication of effort, the conditions and monitoring requirements related to water quality and aquatic biota are specified in the National Pollution Discharge Elimination System (NPDES) Permit No. VA0052451 issued by the Commonwealth of Virginia to the Virginia Electric and Power Company (VEPCO). This permit authorizes VEPCO to discharge controlled waste water from the North Anna Power Station into waters of Virginia.

The Nuclear Regulatory Commission will be relying on the NPDES permit limitations for protection of the aquatic environment from non-radiological effluents.

3. ENVIRONMENTAL MONITORING

None required.*

*In consideration of the provisions of the Clean Water Act (33 USC § 1251, et seq.) and in the interest of avoiding duplication of effort, the conditions and monitoring requirements related to water quality and aquatic biota are specified in the National Pollution Discharge Elimination System (NPDES) Permit No. VA0052451 issued by the Commonwealth of Virginia to the Virginia Electric and Power Company (VEPCO). This permit authorizes VEPCO to discharge controlled waste water from the North Anna Power Station into waters of Virginia.

The Nuclear Regulatory Commission will be relying on the NPDES permit limitations for protection of the aquatic environment from non-radiological effluents.

4. SPECIAL STUDIES AND REQUIREMENTS

4.1 Exceptional Occurrences

4.1.1 Unusual or Important Environmental Events

Specification

The licensee shall record any occurrence of unusual or important events. Unusual or important events are those that potentially could cause or indicate environmental impact causally related with station operation. The following are examples: excessive bird impaction events; onsite plant or animal disease outbreaks; unusual occurrence or mortality of any species protected by the Endangered Species Act of 1973; fish kills near the plant site; unanticipated or emergency discharges of waste water or chemical substances.

Reporting Requirement

Should an unusual or important event occur, the licensee shall make a prompt report to the NRC in accordance with the provisions of Subsections 5.4.2.a and 5.4.2.c or Subsection 5.4.2.d.

4.1.2 Exceeding Limits of Other Relevant Permits

Specification

The licensee shall notify the NRC of occurrences in which the limits specified in relevant permits and certificates issued by other Federal, State, and local agencies are exceeded and which are reportable to those agencies.

Reporting Requirement

The licensee shall make a report to the NRC in accordance with the provisions of Subsections 5.4.2.b and 5.4.2.c or Subsection 5.4.2.d in the event that a limit specified in a relevant permit or certificate issued by another Federal, State, or local agency is exceeded.

4.2 Special Studies

4.2.1 Transmission Line Rights-of-Way Herbicide Management

Objective

The objective of the monitoring program is to determine impact of herbicide applications on the environment.

Specification

The use of herbicides to control undesirable vegetation in the transmission rights-of-way associated with North Anna Power Station will conform to the approved use of selected herbicides as registered by the Environmental Protection Agency and the Virginia Department of Agriculture. The rates of

application will follow recommendations by the Agricultural Extension Service of the Virginia Polytechnic Institute and State University. The application of herbicides to rights-of-way must be controlled so as to prevent drift. No herbicides may be applied on rights-of-way over pasture, cropland, or irrigation ditches or near water bodies, homes, or recreation areas.

Reporting Requirements

The Annual Environmental Operating Report (Section 5.4.1) will include a statement as to whether herbicides were used. In addition, a brief description of the type(s), volume(s), concentration(s), manner, and frequency of application will be included. Field logs summarizing weather conditions, location of applications, and rates of application should be kept and be available for a period of five years. Inspections should confirm that restricted areas have not been sprayed, unauthorized releases have not taken place, and accidents such as spills have been documented and cleaned up if possible. A summary of the application and inspection programs will appear in the Annual Environmental Operating Report (Section 5.4.1).

Bases

Herbicides, unless judiciously applied, can destroy bird and mammal habitat and cause changes in the chemistry of soil, ground, and surface waters.

Use of herbicides will conform to various local and Federal regulations.

This information will provide surveillance information to the staff to ensure that herbicide applications conform to current regulations and thereby minimize environmental impact due to right-of-way maintenance procedures.

4.2.2 Transmission Line Right-of-Way Erosion Control Inspection

Objective

Periodic maintenance activities or severe weather may cause instances along the transmission line corridors associated with North Anna Power Station where soil or slope stabilization will be necessary. A yearly record during normal line surveillance activities will indicate any areas showing erosion or vegetation damage and all reasonable steps shall be taken to stabilize such occurrences.

Specifications

All areas along the corridors showing evidences of erosion should be recorded during normal line surveillance. All actions taken to stabilize such occurrences will be recorded.

Reporting Requirements

The Annual Environmental Operating Report (Section 5.4.1) will include a summary of the field inspection programs. Field logs summarizing locations of erosion damage and appropriate actions taken to rectify erosion problem areas

should be kept and be available for a period of five years. A summary of the inspection program and corrective actions taken will appear in the Annual Environmental Operating Report (5.4.1).

Bases

Periodic maintenance activities or severe weather conditions may cause instances along the transmission line corridors when reseeding or other appropriate erosion control activities will be necessary. Routine corridor surveillance techniques will identify erosion problem areas and coupled with appropriate erosion control steps will ensure that such areas become stabilized.

4.2.3 Vegetation Studies

Objective

The objective of this monitoring program is to evaluate the effects of power station operation on the vegetation types and vegetation production in two plots adjacent to the Waste Heat Treatment Facility, two plots adjacent to Lake Anna, and one plot downstream near the Lake Anna Dam.

Specifications

The initial vegetation surveys were conducted to determine plant

- (1) density
- (2) productivity
- (3) diversity

on both the community and species levels. Each of the five plots were sampled in the same manner using methods commonly employed in the ecological analysis of vegetation. The initial survey has been summarized and will be used as the base for studies to be conducted at the end of the growing seasons in 1979 and 1981.

This study will terminate after 1981. If an adverse environmental impact is identified, then approval from the NRC must be obtained before this study is terminated.

Reporting Requirements

Any adverse environmental impact identified by this study shall be reported in the Annual Environmental Operating Report (Section 5.4.1).

Bases

The responses of the floral community to possible environmental alterations due to the impoundment of Lake Anna and the Waste Heat Treatment Facility will be monitored in the dominant oak-pine forest typical of the area. Growth, development, and population structure may be modified due to the proximity of a water body having temperatures above the natural equilibrium level.

The monitoring program has been designed to detect changes in various components of the dominant vegetation types and to assess the cause and effect of the changes.

5. ADMINISTRATIVE CONTROLS

Administrative controls below apply to Appendix B - Part II only.

5.1 Responsibility

The responsibility for implementing the Environmental Technical Specifications is assigned to the Director of Nuclear Operations at the corporate level and to the Station Manager of the Station Level. The Executive Manager of Environmental Services shall be responsible for providing services which will fulfill the non-radiological environmental surveillance requirements.

5.2 Review and Audit

5.2.1 Review

The Station Nuclear Safety and Operating Committee (SNSOC) is responsible for the review of procedures for meeting these environmental technical specifications.

The above mentioned review shall be conducted on the following:

- A. Proposed changes to the Environmental Technical Specifications and any evaluation of the environmental impact of the changes.
- B. Proposed changes to station operating procedures, which affect the environmental effects of the station, and any evaluation of the environmental impact of the changes.
- C. Proposed changes or modifications to station or unit equipment, or systems which might have an environmental impact, and any evaluation of the environmental impact of the changes.
- D. Investigations of all reported instances of noncompliance with Environmental Technical Specifications, associated corrective actions, and measures taken to prevent recurrence.

5.2.2 Audit

The supervisor, Quality Assurance, Operations and Maintenance, shall conduct an annual audit of the implementation of these Environmental Technical Specifications.

5.3 Changes in Station Design or Operation

Changes in procedures, station design or operation may be made subject to conditions described below, provided such changes are approved by the SNSOC (Review and Audit responsibility per Section 5.2).

- A. The licensee may (1) make changes in the station design and operation as described in the FES, FES Addendum and the Environmental Report, and (2) conduct tests and experiments not described in this document without prior Commission approval, unless the proposed change, test, or experiment

involves a change in the objectives of the ETS, or an unreviewed environmental question of substantive impact.

- B. A proposed change, test, or experiment shall be deemed to involve an unreviewed environmental question (1) if the probability of magnitude of environmental impact may be increased; or (2) if a possibility for a substantive environmental impact of a different type than any evaluated previously in the FES or FES Addendum may be created.
- C. The licensee shall maintain records of changes in facility design or operation made pursuant to this Subsection to the extent that such changes constitute changes in procedures as described in the FES, FES Addendum and ER. The licensee shall also maintain records of tests and experiments carried out pursuant to paragraph "a" of this Subsection. These records shall include a written evaluation which provides the bases for the determination that the change, test, or experiment does not involve an unreviewed environmental question of substantive impact or constitute a change in the objectives of these ETS. The licensee shall furnish to the Commission, annually or at such shorter intervals as may be specified in the license, a report containing descriptions, analyses, interpretations, and evaluations of such changes, tests, and experiments.
- D. Changes in the special studies, if required in Section 4.2, which affect sampling frequency, location, gear, or replication shall be reported to the NRC within 30 days after their implementation. These reports shall describe the changes made, the reasons for making the changes, and an evaluation of the environmental impact of these changes. Such changes must be governed by the need to maintain consistency with previously used procedures so that direct comparisons of data are technically valid. Such modifications or changes must be justified and supported by adequate comparative sampling programs or studies demonstrating the comparability of results or which provide a basis for making adjustments that would permit direct comparisons.

5.4 Station Reporting Requirements

5.4.1 Routine Reports

Annual Environmental Operating Report

A report on the non radiological environmental monitoring programs for the previous year shall be submitted to the NRC separate from other NRC reporting requirements by May 1 of each year. The period of the first report shall begin with the date of issuance of the operating license. The report shall include summaries, analyses, interpretations, and statistical evaluation of the results of the environmental monitoring required by special studies and requirements (Section 4) for the report period, including a comparison with preoperational studies, operational controls (as appropriate), and previous non-radiological environmental monitoring reports, and an assessment of the observed impacts of the station operation on the environment. If harmful effects or evidence of irreversible damage are suggested by the monitoring programs, the licensee shall provide a more detailed analysis of the data and a proposed course of action to alleviate the problem.

For those programs concerned with water quality or protection of aquatic biota, which are regulated under the Clean Water Act, the requirements of this section shall be satisfied by submitting to the NRC copies of the reports as required by the NPDES permit (or otherwise required pursuant to the Clean Water Act), and in accordance with the frequency, content, and schedules set forth by the agencies responsible for implementing the Clean Water Act.

In the event that some results are not available by the report due date, the report shall be submitted noting and explaining the missing results. The missing data shall be submitted as soon as possible in a supplementary report.

The Annual Report shall also include a summary of:

1. All ETS noncompliances and the corrective actions taken to remedy them.
2. Changes made to applicable State and Federal permits and certifications.
3. Changes in station design which could involve an environmental impact or change the findings of the FES.
4. All nonroutine reports submitted per ETS Section 4.1.
5. Changes in approved ETS.

5.4.2 Nonroutine Reports

A report shall be submitted in the event that an "Unusual or Important Environmental Event," as specified in Section 4.1.1 occurs, or if another relevant permit is violated as specified in Section 4.1.2. The schedule and content for these nonroutine reports are described below:

5.4.2.a Prompt Report

Those events specified as requiring prompt reporting shall be reported within 24 hours by telephone, telegraph, or facsimile transmission to the NRC followed by a written report to the NRC within 30 days.

5.4.2.b Thirty-Day Report

Those events not requiring a prompt report as described in Subsection 5.4.2.a shall be reported to the NRC within 30 days of their occurrence.

5.4.2.c Content of Nonroutine Reports

Written 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, (c) indicate the action taken to correct the reported occurrence, and (d) indicate the corrective action taken (including any significant changes made in procedures) to preclude repetition of the occurrence and to prevent similar occurrences involving similar components or systems.

5.4.2.d Exceptions for Matters Regulated Under the Clean Water Act

For matters regulated under the Clean Water Act, the report schedules and content requirements described in Subsections 5.4.2.a, 5.4.2.b, and 5.4.2.c shall be satisfied by submitting, to the NRC, copies of reports as required by the NPDES permit (or other regulations pursuant to the Clean Water Act) and in accordance with the schedules and content requirements imposed thereby.

5.5 Changes in Environmental Technical Specifications and Permits

5.5.1 Changes in Environmental Technical Specifications

Requests for changes in environmental technical specifications shall be submitted to the NRC for review and authorization per 10 CFR 50.90. The request shall include an evaluation of the environmental impact of the proposed change and a supporting justification. Implementation of such requested changes in ETS shall not commence prior to incorporation by the NRC of the new specifications in the license.

5.5.2 Changes in Permits and Certifications

Changes and additions to required Federal (other than NRC), State, local, and regional authority permits and certificates for the protection of the environment shall be reported to the NRC within 30 days. In the event that the licensee initiates or becomes aware of a request for changes to any of the water quality requirements, limits, or values stipulated in any certification or permit issued pursuant to the Clean Water Act, the NRC shall be notified within 30 days.

If a permit or certification, in part or in its entirety, is appealed and stayed, the NRC shall be notified within 30 days. If, as a result of the appeal process, the permit or certification requirements are changed, the change shall be dealt with as described in the previous paragraph of this section.

5.6 Records Retention

Records and logs relative to the environmental aspects of station operation shall be made and retained in a manner convenient for review and inspection. These records and logs shall be made available to NRC on request.

5.6.1 The following records shall be retained for the life of the station:

- (a) Record of changes to these Environmental Technical Specifications including, when applicable, records of NRC approval of such changes.
- (b) Record of modifications to station structures, systems, and components determined to potentially affect the continued protection of the environment.
- (c) Record of changes to permits and certification required by Federal (other than NRC), State, local, and regional authorities for the protection of the environment.

(d) Routine reports submitted to the NRC.

5.6.2 Records of the following shall be retained for a minimum of five years:

(a) Review and audit activities.

(b) Events, and the reports thereon, which are the subjects of nonroutine reports to the NRC.

5.6.3 Records associated with requirements of Federal (other than NRC), State, local and regional authorities' permits and certificates for the protection of the environment shall be retained for the period established by the respective permit or certificate.

NRC FORM 335 (7-77)		U.S. NUCLEAR REGULATORY COMMISSION BIBLIOGRAPHIC DATA SHEET		1. REPORT NUMBER (Assigned by DDC) NUREG-0664 Revision 1	
4. TITLE AND SUBTITLE (Add Volume No., if appropriate) North Anna Power Station Unit 2 Technical Specifications Appendix "A" to License No. NPF-7				2. (Leave blank)	
7. AUTHOR(S)				3. RECIPIENT'S ACCESSION NO.	
9. PERFORMING ORGANIZATION NAME AND MAILING ADDRESS (Include Zip Code) Division of Operating Reactors Office of Nuclear Reactor Regulation U. S. Nuclear Regulatory Commission Washington, D. C. 20555				5. DATE REPORT COMPLETED MONTH August YEAR 1980	
12. SPONSORING ORGANIZATION NAME AND MAILING ADDRESS (Include Zip Code) (Same as 9.)				DATE REPORT ISSUED MONTH August YEAR 1980	
13. TYPE OF REPORT Technical Report				6. (Leave blank)	
15. SUPPLEMENTARY NOTES				8. (Leave blank)	
16. ABSTRACT (200 words or less) The North Anna Unit 2 Technical Specifications, which were prepared by the U. S. Nuclear Regulatory Commission, set forth the limits, operating conditions and other requirements applicable to nuclear reactor facility operation as set forth in 10 CFR 50.36 for the protection of the health and safety of the public.				10. PROJECT/TASK/WORK UNIT NO.	
17. KEY WORDS AND DOCUMENT ANALYSIS N/A				11. CONTRACT NO. N/A	
17b. IDENTIFIERS/OPEN-ENDED TERMS N/A				13. TYPE OF REPORT Technical Report	
18. AVAILABILITY STATEMENT Unlimited				PERIOD COVERED (Inclusive dates) N/A	
19. SECURITY CLASS (This report) N/A				14. (Leave blank)	
20. SECURITY CLASS (This page) N/A				15. SUPPLEMENTARY NOTES	
21. NO. OF PAGES 350				16. ABSTRACT (200 words or less)	
22. PRICE \$				17. KEY WORDS AND DOCUMENT ANALYSIS N/A	