

TABLE 3.3-13 (Continued)  
TABLE NOTATION

ACTION 28 With the number of OPERABLE channels less than required, releases via this pathway may continue, provided grab samples are collected at least once per 12 hours and analyzed within 24 hours, and either the requirements of ACTION 24 Part 2 are met or Radiation Monitor RM-A11 is OPERABLE prior to releasing the contents of the Waste Gas Decay Tanks.

ACTION 29 With the number of OPERABLE channels less than required by the Minimum Channels OPERABLE requirements, initiate the preplanned alternate method of monitoring the appropriate parameter(s), within 72 hours, and:

- 1) Either restore the inoperable Channel(s) to OPERABLE status within 7 days of the event, or
- 2) Prepare and submit a Special Report to the Commission pursuant to Specification 6.9.2 within the next 14 days outlining the action taken, the cause of the inoperability and the plans and schedule for restoring the system to OPERABLE status.

Action a. is not applicable.

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TABLE 4.3-9

RADIOACTIVE GASEOUS 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>	<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	1, 2, 3, 4
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
3. AUXILIARY BUILDING & FUEL HANDLING AREA EXHAUST DUCT MONITOR (RM-A2)					
a. Noble Gas Activity Monitor					
i. Operating Range	D#	P	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

## ADMINISTRATIVE CONTROLS

### SPECIAL REPORTS (Continued)

- j. Failure to process liquid radwaste, in excess of limits, prior to release, Specification 3.7.13.2.
- k. Failure to process gaseous radwaste, in excess of limits, prior to release, Specification 3.7.13.3.
- l. 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.
- m. Unavailability of milk or fresh leafy vegetable samples, Specification 3.12.1.
- n. Inoperable Mid or High Range Noble Gas Efficient Monitoring Instrumentation, Specification 3.3.3.8.

## CHANGES TO SUPPLEMENT 2 OF TSCRN 36

On December 16, 1983, Florida Power Corporation submitted Supplement 2 to Technical Specification Change Request No. 36. The purpose of Supplement 2 was to incorporate certain changes as requested by your staff and to include editorial changes from our staff.

Supplement 2 has been revised (changed pages attached) to include additional administrative and editorial changes.

Specifically:

- 1) Page 3/4 12-4: C13 is the only Control Location.
- 2) Page 3/4 12-5: The monthly vegetation sample should be comprised of three types of vegetation (three separate samples are not necessary).
- 3) Page 3/4 12-6: Footnote b has been clarified to specify that levels apply to those mixtures which contain reportable levels of the parent isotope.
- 4) Page 3/4 12-7 and 12-9: Footnote g specifies that LLD for I-131 applies only to a single weekly filter. This revision is necessary due to I-131 short half-life relative to the previously required quarterly frequency of the LLD analysis.

TABLE 3.12-1

OPERATIONAL RADIOLOGICAL ENVIRONMENTAL MONITORING PROGRAM

Exposure Pathway and/or Sample	Number of Samples and Locations	Sampling/ Collection Frequency	Type/Frequency of Analysis
1. AIRBORNE Radioiodine and particulates	One sample each: C07, C18, C40, C41, C46, and Control Location C47	Continuous sampler/ Weekly collection	<u>Radioiodine canister:</u> a) I-131 analysis weekly <u>Particulate sampler:</u> a) Gross $\beta$ at $\geq$ 24 hours/ following weekly filter change. b) Composite gamma spectral analysis (by location)/ quarterly. (Gamma Spectral Analysis shall also be performed on individual samples if gross beta activity of any sample is greater than $1.0 \text{ p Ci/m}^3$ and which is also greater than ten times the control sample activity.)
2. DIRECT RADIATION	1) Site Boundary: C60, C61, C62, C63, C64, C65, C66, C67, C68, C69, C41, C70, C27, C71, C72, C73 2) Five Miles: C18, C03, C04, C74, C75, C76, C08, C77, C09, C78, C14G, C01, C79 3) Control Location: C47	Continuous placement/Quarterly collection	Gamma exposure rate/quarterly

TABLE 3.12-1 (Continued)

OPERATIONAL RADIOLOGICAL ENVIRONMENTAL MONITORING PROGRAM

Exposure Pathway and/or Sample	Number of Samples and Locations	Sampling/ Collection Frequency	Type/Frequency of Analysis
3. WATERBORNE Seawater	One sample each: C14H, C14G Control Location C13	Grab sample/Monthly	Gamma spectral analysis/monthly  Tritium analysis on each sample or on a quarterly composite of monthly samples
Ground water	One sample: C40 (Control Location)	Grab sample/ semiannual	Gamma spectral and Tritium analysis/each sample
Drinking water	One sample each: C07, C10, C18 (All Control Locations)	Grab sample/quarterly	Gamma spectral and Tritium analysis/each sample
Shoreline sediment	One sample each: C14H, C14M, C14G Control Location C09	Semiannual sample	Gamma spectral analysis/each sample
4. INGESTION Fish & Invertebrates	One sample each: C29, Control Location C30	Quarterly: Oysters and carnivorous fish	Gamma spectral analysis on edible portions/each sample

TABLE 3.12-1 (Continued)

OPERATIONAL RADIOLOGICAL ENVIRONMENTAL MONITORING PROGRAM

Exposure Pathway and/or Sample	Number of Samples and Locations	Sampling/ Collection Frequency	Type/Frequency of Analysis
Food Products	One sample each: C48a*, C48b*, Control Location C47	Monthly (when available): Sample comprised of three (3) types of broad leaf vegetation from each location	Gamma spectral and I-131 analysis/each sample
	One sample: C19	Annual during harvest: Citrus	Gamma spectral analysis/ each sample
	One sample: C04	Annual during harvest: Watermelon	Gamma spectral analysis/ each sample

\* Stations C48a and C48b are located at or beyond the 4400 ft. site boundary for gaseous effluents in the two sectors which yield the highest historical annual average D/Q values.



TABLE 3.12-2

REPORTING LEVELS FOR RADIOACTIVITY CONCENTRATIONS IN ENVIRONMENTAL SAMPLES

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

(a) For drinking water samples. This is 40 CFR Part 141 value. If no drinking water pathway exists, a value of 30,000 pCi/l may be used.

(b) An equilibrium mixture of the parent and daughter isotope which contains the reporting value of the parent isotope.

(c) For drinking water samples only.



TABLE 4.12-1

MAXIMUM VALUES FOR THE LOWER LIMITS OF DETECTION (LLD) a,d

Analysis	Water (pCi/l)	Airborne Particulate or Gases (pCi/m <sup>3</sup> )	Fish (pCi/Kg, wet)	Milk (pCi/l)	Food Products (pCi/Kg, wet)	Sediment (pCi/Kg, dry)
gross beta		0.01				
<sup>3</sup> H	2000 <sup>b</sup>					
<sup>54</sup> Mn	15		130			
<sup>59</sup> Fe	30		260			
<sup>58</sup> Co	15		130			
<sup>60</sup> Co	15		130			
<sup>65</sup> Zn	30		260			
<sup>95</sup> Zr-Nb	15 <sup>c</sup>					
<sup>131</sup> I	1 <sup>f</sup>	0.07 <sup>g</sup>		1	60	
<sup>134</sup> Cs	15	0.05 <sup>e</sup>	130	15	60	150
<sup>137</sup> Cs	18	0.06 <sup>e</sup>	150	18	80	180
<sup>140</sup> Ba-La	15 <sup>c</sup>			15 <sup>c</sup>		

TABLE 4.12-1 (Continued)

TABLE NOTATION

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

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

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

Where:

LLD is the lower limit of detection as defined above (as picocurie per unit mass or volume),

$s_b$  is the standard deviation of the background counting rate or of the counting rate of a blank sample as appropriate (as counts per minute),

E is the counting efficiency (as counts per disintegration),

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

2.22 is the number of disintegrations per minute per picocurie,

Y is the fractional radiochemical yield (when applicable),

$\lambda$  is the radioactive decay constant for the particular radionuclide, and

$\Delta t$  is the elapsed time between sample collection (or end of the sample collection period) and time of counting (for environmental samples, not plant effluent samples).

Typical values of E, V, Y and  $\Delta t$  should be used in the calculation.

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\* The LLD is defined as an a priori (before the fact) limit representing the capability of the measurement system and not as an a posteriori (after the fact) limit for a particular measurement. Analyses shall be performed in such a manner that the stated LLD's will be achieved under routine conditions. Occasionally, background fluctuations, unavoidable small sample sizes, the presence of interfering nuclides, or other uncontrollable circumstances may render these LLD's unachievable. In such cases, the contributing factors shall be identified and described in the Annual Radiological Environmental Operating Report.

TABLE 4.12-1 (Continued)

TABLE NOTATION

- b. LLD for drinking water. If no drinking water pathway exists, a value of 3000 pCi/l may be used.
- c. The specified LLD is for an equilibrium mixture of parent and daughter nuclides which contains 15 pci/l of the parent nuclide.
- d. Other peaks which are measurable and identifiable, together with the radionuclides in Table 4.12-1, shall be identified and reported.
- e. Cs-134, and Cs-137 LLD's apply only to the quarterly composite gamma spectral analysis, not to analyses of single particulate filters.
- f. LLD for drinking water. If no drinking water pathway exists, the LLD of gamma isotopic analysis may be used.
- g. LLD for I-131 applies to a single weekly filter.