

ENCLOSURE 1

PROPOSED CHANGES TO SEQUOYAH UNIT 1

TECHNICAL SPECIFICATIONS

8003310312

TABLE 2.2-1 (Continued)

REACTOR TRIP SYSTEM INSTRUMENTATION TRIP SETPOINTS

<u>FUNCTIONAL UNIT</u>	<u>TRIP SETPOINT</u>	<u>ALLOWABLE VALUES</u>
21. Turbine Impulse Chamber Pressure - (P-13) Input to Low Power Reactor Trips Block P-7	< 10% Turbine Impulse Pressure Equivalent	< 11% Turbine Impulse Pressure Equivalent
22. Power Range Neutron Flux - (P-8) Input to Low Reactor Coolant Loop Flow Reactor Trip	< 35% of RATED THERMAL POWER	< 36% of RATED THERMAL POWER
23. Power Range Neutron Flux - (P-10) - Enable block of Source, Intermediate, and Power Range (low setpoint) reactor Trips	> 10% of RATED THERMAL POWER	> 9% of RATED THERMAL POWER
24. Reactor Trip P-4	Not Applicable	Not Applicable

NOTATION

NOTE 1: Overtemperature $\Delta T \left(\frac{1}{1 + \tau_1 S} \right) \leq \Delta T_0 \left\{ K_1 - K_2 \left(\frac{1 + \tau_2 S}{1 + \tau_3 S} \right) \left[T \left(\frac{1}{1 + \tau_4 S} \right) - T' \right] + K_3 (P - P') - f_1 (\Delta I) \right\}$

where: $\frac{1}{1 + \tau_1}$ = Lag compensator on measured ΔT

τ_1 = Time constants utilized in the lag compensator for $\Delta T_3 \tau_1 = 2$ secs.

ΔT_0 = Indicated ΔT at RATED THERMAL POWER

K_1 \leq 1.14

K_2 = 0.009

TABLE 3.3-13 (Continued)

TABLE NOTATION

* At all times.

** During waste gas disposal system operation.

*** During shield building exhaust system operation.

ACTION 32 - With the number of channels OPERABLE less than required by the Minimum Channels OPERABLE requirement, the contents of the tank(s) may be released to the environment for up to 14 days provided that prior to initiating the release:

- a. At least two independent samples of the tank's contents are analyzed, and
- b. At least two technically qualified members of the Facility Staff independently verify the release rate calculations and discharge valve lineup;

Otherwise, suspend release of radioactive effluents via this pathway.

ACTION 33 - With the number of channels OPERABLE less than required by the Minimum Channels OPERABLE requirement, effluent releases via this pathway may continue for up to 30 days provided the flow rate is estimated at least once per 4 hours.

ACTION 34 - With the number of channels OPERABLE less than required by the Minimum Channels OPERABLE requirement, effluent releases via this pathway may continue for up to 30 days provided grab samples are taken at least once per 8 hours and these samples are analyzed for noble gas gross activity within 24 hours.

ACTION 35 - With the number of channels OPERABLE less than required by the Minimum Channels OPERABLE requirement, operation of this waste gas disposal system may continue for up to 7 days provided grab samples are collected at least once per 4 hours and analyzed within the following 4 hours. With the hydrogen and oxygen monitors inoperable, be in at least HOT STANDBY within 6 hours.

ACTION 36 - With the number of channels OPERABLE less than required by the Minimum Channels OPERABLE requirement, effluent releases via the affected pathway may continue for up to 30 days provided that within 4 hours after the channel has been declared inoperable samples are continuously collected with auxiliary sampling equipment as required in Table 4.11-2.

PLANT SYSTEMS

AUXILIARY FEEDWATER SYSTEM

LIMITING CONDITION FOR OPERATION

3.7.1.2 At least three independent steam generator auxiliary feedwater pumps and associated flow paths shall be OPERABLE with:

- a. Two feedwater pumps, each capable of being powered from separate shutdown boards, and
- b. One feedwater pump capable of being powered from an OPERABLE steam supply system.

APPLICABILITY: MODES 1, 2 and 3.

ACTION:

- a. With one auxiliary feedwater pump inoperable, restore at least three auxiliary feedwater pumps (two capable of being powered from separate shutdown boards and one capable of being powered by an OPERABLE steam supply system) to OPERABLE status within 72 hours or be in at least HOT STANDBY within the next 6 hours and in HOT SHUTDOWN within the following 6 hours.
- b. The provisions of Specification 3.0.4 are not applicable.

SURVEILLANCE REQUIREMENTS

4.7.1.2 Each auxiliary feedwater pump shall be demonstrated OPERABLE:

- a. At least once per 31 days by:
 1. Verifying that each motor driven pump develops a differential pressure of greater than or equal to 1397 psid on recirculation flow.
 2. Verifying that the steam turbine driven pump develops a differential pressure of greater than or equal to 1183 psid on recirculation flow when the secondary steam supply pressure is greater than 842 psig.
 3. Verifying that each non-automatic valve in the flow path that is not locked, sealed, or otherwise secured in position, is in its correct position, and
 4. Verifying that each automatic control valve in the flow path is OPERABLE whenever the auxiliary feedwater system is placed in automatic control or when above 10% of RATED THERMAL POWER.

3/4.9 REFUELING OPERATIONS

3/4.9.1 BORON CONCENTRATION

LIMITING CONDITION FOR OPERATION

3.9.1 With the reactor vessel head unbolted or removed, the boron concentration of all filled portions of the Reactor Coolant System and the refueling canal shall be maintained uniform and sufficient to ensure that the more restrictive of the following reactivity conditions is met:

- a. Either a K_{eff} of 0.95 or less, which includes a 1% delta k/k conservative allowance for uncertainties, or
- b. A boron concentration of greater than or equal to 2000 ppm, which includes a 50 ppm conservative allowance for uncertainties.

APPLICABILITY: MODE 6*

ACTION:

With the requirements of the above specification not satisfied, immediately suspend all operations involving CORE ALTERATIONS or positive reactivity changes and initiate and continue boration at greater than or equal to 10 gpm of a solution containing 20,000 ppm boron or its equivalent until K_{eff} is reduced to less than or equal to 0.95 or the boron concentration is restored to greater than or equal to 2000 ppm, whichever is the more restrictive. The provisions of Specification 3.0.3 are not applicable.

SURVEILLANCE REQUIREMENTS

4.9.1.1 The more restrictive of the above two reactivity conditions shall be determined prior to:

- a. Removing or unbolting the reactor vessel head, and
- b. Withdrawal of any full length control rod in excess of 3 feet from its fully inserted position within the reactor pressure vessel.

4.9.1.2 The boron concentration of the reactor coolant system and the refueling canal shall be determined by chemical analysis at least once per 72 hours.

*The reactor shall be maintained in MODE 6 whenever the reactor vessel head is unbolted or removed and fuel is in the reactor vessel.

REFUELING OPERATIONS

SURVEILLANCE REQUIREMENTS (Continued)

4.9.1.3 One of the following valve combinations shall be verified closed under administrative control at least once per 72 hours:

<u>Combination A</u>	<u>Combination B</u>	<u>Combination C</u>	<u>Combination D</u>
a. 1-81-536	a. 1-81-536	a. 1-81-536	a. 1-81-536
b. 1-62-922	b. 1-62-922	b. 1-62-907	b. 1-62-907
c. 1-62-916	c. 1-62-916	c. 1-62-914	c. 1-62-914
d. 1-62-933	d. 1-62-940	d. 1-62-921	d. 1-62-921
	e. 1-62-696	e. 1-62-933	e. 1-62-940
	f. 1-62-929		f. 1-62-696
	g. 1-62-932		g. 1-62-929
	h. 1-FCV-62-128		h. 1-62-932
			i. 1-FCV-62-128

SPECIAL TEST EXCEPTIONS

3/4.10.5 POSITION INDICATION SYSTEM - SHUTDOWN

LIMITING CONDITION FOR OPERATION

3.10.5 The limitations of Specification 3.1.3.3 may be suspended during the performance of individual full length (shutdown and control) rod drop time measurements provided;

- a. Only one shutdown or control bank is withdrawn from the fully inserted position at a time, and
- b. The rod position indicator is OPERABLE during the withdrawal of the rods.*

APPLICABILITY: MODES 3, 4 and 5 during performance of rod drop time measurements.

ACTION:

With the position indication system inoperable, or more than one bank of rods withdrawn, immediately open the reactor trip breakers.

SURVEILLANCE REQUIREMENTS

4.10.5 The above required rod position indication systems shall be determined to be OPERABLE within 24 hours prior to the start of and at least once per 24 hours thereafter during rod drop time measurements by verifying the demand position indication system and the rod position indication systems agree:

- a. Within 12 steps when the rods are stationary, and
- b. Within 24 steps during rod motion.

* This requirement is not applicable during the initial calibration of the rod position indication system provided (1) K_{eff} is maintained less than or equal to 0.95, and (2) only one shutdown or control bank is withdrawn from the fully inserted position at one time.

3/4.11 RADIOACTIVE EFFLUENTS

3/4.11.1 LIQUID EFFLUENTS

CONCENTRATION

LIMITING CONDITION FOR OPERATION

3.11.1.1 The concentration of radioactive material released from the site (see Figure 5.1-1) shall be limited to the concentrations specified in 10 CFR Part 20, Appendix B, Table II, Column 2 for radionuclides other than dissolved or entrained noble gases. For dissolved or entrained noble gases, the concentration shall be limited to 2×10^{-4} microcuries/ml total activity.

APPLICABILITY: At all times.

ACTION:

With the concentration of radioactive material released from the site exceeding the above limits, immediately restore the concentration to within the above limits.

SURVEILLANCE REQUIREMENTS

4.11.1.1.1 The radioactivity content of each batch of radioactive liquid waste from the radwaste system tanks shall be determined prior to release by sampling and analysis in accordance with Table 4.11-1. The results of pre-release analyses shall be used with the calculational methods in the ODCM to assure that the concentration at the point of release is maintained within the limits of Specification 3.11.1.1.

4.11.1.1.2 Post-release analyses of samples composited from batch releases shall be performed in accordance with Table 4.11-1. The results of the previous post-release analyses shall be used with the calculational methods in the ODCM to assure that the concentrations at the point of release were maintained within the limits of Specification 3.11.1.1.

4.11.1.1.3 The radioactivity concentration of liquids discharged from continuous release points shall be determined by collection and analysis of samples in accordance with Table 4.11-1. The results of the analyses shall be used with the calculational methods in the ODCM to assure that the concentrations at the point of release are maintained within the limits of Specification 3.11.1.1.

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) ($\mu\text{Ci/ml}$) ^a
A. Batch Waste Release-Radwaste System Tanks ^d	P Each Batch	P Each Batch	Principal Gamma Emitters ^f	5×10^{-7}
			I-131	1×10^{-6}
1. Waste Condensate Tanks (3)	P One Batch/M	M	Dissolved and Entrained Gases (Gamma emitters)	1×10^{-5}
2. Cask Decontamination Tank				
3. Laundry Tanks (2)	P Each Batch	M Composite ^b	H-3	1×10^{-5}
			Gross Alpha	1×10^{-7}
4. Chemical Drain Tank				
5. Monitor Tank			P-32	1×10^{-6}
6. Distillate Tanks (2)	P Each Batch	Q Composite ^b	Sr-89, Sr-90	5×10^{-8}
7. Condensate Demineralizer Waste Evaporator Blowdown Tank (1)			Fe-55	1×10^{-6}

TABLE 4.11-1 (Continued)
 RADIOACTIVE LIQUID WASTE SAMPLING AND ANALYSIS PROGRAM

Liquid Release Type	Sampling Frequency	Minimum Analysis Frequency	Type of Activity Analysis	Lower Limit of Detection (LLD) ($\mu\text{Ci/ml}$) ^a		
B. Batch Waste Release-Condensate Demineralizer Regenerant Tanks	Composite of Each Batch ^b	Each Batch	Principal Gamma Emitters ^f	5×10^{-7}		
			I-131	1×10^{-6}		
1. Non-Reclaimable Waste Tank	One Batch/M Composite	M	Dissolved and Entrained Gases (Gamma emitters)	1×10^{-5}		
2. High Crud Tanks (2)	Each Batch Composite	M Composite ^b	H-3	1×10^{-5}		
			Gross Alpha	1×10^{-7}		
			P-32	1×10^{-6}		
	Each Batch Composite	Q Composite ^b	Sr-89, Sr-90	5×10^{-8}		
			Fe-55	1×10^{-6}		
C. Continuous Releases ^e	D Grab Sample	W Composite ^c	Principal Gamma Emitters ^f	5×10^{-7}		
			I-131	1×10^{-6}		
1. Steam Generator Blowdown	M Grab Sample	M	Dissolved and Entrained Gases (Gamma Emitters)	1×10^{-5}		
			D Grab Sample	M Composite ^c	H-3	1×10^{-5}
					Gross Alpha	1×10^{-7}
					P-32	1×10^{-5}
			D Grab Sample	Q Composite ^c	Sr-89, Sr-90	5×10^{-8}
					Fe-55	1×10^{-6}
2. Turbine Building Sump	D Grab Sample	Q Composite ^c	Sr-89, Sr-90	5×10^{-8}		
			Fe-55	1×10^{-6}		

RADIOACTIVE EFFLUENTS

3/4.11.2 GASEOUS EFFLUENTS

DOSE RATE

LIMITING CONDITION FOR OPERATION

3.11.2.1 The dose rate due to radioactive materials released in gaseous effluents from the site (see Figure 5.1-1) shall be limited to the following:

- a. For noble gases: Less than or equal to 500 mrem/yr to the total body and less than or equal to 3000 mrem/yr to the skin, and
- b. For all radioiodines and for all radioactive materials in particulate form and radionuclides (other than noble gases) with half lives greater than 8 days: Less than or equal to 1500 mrem/yr to any organ.

APPLICABILITY: At all times except as noted in Table 4.11-2.

ACTION:

With the dose rate(s) exceeding the above limits, immediately decrease the release rate to within the above limit(s).

SURVEILLANCE REQUIREMENTS

4.11.2.1.1 The dose rate due to noble gases in gaseous effluents shall be determined to be within the above limits in accordance with the methods and procedures of the ODCM.

4.11.2.1.2 The dose rate due to radioactive materials, other than noble gases, in gaseous effluents shall be determined to be within the above limits in accordance with the methods and procedures of the ODCM by obtaining representative samples and performing analyses in accordance with the sampling and analysis program specified in Table 4.11-2.

TABLE 4.11-2 (Continued)

TABLE NOTATION

- b. Analyses shall also be performed following shutdown, startup, or a THERMAL POWER change exceeding 15 percent of RATED THERMAL POWER within a one hour period.
- c. Tritium grab samples shall be taken at least once per 24 hours when the refueling canal is flooded.
- d. Samples shall be changed at least once per 7 days and analyses shall be completed within 48 hours after changing (or after removal from sampler). Sampling shall also be performed at least once per 24 hours for at least 7 days following each shutdown, startup or THERMAL POWER level change exceeding 15% of RATED THERMAL POWER in one hour and analysis shall be completed within 48 hours of changing. When samples collected for 24 hours are analyzed, the corresponding LLD's may be increased by a factor of 10.
- e. Tritium grab samples shall be taken at least once per 7 days from the ventilation exhaust from the spent fuel pool area, whenever spent fuel is in the spent fuel pool.
- f. The ratio of the sample flow rate to the sampled stream flow rate shall be known for the time period covered by each dose or dose rate calculation made in accordance with Specifications 3.11.2.1, 3.11.2.2 and 3.11.2.3.
- g. The principal gamma emitters for which the LLD specification applies exclusively are the following radionuclides: Kr-87, Kr-88, Xe-133, Xe-133m, Xe-135, and Xe-138 for gaseous emissions and Mn-54, Fe-59, Co-58, Co-60, Zn-65, Mo-99, Cs-134, Cs-137, Ce-141 and Ce-144 for particulate emissions. This list does not mean that only these nuclides are to be detected and reported. Other peaks which are measureable and identifiable, together with the above nuclides, shall also be identified and report.
- h. During releases via this exhaust system.
- i. Upper and lower compartments will be sampled prior to purging. The incore instrument room purge sample will be obtained at the shield building exhaust between 5 and 10 minutes following initiation of the incore instrument room purge. These requirements are only applicable during MODES 1, 2, 3, 4 and during fuel movement.

ADMINISTRATIVE CONTROLS

- h. Errors discovered in the transient or accident analyses or in the methods used for such analyses as described in the safety analysis report or in the bases for the technical specifications that have or could have permitted reactor operation in a manner less conservative than assumed in the analyses.
- i. Performance of structures, systems, or components that requires remedial action or corrective measures to prevent operation in a manner less conservative than assumed in the accident analyses in the safety analysis report or technical specifications bases; or discovery during unit life of conditions not specifically considered in the safety analysis report or technical specifications that require remedial action or corrective measures to prevent the existence or development of an unsafe condition.
- j. Offsite releases of radioactive materials in liquid and gaseous effluents which exceed the limits of Specification 3.11.1.1 or 3.11.2.1.
- k. Exceeding the limits in Specification 3.11.1.4 or 3.11.2.6 for the storage of radioactive materials in the listed tanks. The written follow-up report shall include a schedule and a description of activities planned and/or taken to reduce the contents to within the specified limits.

THIRTY DAY WRITTEN REPORTS

6.9.1.13 The types of events listed below shall be the subject of written reports to the Director of the Regional Office within thirty days of occurrence of the event. The written report shall include, as a minimum, a completed copy of a licensee event report form. Information provided on the licensee event report form shall be supplemented, as needed, by additional narrative material to provide complete explanation of the circumstances surrounding the event.

- a. Reactor protection system or engineered safety feature instrument settings which are found to be less conservative than those established by the technical specifications but which do not prevent the fulfillment of the functional requirements of affected systems.
- b. Conditions leading to operation in a degraded mode permitted by a limiting condition for operation or plant shutdown required by a limiting condition for operation.
- c. Observed inadequacies in the implementation of administrative or procedural controls which threaten to cause reduction of degree of redundancy provided in reactor protection systems or engineered safety feature systems.
- d. Abnormal degradation of systems other than those specified in 6.9.1.12.c above designed to contain radioactive material resulting from the fission process.

8.1 SPECIFICATION 3/4.11.1

Prior to initial criticality, the requirements for sampling and analysis for items A.6, A.7, and A.9 in Table 4.11-1 may be waived provided the release is through the turbine building sump (item B.2 of the Table 4.11-1).

8.2 SPECIFICATION 4.8.1.1.2c

The surveillance requirements for verifying diesel generator voltage and frequency during diesel generator starts is waived for the original surveillance interval only.

8.3 SPECIFICATION 4.7.8.1, ITEM D 3

The 1/4 inch negative pressure requirement within the spent fuel storage area and ESF pump rooms is waived during the low power test program. However, the auxiliary building gas treatment system shall be capable of maintaining these areas at a slight negative pressure during this period.

8.4 SPECIFICATION 3.3.3.10, TABLE 3.3-13, ITEM 33

Flow rates for ventilation systems for the shield building exhaust, auxiliary building and service building may be estimated using the design flow rate for the appropriate fans. This interim waiver extends the 30-day limit for 18 months from the issuance of this license. This waiver is considered to be an interim measure until flow rate monitors for the ventilation system for these structures can be repaired or replaced.

8.5 SPECIFICATION 3.3.3.9, TABLE 3.3-12, ITEM 30

Prior to initial criticality, discharge from the Cooling Tower Blowdown Effluent line may continue with an inoperable flow monitor provided that flow is estimated every 4 hours during discharge. This interim waiver extends the 30 day limit until initial criticality.

ENCLOSURE 2

REASONS AND JUSTIFICATIONS
FOR PROPOSED CHANGES TO SEQUOYAH UNIT 1
TECHNICAL SPECIFICATIONS

1. TABLE 2.2-1, PAGE 2-7

The reactor trip logic was modified at NRC request. However, the draft technical specifications were incorrectly prepared. This change reflects the NRC approved reactor trip logic.

2. ACTION 36, PAGE 3/4 3-77

The present wording of ACTION 36 allows no time for the channel (iodine or particulate sampler) to be inoperable before auxiliary sampling starts. This change would allow us four hours to correct the situation or start auxiliary sampling without requiring prompt LER notification. The 30-day idea is consistent with the general philosophy of standard technical specifications.

3. SPECIFICATION 3.7.1.2, PAGE 3/4 7-5

The steam driven auxiliary feedwater pump cannot be demonstrated OPERABLE before entering MODE 3; there is not sufficient steam available in MODE 4. This change should be considered generic to all PWR standard technical specifications.

4. SPECIFICATION 3.9.1, PAGE 3/4 9-1

The present valve list does not allow for makeup to the Refueling Water Storage Tank during MODE 6. The proposed change allows for makeup while still preventing an inadvertent dilution of the reactor coolant system.

5. SPECIFICATION 3.10.5, PAGE 3/4 10-5

Position indication calibration is done with bank withdrawal, not individual control rod assembly withdrawal. This change is consistent with Westinghouse standard technical specifications.

6. SPECIFICATION 3.11.1.1, PAGE 3/4 11-1

This change reflects the fact that only the batch releases from the radwaste system will have radioactivity content determined before release. Batch releases from the condensate demineralizer regenerant tanks will be sampled with a composite sampler during release.

7. TABLE 4.11-1, PAGE 3/4 11-2 & 3/4 11-2a

This change separates the releases from the radwaste system and the condensate demineralizer regenerant tanks. The radwaste system releases will be batch type with sampling and analysis before release. The condensate demineralizer regenerant tank releases will be batch with the release path subject to composite sampling during release. The release path for demineralizer regenerant tanks is equipped with a radiation monitor that has isolation capabilities which will prevent releases of liquid with unusually high concentrations of radioactive materials.

8. SPECIFICATION 3.11.2.1, PAGE 3/4 11-8

The present specification is applicable at all times. The change that is proposed will allow for some relaxation of the sampling requirements during MODES 5 and 6. The specific relaxation request is listed below.

9. TABLE 4.11-2, PAGE 3/4 11-11

The present sampling requirement for containment purging requires a grab sample analysis before initiation of containment purge from any compartment. The proposed change eliminates the sampling requirement during the periods when containment integrity is not required, namely MODE 5 and MODE 6 when fuel is not being moved. This change would enable us to start and stop the purge fans without having to grab sample an open containment. The containment purge fans exhaust to the shield building vent which is continuously monitored and sampled on a regular basis.

10. SPECIFICATION 6.9.1.13, PAGE 6-21

Correction, specification 6.9.1.8.c does not exist.

11. SPECIFICATION 8.5, PAGE 8-1

The flow monitor is not functioning properly, and we do not expect to have it repaired before the 30-day outage limit expires on April 2, 1980. We are proposing a change to allow us to extend the outage time until initial criticality. All sampling requirements and limits will be met before release. Flowrates will be estimated during the release periods. In addition, no radiological hazard will exist until initial criticality.