

U.S. Nuclear Regulatory Commission
LIC-93-0108

ATTACHMENT A

DEFINITIONS

$$\begin{aligned}\text{Dose Equivalent I-131 } (\mu\text{Ci/gm}) &= \mu\text{Ci/gm of I-131} \\ &+ 0.0361 \times \mu\text{Ci/gm of I-132} \\ &+ 0.270 \times \mu\text{Ci/gm of I-133} \\ &+ 0.0169 \times \mu\text{Ci/gm of I-134} \\ &+ 0.0838 \times \mu\text{Ci/gm of I-135}\end{aligned}$$

\bar{E} - Average Disintegration Energy

\bar{E} is the average (weighted in proportion to the concentration of each radionuclide in the reactor coolant at the time of sampling) of the sum of the average beta and gamma energies per disintegration, in MEV, for isotopes, other than iodines, with half lives greater than 15 minutes making up at least 95% of the total non-iodine radioactivity in the coolant.

Offsite Dose Calculation Manual (ODCM)

The document(s) that contain the methodology and parameters used in the calculations of offsite doses resulting from radioactive gaseous and liquid effluents, in the calculation of gaseous and liquid effluent radiation monitoring Warn/High (trip) Alarm setpoints, and in the conduct of the Environmental Radiological Monitoring Program. The ODCM shall also contain:

- 1) The Radiological Effluent Controls and the Radiological Environmental Monitoring Program required by Specification 5.16.
- 2) Descriptions of the information that should be included in the Annual Radiological Environmental Operating Report and ~~Semiannual~~Annual Radioactive Effluent Release Reports required by Specifications 5.9.4.a and 5.9.4.b.

Unrestricted Area

Any area at or beyond the site boundary access to which is not controlled by the licensee for purposes of protection of individuals from exposure to radiation and radioactive materials.

Core Operating Limits Report (COLR)

The Core Operating Limits Report (COLR) is a Fort Calhoun Station Unit No. 1 specific document that provides core operating limits for the current operating cycle. These cycle-specific core operating limits shall be determined for each reload cycle in accordance with Section 5.9.5. Plant operation within these operating limits is addressed in the individual specifications.

References

- (1) USAR, Section 7.2
- (2) USAR, Section 7.3

TABLE 2-10

POST-ACCIDENT MONITORING INSTRUMENTATION OPERATING LIMITS

<u>Instrument</u>	<u>Minimum Operable Channels</u>	<u>Action</u>
1. Containment Wide Range Radiation Monitors (RM-091A & B)	2	(a)
2. Wide Range Noble Gas Stack Monitor		
RM-063L RM-062(Noble Gas Portion Only)	1	(a)
RM-063M (Noble Gas Portion Only)	1	(a)
RM-063H (Noble Gas Portion Only)	1	(a)
3. Main Steam Line Radiation Monitor (RM-064)	1	(a)
4. Containment Hydrogen Monitor (VA-81A & B)	2	(b)(c)
5. Containment Water Level		
Narrow Range (LT-599 & LT-600)	1	(d)
Wide Range (LT-387 & LT-388)	2	(b)(c)
6. Containment Wide Range Pressure	2	(b)(c)
7. Reactor Coolant System Subcooled Margin Monitor	2	(e)(f)
8. Core Exit Thermocouples (i)	2/Core Quadrant	(g)(h)
9. Reactor Vessel Level (HJTC) (j)	2	(k)(l)
(a) With the number of OPERABLE channels less than required by the minimum channels operable requirements, initiate the pre-planned 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 5.9.3 within 14 days following the event outlining the action taken, the cause of the inoperability, and the plans and schedules for restoring the system to OPERABLE status.		
(b) With one channel inoperable, restore the inoperable monitor to OPERABLE status within 30 days or be in at least HOT SHUTDOWN within the next 12 hours.		

TABLE 3-3

**MINIMUM FREQUENCIES FOR CHECKS, CALIBRATIONS AND TESTING
OF MISCELLANEOUS INSTRUMENTATION AND CONTROLS**

<u>Channel Description</u>	<u>Surveillance Function</u>	<u>Frequency</u>	<u>Surveillance Method</u>
1. Primary CEA Position Indication System	a. Check	S	a. Comparison of output data with secondary CEAPIS.
	b. Test	M	b. Test of power dependent insertion limits, deviation, and sequence monitoring systems.
	c. Calibrate	R	c. Physically measured CEDM position used to verify system accuracy. Calibrate CEA position interlocks.
2. Secondary CEA Position Indication System	a. Check	S	a. Comparison of output data with primary CEAPIS.
	b. Test	M	b. Test of power dependent insertion limit, deviation, out-of-sequence, and overlap monitoring systems.
	c. Calibrate	R	c. Calibrate secondary CEA position indication system and CEA interlock alarms.
3. Area and Post Accident Radiation Monitors ⁽¹⁾	a. Check	D	a. Normal readings observed and internal test signals used to verify instrument operation.
	b. Test	M	b. Detector exposed to remote operated radiation check source or test signal.
	c. Calibrate	R	c. Secondary and Electronic calibration performed at refueling frequency. Primary calibration with exposure to radioactive sources only when required by the secondary and electronic calibration. RM-091 A/B - Calibration by electronic signal substitution is acceptable for all range decades above 10 R/hr. Calibration for at least one decade below 1- R/hr. shall be by means of calibrated radiation source.

(1) Post Accident Radiation Monitors are: ~~RM-063L/M/H~~ RM-062, RM-063, RM-064, and RM-091A/B. Area Radiation Monitors are: RM-070 thru RM-082, RM-084 thru RM-089, and RM-095 thru RM-098.

5.0 ADMINISTRATIVE CONTROLS

5.9.3 Special Reports

Special reports shall be submitted to the Regional Administrator of the appropriate NRC Regional Office 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 where appropriate:

- a. In-service inspection report, reference 3.3.
- b. Tendon surveillance, reference 3.5.
- c. Containment structural tests, reference 3.5.
- d. Special maintenance reports.
- e. Containment leak rate tests, reference 3.5.
- f. DELETED
- g. Materials radiation surveillance specimens reports, reference 3.3.
- h. Fire protection equipment outage, reference 2.19.
- i. Post-accident monitoring instrumentation, reference 2.21
- j. Electrical systems, reference 2.7(2).

5.9.4 Unique Reporting Requirements

a. Annual Radioactive Effluent Release Report

The Annual Radioactive Effluent Release Report covering the operation of the unit during the previous 12 months of operation shall be submitted before May 1 of each year. The report shall include a summary of the quantities of radioactive liquid and gaseous effluents and solid waste released from the unit. The material provided shall be 1) consistent with the objectives outlined in the ODCM and PCP, and 2) in conformance with 10 CFR 50.36a. and Section IV.B.1 of Appendix I to 10 CFR 50.

b. Annual Radiological Environmental Operating Report

The Annual Radiological Environmental Operating Report covering the operation of the unit during the previous calendar year shall be submitted before May 1 of each year. The report shall include summaries, interpretations, and analysis of trends of the results of the Radiological Environmental Monitoring Program for the reporting period. The material provided shall be consistent with the objectives outlined in (1) the ODCM and (2) Section IV.B.2, IV.B.3, and IV.C of Appendix I to 10 CFR 50.

5.0 ADMINISTRATIVE CONTROLS

5.11.1 In lieu of the "control device" ~~or "alarm signal"~~ required by paragraph 20.203(e)(2) 20.1601(a)(1)(2)(3) of 10 CFR Part 20, and as an alternative method allowed under 20.1601(c) each high radiation area (as defined in § 20.202(b)(3) 20.1601 of 10 CFR Part 20) in which the intensity of radiation is 1000 mrem/hr or less shall be barricaded and conspicuously posted as a high radiation area and entrance thereto shall be controlled by required issuance of a Radiation Work Permit.* Any individual or group of individuals permitted to enter such areas shall be provided with or accompanied by one or more of the following:

- a. A radiation monitoring device which continuously indicates the radiation dose rate in the area.
- b. A radiation monitoring device which continuously integrates the radiation dose rate in the area and alarms when a preset integrated dose is received. Entry into such areas with this monitoring device may be made after the dose rate level in the area has been established and personnel have been made knowledgeable of them.
- c. An individual qualified in radiation protection procedures who is equipped with a radiation dose rate monitoring device. This individual shall be responsible for providing positive control over the activities within the area and shall perform periodic radiation surveillance at the frequency specified by the Supervisor-Radiation Protection in the Radiation Work Permit.

5.11.2 The requirements of 5.11.1, above, shall also apply to each high radiation area in which the intensity of radiation is greater than 1000 mrem/hr (~~Very Restricted High Radiation Area~~). In addition, locked doors shall be provided to prevent unauthorized ~~enter~~ entry into such areas and the keys shall be maintained under the administrative control of the Shift Supervisor on duty and/or the Supervisor-Radiation Protection with the following exception:

- a. In lieu of the above, for accessible localized ~~Very Restricted High Radiation~~ areas located in large areas such as containment, where no lockable enclosure exists in the immediate vicinity of the ~~Very High Radiation area~~ to control access to the ~~Very Restricted High Radiation~~ area and no such enclosure can be readily constructed, then the ~~Very Restricted High Radiation~~ area shall be:
 - i. roped off such that an individual at the rope boundary is exposed to 1000 mrem/hr or less;
 - ii. conspicuously posted, and
 - iii. a flashing light shall be activated as a warning device.

*Radiation Protection personnel shall be exempt from the RWP issuance requirement during the performance of their assigned radiation protection duties, provided they comply with approved radiation protection procedures for entry into high radiation areas.

5.0 ADMINISTRATIVE CONTROLS

5.16 Radiological Effluents and Environmental Monitoring Programs

The following programs shall be established, implemented, and maintained.

5.16.1 Radioactive Effluent Controls Program

A program shall be provided conforming with 10 CFR 50.36a for control of radioactive effluents and for maintaining the doses to individuals in unrestricted areas from radioactive effluents as low as reasonably achievable. The program (1) shall be contained in the ODCM, (2) shall be implemented by operating procedures, and (3) shall include remedial actions to be taken whenever the program limits are exceeded. The program shall include the following elements:

- a. Limitations on the operability of radioactive liquid and gaseous radiation monitoring instrumentation including operability tests and setpoint determination in accordance with the methodology in the ODCM.
- b. Limitations on the concentration of radioactive material, other than dissolved or entrained noble gases, released in liquid effluents to unrestricted areas conforming to 10 times 10 CFR ~~Part 20.1001-~~ 20.2401, Appendix B, Table H2, Column 2. For dissolved or entrained noble gases, the concentration shall be limited to 2.0 E-04 $\mu\text{Ci/ml}$ total activity.
- c. Monitoring, sampling, and analysis of radioactive liquid and gaseous effluents in accordance with 10 CFR ~~20.106~~ 20.1302 and with the methodology and parameters in the ODCM.
- d. Limitations on the annual and quarterly doses or dose commitment to individuals in unrestricted areas from radioactive materials in liquid effluents released to unrestricted areas conforming to Appendix I to 10 CFR Part 50.
- e. Determination of cumulative doses from radioactive effluents for the current calendar quarter and current calendar year in accordance with the ODCM on a quarterly basis.
- f. Limitations on the operability and use of the liquid and gaseous effluent treatment systems to ensure that the appropriate portions of these systems are used to reduce releases of radioactivity in plant effluents.

5.0 ADMINISTRATIVE CONTROLS

5.16 Radiological Effluents and Environmental Monitoring Programs (continued)

- g. Limitations on the concentration resulting from radioactive material released in gaseous effluents to unrestricted areas conforming to 10 times 10 CFR Part 20.1001-20.2401, Appendix B, Table H2, Column 1.
- h. Limitations on the annual and quarterly air doses resulting from noble gases released in gaseous effluents to unrestricted areas conforming to Appendix I to 10 CFR Part 50.
- i. Limitations on the annual and quarterly doses to an individual beyond the site boundary from Iodine-131, tritium, and all radionuclides in particulate form with half lives greater than 8 days in gaseous effluents released to unrestricted areas conforming to Appendix I to 10 CFR Part 50.
- j. Limitations on the annual dose or dose commitment to an individual beyond the site boundary due to releases of radioactivity and to radiation from uranium fuel cycle sources conforming to 40 CFR Part 190.

5.16.2 Radiological Environmental Monitoring Program

A program shall be provided to monitor the radiation and radionuclides in the environs of the plant. The program shall provide (1) representative measurements of radioactivity in the highest potential exposure pathways, and (2) verification of the accuracy of the effluent monitoring program and modeling of environmental exposure pathways. The program shall (1) be contained in the ODCM, (2) conform to the guidance of Appendix I to 10 CFR Part 50, and (3) include the following:

- a. Monitoring, sampling, analysis, and reporting of radiation and radionuclides in the environment in accordance with the methodology and parameters in the ODCM.
- b. A Land Use Census to ensure that changes in the use of areas at and beyond the site boundary are identified and that modifications to the monitoring program are made if required by the results of this census.
- c. Participation in an Interlaboratory Comparison Program to ensure that independent checks on the precision and accuracy of the measurements of radioactive materials in environmental sample matrices are performed as part of the quality assurance program for environmental monitoring.

5.0 ADMINISTRATIVE CONTROLS

5.17 Offsite Dose Calculation Manual (ODCM)

Changes to the ODCM:

- a. Shall be documented and records of reviews performed shall be retained as required by Specification 5.10.2.o. This documentation shall contain:
 1. Sufficient information to support the change together with the appropriate analyses or evaluations justifying the change(s) and
 2. A determination that the change will maintain the level of radioactive effluent control required by 10 CFR ~~20.106~~ 20.1302, 40 CFR Part 190, 10 CFR Part 50.36a, and Appendix I to 10 CFR Part 50 and not adversely impact the accuracy or reliability of effluent, dose, or setpoint calculations.
- b. Shall become effective after review and acceptance by the Plant Review Committee and the approval of the Manager - Fort Calhoun Station.
- c. Temporary changes to the ODCM may be made in accordance with Technical Specification 5.8.3.
- d. Shall be submitted to the Nuclear Regulatory Commission in the form of a complete, legible copy of the entire ODCM as a part of or concurrent with the Annual Radioactive Effluent Release Report for the period of the report in which any change to the ODCM was made. Each change shall be identified by markings in the margin of the affected pages, clearly indicating the area of the page that was changed and shall indicate the date (e.g., month/year) the change was implemented.

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ATTACHMENT B

DISCUSSION, JUSTIFICATION AND NO SIGNIFICANT HAZARDS CONSIDERATIONS

DISCUSSION AND JUSTIFICATION

The Omaha Public Power District (OPPD) proposes to revise the Fort Calhoun Station Unit No. 1 Technical Specifications to reflect the relocation of the old 10 CFR 20.106 requirements to the new 10 CFR 20.1302, and implement administrative changes.

CHANGES PROPOSED TO IMPLEMENT THE NEW 10 CFR PART 20

Specifications 5.11.1, 5.16.1c., and 5.17a. are being revised to incorporate requirements in order to implement the new 10 CFR Part 20. The changes consist of revising the references to Part 20 subsections to reflect the new Part 20 subsection numbers, and revising the term "Very High Radiation Area" to "Restricted High Radiation Area." "Very High Radiation Area" is a term defined in the new 10 CFR Part 20, therefore the definition in the Technical Specifications is being revised so that it does not conflict with the new 10 CFR Part 20 definition.

In addition, it is proposed to implement changes to the release rate limit in order to accommodate needed operational flexibility to facilitate implementation of the new 10 CFR 20 requirements, which consist of limiting releases to 10 times the values allowed by 10 CFR 20.1001-20.2401, Appendix B, Table 2, Column 2.

The basic requirements for Technical Specifications (TS) concerning effluents from nuclear power reactors are stated in 10 CFR 50.36a. These requirements indicate that compliance with effluent TS will keep average annual releases of radioactive material in effluents to small percentages of the limits specified in the old 10 CFR 20.106 (new 20.1302). These requirements further indicate that operational flexibility is allowed, compatible with considerations of health and safety, which may temporarily result in releases higher than such small percentages, but still within the limits specified in the old 10 CFR 20.106 which references Appendix B, Table II concentrations (MPCs). These referenced concentrations are specific values which relate to an annual dose of 500 mrem. It is further indicated in 10 CFR 50.36a, that when using operational flexibility, best efforts shall be exerted to keep levels of radioactive materials in effluents as low as reasonably achievable (ALARA) as set forth in 10 CFR 50, Appendix I.

As stated in the Introduction to Appendix B of the new 10 CFR Part 20, the liquid and gaseous effluent concentration (EC) limits given in Appendix B, Table 2, are based on an annual dose of 50 mrem. Since a release concentration corresponding to a limiting dose rate of 500 mrem/year at the site boundary has been acceptable as a TS limit for effluents, which applies at all times as an assurance that the limits of 10 CFR 50, Appendix I are not likely to be exceeded, it should not be necessary to reduce this limit by a factor of 10.

Operational history at Fort Calhoun Station has demonstrated that the use of the concentration values associated with the old 10 CFR 20.106 as a TS limit has resulted in calculated maximum individual doses to a member of the public that are small percentages of the limits of 10 CFR 50, Appendix I. Therefore, the use of concentration values which correspond to an annual dose of 500 mrem (ten times the concentration values stated in the new 10 CFR 20, Appendix B, Table 2) is not expected to have a negative impact on the ability to continue to operate within the limits of 10 CFR 50, Appendix I and 40 CFR Part 190.

Having sufficient operational flexibility is especially important in establishing a basis for effluent monitor setpoint calculations. As discussed above, the concentrations stated in the new 10 CFR 20, Appendix B, Table 2, relate to a dose of 50 mrem in a year. This low value is impractical upon which to base effluent monitor setpoint calculations for many effluent release situations when monitor background, monitor sensitivity, and monitor performance must be taken into account.

Compliance with the limits of the new 10 CFR 20.1301 will be demonstrated by operating within the limits of 10 CFR 50, Appendix I and 40 CFR Part 190.

ADMINISTRATIVE CHANGES

The definition of the Offsite Dose Calculation Manual is being revised to reflect the change of the Semiannual Radioactive Effluent Report to the Annual Radioactive Effluents Report consistent with Amendment 152.

Specification 2.21, Table 2-10, Item No. 2, and Specification 3.1, Table 3-3, Item No. 3 are being revised to reflect a change in equipment identification numbers. Modification MR-FC-84-155C is replacing the wide range noble gas stack monitors identified as RM-063L/M/H with two channels which will be identified as RM-062 and RM-063. The combination of the two instruments which will be installed provides the same measurement range as the current RM-063L/M/H and meets the same applicable post accident monitoring requirements.

Specification 5.9.4a is being revised to incorporate guidance from the NRC staff concerning submittal of the annual radioactive effluent release report. It is required by 10 CFR 50.36a that the annual report be submitted each year. The proposed revision would further clarify that the report will be submitted before May 1 of each year following the guidance of NRC staff.

Specification 5.11.1.c. is being revised to add the word "This" into the second sentence so that the sentence is grammatically correct and will read "This individual shall be responsible.."

Specification 5.11.2 contains a grammatical error, the word "enter" is being corrected to read "entry." Specification 5.11.2.a.i. is being revised to replace a period with a comma.

The number for Specification 5.16.1 on page 5-22 is incorrectly stated as 5.6.1, and is being corrected.

The references to 10 CFR Parts and sections are being revised for consistency. When reference is made to the entire 10 CFR Part the word "Part" is included (i.e. 10 CFR Part 20). When reference to a particular section is made the word "Part" is not included (i.e. 10 CFR 20.1302)

BASIS FOR NO SIGNIFICANT HAZARDS CONSIDERATION:

The proposed changes do not involve significant hazards considerations because operation of Fort Calhoun Station Unit No. 1 in accordance with these changes would not:

- (1) Involve a significant increase in the probability or consequences of an accident previously evaluated.

The proposed changes to the liquid and gaseous release rate limits and the relocation of the old 10 CFR 20.106 requirements to the new 10 CFR 20.1302 does not effect the probability or consequences of an accident previously evaluated. The proposed changes will not change the types or amounts of effluents that will be released, nor will there be an increase in individual or cumulative occupational radiation exposures.

The proposed changes to the submittal requirements of the annual radioactive effluent report do not affect the probability or consequences of an accident previously evaluated. The required submittal is a reporting requirement only. The proposed change will continue to meet the reporting requirement of 10 CFR 50.36a and further clarifies when the report is to be submitted.

The proposed changes to the equipment identification numbers do not affect the probability or consequences of an accident previously evaluated. The changes reflect a modification which will replace three existing radiation monitors with two monitors which will have the same measurement range of detection and meet the post accident requirements of the present monitors.

- (2) Create the possibility of a new or different kind of accident from any previously analyzed.

The proposed changes to the liquid and gaseous release rate limits and the relocation of the old 10 CFR 20.106 requirements to the new 10 CFR 20.1302 will not create the possibility of a new or different kind of accident. The proposed changes will not change the types or amounts of effluents that will be released, nor will there be an increase in individual or cumulative occupational radiation exposures.

The proposed changes to the submittal requirements of the annual radioactive effluent report will not create a new or different kind of accident. The required submittal is a reporting requirement only, and therefore cannot create an accident.

The proposed changes to the equipment identification numbers will not create the possibility of a new or different kind of accident. The function and operation of the radiation monitors which will replace the existing monitors remains the same as the present monitors.

- (3) Involve a significant reduction in a margin of safety.

The proposed changes to the liquid and gaseous release rate limits and the relocation of the old 10 CFR 20.106 requirements to the new 10 CFR 20.1302 will not create the possibility of a new or different kind of accident. The proposed changes will not change the types or amounts of effluents that will be released, nor will there be an increase in individual or cumulative occupational radiation exposures.

The proposed changes to the submittal requirements for the annual radioactive effluent report and equipment identification numbers are administrative and will not involve a reduction in a margin of safety.

Therefore based on the above considerations, it is OPPD's position that this proposed amendment does not involve significant hazards considerations as defined by 10 CFR 50.92 and the proposed changes will not result in a condition which significantly alters the impact of the Station on the environment. Thus, the proposed changes meet the eligibility criteria for categorical exclusion set forth in 10 CFR 51.22(e)(9) and pursuant to 10 CFR 51.22(b) no environmental assessment need be prepared.