

NRC DISTRIBUTION FOR PART 50 DOCKET MATERIAL

TO:  MR. VICTOR STELLO	FROM: FLORIDA POWER & LIGHT COMPANY MIAMI, FLORIDA MR. ROBERT E. UHRIG	DATE OF DOCUMENT 6/4/76
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DESCRIPTION

LTR. NOTORIZED 6/4/76 TRANS THE FOLLOWING:

PLANT NAME: (2-P)  
TURKEY POINT 3 & 4

ENCLOSURE

CONSISTING OF PROPOSED CHANGES TO MODIFY TECH SPECS SO THEY ARE IN COMPLIANCE WITH APPENDIX I TO 10 CFR 50.

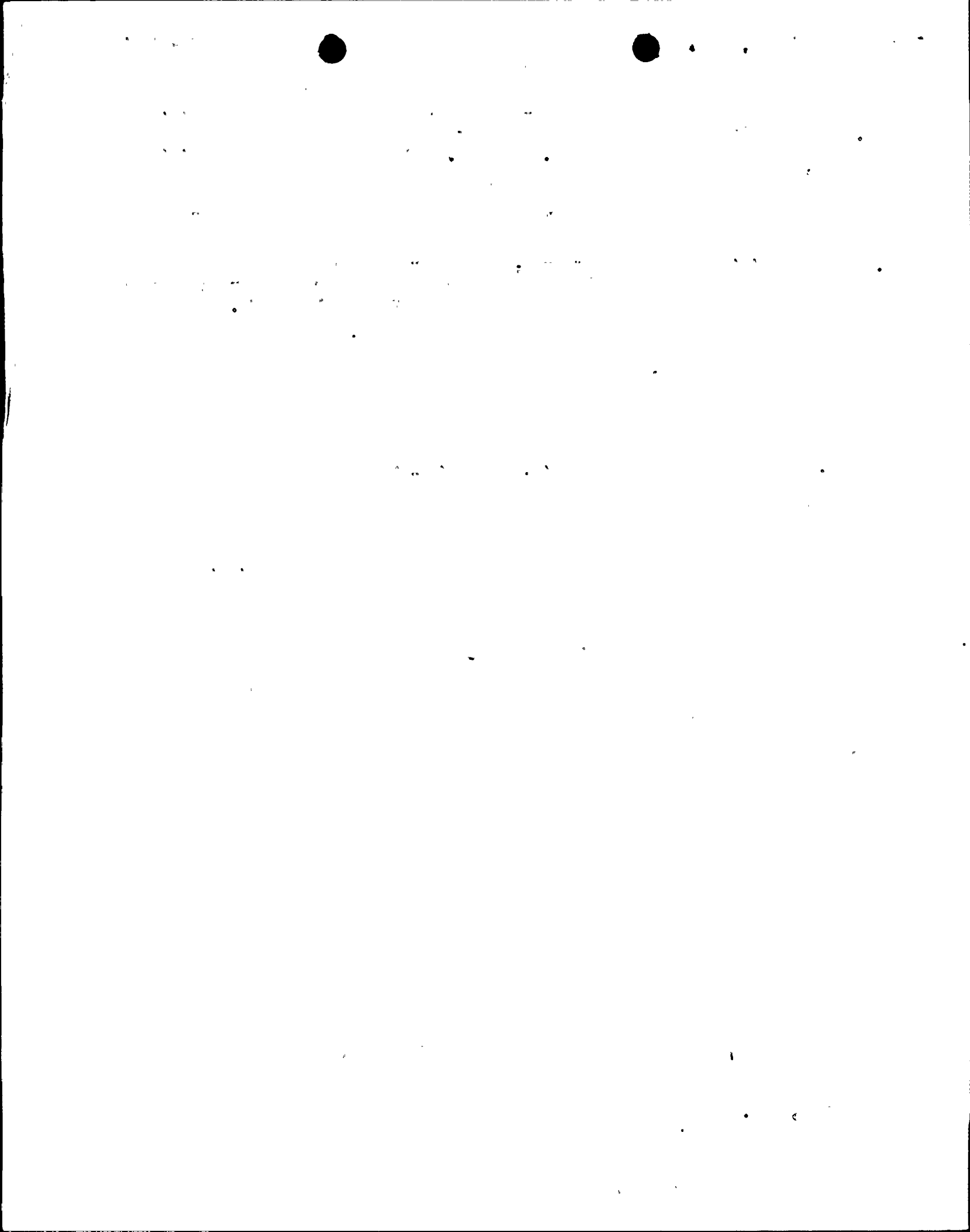
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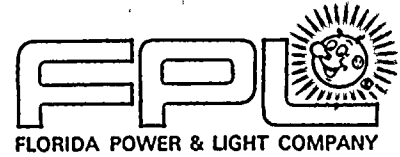
FOR ACTION/INFORMATION		6/10/76	RJL
ASSIGNED AD:		ASSIGNED AD:	
BRANCH CHIEF: (3)	LEAR	BRANCH CHIEF:	
PROJECT MANAGER:	ELLIOTT	PROJECT MANAGER:	
LIC. ASST.:	PARRISH	LIC. ASST.:	

INTERNAL DISTRIBUTION			
<input checked="" type="checkbox"/> REG FILE	SYSTEMS SAFETY	PLANT SYSTEMS	ENVIRO TECH
<input checked="" type="checkbox"/> NRC PDR	HEINEMAN	TEDESCO	ERNST
<input checked="" type="checkbox"/> I & E (2)	SCHROEDER	BENAROYA	RALLARD
<input checked="" type="checkbox"/> OHL		LAJNAS	SPANGLER
<input checked="" type="checkbox"/> GOSSICK & STAFF	ENGINEERING	IPPOLITO	
MPC	KICARY		SITE TECH
CASE	KNIGHT	OPERATING REACTORS	GAMMILL
HANAUER	STHWELL	STELLO	STEPP
HARLESS	PAWLICKI		HULMAN
		OPERATING TECH	MARKEE
PROJECT MANAGEMENT	REACTOR SAFETY	EISENHUT	SITE ANALYSIS
BOYD	ROSS	SHAO	VOLLNER
P COLLINS	NOVAK	BAER	BUNCH
HOUSTON	ROSZTOCZY	SCHWENCER	J. COLLINS (2)
PETERSON	CHECK	GRIMES	KREGOR
MELTZ			VERDERY
HELTENES	AT & I	SITE SAFETY & ENVIRO	
SKOVHOLT	SALTZMAN	ANALYSIS	
	RUTBERG	DENTON & MULLER - L.A.	

EXTERNAL DISTRIBUTION			CONTROL NUMBER
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<input checked="" type="checkbox"/> ASI.B	CONSULTANTS		
<input checked="" type="checkbox"/> ACRS HOLDING/SENT =	PARRISH		

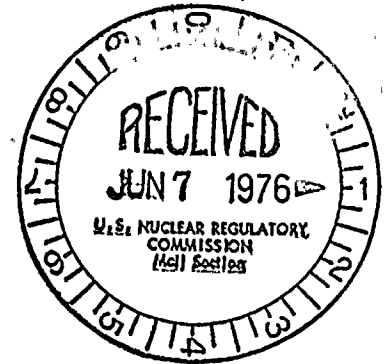


Regulatory Docket File



June 4, 1976  
L-76-1976

Director of Nuclear Reactor Regulation  
Attn: Mr. Victor Stello, Director  
Division of Operating Reactors  
U. S. Nuclear Regulatory Commission  
Washington, D. C. 20555



Dear Mr. Stello:

Re: Turkey Point Plant, Units 3 and 4  
Docket Nos. 50-250 and 50-251  
Proposed Amendment to Facility  
Operating Licenses DPR-31 and DPR-41

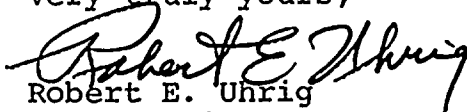
In accordance with 10 CFR 50.30, Florida Power & Light Company submits herewith forty (40) copies and three (3) signed originals of a request to amend Appendix A of Facility Operating Licenses DPR-31 and DPR-41. The proposed changes are shown on the accompanying Technical Specification, pages bearing the date of this letter in the lower right hand corner.

The proposed changes modify the Technical Specifications so that they are in compliance with Appendix I to 10 CFR 50. The modification was made by applying a linear reduction to the data in our current Technical Specifications providing a practical implementation of compliance.

The proposed amendment has been reviewed and the conclusion reached that it does not involve a significant hazards consideration; therefore, prenoticing pursuant to 10 CFR 2.105 should not be required.

We would be pleased to meet with Staff members to discuss these changes. It would assist us to have such a meeting at a Florida site, since our technical staff members responsible for handling our Specifications are involved in heavy operational commitments for the next several months.

Very truly yours,

  
Robert E. Uhrig  
Vice President

REU/NR/hlc  
Attachments

cc: Norman C. Moseley  
Jack R. Newman, Esq.

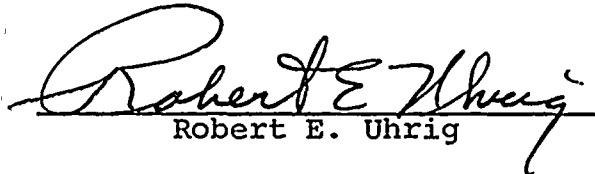
5721

STATE OF FLORIDA    )  
                          )  
COUNTY OF DADE     )        ss.


Robert E. Uhrig, being first duly sworn, deposes and says:

That he is a Vice President of Florida Power & Light Company,  
the Licensee herein;

That he has executed the foregoing document; that the state-  
ments made in this said document are true and correct to the  
best of his knowledge, information and belief, and that he is  
authorized to execute the document on behalf of said Licensee.

  
Robert E. Uhrig

Subscribed to and sworn before me  
this 4<sup>th</sup> day of June, 1976

  
Notary Public, in and for the County of  
Dade, State of Florida

NOTARY PUBLIC STATE OF FLORIDA AT LARGE  
MY COMMISSION EXPIRES NOV. 30 1979  
BONDED THRU GENERAL INS. UNDERWRITERS

My commission expires: \_\_\_\_\_



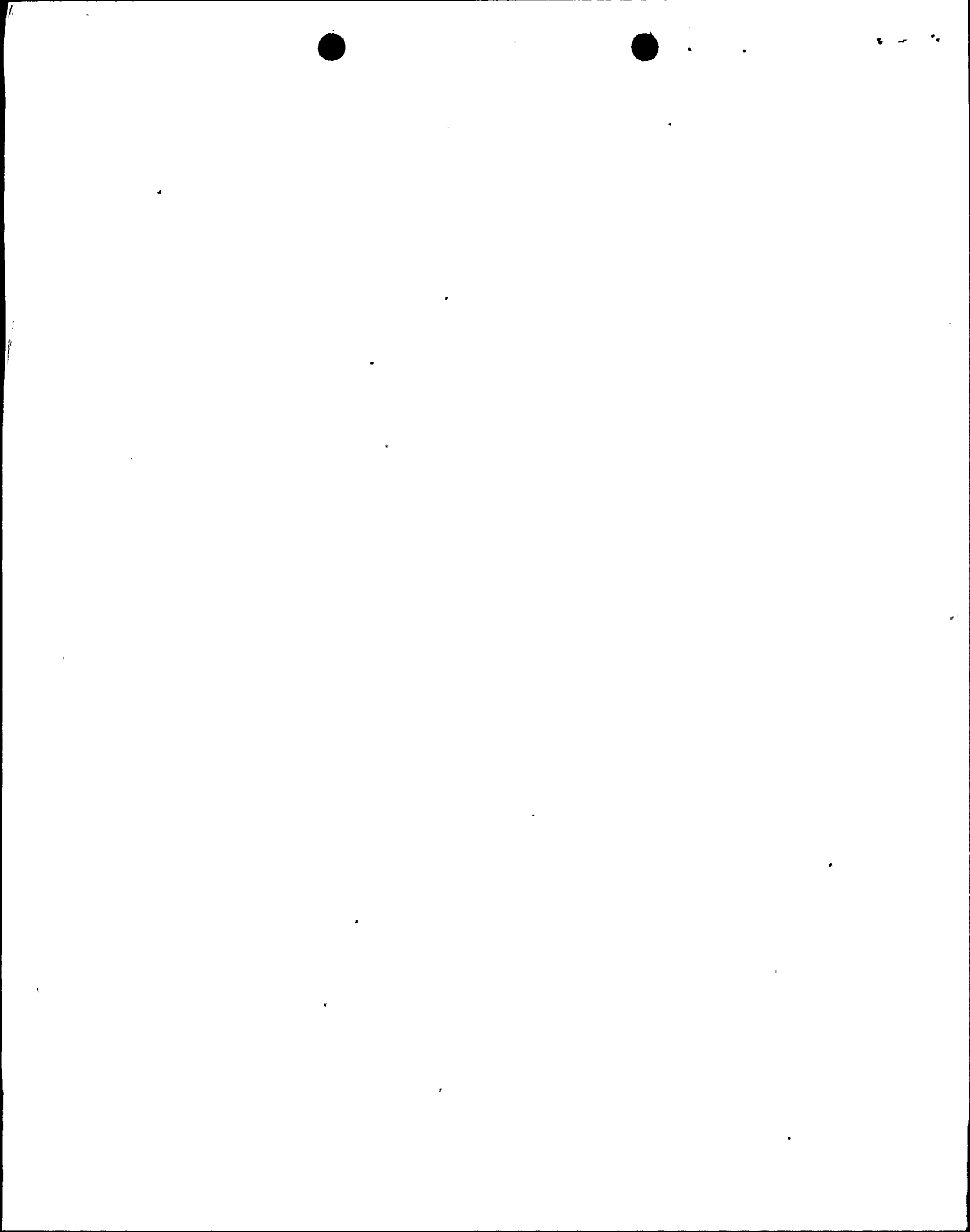
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WASHINGTON, D.C.

Applicability: Applies to the controlled release of all liquid and gaseous waste discharged from the plant which may contain radioactive materials and to the handling of containers of radioactive materials.

Objective: To define the limits and conditions for the controlled 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 Parts 50.34a and 50.36a, and to ensure that these releases result in concentrations of radioactive materials in liquid and gaseous 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 are as low as is reasonably achievable, the following design objectives as defined in Appendix I to 10 CFR Part 50 apply:

- a. The annual total quantity of all radioactive material above background that may be released from Turkey Point Plant to outside the Protected Area should not result in an annual dose or dose commitment from liquid effluents for any individual outside the Protected Area from all pathways of exposure in excess of 6 millirems to the total body or 20 millirems to any organ.

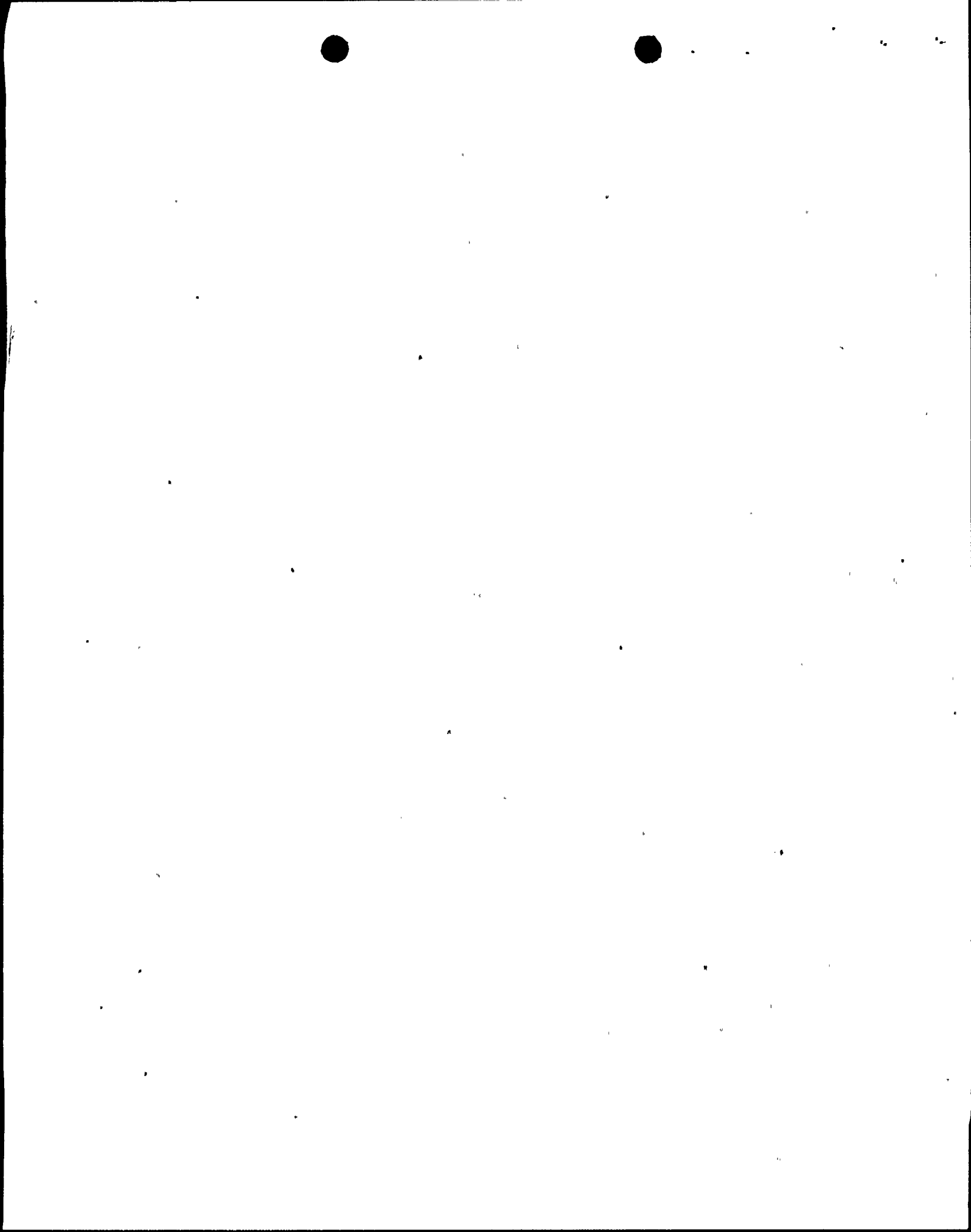


- b. The annual total quantity of all radioactive material above background that may be released from Turkey Point Plant to the atmosphere should not result in an annual air dose from gaseous effluents at any location near ground level which could be occupied by individuals outside the restricted area in excess of 20 millirads for gamma radiation or 40 millirads for beta radiation, or that this quantity should not result in an annual external dose from gaseous effluents to any individual outside the restricted area in excess of 10 millirems to the total body or 30 millirems to the skin.
- c. The annual total quantity of all radioactive iodine and radioactive material in particulate form above background that may be released from Turkey Point Plant in effluents to the atmosphere should not result in an annual dose or dose commitment from such radioactive iodine and radioactive material in particulate form for any individual outside the restricted area from all pathways of exposure in excess of 30 millirems to any organ.



the USNRC as a 30 day reportable occurrence in accordance with Technical Specification 6.6.1.

- f. An unplanned or uncontrolled release of radioactive materials in liquid effluents to outside the Protected Area in excess of 1.5 curies constitutes a 30 day reportable occurrence and shall be reported to the USNRC in accordance with Technical Specification 6.6.1.
- g. Sampling and analysis of liquid radioactive waste shall be performed in accordance with Table 3.9-1.
- h. Prior to a batch liquid waste release, the sample taken shall be analyzed for nuclide identification and concentration in accordance with Table 3.9-1.
- i. The radioactivity in liquid wastes shall be monitored during release as required below. Table 3.9-2 indicates the location and minimum requirements for continuous monitoring instrumentation for liquid waste effluent systems.
  - (1) If Channel R-18 of the Process Radiation Monitoring System is inoperable when a release is being planned, either R-18 shall be made operable prior to beginning the release or two samples shall be independently taken and analyzed and two plant personnel shall independently check valving prior to the release.



(2) If Channel R-19 of the Process Radiation Monitoring System is inoperable, the steam generator blowdown shall either be terminated, diverted to the radioactive liquid waste processing system, or grab samples shall be taken, analyzed for gross activity at a sensitivity of  $10^{-7}$   $\mu\text{Ci/ml}$  and recorded each eight hours.

j. Channels R-18 and R-19 of the Process Radiation Monitoring System shall be calibrated at least annually by means of a known liquid radioactive source as required by Table 4.1-1. The gamma spectrum for the known liquid source shall contain the principal gamma emitter peaks representative of those to be monitored.

The sources used to calibrate the known liquid source shall be certified to standards of the National Bureau of Standards. The relationships between the known liquid source, and the R-18 and R-19 readings shall be established.

Specification: 3.9.2. Gaseous Waste

a. The release rate of noble gases from the Turkey Point Plant when averaged over a calendar quarter shall not exceed a total of 3 millicuries per second.

b. The release rate limit of all radioiodines and particulate radionuclides released from the Turkey Point Plant as part of the gaseous wastes when averaged over a calendar quarter shall not exceed

$$\sum_i \frac{Q_i}{MPC_i} \leq 2,000 \frac{m^3}{sec}$$

where  $Q_i$  = release rate of  $i$ th radionuclide  
and MPC = Concentration values in Appendix B,  
Table II, Column 1, 10 CFR 20.

c. The total release rate of noble gases shall not exceed 100 millicuries per second averaged over any 1 hour.

d. The total of the rate of release of radioiodines and radioactive particulates divided by their MPC's shall not exceed 10,000  $m^3/sec$  for any given batch release.

e. The maximum activity to be contained in one gas decay tank shall not exceed 70,000 curie of Xe-133 equivalent.

f. During the release of gaseous wastes from the gas decay tanks, Channel R-14 of the Process Radiation Monitoring System shall be operating and set to alarm and to initiate the automatic closure of RCV-014

Specification: 1. Liquid Wastes

- a. The concentration of radioactive materials released in liquid effluents to outside the Protected Area from both reactors shall not exceed the values specified in 10 CFR 20, Appendix B, Table II, Column 2.
- b. The cumulative release of radioactive materials in liquid waste effluents, excluding tritium and dissolved gases, shall not exceed 5 Ci per calendar quarter or 10 Ci in any 12 consecutive months.
- c. During release of radioactive material in liquid effluents, Channel R-18 of the Process Radiation Monitoring System shall be set to alarm and to initiate the automatic closure of RCV-018 prior to exceeding the concentrations referenced in 3.9.1.a above, except as provided in 3.9.1.i below.
- d. 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/calendar quarter, excluding tritium and dissolved gases.
- e. If the actual release of radioactive materials in liquid effluents, excluding tritium and dissolved gases, exceeds 5 curies in any 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 Specification 3.9.1.a, and report these actions to

prior to exceeding the limits specified in 3.9.2.a above. During purging of the containment building, Channels R-11 and R-12 of the Process Radiation Monitoring System shall be operating and set to alarm and to initiate containment ventilation isolation prior to exceeding the limits specified in 3.9.2.c & d above.

- g. If the actual release of radioactive materials in gaseous effluents results in exceeding 3 millicuries per second when averaged over a calendar quarter for noble gases or if the sum of the average release rates divided by the MPC for each radioiodine or particulates exceeds 2,000 in any calendar quarter, the licensee shall make an investigation to identify the causes for such release rates, define and initiate a program to reduce such release rates, including a power level reduction, and report these actions to the USNRC as a 30 day reportable occurrence in accordance with Technical Specification 6.6.1.
- h. An unplanned or uncontrolled release of radioactive materials in gaseous effluents resulting in a release rate of 0.3 millicuries/sec averaged over the calendar quarter occurring in a single event constitutes a 30 day reportable occurrence and shall be reported to the USNRC in accordance with Technical Specification 6.6.1.

- i. Sampling and analysis of radioactive material in gaseous effluent, including radioactive materials in particulate forms and radioiodines shall be performed in accordance with Table 3.9-3.
- j. Noble gas releases to the environment shall be monitored as required by Table 3.9-4. Whenever a release is in progress and all the process radiation monitor channels monitoring that release are inoperable, grab samples shall be taken and analyzed daily for radioactivity.
- k. During any planned batch release of radioactive materials in effluent, the gross activity monitor, the iodine collection device and the particulate collection device, shall be operating or grab samples shall be taken and analyzed daily.
- l. Channels R-12, R-14, and R-15 of the Process Radiation Monitoring System shall be calibrated at least annually by means of a known noble gas radioactive source as required by Table 4.1-1. The gamma or beta spectrum for the known noble gas source shall contain at least one of the principal gamma or beta emitter peaks known to be present in the gas stream to be monitored by the effluent radiation monitor. The sources used to calibrate the known noble gas source shall be certified to standards of the National Bureau of Standards. The relationships between the known noble gas source, and the R-12, R-14, and R-15 readings shall be established.





TABLE 3.9-1

## RADIOACTIVE LIQUID WASTE SAMPLING AND ANALYSIS

Liquid Source	Sampling and Analysis Frequency	Type of Activity Analysis	Detectable Concentration ( $\mu\text{Ci/ml}$ ) <sup>a</sup>
A. Monitor Tank Batch Releases	Each Batch	Principal Gamma Emitters <sup>d</sup>	$5 \times 10^{-7b}$
	One Batch/Month	Dissolved Gases	$10^{-5}$
	Weekly Composite <sup>c</sup>	Ba-La-140, I-131	$10^{-6}$
	Monthly Composite <sup>c</sup>	H-3	$10^{-5}$
		Gross $\alpha$	$10^{-7}$
Quarterly Composite <sup>c</sup>	Sr-89, Sr-90	$5 \times 10^{-3}$	

- <sup>a</sup> The detectability limits for activity analysis are based on the technical feasibility and on the potential significance in the environment of the quantities released. For some nuclides, lower detection limits may be readily achievable, and when nuclides are measured below the stated limits, they should also be reported.
- <sup>b</sup> For 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 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.
- <sup>c</sup> A composite sample is one in which the quantity of liquid sampled is proportional to the quantity of liquid waste discharged and in which the method of sampling employed results in a specimen which is representative of the liquids released.
- <sup>d</sup> When operational or other type of limitations preclude specific gamma spectrum analysis of each tank prior to release, gross activity measurements shall be made to estimate the quantity and concentration of radioactive material released in the batch and a composite sample of each batch released during this time shall be collected and analyzed for the principal gamma emitting radionuclides.



TABLE 3.9-2  
 LIQUID WASTE SYSTEM  
 LOCATION OF PROCESS AND EFFLUENT MONITORS AND DEVICES REQUIRED BY TECHNICAL SPECIFICATIONS

Process Stream or Release Point	Continuous Monitoring Instrumentation					Grab Sample Station	Radiation Monitor Plant Instrument No.
	Gross Activity	Gross Activity Recorder	Radiation Alarm	Auto Control to Isolation Valve	Flow Rate Indicator		
Liquid Radwaste Effluent Line	X	X	X	X	X	X	R-18
Steam Generator Blowdown Effluent Line	X	X	X	X	X	X	R-19
Component Cooling System	X		X			X	R-17 A & B

X-Required



TABLE 3.9.3.  
RADIOACTIVE GASEOUS WASTE SAMPLING AND ANALYSIS

Gaseous Source	Sampling and Analysis Frequency	Type of Activity Analysis	Detectable Concentrations ( $\mu\text{Ci/ml}$ ) <sup>a</sup>
A. Waste Gas Decay Tank Batch Releases	Each Tank	Principal Gamma Emitters	$10^{-4b}$
		H-3	$10^{-6}$
B. Containment Purge Batch Releases	Each Purge <sup>c</sup>	Principal Gamma Emitters	$10^{-4}$
		H-3	$10^{-6}$
C. Condenser Air Ejector Continuous Releases	Monthly (Gas Sample) <sup>c</sup>	Principal Gamma Emitters	$10^{-4b}$
		H-3	$10^{-6}$
D. Plant Vent	Weekly (Charcoal Sample)	I-131	$10^{-12}$
		I-133, I-135	$10^{-10}$
	Weekly (Particulates)	Principal Gamma Emitters (Ba-La-140, I-131, Others)	$10^{-11}$
	Monthly Composite (Particulates)	Gross $\alpha$	$10^{-11}$
	Quarterly Composite (Particulates)	Sr-89, Sr-90	$10^{-11}$

<sup>a</sup> The above detectability limits for activity analysis are based on technical feasibility and on the potential significance in the environment of the quantities released. For some nuclides, lower detection limits may be readily achievable, and when nuclides are measured below the stated limits, they should also be reported.

<sup>b</sup> For 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.

<sup>c</sup> Analyses shall also be performed following each refueling, startup, or similar operational occurrence which could alter the mixture of radionuclides.

TABLE 3.9-4

## 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 Instrument No.
	Noble Gas Activity	Activity Recorder	Radiation Alarm	Auto Control to Isolation Valve	Flow Rate Indicator	I	Particulate		
Waste Gas Storage Tank Releases	X	X	X	X		X	X	X	R-13, R-14
Condenser Air Removal System <sup>a</sup>	X	X	X					X	R-15
Plant Ventilation Systems Includes: Reactor Containment (when purging)	X	X	X	X		X	X	X	R-13, R-14 Aux. Monitor 1
Reactor Containment	X	X	X	X			X	X	R-11, R-12
Fuel Handling Storage Building - Unit 3	X	X				X	X		Aux. Monitor

X - Required



B3.9 BASES FOR LIMITING CONDITIONS FOR OPERATION, RADIOACTIVE MATERIALS  
RELEASE

1. Liquid Releases

Bases: The release of radioactive materials in liquid effluents to unrestricted areas shall not exceed the concentration limits specified in 10 CFR Part 20 at any time and should be as low as is reasonably achievable in accordance with the requirements of 10 CFR Part 50.34a and 50.36a. These specifications provide reasonable assurance that the resulting average annual dose or dose commitment from liquid effluents from each radioactive waste producing reactor for any individual in an unrestricted area from all pathways of exposure will not exceed 3 mrem to the total body or 10 mrem to any organ. 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 even under unusual operating conditions which may temporarily result in releases higher than such numerical guides for design objectives but still within levels that assure that the average population exposure is equivalent to small fractions of doses from natural background radiation.

Specification 3.9.1.a requires that the concentration of radioactive materials in liquid waste effluents released from the site be limited to levels specified in 10 CFR Part 20.106. This specification provides assurance that no member of the general public will be exposed at any time to liquid containing radioactive materials in excess of limits considered permissible under the Commission's Regulations.

Specification 3.9.1.b establishes the annual quantity of radioactive materials in liquid waste effluents from Turkey Point Plant



to unrestricted areas, such that the resulting annual exposure to the whole body or any organ of an individual from liquid effluents will not exceed 6 and 20 millirems respectively.

Consistent with the requirements of 10 CFR Part 50, Appendix A, General Design Criteria 60 and 64, Specification 3.9.1.c requires 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 3.9.1.d requires the equipment installed in the liquid radwaste treatment systems to be maintained and operated 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, App. I. Normal use and maintenance of installed equipment in the liquid radwaste treatment 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 the projected cumulative discharge rate could result in doses exceeding one-quarter of the design objectives in Section 11.A of Appendix I to 10 CFR Part 50 during any calendar quarter.

Specification 3.9.3 provides for reporting spillage or release events which, while below the limits of 10 CFR Part 20, could result in exposures higher than the design objectives.

The sampling and monitoring requirements given under Specification 3.9.1 provide assurance that radioactive materials in liquid wastes are properly controlled and monitored in conformance with the requirements of General Design Criteria 60 and 64. These requirements provide the data which allow evaluation of Turkey Point'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 6.9.4 of these Technical Specifications. On the basis of such reports and any additional information the Commission may obtain, the Commission may from time to time require the licensee to take such action as the Commission deems appropriate.

## BASES FOR GASEOUS WASTE RELEASES

The Specifications provide reasonable assurance that the resulting annual exposure to the whole body or any organ of an individual from gaseous effluents will not exceed 5 millirems/year. The licensee is permitted 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 but still remain within the limits specified in 10 CFR 20. At the same time it is expected that, in using this operational flexibility under unusual operating conditions, the licensee shall exert every effort to keep levels of radioactive material in gaseous wastes as low as practicable and therefore that annual releases will not exceed a small fraction of the annual average concentration limits for unrestricted areas specified in 10 CFR 20. These efforts shall include consideration of meteorological conditions during releases.

The release rate limit of 3 millicuries per second is based on a maximum annual average site boundary X/Q of  $1.02 \times 10^{-6}$  seconds per cubic meter which was derived for the 4164 foot distance to the north site boundary. Based on Xe-133, the predominant nuclide released the annual average release rate of 3 millicuries per second would result in an annual average dose at the north site boundary of about 5 mrem whole body per year.

The specified release rates of I-131 and particulates with half lives greater than 8 days would limit concentrations at the nearest site boundary to values of about 1 mrem whole body per year. Resulting dose from I-131 due to the milkchain

from milk obtained at the nearest dairy pasture, 25 miles distance from the plant, would be of the order of 3.5 mrem. An annual average  $X/Q$  of  $4.6 \times 10^{-9}$  seconds per cubic meter was used to determine concentrations at 25 miles from the plant.

The release rate limit of 100 millicuries per second averaged over any one hour is a calculated value which would result in an exposure of 3 millirem in that hour assuming inversion conditions. Meteorological conditions at the site are expected to be better than these assumed conditions at least 95% of the time. The limit of 70,000 curies of Xe-133 equivalent in any one gas decay tank is based on a maximum exposure of 0.5 rem due to accidental release of the tank contents under inversion meteorological conditions. The value of  $X/Q$  used for inversion conditions was  $1.56 \times 10^{-4}$  seconds per cubic meter, and the resulting dose rate using the equation

$$D = D.25 \bar{C} \bar{E} X/Q \text{ is } 0.5 \text{ rem.}$$

$\bar{E}$  for Xe-133 is 0.19 MEV/disintegration.

