Department of Environmental Quality

To protect, conserve and enhance the quality of Wyoming's environment for the benefit of current and future generations.

Dave Freudenthal, Governor

John Corra, Director

May 20, 2009

Mr. Gary L. Harris
Plant Managing Director
PacifiCorp
48 Wyodak Road - Garner Lake Route
Gillette, WY 82716

Permit No. **MD-7487**

Dear Mr. Harris:

The Division of Air Quality of the Wyoming Department of Environmental Quality has completed final review of PacifiCorp's application to modify Unit 1 and set Plantwide Applicability Limitations (PALs) for sulfur dioxide (SO_2) and nitrogen oxide (NO_x) at the Wyodak Plant, located in Section 27, T50N, R71W, approximately five (5) miles east of Gillette, in Campbell County, Wyoming.

Following this agency's proposed approval of the request as published February 6, 2009 and in accordance with Chapter 6, Section 2(m) of the Wyoming Air Quality Standards and Regulations, the public was afforded a 30-day period in which to submit comments concerning the proposed modification, and an opportunity for a public hearing. Comments have been received and were considered in the final permit. Therefore, on the basis of the information provided to us, approval to modify the Wyodak Power Plant as described in the application is hereby granted pursuant to Chapter 6, Section 2 and 4 of the regulations with the following conditions:

1. That authorized representatives of the Division of Air Quality be given permission to enter and inspect any property, premise or place on or at which an air pollution source is located or is being constructed or installed for the purpose of investigating actual or potential sources of air pollution and for determining compliance or non-compliance with any rules, standards, permits or orders.

2. That all substantive commitments and descriptions set forth in the application for this permit, unless superseded by a specific condition of this permit, are incorporated herein by this reference and are enforceable as conditions of this permit.

3. That PacifiCorp shall modify their Operating Permit in accordance with Chapter 6, Section 3 of the WAQSR.

4. All notifications, reports and correspondence associated with this permit shall be submitted to the Stationary Source Compliance Program Manager, Air Quality Division, 122 West 25th Street, Cheyenne, WY 82002 and a copy shall be submitted to the District Engineer, Air Quality Division, 1866 S. Sheridan Avenue, Sheridan, WY 82801.

5. For the pollution control project, the owner or operator shall furnish the Administrator written notification of: (i) the anticipated date of initial startup not more than 60 days or less than 30 days prior to such date, and; (ii) the actual date of initial start-up within 15 days after such date in accordance with Chapter 6, Section 2(i) of the WAQSR.

6. For the pollution control project, the date of commencement of construction shall be reported to the Administrator within 30 days of such date. The permit shall become invalid if construction or modification is not commenced within 24 months of the date of permit issuance or if construction is discontinued for a period of 24 months or more in accordance with Chapter 6, Section 2(h) of the WAQSR. The Administrator may extend such time period(s) upon a satisfactory showing that an extension is justified.

7. Performance tests shall be conducted and a written report of the results submitted within 45 days of achieving maximum design rate but not later than 90 days following initial start-up in accordance with Chapter 6, Section 2(j) of the WAQSR. The operator shall provide 15 days prior notice of the test date. If maximum design production rate is not achieved within 90 days of start-up, the Administrator may require testing at the rate achieved and again when maximum rate is achieved.

8. Emissions from Unit 1 shall not exceed the levels below. Annual Plantwide Applicability Limits (PALs) for NO_x and SO_2 are established in Condition 16 of this permit.

    i. Effective upon permit issuance:
        1. NO_x: 0.7 lb/MMBtu; 3-hour block average
            a. Limit shall apply during all operating periods.
        2. SO_2: 0.5 lb/MMBtu; 3-hour block average
            a. Limit shall apply during all operating periods.
        3. PM: 0.1 lb/MMBtu and 470.0 lb/hr
            a. Limits shall apply during all operating periods.
            b. Filterable PM/PM_{10}

    ii. Effective upon installation or upgrade of control equipment:
        1. NO_x: 0.23 lb/MMBtu and 1,081.0 lb/hr; 30-day rolling average
            a. Limits shall apply during all operating periods.
            b. Limits shall become effective upon startup of unit with Low-NO_x burners and completion of the initial performance tests required by Condition 7 of this permit. Actual date of startup shall be submitted as required by Condition 5 of this permit.
        2. SO_2: 0.16 lb/MMBtu; 30-day rolling average
            0.5 lb/MMBtu; 3-hour block average
            2,115.0 lb/hr; 3-hour block average
            a. Limits shall apply during all operating periods.
            b. Limits shall become effective upon startup of unit with fabric filter baghouse and completion of the initial performance tests required by Condition 7 of this permit. Actual date of startup shall be submitted as required by Condition 5 of this permit.
        3. PM:
            a. 0.015 lb/MMBtu
                i. Limit shall apply during all operating periods, except startup.

1. Startup begins with the introduction of fuel oil into the boiler and ends no later than the point in time when the flue gas desulfurization system on Unit 1 reaches a temperature of 275°F and three (3) coal pulverizers have been placed in service.

ii. Filterable PM/PM_{10}

iii. Limit shall become effective upon startup of unit with fabric filter baghouse and completion of the initial performance tests required by Condition 7 of this permit. Actual date of startup shall be submitted as required by Condition 5 of this permit.

b. 71.0 lb/hr and 308.8 tpy

i. Limits shall apply during all operating periods.

ii. Filterable PM/PM_{10}

iii. Limits shall become effective upon startup of unit with fabric filter baghouse and completion of the initial performance tests required by Condition 7 of this permit. Actual date of startup shall be submitted as required by Condition 5 of this permit.

4. CO: 0.25 lb/MMBtu and 1,175.0 lb/hr; 30-day rolling average

a. Limits shall apply during all operating periods.

b. Limits shall become effective upon startup of unit with Low-NO_x burners and completion of the initial performance tests required by Condition 7 of this permit. Actual date of startup shall be submitted as required by Condition 5 of this permit.

9. Opacity from Unit 1 shall be limited as follows:

i. No greater than 20 percent opacity of visible emissions, except one six-minute period per hour of not more than 27 percent opacity.

1. Limit shall apply during all operating periods.
2. Limit shall become effective upon permit issuance.

ii. PacifiCorp will comply with all reporting and record keeping requirements as specified in WAQSR, Chapter 5, Section 2(g).

1. Reports shall include specific identification of each period of excess emissions that occur during startup, shutdown, or malfunctions of the boiler.
2. For Unit 1, opacity excess emissions are defined as

a. Any six-minute period in which the average opacity of emissions exceeds 20 percent, except that one six-minute period per hour of not more than 27 percent opacity need not be reported.

10. Initial performance tests, required by Condition 7 of this permit, shall consist of the following:

i. PM/PM_{10}: Testing shall follow 40 CFR 60.46 and EPA Reference Test Methods 1-4 and 5 during normal operations after the fabric filter baghouse installation.

ii. CO: Compliance with the CO 30-day average shall be determined using a continuous emissions monitoring system (CEMS). Testing is required for Unit 1 after installation of the Low-NOx burners.

iii. NO_x: Three 1-hour tests following EPA Reference Test Methods 1-4 and 7E to demonstrate compliance with the lb/hr and lb/MMBtu limits. Testing is required for Unit 1 after installation of the Low-NOx burners.

iv. Opacity: EPA Method 9 or certified continuous opacity monitor and the procedures in WAQSR, Chapter 5, Section 2(i) shall be used to determine initial compliance with opacity limits in this permit. Testing is required for Unit 1 after fabric filter baghouse installation.

11. Prior to any performance testing required by this permit, a test protocol shall be submitted to the Division for approval, at least 30 days prior to testing. Results of the tests shall be submitted to this office within 45 days of completing the tests.

12. Compliance with the limits set forth in this permit shall be determined with data from the continuous monitoring systems required by 40 CFR Part 75 as follows:

i. Exceedances of the limits shall be defined as follows:

1. Any 30-day rolling average which exceeds the lb/MMBtu or lb/hr NO_x, SO_2, or CO limit as calculated using the following formula:

$$E_{avg} = \frac{\sum_{h=1}^{n}(C)_h}{n}$$

Where:

C= 1-hour average emission rate (lb/MMBtu or lb/hr) for hour "h" calculated using data from the CEM equipment required by 40 CFR Part 75 and the procedures in §60.48Da and §60.49Da. All 1-hour averages must meet the requirements of WAQSR, Chapter 5, Section 2(j).

E_{avg}= Weighted 30-day rolling average emission rate (lb/MMBtu or lb/hr).

n= The number of unit operating hours in the 30-day period with valid emissions data.

2. Any 3-hour block average of NO_x and SO_2 emissions calculated using data from the CEM equipment required by 40 CFR Part 75 which exceeds the lb/MMBtu or lb/hr limit established in this permit using valid data. Valid data shall meet the requirements of WAQSR, Chapter 5, Section 2(j). The 3-hour average emission rate shall be calculated at the end of each 3-hour operating block as the arithmetic average of hourly emissions with valid data during the previous three operating hours.

ii. PacifiCorp will comply with all reporting and record keeping requirements as specified in WAQSR, Chapter 5, Section 2(g).

13. PacifiCorp shall comply with all applicable requirements of 40 CFR part 60, subpart D.

14. Records shall be maintained documenting the amount of coal burned each year at the Wyodak Plant.

15. Records required by any applicable regulation or permit condition shall be maintained for a minimum period of five (5) years and shall be readily accessible to Division representatives.

PLANTWIDE APPLICABILITY LIMIT (PAL) CONDITIONS

16. NO_x emissions from the Wyodak Plant shall have a plantwide applicability limit (PAL) and SO_2 emissions from Wyodak Plant shall have a PAL. Compliance with the NO_x PAL and SO_2 PAL shall be determined using a 12-month rolling average. Both point sources and fugitive sources shall be evaluated.

i. Effective upon issuance of permit:
   1. NO_x: 5,078.0 tons per year
      a. Limit is based on a 12-month rolling average.
      b. Initial compliance shall be determined 12 months from the issuance date of this permit
   2. SO_2: 7,893.5 tons per year
      a. Limit is based on a 12-month rolling average.
      b. Initial compliance shall be determined 12 months from the issuance date of this permit

ii. Effective upon installation or upgrade of control equipment on Unit 1:
   1. NO_x: 4,735.6 tons per year
      a. Limit is based on a 12-month rolling average.
      b. Limit shall become effective upon completion of the Low-NO_x burner installation to Unit 1.
      c. Initial compliance shall be determined 12 months after startup of Unit 1 following the Low-NO_x burner upgrade and completion of the initial performance tests required by Condition 7 of this permit. Actual date of startup shall be submitted as required by Condition 5 of this permit.

2. SO_2: 3,293.8 tons per year
   a. Limit is based on a 12-month rolling average.
   b. Limit shall become effective upon completion of the fabric filter baghouse installation on Unit 1.
   c. Initial compliance shall be determined 12 months after startup of Unit 1 with the fabric filter baghouse installation and completion of the initial performance tests required by Condition 7 of this permit. Actual date of startup shall be submitted as required by Condition 5 of this permit.

17. The NO_x PALs and SO_2 PALs shall be in effect on the date of permit issuance and shall expire exactly ten (10) years, to the day, of the effective date.

18. Emission calculations provided by PacifiCorp to show compliance with the NO_x PAL and SO_2 PAL shall include emissions from start-ups, shutdowns and malfunctions.

19. PacifiCorp shall monitor emissions from the Wyodak Plant as follows:

   i. Unit 1:
      1. Plantwide NO_x and SO_2 emissions, in terms of lb/hr, shall be monitored by the continuous emissions monitoring system (CEMS) required by 40 CFR Part 75. Failure to use a monitoring system approved by the Division will render the PAL invalid.
      2. PacifiCorp shall provide substituted data according to the missing data procedures of 40 CFR, Part 75 during any period of time that there is not monitoring data. All monitoring data must meet the requirements of WAQSR, Chapter 5, Section 2(j).
      3. PacifiCorp shall use EPA's Clean Air Markets reporting program to convert the monitoring system data to monthly emissions and annual emissions based on a 12-month rolling total for each month
   ii. All other emission sources:
      1. Monthly NO_x and SO_2 emissions shall be calculated using methodology approved for the annual emissions inventory. This shall include but not limited to test results, manufacture's information, emission factors, actual throughput and operating hours.
      2. 12-month rolling average shall be calculated by summing the monthly emissions from the previous 12 months

20. PacifiCorp shall submit a timely application, in accordance with Chapter 6, Section 4(b)(xv)(J) of the WAQSR, to the Division to request renewal of a PAL. A timely application is one that is submitted at least 6 months prior to, but not earlier than 18 months from, the date of permit expiration. This deadline for application submittal is to ensure that the permit will not expire before the permit is renewed. If PacifiCorp submits a complete application to renew the PAL within this time period, then the PAL shall continue to be effective until the revised permit with the renewed PAL is issued.

21. If PacifiCorp decides not to renew the NO_x PAL or SO_2 PAL, the PAL will expire at the end of the PAL effective period and the Wyodak Plant will be subject to the requirements of Chapter 6, Section 4(b)(xv)(I) of the WAQSR.

22. All records, as required below, shall be retained on site. Records may be retained in an electronic format.

    i. PacifiCorp shall retain a copy of all records necessary to determine compliance with the NO_x PAL and SO_2 PAL, including a determination of the facility's 12-month rolling total emissions, for five (5) years from the date of such record.

    ii. A copy of the following records shall be retained for the duration of the PAL effective period plus five (5) years:
        1. A copy of the PAL permit application and any application revisions to the PAL.
        2. Each annual certification of compliance pursuant to Chapter 6, Section 3 and the data relied on in certifying the compliance.

23. PacifiCorp shall submit the following reports by the required deadlines:

    i. PacifiCorp shall submit semi-annual monitoring reports and prompt deviation reports to the Division in accordance with the applicable Chapter 6, Section 3 Operating Permit Program. The reports shall meet the requirements listed below:

        1. The semi-annual report shall be submitted to the Division within 30 days of the end of each reporting period. This report shall contain the following information:

            a. The identification of owner and operator and the permit number.
            b. Total annual emissions (tons per year) based on a 12-month rolling total for each month in the reporting period.
            c. All data relied upon, including but not limited to any Quality Assurance or Quality Control data, in calculating the monthly and annual NO_x PAL and SO_2 PAL emissions.
            d. A list of any emissions units modified or added to the major stationary source during the preceding 6-month period.
            e. The number, duration, and cause of any deviations or monitoring malfunctions (other than time associated with zero and span calibration checks), and any corrective action taken.
            f. A notification of a shutdown of any monitoring system, whether the shutdown was permanent or temporary, the reason for the shutdown, the anticipated date that the monitoring system will be fully operational or replaced with another monitoring system, and whether the emissions unit monitored by the monitoring system continued to operate, and the calculation of the emissions of the pollutant.

g. A signed statement by the responsible official certifying the truth, accuracy, and completeness of the information provided in the report.

2. PacifiCorp shall promptly submit reports of any deviations or exceedance of the PAL requirements, including periods where no monitoring is available. The reports shall contain the following:

   a. The identification of owner and operator and the permit number.
   b. The PAL requirement that experienced the deviation or that was exceeded.
   c. Emissions resulting from the deviation or the exceedance.
   d. A signed statement by the responsible official certifying the truth, accuracy, and completeness of the information provided in the report

24. That during the PAL effective period, the Division may reopen the permit in accordance with Chapter 6, Section 4(b)(xv)(H) of the WAQSR.

25. That any new emission unit to be constructed under the PAL limits or modifications/repairs to an existing emission uit that meets the definition of reconstruction under Chapter 5, Section 2(l) of the WAQSR shall be permitted under Chapter 6, Section 2 of the WAQSR prior to commencing construction.

It must be noted that this approval does not relieve you of your obligation to comply with all applicable county, state, and federal standards, regulations or ordinances. Special attention must be given to Chapter 6, Section 3 of the Wyoming Air Quality Standards and Regulations, which details the requirements for compliance with condition 3 and Chapter 6, Section 2 of the Wyoming Air Quality Standards and Regulations, which details the requirements for compliance with conditions 5, 6 and 7. Any appeal of this permit as a final action of the Department must be made to the Environmental Quality Council within sixty (60) days of permit issuance per Section 16, Chapter I, General Rules of Practice and Procedure, Department of Environmental Quality.

If we may be of further assistance to you, please feel free to contact this office.

Sincerely,

David A. Finley
Administrator
Air Quality Division

John V. Corra
Director
Dept. of Environmental Quality

cc: Tanner Shatto

IN THE MATTER OF A PERMIT APPLICATION (AP-7487) FROM PACIFICORP TO MODIFY THE WYODAK PLANT, LOCATED IN SECTION 27, T50N, R71W, APPROXIMATELY FIVE (5) MILES EAST OF GILLETTE, IN CAMPBELL COUNTY, WYOMING

DECISION

I. Introduction

The Air Quality Division received a permit application from PacifiCorp, on March 13, 2008, to modify Unit 1 at the Wyodak Plant, located in Section 27, T50N, R71W, approximately five (5) miles east of Gillette, in Campbell County, Wyoming. PacifiCorp proposed to install a low- NO_x burner system and replace the existing electrostatic precipitator (ESP) with fabric filter baghouse on Unit 1. PacifiCorp also proposed to perform other Capital and O&M projects during the project. Installation of the pollution control equipment is expected to be completed by April 2011. The Air Quality Division conducted an analysis of this application and on February 6, 2009, published in the News-Record in Gillette, Wyoming, a public notice of proposed intent to approve and placed a copy of the application and Division's analysis in the office of the Campbell County Clerk in accordance with regulations. The public notice period ran from February 6, 2009 through March 9, 2009. Due to inclement weather, the public hearing on March 9, 2009 was cancelled. The notice was republished on March 13, 2009 with a revised public hearing end date of March 27, 2009. A public hearing was held at 1:00 pm, Friday, March 27, 2009 in the Wyoming Room at the Campbell County Library, located at 2101 South 4-J Road, Gillette, Wyoming.

The Division received comments from PacifiCorp and the EPA. The comments received and responses to the comments are provided below. PacifiCorp provided responses to some of the issues, which are also provided.

II. Analysis of Applicant's Comments:

1. Effective Date of Emission Limits – Please modify Condition 16.ii. to indicate that the permit limits are effective upon installation of the control equipment and completion of the initial performance tests required by Condition 7 of the permit. This wording is in effect for proposed Condition 8.ii.

   Response: The Division has modified Condition 16.ii to indicate that the permit limits are effective upon installation of the control equipment and completion of the initial performance tests required by Condition 7 of the permit

2. Performance Testing Requirements – It is requested that the timeframe to conduct performance testing specified in Condition 7 be modified to 120 days.

   Response: Condition 7 is a standard condition consistent with similar permitting actions and will not be modified. The 90 day requirement is established by rule in Chapter 6, Section 2 of the WAQSR.

3. Significant Digits – Several discrepancies are noted throughout the permit analysis regarding significant digits.

Response: The permit analysis will not be revised, but the comment will be incorporated into the permit application. Significant digits for lb/hr limits in Condition 8 of the final permit have been carried out to the nearest tenth.

4. Appendix A – An updated project list has been included.

Response: The Division requested clarification from PacifiCorp regarding the project list submitted with the application. PacifiCorp responded that the list did indeed include additional capital and O&M projects that were not included on the original list and that the future potential emissions for the facility will not change as a result of these projects. The Division will accept this list because the future potential emissions for the facility will not be affected and because a PSD applicability analysis was conducted for all pollutants. Furthermore, all of the proposed projects will occur within a 24-month window of permit issuance. In that respect, a new 24-month baseline would not be established prior to the completion of the projects. As such, the Division finds that the baseline and the future potential calculations would not change if PacifiCorp were to permit the additional projects separately.

III. Analysis of EPA's Comments:

1. BACT Limit for Carbon Monoxide (CO) – The permit analysis does not include an explanation of for the 0.25 lb/MMBtu limit for CO. Furthermore, with regard to the RACT/BACT/LAER Clearinghouse (RBLC) for CO BACT, only three (3) sources from the RBLC were listed, while twelve (12) were identified in similar PacifiCorp projects of which nine (9) indicated emission levels below 0.16 lb/MMBtu. An explanation should be presented if differences in boiler types restrict BACT for the proposed unit.

Response: PacifiCorp performed an RBLC search for a wall-fired pulverized coal-fired boiler and found one other boiler, C.E. McIntosh Unit 3 (FL-0308), with a CO limit of 0.20 lb/MMBtu on a 30-day rolling average basis. It should be noted that the C.E. McIntosh Unit 3 is fired on coal, residual oil, natural gas, refuse-derived fuel and petroleum coke and that NO_x emissions were not reported. Other than during startup, the Wyodak boiler is fired exclusively on Powder River Basin sub-bituminous coal, which makes the Wyodak boiler not directly comparable to the C.E. McIntosh Unit 3 boiler. CO emissions are directly related to the design and type of boiler, fuel characteristics and quality, mill configuration, boiler tuning, and operational settings and characteristics. Therefore, boilers are inherently unique in nature.

PacifiCorp reported a recent modification was made to their Hunter Unit 3 facility, which is also a wall-fired unit. This modification involved a low NO_x burner upgrade with a CO limit of 0.2 lb/MMBtu on a 30-day rolling average basis and a NO_x limit of 0.34 lb/MMBtu on a 30-day rolling average basis. A NO_x limit of 0.23 lb/MMBtu at Wyodak can only be achieved with a CO limit of 0.25 lb/MMBtu. A lower CO emission rate would result in a higher NO_x emission rate. Minimizing both NO_x and CO is best achieved with a 0.25 lb/MMBtu emission rate at Wyodak. The Division is satisfied that a 0.25 lb/MMBtu CO limit represents BACT for the Wyodak Plant.

2. PAL for First 11 Months – WAQSR Chapter 6, Section 4(b)(x[sic])(D)(I)(1) states "for each month during the first 11 months from the PAL effective date, the major stationary source owner or operator shall show that the sum of the preceding monthly emissions from the PAL effective date for each emissions unit under the PAL is less than the PAL." This was not satisfied by the proposed permit conditions.

   Response: The Division finds that the compliance point at the end of the first 12-month period is sufficient to address deficiencies for non-compliance with the 12-month rolling average emission limit. Condition 23 requires a semi-annual report to be submitted to the Division to address the 12-month rolling average emission limit.

3. PAL and Monitoring – WAQSR Chapter 6, Section 4(b)(xv)(G)(vii) requires that "the major stationary source owner or operator monitor all emissions units..." There is a requirement in Condition 19 to monitor Unit 1, but there are no monitoring provisions specified for other emitting units at the facility.

   Response: The Division will accept calculations using methodology approved for the annual emissions inventory. This shall include but not limited to test results, manufacture's information, emission factors, actual throughput and operating hours emission factors for the compliance demonstration for non-stack and emergency generator emissions. Condition 19 has been revised to include calculation methods for the other sources.

4. PAL and Calculation Procedures – WAQSR Chapter 6, Section 4(b)(xv)(G)(vi) requires a 12-month rolling total for each emitting unit. The permit conditions should include calculation procedures to convert monitoring data to monthly and 12-month rolling emissions.

   Response: Calculation procedures for a 12-month rolling average are found in Condition 19 of the final permit for Unit 1 and all other sources.

5. PM and Startup – The proposed permit conditions do not include provisions to demonstrate compliance with PM limits during startup.

   Response: The Division has required testing during startup for other similar facilities in the past, but these have been for units operating with an electrostatic precipitator (ESP). During startup, the ESP efficiency is uncertain until the minimum operating temperature is reached. The efficiency of a baghouse is not temperature dependent. This unit is equipped with a baghouse. Once the boiler is switched over to coal as fuel, the baghouse is available as a viable control device. Furthermore, PacifiCorp submitted a fuel oil demonstration to the Division, which was included in the permit analysis under the startup and shutdown section. This demonstration indicated that the maximum PM emissions due to fuel oil are 8.9 lb/hr, below the limit of 71 lb/hr. Therefore, the Division is satisfied that testing during startup is not necessary.

6. Director's Discretion – The phrase "or alternative test methods as approved by the Division" used in Condition 10.i is a form of director's discretion and should be removed. Furthermore, the Division has indicated that director's discretion language will be removed from the State Implementation Plan (SIP).

   Response: Condition 10.i was modified to remove director's discretion language.

7. Periodic PM Testing – The proposed permit conditions do not include periodic PM testing requirements.

   Response: Annual testing is already required in accordance with the CAM plan in the Title V permit.

8. Subpart Da – The proposed pollution control project and Capital and O&M projects could be considered a modification which could trigger NSPS Subpart Da applicability due to the increase of hourly emissions for SO_2.

   Response: The determination for NSPS modifications are based on the comparison of current potential to emit (PTE) to future PTE. As indicated in the permit analysis, the current SO_2 PTE is 2,350 lb/hr and the future PTE is 2,115 lb/hr. Therefore, in terms of the NSPS, the proposed project results in a reduction in emissions for SO_2, not an increase.

9. Case by Case MACT – The EPA final rule of March 29, 2005, known as the Section 112(n) Revision Rule, removed coal and oil-fired EUSGUs from the Clean Air Act Section 112(c) rule. By court order on March 14, 2008, the Section 112(n) Revision Rule was vacated. This restored the December 15, 2000 section 112(c) listing of coal and oil-fired EUSGUs. Therefore, if the proposed projects are considered a modification, a case by case MACT determination is necessary.

   Response: PacifiCorp reports that the fixed capital cost of the proposed Wyodak projects are approximately 10% of the fixed capital cost to construct a comparable electric generating unit. 40 CFR 63.41 states that the fixed capital cost must exceed 50% to be considered a major source reconstruction. As such, the Division finds that a case by case MACT determination is not required for this facility.

10. PM Modeling – The EPA commented on the lack of PM_{10} modeling, based on the statement that "proposed modifications will change the plume characteristics from the unit and may affect ground-level concentrations surrounding the facility". The EPA also commented on the proposed emission rate for PM_{10}.

    Response: The Division contends that the justification provided in the analysis demonstrates that further modeling is not required. However, the applicant submitted PM_{10} modeling from Wyodak to further demonstrate that post-project emissions from Wyodak Unit 1 would remain below applicable ambient standards. The applicant submitted modeling based on the 24-hour averaging period. The Division re-ran the model with 24-hour and annual averaging periods. Results from the 24-hour and annual PM_{10} modeling show that impacts from Wyodak Unit are below each respective Significant Impact Level (SIL). The table below

summarizes the modeling results:

PSD Class II Significant Impact Analysis Results for Wyodak PM_{10}

Pollutant	Averaging Period	Wyodak Unit 1 Maximum Impact ($\mu g/m^3$)	SILs ($\mu g/m^3$)	Wyodak Unit 1 Impact Exceeds SILs (Yes/No)
PM_{10}	Annual	0.1	1	No
	24-hour	2.5	5	No

The allowable PM_{10} emission rate of 71 lb/hr is based on the future potential emission limit of 0.015 lb/MMBtu and boiler heat input of 4,700 MMBtu/hr after the fabric filter baghouse is installed.

11. Coal Burn Rate and Heat Input Rate – There are discrepancies in the permit analysis regarding whether or not the project will result in an increase in heat input and coal burn rate.

Response: PacifiCorp states that an annual average heat input rate of 33,919,881 MMBtu/year was reported based on 24 consecutive months of operation. The maximum future potential rate of 41,172,000 MMBtu/year was used to calculate future potential emissions at 100% capacity and will not increase the maximum heat input rate of 4,700 MMBtu/hr.

12. Definition of Startup – Since the PM limit in Condition 8.ii.3.b is not applicable during startup, the definition of startup should be included in the permit.

Response: A startup definition has been added to Condition 8 in the final permit.

13. Fuel Oil Startup Emission Estimate – Regarding the two (2) 74 gpm ignition oil pumps, PacifiCorp stated that the pumps are installed in parallel and that only one will be used during normal operation. The number of pumps allowed to be used during startup and corresponding emission rate should be clarified. The permit analysis reflects the calculation based on the use of one (1) pump.

Response: It is the intent of the applicant to use only one pump with the other pump serving as a backup, as indicated in the October 20, 2008 letter to the Division. Furthermore even if both pumps were utilized, doubling the fuel oil usage and thus doubling the PM emissions, the 17.8 lb/hr emission rate is still far lower than the PM emission limit of 71 lb/hr. The Division is satisfied by the fuel oil demonstration provided by PacifiCorp regarding PM emissions during startup. No changes have been made to the final permit.

14. SO_2 Reductions – The application states that the removal of the electrostatic precipitator (ESP) and installation of the baghouse will eliminate the need to bypass the scrubber when the exhaust gas is too cool for the ESP. The proposed reduction in Table 1 of the analysis is only achievable if the scrubber bypassing is not allowed. If scrubber bypassing continues,

only a limited amount of SO_2 emission reductions would be realized by the baghouse. A condition should be added to prohibit scrubber bypassing.
Response: The proposed SO_2 emission reduction limits in Table 1 were carried forward to Condition 8 and are applicable at all times. In order for PacifiCorp to comply at all times, they cannot bypass the scrubber. Furthermore, Unit 1 is continuously monitored for SO_2 emissions. Therefore, the Division finds that the current permit requirements adequately address this issue.

15. Lead – The EPA commented that the Division should analyze ambient air monitoring data for lead and generate a representative background concentration for lead instead of the natural background level of 0 $\mu g/m^3$ used in the Division's analysis. According to EPA, Wyoming IMPROVE lead ambient air data from 2004-2006 reports a mean $PM_{2.5}$ lead level of 0.00005 $\mu g/m^3$. EPA adds that this does not include larger particles containing lead.

Response: The Division acknowledges that there may be representative background data available for lead. As reported in the Division's analysis, the highest modeled impact was 0.00005 $\mu g/m^3$, located near the power plant's facility fenceline. The total impact for lead, when considering a background concentration of 0.00005 $\mu g/m^3$, is 0.0001 $\mu g/m^3$, which is still well below 1% of the recently revised NAAQS standard of 0.15 $\mu g/m^3$. Revised Table 16 is provided below to show the total concentration of lead from the Wyodak Plant plus background.

Table 16: Maximum Modeled Lead Impacts

Averaging Period	Wyodak Modeled Impact + Background ($\mu g/m^3$)	Pb NAAQS ($\mu g/m^3$)	Percent of NAAQS for Pb
Quarterly[1]	0.0001	0.15	<1%

[1] Calendar quarter modeled impact (3-month) for lead was based on using the maximum modeled monthly concentration.

16. RICE MACT – Appendix A of the application indicates that a diesel generator will be rebuilt in 2011. Upon reconstruction 40 CFR part 63, subpart ZZZZ may be applicable to the diesel generator.

Response: If applicable, PacifiCorp will have to comply with Subpart ZZZZ for the diesel generator engine.

17. Pages with Missing Information – Multiple pages of the analysis received by the EPA were cut off. The Division should replace the public notice copy with a new copy if public notice copy had pages with missing information.

Response: The Division apologizes for any inconvenience this may have caused. No problems with the public notice package were noted.

IV. **Decision:**

On the basis of comments received during the public notice period and at the public hearing, an analysis of those comments, and representations made by the applicant in the application, the Department has determined that an air quality permit will be issued to PacifiCorp, to modify the Wyodak Plant as described in the application.

Dated this 20th day of May, 2009.

Dave Finley
Administrator
Wyoming Air Quality Division

John Corra
Director
Wyoming Department of Environmental Quality