ATTACHMENT
TO
AECM-84/0338 (6/19/84)

PROPOSED CHANGES TO THE
GRAND GULF NUCLEAR STATION
TECHNICAL SPECIFICATIONS

NRC TECHNICAL REVIEW BRANCH: RADIOLOGICAL ASSESSMENT

Listing of Item Numbers by
Technical Specification Problem Sheet (TSPS) Number

TSPS No.	Item Nos.*
036	C.01
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194	D.10
225	D.11
248	A.03
249	D.12, A.02

*Item number format: A.02

Item number within category

Category designator

A. TYPOGRAPHICAL ERRORS, EDITORIAL CHANGES, AND CLARIFICATIONS

These proposed changes correct obvious typographical errors, implement editorial changes such as correction of spelling errors, punctuation errors, and grammatical errors or provide clarification of the basic meaning or intent of the subject technical specifications.

MP&L has determined that the proposed changes do not:

- o Involve a significant increase in the probability or consequences of an accident previously evaluated; or
- o Create the possibility of a new or different kind of accident from any accident previously evaluated; or
- o Involve a significant reduction in a margin of safety.

Therefore, the proposed changes do not involve a significant hazards consideration.

Several of the technical specification changes associated with this submittal are being proposed in order to provide consistency with NUREG-0473 Rev. 3, Draft 7''. In addition, these changes have been evaluated to assure that the changes are consistent with the present Grand Gulf programs and policies concerning radiological control and releases. These changes have been determined to be consistent with the NRC guidance and the standards for protection against radiation as specified in 10 CFR Part 20.

A description of these changes including necessary justification for the changes is provided below:

TYPOGRAPHICAL ERRORS

Typographical errors are being corrected by this submittal as listed below. Correction of these typographical errors is purely an administrative change. (See attached revised technical specification pages for exact changes proposed.)

	TSPS No.	TS Page No.
1.	91	1-3 3/4 12-11
2.	249	B 3/4 11-2 3/4 12-1 3/4 12-3 3/4 12-5 6-25

EDITORIAL CHANGES

A proposed editorial changes to the technical specifications is discussed below:

3. (TSPS 248) Renumbering of Bases, Technical Specification Bases 3/4.11.2.4 and 3/4.11.2.5

   This proposed change renumbers Bases 3/4.11.2.4 and 3/4.11.2.5 to reflect the technical specification sections described in the text of the bases. This is an editorial change only and is therefore purely administrative in nature. (Page B 3/4 11-4)

CLARIFICATIONS

Clarifications to the technical specifications to improve understanding and readability are discussed below:

4. (TSPS 105), SITE BOUNDARY Terminology, Technical Specifications 1.40, 3/4.11.2.1, 3/4.11.2.3, 3/4.11.2.5, 5.1.3, 6.9.1.9, Table 3.12.1-1 and Bases 3/4.11.2.1, 3/4.11.2.2, 3/4.11.2.3, 3/4.11.2.7, 3/4.12.2

   A revision is proposed to add a definition for SITE BOUNDARY to the technical specifications to indicate that this is the line beyond which the land is neither owned, nor leased, nor otherwise controlled by the licensee. This definition is being added to clarify the boundary used for offsite dose calculations. This change also adds this defined term where applicable in the technical specifications. This change does not adversely impact plant safety because it serves only to clarify the subject specifications.

   A revision to Technical Specification 5.1.3 is requested to change the "UNRESTRICTED AREA BOUNDARY" terminology in this design feature summary to "UNRESTRICTED AREA and SITE BOUNDARY." This proposed change will achieve consistency throughout the technical specifications with the new definition for UNRESTRICTED AREA and the new definition for SITE BOUNDARY. This proposed change involves no safety significance as it represents a purely administrative change of an editorial nature for the purpose of providing consistency in the technical specifications. (Pages 1-8, 3/4 11-8, 3/4 11-13, 3/4 11-15, 3/4 12-3, 5-1, 6-18, B 3/4 11-2, B 3/4 11-3, B 3/4 11-4, B 3/4 11-5, B 3/4 12-1)

B. TECHNICAL SPECIFICATION/AS-BUILT PLANT CONSISTENCY

No technical specification changes in this category are included with this attachment.

C. ENHANCEMENTS THAT ARE CONSISTENT WITH THE SAFETY ANALYSES

The following proposed change is an enhancement which is consistent with the safety analyses and the licensing basis and which provides clarification, renders areas consistent with the philosophy and intent of the technical specifications, or provides additional plant operational margin.

Several of the technical specification changes associated with the items being reviewed by the Radiological Assessment Branch are being proposed in order to provide consistency with NUREG-0473, Revision 3, Draft 7'', which contains the most current industry practice and regulatory guidance. These changes have been evaluated to assure consistency with present Grand Gulf programs and policies concerning radiological control and releases. Furthermore, these changes have been determined to be consistent with the NRC guidance and the standards for protection against radiation as specified in 10 CFR 20.

Since this proposed change is included in the current licensing bases and is bounded by existing safety analyses, the proposed change does not:

- o Involve a significant increase in the probability or consequences of an accident previously evaluated; or
- o Create the possibility of a new or different kind of accident from any accident previously evaluated; or
- o Involve a significant reduction in a margin of safety.

Therefore, the proposed change does not involve a significant hazards consideration.

A description of this change including justification for the change is provided below:

1. (TSPS 036), Operational Radiological Environmental Monitoring Program, Technical Specification Table 3.12.1-1

   The proposed change adds a requirement to perform gamma isotopic and I-131 analysis for the Food Products entry listed in the Type and Frequency of Analysis column of Table 3.12.1-1. In addition, this change adds the superscript "c" to the "gamma isotopic" entries in this column. Note c defines what is meant by "gamma isotopic analysis." These changes are considered enhancements to safety in that they represent an additional requirement that is not presently included in the specification, clarify analysis requirements, and achieve consistency throughout the technical specifications. (Pages 3/4 12-4 and 3/4 12-5)

D. REGULATORY REQUIREMENTS/REQUESTS/RECOMMENDATIONS

The following changes are proposed to render the technical specifications consistent with recent changes in NRC policy and the Code of Federal Regulations, as well as to implement changes or enhancements recently requested or recommended by NRC reviewers.

In particular, several of the technical specification changes associated with the items being reviewed by the Radiological Assessment Branch are being proposed in order to provide consistency with NUREG-0473, Revision 3, Draft 7'', which contains the most current industry practice and regulatory guidance. These changes have been evaluated to assure consistency with present Grand Gulf programs and policies concerning radiological control and releases. Furthermore, these changes have been determined to be consistent with the standards for protection against radiation as specified in 10 CFR 20.

These proposed changes are required to render the technical specifications consistent with recent NRC guidance, and it has been concluded based on a review of each item that the proposed changes do not:

- Involve a significant increase in the probability or consequences of an accident previously evaluated; or
- Create the possibility of a new or different kind of accident from any accident previously evaluated; or
- Involve a significant reduction in a margin of safety.

Therefore, the proposed changes do not involve a significant hazards consideration.

A description of these changes including justification for the changes is provided below:

1. (TSPS 085), Process Control Program and Solidification, Technical Specifications 1.32, 1.41, 3/4.11.3, and Bases 3/4.11.3

   The following changes to the subject technical specifications and bases are proposed:

   a. The definition for PROCESS CONTROL PROGRAM (PCP) is expanded to include reference to 10 CFR 20, 10 CFR 61, 10 CFR 71, Federal and State regulations and burial ground regulations governing the disposal of radioactive waste. This change is an enhancement to safety in that it will help to ensure compliance with applicable requirements governing radioactive waste disposal. (Page 1-6)

b. The definition for SOLIDIFICATION is revised to simplify the present definition to read "the conversion of wet wastes into a form that meets shipping and burial ground requirements." The present definition implies that dewatering is not an appropriate means of SOLIDIFICATION; however, this method of SOLIDIFICATION is generally accepted at burial grounds. This change will not adversely impact plant safety as it serves only to clarify the definition. (Page 1-8)

c. A revision to Technical Specification 3/4.11.3 concerning solid radioactive waste is proposed to reflect that SOLIDIFICATION will be assured by the provisions of the PROCESS CONTROL PROGRAM rather than by the OPERABILITY of the Solid Radwaste System. This revision is consistent with the revised definition for PROCESS CONTROL PROGRAM (Item D.1.a above) which includes provisions to ensure that waste SOLIDIFICATION is accomplished consistent with applicable regulations. The proposed change replaces Technical Specification 3/4.11.3 with a new specification which includes a Limiting Condition for Operation, ACTION statement, and surveillance requirements which rely upon the PROCESS CONTROL PROGRAM to verify SOLIDIFICATION by periodically testing samples of waste batches. Therefore, the OPERABILITY requirement of the solid radwaste system can be deleted from this technical specification without adversely impacting plant safety because the PROCESS CONTROL PROGRAM itself provides an equivalent level of assurance of SOLIDIFICATION. (Pages 3/4 11-18 and 3/4 11-19)

d. A revision to Bases 3/4.11.3 for SOLID RADIOACTIVE WASTE is proposed to delete the first sentence which indicates that the Solid Radwaste System will be OPERABLE when solid radwastes are being processed and packaged for shipment to offsite burial locations. This deletion is proposed to clarify that dewatering processes and contracted solid radwaste services are appropriate alternatives to preparing solid radwaste using the Solid Radwaste System. This change will not adversely impact plant safety because it serves only to clarify the bases and does not affect any technical specification requirements. (Page B 3/4 11-5)

These proposed changes are in response to NRC requests to incorporate recent regulatory activities into the GGNS technical specifications. These proposed changes are revisions that will help to ensure compliance with regulatory requirements and thus, do not adversely impact plant safety.

2. (TSPS 086), Liquid Waste Treatment System and VENTILATION EXHAUST TREATMENT SYSTEM, Technical Specifications 3/4.11.1.3, 3/4.11.2.5, and Bases 3/4.11.1.3

The proposed changes to the subject specifications are as follows:

a. Revise the Limiting Condition for Operation for Technical Specifications 3.11.1.3 and 3.11.2.5 to specify that the

subject systems shall be used to reduce radioactive materials in waste prior to their discharge when the projected doses due to effluent releases from each reactor unit to UNRESTRICTED AREAS (3.11.1.3) and areas at and beyond the SITE BOUNDARY (3.11.2.5) would exceed specified values. This change is an enhancement to plant safety because it replaces the existing OPERABILITY requirements for specific components with a broader requirement for system OPERABILITY.

b. Add the phrase "other than when the VENTILATION EXHAUST TREATMENT SYSTEM is undergoing routine maintenance" to the applicability statement of Technical Specification 3.11.2.5. This change is an operational enhancement to allow for routine system maintenance. It is also considered an enhancement to safety because such maintenance is expected to result in increased system availability.

c. Delete the 31 days allowed for the systems to be inoperable from ACTION a of Technical Specifications 3.11.1.3 and 3.11.2.5. This is an enhancement to safety because it reduces the time period between identification of system inoperability and entry into the appropriate ACTION statement.

d. Revise ACTION Statements a.1 of Technical Specification 3.11.1.3 and 3.11.2.5 to include additional reporting requirements. This change is a safety enhancement in that imposes additional requirements not contained in the current specifications.

e. Delete reference to Technical Specification 6.9.1.11 in ACTION b of Specifications 3.11.1.3 and 3.11.2.5 because this section has been deleted by problem sheet 093 (Special Reporting Requirements).

f. Revise Surveillance Requirements 4.11.1.3.1 and 4.11.2.5.1 to specify that doses due to releases from each reactor unit to specified areas shall be projected at least once per 31 days in accordance with the methodology and parameters in the ODCM. This change does not adversely impact plant safety as it serves only to clarify the subject surveillance requirements.

g. Revise Surveillance Requirement 4.11.1.3.2 to read, "The installed liquid radwaste system shall be demonstrated OPERABLE by meeting Technical Specifications 3.11.1.1 and 3.11.1.2." Compliance with the revision will ensure that the liquid radwaste system is fulfilling its function and that releases are below allowable levels. This change is an enhancement to safety in that it provides for a direct, quantitative determination of system OPERABILITY.

h. Revise Surveillance Requirement 4.11.2.5.2 to read, "The installed VENTILATION EXHAUST TREATMENT SYSTEM shall be demonstrated OPERABLE by meeting Technical Specifications 3.11.2.1 and 3.11.2.2 or 3.11.2.3." Compliance with this

revision will ensure that the VENTILATION EXHAUST TREATMENT SYSTEM is capable of performing its function. This change is an enhancement to safety in that it provides for a direct, quantitative determination of system OPERABILITY.

i. Bases 3/4.11.1.3 for Liquid Radwaste is revised to delete the first sentence which indicates the liquid radwaste system will be OPERABLE when liquid effluents require treatment prior to release to the environment. This change is made to reflect the revision to Technical Specification 3.11.1.3 (which deletes the requirement that the Liquid Radwaste System components as specified in the ODCM be OPERABLE, and requires only that the liquid radwaste system be capable of meeting the dose and concentration requirements specified in Specifications 3.11.1.1 and 3.11.1.2). Also, a paragraph is added to clarify that for units with a shared radwaste system, the liquid effluents are proportioned among the units sharing the system. These changes do not adversely impact plant safety because they serve only to clarify the bases and make them consistent with the revised technical specifications.

These proposed changes clarify the OPERABILITY, ACTION, Applicability, and surveillance requirements of the subject technical specifications and are consistent with NUREG-0473, Rev. 3, Draft 7'', and the requirements of Appendices A and I to 10 CFR 50. These changes promote consistency and constitute additional requirements not presently included in the technical specifications. (Pages 3/4 11-6, 3/4 11-15 and B 3/4 11-2)

3. (TSPS 088), Major Changes to Radioactive Waste Treatment Systems, Technical Specification 6.15

The proposed change requires that licensee initiated major changes to the Radioactive Waste Systems (liquid, gaseous, and solid) be reported to the Commission in the Semi-annual Radioactive Effluent Release Report instead of the Monthly Operating Report. A footnote was also added to allow the licensee to submit this information as part of the annual FSAR update. The proposed change to the reporting requirements does not adversely impact plant safety because it does not affect allowable releases as specified in 10 CFR Part 20. The proposed change is consistent with NUREG-0473, Rev. 3, Draft 7'' and is considered to be an enhancement consistent with NRC guidance. (Page 6-26)

4. (TSPS 089), Radioactive Effluents - Dose, Technical Specification 3/4.11.1.2

This proposed change revises Surveillance Requirement 4.11.1.2 to read, "Cumulative dose contributions from liquid effluents for the current calendar quarter and the current calendar year shall be determined in accordance with the methodology and parameters of the ODCM at least once per 31 days."

This proposed change specifies time periods over which the doses are cumulative and is consistent with the requirements of NUREG-0473, Rev. 3, Draft 7'', and with Surveillance Requirements 4.11.2.2 and 4.11.2.3 of the present GGNS Technical Specifications. This change is an enhancement to safety in that it clarifies the surveillance requirement by specifying time periods that are in compliance with 10 CFR 50, Appendix I. (Page 3/4 11-5)

5. (TSPS 090), Radioactive Effluents, Technical Specification 3/4.11.4

The proposed change replaces Technical Specification 3/4.11.4 with a new specification to enhance understanding of existing dose limitations. This change adds an additional surveillance requirement to provide guidance for the determination of cumulative dose contributions, in accordance with the ODCM, due to direct radiation from the reactor and radwaste storage tanks. This change is consistent with 40 CFR 190, NRC guidelines, and NUREG-0473, Rev. 3, Draft 7'' and is an enhancement to safety in that it imposes an additional requirement not contained in the current specification. (Page 3/4 11-20)

6. (TSPS 092), Radiological Environmental Monitoring Interlaboratory Comparison Program, Technical Specification 3/4.12.3

The surveillance requirement for the subject technical specification presently specifies that the participants in the Environmental Protection Agency (EPA) crosscheck program may provide the EPA program code for NRC review in lieu of the summary of results obtained as part of the required Interlaboratory Comparison Program. The proposed change deletes the reference to the EPA program code because it will not be applicable if the NRC changes to an organization other than the EPA, to do the comparison study. This proposed change is in response to an NRC memorandum from Frank J. Congel, Chief RAB, to Cecil O. Thomas, Chief SSPB, dated November 4, 1983. It does not adversely impact plant safety or change the intent of the present specification.
(Page 3/4 12-12)

7. (TSPS 190), Drinking Water Report, Technical Specification Tables 3.12.1-2 and 4.12.1-1

A correction of a typographical error on Technical Specification Tables 3.12.1-2 and 4.12.1-1 is proposed whereby the term "M-3" is changed to "H-3", which is the correct abbreviation for tritium. Furthermore, Note a in Table 3.12.1-2 is also revised to provide additional information concerning the H-3 reporting level for drinking water samples. Note c of Table 4.12.1-1 is revised to clarify that if no drinking water pathway exists within three miles downstream of the site, the LLD of gamma isotopic may be used. Note d is also added to Table 4.12.1-1 for clarification of the LLD for H-3 in drinking water. These changes are for clarification purposes to indicate that the reporting level and LLD of H-3 may be raised if no drinking water pathway exists.

These proposed changes do not adversely impact plant safety because they are consistent with NUREG-0473, Rev. 3, Draft 7'', with NRC guidance and with present Grand Gulf programs. (Pages 3/4 12-7, 3/4 12-8, 3/4 12-10)

8. (TSPS 191), Dose Rate and Dose from Radioiodines, Technical Specifications 3/4.11.2.1, 3/4.11.2.3 and Bases 3/4.11.2.3

This proposed change substitutes the language "Iodine-131, Iodine-133, Tritium and Radionuclides" for the existing language, which is generally of the form "Radioiodines, Radioactive materials ... and Tritium." This change clearly identifies which specific radioiodines are of concern and is consistent with the Grand Gulf ODCM. Additionally, several clarifications to Technical Specifications 3/4.11.2.1 and 3/4.11.2.3 are proposed. The proposed changes correct a typographical error in Surveillance Requirement 4.11.2.3 and revise several terms and phrases in the same surveillance requirement to make them consistent with the terminology used elsewhere in the technical specifications.

These proposed changes are consistent with NUREG-0473, Rev. 3, Draft 7'', and do not change the philosophy or intent of the technical specifications. Therefore, these changes are considered enhancements which do not adversely impact plant safety. (Pages 3/4 11-8, 3/4 11-13, B 3/4 11-3 and B 3/4 11-4)

9. (TSPS 192), GASEOUS RADWASTE TREATMENT (OFFGAS) SYSTEM, Technical Specification 3/4.11.2.4

The proposed changes to Technical Specification 3/4.11.2.4 are as follows:

a. Delete the phrase "components as specified in the ODCM" from the LCO to specify that the entire GASEOUS RADWASTE TREATMENT (OFFGAS) SYSTEM shall be in operation.

b. Revise ACTION a to clarify that the ACTION is required to be performed when gaseous radwaste from the main condenser air ejector system is being discharged without treatment, thereby providing a quantifiable criterion for entering the subject ACTION statement.

c. Add to ACTION a.1 additional reporting requirements to be included in the Special Report.

d. Delete the reference to Technical Specification 6.9.1.11 in ACTION b. because this section has been deleted by problem sheet 093 (Special Reporting Requirements).

e. Revise Surveillance Requirement 4.11.2.4 to be consistent with the revised LCO by verifying that the GASEOUS RADWASTE TREATMENT (OFFGAS) SYSTEM is functioning.

These changes clarify OPERABILITY, surveillance, and reporting requirements and are consistent with NUREG-0473, Rev. 3, Draft 7'', and 10 CFR 20. These changes constitute an enhancement to safety in that they impose additional requirements not presently included in the technical specifications and conform with recent NRC guidance. (Page 3/4 11-14)

10. (TSPS 194), Operational Radiological Environmental Monitoring Program, Technical Specification Table 3.12.1-1

    A change to "Number of samples and locations" column of Table 3.12.1-1 is requested. For Food Product samples, the change will require gathering samples of 3 different kinds of broad leaf vegetation, rather than 3 samples of one kind, and will require these samples be taken from two different locations close to the SITE BOUNDARY. This proposed change is an enhancement to safety in that it increases the sampling requirements of the broad leaf vegetation sampling program. This change is also consistent with NUREG-0473, Rev. 3, Draft 7''. (Page 3/4 12-5)

11. (TSPS 225), Illegible Figures, Technical Specification Figures 5.1.1-1, 5.1.2-1, and 5.1.3-1

    Legible copies of the subject figures are submitted to replace the figures currently found in the technical specifications. All of the subject figures have been redrawn to improve legibility including deletion of typographical lines. These changes are administrative in nature and are submitted in response to NRC concerns over the readability of the subject figures. In addition, Figure 5.1.3-1 has been enhanced by adding the effluent release points. (Pages 5-2, 5-3, 5-4)

12. (TSPS 249), Changes to Radiological and Environmental Technical Specifications

    a. Additional Definition - MEMBERS OF THE PUBLIC, Technical Specifications 1.24, 3.12.1, 6.9.1.9, 6.15.1.1.e, Bases 3/4.11.1, 3/4.11.1.2, Bases 3/4.11.2.1, Bases 3/4.11.2.2, Bases 3/4.11.2.3, Bases 3/4.11.2.7, Bases 3/4.11.4, and Bases 3/4.12.1

       An appropriate definition for the term "MEMBERS OF THE PUBLIC" has been added to the technical specifications. Present technical specifications use the term "individual" instead of MEMBERS OF THE PUBLIC. The term "individual" can be misinterpreted as applying to personnel who work in the plant. This change is being proposed to clarify that MEMBERS OF THE PUBLIC do not include persons who are occupationally associated with the plant. This change renders the subject technical specifications consistent with NUREG-0473, Rev. 3, Draft 7'' by adding this defined term where applicable. This change does not adversely impact plant safety because the proposed definition is consistent with the NRC guidance and present Grand Gulf programs. (Pages 1-4, 3/4 12-1, 6-18, 6-26, B 3/4 11-1, B 3/4 11-2, B 3/4 11-3, B 3/4 11-5, and B 3/4 12-1)

b. Additional Definition - UNRESTRICTED AREA, Technical Specification 1.46, Bases 3/4.11.1.1, 3/4.11.1.2, Bases 3/4 11.1.4, Bases 3/4 11.2.1, Bases 3/4 11.2.2, Bases 3/4.11.2.3, Technical Specification 6.9.1.9, Technical Specification 6.15.1.e.

An appropriate definition for the term "UNRESTRICTED AREA" has been added to the technical specifications to designate those areas at or beyond the SITE BOUNDARY for which access is not controlled by the licensee for the purposes of protection of MEMBERS OF THE PUBLIC from exposure to radiation and radioactive materials, or any area within the SITE BOUNDARY used for residential quarters or for industrial, commercial, institutional and/or recreational purposes. The term UNRESTRICTED AREA is added to the subject specifications to be consistent with the new proposed definition. This change renders the subject technical specifications consistent with NUREG-0473, Rev. 3, Draft 7'' by adding this defined term where applicable. This change does not adversely impact plant safety because the proposed definition is consistent with NRC guidance and present Grand Gulf programs (Page 1-8, B 3/4 11-1, B 3/4 11-2, B 3/4 11-3, 6-18, 6-26)

c. Liquid Effluents - Concentration, Technical Specification 3/4.11.1.1

The proposed revision changes Technical Specification 3.11.1.1 and its associated ACTION statement to specify that only liquid effluents released to UNRESTRICTED AREAS are controlled by the subject specification. The proposed change to Surveillance Requirement 4.11.1.1.2 is a wording change only that adds clarification without changing the requirements of the present surveillance requirement. These proposed changes are are purely administrative and are consistent with NUREG-0473, Rev. 3, Draft 7'', NRC guidance and present Grand Gulf programs. (Page 3/4 11-1)

d. Radioactive Liquid and Gaseous Waste Sampling and Analysis Programs, Technical Specification Table 4.11.1.1.1-1, Table 4.11.2.1.2-1, Bases 3/4.11.1.1, and Bases 3/4.11.2.1.

Proposed changes to the subject tables include the use of microcurie instead of picocurie, deletion of the "*" footnote and deletion of a potentially confusing statement involving background determination methods associated with calculating the LLD for a radionuclide determined by gamma-ray spectrometry. The change in units (from pCi to μCi) is a purely administrative change for consistency with published NRC guidelines. The deletion of the "*" footnote does not adversely impact plant safety because an additional change is proposed to incorporate the deleted information into Bases 3/4.11.1.1 and 3/4.11.2.1. These proposed changes are consistent with NUREG-0473, Rev. 3, Draft 7'' and are consistent with NRC guidance and present Grand Gulf programs. (Pages 3/4 11-3, 3/4 11-4, 3/4 11-10, and 3/4 11-11, B 3/4 11-1, B 3/4 11-3)

e. Liquid Effluents - Dose, Technical Specification 3/4.11.1.2

Proposed changes to Technical Specification 3/4.11.1.2 include appropriate terminology changes from the present use of "an individual" to "a MEMBER OF THE PUBLIC" and from "from the site" to "to UNRESTRICTED AREA." These changes provide consistency between the subject specification and the new proposed definitions for MEMBER OF THE PUBLIC and UNRESTRICTED AREA. A change to the associated ACTION statement is also proposed to include a requirement to report, in a Special Report, those corrective actions that have been taken to reduce the release to within specified limits as well as actions that will be taken to ensure that future releases will be in compliance with the specified limits. A "*" footnote is also added to specify applicability only if a drinking water supply is taken from the receiving water body within 3 miles downstream of the plant discharge. These proposed changes are enhancements to safety because they include additional requirements not contained in the current specification and are consistent with NUREG-0473, Rev. 3, Draft 7'' as well as NRC guidance and present Grand Gulf programs. (Page 3/4 11-5)

f. Liquid Holding Tanks, Technical Specification 3/4.11.1.4

A change is proposed to add to ACTION a, of the subject technical specification a requirement to describe, in the next Semiannual Radioactive Effluent Release Report, the events which led to entry into the ACTION statement. Reference to Technical Specification 6.9.1.11 is deleted since Section 6.9.1.11 is deleted by problem sheet 093 (Special Reporting Requirements). Surveillance Requirement 4.11.1.4 is also changed to clarify that the quantity of radioactive material in "each" of the specified liquid holdup tanks is to be determined. These proposed changes are enhancements to safety in that they impose additional requirements that are consistent with NUREG-0473, Rev. 3, Draft 7'' as well as NRC guidance and present Grand Gulf programs. (Page 3/4 11-7)

g. Radioactive Effluents Dose - Noble Gases, Technical Specification 3/4.11.2.2, Bases 3/4.11.2.1, 3/4.11.2.2 and Bases 3/4.11.2.3

The proposed change to Technical Specification 3.11.2.2 clarifies that the air dose limits due to noble gas releases from each reactor unit are applicable to those areas at and beyond the SITE BOUNDARY. The change to Surveillance Requirement 4.11.2.2 clarifies that dose calculations are made using the contribution from noble gases in accordance with the methodology and parameters in the ODCM. In addition, a statement is added to Bases 3/4.11.2.2 and 3/4.11.2.3 to clarify that effluents are proportioned among the units sharing the Radwaste Treatment System. Bases 3/4.11.2.1 is revised by deleting the statement about effluents from shared units being proportioned among the units sharing the Radwaste Treatment System. This deleted statement does not

apply to this specification since dose is dependent on total effluent release. These proposed revisions are purely administrative changes to maintain consistent terminology throughout the technical specification. They are also consistent with NUREG-0473, Rev. 3, Draft 7'' as well as NRC guidance and present Grand Gulf programs. (Page 3/4 11-12, B 3/4 11-3, and B 3/4 11-4)

h. Radiological Environmental Monitoring Program, Technical Specification 3/4.12.1

A revision to ACTION b of the subject technical specification is proposed to require submittal of a Special Report pursuant to Technical Specification 6.9.2 within 30 days instead of the present requirement to submit the Special Report within 30 days from the end of the affected calendar quarter. ACTION c is created from the last two sentences of ACTION b to promote understanding and readability. New ACTION c is changed by specifying broad leaf vegetation instead of fresh leafy vegetable samples. This change will allow collection of broad leaf vegetation other than edible vegetables to satisfy the requirements of the specification. ACTION c is also modified by deleting reference to Technical Specification 6.9.1 (deleted by problem sheet 093) and requiring instead, that when broad leaf vegetation sampling is relocated, the new location be identified and added to the radiological environmental monitoring program within 30 days. Presently a Special Report is required when samples are unavailable, but this requirement is changed to require reporting the cause(s) of the unavailability of samples and the new locations for obtaining replacement samples in the next Semiannual Radioactive Effluent Release Report. Revised ODCM figure(s) and table reflecting the new locations are also required at this time. A proposed change to ACTION c will allow samples that are unavailable to be deleted from the radiological environmental monitoring program as well as the table in the ODCM provided replacement sample locations are identified and documented. Present ACTION c is relettered to be ACTION d to correspond with the above changes. These proposed changes do not adversely impact plant safety in that they do not reduce the intent of the sampling or reporting requirements of the current specification. These changes are consistent with NUREG-0473, Rev. 3, Draft 7'' as well as NRC guidance and present Grand Gulf programs. (Page 3/4 12-1)

i. Operational Radiological Environmental Monitoring Program Technical Specification Table 3.12.1-1

Several changes to Table 3.12.1-1 are proposed for the purpose of rendering the table consistent with NUREG-0473, Rev. 3, Draft 7''. Specific proposed changes are as follows:

1) For AIRBORNE pathways the proposed change requires that three of the five samples come from locations "close to the SITE BOUNDARY." Also a revision in the terminology for the calculated ground level dose is requested to clarify that the concern is deposition per unit area (D/Q), rather than atmospheric dispersion (X/Q).

2) For DIRECT RADIATION pathways or samples, a revision to the description of the location of the required 40 monitoring stations is proposed to clarify that stations do not have to be placed in inaccessible sectors, (e.g. a sector that is unreachable via land vehicles). This change does not adversely impact plant safety because the revised requirement remains consistent with the ODCM. A "*" note is added to specify that accessible sectors are described in the ODCM.

3) For Fish and Invertebrate samples, the change deletes the specific requirement to collect "catfish" and replaces it with a more general requirement, "one species of commercially or recreationally important fish."

4) In the Table Notation several revisions are proposed. Note a is expanded to provide additional information concerning the number, locations, and collection frequency of samples used in the radiological environmental monitoring program. The revised note includes information concerning references, deviation allowances, and reporting requirements, which are consistent with NUREG-0473, Rev. 3, Draft 7''. Note e is deleted as it provides information that is appropriate for surveillance procedures rather than technical specifications. Note f is revised to delete reference to Regulatory Guide 4.13 since this is superfluous information not needed in the technical specifications. Notation for Notes f, g, i, and k are corrected to reflect the deletion of Note e. These changes are enhancements which render the subject table consistent with NUREG-0473, Rev. 3, Draft 7'' as well as NRC guidance and present Grand Gulf programs. (Page 3/4 12-3, 3/4 12-4, 3/4 12-5, and 3/4 12-6)

j. Maximum Values for the Lower Limits of Detection (LLD) Table Notation, Technical Specification Table 4.12.1-1 and Bases 3/4.12.1

The proposed change to Note b of the subject Table deletes a statement involving background determination methods associated with calculating the LLD for a radionuclide determined by gamma-ray spectrometry, and deletes the * footnote. This deletion does not adversely impact plant safety because the information contained in the * footnote is moved to Bases 3/4.12.1.

A requirement is added to identify and describe in the Annual Radiological Environmental Operating Report any circumstances that may render LLDs unachievable. These proposed changes are an enhancement to safety, in that they impose additional requirements that are consistent with NUREG-0473, Rev. 3, Draft 7'', NRC guidance, and present Grand Gulf programs.(Page 3/4 12-10 and B 3/4 12-1)

k. Land Use Census, Technical Specification 3/4.12.2

A revision to Specification 3/4.12.2 is proposed to render the specification consistent with NUREG-0473, Rev. 3, Draft 7''. The changes resulting from this revision are in the area of reporting requirements and locations for the land use census. New sample locations are required to be identified in the Semiannual Radioactive Effluent Release Report, rather than the Monthly Operating Report, and the results of the land use census must now be included in the Annual Radiological Environmental Operating Report. In addition, the references to Licensee Event Report have been deleted in accordance with problem sheet 093 (Special Reporting Requirements). The new distance (5 miles) specified for location of the nearest milk animal, the nearest residence, and the nearest garden is an enhancement to safety in that is ensures more accurate samples are obtained. Specifying a garden size of 500 $ft.^2$ provides a better definition for sample criteria. (Page 3/4 12-11)

l. Interlaboratory Comparison Program Technical Specification 3.12.3

A revision to Technical Specification 3.12.3 is proposed to clarify that the analyses for the Interlaboratory Comparison Program need only be performed on those radioactive materials that correspond to the samples required to be analyzed by Table 3.12.1-1. The addition of this clarification does not adversely impact plant safety and is consistent with NRC guidance and present Grand Gulf programs. (Page 3/4 12-12)

m. Liquid Holdup Tanks, Bases 3/4.11.1.4

A revision to the subject bases is proposed to clarify that the tanks applicable to Technical Specification 3.11.1.4 are those that are capable of releasing to the environment because they are not surrounded by liners, dikes, or walls capable of holding their contents and do not have overflows or drains that are connected to the liquid radwaste treatment system. This change will not adversely impact safety and is consistent with NUREG-0473, Rev. 3, Draft 7'', NRC guidance and present Grand Gulf programs. (Page B 3/4 11-2)

n. Total Dose, Bases 3/4.11.4

A revision to the subject bases is proposed to indicate that a Special Report must be submitted whenever plant generated dose

exceeds 25 mrem to the total body or any organ, except the thyroid, which shall be limited to less than or equal to 75 mrem, rather than twice the design objective doses of Appendix I. In addition, a new reference is added, 10 CFR 20.405C. These proposed changes will not adversely impact safety and are consistent with NUREG-0473, Rev. 3, Draft 7'' and NRC guidance. (Page B 3/4 11-5)

o. Monitoring Program, Bases 3/4.12.1

A revision to the subject bases is proposed to add a reference to 10 CFR Part 50. Specifically, words are added to clarify that the radiological monitoring program discussed in the bases implements Section IV.B.2 of Appendix I to 10 CFR 50. This proposed change is consistent with NUREG-0473, Rev. 3, Draft 7'' and NRC guidance. (Page B 3/4 12-1)

p. Land Use Census, Bases 3/4.12.2

An addition to Bases 3/4.12.2 is proposed to justify the minimum garden size of $50m^2$. Included in this addition are the assumptions used to determine the minimum garden size. This proposed change does not adversely impact plant safety and is consistent with NUREG-0473, Rev. 3, Draft 7'' and with NRC guidance. (Page B 3/4 12-1)

q. Interlaboratory Comparison Program, Bases 3/4.12.3

A revision to Bases 3/4.12.3 is proposed to indicate that the Interlaboratory Comparison Program must be "approved" and that the results of the measurements of radioactive materials in the environmental sample matrices are "valid for the purposes of Section IV.B.2 of Appendix I to 10 CFR Part 50." This proposed change is a purely administrative change to clarify the bases and is consistent with NUREG-0473, Rev. 3, Draft 7''. (Page B 3/4 12-1)

r. Annual Radiological Environmental Operating Report, Technical Specification 6.9.1.7

A revision to Technical Specification 6.9.1.7 is proposed to require deviations from the sampling program identified in Technical Specification 3.12.1 to be reported in the Annual Radiological Environmental Operating Report. This proposed change is consistent with NRC guidance and present Grand Gulf programs and represents an additional requirement not presently in the technical specifications. (Page 6-17)

s. Semiannual Radioactive Effluent Release Report, Technical Specification 6.9.1.9

Revisions to Technical Specification 6.9.1.9 are proposed for the purpose of identifying additional information that should be included in the Semiannual Radioactive Effluent Release

Report; namely, 1) assessments of the radiation doses from radioactive liquid and gaseous effluents received by MEMBERS OF THE PUBLIC during activities inside the SITE BOUNDARY, along with the assumptions used to make these assessments, 2) causes of any unavailability of samples for the pathway, and 3) the locations for obtaining replacement samples. In addition, the report should include revised figures and tables for the ODCM, which reflect all new sample location(s). The report is also required to include any changes to the ODCM. These proposed changes are enhancements to safety in that they represent additional reporting requirements and are consistent with NUREG-0473, Rev. 3, Draft 7'', NRC guidance and present Grand Gulf programs. (Page 6-18)

t. Monthly Operating Reports, Technical Specification 6.9.1.10

A revision is proposed to delete from Technical Specification 6.9.1.10 the requirement to report changes to the OFFSITE DOSE CALCULATION MANUAL and major changes to the radioactive waste treatment systems in the Monthly Operating Report. Such changes will instead be required to be reported in the Semi-annual Radioactive Effluent Release Report. This proposed change will not impact plant safety and is consistent with NUREG-0473, Rev. 3, Draft 7'' and NRC guidance. (Page 6-19)

u. Offsite Dose Calculation Manual (ODCM) Reporting Requirements, Technical Specification 6.14.2.1

A revision to Technical Specification 6.14.2.1 is proposed to indicate that changes to the ODCM shall be reported in the Semiannual Radioactive Effluent Release Report rather than in the Monthly Operating Report. This proposed change will not adversely impact plant safety and is consistent with NUREG-0473, Rev. 3, Draft 7'' and NRC guidance. (Page 6-25)

E. PROPOSED TECHNICAL SPECIFICATION CHANGES

(AFFECTED PAGES ARE PROVIDED IN THE ORDER OF ASCENDING PAGE NUMBERS.)

E-AVERAGE DISINTEGRATION ENERGY

1.11 $\bar{E}$ shall be 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, with half lives greater than 15 minutes, making up at least 95% of the total non-iodine activity in the coolant.

EMERGENCY CORE COOLING SYSTEM (ECCS) RESPONSE TIME

1.12 The EMERGENCY CORE COOLING SYSTEM (ECCS) RESPONSE TIME shall be that time interval from when the monitored parameter exceeds its ECCS actuation setpoint at the channel sensor until the ECCS equipment is capable of performing its safety function, i.e., the valves travel to their required positions, pump discharge pressures reach their required values, etc. Times shall include diesel generator starting and sequence loading delays where applicable. The response time may be measured by any series of sequential, overlapping or total steps such that the entire response time is measured.

END-OF-CYCLE RECIRCULATION PUMP TRIP SYSTEM RESPONSE TIME

1.13 The END-OF-CYCLE RECIRCULATION PUMP TRIP SYSTEM RESPONSE TIME shall be that time interval to complete suppression of the electric arc between the fully open contacts of the recirculation pump circuit breaker from initial movement of the associated:

a. Turbine stop valves, and
b. Turbine control valves.

The response time may be measured by any series of sequential, overlapping or total steps such that the entire response time is measured.

FRACTION OF LIMITING POWER DENSITY

1.14 The FRACTION OF LIMITING POWER DENSITY (FLPD) shall be the LHGR existing at a given location divided by the limiting LHGR for that bundle type.

FRACTION OF RATED THERMAL POWER

1.15 The FRACTION OF RATED THERMAL POWER (FRTP) shall be the measured THERMAL POWER divided by the RATED THERMAL POWER.

FREQUENCY NOTATION

1.16 The FREQUENCY NOTATION specified for the performance of Surveillance Requirements shall correspond to the intervals defined in Table 1.1.

GASEOUS RADWASTE TREATMENT (OFFGAS) SYSTEM

1.17 The GASEOUS RADWASTE ~~RADWATE~~ TREATMENT (OFFGAS) SYSTEM is the system designed and installed to reduce radioactive ~~radoactive~~ gaseous effluents by collecting primary coolant system offgases from the primary system and providing for delay or holdup for the purpose of reducing the total radioactivity prior to release to the environment.

IDENTIFIED LEAKAGE

1.18 IDENTIFIED LEAKAGE shall be:

a. Leakage into collection systems, such as pump seal or valve packing leaks, that is captured and conducted to a sump or collecting tank, or

b. Leakage into the drywell atmosphere from sources that are both specifically located and known either not to interfere with the operation of the leakage detection systems or not to be PRESSURE BOUNDARY LEAKAGE.

ISOLATION SYSTEM RESPONSE TIME

1.19 The ISOLATION SYSTEM RESPONSE TIME shall be that time interval from when the monitored parameter exceeds its isolation actuation setpoint at the channel sensor until the isolation valves travel to their required positions. Times shall include diesel generator starting and sequence loading delays where applicable. The response time may be measured by any series of sequential, overlapping or total steps such that the entire response time is measured.

LIMITING CONTROL ROD PATTERN

1.20 A LIMITING CONTROL ROD PATTERN shall be a pattern which results in the core being on a thermal hydraulic limit, i.e., operating on a limiting value for APLHGR, LHGR, or MCPR.

LINEAR HEAT GENERATION RATE

1.21 LINEAR HEAT GENERATION RATE (LHGR) shall be the heat generation per unit length of fuel rod. It is the integral of the heat flux over the heat transfer area associated with the unit length.

LOGIC SYSTEM FUNCTIONAL TEST

1.22 A LOGIC SYSTEM FUNCTIONAL TEST shall be a test of all logic components, i.e., all relays and contacts, all trip units, solid state logic elements, etc., of a logic circuit, from sensor through and including the actuated device, to verify OPERABILITY. The LOGIC SYSTEM FUNCTIONAL TEST may be performed by any series of sequential, overlapping or total system steps such that the entire logic system is tested.

MAXIMUM FRACTION OF LIMITING POWER DENSITY

1.23 The MAXIMUM FRACTION OF LIMITING POWER DENSITY (MFLPD) shall be the highest value of the FLPD which exists in the core.

INSERT →

MINIMUM CRITICAL POWER RATIO 249

1.2~~4~~5 The MINIMUM CRITICAL POWER RATIO (MCPR) shall be the smallest CPR which exists in the core.

INSERT TO DEFINITIONS, PAGE 1-4

MEMBER(S) OF THE PUBLIC

1.24 MEMBER(S) OF THE PUBLIC shall include all persons who are not occupationally associated with the plant. This category does not include employees of the utility, its contractors or vendors. Also excluded from this category are persons who enter the site to service equipment or to make deliveries. This category does include persons who use portions of the site for recreational, occupational or other purposes not associated with the plant.

OFFSITE DOSE CALCULATION MANUAL (ODCM)

1.2~~5~~6 The OFFSITE DOSE CALCULATION MANUAL shall contain the methodology and parameters used in the calculation of offsite doses due to radioactive gaseous and liquid effluents and in the calculation of gaseous and liquid effluent monitoring alarm/trip setpoints. It shall also contain a table and figure defining current radiological environmental monitoring sample locations. 249

OPERABLE - OPERABILITY

1.2~~6~~7 A system, subsystem, train, component or device shall be OPERABLE or have OPERABILITY when it is capable of performing its specified function(s) and when all necessary attendant instrumentation, controls, electrical power, cooling or seal water, lubrication or other auxiliary equipment that are required for the system, subsystem, train, component or device to perform its function(s) are also capable of performing their related support function(s). 249

OPERATIONAL CONDITION - CONDITION

1.2~~7~~8 An OPERATIONAL CONDITION, i.e., CONDITION, shall be any one inclusive combination of mode switch position and average reactor coolant temperature as specified in Table 1.2. 249

PHYSICS TESTS

1.2~~8~~9 PHYSICS TESTS shall be those tests performed to measure the fundamental nuclear characteristics of the reactor core and related instrumentation and 1) described in Chapter 14 of the FSAR, 2) authorized under the provisions of 10 CFR 50.59, or 3) otherwise approved by the Commission. 249

PRESSURE BOUNDARY LEAKAGE

1.~~29~~30 PRESSURE BOUNDARY LEAKAGE shall be leakage through a non-isolable fault in a reactor coolant system component body, pipe wall or vessel wall. 249

PRIMARY CONTAINMENT INTEGRITY

1.3~~0~~1 PRIMARY CONTAINMENT INTEGRITY shall exist when: 249

a. All containment penetrations required to be closed during accident conditions are either:

1. Capable of being closed by an OPERABLE containment automatic isolation system, or

2. Closed by at least one manual valve, blind flange, or deactivated automatic valve secured in its closed position, except as provided in Table 3.6.4-1 of Specification, 3.6.4.

b. The containment equipment hatch is closed and sealed.

c. Each containment air lock is OPERABLE pursuant to Specification 3.6.1.3.

d. The containment leakage rates are within the limits of Specification 3.6.1.2.

e. The suppression pool is OPERABLE pursuant to Specification 3.6.3.1.

f. The sealing mechanism associated with each primary containment penetration; e.g., welds, bellows or O-rings, is OPERABLE.

PROCESS CONTROL PROGRAM (PCP)

~~1.31 The PROCESS CONTROL PROGRAM shall contain the sampling, analysis, and formulation determination by which SOLIDIFICATION of radioactive wastes from liquid systems is assured.~~ Insert 580

PURGE - PURGING

1.3~~2~~3 PURGE or PURGING is the controlled process of discharging air or gas from a confinement to maintain temperature, pressure, humidity, concentration or other operating condition, in such a manner that replacement air or gas is required to purify the confinement. 249

RATED THERMAL POWER

1.3~~3~~4 RATED THERMAL POWER shall be a total reactor core heat transfer rate to the reactor coolant of 3833 MWT. 249

Amendment No. ___

INSERT TO DEFINITIONS, 1.31 PAGE 1-6

1.32 The PROCESS CONTROL PROGRAM shall contain the current formula, sampling, analyses, tests, and determinations to be made to ensure that the processing and packaging of solid radioactive wastes based on demonstrated processing of actual or simulated wet solid wastes will be accomplished in such a way as to assure compliance with 10 CFR Part 20, 10 CFR Part 61, 10 CFR Part 71, and Federal and State regulations, burial ground requirements and other requirements governing the disposal of the radioactive waste.

REACTOR PROTECTION SYSTEM RESPONSE TIME

1.3~~4~~5 REACTOR PROTECTION SYSTEM RESPONSE TIME shall be the time interval from when the monitored parameter exceeds its trip setpoint at the channel sensor until de-energization of the scram pilot valve solenoids. The response time may be measured by any series of sequential, overlapping or total steps such that the entire response time is measured. 249

REPORTABLE OCCURRENCE

1.3~~5~~6 A REPORTABLE OCCURRENCE shall be any of those conditions specified in Specifications 6.9.1.12 and 6.9.1.13. 249

ROD DENSITY

1.3~~6~~7 ROD DENSITY shall be the number of control rod notches inserted as a fraction of the total number of control rod notches. All rods fully inserted is equivalent to 100% ROD DENSITY. 249

SECONDARY CONTAINMENT INTEGRITY

1.3~~7~~8 SECONDARY CONTAINMENT INTEGRITY shall exist when: 249

a. All Auxiliary Building and Enclosure Building penetrations required to be closed during accident conditions are either:

   1. Capable of being closed by an OPERABLE secondary containment automatic isolation system, or

   2. Closed by at least one manual valve, blind flange, or deactivated automatic valve or damper, as applicable, secured in its closed position, except as provided in Table 3.6.6.2-1 of Specification 3.6.6.2.

b. All Auxiliary Building and Enclosure Building equipment hatches and blowout panels are closed and sealed.

c. The standby gas treatment system is OPERABLE pursuant to Specification 3.6.6.3.

d. The door in each access to the Auxiliary Building and Enclosure Building is closed, except for normal entry and exit.

e. The sealing mechanism associated with each Auxiliary Building and Enclosure Building penetration, e.g., welds, bellows or O-rings, is OPERABLE.

SHUTDOWN MARGIN

1.39 SHUTDOWN MARGIN shall be the amount of reactivity by which the reactor is subcritical or would be subcritical assuming all control rods are fully inserted except for the single control rod of highest reactivity worth which is assumed to be fully withdrawn and the reactor is in the shutdown condition; cold, i.e. 68°F; and xenon free. 249

INSERT → A 105

SOLIDIFICATION

1.41 SOLIDIFICATION shall be the conversion of wet ~~radioactive~~ wastes ~~from liquid systems to a homogeneous (uniformly distributed), monolithic, immobilized solid with definite volume and shape, bounded by a stable surface of distinct outline on all sides (free-standing).~~ into a form that meets shipping and burial ground requirements. 249 085

SOURCE CHECK

1.42 A SOURCE CHECK shall be the qualitative assessment of channel response when the channel sensor is exposed to a radioactive source. 249

STAGGERED TEST BASIS

1.43 A STAGGERED TEST BASIS shall consist of: 249

a. A test schedule for n systems, subsystems, trains or other designated components obtained by dividing the specified test interval into n equal subintervals.

b. The testing of one system, subsystem, train or other designated component at the beginning of each subinterval.

THERMAL POWER

1.44 THERMAL POWER shall be the total reactor core heat transfer rate to the reactor coolant. 249

UNIDENTIFIED LEAKAGE

1.45 UNIDENTIFIED LEAKAGE shall be all leakage which is not IDENTIFIED LEAKAGE.

INSERT → UNRESTRICTED AREA 1.46
B

VENTILATION EXHAUST TREATMENT SYSTEM

1.47 A VENTILATION EXHAUST TREATMENT SYSTEM is any system designed and installed to reduce gaseous radioiodine or radioactive material in particulate form in effluents by passing ventilation or vent exhaust gases through charcoal adsorbers and/or HEPA filters for the purpose of removing iodines or particulates from the gaseous exhaust stream prior to the release to the environment (such a system is not considered to have any effect on noble gas effluents). Engineered Safety Feature (ESF) atmospheric cleanup systems are not considered to be VENTILATION EXHAUST TREATMENT SYSTEM components. 249

VENTING

1.48 VENTING is the controlled process of discharging air or gas from a confinement to maintain 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. 249

INSERT A TO DEFINITIONS Page 1-8

SITE BOUNDARY

1.40 The SITE BOUNDARY shall be that line beyond which the land is neither owned, nor leased, nor otherwise controlled by the licensee.

INSERT B TO DEFINITIONS, Page 1-8

UNRESTRICTED AREA

1.46 An UNRESTRICTED AREA shall be any area at or beyond the SITE BOUNDARY access to which is not controlled by the licensee for purposes of protection of MEMBERS OF THE PUBLIC from exposure to radiation and radioactive materials, or any area within the SITE BOUNDARY used for residential quarters or for industrial, commercial, institutional, and/or recreational purposes.

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 in liquid effluents ~~from the site~~ to UNRESTRICTED AREAS ~~unrestricted areas~~ (see Figure 5.1.3-1) 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. 249

APPLICABILITY: At all times.

ACTION:

With the concentration of radioactive material released in liquid effluents to UNRESTRICTED AREAS ~~from the site~~ exceeding the above limits, immediately restore the concentration to within the above limits. 249

SURVEILLANCE REQUIREMENTS

4.11.1.1.1 The radioactivity content of each batch of radioactive liquid waste shall be determined prior to release by sampling and analysis in accordance with Table 4.11.1.1.1-1. 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 4.11.1.1.1-1. 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.~~ radioactivity analysis shall be used in accordance with the methodology and parameters in the ODCM to assure that the concentrations at the point of release are maintained within the limits of Specification 3.11.1.1. 249

TABLE 4.11.1.1.1-1 (Continued)

RADIOACTIVE LIQUID WASTE SAMPLING AND ANALYSIS PROGRAM

TABLE NOTATION

a. The LLD is the smallest concentration of radioactive material in a sample that will yield a net count (above system background) that will be detected with 95% probability with only 5% probability of falsely concluding that a blank observation represents a "real" signal.

For a particular measurement system (which may include radiochemical separation):

$$LLD = \frac{4.66\ s_b}{E \cdot V \cdot 2.22 \times 10^6 \cdot Y \cdot \exp(-\lambda\Delta t)}$$ 249

where

LLD is the "a priori" lower limit of detection as defined above (as μCi per unit mass or volume). (Current literature defines the LLD as the detection capability for the instrumentation only, and the MDC, minimum detectable concentration, as the detection capability for a given instrument, procedure, and type of sample.) 249

s_b is the standard deviation of the background counting rate or of the counting rate of a blank sample as appropriate (as counts per minute)

E is the counting efficiency (as counts per disintegration)

V is the sample size (in units of mass or volume)

2.22×10^6 is the number of disintegrations per minute per ~~picocurie~~ microcurie 249

Y is the fractional radiochemical yield (when applicable)

λ is the radioactive decay constant for the particular radionuclide

Δt is the elasped time between sample collection (or end of the sample collection period) and time of counting

The value of s_b used in the calculation of the LLD for a particular measurement system should be based on the actual observed variance of the background counting rate or of the counting rate of the blank samples (as appropriate) rather than on an unverified theoretically predicated variance.

~~In calculating the LLD for a radionuclide determined by gamma-ray spectrometry, the background should include the typical contributions of other radionuclides normally present in the samples.~~ Typical values of E, V, Y and Δt should be used in the calculation. 249

It should be recognized that the LLD is defined as an a priori (before the fact) limit representing the capability of a measurement system and not as a posteriori (after the fact) limit for a particular measurement. 249

TABLE 4.11.1.1.1-1 (Continued)

RADIOACTIVE LIQUID WASTE SAMPLING AND ANALYSIS PROGRAM

TABLE NOTATION (Continued)

b. A composite sample is one in which the quantity of liquid sampled is proportional to the quantity of liquid waste discharged and in which the method of sampling employed results in a specimen which is representative of the liquids released.

c. A batch release is the discharge of liquid wastes of a discrete volume. Prior to sampling for analyses, each batch shall be isolated, and then thoroughly mixed to assure representative sampling.

d. The principal gamma emitters for which the LLD specification applies exclusively are the following radionuclides: Mn-54, Fe-59, Co-58, Co-60, Zn-65, Mo-99, Cs-134, Cs-137, Ce-141, and Ce-144. This list does not mean that only these nuclides are to be detected and reported. Other peaks which are measurable and identifiable, together with the above nuclides, shall also be identified and reported.

~~For a more complete discussion of the LLD, and other detection limits, see the following:~~
~~(1) HASL Procedures Manual, HASL-300 (revised annually).~~
~~(2) Currie, L. A., "Limits for Qualitative Detection and Quantitative Determination - Application to Radiochemistry" Anal. Chem. 40, 586-93 (1968).~~
~~(3) Hartwell, J. K., "Detection Limits for Radioisotopic Counting Techniques," Atlantic Richfield Hanford Company Report ARH-2537 (June 22, 1972).~~

249

RADIOACTIVE EFFLUENTS

DOSE

LIMITING CONDITION FOR OPERATION

3.11.1.2 The dose or dose commitment to a MEMBER OF THE PUBLIC ~~an individual~~ from radioactive materials in liquid effluents released, from each reactor unit, to UNRESTRICTED AREAS ~~from the site~~ (see Figure 5.1.3-1) shall be limited: 249

a. During any calendar quarter to less than or equal to 1.5 mrem to the total body and to less than or equal to 5 mrem to any organ, and

b. During any calendar year to less than or equal to 3 mrem to the total body and to less than or equal to 10 mrem to any organ.

APPLICABILITY: At all times.

ACTION:

a. With the calculated dose from the release of radioactive materials in liquid effluents exceeding any of the above limits, in lieu of any other report required by Specification 6.9.1, prepare and submit to the Commission within 30 days, pursuant to Specification 6.9.2, a Special Report which identifies the cause(s) for exceeding the limit(s) and defines the corrective actions that have been taken to reduce the release and the corrective actions to be taken to ensure that future releases will be in compliance with ~~Specification 3.11.1.2.~~ the above limits. This Special Report shall also include (1) the results of radiological analyses of the drinking water source and (2) the radiological impact on finished drinking water supplies with regard to the requirements of 40 CFR Part 141.* 249

b. The provisions of Specifications 3.0.3 and 3.0.4 are not applicable.

SURVEILLANCE REQUIREMENTS

4.11.1.2 Dose Calculations. Cumulative dose contributions from liquid effluents for the current calendar quarter and the current calendar year shall be determined in accordance with the methodology and parameters of the ODCM at least once per 31 days. 680

*Applicable only if drinking water supply is taken from the receiving water body within 3 miles downstream of the plant discharge. 249

RADIOACTIVE EFFLUENTS

LIQUID WASTE TREATMENT

LIMITING CONDITION FOR OPERATION

3.11.1.3 The liquid radwaste system ~~components as specified in the ODCM shall be OPERABLE. The appropriate portions of the system~~ shall be used to reduce the radioactive materials in liquid wastes prior to their discharge when the ~~cumulative~~ projected doses due to the liquid effluent ~~from the site~~ from each reactor unit to UNRESTRICTED AREAS (see Figure 5.1.3-1) ~~in a 31 day period~~ would exceed 0.06 mrem to the total body or 0.2 mrem to any organ, in a 31 day period. | 086 | 086

APPLICABILITY: At all times.

ACTION:

a. With ~~the liquid radwaste treatment system inoperable for more than 31 days or with~~ radioactive liquid waste being discharged without treatment and in excess of the above limits, in lieu of any other report required by Specification 6.9.1, prepare and submit to the Commission within 30 days pursuant to Specification 6.9.2 a Special Report which includes the following information: | 086

   Insert → 1. ~~Identification of the inoperable equipment or subsystems and the reason for inoperability,~~ | 086

   2. Action(s) taken to restore the inoperable equipment to OPERABLE status, and

   3. Summary description of action(s) taken to prevent a recurrence.

b. The provisions of Specifications 3.0.3 and 3.0.4 ~~and 6.9.1.11~~ are not applicable. | 086

SURVEILLANCE REQUIREMENTS

4.11.1.3.1 Doses due to liquid releases from each reactor unit to ~~unrestricted areas~~ UNRESTRICTED AREAS shall be projected at least once per 31 days, in accordance with methodology and parameters in the ODCM. | 086

4.11.1.3.2 ~~The liquid radwaste system components specified in the ODCM shall be demonstrated OPERABLE by operating the liquid radwaste treatment system equipment for at least 30 minutes at least once per 92 days unless the liquid radwaste system has been utilized to process radioactive liquids during the previous 92 days.~~ The installed liquid radwaste system shall be demonstrated OPERABLE by meeting Specifications 3.11.1.1 and 3.11.1.2. | 086

INSERT TO ACTION a.1 OF SPECIFICATION 3.11.1.3, PAGE 3/4 11-6

Explanation of why liquid radwaste was being discharged without treatment, identification of any inoperable equipment or subsystems which resulted in liquid radwaste being discharged without treatment, and the reason for the inoperability,

RADIOACTIVE EFFLUENTS

LIQUID HOLDUP TANKS

LIMITING CONDITION FOR OPERATION

3.11.1.4 The quantity of radioactive material contained in any outside temporary tank, not including liners for shipping radwaste, shall be limited to less than or equal to 10 curies, excluding tritium and dissolved or entrained noble gases.

APPLICABILITY: At all times.

ACTION:

a. With the quantity of radioactive material in any of the above specified tanks exceeding the above limit, immediately suspend all additions of radioactive material to the tanks and within 48 hours reduce the tank contents to within the limit, and describe the events leading to the condition in the next Semiannual Radioactive Effluent Release Report. 249

b. The provisions of Specifications 3.0.3, and 3.0.4 ~~and 6.9.1.11~~ are not applicable.

SURVEILLANCE REQUIREMENTS

4.11.1.4 The quantity of radioactive material contained in each of the above specified tanks shall be determined to be within the above limit by analyzing a representative sample of the tank's contents at least once per 7 days when radioactive materials are being added to the tank. 249

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 to areas at and beyond the SITE BOUNDARY (see Figure 5.1.3-1) 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 Iodine-131, Iodine-133, ~~radioiodines,~~ tritium and all radionuclides ~~radioactive materials~~ in particulate form with half lives greater than 8 days: Less than or equal to 1500 mrem/yr to any organ.

APPLICABILITY: At all times.

ACTION:

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

SUREVEILLANCE 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~~ methodology and ~~procedures~~ parameters of the ODCM.

4.11.2.1.2 The dose rate due to Iodine-131, Iodine-133 ~~radioiodines~~, tritium and to radionuclides ~~radioactive materials~~ in particulate form with half lives greater than 8 days, ~~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 4.11.2.1.2-1.

methodology and parameters

RADIOACTIVE GASEOUS WASTE SAMPLING AND ANALYSIS PROGRAM

TABLE NOTATION

a. The LLD is the smallest concentration of radioactive material in a sample that will yield a net count (above system background) that will be detected with 95% probability with only 5% probability of falsely concluding that a blank observation represents a "real" signal.

For a particular measurement system (which may include radiochemical separation):

$$LLD = \frac{4.66\ s_b}{E \cdot V \cdot 2.22 \times 10^6 \cdot Y \cdot \exp(-\lambda \Delta t)}$$ 249

where

LLD is the "a priori" lower limit of detection as defined above (as μCi per unit mass or volume). (Current literature defines the LLD as the detection capability for the instrumentation only, and the MDC, minimum detectable concentration, as the detection capability for a given instrument, procedure, and type of sample.) 249

s_b is the standard deviation of the background counting rate or of the counting rate of a blank sample as appropriate (as counts per minute)

E is the counting efficiency (as counts per disintegration)

V is the sample size (in units of mass or volume)

2.22×10^6 is the number of disintegrations per minute per ~~picocurie~~ microcurie 249

Y is the fractional radiochemical yield (when applicable)

λ is the radioactive decay constant for the particular radionuclide

Δt is the elapsed time between sample collection (or end of the sample collection period) and time of counting

The value of s_b used in the calculation of the LLD for a particular measurement system should be based on the actual observed variance of the background counting rate or of the counting rate of the blank samples (as appropriate) rather than on an unverified theoretically predicated variance.

~~In calculating the LLD for a radionuclide determined by gamma-ray spectrometry, the background should include the typical contributions of other radionuclides normally present in the samples.~~ Typical values of E, V, Y and Δt should be used in the calculation. 249

It should be recognized that the LLD is defined as an a priori (before the fact) limit representing the capability of a measurement system and not as a posteriori (after the fact) limit for a particular measurement. 249

TABLE 4.11.2.1.2-1 (Continued)

RADIOACTIVE GASEOUS WASTE SAMPLING AND ANALYSIS PROGRAM

TABLE NOTATION (Continued)

b. Analyses shall also be performed following startup from cold shutdown, or a THERMAL POWER change exceeding 15 percent of the RATED THERMAL POWER within a one hour period.

c. 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 and analyses shall also be performed at least once per 24 hours for at least 7 days following each shutdown, startup or THERMAL POWER change exceeding 15 percent of RATED THERMAL POWER in one hour. When samples collected for 24 hours are analyzed, the corresponding LLD's may be increased by a factor of 10.

d. 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 and 3.11.2.3.

e. 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 measurable and identifiable, together with the above nuclides, shall also be identified and reported.

~~*For a more complete discussion of the LLD, and other detection limits, see the following:~~
~~(1) HASL Procedures Manual, HASL-300 (revised annually).~~
~~(2) Currie, L. A., "Limits for Qualitative Detection and Quantitative Determination - Application to Radiochemistry" Anal. Chem. 40, 586-93 (1968).~~
~~(3) Hartwell, J. K., "Detection Limits for Radioisotopic Counting Tecnhiques," Atlantic Richfield Hanford Company Report ARH-2537 (June 22, 1972).~~

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RADIOACTIVE EFFLUENTS

DOSE - NOBLE GASES

LIMITING CONDITION FOR OPERATION

3.11.2.2 The air dose due to noble gases released in gaseous effluents, from each reactor unit, from the site (see Figure 5.1.3-1) shall be limited to the following: 249
(To areas at and beyond the SITE BOUNDARY

a. During any calendar quarter: Less than or equal to 5 mrad for gamma radiation and less than or equal to 10 mrad for beta radiation, and

b. During any calendar year: Less than or equal to 10 mrad for gamma radiation and less than or equal to 20 mrad for beta radiation.

APPLICABILITY: At all times.

ACTION:

a. With the calculated air dose from the radioactive noble gases in gaseous effluents exceeding any of the above limits, in lieu of any other report required by Specification 6.9.1, prepare and submit to the Commission within 30 days, pursuant to Specification 6.9.2, a Special Report which identifies the cause(s) for exceeding the limit(s) and defines the corrective actions to be taken to ensure that future releases will be in compliance with Specification 3.11.2.2.

b. The provisions of Specifications 3.0.3 and 3.0.4 are not applicable.

SURVEILLANCE REQUIREMENTS

For noble gases

4.11.2.2 Dose Calculations. Cumulative dose contributions ~~from gaseous effluents~~ for the current calendar quarter and current calendar year shall be determined in accordance with the ODCM at least once per 31 days. 249
methodology and parameters in the

RADIOACTIVE EFFLUENTS

IODINE-131, IODINE-133, TRITIUM AND RADIONUCLIDES

DOSE - ~~RADIOIODINES, RADIOACTIVE MATERIALS~~ IN PARTICULATE FORM ~~AND TRITIUM~~ 191

LIMITING CONDITION FOR OPERATION

a MEMBER OF THE PUBLIC Iodine-131, Iodine-133, tritium and

3.11.2.3 The dose to ~~an individual~~ from ~~tritium, radioiodines and radioactive~~ 191

radionuclides ~~materials~~ in particulate form with half-lives greater than 8 days in gaseous effluents released, from each reactor unit, from the site (see Figure 5.1.3-1) 501 shall be limited to the following:

to areas at and beyond the SITE BOUNDARY

a. During any calendar quarter: Less than or equal to 7.5 mrem to any organ, and

b. During any calendar year: Less than or equal to 15 mrem to any organ.

APPLICABILITY: At all times.

ACTION:

particulate

Iodine-131, Iodine-133, tritium and radionuclides

a. With the calculated dose from the release of ~~tritium, radioiodines, or radioactive materials~~ in ~~paticulate~~ form, with half-lives greater than 8 days, in gaseous effluents exceeding any of the above limits, in lieu of any other report required by Specification 6.9.1, prepare and submit to the Commission within 30 days, pursuant to Specification 6.9.2, a Special Report which identifies the cause(s) for exceeding the limit and defines the corrective actions that have been taken to reduce releases and the proposed corrective actions to be taken to ensure that future releases will be in compliance with Specification 3.11.2.3. 191

b. The provisions of Specifications 3.0.3 and 3.0.4 are not applicable.

SURVEILLANCE REQUIREMENTS

Iodine-131, Iodine-133, tritium and radionuclides

4.11.2.3 Dose Calculations. Cumulative dose contributions from ~~tritium, radioiodines, and radioactive materials~~ in particulate form ~~wth~~ with half-lives greater than 8 days for the current calendar quarter and current calendar year shall be determined in accordance with the methodology and parameters in the ODCM at least once per 31 days. 191

RADIOACTIVE EFFLUENTS

GASEOUS RADWASTE TREATMENT

LIMITING CONDITION FOR OPERATION

3.11.2.4 The GASEOUS RADWASTE TREATMENT (OFFGAS) SYSTEM ~~components as specified in the ODCM~~ shall be in operation. 192

APPLICABILITY: Whenever the main condenser air ejector system is in operation.

ACTION:

gaseous radwaste from the main condenser air ejector system being discharged without treatment for

a. With ~~the GASEOUS RADWASTE TREATMENT (OFFGAS) SYSTEM inoperable for~~ more than 7 consecutive days, in lieu of any other report required by Specification 6.9.1, prepare and submit to the Commission within 30 days, pursuant to Specification 6.9.2, a Special Report which includes the following information: 192

Explanation of why gaseous radwaste was being discharged without treatment,

1. ~~I~~identification of the inoperable equipment or subsystems which resulted in gaseous radwaste being discharged without treatment, and the reason for inoperability, 192

2. Action(s) taken to restore the inoperable equipment to OPERABLE status, and

3. Summary description of action(s) taken to prevent a recurrence.

b. The provisions of Specifications 3.0.3 and 3.0.4 ~~and 6.9.1.11~~ are not applicable. 192

SURVEILLANCE REQUIREMENTS

4.11.2.4 ~~The GASEOUS RADWASTE TREATMENT (OFFGAS) SYSTEM components specified in the ODCM shall be demonstrated OPERABLE by operating the GASEOUS RADWASTE TREATMENT SYSTEM components as described in the ODCM for at least 30 minutes at least once per 92 days unless the system has been utilized to process radioactive gas during the previous 92 days.~~ 192

The instruments specified in the ODCM shall be checked every 12 hours whenever the main condenser air ejector system is in operation to ensure that the GASEOUS RADWASTE TREATMENT (OFFGAS) SYSTEM is functioning.

RADIOACTIVE EFFLUENTS

VENTILATION EXHAUST TREATMENT

LIMITING CONDITION FOR OPERATION

3.11.2.5 The ~~appropriate portions of the~~ VENTILATION EXHAUST TREATMENT SYSTEM shall ~~be OPERABLE and~~ be used to reduce radioactive materials in gaseous waste prior to their discharge when the projected ~~cumulative~~ dose due to gaseous effluent releases from ~~the site~~ each reactor unit to areas at and beyond the SITE BOUNDARY (see Figure 5.1.3-1) in a 31 day period would exceed 0.3 mrem to any organ. 105 086

APPLICABILITY: At all times other than when the VENTILATION EXHAUST TREATMENT SYSTEM is undergoing routine maintenance.* 086

ACTION:

a. With ~~the VENTILATION EXHAUST TREATMENT SYSTEM inoperable for more than 31 days, or with~~ gaseous waste being discharged without treatment and in excess of the above limits, in lieu of any other report required by Specification 6.9.1, prepare and submit to the Commission within 30 days, pursuant to Specification 6.9.2, a Special Report which includes the following information: 086

   1. Insert ~~Identification of the inoperable equipment or subsystems and the reason for inoperability,~~ 086

   2. Action(s) taken to restore the inoperable equipment to OPERABLE status, and

   3. Summary description of action(s) taken to prevent a recurrence.

b. The provisions of Specifications 3.0.3 and 3.0.4 ~~and 6.9.1.11~~ are not applicable. 086

SURVEILLANCE REQUIREMENTS

4.11.2.5.1 Doses due to gaseous releases from ~~the site~~ each reactor unit to areas at and beyond the SITE BOUNDARY shall be projected at least once per 31 days in accordance with the methodology and parameters in the ODCM. 105 086

4.11.2.5.2 ~~The VENTILATION EXHAUST TREATMENT SYSTEM shall be demonstrated OPERABLE by operating the VENTILATION EXHAUST TREATMENT SYSTEM equipment for at least 30 minutes, at least once per 92 days unless the appropriate system has been utilized to process radioactive gaseous effluents during the previous 92 days.~~ The installed VENTILATION EXHAUST TREATMENT SYSTEM shall be demonstrated OPERABLE by meeting Specifications 3.11.2.1 and 3.11.2.2 or 3.11.2.3. 086

*Not applicable to Turbine Building ventilation exhaust unless filtration media is installed

INSERT TO ACTION a.1 OF SPECIFICATION 3.11.2.5, PAGE 3/4 11-15

Explanation of why gaseous radwaste was being discharged without treatment, identification of any inoperable equipment or subsystems which resulted in gaseous radwaste being discharged without treatment, and the reason for the inoperability,

3/4.11.3 SOLID RADIOACTIVE WASTE

LIMITING CONDITION FOR OPERATION

3.11.3 The solid radwaste system as specified in the PROCESS CONTROL PROGRAM shall be OPERABLE and used, as applicable in accordance with a PROCESS CONTROL PROGRAM, for the SOLDIFICATION and packaging of radioactive wastes to ensure meeting the requirements of 10 CFR Part 20 and of 10 CFR Part 71 prior to shipment of radioactive wastes from the site.

APPLICABILITY: At all times.

ACTION:

a. With the packaging requirments of 10 CFR Part 20 and/or 10 CFR Part 71 not satisfied, suspend shipments of defectively packaged solid radioactive wastes from the site.

b. With the solid radwaste system inoperable for more than 31 consecutive days, in lieu of any other report required by Specification 6.9.1, prepare and submit to the Commission within 30 days pursuant to Specification 6.9.2 a Special Report which includes the following information:

INSERT NEW PAGE

1. Identification of the inoperable equipment or subsystems and the reason for inoperability,

2. Action(s) taken to restore the inoperable equipment to OPERABLE status,

3. A description of the alternative used for SOLDIFICATION and packaging of radioactive wastes, and

4. Summary description of action(s) taken to prevent a recurrence.

c. The provisons of Specifications 3.0.3, 3.0.4 and 6.9.1.11 are not applicable.

SURVEILLANCE REQUIREMENTS

4.11.3.1 The solid radwaste system shall be demonstrated OPERABLE at least once per 92 days by:

a. Operating the solid radwaste system at least once in the previous 92 days in accordance with the PROCESS CONTROL PROGRAM, or

b. Verification of the existence of a valid contract for SOLIDIFICATION to be performed by a contractor in accordance with a PROCESS CONTROL PROGRAM.

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3/4.11.3 SOLID RADIOACTIVE WASTE

LIMITING CONDITION FOR OPERATION

3.11.3 The solid radwaste system shall be used in accordance with a PROCESS CONTROL PROGRAM to process wet radioactive wastes to meet shipping and burial ground requirements.

APPLICABILITY: At all times.

ACTION:

a. With the provisions of the PROCESS CONTROL PROGRAM not satisfied, suspend shipments of defectively processed or defectively packaged solid radioactive wastes from the site.

b. The provisions of Specifications 3.0.3 and 3.0.4 are not applicable.

SURVEILLANCE REQUIREMENTS

4.11.3 The PROCESS CONTROL PROGRAM shall be used to verify the SOLIDIFICATION* of at least one representative test specimen from at least every tenth batch of each type of wet radioactive waste. 085

a. If any test specimen fails to verify SOLIDIFICATION*, the SOLIDIFICATION* of the batch under test shall be suspended until such time as additional test specimens can be obtained, alternative SOLIDIFICATION* parameters can be determined in accordance with the PROCESS CONTROL PROGRAM, and a subsequent test verifies SOLIDIFICATION*. SOLIDIFICATION* of the batch may then be resumed using the alternative SOLIDIFICATION* parameters determined by the PROCESS CONTROL PROGRAM.

b. If the initial test specimen from a batch of waste fails to verify SOLIDIFICATION*, the PROCESS CONTROL PROGRAM shall provide for the collection and testing of representative test specimens from each consecutive batch of the same type of wet waste until at least 3 consecutive initial test specimens demonstrate SOLIDIFICATION*. The PROCESS CONTROL PROGRAM shall be modified as required, as provided in Specification 6.13, to assure SOLIDIFICATION* of subsequent batches of waste.

*Except dewatering.

SURVEILLANCE REQUIREMENTS (Continued)

4.11.3.2 The PROCESS CONTROL PROGRAM shall be used to verify the SOLIDIFICATION of at least one representative test specimen from at least every tenth batch of each type of wet radioactive waste, e.g., filter sludges, spent resins, evaporator bottoms, and sodium sulfate solutions, categorized as "non-specific" waste, except Equipment Filter Sludge and Floor Filter Sludge wastes which are required at least one representative test specimen from at least every twentieth batch. For batches categorized as "specific" waste, sampling shall be as outlined in the PROCESS CONTROL PROGRAM.

a. If any test specimen of "non-specific" waste fails to verify SOLIDIFICATION, the SOLIDIFICATION of the batch under test shall be suspended until such time as additional test specimens can be obtained, alternative SOLIDIFICATION parameters can be determined in accordance with the PROCESS CONTROL PROGRAM, and a subsequnt test verifies SOLIDIFICATION. SOLIDIFICATION of the batch may then be resumed using the alternative SOLIDIFICATION parameters determined by the PROCESS CONTROL PROGRAM.

b. If the initial test specimen from a batch of "non-specific" waste fails to verify SOLIDIFICATION, the PROCESS CONTROL PROGRAM shall provide for the collection and testing of representative test specimens from each consecutive batch of the same type of wet waste until at least 3 consecutive initial test specimens demonstrate SOLIDICAITION. The PROCESS CONTROL PROGRAM shall be modified as required, as provided in Specification 6.13.2, to assure SOLIDIFICATION of subsequent batches of waste.

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3/4.11.4 TOTAL DOSE

LIMITING CONDITION FOR OPERATION

3.11.4 The dose or dose commitments over 12 consecutive months to any member of the public, due to releases of radioactivity and radiation, from uranium fuel cycle sources shall be limited to: a. less than or equal to 25 mrem to the total body or any organ (except the thyroid), b. less than or equal to 75 mrem to the thyroid.

APPLICABILITY: At all times.

ACTION:

a. With the calculated doses from the release of radioactive materials in liquid or gaseous effluents exceeding twice the limits of Specification 3.11.1.2.a, 3.11.1.2.b, 3.11.2.2.a, 3.11.2.2.b, 3.11.2.3.a, or 3.11.2.3.b, in lieu of any other report reuqired by Specification 6.9.1, prepare and submit a Special Report to the Director, Nuclear Reactor Regulation, U.S. Nuclear Regulatory Commission, Washington, D.C. 20555, within 30 days, which defines the corrective action to be taken to reduce subsequent releases to prevent recurrence and exceeding the limits of Specification 3.11.4. This Special Report shall include an analysis which estimates the radiation exposure (i.e., dose) to a member of the public from uranium fuel cycle sources including all effluent pathways and direct radiation for a 12 consecutive month period that includes the release(s) coverd by this report. If the estimated dose(s) exceeds the limits of Specification 3.11.4, and if the release condition resulting in violation of 40 CFR 190 has not already been corrected, the Special Report shall include a request for a variance in accordance with the provisions of 40 CFR 190 and including the specified information of § 190.00(b). Submittal of the report is considered a timely request, and a variance is granted until staff action on the request is complete. The variance only relates to the limits of 40 CFR 190, and does not apply in any way to the requirements for dose limitation of 10 CFR Part 20, as addressed in other sections of this technical specification.

b. The provisions of Specifications 3.0.3 and 3.0.4 are not applicable.

SURVEILLANCE REQUIREMENTS

4.11.4 <u>Dose Calculations</u>. Cumulative dose contributions from liquid and gaseous effluents shall be determined in accordance wth Specifications 4.11.1.2, 4.11.2.2, and 4.11.2.3, and in accordance with the ODCM.

RADIOACTIVE EFFLUENTS

3/4.11.4 TOTAL DOSE

LIMITING CONDITION FOR OPERATION

3.11.4 The annual (calendar year) dose or dose commitment to any MEMBER OF THE PUBLIC due to releases of radioactivity and to radiation from uranium fuel cycle sources shall be limited to less than or equal to 25 mrem to the total body or any organ, except the thyroid, which shall be limited to less than or equal to 75 mrem .

APPLICABILITY: At all times.

ACTION:

a. With the calculated doses from the release of radioactive materials in liquid or gaseous effluents exceeding twice the limits of Specification 3.11.1.2.a, 3.11.1.2.b, 3.11.2.2.a, 3.11.2.2.b, 3.11.2.3.a, or 3.11.2.3.b, calculations should be made including direct radiation contributions from the reactor units and from outside storage tanks to determine whether the above limits of Specification 3.11.4 have been exceeded. If such is the case, prepare and submit to the commission within 30 days, pursuant to Specification 6.9.2, a Special Report that defines the corrective action to be taken to reduce subsequent releases to prevent recurrence of exceeding the above limits and includes the schedule for achieving conformance with the above limits. This Special Report, as defined in 10 CFR Part 20.405c, shall include an analysis that estimates the radiation exposure (dose) to a MEMBER OF THE PUBLIC from uranium fuel cycle sources, including all effluent pathways and direct radiation, for the calendar year that includes the release(s) covered by this report. It shall also describe levels of radiation and concentrations of radioactive material involved, and the cause of the exposure levels or concentrations. If the estimated dose(s) exceeds the above limits, and if the release condition resulting in violation of 40 CFR Part 190 has not already been corrected, the Special Report shall include a request for a variance in accordance with the provisions of 40 CFR Part 190. Submittal of the report is considered a timely request, and a variance is granted until staff action on the request is complete.

b. The provisions of Specification 3.0.3 and 3.0.4 are not applicable.

SURVEILLANCE REQUIREMENTS

4.11.4.1 Cumulative dose contributions from liquid and gaseous effluents shall be determined in accordance with Specifications 4.11.1.2, 4.11.2.2, and 4.11.2.3, and in accordance with the methodology and parameters in the ODCM.

4.11.4.2 Cumulative dose contributions from direct radiation from the reactor units and from radwaste storage tanks shall be determined in accordance with the methodology and parameters in the ODCM. This requirement is applicable only under conditions set forth in Specification 3.11.4.a.

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3/4.12 RADIOLOGICAL ENVIRONMENTAL MONITORING

3/4.12.1 MONITORING PROGRAM

LIMITING CONDITION FOR OPERATION

3.12.1 The radiological environmental monitoring program shall be conducted as specified in Table 3.12.1-1.

APPLICABILITY: At all times.

ACTION:

a. With the radiological environmental monitoring program not being conducted as specified in Table 3.12.1-1, prepare and submit to the Commission, in the Annual Radiological Environmental Operating Report per Specification 6.9.1.7, a description of the reasons for not conducting the program as required and the plans for preventing a recurrence.

b. With the level of radioactivity as the result of plant effluent in an environmental sampling medium at a specified location exceeding the reporting levels of Table 3.12.1-2 when averaged over any calendar quarter, prepare and submit to the Commission within 30 days, ~~from the end of the affected calendar quarter~~ pursuant to Specification 6.9.2 a Special Report that identifies the cause(s) for exceeding the limit(s) and defines the corrective actions to be taken to reduce radioactive effluents so that the potential annual dose to ~~an individual~~ a MEMBER OF THE PUBLIC is less than the calendar year limits of Specification 3.11.1.2, 3.11.2.2 and 3.11.2.3. pursuant to Specification 6.9.1.13.f. When more than one of the radionuclides in Table ~~3.12-2~~ 3.12.1-2 are detected in the sampling medium, this report shall be submitted if: 249

$$\frac{\text{concentration (1)}}{\text{reporting level (1)}} + \frac{\text{concentration (2)}}{\text{reporting level (2)}} + \ldots \geq 1.0$$

When radionuclides other than those in Table 3.12.1-2 are detected and are the result of plant effluents, this report shall be submitted if the potential annual dose to ~~an individual~~ a MEMBER OF THE PUBLIC is equal to or greater than the calendar year limits of Specifications 3.11.1.2, 3.11.2.2 and 3.11.2.3. This report is not required if the measured level of radioactivity was not the result of plant effluents; however, in such an event, the condition shall be reported and described in the Annual Radiological Environmental Operating Report. 249

c. ~~With~~ If milk or ~~fresh leafy vegetable samples unavailable~~ broad leaf vegetation sampling is relocated from one or more of the sample locations required by Table 3.12.1-1, ~~in lieu of any other report required by Specification 6.9.1, prepare and submit to the Commission within 30 days, pursuant to Specification 6.9.2, a Special Report which identifies the cause of the unavailability of samples and identifies locations for obtaining replacement samples.~~ Insert {the radiological environmental monitoring program and} The specific locations from which samples were unavailable may then be deleted from the table(s) in the ODCM provided the locations from which the replacement samples were obtained are added to the table(s) as replacement locations. 249

d. The provisions of Specifications 3.0.3 and 3.0.4 are not applicable. 249

INSERT TO SPECIFICATION 3.12.1, PAGE 3/4 12-1

identify new locations for obtaining replacement samples and add them to the radiological environmental monitoring program within 30 days. In addition, report the cause(s) of the unavailability of samples and the new locations for obtaining replacement samples in the next Semi-annual Radioactive Effluent Release Report. Include in this report the revised ODCM Figure(s) and table(s) reflecting the new locations.

TABLE 3.12.1-1

OPERATIONAL RADIOLOGICAL ENVIRONMENTAL MONITORING PROGRAM

Exposure Pathway and/or Sample	Number of Samples[a] and Locations	Sampling and Collection Frequency[a]	Type and Frequency of Analysis
AIRBORNE			
Radioiodine and Particulates	Samples from 5 locations: 3 samples ~~from offsite locations~~ close to the SITE BOUNDARY (in different sectors) ~~of the~~ having highest calculated annual average groundlevel ~~X/Q~~. D/Q 1 sample from the vicinity of a community having the highest calculated annual average groundlevel ~~X/Q~~. D/Q 1 sample from a control location 15-30 km (10-20 miles) distance ~~[c]~~ [d]	Continuous sampler operation with sample collection weekly or as required by dust loading, whichever is more frequent[b]	Radioiodine Cannister: analyze weekly for I-131 Particulate Sampler: Gross beta radioactivity following filter change,[b] composite (by location) for gamma isotopic[c] ~~qualerly~~ quarterly
DIRECT RADIATION ~~[f]~~ [e]	Insert ~~40 stations with two or more dosimeters or one instrument for measuring and recording dose rate continuously to be placed as follows: 1) an inner ring of stations in the general area of the site boundary and an outer ring in the 4 to 5 mile range from the site with a station in each sector of each ring (16 sectors x 2 rings = 32 stations). The balance of the stations should be placed in special interest areas such as population centers, nearby residences, schools, and in 2 or 3 areas to serve as control stations.~~	Quarterly	Gamma dose ~~qualerly~~ quarterly

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INSERT TO TABLE 3.12.1-1, PAGE 3/4 12-3

40 stations with two or more dosimeters or one instrument for measuring and recording dose rate continuously to be placed in each accessible* sector as follows:

1) An inner ring of stations in the general area of the SITE BOUNDARY

2) An outer ring approximately 3 to 5 miles from the site.

The balance of the stations should be placed in special interest areas such as population centers, nearby residences, schools, and in 1 or 2 areas to serve as control stations.

TABLE 3.12.1-1 (Continued)

OPERATI NAL RADIOLOGICAL ENVIRONMENTAL MONITORING PROGRAM

Exposure Pathway and/or Sample	Number of Samples[a] and Locations	Sampling and Collection Frequency[a]	Type and Frequency of Analysis
WATERBORNE			
Surface[g] [f]	1 sample upstream 1 sample downstream	Monthly	Gamma isotopic analysis monthly.[c] Composite for tritium analyses quarterly
	Discharge Basin	Composite sample over one-month period[*g]	
Ground	Samples from 2 sources	Quarterly	Gamma isotopic[c] and tritium analysis quarterly
Cistern Water	1 sample of the nearest source that could be affected 1 sample from a control location	Monthly	I-131, Gross β and gamma isotopic analyses[c] monthly. Composite for tritium analysis quarterly
Sediment from Shoreline	1 sample from downstream area	Semiannually	Gamma isotopic analyses[c] semiannually
INGESTION			
Milk	Samples from milking animals in 3 locations within 5 km distant having the highest dose potential. If there are none then, 1 sample from milking animals in each of 3 areas between 5 to 8 km distant where doses are calculated to be greater than 1 mrem per year[*h]	Semimonthly when animals are on pasture, monthly at other times	Gamma isotopic[c] and I-131 analysis semimonthly when animals are on pasture; monthly at other times.

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TABLE 3.12.1-1 (Continued)

OPERA IONAL RADIOLOGICAL ENVIRONMENTAL MONITORING PROGRAM

Exposure Pathway and/or Sample	Number of Samples[a] and Locations	Sampling and Collection Frequency[a]	Type and Frequency of Analysis
Milk (cont'd)	1 sample from milking animals at a control location (15-30 km distant)	one species of commercially or recreationally important fish	
Fish and Invertebrates	1 sample of ~~catfish~~ in vicinity of discharge point	Semiannually	Gamma isotopic[c] analysis on edible portions 036 249
	1 sample of same species in areas ~~fa~~ not influenced by plant discharge		
Food Products Samples of 3 different kinds of broad leaf vegetation grown nearest each of two different offsite locations	~~3 samples of broad leaf vegetation grown near site Boundary Location~~ with highest anticipated annual average ground-level D/Q if milk sampling is not performed	Monthly when available	Gamma isotopic[c] and I-131 analysis 036 194
	1 sample of each of the similar vegetation grown 15-30 km distant if milk sampling is not performed	Monthly when available	Gamma isotopic[c] and I-131 analysis 036

TABLE 3.12.1-1 (Continued)

OPERATIONAL RADIOLOGICAL ENVIRONMENTAL MONITORING PROGRAM

TABLE NOTATION 249

* As described in the ODCM

Insert

[a] ~~Sample locations are indicated in the ODCM.~~ 249

[b] Particulate sample filters should be analyzed for gross beta 24 hours or more after sampling to allow for radon and thoron daughter decay. If gross beta activity in air or water is greater than ten times the yearly mean of control samples for any medium, gamma isotopic analysis should be performed on the individual samples.

[c] Gamma isotopic analysis means the identification and quantification of gamma-emitting radionuclides that may be attributable to the effluents from the facility.

[d] The purpose of this sample is to obtain background information.

~~[e] Canisters for the collection of radioiodine in air are subject to channeling. These devices should be carefully checked before operation in the field to prevent loss of iodine.~~ 249

[e] ~~[f]~~ ~~Regulatory Guide 4.13 provides minimum acceptable performance criteria for thermoluminescence dosimetry (TLD) systems used for environmental monitoring.~~ One or more instruments, such as a pressurized ion chamber, for measuring and recording dose rate continuously may ~~my~~ be used in place of, or in addition to, integrating dosimeters. For the purposes of this table, a thermoluminescent dosimeter may be considered to be one phosphor and two or more phosphors in a packet may be considered as two or more dosimeters. Film badges should not be used for measuring direct radiation. 249

[f] ~~[g]~~ The "upstream sample" should be taken at a distance beyond significant influence of the discharge. The "downstream" sample should be taken in an area beyond but near the mixing zone. 249

[g] ~~[+]~~ Composite samples should be collected with equipment (or equivalent) which is capable of collecting an aliquot at time intervals which are very short (e.g., hourly) relative to the compositing period (e.g., monthly). 249

[h] ~~[*]~~ The dose shall be calculated using methodology contained in the ODCM. 249

INSERT TO TABLE 3.12.1-1, PAGE 3/4 12-6

Specific parameters of distance and direction sector from the centerline of one reactor, and additional description where pertinent, shall be provided for each and every sample location in Table 3.12.1-1 in the table(s) and figure(s) in the ODCM. Refer to NUREG-0133, "Preparation of Radiological Effluent Technical Specifications for Nuclear Power Plants," October 1978, and to Radiological Assessment Branch Technical Position, Revision 1, November 1979. Deviations are permitted from the required sampling schedule if specimens are unobtainable due to hazardous conditions, seasonal unavailability, malfunction of automatic sampling equipment and other legitimate reasons. If specimens are unobtainable due to sampling equipment malfunction, every effort shall be made to complete corrective action prior to the end of the next sampling period. All above deviations from the sampling schedule shall be documented in the Annual Radiological Environmental Operating Report pursuant to Technical Specification 6.9.1.6.

It is recognized that, at times, it may not be possible or practicable to continue to obtain samples of the media of choice at the most desired location or time. In these instances suitable alternative media and locations may be chosen for the particular pathway in question and appropriate substitutions made within 30 days in the radiological environmental monitoring program. In lieu of a Licensee Event Report and pursuant to Technical Specification 6.9.1.9, identify the cause of the unavailability of samples for that pathway and identify the new location(s) for obtaining replacement samples in the next Semiannual Radioactive Effluent Release Report and also include in the report a revised figure(s) and table(s) for the ODCM reflecting the new location(s).

TABLE 3.12.1-2

REPORTING L VELS FOR RADIOACTIVITY CONCENTRATIONS IN ENVIRONMENTAL SAMPLES

Reporting Levels

Analysis	Water (pCi/l)	Airborne Particulate or Gases (pCi/m^3)	Fish (pCi/Kg, wet)	Milk (pCi/l)	Food Products (pCi/Kg, wet)
H-3	2×10^4 ~~(a)~~	NA	NA	NA	NA
Mn-54	1×10^3	NA	3×10^4	NA	NA
Fe-59	4×10^2	NA	1×10^4	NA	NA
Co-58	1×10^3	NA	3×10^4	NA	NA
Co-60	3×10^2	NA	1×10^4	NA	NA
Zn-65	3×10^2	NA	2×10^4	NA	NA
Zr-Nb-95	4×10^2	NA	NA	NA	NA
I-131	2	0.9	NA	3	1×10^2
Cs-134	30	10	1×10^3	60	1×10^3
Cs-137	50	20	2×10^3	70	2×10^3
Ba-La-140	2×10^2	NA	NA	3×10^2	NA

(a) For drinking water samples. This is a 40 CFR Part 141 value. *If no drinking water pathway exists, a value of 30,000 pCi/l may be used.*

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TABLE 4.12.1-1

MAXIMUM VALUES FOR THE LOWER LIMITS OF DETECTION (LLD)[a,b]

Analysis	Water (pCi/l)	Airborne Particulate or Gas (pCi/m^3)	Fish (pCi/kg,wet)	Milk (pCi/l)	Broad Leaf Vegetation (pCi/kg,wet)	Sediment (pCi/kg,dry)
gross beta	4	1×10^{-2}	NA	NA	NA	NA
H-3	2000[d]	NA	NA	NA	NA	NA
Mn-54	15	NA	130	NA	NA	NA
Fe-59	30	NA	260	NA	NA	NA
Co-58,60	15	NA	130	NA	NA	NA
Zn-65	30	NA	260	NA	NA	NA
Zr-95	30	NA	NA	NA	NA	NA
Nb-95	15	NA	NA	NA	NA	NA
I-131	1[c]	7×10^{-2}	NA	1	60	NA
Cs-134	15	5×10^{-2}	130	15	60	150
Cs-137	18	6×10^{-2}	150	18	80	180
Ba-140	60	NA	NA	60	NA	NA
La-140	15	NA	NA	15	NA	NA

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~~In calculating the LLD for a radionuclide determined by gamma-ray spectrometry, the background should include the typical contributions of other radionuclides normally present in the samples (e.g., potassium-40 in milk samples).~~ Typical values of E, V, Y and Δt should be used in the calculation. 249

It should be recognized that the LLD is defined as an a priori (before the fact) limit representing the capability of a measurement system and not as a posteriori (after the fact) limit for a particular measurement.~~*~~ 249

Occasionally background fluctuations, unavoidable small sample size, the presence of interfering nuclides, or other uncontrollable circumstances may render these LLDs unachievable. In such caces, the contributing factors should be identified and described in the Annual Radiological Environmental Operating Report pursuant to Specification 6.9.1.6..

[c] LLD for drinking water samples. If no drinking water pathway exists, the LLD of gamma isotopic may be used.

d. If no drinking water pathway exists, a value of 3000 pCi/l may be used. 190

~~*For a more complete discussion of the LLD, and other detection limits, see the following:~~
~~(1) HASL Procedures Manual, HASL-300 (revised annually).~~
~~(2) Currie, L. A., "Limits for Qualitative Detection and Quantitative Determination - Application to Radiochemistry" Anal. Chem. 40, 586-93 (1968).~~
~~(3) Hartwell, J. K., "Detection Limits for Radioisotopic Counting Tecnhiques," Atlantic Richfield Hanford Company Report ARH-2537 (June 22, 1972).~~ 249

INSERT NEW PAGE

3/4.12.2 LAND USE CENSUS

LIMITING CONDITION FOR OPERATION

3.12.2 A land use census shall be conducted and shall identify the location of the nearest milk animal and the nearest permanent residence. Broad leaf vegetation sampling is performed near the site boundary location with the highest projected D/Q in lieu of a garden census.

APPLICABILITY: At all times.

ACTION:

a. With a land use census identifying a location(s) which yields a calculated dose or dose commitment greater than the values currently being calculated in Specification 4.11.2.3, in lieu of any other report required by Specification 6.9.1, a revised figure in the ODCM reflecting the new location(s) shall be submitted to the Commission as an inclusion to the Monthly Operating Report.

b. With a land use census identifying a location(s) which yields a calculated dose or dose commitment via the same exposure pathway 20 percent greater than at a location from which samples are currently being obtained in accordance with Specification 3.12.1, in lieu of any other report required by Specification 6.9.1, a revised figure in the ODCM reflecting the new location(s) shall be submitted to the Commission as an inclusion to the Monthly Operating Report. The new location shall be added to the radiological environmental monitoring program within 30 days. The sampling location, excluding the control station location, having the lowest calculated dose or dose commitment (via the same exposure pathway) may be deleted from this monitoring program after October 31 of the year in which this land use census was conducted.

c. The provisions of Specifications 3.0.3 and 3.0.4 are not applicable.

SURVEILLANCE REQUIREMENTS

4.12.2 The land use ~~cnesus~~ census shall be conducted at least once per 12 months between the dates of June 1 and October 1 using that information which will provide the best results such as by a door-to-door survey, aerial survey, visual or by consulting local agriculture authorities.

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RADIOLOGICAL ENVIRONMENTAL MONITORING

3/4.12.2 LAND USE CENSUS

LIMITING CONDITION FOR OPERATION

3.12.2 A land use census shall be conducted and shall identify within a distance of 8 km (5 miles) the location in each of the 16 meteorological sectors of the nearest milk animal, the nearest residence and the nearest garden of greater than 50 m^2 (500 ft^2) producing broad leaf vegetation. Broad leaf vegetation sampling of at least three different kinds of vegetation may be performed at the SITE BOUNDARY in each of two different direction sectors with the highest predicted D/Qs in lieu of the garden census. Specifications for broad leaf vegetation sampling in Table 3.12.1-1 shall be followed, including analysis of control samples.

ACTION:

a. With a land use census identifying a location(s) that yields a calculated dose or dose commitment greated than the values currently being calculated in Specification 4.11.2.3, identify the new location(s) in the next Semiannual Radioactive Effluent Release Report, pursuant to Specification 6.9.1.9.

b. With a land use census identifying a location(s) that yields a calculated dose or dose commitment (via the same exposure pathway) 20 percent greater than at a location from which samples are currently being obtained in accordance with Specification 3.12.1, add the new location(s) to the radiological environmental monitoring program within 30 days. The sampling location(s), excluding the control station location, having the lowest calculated dose or dose commitment(s), via the same exposure pathway, may be deleted from this monitoring program after October 31 of the year in which this land use census was conducted. Identify the new location(s) in the next Semiannual Radioactive Effluent Release Report and also include in the report a revised figure(s) and table(s) for the ODCM reflecting the new location(s).

c. The provisions of Specification 3.0.3 and 3.0.4 are not applicable.

SURVEILLANCE REQUIREMENTS

4.12.2 The land use census shall be conducted during the growing season at least once per 12 months using that information that will provide the best results, such as by a door-to-door survey, aerial survey, or by consulting local agriculture authorities. The results of the land use census shall be included in the Annual Radiological Environmental Operating Report pursuant to Specification 6.9.1.7.

that correspond to samples required by Table 3.12.1-1. These materials are

3/4.12.3 INTERLABORATORY COMPARISON PROGRAM

LIMITING CONDITION FOR OPERATION

3.12.3 Analyses shall be performed on radioactive materials supplied as part of an Interlaboratory Comparison Program which has been approved by the Commission. 249

APPLICABILITY: At all times.

ACITON:

a. With analyses not being performed as required above, report the corrective actions taken to prevent a recurrence to the Commission in the Annual Radiological Environmental Operating Report pursuant to Specification 6.9.1.7.

b. The provisions of Specifications 3.0.3 and 3.0.4 are not applicable.

SURVEILLANCE REQUIREMENTS

4.12.3 A summary of the results obtained as part of the above required Interlaboratory Comparison Program shall be included in the Annual Radiological Environmental Operating Report pursuant to Specification 6.9.1.7. ~~Participants in the EPA crosscheck program may provide the EPA program code for NRC review in lieu of the summary of results.~~ 260

a MEMBER OF THE PUBLIC

in UNRESTRICTED AREAS

3/4.11.1 LIQUID EFFLUENTS

to UNRESTRICTED AREAS

3/4.11.1.1 CONCENTRATION

This specification is provided to ensure that the concentration of radioactive materials released in liquid waste effluents ~~from the site~~ will be less than the concentration levels specified in 10 CFR Part 20, Appendix B, Table II, Column 2. This limitation provides additional assurance that the levels of radioactive materials in bodies of water ~~outside the site~~ will result in exposures within (1) the Section II.A design objectives of Appendix I, 10 CFR 50, to ~~an individual~~, and (2) the limits of 10 CFR 20.106(e) to the population. The concentration limit for dissolved or entrained noble gases is based upon the assumption that Xe-135 is the controlling radioisotope and its MPC in air ~~i.e.,~~ (submersion) was converted to an equivalent concentration in water using the methods described in International Commission on Radiological Protection (ICRP) Publication 2. Insert 249 249 249 249 249 249 249

3/4.11.1.2 DOSE

This specification is provided to implement the requirements of Sections II.A, III.A and IV.A of Appendix I, 10 CFR Part 50. The Limiting Condition for Operation implements the guides set forth in Section II.A of Appendix I. The ACTION statements provide the required operating flexibility and at the same time implement the guides set forth in Section IV.A of Appendix I assure that the releases of radioactive material in liquid effluents to UNRESTRICTED AREAS will be kept "as low as is reasonably achievable." Also, for fresh water sites with drinking water supplies which can be potentially affected by plant operations, there is reasonable assurance that the operation of the facility will not result in radionuclide concentrations in the finished drinking water that are in excess of the requirements of 40 CFR 141. The dose calculations in the ODCM implement the requirements in Section III.A of Appendix I that conformance with the guides of Appendix I be shown by calculational procedures based on models and data, such that the actual exposure of ~~an individual~~ a MEMBER OF THE PUBLIC through appropriate pathways is unlikely to be substantially underestimated. The equations specified in the ODCM for calculating the doses due to the actual release rates of radioactive materials in liquid effluents are consistent with the methodology provided in Regulatory Guide 1.109, "Calculation 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 1, October 1977 and Regulatory Guide 1.113, "Estimating Aquatic Dispersion of Effluent from Accidental and Routine Reactor Releases for the Purpose of Implementing Appendix I," April 1977. 249 249

This specification applies to the release of liquid effluents from each reactor at the site. For units with shared radwaste treatment systems, the liquid effluents from the shared system are proportioned among the units sharing that system.

INSERT TO 3/4.11.1.1, PAGE B 3/4 11-1

The required detection capabilities for radioactive materials in liquid waste samples are tabulated in terms of the lower limits of detection (LLDs). Detailed discussion of the LLD, and other detection limits can be found in:

1) HASL Procedures Manual, HASL-300 (revised annually).
2) Currie, L. A., "Limits for Qualitative Detection and Quantitative Determination - Application to Radiochemistry" Anal. Chem. 40, 586-93 (1968).
3) Hartwell, J. K., "Detection Limits for Radioisotopic Counting Techniques," Atlantic Richfield Hanford Company Report ARH-2537 (June 22, 1972).

3/4.11.1.3 LIQUID WASTE TREATMENT

~~The OPERABILITY of the liquid radwaste treatment system ensures that this system will be available for use whenever liquid effluents require treatment prior to release to the environment.~~ The requirement that the appropriate portions of this system be used when specified provides assurance that the releases of radioactive materials in liquid 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 the design objective given in Section II.D of Appendix I to 10 CFR Part 50. The specified limit governing the use of appropriate portions of the liquid radwaste treatment system were specified as a suitable fraction of the dose design objectives set forth in Section II.A of Appendix I, 10 CFR Part 50, for liquid effluents. 980

INSERT A → 980

3/4.11.1.4 LIQUID HOLDUP TANKS

Insert B → Restricting the quantity of radioactive material contained in the specified tanks provides assurance that in the event of an uncontrolled release of the tanks' contents, the resulting concentrations would be less than the limits of 10 CFR Part 20, Appendix B, Table II, Column 2, at the nearest potable water supply and the nearest surface water supply in an ~~unrestricted area.~~ UNRESTRICTED AREA 249

3/4.11.2 GASEOUS EFFLUENTS

3/4.11.2.1 DOSE RATE

This specification is provided to ensure that the dose ~~at the site boundary~~ anytime at and beyond the SITE 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.~~ UNRESTRICTED AREAS. The annual dose limits are the doses associated with the concentrations of 10 CFR Part 20, Appendix B, Table II, Column 1. These limits provide reasonable assurance that radioactive material discharged in gaseous effluents will not result in the exposure of ~~an~~ a ~~individual~~ MEMBER OF THE PUBLIC in an ~~unrestricted area~~ UNRESTRICTED AREA outside the ~~site boundary~~ SITE BOUNDARY to annual average concentrations exceeding the limits ~~specified~~ specified in Appendix B, Table II of 10 CFR Part 20 (10 CFR Part 20.106(b)). For ~~individuals~~ MEMBERS OF THE PUBLIC who may at times be within the ~~site boundary~~ SITE BOUNDARY, the occupancy of the ~~individual~~ MEMBER OF THE PUBLIC will be sufficiently low to compensate for any increase in the atmospheric diffusion factor above that for the ~~site boundary~~ SITE BOUNDARY. The specified release rate limits restrict, at all times, the corresponding gamma and beta dose rates above background to ~~an~~ a ~~individual~~ MEMBER OF THE PUBLIC at or beyond the ~~site boundary~~ SITE BOUNDARY to less than or equal to 500 mrem/year to the total body or to less than or equal to 3000 mrem/year to the skin. These release rate limits also restrict, at all times, the corresponding thyroid dose rate above background to a child via the inhalation pathway to less than or equal to 1500 mrem/year. 105 249

INSERT A TO BASES 3/4.11.1.3, PAGE B 3/4 11-2

This specification applies to the release of liquid effluents from each reactor at the site. For units with shared radwaste treatment systems, the liquid effluents from the shared system are proportioned among the units sharing that system.

INSERT B TO BASES 3/4.11.1.4, Page B 3/4 11-2

The tanks listed in this Specification include all those tanks containing radioactive material that are not surrounded by liners, dikes, or walls capable of holding the contents and that do not have overflows and surrounding area drains connected to the liquid radwaste treatment system.

This specification applies to the release of gaseous effluents from each reactor at the site. For units with shared radwaste treatment systems, the gaseous effluents from the shared system are proportioned among the units sharing that system.

DOSE RATE (Continued)

This specification applies to the release of gaseous effluents from all reactors at the site. ~~For units with shared radwaste treatment systems, the gaseous effluents from the shared system are proportioned among the units sharing that system.~~ Insert 249

a MEMBER OF THE PUBLIC

to UNRESTRICTED AREAS

3/4.11.2.2 DOSE - NOBLE GASES

This specification is provided to implement the requirements of Sections II.B, III.A and IV.A of Appendix I, 10 CFR Part 50. The Limiting Condition for Operation implements the guides set forth in Section II.B of Appendix I. The ACTION statements provide the required operating flexibility and at the same time implement the guides set forth in Section IV.A of Appendix I to assure that the releases of radioactive material in gaseous effluents will 249
be kept "as low as is reasonably achievable." The Surveillance Requirements implement the requirements in Section III.A of Appendix I that conformance with the guides of Appendix I be shown by calculational procedures based on models and data such that the actual exposure of ~~an individual~~ through appropriate 249
pathways is unlikely to be substantially underestimated. The dose calculations established in the ODCM for calculating the doses due to the actual release rates of radioactive noble gases in gaseous effluents are consistent with the methodology provided in Regulatory Guide 1.109, "Calculation 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 1, 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," Revision 1, July 1977. The ODCM equations provided for determining the air doses at ~~the site boundary~~ are based upon the historical average 105
atmospheric conditions. and beyond the SITE BOUNDARY 249

IODINE-131, IODINE-133, TRITIUM AND RADIONUCLIDES

3/4.11.2.3 DOSE - ~~RADIOIODINES, RADIOACTIVE MATERIALS~~ IN PARTICULATE FORM ~~AND TRITIUM~~ 191

to UNRESTRICTED AREAS

This specification is provided to implement the requirements of Sections II.C, III.A and IV.A of Appendix I, 10 CFR Part 50. The Limiting Conditions for Operation are the guides set forth in Section II.C of Appendix I. The ACTION statements provide the required operating flexibility and at the same time implement the guides set forth in Section IV.A of Appendix I to assure that the releases of radioactive materials in gaseous effluents will be 249
kept "as low as is reasonably achievable." The ODCM calculational methods specified in the Surveillance Requirements implement the requirements in Section III.A. of Appendix I that conformance with the guides of Appendix I be shown by calculational procedures based on models and data, such that the actual exposure of ~~an individual~~ through appropriate pathways is unlikely to 249
be substantially underestimated. The ODCM calculational methods for calculating the doses due to the actual release rates of the subject materials

a MEMBER OF THE PUBLIC

INSERT FOR 3/4.11.2.1, PAGE B 3/4 11-3

For a more complete discussion of the LLD, and other detection limits, see the following:

(1) HASL Procedures Manual, HASL-300 (revised annually).
(2) Currie, L. A., "Limits for Qualitative Detection and Quantitative Determination - Application to Radiochemistry" Anal. Chem. 40, 586-93 (1968).
(3) Hartwell, J. K., "Detection Limits for Radioisotopic Counting Techniques," Atlantic Richfield Hanford Company Report ARH-2537 (June 22,1972).

IODINE-131, IODINE-133, TRITIUM AND RADIONUCLIDES

DOSE - ~~RADIOIODINES, RADIOACTIVE MATERIALS~~ IN PARTICULATE FORM ~~AND TRITIUM~~ (Continued) 191

areas at and beyond the SITE BOUNDARY

are consistent with the methodology provided in Regulatory Guide 1.109, "Calculation 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 1, 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," Revison 1, July 1977. These equations also provide for determining the actual doses based upon the historical average atmospheric conditions. The release rate specifications for ~~radioiodines, radioactive materials~~ in particulate form ~~and tritium~~ are dependent on the existing radionuclide pathway to man in the ~~unrestricted area.~~ The pathways which were examined in the development of these calculations were: 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. 105 191

Iodine-131, Iodine-133, tritium and radionuclides 249

3/4.11.2.4 AND 3/4.11.2.5 GASEOUS RADWASTE TREATMENT AND VENTILATION EXHAUST TREATMENT 248

The OPERABILITY of the GASEOUS RADWASTE TREATMENT (OFFGAS) SYSTEM and the VENTILATION EXHAUST TREATMENT SYSTEM ensures that the system will be available for use whenever gaseous effluents require treatment prior to release to the environment. The requirement that the appropriate portions of the system be used, when specified, provides reasonable assurance that the releases 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 the design objectives given in Section II.D of Appendix I to 10 CFR Part 50. The specified limits governing the use of appropriate portions of the system were specified as a suitable fraction of the dose design objectives set forth in Sections II.B and II.C of Appendix I, 10 CFR Part 50, for gaseous effluents.

3/4.11.2.~~5~~ 6 EXPLOSIVE GAS MIXTURE 248

This specification is provided to ensure that the concentration of potentially explosive gas mixtures contained in the offgas holdup piping is maintained below the flammability limits of hydrogen. Maintaining the concentration of hydrogen below its flammability limit 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 10 CFR Part 50.

This specification applies to the release of gaseous effluents from each reactor at the site. For units with shared radwaste treatment systems, the gaseous effluents from the shared system are proportioned among the units sharing that system. 249

AMENDMENT NO. ___

3/4.11.2.7 MAIN CONDENSER

Restricting the gross radioactivity rate of noble gases from the main condenser provides reasonable assurance that the total body exposure to ~~an~~ a ~~individual~~ ~~at the exclusion area boundary~~ will not exceed a small fraction of the limits of 10 CFR Part 100 in the event this effluent is inadvertently discharged directly to the environment without treatment. This specification implements the requirements of General Design Criteria 60 and 64 of Appendix A to 10 CFR Part 50. 249/105

at and beyond the SITE BOUNDARY

MEMBER OF THE PUBLIC

3/4.11.3 SOLID RADIOACTIVE WASTE

~~The OPERABILITY of the solid radwaste system ensures that the system will be available for use whenever solid radwastes require processing and packaging prior to being shipped offsite.~~ This specification implements the requirements of 10 CFR Part 50.36a and General Design Criterion 60 of Appendix A to 10 CFR Part 50. The process parameters included in establishing the PROCESS CONTROL PROGRAM may include, but are not limited to waste type, waste pH, waste/liquid/solidification agent/catalyst ratios, waste oil content, waste principal chemical constituents, mixing and curing times. 085

3/4.11.4 TOTAL DOSE

This specification is provided to meet the dose limitation of 40 CFR 190. The specification requires the preparation and submittal of a special Report whenever the calculated doses from plant radioactive effluents exceed twice the design objective doses of Appendix I. For sites containing up to 4 reactors it is highly unlikely that the resultant dose to a member of the public will exceed the dose limits of 40 CFR 190 if the individual reactors remain within the reporting requirement level. The Special Report will describe a course of action which should result in the limitation of dose to a member of the public for 12 consecutive months to within the 40 CFR 190 limits. For the purposes of the Special Report, it may be assumed that the dose commitment to the member of the public from other uranium fuel cycle sources is negligible, with the exception that dose contributions from other nuclear fuel cycle facilities at the same site or within a radius of 5 miles must be considered. If the dose to any member of the public is estimated to exceed the requirements of 40 CFR 190, the Special Report with a request for a variance (provided the release conditions resulting in violation of 40 CFR 190 have not already been corrected), in accordance with the provisions of 40 CFR 190.11, is considered to be a timely request and fulfills the requirements of 40 CFR 190 until NRC staff action is completed. An individual is not considered a member of the public during any period in which he/she is engaged in carrying out any operation which is part of the nuclear fuel cycle. 249

Insert

INSERT TO BASES 3/4.11.4, PAGE B 3/4 11-5

3/4.11.4 TOTAL DOSE

This specification is provided to meet the dose limitations of 40 CFR Part 190. The specification requires the preparation and submittal of a Special Report whenever the calculated doses from plant generated radioactive effluents and direct radiation exceed 25 mrem to the total body or any organ, except the thyroid, which shall be limited to less than or equal to 75 mrem. For sites containing up to 4 reactors, it is highly unlikely that the resultant dose to a MEMBER OF THE PUBLIC will exceed the dose limits of 40 CFR Part 190 if the individual reactors remain within twice the dose design objectives of Appendix I, and if direct radiation doses from the reactor units and outside storage tanks are kept small. The Special Report will describe a course of action that should result in the limitation of the annual dose to a MEMBER OF THE PUBLIC to within the 40 CFR Part 190 limits. For the purposes of the Special Report, it may be assumed that the dose commitment to the MEMBER OF THE PUBLIC from other uranium fuel cycle sources is negligible, with the exception that dose contributions from other nuclear fuel cycle facilities at the same site or within a radius of 8 km must be considered. If the dose to any MEMBER OF THE PUBLIC is estimated to exceed the requirements of 40 CFR Part 190, the Special Report with a request for a variance (provided the release conditions resulting in violation of 40 CFR Part 190 have not already been corrected), in accordance with the provisions of 40 CFR Part 190.11 and 10 CFR Part 20.405c, is considered to be a timely request and fulfills the requirements of 40 CFR Part 190 until NRC staff action is completed. The variance only relates to the limits of 40 CFR Part 190, and does not apply in any way to the other requirements for dose limitation of 10 CFR Part 20, as addressed in Technical Specifications 3.11.1.1 and 3.11.2.1. An individual is not considered a MEMBER OF THE PUBLIC during any period in which he/she is engaged in carrying out any operation that is part of the nuclear fuel cycle.

BASES

3/4.12.1 MONITORING PROGRAM

MEMBERS OF THE PUBLIC

The radiological monitoring program required by this specification provides measurements of radiation and of radioactive materials in those exposure pathways and for those radionuclides, which lead to the highest potential radiation exposures of ~~individuals~~ resulting from the station operation. This monitoring program thereby supplements the radiological effluent monitoring program by verifying that the measurable concentrations of radioactive materials and levels of radiation are not higher than expected on the basis of the effluent measurements and modeling of the environmental exposure pathways. The initially specified monitoring program will be effective for at least the first three years of commerical operation. Following this period, program changes may be initiated based on operational experience. 249

implements Section IV.B.2 of Appendix I to 10 CFR Part 50 and

The detection capabilities required by Table 4.12.1-1 are state-of-the-art for routine environmental measurements in industrial laboratories. It should be recognized that the LLD is defined as an "a priori" (before the fact) limit representing the capability of a measurement system and not as "a posteriori" (after the fact) limit for a particular measurement. Analyses shall be performed in such a manner that the stated LLDs will be achieved under routine conditions. Occasionally background fluctuations, unavoidably small sample sizes, the presence of interfering nuclides, or other uncontrollable circumstances may render these LLDs unachievable. In such cases, the contributing factors will be identified and described in the Annual Radiological Environmental Operating Report. Insert. 249

Insert

3/4.12.2 LAND USE CENSUS

This specification is provided to ensure that changes in the use of unrestricted areas are identified and that modifications to the monitoring program are made if required by the results of this census. The best survey information from the door-to-door survey, aerial survey, visual survey or from consulting with local agricultural authorities shall be used. This census satisfies the requirements of Section IV.B.3 of Appendix I to 10 CFR Part 50. 249 105

3/4.12.3 INTERLABORATORY COMPARISON PROGRAM

The requirement for participation in an Interlaboratory Comparison Program is provided to ensure that independent checks on the precision and accuracy of the measurements of radioactive material in environmental sample matrices are performed as part of the quality assurance program for environmental monitoring in order to demonstrate that the results are reasonably valid.

INSERT FOR 3/4.12.1, PAGE B 3/4 12-1

For a more complete discussion of the LLD, and other detection limits, see the following:

(1) HASL Procedures Manual, HASL-300 (revised annually).

(2) Currie, L. A., "Limits for Qualitative Detection and Quantitative Determination - Application to Radiochemistry" Anal. Chem. 40, 586-93 (1968).

(3) Hartwell, J. K., "Detection Limits for Radioisotopic Counting Techniques," Atlantic Richfield Hanford Company Report ARH-2537 (June 22,1972).

INSERT TO BASES 3/4.12.2 and 3/4.12.3, PAGE B 3/4 12-1

3/4.12.2 LAND USE CENSUS

This specification is provided to ensure that changes in the use of areas at and beyond the SITE BOUNDARY are identified and that modifications to the radiological environmental monitoring program are made if required by the results of this census. The best information from the door-to-door survey, visual or aerial survey or from consulting with local agricultural authorities shall be used. This census satisfies the requirements of Section IV.B.3 of Appendix I to 10 CFR Part 50. Restricting the census to gardens of greater than 50 m^2 provides assurance that significant exposure pathways via leafy vegetables will be identified and monitored since a garden of this size is the minimum required to produce the quantity (26 kg/year) of leafy vegetables assumed in Regulatory Guide 1.109 for consumption by a child. To determine this minimum garden size, the following assumptions were made: 1) 20% of the garden was used for growing broad leaf vegetation (i.e., similar to lettuce and cabbage), and 2) a vegetation yield of 2 kg/m^2.

3/4.12.3 INTERLABORATORY COMPARISON PROGRAM

The requirement for participation in an approved Interlaboratory Comparison Program is provided to ensure that independent checks on the precision and accuracy of the measurements of radioactive material in environmental sample matrices are performed as part of the quality assurance program for environmental monitoring in order to demonstrate that the results are valid for the purposes of Section IV.B.2 of Appendix I to 10 CFR Part 50.

5.0 DESIGN FEATURES

5.1 SITE

EXCLUSION AREA

5.1.1 The exclusion area shall be as shown in Figure 5.1.1-1.

LOW POPULATION ZONE

5.1.2 The low population zone shall be as shown in Figure 5.1.2-1.

UNRESTRICTED AREA AND SITE BOUNDARY FOR GASEOUS EFFLUENTS AND FOR LIQUID EFFLUENTS 105

5.1.3 ~~The unrestricted area boundary~~ The UNRESTRICTED AREA and SITE BOUNDARY for gaseous effluents and for liquid effluents shall be as shown in Figure 5.1.3-1. The gaseous effluent release points are shown in Figure 5.1.1-1.

5.2 CONTAINMENT

CONFIGURATION

5.2.1 The containment is a steel lined, reinforced concrete structure composed of a vertical right cylinder and a hemispherical dome. Inside and at the bottom of the containment is a reinforced concrete drywell composed of a vertical right cylinder and a steel head which contains an approximately eighteen to nineteen foot deep water filled suppression pool connected to the drywell through a series of horizontal vents. The containment has a minimum net free air volume of 1,400,000 cubic feet. The drywell has a minimum net free air volume of 270,000 cubic feet.

DESIGN TEMPERATURE AND PRESSURE

5.2.2 The containment and drywell are designed and shall be maintained for:

a. Maximum internal pressure:
   1. Drywell 30 psig.
   2. Containment 15 psig.

b. Maximum internal temperature:
   1. Drywell 330°F.
   2. Suppression pool 185°F.

c. Maximum external-to-internal differential pressure:
   1. Drywell 21 psid.
   2. Containment 3 psid.

SECONDARY CONTAINMENT

5.2.3 The secondary containment consists of the Reactor Building and the Enclosure Building, and has a minimum free volume of 3,640,000 cubic feet.

AMENDMENT No. ___

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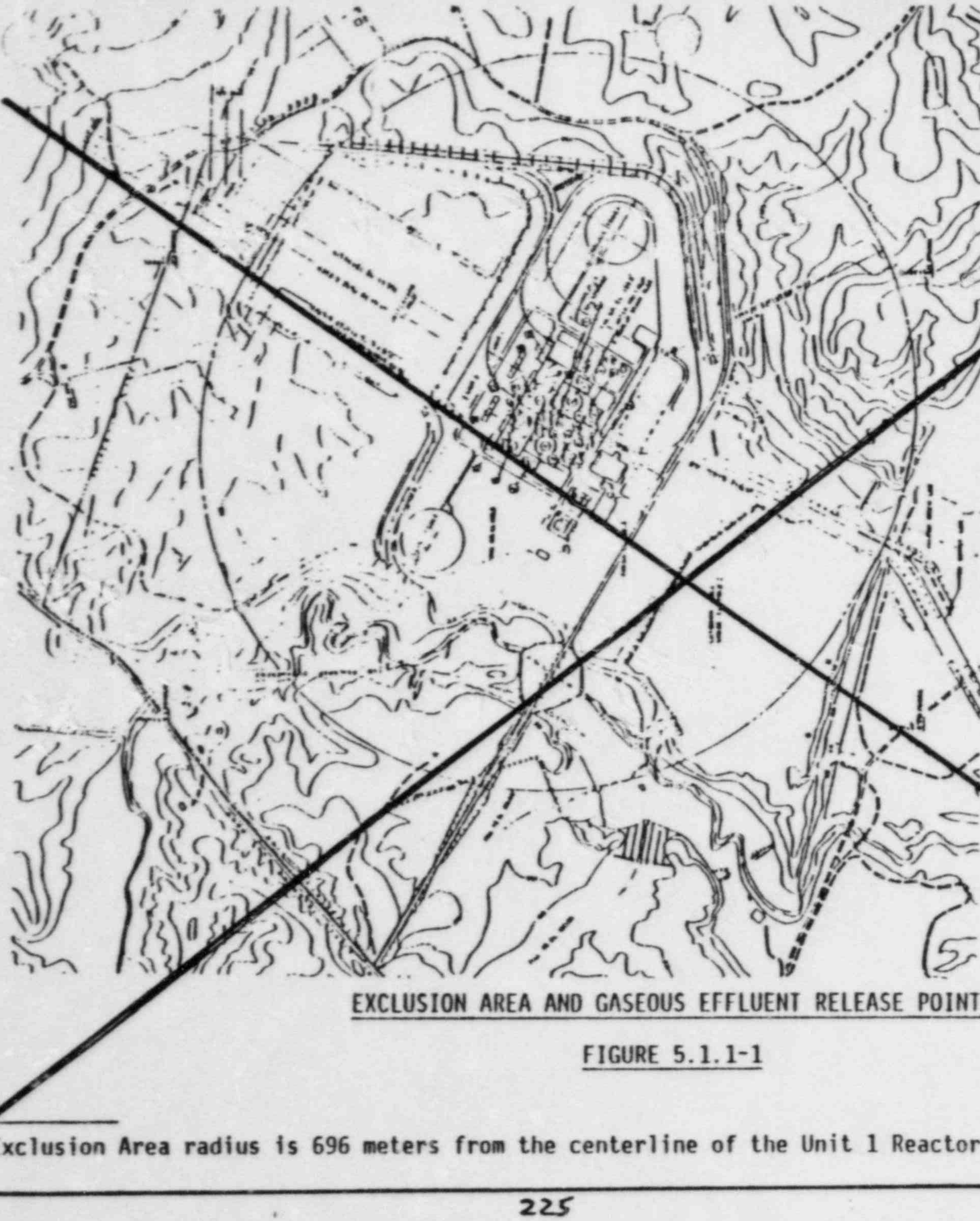

NOTES

1. GRID COORDINATES SHOWN ARE BASED ON MISSISSIPPI COORDINATE SYSTEM, WEST ZONE.
2. DATUM FOR ELEVATIONS SHOWN IS MEAN SEA LEVEL EL. 0.0'.
3. SEE FIGURE 5.1.4-1 FOR UNRESTRICTED AREA BOUNDARY
4. SEE FIGURE 5.1.2-1 FOR METEOROLOGICAL TOWER LOCATION

200 0 200 400
FEET

CATEGORY I STRUCTURES

- (A) CONTAINMENT STRUCTURE
- (B) AUXILIARY BUILDING
- (C) MAIN STEAM PIPE CHASE
- (D) DIESEL GENERATOR BUILDING
- (E) DIESEL GEN FUEL OIL STORAGE TANK
- (F) CONTROL BUILDING
- (G) CONDENSATE STORAGE TANK
- (H) STANDBY SERVICE WATER COOLING TOWER BASIN

GASEOUS EFFLUENT RELEASE POINTS

NO	VENT	MIN DISTANCE TO BOUNDARY LINE	RELEASE ELEV.
1	RADWASTE BLDG	2090 FT	EL 164.0'
2	TURBINE BLDG	2090 FT	EL 232.0'
3	STANDBY GAS TREATMENT	2350 FT	EL 272.0'
4	FUEL HANDLING AREA	2340 FT	EL 272.0'
5	CONTROL BLDG	2290 FT	EL 195.0'
6	CONTAINMENT	2240 FT	EL [illegible]
7	CONTROL BLDG	2420 FT	EL 195.0'
8	CONTROL RM PURGE	2420 FT	EL 195.0'
9	CONTROL RM [illegible] EXH	[illegible]	EL 195.0'
10	BATTERY RM EXH UNIT 1	2030 [illegible]	EL 170.0'
11	LUBE OIL RM EXH UNIT 1	2160 FT	EL 143.0'
12	BATTERY RM EXH UNIT 2	2520 FT	EL 156.0'
13	LUBE OIL RM EXH UNIT 2	2500 FT	EL [illegible]
14	TURBINE BLDG SHORT PURGE EXH UNIT 1	1990 FT	EL [illegible]
15	TURBINE BLDG SHORT PURGE EXH UNIT 2	2540 FT	EL 186.0'

(1) NORMAL CONTROL RM OA INTAKE - EL 208.0'

(2) STANDBY CONTROL RM OA INTAKE - EL 139.0'

EXCLUSION AREA AND GASEOUS EFFLUENT RELEASE POINTS

FIGURE 5.1.1-1

Exclusion Area radius is 696 meters from the centerline of the Unit 1 Reactor

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EXCLUSION AREA AND GASEOUS EFFLUENT RELEASE POINTS

FIGURE 5.1.1-1

EXCLUSION AREA RADIUS IS 696 METERS FROM ℄ OF THE UNIT ONE REACTOR

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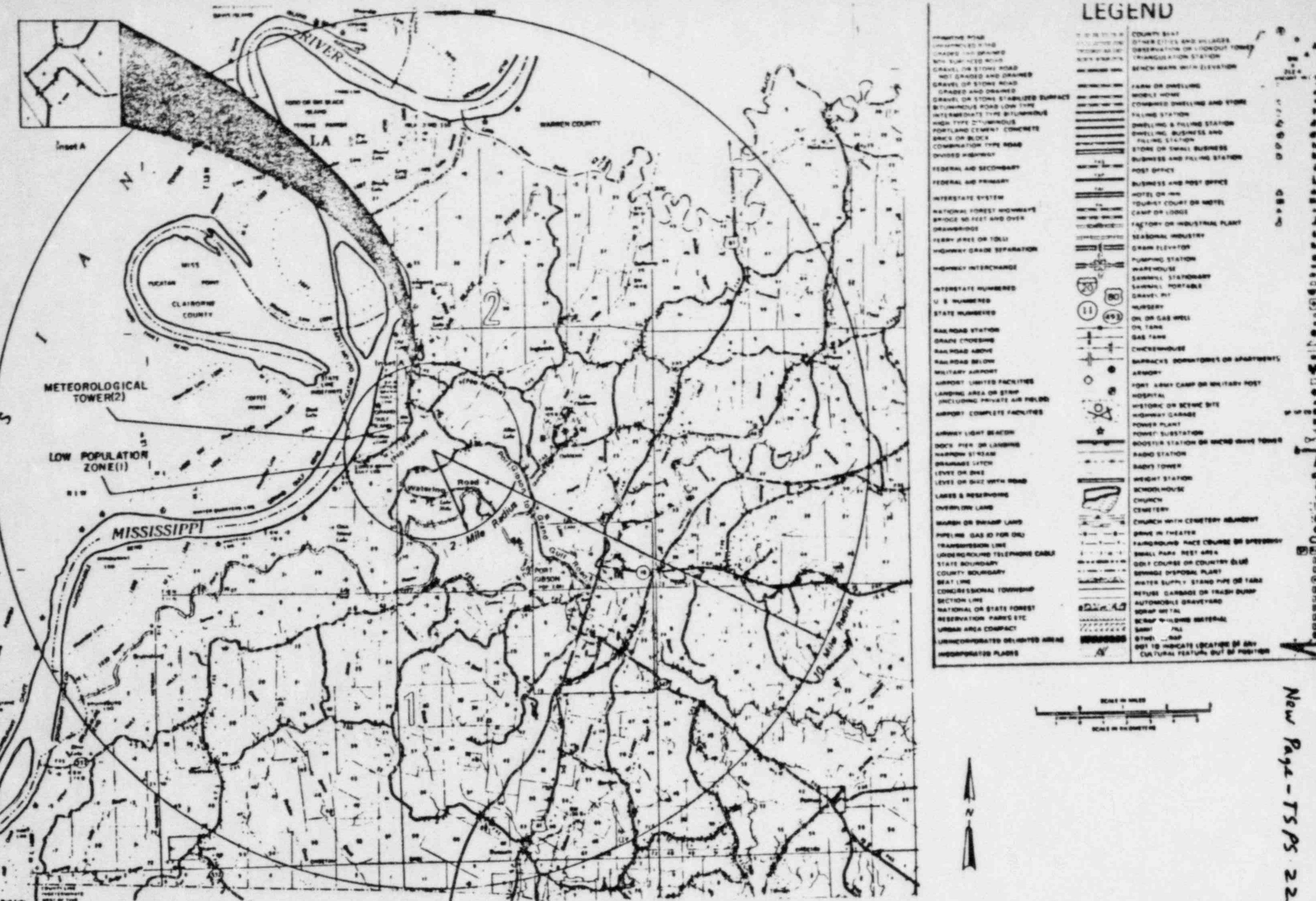
Note: 1) Low Population Zone radius is 2 miles
2) Meteorological tower location if approximately 5000 feet NNW of the centerline of the Unit 1 reactor

LOW POPULATION ZONE AND METEOROLOGICAL TOWER LOCATION

FIGURE 5.1.2-1

225



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LOW POPULATION ZONE AND METEOROGICAL TOWER LOCATION

FIGURE 5.1.2-1

NOTE:

1.) LOW POPULATION ZONE RADIUS IS 2 MILES.
2.) METEOROLOGICAL TOWER LOCATION IS APPROXIMATELY 5000 FEET ... OF THE CENTER LINE OF THE UNIT 1 REACTOR

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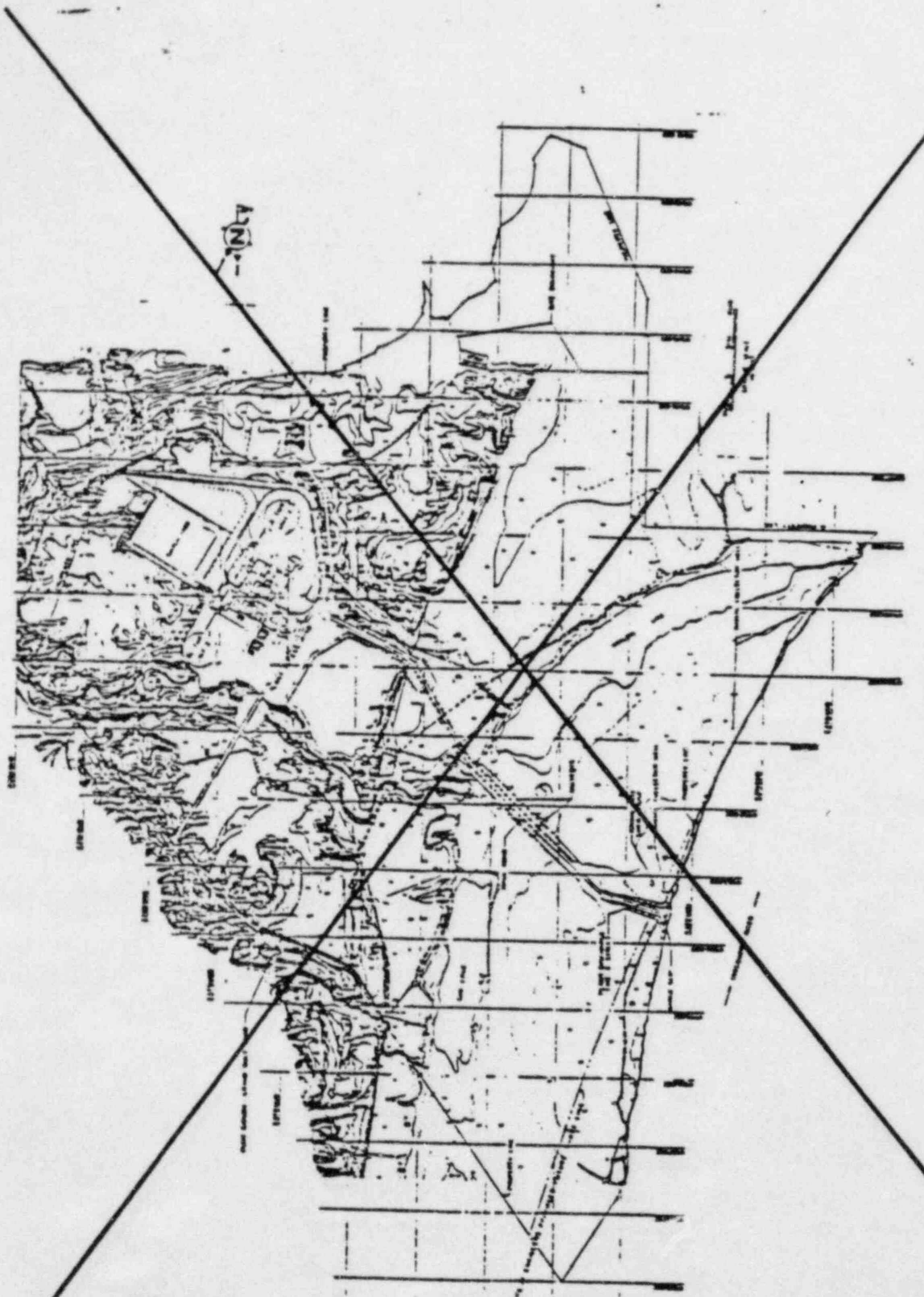
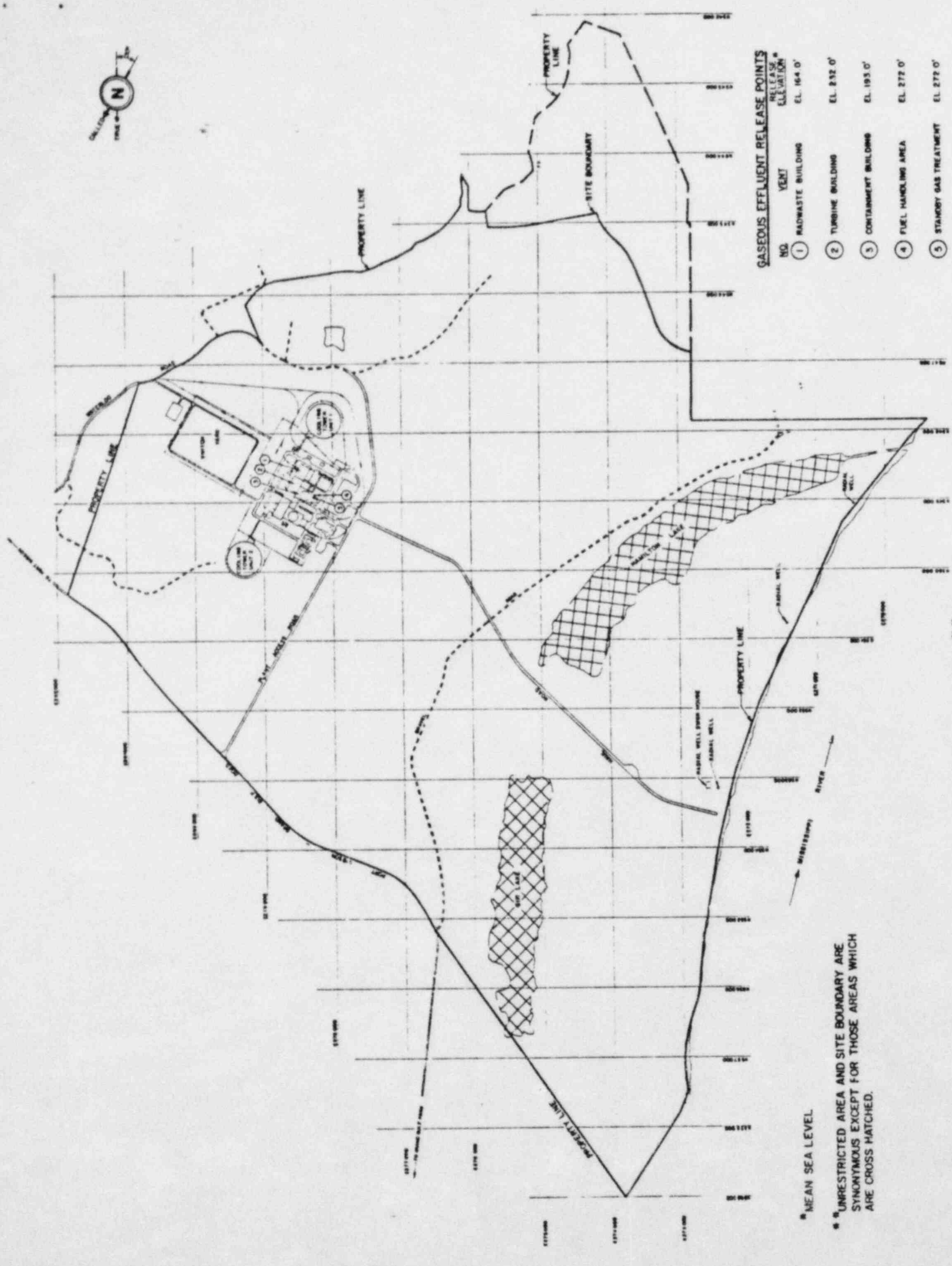


UNRESTRICTED AREA AND SITE BOUNDARY FOR LIQUID AND GASEOUS EFFLUENTS

FIGURE 5.1.3-1

225



UNRESTRICTED AREA** & SITE BOUNDARY

FIGURE 5.1.3-1

GASEOUS EFFLUENT RELEASE POINTS

NO	VENT	RELEASE ELEVATION*
1	RADWASTE BUILDING	EL. 164.0'
2	TURBINE BUILDING	EL. 232.0'
3	CONTAINMENT BUILDING	EL. 193.0'
4	FUEL HANDLING AREA	EL. 277.0'
5	STANDBY GAS TREATMENT	EL. 277.0'

*MEAN SEA LEVEL

**UNRESTRICTED AREA AND SITE BOUNDARY ARE SYNONYMOUS EXCEPT FOR THOSE AREAS WHICH ARE CROSS HATCHED.

Deviations from the sampling program identified in Technical Specification 3.12.1 shall be reported.

ANNUAL RADIOLOGICAL ENVIRONMENTAL OPERATING REPORT[3/]

6.9.1.6 Routine radiological environmental operating reports covering the operation of the unit during the previous calendar year shall be submitted prior to May 1 of each year. The initial report shall be submitted prior to May 1 of the year following initial criticality.

6.9.1.7 The annual radiological environmental operating reports shall include summaries, interpretations, and an analysis of trends of the results of the radiological enviromental surveillance activities for the report period, including a comparison with preoperational studies, operational controls (as appropriate), and previous environmental surveillance reports and an assessment of the observed impacts of the plant operation on the environment. The reports shall also include the results of land use censuses required by Specification 3.12.2. If harmful effects or evidence of irreversible damage are detected by the monitoring, the report shall provide an analysis of the problem and a planned course of action to alleviate the problem.

The annual radiological environmental operating reports shall include summarized and tabulated results in the format of Regulatory Guide 4.8, December 1975 of all radiological environmental samples taken during the report period. In the event that some results are not available for inclusion with the report, the report shall be submitted noting and explaining the reasons for the missing results. The missing data shall be submitted as soon as possible in a supplementary report. 249

The reports shall also include the following: a summary description of the radiological environmental monitoring program; a map of all sampling locations keyed to a table giving distances and directions from one reactor; and the results of licensee participation in the Interlaboratory Comparison Program, required by Specification 3.12.3.

SEMIANNUAL RADIOACTIVE EFFLUENT RELEASE REPORT[3/]

6.9.1.8 Routine radioactive release reports covering the operation of the unit during the previous 6 months of operation shall be submitted within 60 days after January 1 and July 1 of each year. The period of the first report shall begin with the date of initial criticality.

3/ A single submittal may be made for a multiple unit station. The submittal should combine those sections that are common to all units at the station; however, for units with separate radwaste systems, the submittal shall specify the releases of radioactive material for each unit.

SEMIANNUAL RADIOACTIVE EFFLUENT RELEASE REPORT (Continued)

6.9.1.9 The radioactive effluent release reports shall include a summary of the quantities of radioactive liquid and gaseous effluents and solid waste released from the unit as outlined in Regulatory Guide 1.21, "Measuring, Evaluating, and Reporting Radioactivity in Solid Wastes and Releases of Radioactive Materials in Liquid and Gaseous Effluents from Light-Water-Cooled Nuclear Power Plants," Revision 1, June 1974, with data summarized on a quarterly basis following the format of Appendix B thereof.

The radioactive effluent release report to be submitted within 60 days after January 1 of each year shall include an annual summary of hourly meteorological data collected over the previous year. This annual summary may be either in the form of an hour-by-hour listing of wind speed, wind direction, and atmospheric stability, and precipitation (if measured) on magnetic tape, or in the form of joint frequency distributions of wind speed, wind direction, and atmospheric stability. This same report shall include an assessment of the radiation doses due to the radioactive liquid and gaseous effluents released from the unit or station during the previous calendar year. The meteorological conditions concurrent with the time of release of radioactive materials in gaseous effluents (as determined by sampling frequency and measurement) shall be used for determining the gaseous pathway doses. The assessment of radiation doses shall be performed in accordance with the OFFSITE DOSE CALCULATION MANUAL (ODCM). 249 249 105

Insert A

Insert B

The radioactive effluent release report to be submitted within 60 days after January 1 of each year shall also include an assessment of radiation doses to the likely most exposed ~~member of the public~~ MEMBER OF THE PUBLIC from reactor releases and other nearby uranium fuel cycle sources (including doses from primary effluent pathways and direct radiation) for the previous 12 consecutive months to show conformance with 40 CFR 190, Environmental Radiation Protection Standards for Nuclear Power Operation. Acceptable methods for calculating the dose contribution from liquid and gaseous effluents are given in Regulatory Guide 1.109, Rev. 1. 249

The radioactive effluents release shall include the following information for each type of solid waste shipped offsite during the report period:

a. Container volume,

b. Total curie quantity (specify whether determined by measurement or estimate),

c. Principal radionuclide (specify whether determined by measurement or estimate),

d. Type of waste (e.g., spent resin, compact dry waste, evaporator bottoms),

e. Type of container (e.g., LSA, Type A, Type B, Large Quantity), and

f. Solidification agent (e.g., cement, urea formaldehyde).

The radioactive effluent release reports shall include unplanned releases from the site to ~~unrestricted area~~ the UNRESTRICTED AREA of radioactive materials in gaseous and liquid effluents on a quartarly basis. 249

The radioactive effluent release reports shall include any changes to the PROCESS CONTROL PROGRAM (PCP), OFFSITE DOSE CALCULATION MANUAL (ODCM) or radioactive waste systems made during the reporting period. 249

INSERT A TO 6.9.1.9, PAGE 6-18

This same report shall also include an assessment of the radiation doses from radioactive liquid and gaseous effluents to MEMBERS OF THE PUBLIC due to their activities inside the SITE BOUNDARY (Figure 5.1.3-1) during the report period. All assumptions used in making these assessments, i.e., specific activity, exposure time and location, shall be included in these reports.

INSERT B TO 6.9.1.9, PAGE 6-18

The Semiannual Radioactive Effluent Release Report shall identify those radiological environmental sample parameters and locations where it is not possible or practicable to continue to obtain samples of the media of choice at the most desired location or time. In addition, the cause of the unavailability of samples for the pathway and the new location(s) for obtaining replacement samples should be identified. The report should also include a revised Figure(s) and Table(s) for the ODCM reflecting the new location(s).

MONTHLY OPERATING REPORTS

6.9.1.10 Routine reports of operating statistics and shutdown experience, including documentation of all challenges to main steam system safety/relief valves, shall be submitted on a monthly basis to the Director, Office of Management and Program Analysis, U.S. Nuclear Regulatory Commission, Washington, D.C. 20555, with a copy to the Regional Administrator of the Regional Office no later than the 15th of each month following the calendar month covered by the report.

~~Any changes to the OFFSITE DOSE CALCULATION MANUAL shall be submitted with the Monthly Operating Report within 90 days of the date the change(s) was made effective. In addition, a report of any major changes to the radioactive waste treatment systems shall be submitted with the Monthly Operating Report for the period in which the evaluation was reviewed and accepted by the (PSRC).~~ 249

REPORTABLE OCCURRENCES

6.9.1.11 The REPORTABLE OCCURRENCES of Specifications 6.9.1.12 and 6.9.1.13 below, including corrective actions and measures to prevent recurrence, shall be reported to the NRC. Supplemental reports may be required to fully describe final resolution of occurrence. In case of corrected or supplemental reports, a licensee event report shall be completed and reference shall be made to the original report date.

PROMPT NOTIFICATION WITH WRITTEN FOLLOWUP

6.9.1.12 The types of events listed below shall be reported within 24 hours by telephone and confirmed by telegraph, mailgram, or facsimile transmission to the Regional Administrator of the Regional Office, or his designate no later than the first working day following the event, with a written followup report within 14 days. The written followup 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. Failure of the reactor protection system or other systems subject to limiting safety system settings to initiate the required protective function by the time a monitored parameter reaches the setpoint specified as the limiting safety system setting in the technical specifications or failure to complete the required protective function.

b. Operation of the unit or affected systems when any parameter or operation subject to a limiting condition for operation is less conservative than the least conservative aspect of the limiting condition for operation established in the technical specifications.

c. Abnormal degradation discovered in fuel cladding, reactor coolant pressure boundary, or primary containment.

Semiannual Radioactive Effluent Release Report for the period in which the change(s) was made.

6.13 PROCESS CONTROL PROGRAM (PCP)

6.13.1 The PCP shall be approved by the Commission prior to implementation.

6.13.2 Licensee initiated changes to the PCP:

1. Shall be submitted to the Commission in the Semiannual ~~semi-annual~~ Radioactive Effluent Release Report for the period in which the change(s) was made. This submittal shall contain: 249

   a. Sufficiently detailed information to totally support the rationale for the change without benefit of additional or supplemental information;

   b. A determination that the change did not reduce the overall conformance of the solidified waste product to existing criteria for solid wastes; and

   c. Documentation of the fact that the change has been reviewed and found acceptable by the PSRC.

2. Shall become effective upon review and acceptance by the PSRC.

6.14 OFFSITE DOSE CALCULATION MANUAL (ODCM)

6.14.1 The ODCM shall be approved by the Commission prior to implementation.

6.14.2 Licensee initiated changes to the ODCM:

1. Shall be submitted to the Commission in the ~~Monthly Operating Report within 90 days of the date the change(s) was made effective.~~ This submittal shall contain: 249

   a. Sufficiently detailed information to totally support the rationale for the change without benefit of additional or supplemental information. Information submitted should consist of a package of those pages of the ODCM to be changed with each page numbered and provided with an approval and data box, together with appropriate analyses or evaluations justifying the change(s);

   b. A determination that the change will not reduce the accuracy or reliability of dose calculations or setpoint determinations; and

   c. Documentation of the fact that the change has been reviewed and found acceptable by th PSRC.

2. Shall become effective upon review and acceptance by the PSRC.

6.15 MAJOR CHANGES TO RADIOACTIVE WASTE TREATMENT SYSTEMS * 088

6.15.1 Licensee initiated major changes to the radioactive waste systems, liquid, gaseous and solid:

1. Shall be reported to the Commission in the ~~Monthly Operating Report~~ Semiannual Radioactive Effluent Release Report for the period in which the evaluation was reviewed by the PSRC. The discussion of each change shall contain: 088

   a. A summary of the evaluation that led to the determination that the change could be made in accordance wth 10 CFR 50.59;

   b. Sufficient detailed information to totally support the reason for the change without benefit of additional or supplemental information;

   c. A detailed description of the equipment, components and processes involved and the interfaces with other plant systems;

   d. An evaluation of the change which shows the predicted releases of radioactive materials in liquid and gaseous effluents and/or quantity of solid waste that differ from those previously predicted in the license application and amendments thereto;

   e. An evaluation of the change which shows the expected maximum exposures to ~~individual~~ MEMBERS OF THE PUBLIC in the ~~unrestricted area~~ UNRESTRICTED AREA and to the general population that differ from those previously estimated in the license application and amendments thereto; 249

   f. A comparison of the predicted releases of radioactive materials, in liquid and gaseous effluents and in solid waste, to the actual releases for the period prior to when the changes are to be made;

   g. An estimate of the exposure to plant operating personnel as a result of the change; and

   h. Documentation of the fact that the change was reviewed and found acceptable by the PSRC.

2. Shall become effective upon review and acceptance by the PSRC.

* Licensee may choose to submit the information called for in this specification as part of the annual FSAR update. 088

DOCUMENT REVIEW REQUEST FORM

PART I (NUCLEAR SERVICES)

TO: Manager of Quality Assurance DATE: 6-19-84

Your review as indicated below of the following document is requested:

Document Title: PCOL-84/15A (AECM-84/0338)

- [x] Concurrence
- [ ] Quality Requirement Review
- [ ] Technical Content Review
- [ ] Licensing Impact Review

Please complete PART II of this form and return as indicated below not later than ________.

Please return this form to:
Manager of Nuclear Services (ATTN: Manager of Safety and Compliance).

PART II (REVIEWING ORGANIZATION)

The document indicated above has been reviewed.

- [x] No Comments
- [ ] Comments ________

R Dwayne Chisolm 6/19/84
Reviewer's Signature/Date

BAW Heard for T.E. Reaves Jr
Manager of QA / Date 6/19/84

PART III (NUCLEAR SERVICES)

Comments indicated above have been incorporated or resolved as follows:

____

Signature/Date

REVIEW OF DOCUMENTS	REV. 0	DATE 4/4/83
ATTACHMENT I to Procedure 1.11	PAGE 1 of 1	