

APPENDIX D

EVALUATION OF LICENSEE-REPORTED REVISIONS TO

PCP

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D.2. EVALUATION OF LICENSEE-REPORTED REVISIONS TO PCP

The Licensee has made several changes to the PCP that was issued by the Licensee on April 27, 1982 and approved by NRC on November 19, 1982.* These changes appeared as Revision 1 to the PCP in the first 6-month Semiannual Radioactive Effluent Report of 1984, but no changes were made in the subsequent two semiannual reports in 1984 and 1985.

It is Revision 1 of the PCP that has been reviewed for this report. The result of the evaluation is intended to be a standalone document, and is given in the following attachment as Supplement B to Appendix D.

*Letter from A. Schwencer (NRC/DL) to J. P. McGaughy, Jr. (MP&L), November 16, 1982.

SUPPLEMENT B

to

APPENDIX D

EVALUATION OF LICENSEE-REPORTED REVISIONS TO PCP

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1. INTRODUCTION

1.1 PURPOSE OF REVIEW

The purpose of this document is to review and evaluate the Process Control Program (PCP), updated through June 30, 1985, as revised by the Grand Gulf Nuclear Station Unit 1 since April 27, 1982 when the PCP was issued by the Licensee as Revision 0 [1] and was subsequently approved by the NRC [2].

The PCP is a supplementary document for implementing the Radiological Effluent Technical Specifications (RETS) in compliance with Standard Review Plan 11.4 [3] and Branch Technical Position ETSB-11-3 [4].

1.2 SCOPE OF REVIEW

As specified in NUREG-0472 [5] and NUREG-0473 [6], the PCP is to be developed by the Licensee to document the current formula, sampling, analyses, tests, and determinations to be made to ensure that the processing and packaging of solid radwastes are accomplished. As a minimum, the PCP should provide commitments and information regarding the following topics [7]:

- o Processing and packaging of liquid wet wastes
- o Processing and packaging of other wet wastes
- o Treatment of oily wastes
- o Block diagram sketches of these systems
- o Considerations of ALARA.

1.3 PLANT-SPECIFIC BACKGROUND

On behalf of Grand Gulf Nuclear Station Unit 1, the Mississippi Power and Light Company submitted changes to the existing PCP [1] in the Semiannual Radioactive Effluent Release Reports issued by the Licensee. The Licensee issued Revision 1 of the PCP in the first 6 months of 1984 [8]. No changes to PCP were made by the Licensee in the second 6-month period of 1984 [9] and the first 6-month period of 1985 [10].

The Licensee's Semiannual Reports and the changes of the PCP were transmitted to an independent review team at the Franklin Research Center (FRC) for review. The review was subsequently conducted by FRC, and the results and conclusions of the PCP evaluation are presented in Sections 3 and 4 of this document.

2. REVIEW CRITERIA

NUREG-0472 [5] and NUREG-0473 [6] specify that the Licensee develop a PCP to ensure that the processing and packaging of solid radioactive wastes will be accomplished in compliance with 10CFR20 [11], 10CFR71 [12], and other federal and state regulations or requirements governing the offsite disposal of the low-level radioactive waste.

The PCP is not intended to contain a set of detailed procedures; rather, it is the source of basic criteria for the detailed procedures to be developed by the Licensee. The criteria used for the PCP are to address only current NRC guidelines [7] and do not include new criteria required by 10CFR61 [13]. The PCP should include, but is not limited to, the following:

- o A commitment that all liquid wet wastes shall be solidified prior to shipment offsite.
- o A commitment that containers, shipping casks, and methods of packaging for liquid wet wastes meet applicable Federal regulations, e.g., 10CFR Part 71.
- o A commitment that radioactive wastes will be shipped to a licensed burial site in accordance with applicable Commission, Department of Transportation, and State regulations, including the burial site regulation requirement.
- o A general description of the laboratory mixing of a sample of waste to arrive at process parameters prior to commencing the solidification process.
- o A general description of the solidification process including type of solidification agent, process control parameters, parameter boundary conditions, proper waste form properties, and assurance that the solidification systems are operated within the established process parameters.
- o A general description of sampling of at least one representative sample from every tenth batch to ensure solidification and the action to be taken if the sample fails to verify solidification.
- o The provisions to verify the absence of free liquid.
- o The provisions to reprocess containers in which free liquids are detected.
- o If the solidification process is exothermic, what process control parameters must be met prior to capping the container?

- o Appropriate statements similar to those for liquid waste should be included for other wet wastes which could include filter sludge, spent powdered resins, spent bead resins, and spent cartridge filter elements.
- o A general description of the dewatering technique and control parameters for other wet wastes.
- o Provisions to reprocess the other wet wastes through the dewatering system if excess free water is observed should be included.
- o A general description for treatment of oily wastes which are to be transported offsite for burial should be included.
- o Sketches of the above systems.
- o A statement that ALARA considerations were addressed in all phases of the solidification process.

3. TECHNICAL EVALUATION

The Licensee has made a commitment to process all liquid wet wastes prior to shipment offsite and a commitment to comply with Federal regulations on shipping and packaging. These commitments satisfy the current NRC guidance.

The Licensee has not made an explicit commitment that radioactive wastes will be shipped to a licensed burial site. Although it may be implied in the Licensee's commitment to employ vendors approved by the NRC, the commitment to ship the radioactive wastes should be clearly stated in the PCP.

The Licensee has provided a description of a waste stream sample prior to commencing the solidification process. The Licensee has also included a general description of the solidification process including types of solidification agent, process control parameters, parameter boundary conditions, proper waste form properties, and assurance that the solidification systems are operated within established process parameters. The Licensee's descriptions are satisfactory and meet the current NRC criteria.

Under the subject of sampling for verification of solidification in the Licensee's PCP, a commitment has been made to verify the solidification on at least every tenth batch of waste. Should trends indicate the possibility of changing parameters, which may have an effect on the methods and materials used for solidification, more frequent sampling may be required. The Licensee's commitment to waste solidification meets the NRC criteria.

Provisions included in the Licensee's PCP to verify the solidification have, in part, addressed the verification of free-standing liquids. The Licensee has listed a step-by-step procedure for verification of solidification. For batches of miscellaneous wastes, the Licensee has committed to take a grab sample and follow the verification procedures as stated. The Licensee's approach to verifying the solidification satisfies the current NRC criteria.

The Licensee has not adequately stated the provisions to process containers in which free liquids are detected. The Licensee should expand the commitment to reflect the procedures taken to process the affected containers.

The Licensee has not specifically addressed the following subjects:

- o whether the solidification is exothermic, and the associated process control parameters to be met prior to capping the containers

- o a general description of treatment of oily wastes which are to be transported offsite for burial
- o sketches of the waste processing systems
- o The ALARA consideration in all phases of the solidification process.

In summary, except for the deficiencies described above, the Licensee's PCP and the revised changes are generally consistent with the current NRC criteria [7]. However, the PCP should be revised in the future to show compliance with 10CFR Part 61 [13] when NRC guidance becomes available.

4. CONCLUSION

The Licensee's revision (Rev. 1) to the Process Control Program (PCP Rev. 0, dated April 27, 1982 [1]) submitted by the Licensee in the Semiannual Effluent Release Report [8, 9, 10] for the period of January 1, 1984 through June 30, 1984 [8], has been reviewed against the current NRC criteria [7]. It is found that the PCP as revised by the Licensee generally complies with current NRC criteria. However, several deficiencies described in the following were noted. The Licensee should update the PCP to correct these deficiencies. Further, the PCP should be revised in the future to show compliance with 10CFR Part 61 [13] when NRC guidance becomes available.

These deficiencies found in the Licensee's PCP submittal are:

- o The Licensee has not made an explicit commitment to ship the radioactive wastes to a licensed burial site.
- o The Licensee has not adequately addressed the provisions to process containers in which free liquids are detected.
- o The Licensee has not indicated whether the solidification is exothermic, nor has it provided process control parameters to be met prior to capping the containers if the process is exothermic.
- o The Licensee has not provided a general description of treatment of oily wastes which are transported offsite for burial.
- o The Licensee has not included a general sketch of the waste processing systems in the PCP.
- o The Licensee has not addressed the ALARA considerations in all phases of the solification process.

5. REFERENCES

1. Process Control Program for Grand Gulf Nuclear Station Unit 1, Rev. 0, Mississippi Power and Light Company
NRC Docket No. 50-416
Submittal with letter dated April 27, 1982
2. S. Schwencer (NRC/DL)
Letter to J. P. McGaughy, Jr. (MP&L)
Subject: NRC/DL Approval of Grand Gulf ODCM and PCP
NRC Docket No. 50-416
November 19, 1982
3. "Solid Waste Management System," Standard Review Plan, Office of Nuclear Reactor Regulation, Section 11.4, Revision 2, dated July 1981
4. Branch Technical Position 11-3, "Design Guidance for Solid Radioactive Waste Management Systems Installed in Light-Water-Cooled Nuclear Power Reactors Plants," attachment to SRP 11.4, Revision 2, July 1981
5. NUREG-0472, "Radiological Effluent Technical Specifications for Pressurized Water Reactors," Draft 7", Revision 3, September 1982
6. NUREG-0473, "Radiological Effluent Technical Specifications for Boiling Water Reactors," Draft 7", Revision 7, September 1982.
7. Letter of transmittal from C. Willis (NRC) to S. Pandey (FRC),
Subject: "Guidance for Review of the Process Control Program, Enclosure 2," Criteria for Process Control Program, January 7, 1983
8. "Semiannual Radioactive Effluent Release Report - January 1 through June 30, 1984," Grand Gulf Nuclear Station Unit 1, Mississippi Power and Light Company
NRC Docket No. 50-416
9. "Semiannual Radioactive Effluent Release Report - July 1 through December 31, 1984," Grand Gulf Nuclear Station Unit 1, Mississippi Power and Light Company
NRC Docket No. 50-416
10. "Semiannual Radioactive Effluent Release Report - January 1 through June 30, 1985," Grand Gulf Nuclear Station Unit 1, Mississippi Power and Light Company
NRC Docket No. 50-416

11. Title 10, Code of Federal Regulations, Part 20, "Standards for Protection Against Radiation"
12. Title 10, Code of Federal Regulations, Part 71, "Packaging and Transportation of Radioactive Material"
13. Title 10, Code of Federal Regulations, Part 61, "Licensing Requirements for Land Disposal of Radioactive Waste"