

RIDGE GENERATING STATION, L. P.

General Partners



DECKER ENERGY-RIDGE, INC. RECEIVED WHEELABRATOR POLK INC.

400 North New York Avenue, Suite 101
Winter Park, Florida 32789
Tel. 407-628-8900
Fax. 407-628-8535

AUG 26 1992

Bureau of
Air Regulation August 24, 1992

Florida Department of Environmental Regulation
Division of Air Resources Management
Twin Towers Office Building
2600 Blair Stone Road
Tallahassee, Florida 32399-2400

Attention: Mr. Preston Lewis, P.E.
Bureau of Air Regulation

Re: Ridge Generating Station, Polk County
DER File No. AC 53-206244, PSD-FL-183

Dear Mr. Lewis:

On July 29, 1992, Ridge Generating Station Limited Partnership (RGSLP) received the Revised Technical Evaluation and Preliminary Determination and the proposed permit for the Ridge Generating Station. This letter summarizes our comments on these documents. We have arranged our comments in the order in which they appear in the document. In addition, we have also attached a marked-up version of the documents which clearly illustrates the revisions that we are requesting. The basis for the requested revisions is provided below.

1. Revised Technical Evaluation and Preliminary Determination, Page 3, Paragraph 1

Requested Revisions

The words "urea or" should be inserted between the words "injecting" and "ammonia" in the last line.

Basis

As discussed in the Application, either urea or ammonia will be used as a reagent in the SNCR system, depending upon which vendor is selected. Since a final decision on the SNCR vendor has not been made, it would be more accurate to list both options in the Technical Evaluation.

2. Proposed Permit, Page 6 of 9, Specific Condition 5

a. Comment

Based upon discussions between Steve Smallwood and John Reynolds, it is our understanding that the numbers in the column titled "Basis (lb/MMBTU)" are not permit limits that are to be used for determining compliance. The permit limits are those numbers that are found in

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the columns titled "Lbs/hr*" and "Tons/yr." If our understanding on this issue is incorrect, it is essential that the averaging period specified in specific Condition 5 also apply to the numbers in the "Lb/MMBTU" column. This could easily be accomplished by adding the asterisk to the title of that column as well.

b. Requested Revision

The titles of the last two columns should be revised to read "Limits (Lbs/hr)*" and "Limits (Tons/yr)".

Basis

This revision would avoid future potential confusion related to which values listed in the Condition are the "Limits" which shall not be exceeded versus those that are intended to be used simply as a "Basis" for calculation purposes.

c. Requested Revision

The word "test" in the last line of Specific Condition 5 should be deleted and replaced with the phrase "the emissions testing program."

Basis

This change would make it clear that future decisions related to revisions of the emissions limits and averaging periods would be based on the results of the comprehensive emissions testing program rather than some other unspecified test.

3. Proposed Permit, Page 6 of 9, Specific Condition 6

Comment

It was our understanding, based on our meeting of July 1, 1992, that it was not the intention of the Department to require ambient ammonia monitoring throughout the operational life of the facility. It was our understanding that ambient monitoring for ammonia would be required during an initial testing program and that a decision on the long term need for, and method of, future ammonia monitoring would be based upon the results of the Test Program.

Requested Revision

The last sentence of Specific Condition 6 should be deleted and replaced with the following sentence: "The results of the monitoring program shall be discussed in the Emissions Testing Program report. The need for and method of additional ammonia monitoring will be determined by the Department based on the results of the emissions testing program."

Basis

This revision would make it clear that a decision on the long term monitoring requirements will be based on the results of the test program. If those results indicate that long term monitoring is warranted, then it can be required. If, however, those results indicate that long term monitoring is not warranted, then it would not be prudent or justifiable to require it. It is clearly more appropriate to make a final decision based upon facility specific data.

As we have discussed, although we do not believe that ammonia emissions will be problematic at this facility, we are sensitive to the issues you have had to face with other types of facilities. Therefore, we are willing to install a monitor on a temporary basis, for the duration of the testing program. We do not believe, however, that it is appropriate to require the permanent installation and operation of an ammonia monitor at this facility when you consider the source of potential ammonia emissions and the proposed automated control system.

4. Proposed Permit, Page 6 of 9, Specific Condition 7

Requested Revision

The words "fly ash silo" should be deleted from the first line of the condition and replaced with the words "ash handling area."

Basis

As discussed on Pages 3-7 and 3-8 of the Application Report, two alternative methods of handling/storing combined ash were initially being considered. In our March 19, 1992 letter to C.E. Fancy, we indicated that the ash silo alternative had been replaced by an ash handling building containing "roll-on roll-off" containers. The requested

revision is proposed to avoid any confusion related to the ash handling area vent filter.

5. Proposed Permit, Page 7 of 9, Specific Condition 8

a. Requested Revision

Delete the requirement for stack emission tests at 50 percent.

Basis

We request that the requirement for testing at 50 percent be deleted because that load level will not constitute a normal operating condition. RGSLP will always attempt to maintain the facility at as close to full load as possible. There may be times such as with wet fuel, when the facility is operating at a boiler capacity in the range of 75 percent. However, the facility will not be operated continuously at a load as low as 50 percent because it would be uneconomical to operate at that level. Since a 50 percent load range will not be representative of facility operation, it is not appropriate to require stack emissions testing at that level. The Emissions Testing Program Report will include CEM data covering the transition periods of start-up and shut-down.

b. Requested Revision

Insert the following sentence in the fifth line on Page 7 following the word "startup" and preceding the next sentence beginning "The following EPA...": "The first firing of wood, tires or landfill gas will constitute initial startup."

Basis

The requested revision would clarify what we believe your intent to be with regard to initial startup.

6. Proposed Permit, Page 7 of 9, Specific Condition 9

Requested Revision

The words "initial compliance test" should be deleted from the sixth line and replaced with the words "emissions testing program."

Basis

This clarification is desirable to deal with emissions testing requirements in a consistent manner throughout the Permit.

7. Proposed Permit, Page 8 of 9, Specific Condition 16

Comment

We believe that the meaning of the phrase "revised BACT application" could be misconstrued and, therefore, the meaning should be clarified. Based on our discussions on this topic, it is our understanding that the Department agrees that the control systems proposed represent the best available control technology. The Department has proposed a two step process to establish the final emissions limits and averaging periods, with the final limits being established based on the results of the Emissions Testing Program. We believe that this is an excellent approach for this facility.

We also understand that the Department would like economic information related to the selected control systems and we are willing to provide that information to the Department. It is imperative, however, that the permit clearly indicates that the additional BACT related information is being submitted for the purpose of establishing final emissions limits and averaging periods and not for the purpose of re-evaluating the selected control systems. While we believe that the last statement on page 8 of 9 (Specific Condition 17) makes that point, we believe that potential future confusion should be avoided by making several additional clarifying revisions.

Requested Revision

The last four words in Specific Condition 16, "a revised BACT application," should be deleted and the following words should be inserted, "proposed final BACT emissions limits and averaging periods based on a statistical analysis of the emissions testing program data. Economic information shall also be submitted for the selected control equipment, as described in the attached BACT determination."

Basis

As discussed in the comment above, this revision would clarify the nature and intent of the required supplemental BACT information.

8. Proposed Permit, Page 8 of 9, Specific Condition 17

Requested Revision

The first sentence in the condition should be revised to read: "Within 90 days of receipt of the proposed revised BACT emissions limits and other..."

Basis

This will clarify the nature and intended use of the additional BACT related data to be submitted.

9. BACT Determination, Page 1 of 4, Maximum Allowable Emissions Table

Requested Revisions

The value for VOC's in the columns titled "Proposed by RGS" and "Proposed by DER" should be "96.8" rather than the value of "96.6" as currently shown. Similarly, the value for Hg in the same columns should be "0.097" rather than the "0.1" currently shown.

Basis

These revisions are required to be consistent with the Application, the Revised Technical Evaluation and Preliminary Determination, and the proposed permit.

10. BACT Determination, Page 3 of 4

Requested Revisions

The following changes should be made in the section entitled "BACT Determination Rationale." The first phrase on line one, "Irrespective of control technology economics," should be deleted. The second sentence of the first paragraph, beginning with the word "However" and ending with the word "time" should be deleted. The second paragraph should be merged with the revised first paragraph and the following should be added as a new paragraph:

"The permit also requires the permittee to submit economic information related to the selected control equipment. This submittal shall include information on the total installed capital cost of each system (consisting of total direct costs and total indirect costs) and the total annual cost of each system

(consisting of direct costs, indirect costs, and recovery credits if any). The total annual costs will be used to estimate a cost effectiveness for the installed control systems in terms of dollars per ton of pollutant removed."

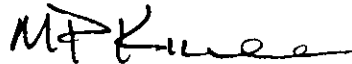
Basis

Similar to the explanation for the requested revision of Specific Condition No. 16, we are requesting this revision to more clearly define the purpose and content of the supplemental BACT related information to be submitted.

We appreciate the time and thought that have gone into the Department's consideration of the Ridge Generating Station permit application to date and would appreciate your further consideration of the comments in this letter. We believe that the requested revisions are minor in nature but are important clarifications that will avoid future potential confusion related to the permit.

Again, we appreciate the efforts of you and your staff and we would be happy to discuss any of the proposed revisions with you.

Sincerely,



Matthew P. Killeen
Senior Environmental Engineer

MPK141:ga

Attachment

cc: J. Reynolds (FDER)
S. Smallwood (D&M)
R. Stone
M. Whiting

B. Thomas, SW Dist
C. Holladay
G. Harper, EPA
C. Shaw, NPS

} 8-27-92
PA

ATTACHMENT A

PROPOSED REVISIONS

MARKED-UP COPY

UREA OR

reduction (SNCR) which reduces NO_x to elemental nitrogen by injecting ammonia into the boiler furnace. X

Since the hours of operation under each of the three scenarios are unknown, and since other fuel mix percentages will also occur, projections of maximum proposed annual emissions would have to be based on the maximums for these anticipated fuel mix cases. The applicant's estimated actual emissions for three anticipated fuel mix scenarios (based on heat input percentages using the applicant's proposed emission limits) are tabulated below.

	100% Wood		80% Wood 20% Tires		75% Wood/15% Tires 10% Landfill Gas		PSD Level
	lbs/hr	tons/yr	lbs/hr	tons/yr	lbs/hr	tons/yr	tons/yr
PM/PM ₁₀	12.6	55.2	12.6	55.2	12.6	55.2	25/10
SO ₂	69.4	304.0	109.4	479.2	92.5	405.2	40
NO _x	94.5	413.9	94.5	413.9	94.5	413.9	40
CO	315.0	1,379.7	315.0	1,379.7	315.0	1,379.7	100
VOC	22.1	96.8	22.1	96.8	22.1	96.8	40
NH ₃	17.8	78.0	17.8	78.0	17.8	78.0	-
C ₆ H ₆	5.0	21.9	5.0	21.9	5.0	21.9	-
HCHO	1.7	7.5	1.7	7.5	1.7	7.5	-
HCL	5.0	22.1	5.0	22.1	5.0	22.1	-
Pb	0.25	1.1	0.25	1.1	0.25	1.1	0.6
Zn	0.63	2.8	0.63	2.8	0.63	2.8	-
Hg	0.02	0.097	0.02	0.097	0.02	0.097	0.1
Be	.0063	0.03	.0063	0.03	.0063	0.03	.0004

III. Rule Applicability

The construction permit application is subject to review under Chapter 403, Florida Statutes, and Florida Administrative Code (F.A.C.) Chapters 17-2 and 17-4. The proposed facility is subject to the provisions of F.A.C. Rule 17-2.500, Prevention of Significant Deterioration (PSD). The facility is located in an area classified as attainment for all regulated air pollutants. Proposed emissions of PM/PM₁₀, SO₂, NO_x, CO, VOC, Pb, and Be equal or exceed the significant levels set forth in Table 500-2 of F.A.C. Rule 17-2.500. Preconstruction review must include a determination of Best Available Control Technology (BACT), good-engineering practice stack height, ambient impact analysis, impact on soils, vegetation and visibility. Applicable emission limit rules are F.A.C. Rules 17-2.660, Table 660-1, Section 60.40b, Subpart Db, 60.43b (c)(1), (f) and (g), 60.44b (d), Standards of Performance for Industrial-Commercial-Institutional Steam Generating Units. For the ash handling system and lime silo, applicable rules are F.A.C. Rules 17-2.610(2) and (3). The above rules would dictate limits except that BACT limits are more stringent and therefore apply.

PERMITTEE:
Ridge Generating Station, L.P.

Permit Number: AC 53-206244
PSD-FL-183
Expiration Date: December 31, 1995

SPECIFIC CONDITIONS:

5. Initially, the RGS boiler exhaust gases shall not exceed the limits shown below. Following completion of the emission testing program required in Specific Condition No. 8, these limits may be revised.

Pollutant	Basis (lb/MMBTU)	LIMITS	LIMITS
		(Lbs/hr*)	(Tons/yr)
PM/PM ₁₀	0.02	12.6	55.2
SO ₂	0.17	109.4	479.2
NO _x	0.15	94.5	413.9
CO	0.50	315.0	1,379.7
VOC	0.035	22.1	96.8
HCL	0.008	5.0	22.1
Hg	0.000035	0.022	0.097
Pb	0.0004	0.25	1.1
Be	0.00001	0.0063	0.03

*Based on 24 hour average. The feasibility of establishing startup/shutdown limits, hourly limits, or rolling average limits in addition to or in lieu of the above limits will be determined after analysis of test data.

THE EMISSIONS TESTING PROGRAM

6. SNCR chemical injection into the boiler exhaust gases shall be provided by an automated control system as described in the application. Ammonia emissions shall be continuously monitored at a prevailing downwind location on the RGS property line by commercially available ambient monitoring equipment. The monitoring data shall be collected and reported for the entire operating period from the initial startup to the time that the emissions test program is completed. ~~Thereafter, the monitoring data shall be collected and stored and made available to the Department upon request.~~

7. Visible emissions from the RGS boiler stack, the fly ash silo vent filter, and the lime silo vent filter shall not exceed 10 percent opacity.

8. In lieu of the usual compliance test requirement, the RGS facility shall, at least six months prior to initial startup of the RGS facility, propose for Department approval a comprehensive emissions testing program representative of the full range of facility operation as stated in the application. It will include continuous emission monitoring (CEM) stack data for SO₂, NO_x and

THE RESULTS OF THE MONITORING PROGRAM SHALL BE DISCUSSED IN THE EMISSIONS TESTING PROGRAM REPORT. THE NEED FOR AND METHOD OF ADDITIONAL AMMONIA MONITORING WILL BE DETERMINED BY THE DEPARTMENT BASED ON THE RESULTS OF THE EMISSIONS TESTING PROGRAM.

PERMITTEE:
Ridge Generating Station, L.P.

Permit Number: AC 53-206244
PSD-FL-183
Expiration Date: December 31, 1995

SPECIFIC CONDITIONS:

THE FIRST FIRING OF WOOD, TIRES OR LANDFILL GAS
WILL CONSTITUTE INITIAL STARTUP.

CO, and stack emission tests for each limited pollutant at ~~50~~ ⁷⁵ percent, and 100 percent of permitted capacity for wood and tires. The emissions testing program shall be completed and results submitted as required in Specific Condition No. 16 within fifteen months after the initial startup. The following EPA test methods or other methods approved by the Department shall be followed:

<u>Pollutant</u>	<u>Test Method</u>
VE	9
PM/PM ₁₀	5 (front half only)
SO ₂	6C
NO _x	7E
CO	10
VOC	25A
HCl	26
Hg	101A
Pb	12
Be	104

EMISSIONS TESTING PROGRAM

9. As part of the required emissions testing program, the permittee shall sample the RGS boiler stack for the following pollutants after proposing acceptable test methods to the Department's Bureau of Air Regulation in Tallahassee. The results of these additional tests shall be reported in lbs/hr and ug/m³ along with the ~~initial compliance test~~ results: Ammonia, Arsenic, Cadmium, Chromium (total), Chromium VI, Zinc Oxide, Benzene, Sulfuric Acid, Polychlorinated Biphenyls (PCBs), Dioxins/Furans.

10. Continuous monitoring equipment shall be installed and operated to measure and record generator output, furnace temperature, stack opacity, and SO₂, NO_x and CO emissions. The tire feed rate in pounds per hour shall be monitored continuously by a commercially available weight detecting system with recording capability, or another method approved by the Department. The tire feed rate data shall be maintained and provided to the Department upon request.

11. Fugitive emissions from the RGS material receiving, processing, storage and transfer operations shall be determined according to EPA Method 22 over a 3-day period that is representative of typical operation. Results of the fugitive emissions survey shall be reported along with the results of the emissions testing program.

12. All reasonable precautions set forth in F.A.C. Rule 17-2.610(3), as well as all measures proposed by the permittee in

PERMITTEE:
Ridge Generating Station, L.P.

Permit Number: AC 53-206244
PSD-FL-183
Expiration Date: December 31, 1995

SPECIFIC CONDITIONS:

the application, shall be taken by the permittee to prevent fugitive emissions.

13. In the event of any malfunction resulting in failure of emission control equipment or any malfunction of process equipment resulting in emissions exceeding limits set forth in Specific Condition No. 5, the operator shall immediately stop the feeding of tires into the boiler and shall use propane firing, if necessary, to maintain a minimum of 1800 degrees F in the combustion zone until all tires in the system have been combusted. No tires may be refed into the boiler following the malfunction until the emission control equipment has been put into proper working order.

14. Whenever the baghouse bypass is activated during an on-line operating situation for any reason, the permittee shall, within 24 hours, provide the Department's Southwest District Office with a complete report of the circumstances and reasons for the occurrence, indicating the amounts of pollutants estimated to have been discharged during the bypass period.

15. No pollutants shall be discharged from the RGS facility which cause or contribute to an objectionable odor (F.A.C. Rule 17-2.620(2)).

16. Results of the emissions testing program and other required submittals shall be submitted to the Department's Southwest District office and the Department's Bureau of Air Regulation office in Tallahassee within fifteen months after initial startup of the RGS facility. Sampling facilities, methods, and reporting shall be in accordance with F.A.C. Rule 17-2.700 and 40 CFR 60, Appendix A. The Department's Southwest District office shall be notified at least 30 days prior to each emission test conducted in the testing program. Along with the submittal to the Department's Bureau of Air Regulation office, the permittee shall include a ~~revised BACT application~~ **PROPOSED FINAL BACT EMISSIONS LIMITS AND AVERAGING PERIODS BASED ON A STATISTICAL ANALYSIS OF THE EMISSIONS TESTING PROGRAM DATA.**

17. Within 90 days of receipt of the ~~revised BACT application~~ and other required submittals, the Department's Bureau of Air Regulation in Tallahassee shall revise the BACT determination and permit limits and conditions as appropriate with the goal of allowing the RGS facility to be operated in an environmentally responsible manner. Revisions may include additional emission limits for other air pollutants as well as separate limits for specific operating conditions. Except for mercury abatement, the BACT control technology would not be revised in the Department's final BACT determination.

ECONOMIC INFORMATION SHALL ALSO BE SUBMITTED FOR THE SELECTED CONTROL EQUIPMENT, AS DISCUSSED IN THE ATTACHED BACT DETERMINATION.

Best Available Control Technology (BACT) Determination
Ridge Generating Station
Polk County

The applicant proposes to construct a 50 MW power generation facility to be named the Ridge Generating Station and located near Auburndale in Polk County, Florida. The facility will consist of a solid fuel boiler, steam turbine, generator and associated equipment. Fuel for the facility will consist of a mixture of waste wood, scrap tires, and landfill gas.

A BACT determination is required for all regulated air pollutants emitted in amounts equal to or greater than the significant emission rates listed in Table 500-2 of Florida Administrative Code (F.A.C.) Rule 17-2.500. Maximum annual emissions proposed by the applicant are tabulated below and in the Technical Evaluation and Preliminary Determination. Maximum allowable emissions as determined from the BACT determination are listed below in tons per year (based on burning 80% wood/20% tires):

Pollutant	Maximum Allowable Emissions (tons per year)		PSD Level
	Proposed by RGS	Proposed by DER	
PM/PM ₁₀	55.2	55.2	25/10
SO ₂	479.2	275.9*	40
NO _x	413.9	303.5*	40
CO	1,379.7	579.5*	100
VOC	96.88	96.88	40
HCL	22.1	22.1	-
Hg	0.1 0.097	0.1 0.097	0.1
Pb	1.1	1.1	0.6
Be	0.03	0.03	0.0004

*Limits not to be enforced until final determination based on emission testing program.

X +
t +

Date of Receipt of a Complete Application

April 6, 1992

BACT Determination Requested by Applicant

Control Technology: Spray Dryer-Absorber/Fabric Filter
Selective Noncatalytic Reduction (SNCR)
Combustion Efficiency

Emission Limits: PM/PM₁₀ 0.02 lb/MMBTU
SO₂ 0.17 lb/MMBTU

- (d) The social and economic impact of the application of such technology.

The EPA currently stresses that BACT should be determined using the "top-down" approach. The first step in this approach is to determine for the emission source in question the most stringent control available for a similar or identical source or source category. If it is shown that this level of control is technically or economically infeasible for the source in question, then the next most stringent level of control is determined and similarly evaluated. This process continues until the BACT level under consideration cannot be eliminated by any substantial or unique technical, environmental, or economic objections.

BACT Determination Rationale

~~Irrespective of control technology economics,~~ The Department believes that the applicant has selected the best control technology available based on a review of the literature and permit requirements for similar facilities. However, the applicant's final BACT proposal should include a detailed analysis of the economic justification for the control systems selected, since all of the economic data will be available by that time.

A review of EPA's BACT/LAER Clearinghouse indicates that there are no existing sources using the fuel mix proposed for the RGS facility. Since there are significant differences between existing wood/tire burning units and the proposed RGS facility, and since this facility is the first of its kind, the only reasonable approach would involve a two-step procedure for the BACT determination and permit; a preliminary followed by a final determination based on the results of the required emissions testing program. This two-step procedure will require that the applicant propose final enforceable BACT limits and permit conditions and that the Department issue a final BACT determination with permit revisions as indicated by the emissions testing results. Therefore, the Department has proposed enforceable initial emission limits and target emission limits for SO₂, NO_x and CO that are to be adjusted as necessary and made enforceable following completion of an emissions testing program. The target limits are based on the more stringent permit limits listed in the BACT/LAER Clearinghouse data.

Details of the Analysis May be Obtained by Contacting:

Preston Lewis, P.E., BACT Coordinator
Department of Environmental Regulation
Bureau of Air Regulation
Twin Towers Office Building
2600 Blair Stone Road
Tallahassee, Florida 32399-2400

INSERT "A" (ATTACHED)

INSERT A

The permit also requires the permittee to submit economic information related to the selected control equipment. This submittal shall include information on the total installed capital cost of each system (consisting of total direct costs and total indirect costs) and the total annual cost of each system (consisting of direct costs, indirect costs, and recovery credits if any). The total annual costs will be used to estimate a cost effectiveness for the installed control systems in terms of dollars per ton of pollutant removed.