OKLAHOMA DEPARTMENT OF ENVIRONMENTAL QUALITY
AIR QUALITY DIVISION

MEMORANDUM **May 30, 2002**

TO: Dawson Lasseter, P.E., Chief Engineer, Permits

THROUGH: David Schutz, P.E., New Source Permits Unit
Eric Milligan, P.E., New Source Permits Unit

THROUGH: Peer Review

FROM: Phillip Fielder, P.E., New Source Permits Unit

SUBJECT: Evaluation of Permit Application No. **99-213-C (PSD) (M-2)**
NRG McClain, LLC
McClain Energy Facility
Newcastle, McClain County
Directions: From Newcastle, go east on HW 37 to I-44. Proceed under I-44 and turn north to SW 175th Street. Go east on SW 175th about ¼ mile to site.

SECTION I. INTRODUCTION

NRG McClain, LLC (formerly Duke Energy McClain, LLC) submitted an application for an administrative amendment to the referenced facility (SIC Code 4911) on May 15, 2002. This facility applied for a minor modification to the original permit and received Permit No. 99-213-C (PSD) (M-1) on October 25, 2001, under which the facility is currently operating. The proposed amendment will consist of fully describing the methodology to comply with an averaging period listed in the original and modified permit.

This review is limited to the proposed changes and incorporates all the requirements of the original and modified construction permits. This permit will void the previous permit.

SECTION II. AMENDMENT DESCRIPTION

The facility includes two 170 MW natural gas-fired combustion turbines operating in combined-cycle mode with two heat recovery steam generators (HRSGs) and a common steam turbine. The HRSGs are of unfired, natural circulation, three-pressure reheat design. Each HRSG produces high-pressure steam at approximately 1,800 pounds per square inch gauge (psig) for introduction into a steam turbine. The steam turbine drives an additional generator with an output of about 180 MW.

The combined-cycle combustion turbine power plant consists of six point sources: two turbine unit stacks, an auxiliary boiler stack, an emergency fire-water pump engine stack, an emergency generator, and a cooling tower. In addition, the facility includes a diesel storage tank, a 15,000-gallon sulfuric acid storage tank, a 15,000-gallon sodium hydroxide storage tank, and a 62,000-gallon water/sodium sulfate storage tank used in the treatment of process water.

Since the facility exceeded the 100 TPY threshold for NOx, CO, and PM_{10} the project was subject to full PSD review. Tier III public review was also required.

As part of the original application, a Best Available Control Technology (BACT) review was conducted for NO_x emissions as required under the Prevention of Significant Deterioration (PSD) regulations. This determination resulted in NO_x emission limits of 9 ppmv annual average and 12 ppmv weekly average both on a dry basis, corrected to 15% oxygen. The amendment will not remove the weekly average but define the compliance methodology as a 168 operating hour rolling average.

The following sections are unchanged from the modified permit except for the compliance method described and current formatting, therefore, this permit will null and void the existing permit.

SECTION III. EMISSIONS

Turbine emissions are based on manufacturer's data. Short-term emissions, lb/hr, were reviewed at five ambient temperatures, including the historical low and high temperatures, and at 50%, 75%, and 100% load. SO_2 emissions are conservatively based on 100% conversion of H_2S to SO_2 and a maximum of 0.02 grain/SCF (32 ppm) H_2S concentration in fuel. Maximum short-term emissions were determined to be highest at the historical low temperature of -8^o F and 100% load. At these conditions the turbines will require a heat input rate of 1,683.3 MMBTUH which results in NOx, CO, VOC, SO_2, and PM_{10} emission rates of 0.049 lb/MMBTU, 0.04 lb/MMBTU, 0.002 lb/MMBTU, 0.006 lb/MMBTU, and 0.01 lb/MMBTU, respectively.

Although the plant will not operate at a 100% capacity factor, nominal long term emissions for the turbines are based on 100% load requiring a heat input rate of 1,594.5 MMBTUH since this results in the highest emissions from manufacturer's guaranteed data and on a continuous operating period. Nominal long term emissions are 0.036 lb/MMBTU, 0.04 lb/MMBTU, 0.002 lb/MMBTU, 0.006 lb/MMBTU, and 0.01 lb/MMBTU for NOx, CO, VOC, SO_2, and PM_{10}, respectively. Lead emissions are based on AP-42 (5/98, Draft) Table 3.1-4 with sulfuric acid mist emissions based on AP-42 (9/98) Section 1.3.3.2 with 3% annually converted to sulfuric acid mist.

The auxiliary gas-fired boiler emissions are based on manufacturer's data of 0.036 lb/MMBTU NOx, 0.036 lb/MMBTU CO, 0.018 lb/MMBTU VOC, 0.001 lb/MMBTU SO_2, and 0.009 lb/MMBTU PM_{10} and operating 7,000 hours annually. Due to the limited operating hours for this unit and low emission rate, no testing will be required to confirm manufacturer's emissions data. Emissions for the diesel-fired emergency fire-water pump engine are based on the design rating of 400-hp, a maximum of 500 hrs/yr, and AP-42 (10/96) Section 3.3 emission factors.

Cooling tower emissions are based on the method in AP-42 (1/95), Section 13.4, 130,000 GPM total water circulation rate, PM_{10} generated by 0.059% of total drift, and with the application of drift eliminators which will control total liquid drift to 0.001% of water circulation.

While emissions from the emergency generator are included in the modeling for a conservative impact review, they are not quantified here since it is a "insignificant activity."

Calculated Emissions

	Auxiliary Boiler		Emergency Fire-Water Pump Engine		Cooling Tower		Combustion Turbine #1		Combustion Turbine #2		Total Emissions*	
Pollutant	**lb/hr**	**TPY**	**lb/hr**	**TPY**	**lb/hr**	**TPY**	**lb/hr**	**TPY**	**lb/hr**	**TPY**	**lb/hr**	**TPY**
NOx	0.80	2.80	12.40	3.10	-	-	83.00	254.00	83.00	254.00	179.20	513.90
SO_2	0.02	0.07	0.82	0.20	-	-	9.60	40.00	9.60	40.00	20.04	80.27
PM_{10}	0.20	0.70	0.88	0.22	0.006	0.026	18.00	79.00	18.00	79.00	37.09	158.95
VOC	0.40	1.40	0.99	0.25	-	-	2.90	12.00	2.90	12.00	7.19	25.65
CO	0.80	2.80	2.67	0.67	-	-	68.00	280.00	68.00	280.00	139.47	563.47

* Combustion turbines will also emit Lead at 0.22 TPY and H_2SO_4 at 2.41 TPY combined.

Significance Levels Comparisons (TPY At Maximum Operation)

Pollutant	Emissions	PSD Significance Level	PSD Review Required
NOx	513.90	40	Yes
CO	563.47	100	Yes
VOC	25.65	40	No
PM_{10}	158.95	15	Yes
SO_2	80.27	40	Yes
Lead	0.22	0.60	No
H_2SO_4	2.41	7	No

SECTION IV. PSD REVIEW

As shown, the facility has potential emissions above the PSD significance levels for NOx, CO, SO_2, and PM_{10} and required full review.

A BACT analysis was originally conducted for all sources emitting any pollutant in PSD-significant quantities. This update only considers the new compliance methodology.

BACT REVIEW

NO_x BACT Review

Since the proposed amendment does not change any emissions rates and; therefore, the basis for the original BACT determination, the following conclusion from the original permit is unchanged.

Summary of Gas Turbine NO_x BACT

The McClain Energy Facility proposes to implement NO_x BACT through the use of state-of-the-art dry-low NO_x combustors capable of achieving 9 ppm NO_x on a long-term basis (12 ppm short-term peak). The long-term guarantee represents annual average operation of the combustor. The 12 ppm guarantee accounts for short term spikes due to transient conditions such as rapid load changes. These levels represent the guaranteed emission rate received from General Electric for the DLN 3 equipped 7FA turbine.

AIR QUALITY IMPACTS

Air quality impacts are not affected by the proposed amendment since NO_x is evaluated on an annual average basis. The 9 ppmv annual average remains a requirement of the permit.

SECTION V. OKLAHOMA AIR QUALITY RULES

OAC 252:100-1 (General Provisions) [Applicable]
Subchapter 1 includes definitions but there are no regulatory requirements.

OAC 252:100-3 (Air Quality Standards and Increments) [Applicable]
Primary Standards are in Appendix E and Secondary Standards are in Appendix F of the Air Pollution Control Rules. At this time, all of Oklahoma is in attainment of these standards. In addition, the facility was originally required to model proposed emissions from the facility to demonstrate that the facility would not have a significant impact on ambient air quality standards.

OAC 252:100-4 (New Source Performance Standards) [Applicable]
Federal regulations in 40 CFR Part 60 are incorporated by reference as they existed on July 1, 2000, except for the following: Subpart A (Sections 60.4, 60.9, 60.10, and 60.16), Subpart B, Subpart C, Subpart Ca, Subpart Cb, Subpart Cc, Subpart Cd, Subpart Ce, Subpart AAA, and Appendix G. NSPS regulations are addressed in the "Federal Regulations" section.

OAC 252:100-5 (Registration, Emission Inventory, and Annual Fees) [Applicable]
The owner or operator of any facility that is a source of air emissions shall submit a complete emission inventory annually on forms obtained from the Air Quality Division. Since this is construction for a new facility, no emission inventories or fees have previously been paid.

OAC 252:100-7 (Permits for Minor Sources) [Not Applicable]
Subchapter 7 sets forth the permit application fees and the basic substantive requirements for permits for minor facilities. The proposed facility is a major source subject to Subchapter 8 permitting.

OAC 252:100-8 (Permits for Part 70 Sources) [Applicable]
Part 5 includes the general administrative requirements for part 70 permits. Any planned changes in the operation of the facility which result in emissions not authorized in the permit and which exceed the "Insignificant Activities" or "Trivial Activities" thresholds require prior notification to AQD and may require a permit modification. Insignificant activities mean individual emission units that either are on the list in Appendix I (OAC 252:100) or whose actual calendar year emissions do not exceed the following limits:

- 5 TPY of any one criteria pollutant
- 2 TPY of any one hazardous air pollutant (HAP) or 5 TPY of multiple HAPs or 20% of any threshold less than 10 TPY for single HAP that the EPA may establish by rule
- 0.6 TPY of any one Category A toxic substance
- 1.2 TPY of any one Category B toxic substance
- 6.0 TPY of any one Category C toxic substance

OAC 252:100-9 (Excess Emissions Reporting Requirements) [Applicable]
In the event of any release which results in excess emissions, the owner or operator of such facility shall notify the Air Quality Division as soon as the owner or operator of the facility has knowledge of such emissions, but no later than 4:30 p.m. the next working day following the malfunction or release. Within ten (10) working days after the immediate notice is given, the owner operator shall submit a written report describing the extent of the excess emissions and response actions taken by the facility. Part 70/Title V sources must report any exceedance that poses an imminent and substantial danger to public health, safety, or the environment as soon as is practicable. Under no circumstances shall notification be more than 24 hours after the exceedance.

OAC 252:100-13 (Open Burning) [Applicable]
Open burning of refuse and other combustible material is prohibited except as authorized in the specific examples and under the conditions listed in this subchapter.

OAC 252:100-19 (Particulate Matter) [Applicable]
This subchapter specifies a particulate matter (PM) emissions limitation of 0.20 lb/MMBTU from new and existing fuel-burning equipment with a rated heat input between 1,000 and 10,000 MMBTUH. The turbines, rated at 1,586 MMBTU, are required to burn only pipeline quality natural gas with a emission limit of 18 lb/hr. Based on these requirements, the turbines have PM emissions of 0.01 lb/MMBTU, below the Subchapter 19 limit. The auxiliary boiler and emergency diesel fire-water pump engine are limited to 0.35 lb/MMBTU. AP-42, Table 1.4-2 (3/98) lists PM emissions for the auxiliary boiler for natural gas to be 7.6 lb/MMcf or about 0.0076 lb/MMBTU. Based on AP-42 (10/96) Section 3.3, the emergency diesel fire-water pump engine will have emissions of 0.31 lb/MMBTU. Therefore, the turbines, auxiliary boiler and emergency diesel fire-water pump engine are in compliance with Subchapter 19.

OAC 252:100-25 (Visible Emissions and Particulates) [Applicable]
No discharge of greater than 20% opacity is allowed except for short-term occurrences which consist of not more than one six-minute period in any consecutive 60 minutes, not to exceed three such periods in any consecutive 24 hours. In no case shall the average of any six-minute period exceed 60% opacity. All fuel-burning equipment on-site will use commercial natural gas with the exception of the diesel-fired emergency fire fighting pump. Therefore, it is not necessary to specify any unique procedures to ensure compliance.

OAC 252:100-29 (Fugitive Dust) [Applicable]
No person shall cause or permit the discharge of any visible fugitive dust emissions beyond the property line on which the emissions originate in such a manner as to damage or to interfere with the use of adjacent properties, or cause air quality standards to be exceeded, or interfere with the maintenance of air quality standards. Under normal operating conditions, this facility will not cause a problem in this area, therefore it is not necessary to require specific precautions to be taken.

OAC 252:100-31 (Sulfur Compounds) [Applicable]
Part 5 limits sulfur dioxide emissions from new equipment (constructed after July 1, 1972). For gaseous fuels the limit is 0.2 lb/million BTU heat input. The turbines are limited to burn pipeline quality natural gas at 9.60 lb/hr emissions, based on manufacturer's data, which is equivalent to 0.006 lb/MMBTU. The auxiliary boiler is limited to burn pipeline quality natural gas at 0.02 lb/hr emissions, based on manufacturer's data, which is equivalent to 0.001 lb/MMBTU Thus, a limitation to only burn pipeline quality natural gas provides compliance for the turbines and auxiliary boiler. Liquid fuels are limited to 0.8 lb/MMBTU heat input. The emergency diesel fire-water pump engine and the emergency generator are limited to burn diesel fuel at 0.5%wt sulfur, based on AP-42 this is equivalent to 0.52 lb/MMBTU. Thus, a limitation to only burn low sulfur diesel fuel provides compliance for the diesel engines.
Part 5 also requires an opacity monitor and sulfur dioxide monitor for equipment rated above 250 MMBTU. Since the turbines are limited to natural gas only, they are exempt from the opacity monitor requirement. Based on the pipeline quality gas requirement, the natural gas burned at the site will have less than 0.1 percent sulfur and is, therefore, exempt from the sulfur dioxide monitor requirement.

OAC 252:100-33 (Nitrogen Oxides) [Applicable]
This subchapter limits nitrogen oxides calculated as nitrogen dioxide from any new gas-fired fuel-burning equipment with a rated heat input of 50 MMBTU or greater to a two-hour maximum of 0.20 lb/MMBTU. The maximum one-hour emission rates for the turbines based on the BACT requirement of 12 ppm is 83.00 lb/hr or 0.05 lb/MMBTU, which is in compliance.

OAC 252:100-35 (Carbon Monoxide) [Not Applicable]
This facility has none of the affected sources: foundry cupola, blast furnace, basic oxygen furnace, catalytic cracking unit, or other petroleum or natural gas process except stationary engines.

OAC 252:100-37 (Volatile Organic Compounds) [Applicable]
Part 3 requires VOC constructed after December 28, 1974, with a capacity of 400 gallons or more and storing a VOC with a vapor pressure greater than 1.5 psia to be equipped with a permanent submerged fill pipe or with an organic vapor recovery system. No such tanks are to be located on-site.
Part 5 limits the VOC content of coating or other operations. This facility does not normally conduct coating or painting operations except for routine maintenance of the facility and equipment, which is exempt.
Part 7 requires fuel-burning equipment to be operated and maintained so as to minimize emissions. Temperature and available air must be sufficient to provide essentially complete combustion. Combustion control is a BACT requirement to minimize emissions.

OAC 252:100-41 (Hazardous and Toxic Air Contaminants) **[Applicable State Only]**
Part 3 addresses hazardous air contaminants. NESHAP, as found in 40 CFR Part 61, are adopted by reference as they exist on July 1, 2000, with the exception of Subparts B, H, I, K, Q, R, T, W and Appendices D and E, all of which address radio nuclides. General Provisions as found in 40 CFR Part 63, Subpart A, and the Maximum Achievable Control Technology (MACT) standards as found in 40 CFR Part 63, Subparts F, G, H, I, L, M, N, O, Q, R, S, T, U, W, X, Y, CC, DD, EE, GG, HH, II, JJ, LL, KK, OO, PP, QQ, RR, SS, TT, UU, VV, WW, YY, CCC, DDD, EEE, GGG, HHH, III, JJJ, LLL, MMM, NNN, OOO, PPP, RRR, TTT, VVV, and XXX are hereby adopted by reference as they exist on July 1, 2000. These standards apply to both existing and new sources of HAPs. NESHAP Regulations are covered in the "Federal Regulations" section.
Part 5 is a **state-only** requirement governing toxic air contaminants. New sources (constructed after March 9, 1987) emitting any category "A" pollutant above de minimis levels must perform a BACT analysis. All sources are required to demonstrate that emissions of any toxic air contaminant which exceeds the de minimis level does not cause or contribute to a violation of the MAAC.

Toxic emissions from the turbines are based on the California Air Toxics Emission Factors (CARB 1997). While emissions of formaldehyde and propylene oxide exceeded the de minimis level, SCREEN3 modeling was conducted for each toxic and indicates the facility is in compliance with each MAAC. Based on the level of formaldehyde emissions, the demonstration of MAAC compliance, and the low off site modeled impact, BACT is accepted as no add-on controls.

		Toxic	De Minimis Levels		Emissions	
Pollutant	**CAS #**	**Category**	**lb/hr**	**TPY**	**lb/hr**	**TPY**
1,3-Butadiene	106990	A	0.57	0.60	0.0004	0.00176
Acetaldehyde	75070	B	1.1	1.2	0.218	0.953
Acrolein	107028	A	0.57	0.60	0.0752	0.329
Ethylbenzene	100414	C	5.6	6.0	0.0568	0.249
Formaldehyde	50000	A	0.57	0.60	0.349	1.53
Naphthalene	91203	B	1.1	1.2	0.00527	0.0231
Propylene Oxide	75569	A	0.57	0.60	0.151	0.663
Toluene	108883	C	5.6	6.0	0.225	0.987
Xylene	13300207	C	5.6	6.0	0.0828	0.362
Benzene	71432	A	0.57	0.60	0.043	0.188

		MAAC	Emissions	Estimated Impact
Pollutant	**CAS #**	**ug/m^3**	**lb/hr**	**ug/m^3**
1,3-Butadiene	106990	44	0.0004	0.000099
Acetaldehyde	75070	3,600	0.218	0.0533
Acrolein	107028	2	0.0752	0.0184
Ethylbenzene	100414	43,427	0.0568	0.0139
Formaldehyde	50000	12	0.349	0.0854
Naphthalene	91203	1,000	0.00527	0.00129
Propylene Oxide	75569	500	0.151	0.0369
Toluene	108883	37,668	0.225	0.055
Xylene	13300207	43,427	0.0828	0.0203
Benzene	71432	32	0.043	0.0105

OAC 252:100-43 (Sampling and Testing Methods) [Applicable]
All required testing must be conducted by methods approved by the Executive Director under the direction of qualified personnel. All required tests shall be made and the results calculated in accordance with test procedures described or referenced in the permit and approved by Air Quality.

OAC 252:100-45 (Monitoring of Emissions) [Applicable]
Records and reports as Air Quality shall prescribe on air contaminants or fuel shall be recorded, compiled, and submitted as specified in the permit.

SECTION VI. FEDERAL REGULATIONS

PSD, 40 CFR Part 52 [Applicable]

The facility is a listed source as a fossil fuel-fired electric plant of more than 250 MMBTU heat input with emissions greater than 100 TPY. A complete PSD review was completed in the memorandum of Permit No. 99-213-C (PSD). The amendment in this permit did not change any of the previous requirements.

NSPS, 40 CFR Part 60 [Applicable]

Subpart GG, Stationary Gas Turbines. This subpart affects stationary gas turbines which commenced construction, reconstruction, or modification after October 3, 1977, with a heat input at peak load of greater than or equal to 10 MMBTUH based on the lower heating value of the fuel. The new turbines have heat input capacities at peak load of 1,586 MMBTU and are, therefore, affected sources. Standards specified in Subpart GG limit NOx emissions to 87 ppmdv or less. Sulfur dioxide standards specified in Subpart GG are that no fuel shall be used which exceeds 0.8% by weight sulfur nor shall exhaust gases contain in excess of 150 ppm SO_2. For fuel supplies without intermediate bulk storage, the owner or operator shall either monitor the fuel nitrogen and sulfur content daily or develop custom schedules of fuel analysis based on the characteristics of the fuel supply; these custom schedules must be approved by the Administrator before they can be used for compliance with monitoring requirements. For the NOx emissions, the BACT requirement of 9 ppm is more stringent than Subpart GG and is, therefore, applicable. While nitrogen content monitoring is not required for turbines burning exclusively pipeline-quality natural gas, monitoring under Acid Rain will be required to demonstrate continued compliance with the 9 ppm limit. For the SO_2 emissions, the facility is proposing to use only pipeline-quality natural gas which will contain less than the 0.8% sulfur by weight limit. Since pipeline-quality natural gas will be used exclusively, monitoring for sulfur is acceptable as a quarterly statement from the gas supplier reflecting the sulfur analysis or a quarterly "stain tube" analysis.

Subpart Dc affects industrial-commercial-institutional steam generating units with a design capacity between 10 and 100 MMBTUH heat input and which commenced construction or modification after June 9, 1989. For gaseous-fueled units, the only applicable standard of Subpart Dc is a requirement to keep records of the fuels used. The 22 MMBTUH gas-fired auxiliary boiler is an affected unit as defined in the subpart since the heating capacity is above the de minimis level. Recordkeeping is specified in the permit.

NESHAP, 40 CFR Part 61 [Not Applicable]

There are no emissions of any of the regulated pollutants: arsenic, asbestos, beryllium, coke oven emissions, radionuclides or vinyl chloride. The facility emits mercury and benzene but it is not one of the applicable sources and is, therefore, exempt from this part.

NESHAP, 40 CFR Part 63 [Not Applicable At This Time]
There is no current standard that applies to this facility. A MACT standard may be applicable under the source category "Subpart YYYY - Combustion (Gas) Turbines" and "Subpart DDDDD - Industrial/Commercial/Institutional Boilers and Process Heaters" which are scheduled for promulgation after May 2002. Air Quality reserves the right to reopen this permit as allowed in OAC 252:100-8 if any standard becomes applicable.

CAM, 40 CFR Part 64 [Not Applicable]
Compliance Assurance Monitoring (CAM) as published in the Federal Register on October 22, 1997, applies to any pollutant specific emission unit at a major source, that is required to obtain a Title V permit, if it meets all of the following criteria:

- It is subject to an emission limit or standard for an applicable regulated air pollutant
- It uses a control device to achieve compliance with the applicable emission limit or standard
- It has potential emissions, prior to the control device, of the applicable regulated air pollutant of 100 TPY

The turbines are not subject to CAM monitoring since the low-NOx burners are not considered an add-on control device.

Chemical Accident Prevention Provisions, 40 CFR Part 68 [Not Applicable]
The turbines burn natural gas only. Natural gas is a listed substance in CAAA 90 Section 112(r). However, this substance is not stored on site. The small quantity which is in the pipelines on the facility is much less than the 10,000 pound threshold and, therefore, is excluded from all requirements including the Risk Management Plan. The chemicals used to treat the process water are not on the list of regulated substances (Section 112r Clean Air Act 1990). More information on this federal program is available on the web page: *www.epa.gov/ceppo*.

Acid Rain, 40 CFR Part 72 (Permit Requirements) [Applicable]
This facility is an affected source since it is a simple cycle unit that commenced operation after November 15, 1990, and must submit an Acid Rain permit application in accordance with the requirements in 40 CFR 72.30. This is a simple cycle unit since no secondary firing occurs in the HRSG. Paragraph 72.30(b)(2)(ii) requires a new source to submit an application for an Acid Rain permit at least 24 months prior to the start of operations. However, Mr. Dwight Alpern, HQ U.S. EPA, (202) 564-9651, confirmed that this requirement was for the benefit of the regulating agency (Oklahoma DEQ) which could and in this case has waived this requirement.

Acid Rain, 40 CFR Part 73 (SO_2 Requirements) [Applicable]
This Part provides for allocation, tracking, holding, and transferring of SO_2 allowances.

Acid Rain, 40 CFR Part 75 (Monitoring Requirements) [Applicable]
The facility shall comply with the emission monitoring and reporting requirements of this Part.

Acid Rain, 40 CFR Part 76 (NOx Requirements) [Not Applicable]
This Part provides for NOx limitations and reductions for coal-fired utility units. Since the facility will fire natural gas only, it is exempt.

Stratospheric Ozone Protection, 40 CFR Part 82 [Applicable]
This facility does not produce, consume, recycle, import, or export any controlled substances or controlled products as defined in this part, nor does this facility perform service on motor (fleet) vehicles which involves ozone-depleting substances. Therefore, as currently operated, this facility is not subject to these requirements. To the extent that the facility has air-conditioning units that apply, the permit requires compliance with Part 82.

SECTION VII. COMPLIANCE

Tier Classification and Public Review

This application has been determined to be a Tier I based on the request for an administrative amendment to a Part 70 operating permit.

The permittee has submitted an affidavit that they are not seeking a permit for land use or for any operation upon land owned by others without their knowledge. The affidavit certifies that the applicant has a current lease or easement which is given to accomplish the permitted purpose and that the landowner has been notified.

Fees Paid

This modification is considered an administrative amendment to clearly define a short term averaging period. No fee is associated with this type of modification.

SECTION VIII. SUMMARY

The applicant has demonstrated the ability to comply with all applicable requirements. Ambient air quality standards are not threatened at this site. There are no active Air Quality compliance or enforcement issues concerning this facility. Issuance of the modified permit is recommended.

PERMIT TO CONSTRUCT
AIR POLLUTION CONTROL FACILITY
SPECIFIC CONDITIONS

Duke Energy McClain, LLC
McClain Energy Facility **Permit Number 99-213-C (PSD) (M-2)**

The permittee is authorized to construct in conformity with the specifications submitted to Air Quality on June 21, 2001. The Evaluation Memorandum, dated May 30, 2002, is attached to this permit to explain the derivation of applicable permit requirements and estimates of emissions; however, it does not contain operating limitations or permit requirements. Commencing construction or operations under this permit constitutes acceptance of, and consent to, the conditions contained herein:

1. Points of emissions and emissions limitations for each point: [OAC 252:100-8-6(a)(1)]

Combustion Turbine*

Pollutant	lb/hr	TPY	ppmdv**	lb/MMBTU
NOx	83.00	254.00	9/12***	0.053
SO_2	9.60	40.00	--	--
PM_{10}	18.00	79.00	--	0.01
VOC	2.90	12.00	--	--
CO	68.00	280.00	20	--

* each of two
** NOx and CO concentrations: parts per million by volume, dry basis, corrected to 15% oxygen
*** annual rolling average/168 operating hour rolling average

Auxiliary Boiler

Pollutant	lb/hr	TPY	lb/MMBTU
NOx	0.80	2.80	0.035
SO_2	0.02	0.07	--
PM_{10}	0.20	0.80	--
VOC	0.40	1.40	--
CO	0.80	2.80	0.037

Cooling Tower*

Pollutant	lb/hr	TPY
PM_{10}	0.006	0.026

* combined total of all towers

2. The emergency diesel fire-water pump engine and the emergency generator are considered insignificant activities based on limited hours of operation. As such, the only requirement is to record fuel usage and hours of operation. [OAC 252:100-8-6(a)(3)]

3. The fuel-burning equipment shall use only pipleline quality natural gas, except for the emergency diesel fire-water pump engine and the emergency generator which shall burn diesel fuel with a maximum sulfur content of 0.05%. [OAC 252:100-8-6(a)(3)]

4. A serial number or another acceptable form of permanent (non-removable) identification shall be on each turbine. [OAC 252:100-45]

5. Upon issuance of an operating permit, the permittee shall be authorized to operate the turbines continuously (24 hours per day, every day of the year). The auxiliary boiler, emergency diesel fire-water pump engine, and emergency generator shall be limited to 7,000, 500, and 500 hours per year, respectively. [OAC 252:100-8-6(a)(3)]

6. The permittee shall incorporate the following BACT methods for reduction of emissions. Emission limitations are as stated in Specific Condition No. 1. [OAC 252:100-8-34]

a. Emissions from each turbine shall be controlled by properly operated and maintained dry low-NOx combustors maintaining levels as specified in S.C. 1.
b. Emissions from the auxiliary boiler shall be controlled by properly operated and low-NOx burners maintaining levels as specified in S.C. 1.
c. Emissions from each cooling tower shall be controlled by properly operated and maintained high efficiency drift eliminators at 0.001% of circulating water flow.

7. The turbines are subject to federal New Source Performance Standards, 40 CFR 60, Subpart GG, and shall comply with all applicable requirements. [40 CFR §§ 60.330-335]

a. 60.332: Standard for nitrogen oxides
b. 60.333: Standard for sulfur dioxide
c. 60.334: Monitoring of operations
d. 60.335: Test methods and procedures

8. Sulfur content monitoring of the fuel under NSPS Subpart GG is acceptable as a quarterly statement from the gas supplier reflecting the sulfur analysis or a quarterly "stain tube" analysis. Other customary monitoring procedures may be submitted with the operating permit for consideration. Monitoring of fuel nitrogen content under NSPS Subpart GG shall not be required while pipeline-quality natural gas is the only fuel fired in the turbines. [40 CFR §§ 60.330-335]

9. The permittee shall comply with all acid rain control permitting requirements and for SO_2 and NOx emissions allowances and continuous emissions monitoring and reporting. [40 CFR Parts 73, 75, 76]

10. During start-up, shutdown, or malfunction the turbines shall not operate more than 4 hours outside the pre-mix mode or below 50 percent of rated load. [OAC 252:100-9]

11. The auxiliary boiler is subject to NSPS Subpart Dc. The only requirement is to maintain a cumulative record of natural gas burned in this unit. [40 CFR 60 Subpart Dc]

12. Within 60 days of achieving maximum power output from the turbines, not to exceed 180 days from initial start-up, and at other such times as directed by Air Quality, the permittee shall conduct performance testing and furnish a written report to Air Quality documenting compliance with emissions limitations. Performance testing by the permittee shall use the following test methods specified in 40 CFR 60: [40 CFR 60 Subpart GG]

Method 1:	Sample and Velocity Traverses for Stationary Sources.
Method 2:	Determination of Stack Gas Velocity and Volumetric Flow Rate.
Method 3:	Gas Analysis for Carbon Dioxide, Excess Air, and Dry Molecular Weight.
Method 4:	Determination of Moisture in Stack Gases.
Method 5:	Determination of Particulate Emissions from stationary sources.
Method 10:	Determination of Carbon Monoxide Emissions From Stationary Sources.
Method 20:	Determination of Nitrogen Oxides and Oxygen Emissions from Stationary Gas Turbines.
Method 25 or 25A:	Determination of Non-Methane Organic Emissions From Stationary Sources.

NOx and CO testing on the turbines shall be conducted at both the 100% and 75% operating rates, performance testing shall be conducted while the new units are operating within 10% of the desired testing rates.

13. The permittee shall install a continuous monitoring system designed to sample NOx, CO, and O_2 for compliance with 40 CFR 75. [40 CFR Parts 75]

14. When monitoring shows concentrations in excess of the ppm or lb/MMBTU limits of Specific Condition No. 1, the owner or operator shall comply with the provisions of OAC 252:100-9 for excess emissions during start-up, shut-down, and malfunction of air pollution control equipment. Requirements include prompt notification to Air Quality and prompt commencement of repairs to correct the condition of excess emissions. [OAC 252:100-9]

15. The permittee shall maintain records as listed below. These records shall be maintained on site or at a local field office for at least five years after the date of recording and shall be provided to regulatory personnel upon request. [OAC 252:100-8-6(a)(3)(B)]

a. CEMS data required by the Acid Rain program.
b. NOx CEMS data demonstrating compliance with 168 operating hour and annual rolling averages.
c. Operating hours for the auxiliary boiler and emergency diesel fire-water pump engine (monthly and cumulative annual).
d. Total fuel consumption, diesel and gas (monthly and cumulative annual).
e. Sulfur content of natural gas (supplier statements or quarterly "stain-tube" analysis).
f. All occasions when any turbine operates for more than 4 hours outside the pre-mix mode or below 50 percent of rated load (date and duration).

16. The permittee shall update the Title V operating permit application within 60 days of issuance of this permit to reflect the amendment of this permit. [OAC 252:100-8-4(b)]

17. The permittee shall initiate potential ozone impact modeling as prescribed by and overseen by DEQ within 180 days of the issuance of the original construction permit. The data and results of the modeling shall be sent to Air Quality Division within 30 days of receipt by the permittee. [OAC 252:100-8 Part 7]

18. The permittee shall design the facility and shall construct the necessary foundation and ancillary equipment to insure the facility's capability to incorporate Selective Catalytic Reduction to the the HRSG's exhaust system. [OAC 252:100-8 Part 7]

19. Upon issuance of this construction permit, Permit No. 99-213-C (PSD) (M-1) will be null and void.

NRG McClain, LLC
Attn: Mr. Rusty Whiteley
801 N.E. 34th
Newcastle, OK 73065

Re: Permit Number 99-213-C (PSD) (M-2)
McClain Generating Station

Dear Mr. Whiteley:

Enclosed is the permit authorizing construction of the referenced facility. Please note that this permit is issued subject to certain standard and specific conditions which are attached.

Thank you for your cooperation in this matter. If we may be of further service, please contact me at (405) 702-4203.

Sincerely,

Phillip Fielder, P.E.
New Source Permits Unit
AIR QUALITY DIVISION

cc: Cleveland County DEQ Office

PERMIT

AIR QUALITY DIVISION
STATE OF OKLAHOMA
DEPARTMENT OF ENVIRONMENTAL QUALITY
707 NORTH ROBINSON, SUITE 4100
P.O. BOX 1677
OKLAHOMA CITY, OKLAHOMA 73101-1677

Date _____ **Permit No.** 99-213-C (PSD) (M-2)

NRG McClain, LLC

having complied with the requirements of the law, is hereby granted permission to construct the modifications to the facility known as the McClain Generating Station in Newcastle, Cleveland County, OK,

subject to the following conditions, attached:

[X] Standard Conditions dated October 17, 2001

[X] Specific Conditions

_____ **Chief Engineer, Air Quality**

DEQ Form 885
Revised 7/93