SEQUOYAH NUCLEAR PLANT
OFFSITE DOSE CALCULATION MANUAL
DATES OF REVISIONS

Original ODCM	02/29/80*
Revision 1	04/15/80**
Revision 2	10/07/80**
Revision 3	11/03/80,
02/10/81	
06/04/81**	04/08/81,
Revision 4	
(10/22/81,	11/22/82
04/29/82**)	11/28/81,
Revision 5	
Revision 6	10/21/82**
Revision 7	01/20/83**
Revision 8	03/23/83**
Revision 9	12/16/83**
Revision 10	03/07/84**
Revision 11	04/24/84**
Revision 12	08/21/84**
Revision 13	02/19/85**
Revision 14	12/02/85
Revision 15	04/14/86
Revision 16	11/05/86***
Revision 17	01/16/87**
Revision 18	10/28/87**
	01/05/88**

Approved by _____ Date 1/18/88
RARC Chairman

Approved by _____ Date 1/12/88
Manager, RADCON

Approved by N/A Date N/A
Plant Manager

* Low Power license for Sequoyah unit 1
** RARC Meeting date
*** Date approved by RARC Chairman

SEQUOYAH NUCLEAR PLANT
OFFSITE DOSE CALCULATION MANUAL
EFFECTIVE PAGE LISTING
REVISION 18

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TABLE 3.1 (Sheet 1 of 4)

RADIOLOGICAL ENVIRONMENTAL MONITORING PROGRAM

Exposure Pathway and/or Sample	Sample Locations*	Sampling and Collection Frequency	Type and Frequency of Analysis
1. AIRBORNE			
a. Particulates	4 samples from locations (in different sectors) at or near the site boundary (LM 2, 3, 4, and 5)	Continuous sampler operation with sample collection once per 7 days (more frequently if required by dust loading)	Analyze for gross beta radioactivity > 24 hours following filter change. Perform gamma isotopic analysis on each sample if gross beta > 10 times yearly mean of control sample. Composite at least once per 92 days (by location for gamma scan)
	4 samples from communities approximately 6–10 miles distance from the plant (PM 2, 3, 8, and 9)		
	3 samples from control locations greater than 10 miles from the plant (RM 1, 3, and 4)		
b. Radioiodine	Samples from same locations as local (LM) and Remote (RM) air particulates	Continuous sampler operation with filter collection once per 7 days	^{131}I at least once per 7 days
c. Soil	Samples from same locations as air particulates	Once per 3 years	Gamma scan, ^{89}Sr, ^{90}Sr once each 3 years
2. DIRECT RADIATION	2 or more dosimeters placed at 10 of the air particulate sampling stations (LM-3, LM-4, LM-5, PM-2, PM-3, PM-8, PM-9, RM-1, & RM-3, and RM-4)	Once per 92 days	Gamma dose at least once per 92 days
	2 or more dosimeters placed at each of at least 30 other locations. (Figures 3.2 and 3.5)		

*Sample locations are shown on Figures 3.1, 3.2, 3.3, 3.4, 3.5, and 3.6.

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TABLE 3.1 (Sheet 2 of 4)

RADIOLOGICAL ENVIRONMENTAL MONITORING PROGRAM

Exposure Pathway and/or Sample	Sample Locations*	Sampling and Collection Frequency	Type and Frequency of Analysis
3. WATERBORNE			
a. Surface (Figure 3.4)	TRM 497.0 TRM 483.4 TRM 473.2	Collected by automatic sequential-type sampler** with composite samples collected over a period of ≤ 32 days	Gamma scan of each composite sample. Composite for tritium analysis at least once per 92 days
b. Ground (Figure 3.2)	1 sample adjacent to plant (location W-6)	At least once per 92 days	Gross beta, gamma scan and tritium analysis at least once per 92 days
	1 sample from ground water source upgradient		
c. Drinking (Table 3.3) (Figure 3.4)	1 sample at the first potable surface water supply downstream from the plant (TRM 473.0)	Collected by automatic sequential-type sampler** with composite sample collected over a period of ≤ 31 days	Gross beta and gamma scan of each composite sample. Composite for tritium, ^{89}Sr, ^{90}Sr at least once per 92 days
	1 sample at the next 2 downstream potable surface water suppliers (greater than 10 miles downstream) (TRM 470.5 and 466.3)	Grab sample once per 31 days	
	2 samples at control locations (TRM 497.0 and TRM 503.8)	Samples collected by automatic sequential-type sampler with composite sample collected over a period of ≤ 31 days	
d. Sediment	TRM 496.3 TRM 483.4 TRM 480.8 TRM 472.6	At least once per 184 days	Gamma scan of each sample

*Sample locations are shown on Figures 3.1, 3.2, 3.3, 3.4, 3.5, and 3.6.
**Samples shall be collected by collecting an aliquot at intervals not exceeding 2 hours.

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TABLE 3.1 (Sheet 3 of 4)

RADIOLOGICAL ENVIRONMENTAL MONITORING PROGRAM

Exposure Pathway and/or Sample	Sample Locations*	Sampling and Collection Frequency	Type and Frequency of Analysis
e. Shoreline Sediment (Figure 3.4)	TRM 485 TRM 478 TRM 477	At least once per 184 days	Gamma scan of each sample
4. INGESTION			
a. Milk (Figure 3.6)	1 sample from milk producing animals in each of 1-3 areas indicated by the cow census where doses are calculated to be highest. If samples are not available from a milk animal location, doses to that area will be estimated by projecting the doses from concentrations detected in milk from other sectors or by sampling vegetation where milk is not available (Table 3.1, 4.d) At least 1 sample from a control location.	At least once per 15 days	Gamma isotopic and ^{131}I analysis of each sample. ^{89}Sr, ^{90}Sr once per quarter
b. Fish	1 sample each for Nickajack, Chickamauga, and Watts Bar Reservoirs	At least once per 184 days. One sample of each of the following species: Channel Catfish White Crappie Smallmouth Buffalo	Gamma scan on edible portion

*Sample locations are shown on Figures 3.1, 3.2, 3.3, 3.4, 3.5, and 3.6.

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TABLE 3.1 (Sheet 4 of 4)

RADIOLOGICAL ENVIRONMENTAL MONITORING PROGRAM

Exposure Pathway and/or Sample	Sample Locations*	Sampling and Collection Frequency	Type and Frequency of Analysis
c. Invertebrates (Asiatic Clams)	TRM 496.5 TRM 483.4 TRM 480.8	At least once per 184 days.	Gamma scan on edible portion
d. Food Products	1 sample each of principal food products grown at private gardens and/or farms in the immediate vicinity of the plant.	At least once per 365 days at time of harvest. The types of foods available for sampling will vary. Following is a list of typical foods which may be available: Cabbage and/or Lettuce Corn Green Beans Potatoes Tomatoes	Gamma scan on edible portion
e. Vegetation (Figure 3.6)	1 sample from up to three locations of milk-producing animals where a sample of milk is not available and at each air particulate station	At least once per 31 days	Gamma scan at least once per 31 days. ^{89}Sr and ^{90}Sr analysis and least once per 92 days

*Sample locations are shown on Figures 3.1, 3.2, 3.3, 3.4, 3.5, and 3.6.

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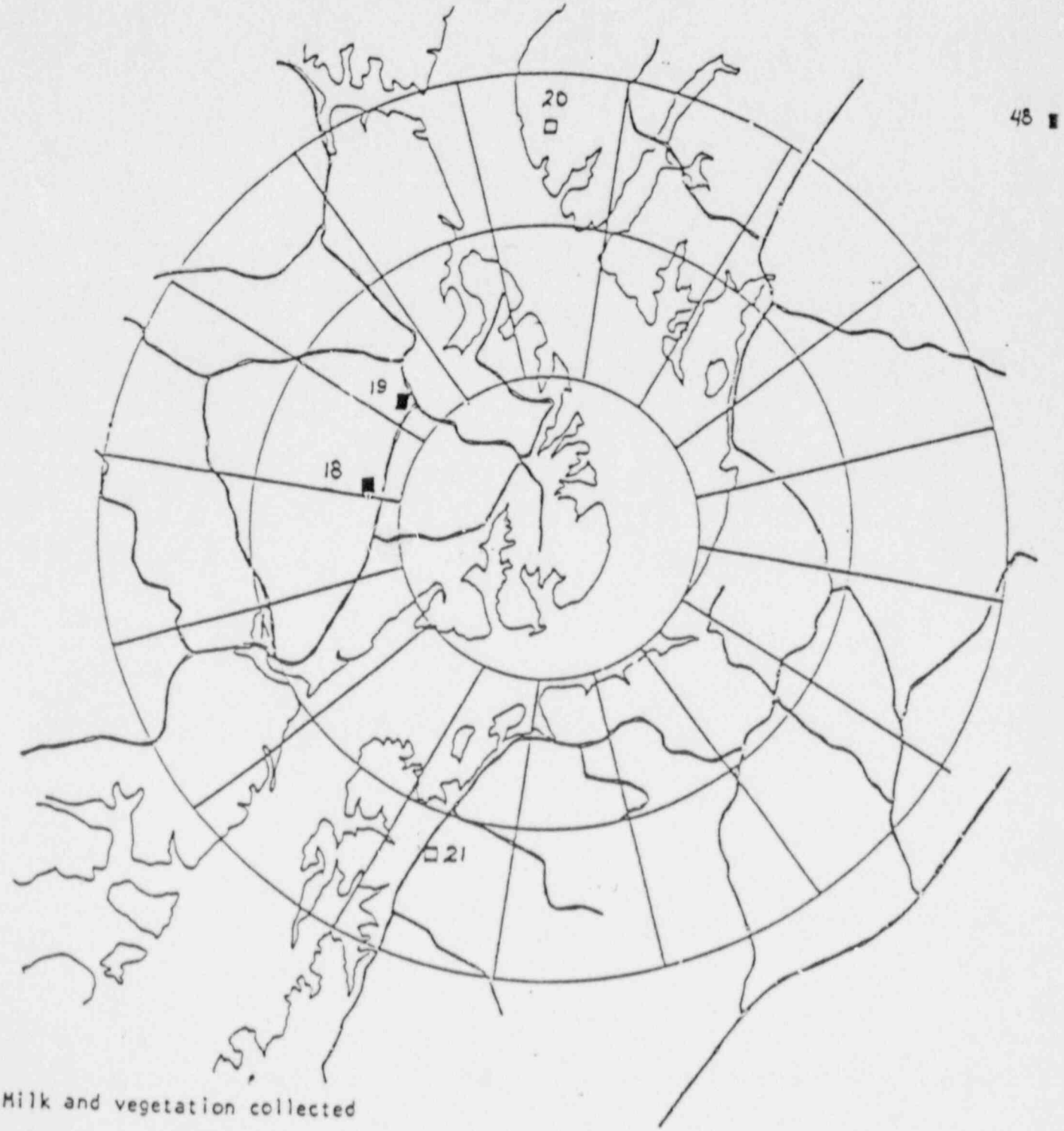
Figure 3.6
MILK AND VEGETABLE SAMPLING LOCATIONS



■ Milk and vegetation collected

□ Vegetation only collected

Note: Vegetation is also collected at each air monitoring station. See Figure 3.1

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