Duke Power Company
Oconee Nuclear Station

Proposed Technical Specification Revision

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3.10.4 Waste Gas Holdup Tanks

a. The quantity of radioactivity contained in each waste gas holdup tank shall be limited to $\leq$ 3.8E+05 curies noble gases (considered as Xe-133).

b. Daily, when radioactive materials are being added to a waste gas holdup tank, the quantity of radioactive material contained in the tank being filled shall be determined.

c. If the quantity of radioactive material in any waste gas holdup tank exceeds the above limit, without delay suspend all additions of radioactive material to the tank and within 48 hours, reduce the tank contents to within the above limit.

3.10.5 Used Oil Incineration

Used oil, contaminated by radioactivity, may be incinerated in the Station auxiliary boiler provided releases do not exceed one-tenth of one percent (0.1%) of the limits in Technical Specification 3.10.2.b.2.

3.10.6 Explosive Gas Mixture

a. The concentration limit of hydrogen in the Waste Gas Holdup Tanks is 3% by volume.

b. If the concentration of hydrogen in the Waste Gas Holdup Tanks exceeds 3% by volume, but is less than or equal to 4% by volume, then within 48 hours, reduce the concentration of hydrogen to within the limit.

c. If the concentration of hydrogen in the Waste Gas Holdup Tanks exceeds 4% by volume, then promptly suspend all additions of waste gases to the tank, and within 24 hours, reduce the concentration of hydrogen to within the limit.

3.10.7 The provisions of Technical Specifications 3.0 do not apply.

Bases

Specification 3.10.1 is provided to assure that the dose rate at anytime at the exclusion area boundary from gaseous effluents from all units on the site will be within the annual dose limits of 10 CFR Part 20 for unrestricted areas. The annual dose limits are the doses associated with the concentrations of 10 CFR Part 20, Appendix B, Table II. These limits provide reasonable assurance that radioactivity material discharged in gaseous effluents will not result in the exposure of an individual in an unrestricted area, either within or outside the exclusion area boundary, to annual average concentrations exceeding the limits specified in Appendix B, Table II of 10 CFR Part 20 (10 CFR Part 20.106(b)). For individuals who may at times be within the exclusion area boundary, the occupancy of the individual will be sufficiently low to compensate for any increase in the atmospheric diffusion factor above that for the exclusion area boundary. The specified release rate limits restrict, at all times, the corresponding gamma and beta dose rates above background to an

individual at or beyond the exclusion area boundary to $\leq$ 500 mrem/year to the total body or to $\leq$ 3000 mrem/year to the skin. These release rate limits also restrict, at all times, the corresponding thyroid rate above background to an infant via the milk animal-milk-infant pathway to $\leq$ 1500 mrem/year for the nearest milk animal to the plant.

Specification 3.10.3 is provided to implement the requirements of Appendix I, 10 CFR Part 50. The specification provides the required operating flexibility and at the same time implement the guides set forth in Appendix I to assure that the releases of radioactive material in gaseous effluents will be kept "as low as is reasonably achievable." Surveillance requirements are implemented to meet the requirements of Appendix I. Calculational procedures based on models and data show that the actual exposure of an individual through the appropriate pathways is unlikely to be substantially underestimated.

The ODCM calculational methods for calculating the doses due to the actual release rates of the subject materials will be consistent with the methodology provided in Regulatory Guide 1.109, "Calculating of Annual Doses to Man from Routine Releases of Reactor Effluents for the Purpose of Evaluating Compliance with 10 CFR Part 50, Appendix I, "Revision I, October 1977 and Regulatory Guide 1.111, "Methods for Estimating Atmospheric Transport and Dispersion of Gaseous Effluents in Routine Releases from Light-Water-Cooled Reactors."

Equations in the ODCM are provided for determining the actual doses based upon the historical average atmospheric conditions. The release rate specifications for radioiodines, radioactive material in particulate form and radionuclides other than noble gases are dependent on the existing radionuclide pathways to man, in the unrestricted area. The pathways which are examined in the development of these calculations are: 1) individual inhalation of airborne radionuclides, 2) deposition of radionuclides onto green leafy vegetation with subsequent consumption by man, 3) deposition onto grassy areas where milk animals and meat producing animals graze with consumption of the milk and meat by man, and 4) deposition on the ground with subsequent exposure of man.

The requirement that the appropriate portions of these systems be used when specified provides reasonable assurance that the release of radioactive materials in gaseous effluents will be kept "as low as is reasonably achievable." This specification implements the requirements of 10 CFR Part 50.36a, General Design Criterion 60 of Appendix A to 10 CFR Part 50, and design objective Section IID of Appendix I to 10 CFR Part 50.

Restricting the quantity of radioactivity contained in each waste gas holdup tank provides assurance that in the event of an uncontrolled release of the tanks contents, the resulting total body exposure to an individual at the nearest exclusion area boundary will not exceed 0.5 rem.

Specification 3.10.6 is provided to ensure that the concentration of potentially explosive gas mixtures contained in the Waste Gas Holdup Tanks is maintained below the flammability limits of hydrogen. (Administrative controls are used to prevent the hydrogen concentrations from reaching the flammability limit.) These controls include sampling each tank 5 times a week while in service, and/or once in 24 hours after isolation of the tank; injection of dilutants to reduce the concentration of hydrogen below its flammability limits provides assurance that the releases of radioactive materials will be controlled in conformance with the requirements of General Design Criterion 60 of Appendix A to 10CFR Part 50.

TABLE 4.1-3 Continued

Minimum Sampling Frequency And Analysis Program

	Item	Check	Frequency	Lower Limit of Detection[5] of Lab Analysis for Waste
8a.	Waste Gas Decay Tank	a. Principal Gamma Emitters[7]	a. Grab Sample prior to release of each batch	a. $<10^{-4}$ µCi/cc (gases) $<10^{-10}$ µCi/cc (particulates and iodines)
		b. Tritium	b. Grab sample prior to release of each batch	b. $<10^{-6}$ µCi/cc
8b.	Reactor Building	a. Principal Gamma Emitters[7]	a. Grab Sample each purge	a. $<10^{-4}$ µCi/cc (gases) $<10^{-10}$ µCi/cc (particulates and iodines)
		b. Tritium	b. Grab Sample each purge	b. $<10^{-6}$ µCi/cc
9.	Keowee Hydro Dam Dilution Flow	Measure Leakage Flow Rate	Annually	
10.	Delete			
11.	Backwash Receiving Tanks	Principle Gamma Emitters including dissolved noble gases	Grab Sample prior to release of each batch	
12.	#3 Chemical Treatment Pond Effluent	a. Principal Gamma Emitters[6]	a. Monthly from composite sample[10]	a. Ce-144 and Mo-99 $<5x10^{-6}$ µCi/ml Other Gamma Nuclides $<5x10^{-7}$ µCi/ml Dissolved Gases $<10^{-5}$ µCi/ml I-131 $<10^{-6}$ µCi/ml
		b. Radiochemical Analysis Sr-89, Sr-90, Fe-55	b. Quarterly from composite sample[9]	b. $<5x10^{-8}$ µCi/ml for Sr's $<10^{-6}$ µCi/ml for Fe-55
		c. Tritium	c. Monthly from composite sample[10]	c. $<10^{-5}$ µCi/ml
		d. Gross Alpha Activity	d. Monthly from composite sample[10]	d. $<10^{-7}$ µCi/ml
13.	Waste Gas Holdup Tank	Hydrogen Concentration	5 times/week on each tank while in service and/or once in 24 hours after isolation of the tank	

3.17 FIRE PROTECTION AND DETECTION SYSTEMS

Applicability

This specification applies to the operability of fire protection and detection systems when equipment protected by those systems is required to be operable.

Objective

To assure the operability of fire protection and detection systems which protect systems and equipment required for safe shutdown.

Specification

3.17.1 The minimum fire detection instrumentation for each fire detection zone shown in Table 3.17-1 shall be operable. The fire detection instruments located within the containment are not required to be operable during the performance of Type A Containment Leakage Rate Tests. When this specification is determined not to be met, appropriate action shall be taken consisting of one or more of the following:

1. Within 1 hour, a fire watch patrol shall be established to inspect an accessible zone with the inoperable instrumentation at least once per hour.

2. The inoperable instrumentation shall be restored to operable status within 14 days or a report shall be submitted to the Commission within the next 30 days outlining the action taken, the cause of the inoperability and the plans and schedule for restoring the instrumentation to operable status. Continued operation of the affected unit is permitted provided that this condition is met. Operation under this specification is not considered to be in a degraded mode and thus is not reportable under Technical Specification 6.6.2.1.

3.17.2 The Fire Suppression Water System shall be operable. This system shall consist of 2 High Pressure Service Water (HPSW) pumps with a design capacity of 6000 gpm each and automatic initiation logic, and the associated piping and valves supplying water to the sprinkler systems and fire hose stations. The HPSW pumps shall be aligned to the high pressure fire header. When this specification is determined not to be met, appropriate action shall be taken consisting of the following:

1. The inoperable equipment shall be restored to operable status within 7 days or a report shall be submitted to the Commission within the next 30 days outlining the plans and procedures to be used to provide for the loss of redundancy in this system. Continued operation of the affected unit is permitted provided that this condition is met. Operation under this specification is not considered to be in a degraded mode and thus is not reportable under Technical Specification 6.6.2.1.

2. With no Fire Suppression Water System operable, in lieu of the above, the following action shall be taken.

   a. Within 24 hours a backup Fire Suppression Water System shall be established. If a backup Fire Suppression Water System cannot be established within 24 hours, place the reactor in Hot Standby within the next twelve (12) hours and in cold shutdown within the following forty-eight (48) hours.

   b. Within 24 hours the Commission shall be notified by telephone, and in writing no later than the first working day following the event.

   c. Within 14 days of the event, a report shall be submitted to the Commission outlining the action taken, the cause of the inoperability and the plans and schedule for restoring the system to operable status.

3.17.3 The sprinkler and spray systems in safety related areas listed in Table 3.17-1 shall be operable. If a system is determined to be inoperable, the following corrective action shall be taken.

1. A continuous fire watch with backup fire suppression equipment shall be established in the area within 1 hour.

2. The sprinkler or spray system shall be restored to operable status within 14 days or a report shall be submitted to the Commission within the next 30 days outlining the cause of inoperability and the plans for restoring the system to operable status. Continued operation of the affected unit is permitted provided that this condition is met. Operation under this specification is not considered to be a degraded mode and thus is not reportable under Technical Specification 6.6.2.1.

3.17.4 The automatic CO_2 system provided for the generators at the Keowee Hydro Station shall be operable. If the system is determined to be inoperable the following corrective action shall be taken:

1. A continuous fire watch with backup fire suppression equipment shall be established in the area within 1 hour.

2. The CO_2 system shall be restored to operable status within 14 days or a report shall be submitted to the Commission within the next 30 days outlining the cause of inoperability and the plans for restoring the system to operable status. Continued operation of the affected reactor unit is permitted provided that this condition is met. Operation under this specification is not considered to be in a degraded mode and thus is not reportable under Technical specification 6.6.2.1.

3.17.5 The fire hose stations listed in Table 3.17-1 shall be operable or the following action shall be taken:

1. If a fire hose station listed in Table 3.17.1 is inoperable, an additional equivalent capacity fire hose of length sufficient to reach the unprotected area shall be provided at an operable hose station within 1 hour.

2. If the inoperable fire hose station cannot be restored to operable status within 14 days, continued operation of the affected unit is permitted provided that within the next 30 days a report is submitted to the Commission outlining the cause of the inoperability, actions taken, and the plans for restoring the system to operable status. Operation under this specification is not considered to be a degraded mode and is not reportable under Tech. Spec. 6.6.2.1.

3.17.6 All fire barrier penetrations (including cable penetration barriers, fire doors, fire dampers) protecting safety related areas shall be operable.

If a fire barrier protecting a safety-related area is determined to be inoperable, the operability status of the fire detection instrumentation for the affected safety related area(s) shall be determined within 1 hour, and the following action shall be taken:

1. If the fire detection instrumentation for the affected area(s) is operable, a fire watch patrol shall be established to inspect the area at least once per hour.

2. If the fire detection instrumentation is inoperable, a continuous fire watch shall be established within the next hour on at least one side of the affected penetration fire barrier. The non-functional fire barrier penetration(s) shall be restored to functional status within 7 days.

3. If the non-functional fire barrier penetration(s) cannot be restored to functional status within 7 days, continued operation of the affected unit is permitted provided that within the next 30 days, a report is submitted to the Commission outlining the cause of the inoperability and the plans for restoring the system to operable status. Operation under this specification is not considered to be a degraded mode and is not reportable under Technical Specification 6.6.2.1.

Bases

Operability of the fire detection instrumentation ensures that adequate warnings capability is available for the prompt detection of fires. This capability is required in order to detect and locate fires in their early stages. Prompt detection of fires will reduce the potential for damage to safety related equipment and is an integral element in the overall facility fire protection program.

6.2 ACTION TO BE TAKEN IN THE EVENT OF A REPORTABLE EVENT

6.2.1 Any reportable event shall be investigated promptly by the station Manager.

6.2.2 The Vice President, Nuclear Production Department shall be notified of any reportable event. A written report shall be prepared which describes the circumstances leading up to and resulting from the incident and shall recommend appropriate action to prevent or minimize the probability of a recurrence. The report shall be submitted to the Vice President, Nuclear Production Department, and the Director of the Nuclear Safety Review Board.

6.2.3 The Commission shall be notified and/or a report submitted pursuant to the requirements of Specification 6.6.2.

6.5 STATION OPERATING RECORDS

Specification

6.5.1 The following records shall be prepared and permanently retained in a manner convenient for review:

a. Records of modifications to the station as described in the FSAR.

b. Special nuclear material physical inventory records.

c. Special nuclear material isotopic inventory records.

d. Radiation monitoring records, including records of radiation and contamination surveys.

e. Records of off-site environmental surveys.

f. Personnel radiation exposure records as required by 10CFR20.

g. Records of radioactive releases and waste disposal.

h. Records of reactor coolant system in-service inspections.

i. Preoperational testing records.

j. Records of special reactor tests or experiments.

k. Records of changes to safety-related operating procedures.

l. Records for Environmental Qualification which are covered under the provisions of paragraph 6.7.

m. Records of the seal service lives of hydraulic snubbers.

6.5.2 The following records shall be prepared and retained for a minimum of six (6) years in a manner convenient for review:

a. Switchboard Record.

b. Reactor Operations Logbook.

c. Shift Supervisor Logbook.

d. Maintenance histories for station safety-related structures, systems and components.

e. Records of safety-related inspections, other than reactor coolant system in-service inspections.

f. Records of reportable events.

g. Periodic testing records and records of other periodic checks, calibrations, etc. performed in accordance with surveillance requirements for safety-related parameters, structures, systems and components.

6.6.2 Non-Routine Reports

6.6.2.1 Reportable Events

Reporting requirements for Licensee Event Reports are contained in 10 CFR 50, §50.73.

6.6.2.2 Environmental Monitoring

a. If individual milk samples show I-131 concentrations of 10 picocuries per liter or greater, a plan shall be submitted within one week advising the NRC of the proposed action to ensure the plant related annual doses will be within the design objective of 45 mrem/yr to the thyroid of any individual.

b. If milk samples collected over a calendar quarter show average concentrations of 4.8 picocuries per liter or greater, a plan shall be submitted within 30 days advising the NRC of the proposed action to ensure the plant related annual doses will be within the design objective of 45 mrem/yr to the thyroid of any individual.

6.6.3 Special Reports

Special reports shall be submitted to the Regional Administrator, 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 reference specification:

a. Single Loop Restrictions, Specification 3.1.8

b. Auxiliary Electricl Systems, Specification 3.7

c. Radioactive Liquid Effluents,
   Dose, Specification 3.9.2
   Liquid Waste Treatment, Specification 3.9.3
   Chemical Treatment Ponds, Specification 3.9.4

d. Radioactive Gaseous Effluents,
   Dose, Specification 3.10.2
   Gaseous Radwaste Treatment, Specification 3.10.3

e. Fire Protection and Detection Systems, Specification 3.17

f. Reactor Coolant System Surveillance,
   Inservice Inspection, Specification 4.2.1
   Reactor Vessel Specimen, Specification 4.2.4

g. Reactor Building Surveillance,
   Containment Leakage Tests, Specification 4.4.1

h. Structural Integrity Surveillance,
   Tendon Surveillance, Specification 4.4.2.2

i. Radiological Environmental Monitoring
   Program, Specification 4.11.1
   Land Use Census, Specification 4.11.2

j. Dose Calculations (40 CFR 190), Specification 4.21