

**FLORIDA POWER CORPORATION  
CRYSTAL RIVER UNIT 3  
DOCKET NO. 50-302/LICENSE NO. DPR-72  
REQUEST NO. 127, REVISION 0  
RADIOLOGICAL TECHNICAL SPECIFICATIONS**

**LICENSE DOCUMENT INVOLVED:** Technical Specifications

<b>PORTIONS:</b>	3.3.3.8	Radioactive Liquid Effluent Monitoring Instrumentation
	3.3.3.9	Radioactive Gaseous Effluent Monitoring Instrumentation
	3.3.3.10	Waste Gas Decay Tank
		- Explosive Gas Monitoring Instrumentation
	3.7.13.5	Waste Gas Decay Tank
		- Explosive Gas Mixture
	3.11.1.1	Liquid Effluents
		- Concentration
	6.9.1.4	Annual and Semi-Annual Reports
	6.9.2	Special Reports

**DESCRIPTION OF REQUEST:**

This Change Request corrects errors and clarifies certain radiological effluent technical specifications. Additionally, this submittal requests an allowance to continue to use the Waste Gas Decay Tanks when the hydrogen and oxygen monitors are inoperable if samples are taken periodically.

The specific changes requested are described below.

- 1) Change the source check for RM-L7 (T.S. 3.3.3.8) from Daily (D) to Prior (P). Add "Secondary Drain Tank" to Table 4.11-1 under Batch Waste Release Tanks.
- 2) Change the APPLICABLE MODES and MODES IN WHICH SURVEILLANCE REQUIRED for all RM-A1 parameters (T.S. 3.3.3.9) from MODES 1, 2, 3, and 4 and ALL MODES to "During periods of Reactor Building purge."
- 3) Delete the footnote on the CHANNEL CHECK for RM-A2, Operating Range Noble Gas Monitor (T.S. 3.3.3.9) and change the SOURCE CHECK from Prior (P) to Not Applicable (NA).
- 4) Delete "for up to 14 Days" from the ACTION Statement of Technical Specification 3.3.3.10 and add the following two Action Statements.
  - b. If the affected channel(s) cannot be returned to OPERABLE status within 14 days, submit a special report to the Commission pursuant to Specification 6.9.2 within 30 days describing the reasons for inoperability and a schedule for corrective action.
  - c. The provisions of 3.0.3 and 3.0.4 are not applicable.

Add an additional special report requirement to Specification 6.9.2 pursuant to Action b above.

- 5) Insert the word "in-service" before Waste Gas Decay Tank for surveillance requirement 4.7.13.5.
- 6) Delete Item n from Specification 6.9.2 requiring a special report for unavailability of vegetable samples. Reference to Specification 3.7.11.4 has been deleted from 6.9.2.
- 7) Change individuals to MEMBERS OF THE PUBLIC in Specification 6.9.1.4 (page 6-14b).

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## REASONS FOR REQUESTS:

- 1) When this specification was initially developed, releases through RM-L7 (Secondary Drain Tank liquid effluent line monitor) were being made continuously. These releases are now being made on a "Batch" frequency, therefore, the specifications should be changed to be consistent with other batch type release monitors.
- 2) When the applicable modes for operation of RM-A1 (Reactor Building purge exhaust duct monitor) were determined, Crystal River Unit 3 was allowed to purge during all modes. Since then, purging has been restricted to Modes 5 and 6 (Cold Shutdown and Refueling). The operability requirements should reflect this restriction and require monitoring only during times we can purge.
- 3) The inclusion of the footnote "During Periods of Reactor Building Purge" to RM-A2 (Auxiliary Building exhaust monitor) was an obvious typographical error. The requirement to perform a source check Prior (P) to release through RM-A2 is also an error as this system (Auxiliary Building exhaust) is required to operate continuously by another Technical Specification (3.7.8.1).
- 4) If the Waste Gas Decay Tanks' hydrogen and/or oxygen monitoring channels are inoperable for more than 14 days, Specification 3.0.3 could be interpreted to require that a shutdown be initiated within one hour. During a plant shutdown, the reactor coolant releases dissolved hydrogen and oxygen due to the lower saturation concentration at the lower pressure. These released gases are generally vented to the Waste Gas Decay Tanks for holdup and radioactive decay. Thus a shutdown can cause an increase in the hydrogen concentrations in the Waste Gas Decay Tanks and is one of the times when monitoring is especially important. It is inappropriate to require a shutdown when the monitoring channels are inoperable. This Change Request will clarify our position that allows Florida Power to continue power operation when the hydrogen and oxygen monitors on the waste gas decay tanks are inoperable provided grab sampling is continued.
- 5) This change will clarify that only the in-service Waste Gas Decay Tank needs to be continuously monitored for hydrogen and oxygen concentrations.
- 6) The unavailability of vegetable samples is reported in the Annual Radiological Environmental Operating Report not as a special report as implied here. Specification 3.7.11.4 does not require a special report, thus this reference to 3.7.11.4 has been deleted.
- 7) MEMBERS OF THE PUBLIC is a defined term, while individuals is not. This change clarifies the scope of individuals to be considered when reporting doses per this requirement. Individuals who are not MEMBERS OF THE PUBLIC are covered under other requirements.

## EVALUATION OF REQUEST:

- 1) This change is administrative in nature.
- 2) This change is administrative.
- 3) This change is administrative.

- 4) This change should improve plant safety. As explained above, a shutdown will cause generation of additional waste gas which is not desirable when the tanks' explosive gas monitoring system is inoperable. Grab sampling will continue to be performed to periodically monitor the tanks' mixtures during monitor inoperability.
- 5) This change is editorial.
- 6) This change is administrative.
- 7) This change is administrative.

**FLORIDA POWER CORPORATION  
CRYSTAL RIVER UNIT 3  
DOCKET NO. 50-302/LICENSE NO. DPR-72  
REQUEST NO. 127, REVISION 0  
SIGNIFICANT HAZARDS CONSIDERATION DETERMINATION**

**REQUEST FOR:**

Issuance of a Technical Specification amendment to correct errors and clarify certain radiological effluent specifications. Additionally, we request an amendment to allow continued use of the waste gas decay tanks when the explosive mixture monitoring instrumentation is inoperable if samples are taken periodically.

**SIGNIFICANT HAZARDS CONSIDERATION DETERMINATION:**

- ( x ) Amendment involved no significant hazards considerations.
- (   ) Amendment involves significant hazards considerations.

**BASIS FOR DETERMINATION:**

This amendment is considered not likely to involve significant hazards considerations, because it is primarily an administrative change to correct errors identified since issuance of the Radiological Effluent Technical Specification, July 1, 1984. The portion of the amendment request revising the continued use of the waste gas decay tanks is also a correction. As explained in the attached, the current Specification has no provision for monitor inoperability beyond 14 days. Generally, this would mean entrance into Specification 3.0.3 is necessary. However, in this case, compliance with 3.0.3 is impossible because this monitor is required to be operable in all modes. Additionally, commencing a plant shutdown, as implied by 3.0.3, would lead to release of additional hydrogen and, thus could have safety consequences while the monitor is inoperable.

**REQUEST IMPLEMENTATION DATE:**

Florida Power Corporation requests that this proposed amendment be published in the Federal Register no later than the October amendment noticing date (October 24, 1984). This publishing date will allow an implementation date during mid-November.

TABLE 4.3-8

RADIOACTIVE LIQUID EFFLUENT MONITORING INSTRUMENTATION SURVEILLANCE REQUIREMENTS

<u>INSTRUMENT</u>	<u>CHANNEL CHECK</u>	<u>SOURCE CHECK</u>	<u>CHANNEL CALIBRATION</u>	<u>CHANNEL FUNCTIONAL TEST</u>
1. GROSS RADIOACTIVITY MONITORS PROVIDING ALARM AND AUTOMATIC TERMINATION OF RELEASE				
a. Auxiliary Building Liquid Radwaste Effluent Line (RM-L2)	D*	P	R(1)	M
b. Secondary Drain Tank Liquid Effluent Line (RM-L7)	D'	P	R(1)	M
2. FLOW RATE MEASUREMENT DEVICES				
a. Auxiliary Building Liquid Radwaste Effluent Line	D(2)	N.A.	R	N.A.
b. Secondary Drain Tank Liquid Effluent Line	D(2)	N.A.	R	N.A.



TABLE 3.3-13

RADIOACTIVE GASEOUS EFFLUENT MONITORING INSTRUMENTATION

	<u>MINIMUM CHANNELS OPERABLE</u>	<u>APPLICABLE MODES</u>	<u>ACTION</u>
1. Waste Gas Decay Tank Monitor (RM-A11)			
a. Noble Gas Activity Monitor*	1	All MODES	24
b. Effluent System Flow Rate Monitor	1	All MODES	26
2. Reactor Building Purge Exhaust Duct Monitor (RM-A1)			
a. Noble Gas Activity Monitor			
i. Operating Range*	1	**	27
ii. Mid Range#	1	**	29
iii. High Range#	1	**	29
b. Iodine Sampler	1	**	25
c. Particulate Sampler	1	**	25
d. Effluent System Flow Rate Monitor	1	**	26
e. Sampler Flow Rate Monitor	1	**	26
3. Auxiliary Building and Fuel Handling Area Exhaust Duct Monitor (RM-A2)			
a. Noble Gas Activity Monitor			
i. Operating Range*	1	All MODES	28
ii. Mid Range#	1	1, 2, 3 & 4	29
iii. High Range#	1	1, 2, 3 & 4	29
b. Iodine Sampler	1	All MODES	25
c. Particulate Sampler	1	All MODES	25
d. Effluent System Flow Rate Monitor	1	All MODES	26
e. Sampler Flow Rate Monitor	1	All MODES	26

\* Provides control room alarm and automatic termination of release.

\*\* During periods of reactor building purge.

# There is no isolation setpoint or release termination function for this monitor, Alarm setpoints are determined by the appropriate system procedures.

TABLE 4.3-9

## RADIOACTIVE GASEOUS EFFLUENT MONITORING INSTRUMENTATION SURVEILLANCE REQUIREMENTS

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<u>INSTRUMENT</u>	<u>CHANNEL CHECK</u>	<u>SOURCE CHECK</u>	<u>CHANNEL CALIBRATION</u>	<u>CHANNEL FUNCTIONAL TEST</u>	<u>MODES IN WHICH SURVEILLANCE REQUIRED</u>
1. WASTE GAS DECAY TANK MONITOR (RM-A11)					
a. Noble Gas Activity Monitor	P	P	R(1)	M	All MODES
b. Effluent System Flow Rate Monitor	P	N.A.	R	M	All MODES
2. REACTOR BUILDING PURGE EXHAUST DUCT MONITOR (RM-A1)					
a. Noble Gas Activity Monitor					
i. Operating Range	D	P	R(1)	M	#
ii. Mid Range	W	M	R(1)	M	#
iii. High Range	W	M	R(1)	M	#
b. Iodine Sampler	W	N.A.	N.A.	N.A.	#
c. Particulate Sampler	W	N.A.	N.A.	N.A.	#
d. Effluent System Flow Rate Monitor	D	N.A.	R	M	#
e. Sampler Flow Rate Monitor	D	N.A.	R	M	#
3. AUXILIARY BUILDING & FUEL HANDLING AREA EXHAUST DUCT MONITOR (RM-A2)					
a. Noble Gas Activity Monitor					
i. Operating Range	D	N.A.	R(1)	M	All MODES
ii. Mid Range	W	M	R(1)	M	1, 2, 3, 4
iii. High Range	W	M	R(1)	M	1, 2, 3, 4
b. Iodine Sampler	W	N.A.	N.A.	N.A.	All MODES
c. Particulate Sampler	W	N.A.	N.A.	N.A.	All MODES
d. Effluent System Flow Rate Monitor	D	N.A.	R	M	All MODES
e. Sampler Flow Rate Monitor	D	N.A.	R	M	All MODES

## INSTRUMENTATION

### WASTE GAS DECAY TANK - EXPLOSIVE GAS MONITORING INSTRUMENTATION

#### LIMITING CONDITION FOR OPERATION

3.3.3.10 The Waste Gas Decay Tanks shall have one hydrogen and one oxygen monitoring channel OPERABLE.

#### APPLICABILITY: ALL MODES.

- ACTION:
- a. With the number of OPERABLE channels less than required above, operation of this system may continue, provided grab samples are collected and analyzed:
    - (1) at least once per 4 hours during degassing operations
    - (2) at least once per 24 hours during other operations
  - b. If the affected channel(s) cannot be returned to OPERABLE status within 14 days, submit a special report to the Commission pursuant to Specification 6.9.2 within 30 days describing the reasons for inoperability and a schedule for corrective action.
  - c. The provisions of 3.0.3 and 3.0.4 are not applicable.

#### SURVEILLANCE REQUIREMENTS.

4.3.3.10 The Waste Gas Decay Tank explosive gas monitoring instrumentation shall be demonstrated operable by performing the CHANNEL CHECK, CHANNEL FUNCTIONAL TEST, and CHANNEL CALIBRATION at the frequencies shown in Table 4.3-10.



## PLANT SYSTEMS

### WASTE GAS DECAY TANK - EXPLOSIVE GAS MIXTURE

#### LIMITING CONDITION FOR OPERATION

3.7.13.5 The concentration of oxygen in any Waste Gas Decay Tank shall be limited to less than or equal to 2% by volume whenever the concentration of hydrogen in that Waste Gas Decay Tank is greater than or equal to 4% by volume.

APPLICABILITY: At all times.

#### ACTION:

Whenever the concentration of hydrogen in any Waste Gas Decay Tank is greater than or equal to 4% by volume, and:

- a. The concentration of oxygen in that Waste Gas Decay Tank is greater than 2% by volume, but less than 4% by volume, without delay begin to reduce the oxygen concentration to within its limit.
- b. The concentration of oxygen in that Waste Gas Decay Tank is greater than or equal to 4% by volume, immediately suspend additions of waste gas to that Waste Gas Decay Tank and without delay begin to reduce the oxygen concentration to within its limit.
- c. The provisions of Specifications 3.0.3 and 3.0.4 are not applicable.

#### SURVEILLANCE REQUIREMENTS

4.7.13.5 The concentrations of hydrogen and oxygen in the in-service Waste Gas Decay Tank shall be continuously monitored with the hydrogen and oxygen monitors required OPERABLE BY Specification 3.3.3.10 or by sampling in accordance with Specification 3.3.3.10 if the hydrogen and/or oxygen monitors are inoperable.

TABLE 4.11-1

## RADIOACTIVE LIQUID WASTE SAMPLING AND ANALYSIS PROGRAM

Liquid Release Type	Sampling Frequency	Minimum Analysis Frequency	Type of Activity Analysis	Lower Limit of Detection (LLD) (uCi/ml) <sup>a</sup>
A. Batch Waste Release Tanks <sup>a</sup>  1. Evaporator Condensate Storage Tanks (2)  2. Laundry & Shower Sump Tanks (2)  3. Secondary Drain Tank	P Each Batch	P Each Batch	Principal Gamma Emitters <sup>1</sup>	$5 \times 10^{-7}$
			I-131	$1 \times 10^{-6}$
	P One Batch/M	M	Dissolved and Entrained Gases (Gamma Emitters)	$1 \times 10^{-5}$
	P Each Batch	M Composite <sup>b</sup>	H-3	$1 \times 10^{-5}$
			Gross Alpha	$1 \times 10^{-7}$
	P Each Batch	Q Composite <sup>b</sup>	Sr-89, Sr-90	$5 \times 10^{-8}$
			Fe-55	$1 \times 10^{-6}$
B. Continuous Releases <sup>a</sup>  1. Secondary Drain Tank	Continuous <sup>c</sup>	W Composite <sup>c</sup>	Principal Gamma Emitters <sup>1</sup>	$5 \times 10^{-7}$
			I-131	$1 \times 10^{-6}$
	M Grab Sample	M	Dissolved and Entrained Gases (Gamma Emitters)	$1 \times 10^{-5}$
	Continuous <sup>c</sup>	M Composite <sup>c</sup>	H-3	$1 \times 10^{-5}$
			Gross Alpha	$1 \times 10^{-7}$
	Continuous <sup>c</sup>	Q Composite <sup>c</sup>	Sr-89, Sr-90	$5 \times 10^{-8}$
			Fe-55	$1 \times 10^{-6}$

## ADMINISTRATIVE CONTROLS

### ANNUAL AND SEMIANNUAL REPORTS (Continued)

an hour-by-hour listing of wind speed, wind direction, atmospheric stability, and precipitation (if measured) on magnetic tape, or in the form of joint frequency distributions of wind speed, wind direction, and atmospheric stability.\* This same report shall include an assessment of the radiation doses due to the radioactive liquid and gaseous effluents released from the unit during the previous calendar year. This same report shall also include an assessment of the radiation doses from radioactive liquid and gaseous effluents to MEMBERS OF THE PUBLIC, due to their activities inside the SITE BOUNDARY (Figure 5.1-3) during the report period. All assumptions used in making these assessments (i.e., specific activity, exposure time and location) shall be included in these reports. The meteorological conditions concurrent with the time of release of radioactive materials in gaseous effluents (as determined by sampling frequency and measurement) shall be used for determining the gaseous pathway doses. The assessment of radiation doses shall be performed in accordance with the OFFSITE DOSE CALCULATION MANUAL (ODCM).

The radioactive effluent release report to be submitted 60 days after January 1 of each year shall also include an assessment of radiation doses to the hypothetical worst case individual from reactor releases (including doses from primary effluent pathways and direct radiation) for the previous calendar year.

Acceptable methods for calculating the dose contribution from liquid and gaseous effluents are given in Regulatory Guide 1.109, Revision 1.

The radioactive effluent release report shall include the following information for each type of solid waste shipped offsite during the report period:

- 1) container volume,
- 2) total curie quantity (specify whether determined by measurement or estimate),
- 3) principal radionuclides (specify whether determined by measurement or estimate),

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\* In lieu of submittal, these meteorological data may be retained in an on-site file and provided to the NRC upon request.

## ADMINISTRATIVE CONTROLS

### SPECIAL REPORTS

6.9.2 Special reports shall be submitted to the Director of the Office of Inspection and Enforcement, Region II, within the time period specified for each report. These reports shall be submitted covering the activities identified below pursuant to the requirements of the applicable referenced specification:

- a. ECCS Actuation, Specification 3.5.2 and 3.5.3.
- b. Inoperable Seismic Monitoring Instrumentation, Specification 3.3.3.3.
- c. Inoperable Meteorological Monitoring Instrumentation, Specification 3.3.3.4.
- d. Seismic event analysis, Specification 4.3.3.3.2.
- e. Inoperable Fire Detection Monitoring Instrumentation, Specification 3.3.3.7.
- f. Inoperable Fire Suppression System, Specifications 3.7.11.1, 3.7.11.2, 3.7.11.3, and 3.7.11.4.
- g. Dose due to radioactive materials in liquid effluents in excess of specified limits, Specification 3.11.1.2.
- h. Dose due to noble gas in gaseous effluents in excess of specified limits, Specification 3.11.2.2.
- i. Total calculated dose due to release of radioactive effluents exceeding twice the limits of Specifications 3.11.1.2.a, 3.11.1.2.b, 3.11.2.2.a, 3.11.2.2.b, 3.11.2.3.a, or 3.11.2.3.b (required by Specification 3.11.3).
- j. Dose due to Iodine-131, Tritium, and radioactive particulates with greater than 8 day half-lives, in gaseous effluents in excess of specified limits, Specification 3.11.2.3.
- k. Failure to process liquid radwaste, in excess of limits, prior to release, Specification 3.7.13.2.
- l. Failure to process gaseous radwaste, in excess of limits, prior to release, Specification 3.7.13.3.
- m. Measured levels of radioactivity in environmental sampling medium in excess of the reporting levels of Table 3.12-2, when averaged over any quarterly sampling period, Specification 3.12.1.1.
- n. Inoperable Mid or High Range Noble Gas Effluent Monitoring Instrumentation, Specification 3.3.3.9.
- o. Inoperable explosive gas monitoring instrumentation, Specification 3.3.3.10.