

Attachment to  
NSD940383  
April 12, 1994

MARKED-UP AFFECTED TECHNICAL SPECIFICATION PAGES

9404190208 940412  
PDR ADOCK 05000298  
P FDR

W.A. Solidification - SOLIDIFICATION shall be the conversion of radioactive wastes from liquid systems to a solid which is as uniformly distributed as reasonably achievable with definite volume and shape, bounded by a stable surface of distinct outline on all sides (free-standing).

X. Spiral Reload - Pertains to the spiral reloading of the core with fuel, at least 50% of which has previously accumulated a minimum exposure of 1000 MWD/T.

Y. Surveillance Frequency - Surveillance requirements shall be applicable during the operational conditions associated with individual LCO's unless otherwise stated in an individual Surveillance Requirement.

Each Surveillance Requirement shall be performed within the specified surveillance interval with a maximum allowable extension not to exceed 25% of the specified surveillance interval.

Performance of a Surveillance Requirement within the specified time interval shall constitute compliance with operability requirements for an LCO unless otherwise required by the specification.

The Surveillance Frequency establishes the limit for which the specified time interval for Surveillance Requirements may be extended. It permits an allowable extension of the normal surveillance interval to facilitate surveillance schedule and consideration of plant operating conditions that may not be suitable for conducting the surveillance; e.g., transient conditions or other ongoing surveillance or maintenance activities. It also provides flexibility to accommodate the length of a fuel cycle for surveillance that are performed at each refueling outage and are specified with an 18 month surveillance interval. It is not intended that this provision be used repeatedly as a convenience to extend surveillance intervals beyond that specified for surveillances that are not performed during refueling outages. The limitation of this definition is based on engineering judgement and the recognition that the most probable result of any particular surveillance being performed is the verification of conformance with the Surveillance Requirements. This provision is sufficient to ensure that the reliability ensured through surveillance activities is not significantly degraded beyond that obtained from the specified surveillance interval.

Z. Surveillance Interval - The surveillance interval is the calendar time between surveillance tests, checks, calibrations and examinations to be performed upon an instrument or component when it is required to be operable. These tests may be waived when the instrument, component or system is not required to be operable, but the instrument, component or system shall be tested prior to being declared operable or as practicable following its return to service.

Z.A. Venting - Venting is the controlled process of discharging air or gas from a confinement to establish temperature, pressure, humidity, concentration or other operating condition, in such a manner that replacement air or gas is not provided or required during venting. Vent, used in system names, does not imply a venting process.

Z.B. Offsite - Offsite means outside of the exclusion area as defined in 10CFR Part 100.3. The exclusion area boundary around Cooper Station is defined in Figure 1.1 and may also be referred to as the Site Boundary.

Nuclear

Z.C. Member of the Public - A Member of the Public is a person ~~who is not occupationally associated with NPPD and who does not normally frequent the Cooper Station. The category does not include contractors, contractor employees, vendors or persons who enter the site to make deliveries, to service equipment, or work on the site.~~

Replace with

in a controlled or unrestricted area who does not receive an occupational dose.

Page included "For Information Only". Due to revision to Proposed Change No. 117, this page is no longer affected by the proposed change.

AA. Core Operating Limits Report

The Core Operating Limits Report is the unit-specific document that provides core operating limits for the current reload cycle. These cycle-specific core operating limits shall be determined for each reload cycle in accordance with Specification 6.5.1.G. Plant operation within these core operating limits is addressed in individual specifications.

LIMITING CONDITION FOR OPERATION

SURVEILLANCE REQUIREMENTS

3.21 (Cont'd)

4.21 (Cont'd)

B. Liquid Effluents

B. Liquid Effluents

Applicability: At all times.

1. Concentration Station  
Specifications

Specification:

a. Radioactive liquid wastes shall be sampled and analyzed according to Table 4.21.B.1.

1. Concentration **20.1302**

b. The analytical results shall be used with methods in the ODAM to verify that the average concentration beyond the **site boundary** does not exceed Specification 3.21.B.1.a, when Sr-89, Sr-90 and Fe-55 concentrations are averaged over no more than 3 months and other radionuclide concentrations are averaged over no more than 31 days.

a. The concentration of radioactive material in water **Offsite** (Figure 1.1) due to radioactive liquid effluent shall not exceed the concentration specified in 10 CFR Part ~~20.106~~ for radionuclides other than dissolved or entrained noble gases. For dissolved or entrained noble gases, the concentration shall not exceed  $2 \times 10^{-4}$   $\mu\text{Ci/ml}$  total activity.

b. With the concentration of radioactive material released **Offsite** exceeding the limit, attend to the cause without delay and restore the concentration within the above limit.

c. The provisions of Specification 6.5.2 do not apply.

{ Capitalized (All caps) }  
{ All Defined Terms }

3.21 & 4.21 BASES

3.21.A & 4.21.A INSTRUMENTATION

3.21.A.1 & 4.21.A.1 Liquid Effluent Monitoring

The radioactive liquid effluent instrumentation is provided to monitor and control, as applicable, the release of radioactive material in liquid effluents. The OPERABILITY and use of these instruments implements the requirements of 10 CFR Part 50, Appendix A, General Design Criteria 60, 63, and 64. The alarm and/or trip setpoints for these instruments are calculated in the manner described in the ODAM to assure that the alarm and/or trip will occur before the limit specified in 10 CFR Part 20.106 is exceeded. Control of the normal liquid discharge pathway is assured by station procedures governing locked discharge valves and valve line-up verification. 1302

3.21.A.2 & 4.21.A.2 Gaseous Effluent Monitoring

The radioactive gaseous effluent instrumentation is provided to monitor and control, as applicable, the releases of radioactive materials in gaseous effluents during actual or potential releases of gaseous effluents. The location of this instrumentation is indicated by a Figure in the ODAM, a simplified flow diagram showing gaseous effluent treatment and monitoring equipment. The alarm/trip setpoints for these instruments shall be calculated in accordance with methods in the ODAM, which have been reviewed by NRC, to ensure that the alarm will occur prior to exceeding the limits of 10 CFR Part 20. The process monitoring instrumentation includes provisions for monitoring the concentrations of potentially explosive gas mixtures in the augmented offgas treatment system. The OPERABILITY and use of this instrumentation is consistent with the requirements of General Design Criteria 60, 63, and 64 of Appendix A to 10 CFR Part 50.

In the event no flow rate measurement device is operable on a gaseous stream, alternative 24-hour estimates are adequate since the system design is constant flow and loss of flow is alarmed in the control room.

3.21.B & 4.21.B LIQUID EFFLUENTS

20.1301 and 20.1302 (b)(2)(i)

3.21.B.1 & 4.21.B.1 Concentration

This specification is provided to ensure that the concentration of radioactive materials released in liquid waste effluents from the site to unrestricted areas will be less than the concentration levels specified in 10 CFR Part 20.106. This limitation provides additional assurance that the levels of radioactive materials in bodies of water outside the site will not result in exposures within (1) the Section IV.A guides on technical specifications in Appendix I, 10 CFR Part 50, for an individual and (2) the limits of 10 CFR Part 20.106 to the population. The concentration limit for noble gases is based upon the assumption that Xe-135 is the controlling radioisotope and its MPC in air (submersion) was converted to an equivalent concentration in water using the methods described in International Commission on Radiological Protection (ICRP) Publication 2. 1302

Since Service Water is not a normal or expected source of significant radioactive release, routine sampling and monitoring for radioactivity is precautionary. An activity concentration of  $3 \times 10^{-6}$   $\mu\text{Ci/ml}$  in Service Water effluent is diluted in the discharge canal to about 1.5% of the 10 CFR 20 Appendix B Table 2 Column 2 concentration with only one circulating water pump operating. During normal Station operation the dilution would be even greater. By monitoring Service Water effluent continuously for radioactivity and by confirmatory sampling weekly, reasonable assurance that its activity concentration can be kept to a small fraction of the 10 CFR Part 20.106 limit and within the Specification 3.21.B.2.a limit is provided. 1302

By monitoring Service Water continuously and liquid radwaste continuously during discharge with the monitor set to alarm or trip before the limit specified in 10 CFR 20.106 is exceeded, reasonable assurance of compliance with Specification 3.21.B.1.2 is provided. Verification that radioactivity in liquid effluent averaged only a small fraction of the concentration limit is provided by calculations demonstrating compliance with Specification 3.21.B.2.a.

Attachment to  
NSD940383  
April 12, 1994

REVISED AFFECTED TECHNICAL SPECIFICATION PAGES





- W.A. Solidification - SOLIDIFICATION shall be the conversion of radioactive wastes from liquid systems to a solid which is as uniformly distributed as reasonably achievable with definite volume and shape, bounded by a stable surface of distinct outline on all sides (free-standing).
- X. Spiral Reload - Pertains to the spiral reloading of the core with fuel, at least 50% of which has previously accumulated a minimum exposure of 1000 MWD/T.
- Y. Surveillance Frequency - Surveillance requirements shall be applicable during the operational conditions associated with individual LCO's unless otherwise stated in an individual Surveillance Requirement.
- Each Surveillance Requirement shall be performed within the specified surveillance interval with a maximum allowable extension not to exceed 25% of the specified surveillance interval.
- Performance of a Surveillance Requirement within the specified time interval shall constitute compliance with operability requirements for an LCO unless otherwise required by the specification.
- The Surveillance Frequency establishes the limit for which the specified time interval for Surveillance Requirements may be extended. It permits an allowable extension of the normal surveillance interval to facilitate surveillance schedule and consideration of plant operating conditions that may not be suitable for conducting the surveillance; e.g., transient conditions or other ongoing surveillance or maintenance activities. It also provides flexibility to accommodate the length of a fuel cycle for surveillance that are performed at each refueling outage and are specified with an 18 month surveillance interval. It is not intended that this provision be used repeatedly as a convenience to extend surveillance intervals beyond that specified for surveillances that are not performed during refueling outages. The limitation of this definition is based on engineering judgement and the recognition that the most probable result of any particular surveillance being performed is the verification of conformance with the Surveillance Requirements. This provision is sufficient to ensure that the reliability ensured through surveillance activities is not significantly degraded beyond that obtained from the specified surveillance interval.
- Z. Surveillance Interval - The surveillance interval is the calendar time between surveillance tests, checks, calibrations and examinations to be performed upon an instrument or component when it is required to be operable. These tests may be waived when the instrument, component or system is not required to be operable, but the instrument, component or system shall be tested prior to being declared operable or as practicable following its return to service.
- Z.A. Venting - Venting is the controlled process of discharging air or gas from a confinement to establish temperature, pressure, humidity, concentration or other operating condition, in such a manner that replacement air or gas is not provided or required during venting. Vent, used in system names, does not imply a venting process.
- Z.B. Offsite - Offsite means outside of the exclusion area as defined in 10CFR Part 100.3. The exclusion area boundary around Cooper Nuclear Station is defined in Figure 1.1 and may also be referred to as the Site Boundary.
- Z.C. Member of the Public - A Member of the Public is a person in a controlled or unrestricted area who does not receive an occupational dose.

LIMITING CONDITION FOR OPERATION

SURVEILLANCE REQUIREMENTS

3.21 (Cont'd)

B. Liquid Effluents

Applicability: At all times.

Specification:

1. Concentration

- a. The concentration of radioactive material in water OFFSITE (Figure 1.1) due to radioactive liquid effluent shall not exceed the concentration specified in 10 CFR Part 20.1302 for radionuclides other than dissolved or entrained noble gases. For dissolved or entrained noble gases, the concentration shall not exceed  $2 \times 10^{-4}$   $\mu\text{Ci/ml}$  total activity.
- b. With the concentration of radioactive material released OFFSITE exceeding the limit, attend to the cause without delay and restore the concentration within the above limit.
- c. The provisions of Specification 6.5.2 do not apply.

4.21 (Cont'd)

B. Liquid Effluents

1. Concentration

- a. Radioactive liquid wastes shall be sampled and analyzed according to Table 4.21.B.1.
- b. The analytical results shall be used with methods in the ODAM to verify that the average concentration beyond the SITE BOUNDARY does not exceed Specification 3.21.B.1.a, when Sr-89, Sr-90 and Fe-55 concentrations are averaged over no more than 3 months and other radionuclide concentrations are averaged over no more than 31 days.



### 3.21 & 4.21 BASES

#### 3.21.A & 4.21.A INSTRUMENTATION

##### 3.21.A.1 & 4.21.A.1 Liquid Effluent Monitoring

The radioactive liquid effluent instrumentation is provided to monitor and control, as applicable, the release of radioactive material in liquid effluents. The OPERABILITY and use of these instruments implements the requirements of 10 CFR Part 50, Appendix A, General Design Criteria 60, 63, and 64. The alarm and/or trip setpoints for these instruments are calculated in the manner described in the ODAM to assure that the alarm and/or trip will occur before the limit specified in 10 CFR Part 20.1302 is exceeded. Control of the normal liquid discharge pathway is assured by station procedures governing locked discharge valves and valve line-up verification.

##### 3.21.A.2 & 4.21.A.2 Gaseous Effluent Monitoring

The radioactive gaseous effluent instrumentation is provided to monitor and control, as applicable, the releases of radioactive materials in gaseous effluents during actual or potential releases of gaseous effluents. The location of this instrumentation is indicated by a Figure in the ODAM, a simplified flow diagram showing gaseous effluent treatment and monitoring equipment. The alarm/trip setpoints for these instruments shall be calculated in accordance with methods in the ODAM, which have been reviewed by NRC, to ensure that the alarm will occur prior to exceeding the limits of 10 CFR Part 20. The process monitoring instrumentation includes provisions for monitoring the concentrations of potentially explosive gas mixtures in the augmented offgas treatment system. The OPERABILITY and use of this instrumentation is consistent with the requirements of General Design Criteria 60, 63, and 64 of Appendix A to 10 CFR Part 50.

In the event no flow rate measurement device is operable on a gaseous stream, alternative 24-hour estimates are adequate since the system design is constant flow and loss of flow is alarmed in the control room.

#### 3.21.B & 4.21.B LIQUID EFFLUENTS

##### 3.21.B.1 & 4.21.B.1 Concentration

This specification is provided to ensure that the concentration of radioactive materials released in liquid waste effluents from the site to unrestricted areas will be less than the concentration levels specified in 10 CFR Part 20.1302. This limitation provides additional assurance that the levels of radioactive materials in bodies of water outside the site will not result in exposures within (1) the Section IV.A guides on technical specifications in Appendix I, 10 CFR Part 50, for an individual and (2) the limits of 10 CFR Part 20.1301 and 20.1302(b)(2)(i) to the population. The concentration limit for noble gases is based upon the assumption that Xe-135 is the controlling radioisotope and its MPC in air (submersion) was converted to an equivalent concentration in water using the methods described in International Commission on Radiological Protection (ICRP) Publication 2.

Since Service Water is not a normal or expected source of significant radioactive release, routine sampling and monitoring for radioactivity is precautionary. An activity concentration of  $3 \times 10^{-6}$   $\mu\text{Ci/ml}$  in Service Water effluent is diluted in the discharge canal to about 1.5% of the 10 CFR 20 Appendix B Table 2 Column 2 concentration with only one circulating water pump operating. During normal Station operation the dilution would be even greater. By monitoring Service Water effluent continuously for radioactivity and by confirmatory sampling weekly, reasonable assurance that its activity concentration can be kept to a small fraction of the 10 CFR Part 20.1302 limit and within the Specification 3.21.B.2 a limit is provided.

By monitoring Service Water continuously and liquid radwaste continuously during discharge with the monitor set to alarm or trip before the limit specified in 10 CFR 20.1302 is exceeded, reasonable assurance of compliance with Specification 3.21.B.1.2 is provided. Verification that radioactivity in liquid effluent averaged only a small fraction of the concentration limit is provided by calculations demonstrating compliance with Specification 3.21.B.2.a.