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February 20, 1991

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

RECEIVED

FEB 26 1991

DER-BAQM

Re: CFI Sulfuric Acid Plants "C" and "D" Permit Modification
AC29-186931

Dear Cindy:

As discussed earlier, I inspected the above referenced source in October 31, 1990 and found no problems. If it is not too late, I would like to incorporate the following NEDS and point I.D.'s for these sources in the preliminary evaluation:

Sulfuric Acid Plant "C": 0005-07
Sulfuric Acid Plant "D": 0005-08

Enclosed please find a copy of "Memorandum of Understanding Regarding Best Operational Start-up Practices for Sulfuric Acid Plants", which was jointly agreed by the DER and CF Industries on November 1, 1989. I would like to request that this document be included or mentioned in the preliminary evaluation. For your information, Jim Pennington and I participated in achieving this agreement.

I also request the incorporation of Chapter 1-3.63(a), Rules of the Environmental Protection Commission of Hillsborough County (copy enclosed) which are more restrictive than 17-2.250(1), F.A.C.

Ms. Cindy Phillips
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Please call if you have any questions or wish to discuss any recommendations in the forthcoming operating permit.

Sincerely,



Carlos C. Gonzalez
Air Permit Engineer

bm

cc: J. Harry Kerns, P.E., FDER SW-District

Enclosures

Adopted 2/26/86
Amended 8/7/86

The ability to comply with all other standards does not relieve a source from this 20% opacity standard.

1-3.63 Specific Source Emissions:

Emissions for the following specific sources shall have the following limits in Hillsborough County regardless of provisions otherwise contained in this rule or in Part VI of Chapter 17-2, F.A.C.:

(a) sulfuric acid plants or plant sections manufacturing sulfuric acid - 10% opacity except for a 30 minute period during plant startup, with opacity for such period allowed up to 40%.

(b) nitric acid plants producing weak nitric acid (50 to 70%) by pressure or atmospheric pressure process - no visible emissions.

(c) existing fossil fuel steam generators - sulfur dioxide emissions shall be limited to 1.1 pounds per million BTU heat input when liquid fuel is burned.

(d) fossil fuel steam generators - visible emissions are limited to 20% opacity except for excess emissions and except for any two minute period in any hour where opacity to 40% is allowed.

PART 7

1-3.70 Source Sampling and Monitoring:

Source sampling and monitoring shall be performed in compliance with Department and EPA requirements so as to determine as accurately as possible actual operational emissions.

PART 8

1-3.80 Mobile Source:

(1) No person shall cause, let, permit, suffer or allow the emission of smoke from motor vehicles on public roadways which is visible within the proximity of the engine exhaust outlet for a period of more than (5) five seconds.

(2) For purposes of this part:

(a) "smoke" is defined as small gasborne and airborne particles, exclusive of water vapor, from a process of combustion, in sufficient number to be visible

MEMORANDUM OF UNDERSTANDING
REGARDING BEST OPERATIONAL START-UP PRACTICES
FOR SULFURIC ACID PLANTS

The parties jointly agree: for the purposes of Rule 17-2.250, the foregoing practices constitute "best operational practices" for the start-up of sulfuric acid plants.

The Department will not seek to incorporate these practices into permits for existing facilities during the first 18 months after implementation. After the expiration of this 18-month period, which is a typical catalyst cycle, the Department may seek to modify the permits, in accordance with Rule 17-4.080 and other applicable laws, to incorporate appropriate site-specific start-up procedures as enforceable permit conditions.

These Sulfuric Acid Plant Best Operation Start-Up Practices will be made available in the control room at all times.

Since these specific procedures are undergoing evaluation, the Department will not consider these practices to be the only means of demonstrating best operating procedures. If a company chooses to use another method, it will be its responsibility to demonstrate that it constitutes best operational practices in accordance with 17-2.250, F.A.C.

BEST OPERATIONAL START-UP PRACTICES
FOR SULFURIC ACID PLANTS

1. Only one sulfuric acid plant at a facility should be started up and burning sulfur at a time. There are times when it will be acceptable for more than one sulfuric acid plant to be in the start-up mode at the same time, provided the following condition is met. It is not acceptable to initiate sulfur burning at one sulfuric acid plant when another plant at the same facility is emitting SO₂ at a rate in excess of the emission limits imposed by the permit or rule, as determined by the CEMS emission rates for the immediately preceding 20 minutes.

2. A plant start-up must be at the lowest practicable operating rate, not to exceed 70 percent of the designated operating rate, until the SO₂ monitor indicates compliance. Because production rate is difficult to measure during start-up, if a more appropriate indicator (such as blower pressure, furnace temperature, gas strength, blower speed, number of sulfur guns operating, etc.) can be documented, tested and validated, the Department will accept this in lieu of directly documenting the operating rate. Implementation requires the development of a suitable list of surrogate parameters to demonstrate and document the reduced operating rate on a plant-by-plant basis. Documentation that the plant is conducting start-up at the reduced rate is the responsibility of the owner or operator.

3. Sulfuric acid plants are authorized to emit excess emissions from start-up for a period of three consecutive hours provided best operational practices, in accordance with this agreement, to minimize emissions are followed. No plant shall be operated (with sulfur as fuel) out of compliance for more than three consecutive hours. Thereafter, the plant shall be shut down. The plant shall be shut down (cease burning sulfur) if, as indicated by the continuous emission monitoring system, the plant is not in compliance within three hours of start-up. Restart may occur as soon as practicable following any needed repairs or adjustments, provided the corrective action is taken and properly documented.

4. Cold Start-Up Procedures.

a. Converter.

(1) The inlet and outlet temperature at the first two masses of catalyst shall be sufficiently high to provide immediate ignition when SO₂ enters the masses. In no event shall the inlet temperature to the first mass be less than 800°F or the outlet temperature to the first two masses be less than 700°F.

These temperatures are the desired temperatures at the time the use of auxiliary fuel is terminated.

(2) The gas stream entering the converter shall contain SO_2 at a level less than normal, and sufficiently low to promote catalytic conversion to SO_3 .

b. Absorbing Towers.

The concentration, temperature and flow of circulating acid shall be as near to normal conditions as reasonably can be achieved. In no event shall the concentration be less than 96 percent H_2SO_4 .

5. Warm Restart.

a. Converter.

The inlet and outlet temperatures of the first two catalyst masses should be sufficiently high to ensure conversion. One of the following three conditions must be met:

(1) The first two catalyst masses inlet and outlet temperatures must be at a minimum of 700°F ; or

(2) Two of the four inlet and outlet temperatures must be greater than or equal to 800°F ; or

(3) The inlet temperature of the first catalyst must be greater than or equal to 600°F and the outlet temperature greater than or equal to 800°F . Also, the inlet and outlet temperatures of the second catalyst must be greater than or equal to 700°F .

Failure to meet one of the above conditions, requires use of cold start-up procedures.

To allow for technological improvements or individual plant conditions, alternative conditions will be considered by the Department in appropriate cases.

b. Absorbing Towers.

The concentration, temperature and flow of circulating acid shall be as near to normal conditions as reasonably can be achieved. In no event shall the concentration be less than 96 percent H_2SO_4 .

Steve Smallwood 10-10-89

Attorney

Nov. 1, 1989

Steve Smallwood, P.E. Date
Director, Division of Air
Resources Management
Department of Environmental
Regulation
Twin Towers Office Building
2600 Blair Stone Road
Tallahassee, FL 32399-2400

CP Industries, Inc. Date

Date