TECHNICAL REVIEW DOCUMENT
for
OPERATING PERMIT 95OPPB098

to be issued to:

CF&I Steel, L.P.
Pueblo - Utilities
Pueblo County
Source ID 1010048

Prepared by Michael E. Jensen
July 7, 1998

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. Conclusions in this document are based on information provided in the original application submittal of December 8, 1995, as well as numerous telephone contacts with the applicant.

II. Source Description:

The steel plant is located in Pueblo County at the south edge of the City of Pueblo, Colorado. The area in which the plant operates is designated as attainment for all criteria pollutants. The total plant emissions classify the plant as a major stationary source with respect to Prevention of Significant Deterioration (PSD) requirements. The Title V application states the utility operations are not subject to the provisions of the Accidental Release Plan Provisions of Section 112 (r)(7) of the Federal Clean Air Act.

CF&I Steel, L.P. (CF&I) uses two (2) electric arc furnaces to produce steel. The steel is then used in the production of various steel products. CF&I elected to divide the plant by major production function and submit separate Title V permits for each production function. This places the compliance responsibility on the designated production manager making the operating, budget and scheduling decisions. For this document the word 'Mill' will be used to refer to the various processes related to the production function. The word 'Mill' is not referring to a separate facility. The following separate Title V permit applications were submitted for the CF&I plant:

Rail Mill	95OPPB086	Steelmaking	95OPPB097
Rod/Bar Mill	95OPPB088	Utilities	95OPPB098
Seamless Mill	95OPPB089		

The utility operations are general facility support activities for the entire plant. Utility operations has the responsibility for the cooling towers, fuel storage, haul roads, storage piles, water treatment ponds and the plant solvent usage.

The following tables display the Potential to Emit for the individual production processes as reported in the separate Title V applications, and the total Potential to Emit for the plant. The actual emissions reported in the Division database for the 1996 data year are included for comparative purposes. The actual emissions for data year 1996 exceed the current Potential to Emit because two boilers, operating in 1996, have been permanently shutdown and the respective construction permits canceled. This change significantly reduced the Potential to Emit for the Utility Operations..

UTILITIES POTENTIAL TO EMIT, TONS PER YEAR

	PM	PM_{10}	NO_X	SO_2	VOC	CO
Solvent Usage					26.83	
Fueling Station					2.98	
Cooling Towers	23.2	23.2				
Haul Roads[1]	240.7	135.1				
Storage Piles[1]	9.68	4.84				
Wastewater Ponds					20.5	
TOTALS	273.6	163.1			50.3	
Division Database - 1996 Actual Emissions	1.19	1.19	55.44	0.24	33.67	13.86

[1] Fugitive dust emissions

PLANT POTENTIAL TO EMIT, TONS PER YEAR

	PM	PM_{10}	NO_X	SO_2	VOC	CO	Lead
Rail Mill	1.80	1.80	198.3	0.20	12.4	14.4	
Rod/Bar Mill	1.97	1.97	216.2	0.24	28.8	15.7	
Seamless Mill	11.9	11.9	623.0	0.90	128.3	57.8	
Steelmaking	368.1	212.6	707.3	779.1	390.9	20,047	10.3
Utilities	273.6	163.1			50.3		
TOTAL	657.4	391.4	1745	780.4	610.7	20135	10.3
Division Database - 1996 Actual Emissions	151.2	94.6	1,077	317.9	248.9	1,900	0.0017

PTE PLANT EMISSIONS, POUNDS PER YEAR

	Rail	Wire	Rod/Bar	Seamless	Steel	Utilities	TOTALS	Division Database 1996 Plant Totals
Styrene 100425[a]			43200	18000			61200	
Ethylbenzene 100414			4800	2000		268	7068	
Toluene 108883	6000		800	5000		268	12068	4980
MIBK 108101	1600		200	1000			2800	
Arsenic Compounds					50		50	12
Cadmium Compounds					556		556	111
Chromium Compounds					1902		1902	689
Mercury					238		238	
Manganese					29460		29460	
Nickel Compounds					238		238	
Ferromanganese					6		6	

Silicomanganese					278		278	
Ferrochromium					20		20	
Hydrochloric Acid 7647010		326					326	
Methanol 67561	2400			800			3200	
2-Butoxyethanol 111672				800			800	
Xylene 1330207				6600		538	7138	796
MEK 78933				4200			4200	
Trichloroethane 71556				180			180	
Glycol ethers	400			5800			6200	
TCA 79005						268	268	
Perchloroethylene 127184						268	268	320
Methylene chloride 75092	7000						7000	
Hexane								9560
Benzene								19414
Lead Compounds								533

[a] Chemical Abstract Services identification number

Hexane, benzene and the lead compounds are reported in the 1996 database but not in the Title V application. These hazardous air pollutants were emitted in the past but were no longer in use at the time the Title V application was prepared. CF&I has not submitted a Revised APEN to report zero emissions for these hazardous air pollutants.

III. EMISSION SOURCES:

The following sources are specifically regulated under terms and conditions of the Operating Permit for this production center.

General Plant Solvent Usage

1. Applicable Requirements: This source was grandfathered from the regulatory requirement for a construction permit. Since the area is in attainment for ozone only the State-wide requirement of Section V of Regulation No. 7 requiring the proper disposal of VOC materials applies.

2. Emission Factors: The solvent used throughout the plant is provided by the Safety-Kleen Company. The spent solvent is picked-up for reprocessing and disposal by Safety-Kleen. The difference in the amount of solvent delivered and returned for recycle is considered to be the lost by evaporation.

3. Monitoring Plan: Monitoring will consist of keeping an inventory of the material delivered and returned to Safety-Kleen. The Division experience has been that a monthly evaluation of the material use inventory provides for improved accounting of the use of the material. The emissions, however, will be calculated on an annual basis. The Division accepts that a VOC source does not normally generate an opacity problem. The permittee will provide an annual certification that the opacity standard has not been exceeded.

4. Compliance Status: The Division accepts that this source was in compliance at the time the application was prepared based on the information provided in the application and the self-certification performed by the applicant.

Fueling Station

1. Applicable Requirements: This source was grandfathered from the regulatory requirement for a construction permit. Since the area is in attainment for ozone only the State-wide requirement of Section V of Regulation No. 7 requiring the proper disposal of VOC materials applies.

2. Emission Factors: The emissions are produced by the underground storage and dispensing of unleaded gasoline. The EPA TANKS2 software was used to determine the

storage tank emissions. AP-42 was used for the VOC emission factor for the dispensing of the fuel.

3. Monitoring Plan: The Division's experience has been that an annual determination of the fuel throughput for the fueling system is satisfactory for the determination of the emissions.

4. Compliance Status: The Division accepts that this source was in compliance at the time the application was prepared based on the information provided in the application and the self-certification performed by the applicant.

Cooling Towers

1. Applicable Requirements: This source was grandfathered from the regulatory requirement for a construction permit.

2. Emission Factors: Cooling tower emissions are created by the loss of water droplets to the atmosphere. The evaporation of the droplet leaves the mineral content of the water as PM_{10} particulate emissions. The water droplet loss is identified as the drift loss. An AP-42 factor was used for the drift loss. The amount of drift loss is related to the tower design and the water flow rate through the tower. The mineral content (Total Dissolved Solids) of the recirculating water is a function of the mineral content of the fresh water supplied and the amount of water lost by evaporation from the tower. There are four separate cooling towers, each with its' own flow rate and each with a slightly different amount of dissolved solids in the tower recirculating water. The total dissolved solids values for the towers are all in a similar range allowing the use of an average total dissolved solids content for the towers.

3. Monitoring Plan: The cooling tower emissions are primarily water vapor making an opacity observation invalid. It is not reasonable to assume that the amount of total dissolved solids released from the evaporation would be of a magnitude to create an opacity problem. The amount of water circulated through the tower will be recorded on a monthly basis to allow recognition of tower down times. An annual determination of the total dissolved solids is considered to provide adequate information to estimate the particulate emissions.

4. Compliance Status: The Division accepts that this source was in compliance at the time the application was prepared based on the information provided in the application and the self-certification performed by the applicant.

Haul Roads

1. Applicable Requirements: This source was grandfathered from the regulatory requirement for a construction permit. The pertinent applicable requirements for this source of fugitive particulate emissions are to minimize the emissions (Regulation No. 1, Section III.D.1.a), and APEN reporting (Regulation No. 3, Part A, Section II). The 20% opacity, no off-property transport and nuisance emission limitations identified in Regulation 1, Section III.D.1.c are guidelines, not enforceable standards. However, failure to comply with the guidelines may trigger the Division to require a fugitive dust control plan be submitted. The file information indicates a fugitive particulate emissions control plan has not been required to avoid a problem with the off-site transport of fugitive dust.

While PM and PM_{10} fugitive particulate emissions are subject to the APEN reporting requirements, they but are not subject to annual emission fees.

2. Emission Factors: Fugitive emissions are emissions that are not discharged to the atmosphere in a confined flow stream. The combination of wind and vehicle traffic create fugitive particulate emissions from the roads. The fugitive emissions are categorized as particulate matter (PM), which is typically particulates with a relatively coarse size range, and particulate matter less than 10 microns in diameter (PM_{10}).

AP-42 provides different emission factors for paved and unpaved road surfaces. The factors are a composite of a number of independent variables that have to be evaluated. The variables include such things as the soil silt content, vehicle speed, number of wheels on a vehicle and similar type information. Once the variables have been assigned values, the estimated emissions become a function of the number of miles traveled by an identified type of vehicle. The permittee used Section 1.25 of AP-42 to compile the emission factors for various vehicles and road surfaces. The Division reviewed and accepts the following emission factors provided in the Title V application.

	PAVED ROAD		UNPAVED ROAD	
EQUIPMENT	PM, lb/VMT	PM_{10}, lb/VMT	PM, lb/VMT	PM_{10}, lb/VMT
CTEC	0.78	0.44	7.3	4.1
Dump Trucks	0.78	0.44	1.8	1.0
Straddle Carriers	0.7816	0.44	1.8	1.0

VMT = Vehicle Miles Traveled

3. Monitoring Plan: As noted above, once the emission factors have been determined the emissions can be estimated by monitoring the number of miles traveled (VMT) on the paved or unpaved road by a vehicle with a given number of wheels (vehicle group such as CTEC, dump truck, straddle carrier, passenger car, etc). Fugitive particulate emissions are usually controlled by the application of water or chemicals to the road surface. Visual observations provide sufficient information to identify when a problem is developing and the need for corrective action.

4. Compliance Status: The Division accepts that this source was in compliance at the time the application was prepared based on the information provided in the application and the self-certification performed by the applicant.

Storage Piles

1. Applicable Requirements: This source was grandfathered from the regulatory requirement for a construction permit. The pertinent applicable requirements for this source of fugitive particulate emissions are to minimize fugitive particulate emissions (Regulation No. 1, Section III.D.1.a), and APEN reporting (Regulation No. 3, Part A, Section II). The 20% opacity, no off-property transport and nuisance emission limitations identified in Regulation 1, Section III.D.1.c are guidelines, not enforceable standards. However, failure to comply with the guidelines may trigger the Division to require a fugitive emissions control plan be submitted. The file information indicates a fugitive particulate emissions control plan has not been required to avoid a problem with the off-site transport of fugitive particulate emissions.

While PM and PM_{10} fugitive particulate emissions are subject to the APEN reporting requirements, they but are not subject to annual emission fees.

2. Emission Factors: Fugitive emissions are emissions that are not discharged to the atmosphere in a confined flow stream. The combination of wind and the exposed surface area create fugitive particulate emissions from the storage piles. The fugitive particulate emissions are categorized as particulate matter (PM), which is typically particulates with a relatively coarse size range, and particulate matter less than 10 microns in diameter (PM_{10}).

The Title V application provided a particulate emission factor of 1290 pounds per acre and a 10 micron particulate emission factor of 645 pounds per acre. The Division accepts these factors.

3. Monitoring Plan: As noted above, once the emission factors have been determined the emissions can be estimated from the amount of exposed surface area of the storage piles.

Fugitive particulate emissions may be controlled by wetting the stored material with water or chemicals, compaction and grading of the stored material. Visual observations provide sufficient information for when a problem is developing and the need for corrective action.

4. Compliance Status: The Division accepts that this source was in compliance at the time the application was prepared based on the information provided in the application and the self-certification performed by the applicant.

Water Treatment Ponds

1. Applicable Requirements: This source was grandfathered from the regulatory requirement for a construction permit. Since the area is in attainment for ozone only the State-wide requirement of Section V of Regulation No. 7 requiring the proper disposal of VOC materials applies.

2. Emission Factors: One of the pollutants removed by the pond treatment process is oil. The Title V application reported the oil treatment process resulted in VOC emissions. The emissions are based on the amount of oil used in a year and the VOC content of the oil.

3. Monitoring Plan: The amount of oil used is determined from an annual inventory.

4. Compliance Status: The oil discharged to the ponds is broken down by biological processes and not by evaporation. The Division accepts this treatment process complies with the requirements of Section V of Regulation No. 7. The Division accepts that this source was in compliance at the time the application was prepared based on the information provided in the application and the self-certification performed by the applicant.

Insignificant Sources

Several insignificant sources of emissions related to this production process are noted in the Title V application. These were cited by the use of the general categories provided in the Title V application forms, and no specific source or equipment was noted. On an annual basis the applicant will have to review the estimated emissions from these insignificant sources to determine if they are still insignificant and in compliance.

Alternate Operating Scenarios

No alternative operating scenarios were identified.

Permit Shield

The intent of the permit shield is to provide limited protection to the facility in the event of an error in the evaluation of whether a regulation, or portion of a regulation applies. The facility identifies the issue and presents its position. The Division reviews the position. If the Division and the facility mutually agree on the position, the issue is recorded in the permit. If, at a later date, it is determined that an error was made in the mutual decision, the facility is protected from enforcement action until the permit can be reopened and the correct requirements and a compliance schedule inserted.

For this Title V application, where a request for the shield protection for a specific applicable requirement, or a specific section of an applicable requirement, and a proper justification provided for the request, the shield was granted. The permit shield was not granted for requests for a blanket protection from all portions of a regulation. The Division finds this type of blanket protection is too broad and general for the shield protection to be properly interpreted and granted.

Miscellaneous

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. Obviously, 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.

Addendum

The Operating Permit draft documents addressed the cooling towers as sources grandfathered from the regulatory requirement for Construction Permits. While reviewing permittee comments on the draft documents a permit application and supporting documents for a Construction Permit for the cooling tower emissions was discovered. The application documents reported that the cooling towers were not grandfathered from the regulatory requirements for a Construction Permit. The cooling tower emissions were established directly in the Operating Permit prior to the Public Comment review.

The due date of the first semi-annual monitoring report required by this operating permit will be more than 180 days after the equipment commenced operation. The Division considers the Responsible Official certification submitted with the semi-annual report will serve as the self-certification for the limits established. The Division accepts the responsible official signature of the Title V application as evidence of compliance for all the sources at the plant at the time the Title V application was submitted.