TECHNICAL REVIEW DOCUMENT
for
OPERATING PERMIT 99OPMR210

to be issued to:

Excel Corporation
Fort Morgan Plant
Morgan County
Source ID 0870024

Prepared by Cathy Rhodes
July, 2001

I. PURPOSE:

This document establishes the basis for decisions made regarding the Applicable Requirements, Emission Factors, Monitoring Plan and Compliance Status of Emission Units covered within the Operating Permit proposed for this site. It is designed for reference during review of the proposed permit by the EPA and during Public Comment. This narrative is intended only as an adjunct for the reviewer and has no legal standing. Conclusions in this document are based on information provided in the original application submittal of May 19, 1999, and supplemental Title V technical information.

Any revisions made to the underlying construction permits associated with this facility in conjunction with the processing of this operating permit application have been reviewed in accordance with the requirements of Regulation No. 3, Part B, Construction Permits, and have been found to meet all applicable substantive and procedural requirements. This operating permit incorporates and shall be considered to be a combined construction/operating permit for any such revision, and the permittee shall be allowed to operate under the revised conditions upon issuance of this operating permit without applying for a revision to this permit or for an additional or revised Construction Permit.

II. Source Description:

This source is a beef slaughter, processing, and packaging facility located at 1505 East Burlington Avenue, Fort Morgan, Morgan County. There are no affected states within 50 miles of the facility. There are no Federal Class I designated areas within 100 kilometers of the facility.

The Title V application reports the facility is not subject to the Accidental Release Plan provisions of 112(r)(7) of the Clean Air Act.

Facility wide emissions are as follows (tons/year):

Pollutant	Actual	Potential
Particulate Matter	25	25
PM_{10}	25	25
Nitrogen Oxides (NO_x)	79	79
Sulfur Dioxide (SO_2)	8	8
Volatile Organic Compounds (VOC)	2	2
Carbon Monoxide	81	81

Potential emissions are based on permitted levels. At this time, actual emissions are assumed to equal potential emissions, because emission factors for various operations have changed since the construction permits were issued, and some sources have not begun normal operation under recently issued construction permits.

Prevention of Significant Deterioration

This plant is located in an area designated as attainment for all criteria pollutants. Under an April, 1999 Consent Agreement, a Prevention of Significant Deterioration (PSD) permit was issued for sulfur dioxide emissions, therefore the facility is required to obtain an operating permit. The facility is classified as a major source for PSD purposes.

III. EMISSION SOURCES:

Specific equipment and activities covered under this operating permit are as follows.

S001 - Two Kewanee Boilers, Design Rates 25.1 & 20.9 mmBtu/hr
S007 - Varec Combustion Flare, 67.5 mmBtu/hr
S008MP-10 - Anaerobic Wastewater Treatment Plant

All digester gas (biogas) generated in the treatment plant is routed for combustion in the boilers. The flare combusts digester gas when the boilers are unable to accept all biogas generated. Initial Approval Construction Permit 99MR0691 was issued for these sources. Applicable requirements are as follows.

Construction Permit 99MR0691

- Visible emissions shall not exceed twenty percent, except during certain operating conditions, when opacity shall not exceed 30% (Colorado Regulation No. 1, Section II.A.1&4)
- Limits emissions of particulate matter, sulfur dioxide, nitrogen oxides, and carbon monoxide on a monthly and annual basis (See Section IV, below, regarding short term limits)
- Limits Hydrogen Sulfide emissions on an annual basis

- Limits wastewater treated and total heat input to the boilers on a monthly and annual basis (see short term limit policy, below).
- Requires minimization of flaring of biogas.

- Sets forth a Best Available Control Technology (BACT) determination for sulfur dioxide emissions
- Sets forth a minimum stack height for the flare, in order to protect the ambient air quality standard for sulfur dioxide
- Standards of Performance for Small Industrial-Commercial-Institutional Steam Generating Units, 40 CFR Part 60, Subpart Dc, as adopted by reference in Colorado Regulation No. 6, Part A

  The regulation does not contain emission limits for gaseous fuels, however the permittee is required to perform certain recordkeeping and reporting procedures.
- New Source Performance Standards, 40 CFR Part 60, Subpart A, Section 60.18, as adopted by reference in Colorado Regulation No. 6, Part A (Per Division PS Memo 99-2, 60.18 applies to flares subject to the requirements of Colorado Regulation No. 6, Part B)
- Requires compliance with the odor requirements of Regulation No. 2.

Colorado Regulation No. 6, Part B

- Section VII - Standards for Incinerators (State-only requirement) This regulation sets forth standards for incinerators. The flare at this facility is considered to be an incinerator. The subject New Source Performance Standards set forth in 60.18 are more stringent than the Regulation No. 6 incinerator requirements, therefore the Regulation No. 6, Part B provisions are streamlined out of the operating permit, and provided the permit shield.
- Section II.C.2 - Standard for Particulate Matter for Fuel Burning Equipment - This standard is identical to the PM standard set forth in Colorado Regulation No. 1, Section III.A.b, except that the Regulation No. 6 standard does not apply during periods of startup, shutdown, or malfunction, while the Regulation No. 1 standard applies at all times. The less stringent Regulation No. 6 standard is streamlined out.
- Section II.C.3 - Limits opacity to 20%. This standard applies at all times except periods of startup, shutdown, or malfunction.

Colorado Regulation No. 1

- Opacity from flares not to exceed 30% (Section II.A.5) The requirements of the New Source Performance Standards set forth in 60.18 require no

visible emissions, therefore the Regulation No. 1 standard is streamlined out and provided the permit shield.

- PM and opacity standards for incinerators (Section III.B) The requirements of the New Source Performance Standards set forth for flares in 60.18 are more stringent, therefore the Regulation No. 1 standard is streamlined out and provided the permit shield.
- Section III.A.b - Sets forth a PM emission limit for fuel burning equipment.

Emission Factors - Combustion emissions are estimated using AP-42 emission factors, except for SO_2 and H_2S emissions. SO_2 and H_2S emissions are estimated using historical test and material balance data, and correlations with sulfate content in the wastewater.

Monitoring Plan - The permittee shall maintain records of the amount of wastewater treated, and total heat input to the boilers on a monthly basis. Records of operation of the flare will be maintained. Compliance with the opacity limits is assumed when natural gas or biogas is combusted in the boilers. An observation for visible emissions or a Method 22 observation is required whenever the flare is used for more than a certain amount of time to destroy biogas. Emissions are estimated monthly. Wastewater sulfate content parameters are monitored for use in calculating SO_2 and H_2S emissions, and for monitoring compliance with SO_2 emission limits. Compliance with the Regulation No. 1 PM emission limit is assumed when natural gas or biogas is used as fuel.

Compliance - These sources were in compliance with applicable requirements upon issuance of the Construction Permit.

S002 - Cleaver Brooks Boiler, 42 mmBtu/hour - Initial Approval Construction Permit 96MR443 was issued for this natural gas fired boiler. Applicable requirements are as follows.

Construction Permit 96MR443

- Limits opacity to 20% - Note: Many previously issued Construction Permit list this opacity limit without referencing a regulation. The Division has determined that the reference should have been Regulation No. 1 or 6, as applicable. Therefore, the operating permit contains the Regulation No. 1 20% and 30% limits, and the Regulation No. 6 20% opacity limit for this source.

- Limits PM, PM_{10}, SO_2, NO_x, VOC, and CO emissions on an hourly and annual basis (See short term limit policy discussion, below) Note: Emission limits are recalculated, based on revised AP-42 factors. Annual emission limits for natural gas change as follows:

Pollutant	Current Limit	Revised Limit
PM & PM_{10}	.252 tpy	1.2 tpy
NO_x	11.939 tpy	14.74 tpy
SO_2	.097 tpy	.09 tpy
CO	5.188 tpy	12.38 tpy
VOC	.848 tpy	.81 tpy

- Limits natural gas consumption on an hourly and annual basis (see short term limit policy discussion)
- Standards of Performance for Small Industrial-Commercial-Institutional Steam Generating Units, 40 CFR Part 60, Subpart Dc, as adopted by reference in Colorado Regulation No. 6, Part A

  The regulation does not contain emission limits for gaseous fuels, however the permittee is required to perform certain recordkeeping and reporting procedures.

Colorado Regulation No. 1 and 6 PM emission limits for fuel burning equipment apply, and are streamlined as discussed for S001, above.

Emission Factors- Emissions are estimated using AP-42 emission factors.

Monitoring Plan- Monthly records of natural gas use will be maintained. Compliance with the emission limits is assumed when compliance with the natural gas consumption limit is met. Compliance with opacity standards and the Regulation No. 1 PM emission limit is assumed when natural gas is used as fuel.

Compliance Status- The Division believes this source was in compliance with applicable requirements as of the date of application submittal.

S003 - Two (2) Cleaver Brooks Boilers, 25 mmBtu/hour each - Initial Approval Construction Permits 90MR355- 1 and 2 were issued for these natural gas fired boilers. Applicable requirements are as follows.

Construction Permits 90MR355(1 and 2)

- Limit opacity to 20% - Note: Many previously issued Construction Permit list this opacity limit without referencing a regulation. The Division has determined that the reference should have been Regulation No. 1 or 6, as applicable. Therefore, the operating permit contains the Regulation No. 1 20% and 30% limits, and the Regulation No. 6 20% opacity limit for this source.
- Limit PM, PM_{10}, SO_2, NO_x, VOC, and CO emissions on an hourly and annual basis (See short term limit policy discussion, below) Note: Emission limits are recalculated, based on revised AP-42 factors. Annual emission limits for natural gas change as follows:

Pollutant	Current Limit (each)	Revised Limit (each)
PM & PM_{10}	.16 tpy	.41 tpy
NO_x	7.51 tpy	5.36 tpy
SO_2	.03 tpy	.03 tpy
CO	1.88 tpy	4.51 tpy
VOC	.15 tpy	.30 tpy

- Limits natural gas consumption on an hourly and annual basis (see short term limit policy discussion)

Standards of Performance for Small Industrial-Commercial-Institutional Steam Generating Units, 40 CFR Part 60, Subpart Dc, as adopted by reference in Colorado Regulation No. 6, Part A

- The boilers were constructed after June 9, 1989, therefore this regulation applies. The regulation does not contain emission limits for gaseous fuels, however the permittee is required to perform certain recordkeeping and reporting procedures.

Colorado Regulation No. 1 and 6 PM emission limits for fuel burning equipment apply, and are streamlined as discussed for S001, above.

Emission Factors- Emissions are estimated using AP-42 emission factors.

Monitoring Plan- Monthly records of natural gas use will be maintained. Compliance with the emission limits is assumed when compliance with the natural gas consumption limit is met. Compliance with opacity standards and the Regulation No. 1 PM emission limit is assumed when natural gas is used as fuel.

Compliance Status- The Division believes this source was in compliance with applicable requirements as of the date of application submittal.

Application for Tallow Use

The permittee submitted a construction permit application to use tallow as fuel in the following boilers: S002 – Cleaver Brooks 42 mmBtu/hour, and S003 – (2) Cleaver Brooks 25 mmBtu/hour each. In addition, the permittee requested an increase in permitted natural gas use at the S003 boilers. The permittee submitted actual fuel use for 1999 and 2000. Average actual fuel use for the last two years was: S002 – 166.71 mmscf/year; S003 – 102.276 and 87.8165 mmscf/year. A comparison of the requested emission increase to actual emissions is set forth in the following table.

BOILER	PM/PM_{10} (TPY)		NO_x (TPY)		SO_2 (TPY)		CO (TPY)		VOC (TPY)	
	Actual	New gas/ tallow	Actual	New gas/ Tallow	Actual	New gas/ tallow	Actual	New gas/ tallow	Actual	New gas/ Tallow
S002	.68	7.42	8.33	23.2	.05	.23	7.0	12.38	.46	.81
S003	.39	3.93	5.11	12.26	.03	.12	4.3	6.56	.28	.43
S003	.34	3.93	4.39	12.26	.03	.12	3.4	6.56	.24	.43
Total Increase	13.87		33.94		.36		10.51		.69	

The requested increases are all below PSD significant levels, therefore PSD does not apply to the requested use of tallow or increase in natural gas use. The requested changes are incorporated directly into this operating permit through a combined construction/operating permit process. The use of tallow is not subject to NSPS Subpart Dc.

Monitoring: In absence of credible evidence to the contrary, compliance with the Regulation No. 1 particulate matter emission standard shall be assumed when the emission limits set forth in the operating permit are met. For opacity, periodic visual observations and Method 9 readings are required.

S004 - Two Dupps Supercookers

A packed bed scrubber controls malodorous emissions from this source and the affected Non-Edible Rendering building air discharge. Initial Approval Construction Permit 87MR168(2) was issued for these sources. Applicable requirements are as follows.

Construction Permit 87MR168(2)

- Limits opacity to 20% - Note: Many previously issued Construction Permit list this opacity limit without referencing a regulation. The Division has determined that the reference should have been Regulation No. 1 or 6, as applicable. Therefore, the operating permit contains the Regulation No. 1 20 and 30% limits, and the Regulation No. 6 20% opacity limit for this source.
- Requires compliance with the odor requirements of Regulation No. 2
- Limits material feed on an hourly and annual basis (see short term limit policy discussion)
- Requires monitoring of scrubber parameters (Note: The permittee no longer uses the scrubber fluid originally permitted. The language is revised to allow use of alternative liquids as long as good engineering practices are used.)

Emission Factors - Emissions of criteria pollutants from this source are negligible.

Monitoring - Monthly records of material feed rate will be maintained. Scrubber pressure drop will be recorded. The scrubber will be maintained in accordance with good engineering practices. Compliance with opacity limits is assumed when the material feed rate limit is met.

Compliance - The Division believes these sources were in compliance at time of application submittal.

S005 - Duske Bone Meal Dryer

This unit is natural gas fired, and is equipped with a cyclone to control particulate emissions. Final Approval Construction Permit 92MR1474 was issued for this source. Applicable requirements are as follows.

Construction Permit 92MR1474

- Limits opacity to 20% - Note: Many previously issued Construction Permit list this opacity limit without referencing a regulation. The Division has determined that the reference should have been Regulation No. 1 or 6, as applicable. Therefore, the operating permit contains the Regulation No. 1 20% and 30% limits, and the Regulation No. 6 20% opacity limit for this source.
- Requires compliance with the odor requirements of Regulation No. 2

- Limits PM, PM_{10}, SO_2, NO_x, VOC, and CO emissions on an hourly and annual basis (See short term limit policy discussion, below) Note: Emission limits are recalculated, based on revised AP-42 factors. Annual emission limits for natural gas change as follows:

Pollutant	Current Limit	Revised Limit (each)
PM & PM_{10}	1.98 tpy	2.28 tpy
NO_x	6.25 tpy	6.50 tpy
SO_2	.04 tpy	.04 tpy
CO	1.25 tpy	5.46 tpy
VOC	.33 tpy	.36 tpy

- Limits bone meal production on an hourly and annual basis (see short term limit policy discussion)

Colorado Regulation No. 6, Part B

- Section III.C. - Standard for Particulate Matter for Manufacturing Processes - This standard is identical to the PM standard set forth in Colorado Regulation No. 1, Section III.C., except that the Regulation No. 6 standard does not apply during period of startup, shutdown, or malfunction, while the Regulation No. 1 standard applies at all times. The less stringent Regulation No. 6 standard is streamlined out.

Colorado Regulation No. 1

- Section III.C. - Sets forth a PM emission limit for manufacturing equipment.

Emission Factors - PM emissions from bone meal production are based on engineering estimates. A control efficiency of 90% is assumed for the cyclone. Natural gas combustion emissions are estimated using AP-42 emission factors.

Monitoring Plan - Compliance with opacity limits is assumed at the meal production limit. Records of monthly natural gas use and production rates are maintained. Compliance with emission limits, including the Regulation No.1 PM emission limit, is assumed when the permitted consumption limit is met.

Compliance - The Division believes this source was in compliance with all applicable requirements at the time of application submittal.

S006 - Rotary Blood Dryer

This dryer is natural gas fired, and is equipped with cyclones and a mechanical separator for control of particulate emissions. Initial Approval Construction Permit 87MR168(1) was issued for this source. Applicable requirements are as follows.

Construction Permit 87MR168(1)

- Limits opacity to 20% - Note: Many previously issued Construction Permits list this opacity limit without referencing a regulation. The Division has determined that the reference should have been Regulation No. 1 or 6, as applicable. Therefore, the operating permit contains the Regulation No. 1 20% and 30% limits, and the Regulation No. 6 20% opacity limit for this source.
- Limits particulate matter emissions on an hourly and annual basis (see short term limit policy discussion) Note: The allowable emission limit is increased from 0.46 to 7.12 tons/year, to account for a new AP-42 emission factor for blood dryers, and natural gas combustion emissions. Emissions from the blood dryer were previously estimated using engineering judgement.
- Limits blood drying rate on an hourly and annual basis (see short term limit policy discussion)
- Requires compliance with Regulation No. 2 odor requirements and sets forth specific measures

Colorado Regulations No. 1 and No. 6, Part B PM emission limits for manufacturing process units apply, and are streamlined as discussed for S005, above.

Natural gas consumption limits and associated emission limits are incorporated directly into the operating permit.

Emission Factors - Combustion emissions and blood dryer PM emissions are estimated using AP-42 emission factors.

Monitoring Plan - Compliance with opacity limits is assumed when natural gas is used as fuel, and when the throughput limits are met. Compliance with the emission limits, including the Regulation No. 1 PM emission limit, is assumed when the throughput limits are met. Dryer exhaust temperature will be monitored and recorded continuously.

Compliance - The Division believes this source was in compliance with all applicable requirements at the time of application submittal.

IV. Emission Factors

From time to time published emission factors are changed based on new or improved data. A logical concern is what happens if the use of the new emission factor in a calculation results in a source being out of compliance with a permit limit. For this operating permit, the emission factors or emission factor equations included in the permit are considered to be fixed until changed by the permit. Factors dependent on the fuel sulfur content or heat content can not be fixed and will vary with the test results. The formula for determining the emission factors is, however, fixed. It is the responsibility of the permittee to be aware of changes in the factors, and to notify the Division in writing of impacts on the permit requirements when there is a change in factors. Upon notification, the Division will work with the permittee to address the situation.

V. Short Term Limits

On April 16, 1998, the Colorado Air Quality Control Commission directed the Division to implement new procedures regarding the use of short term emission and production/throughput limits on Construction Permits. These procedures are being directly implemented in all Operating Permits that had not started their Public Comment period as of April 16, 1998. All short term emission and production/throughput limits that appeared in the Construction Permits associated with this facility that are not required by a specific State or Federal standard or by the above referenced Division procedures have been deleted and all annual emission and production/throughput limits converted to a rolling twelve (12) month total. Note that, if applicable, appropriate modeling to demonstrate compliance with the National Ambient Air Quality Standards was conducted as part of the Construction Permit processing procedures. If required by this permit, portable monitoring results and/or EPA reference test method results will be multiplied by 8760 hours for comparison to annual emission limits unless there is a specific condition in the permit restricting the hours of operation.

Note that the recently issued Initial Construction Permit for the Kewanee boilers, wastewater treatment plant, and flare contains monthly process and emission limits that remain applicable for one year until rolling 12 month averages can commence, These monthly limits are retained in the operating permit application, with the indication that they apply for the first year of operation under the Construction Permit.

The following Construction Permit short term limits are not included in this operating permit.

Construction Permit and Source	Short Term Limit
96MR443 - S002: Cleaver Brooks Boiler	0.252 lb PM/hour 0.252 lb PM_{10}/hour 0.029 lb SO_2/hour 3.544 lbs NO_x/hour 0.252 lb VOC/hour 1.540 lbs CO/hour 44,000 scf natural gas/hour
90MR355 (1 and 2) - S003: Two Cleaver Brooks Boilers	(each boiler) 0.07 lb PM_{10}/hour 0.01 lb SO_2/hour 3.22 lbs NO_x/hour 0.06 lb VOC/hour 0.80 lbs CO/hour 23,000 scf natural gas/hour
87MR168(2) - S004: Two Dupps' Supercookers	45,000 lbs materials feed/hour
92MR1474 – S005: Bone Meal Dryer	1.49 lbs PM_{10}/hour 0.02 lb SO_2/hour 3.00 lbs NO_x/hour 0.16 lb VOC/hour 0.60 lbs CO/hour 14.0 tons bone meal produced/hour
87MR168(1) - S006: Rotary Blood Dryer	0.22 lb PM/hour 5,281 lbs blood dried/hour

VI. Final Approval for Initial Construction Permits

Some Construction Permits that have not yet been issued Final Approval. Since these pieces of equipment will have been in operation for more than 180 days by the due date of the first semi-annual monitoring required by the operating permit, the Division will consider the Responsible Official certification submitted with that report to serve as the self-certification for Final Approval for these sources.