



MISSISSIPPI POWER & LIGHT COMPANY

Helping Build Mississippi

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July 24, 1981

NUCLEAR PRODUCTION DEPARTMENT

U.S. Nuclear Regulatory Commission
Office of Nuclear Reactor Regulation
Washington, D.C. 20555

Attention: Mr. Harold R. Denton, Director

Dear Mr. Denton:



SUBJECT: Grand Gulf Nuclear Station
Units 1 and 2
Docket Nos. 50-416 and 50-417
File 0270/L-957.0
Comments on the Draft
Environmental Statement for
GCNS
AECM-81/268

Mississippi Power & Light Company has completed its evaluation of NUREG-0777, "Draft Environmental Statement Related to the Operation of Grand Gulf Nuclear Station, Units 1 and 2." Our comments resulting from this evaluation are enclosed for your review and inclusion in the Nuclear Regulatory Commission's Final Environmental Statement.

If you have any questions concerning this information, please do not hesitate to contact us.

Yours truly,

L. F. Dale
Manager of Nuclear Services

GOS/TRM/JDR:lm
Attachment

cc: Mr. N. L. Stanpley
Mr. G. B. Taylor
Mr. R. B. McGehee
Mr. T. B. Conner

Mr. Victor Stello, Jr., Director
Office of Inspection & Enforcement
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555

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Member Middle South Utilities System

This attachment includes all the comments made by Mississippi Power & Light Company on the U.S. Nuclear Regulatory Commission's Draft Environmental Statement, related to the operation of Grand Gulf Nuclear Station, Units 1 and 2 (Docket Nos. 50-416 and 50-417 - NUREG-0777). The comments are prefixed by the page number, paragraph number or, if applicable, the section number in the Draft Environmental Statement to which they refer.

1. Page iii, 3rd paragraph, and Page 1-1, Section 1.1

The statement is made that three radial wells along the shore of the Mississippi River will provide makeup water for the cooling system. This contradicts the statement on page 4-2, which states that the station will consist of six radial wells (three operating and three planned for Unit 2). The statement on page 4-2 is more correct in that the three existing radial wells will provide enough makeup water for one unit operation and prior to two unit operation additional mechanisms for providing makeup water will be constructed.

2. Page iii, Item 3a

The NRC notes that the transmission line occupies about 2300 acres; the ER (page 4.2-2, paragraph 2) states the acreage involved is 2240.

3. Page (iv), Item b, and Page 5-1 section 5.3.1

"The average plant makeup water use will be approximately 100 cfs. The expected rate of use of river water is 75 cfs."

Since it is stated here and in Section 4.3.2 of the DES that 70% of the plant water is derived from the river, the flow rate of river water into the wells should be 70 cfs not, 75 cfs.

There is also a typographical error in this paragraph: 75 fps should read as 75 cfs.

4. Page 1-1, paragraph 5

It is noted that the NPDES permit is reproduced in Appendix C. This document is actually in Appendix A of the DES.

5. Page 4-1, paragraph 3

The NRC notes that 242 acres are devoted to structures; the ER (page 4.1-1, paragraph 2) lists 124 acres of the site as being permanently out of biological production.

6. Page 4-2, section 4.2.3, 6th sentence

"Twelve horizontal, screened, 16-inch-diameter pipes, called laterals, extend..."

As shown in Figure 3.4-5 of the ER, not all collector wells will have twelve laterals, since Well 5 has only eleven laterals.

7. Page 4-2, section 4.2.3, 2nd to last sentence

"95 fps" shov'd read 95 cfs.

8. Page 4-3, section 4.2.6, 1st paragraph, 4th sentence

"Table 4.1 shows average effluent quality..." should read "...
average blowdown quality..."

9. Page 4-2, section 4.2.2, 2nd paragraph

Not all of the plant service water goes to the cooling tower in all situations; portions of the water could be bypassed to the discharge basin, assuming a constant PSW demand of 20,833 gpm.

10. Page 4-4, section 4.2.6

Following the first sentence the following statement should be added: "Sulfuric acid is added to control pH and an approved surfactant may be added to enhance the effect of the biocide."

11. Page 4-4, section 4.2.6

The NPDES permit number for the Grand Gulf Nuclear Station is MS0029521.

12. Page 4-4, section 4.2-8

The existing sanitary waste system at the Grand Gulf Nuclear Station has a designed capacity of 45,000 gpd (300 persons at 150 gpd per person). Plans call for one of the three existing 15,000 gallon units to be used during normal one and two unit operation. This unit's discharge is mixed with other plant waste streams at a dilution rate of 2,000 to 1 prior to its discharge to the Mississippi River. The remaining two units (30,000 gallons total) will be used to handle peak loading conditions involved during the ongoing construction activity on Unit 2 as well as fuel outage events. These units discharge into construction basin A which discharges into Hamilton Lake and then to the Mississippi River. Construction basin A has an average flow rate of 500,000 gallons per day therefore providing the sewage treatment discharge with a dilution ratio of 16.7 to 1 prior to its discharge to Hamilton Lake.

13. Page 4-4, section 4.2.6, 1st paragraph, 6th sentence

Should read "...the station effluent which includes the blowdown from the CWS, minor waste streams and plant service water bypass."

14. Section 4.2.6

Sentence should read "Chemical additions to the Circulating Water System will include sulfuric acid to control scaling, hypochlorite to minimize slime and algal growth, intermittent additions of a state approved biocide enhancer to increase the efficiency of the hypochlorite solution, and polyphosphonate to act as a calcium dispersant."

15. Page 4-5, section 4.2.8, 4th paragraph, 4th sentence

The statement is made that sodium sulfite is added to the boiler water to control conductivity. While sodium sulfite does contribute to conductivity, it does not control it. Boiler blowdown controls the dissolved solids concentration and subsequently the conductivity of the boiler water.

16. Page 4-5, 2nd paragraph, line 10

The sentence should read: "Disodium phosphate will be added to control scaling, and hydrazine or an approved hydrazine substitute will be added to control corrosion."

17. Page 4-6, section 4.3.2, paragraph 2; Table 4.1

The radial well water quality data were measured in the months of November and December 1979, not 1980 as stated in the DES.

18. Page 4-6, section 4.3.2, 3rd paragraph, 1st sentence

Suggested revision: "For the purpose of this assessment, the projected average water quality values presented in Table 4.1 are used to characterize the makeup water to the station."

19. Page 4-7, paragraph 7

The DES states that the intermittent stream (Stream B) has been concrete lined. Only part of it has been so lined, as is noted later (page 5-2, paragraph 5) by the NRC.

20. Page 4-7, paragraph 1; page 5-1, section 5.3.3

It is stated in these two sections that the Mississippi River's flood plain is about 95 miles wide, but it is reduced by a levee system to 3-6 miles. These values do not agree with those given in Section 2.4.2.1 of the ER, which states a flood plain of 60 miles which is reduced by the levee system to 2-4 miles.

21. Page 4-8, line 1

Sentence should read: "The applicant has stated that water bearing formations...."

22. Page 4-8, 6th paragraph

The sentence should read: "The only concentrated groundwater withdrawal near the site is the Port Gibson Municipal Water System, located about 8 kilometers (5 miles) southeast of the site."

23. Page 4-10, paragraph 3

The NRC noted that 589 acres were disturbed by construction, while the ER (page 4.1-1, paragraph 2) indicates that 465 acres were involved.

24. Page 4-10, section 4.3.6

The statement is made that the fields near Gin Lake are used for beef cattle grazing and the field around the meteorological tower is used for hay production. Although these areas have been used in these capacities, their agricultural use has and will vary during the operational life of the plant. Therefore, the statement should read that the fields near Gin Lake and the field around the meteorological tower are used for agricultural production.

25. Page 4-10, section 4.3.6, 3rd paragraph

The deposition rate of 1200 g/m²/hr is stated in the DES as having been calculated by the staff with information supplied by the applicant. However, utilizing the maximum deposition rates for total dissolved solids, sodium salt, and iron salt provided by MP&L in Section 5.1.4.5.3 of the ER, the calculated deposition rate should be 0.69 g/ha/hr.

26. Page 4-16, Table 4.1

This table shows circulating water and blowdown for three cycles of concentration, well and river water quality. It is implied in the table and stated in the text that blowdown quality is effluent quality and can be compared with river water quality. This is not true, because effluent quality will be better than blowdown quality, since normal operation of the circulating water system (CWS) calls for the cooling water to be cycled. By cycling the cooling water the amount of makeup water required for operation of the CWS is reduced. Under these circumstances the unrequired makeup water from the PSW system would be bypassed to the effluent discharge. This bypassed water will dilute the effluent discharge thereby improving its quality.

Careful distinction should be made between blowdown and station effluent. Effluent quality should be emphasized except for chemical/physical/biological parameters specifically regulated in the blowdown stream.

27. Page 4-16, Table 4.1

The projected average well concentration for copper should be less than 0.05 mg/l.

The circulating water and blowdown sulfate concentration is 743 mg/l, including the sulfate concentration resulting from sulfuric acid addition.

The long-term average river concentration of aluminum and copper should not have a less than sign in front of the value.

28. Page 4-17, Table 4.2

The meaning of the phrase "after Table 3" in the source footnote is not understandable.

29. Page 4-16, Figure 4.1 "Station Water Use Diagram"

This diagram's reference to "(Note 5)" right after the "Plant Service Water Radial Well System" block in the diagram should be omitted, as there are no numbers given.

30. Page 5-2, paragraph 1

It is stated that the "two streams" (it is assumed the reference is to the two site streams) flow directly into the Mississippi River. These streams, in fact, flow into Hamilton Lake.

31. Page 5-2, paragraph 1, last sentence

There appears to be a typographical error in the 100-year flood level of 27.9 m msl, which corresponds to 91 ft., instead of 9 ft. as stated in the DES.

32. Page 5-3, section 5.5

The statement is made that a short-term program of surveillance using false color infrared aerial photography will be required to detect the possible affects of salt deposition from the cooling tower on the surrounding vegetation. MP&L feels that this type of monitoring program is not necessary to insure the protection of the surrounding vegetation. This opinion is based on several factors:

- A. Deposition Modeling - An extensive modeling program was conducted by the applicant which predicted deposition rates based on the quality of water from the radial well system and meteorology at the site. These studies have shown the deposition of salts and solids on the surrounding vegetation to be minimal.
- B. Water Quality - Samples of water taken from the radial well system have shown the quality of water from these wells to be very good. It is our opinion that based on the good water quality in the Circulating Water System (CWS) and the fact that cooling water will only be circulated 3-5 times prior to its blowdown, that the concentration of dissolved solids in the cooling water and their subsequent entrainment and deposition on the surrounding vegetation will not be a problem.

- C. Deposition of solids on surrounding vegetation could be a problem in areas which experience low precipitation and high temperatures. However, this is not characteristic of the meteorology in the vicinity of the site where precipitation averages 64 inches per year and the highest quarterly temperature averages 86.5^CF.
- D. Mississippi Power & Light has a full time environmental staff assigned to the Grand Gulf Nuclear Station. It is our opinion that through normal ongoing field observations MP&L will be able to monitor the surrounding vegetation for damage due to salt and/or solid deposition from the cooling tower.

33. Page 5-4, section 5.6.2, paragraph 1

Here it is stated that the largest plume length for the summer case is 250 ft. This does not agree with Table 5.1.2b of the ER, where the length of the largest summer plume is given as 300 ft.

34. Page 5-4, section 5.6.2, title

The term "blowdown" should be replaced with "effluent" or "discharge."

35. Page 5-4, paragraph 2

The first sentence refers to the Port Gibson and Franklin lines as not further impacting considerations of the "above rivers" for designation as scenic; however, the "above rivers" are not named. It is assumed that the rivers to which the statement refers are Bayou Pierre and the Big Black River.

36. Page 5-4, paragraph 5, line 5

This sentence tends to imply there will be a complete loss of the small shoreline benthic community downstream from the plant discharge. While it is possible that there will be some loss of the small benthic community present along the shoreline, it is doubtful that there will be a complete loss of this community.

37. Page 5-4, section 5.6.2, 1st paragraph, last sentence

Change 800 m³ to 800 m².

38. Page 5-5, paragraph 1

It is stated that drifting organisms could remain in the thermal plume for as long as 1.6 hours. According to the ER (page 5.1-11, paragraph 4), the time would be less than one hour.

39. Page 5-5, paragraph 6

It is stated that Section 4.2.5 describes chemical and biocidal discharges. This section actually is entitled, "Radioactive Waste Management System."

40. Page 5-6, section 5.6.3, 6th paragraph

This paragraph should include a statement that free available chlorine in the Circulating Water System is further reduced by the presence of ferrous iron in the circulating water, which will exert a chlorine demand and thereby reduce chlorine discharge.

41. Page 5-27, 2nd paragraph, line 10

The statement should read "nodules in about 5 out of 100 cases."

42. Page 5-33, 2nd paragraph

The statement is made that contaminated groundwater from the plant would reach the oxbow lakes before the river. Mississippi Power & Light has conducted several exhaustive pump down testing programs of the radial wells, as well as modeling efforts based on these pump tests, which indicate that there is no hydraulic connection between the groundwater supply and the site oxbow lakes. This conclusion was restated earlier in the DES on page 4-9 and 5-1, where the lack of a direct hydraulic connection between the groundwater and the oxbow lakes was cited. The extensive research conducted by MP&L, and its acceptance by the NRC, seems to be ignored in this section's description of a liquid pathway release of radioactivity and its subsequent introduction to the Mississippi River.

Therefore, it is our position that the only liquid pathway by which radioactivity would be introduced to the Mississippi River is via the groundwater supply and not by way of the oxbow lakes.

43. Page 5-34, 2nd paragraph

The statement is made that the Mississippi River downstream of the Grand Gulf site supplies no municipal users. While it is true, that there are no near site municipal users, however New Orleans is a municipality downstream of the Grand Gulf Nuclear Station which derives its water supply from the Mississippi River.

44. Page 5-44, Table 5.3

Direct Radiation - At present there are 57 TLD locations operational in the Preoperational Radiological Environmental Monitoring Program, eight of which are located in Louisiana.

Milk - The existing program includes 1 sampling site at Alcorn State University and 1 milking animal in the vicinity of GGNS (if an animal is available).

Beef (or Goat) Meat - 1 within 10 miles of the site (if an animal is available; otherwise feedstuff and forage may be substituted).

Fruits and Vegetables - 1 garden crop, preferably from a high D/Q sector, 1 wild fruit (i.e., plums) collected from site environs (when available, and preferably from high D/Q sectors), 1 control sample from area not influenced by plant effluents.

Sediment - Under the existing preoperational program these samples are taken downstream of the plant outfalls and not necessarily at the St. Joseph Ferry.

Soil - MP&L's Amendment 5 to the ER deleted the requirement for Strontium-90 analysis of soil samples. Therefore, under the existing program, Strontium-90 analysis is not conducted on soil samples.

45. Page 6-1, paragraph 6

The DES estimates the operation and maintenance costs for Unit 1 at 1.8 mills/Kwhr, while the ER (Table 9.4.4) estimated it as 2.8 mills/Kwhr.

46. Page 6-1, paragraph 6

The DES estimates the decommissioning cost for each unit at \$35 million to \$60 million in 1978 dollars. The latest estimates for the Grand Gulf Nuclear Station (Middle South Decommission Study, June 19, 1981) estimate decommissioning cost for immediate dismantlement at 93 million (1981 dollars).

47. Page 6-4, Table 6.1, item 7a

The meaning of the phrase ("Letters of Historic and Archaeological Resources") under this item is not clear.

48. The doses reported in Table D-6 do not agree with those previously calculated by MP&L: all doses indicated in Table D-6 are higher by up to a factor of four. Table D-2 presents the atmospheric dispersion factors used in the NRC dose calculations. Again, these values are higher than those used by MP&L by up to a factor of four. It appears that the site-specific recirculation factors for Grand Gulf were not utilized in both sets of NRC calculations.

49. Page C-4, 2nd paragraph

The statement is made that it is probable that reclamation laws similar to those State and Federal laws for open-pit coal mines will be required for open-pit uranium mines. At present, all states which have active open-pit uranium mines already have laws which govern the reclamation practices of those mines.

50. Page D-3, Table D-1

In the air eject exhaust column for Argon-41, a footnote C was denoted. However, there is no footnote C listed in this table.

51. No indication was made in this Statement of the Interim Hazardous Waste Permit which authorizes the Grand Gulf Nuclear Station to store, treat and dispose of all hazardous waste generated on site.