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Arkansas Department of Pollution Control and Ecology
Division of Air Pollution Control

Summary Report Relative to Permit Application

Submitted By: Nekoosa Papers, Inc.
Ashdown, Arkansas (Little River County)

CSN: 410002 Permit No.: 946-A Date Issued: 7 /14/89

Replaced by 0287-AR-7

Submittals: 4/18/88, 4/29/88, 3/8/88, 1/11/89, 1/26/89,
3/2/89, 3/27/89, 4/17/89

Summary

Nekoosa Papers, Inc. (NPI) Ashdown, Arkansas, facility proposes to convert the existing No. 1 recovery boiler to a power boiler. The converted boiler will be known as the No. 3 Power Boiler. In addition, NPI will construct a new lime kiln, to be known as the No. 3 Lime Kiln. Both of these modifications are a result of an expansion to the No. 64 paper machine.

These changes at NPI constitute a major modification to an existing major source, and, as such, NPI is required to do a Prevention of Significant Deterioration (PSD) review. The No. 1 recovery boiler was used as an offset source as part of a PSD permit application submitted in January, 1987. The converted boiler is considered a new source. The impact on ambient air quality was determined according to the requirements of the PSD review.

The pollutants subject to the PSD review process are sulfur dioxide (SO₂), total suspended particulate matter (TSP), particulate matter less than 10 microns (PM₁₀), carbon monoxide (CO), volatile organic compounds (VOC's) and nitrogen dioxide (NO₂). In addition to the pollutants reviewed for the PSD process, total reduced sulfur (TRS) was analyzed.

Modeling was done using the Industrial Source Complex - Short Term (ISCST) model with a five year meteorological data base. The meteorological data was for the city of Shreveport, Louisiana, the closest city with the data.

| | |
|----------------------------------|------------------------------|
| Installation: Upon Permit | Operation: Upon Construction |
| Control Equipment: \$5,928,000 | Total Project: \$450,000,000 |
| Reviewed By: David Morrow | Approved By: J. B. Jones |
| Applicable Regulation: Air Code, | SIP, NSPS, PSD |

Results of dispersion modeling showed that TSP/PM10, CO, and TRS were below the corresponding significant impact increments, and no additional air quality impact analyses were required.

No significant impact increments for VOC have been promulgated. NPI chose to do additional modeling for TSP/PM10 which was included in the PSD increment modeling.

For SO2, TSP/PM10 and NO2 the proposed modifications and the existing PSD increment consuming sources were modeled with the five-year database to identify the maximum PSD increment consumption. A maximum of 50 percent of the annual increment and 80 percent of short term increment consumption is allowed. SO2 and NO2 were both below these maximums. TSP/PM10 showed an increment consumption in excess of the 80 percent of the short term increment. A variance to the 80 percent short term increment consumption is allowed since the PSD Class II increment of 37 ug/m3 is not violated and there is sufficient increment for additional development of new sources within the area.

SO2 and NO2 were both modeled for compliance with National Ambient Air Quality Standards (NAAQS). Modeling for both pollutants showed them to be less than the applicable NAAQS limits.

The Caney Creek National Wilderness Area is located 90 kilometers (56 miles) North of the Ashdown, Arkansas, plant. The Caney Creek National Wilderness is a Class I area. Modeling indicated that the SO2, NO2, and TSP/PM10 air quality impact on this area, with the inclusion of all other PSD increment-consuming sources in the area of review, consumes less than twenty (20) percent of the Class I PSD increment. A Level I Visibility Screening Analysis was conducted for the Caney Creek Area. This screening indicated the visibility impact of the proposed modification is below significant levels.

NPI did not exceed any of the monitoring de minimis concentrations and is not required to conduct preconstruction ambient air monitoring.

NPI's No. 3 Power Boiler will use waste bark and/or natural gas as a fuel. The boiler will have a maximum heat input of 790 MMBTU/hr and a maximum steam generation of 450,000 lbs/hr, achieved using both bark and natural gas as fuel.

Best Available Control Technology (BACT) for the No. 3 Power Boiler for TSP/PM10 is an electrostatic precipitator (ESP).

BACT for the No. 3 Power Boiler for SO2 is the use of low sulfur fuels of bark and natural gas.

BACT for the No. 3 Power Boiler for NO2 is the use of low NOx burners and low excess air.

BACT for the No. 3 Power Boiler for CO is combustion control and boiler operation.

BACT for the No. 3 Power Boiler for NMVOC is boiler combustion control.

The No. 3 Lime Kiln will have a maximum capacity of 440 tons per day of lime. The No. 3 Lime Kiln will use both natural gas and oil as fuels.

BACT for the No. 3 Lime Kiln for TSP/PM10 is an ESP.

BACT for the No. 3 Lime Kiln for SO2 is the use of low sulfur fuels, and combustion control.

BACT for the No. 3 Lime Kiln for NOx is the use of proper burner design and control of excess oxygen.

BACT for the No. 3 Lime Kiln for CO is proper kiln operation.

BACT for the No. 3 Lime Kiln for TRS is proper kiln operation.

A complete list of emission limits for both the No. 3 Power Boiler and the No. 3 Lime Kiln may be found in Table I.

SPECIFIC CONDITIONS

1. Emissions shall not exceed the emission limits set forth in Table I.
2. Visible emissions shall not exceed 20 percent opacity as measured by USEPA Method 9.

Operation of the following sources shall comply fully with the federal New Source Performance Standards (NSPS) (Attachment 1), except where this permit requires more stringent standards.

1. SN-01 (No. 3 Power Boiler ESP exit) Subparts A and Db
2. SN-02 (No. 3 Lime Kiln ESP exit) Subparts A and BB

No. 3 Power Boiler

3. The following are limits for steam generation capacity and heat input:

| Fuel | Steam Generation lbs/hr | Heat Input MMBTU/hr |
|--------------------------|----------------------------|------------------------|
| 1. Bark | 350,000 | 620 |
| 2. Natural Gas | 450,000 | 670 |
| 3. Natural Gas & Bark | 450,000 | 790 |

4. When maintenance is required on the ESP there shall be no bypass of the unit. For situations where the boiler is not shut down for ESP maintenance, one chamber of the ESP shall be isolated. Boiler operation shall be limited to 70 percent of full load rating. NPI shall notify ADPC&E within 24 hours of any ESP maintenance which requires one chamber being removed from service. NPI shall not exceed the limit for particulate shown in Table I during this operation.
5. NPI shall notify ADPC&E, in writing, within 30 days of bringing the No. 3 Power Boiler on-line.
6. Within 120 days from the date the No. 3 Power Boiler comes on-line, NPI shall test for the following pollutants:

| Pollutant | Test Method |
|--------------------|-----------------|
| 1. TSP | USEPA Method 5 |
| 2. SO ₂ | USEPA Method 6 |
| 3. NO _x | USEPA Method 7 |
| 4. CO | USEPA Method 10 |

7. NPI shall conduct a separate test for particulates with the boiler at 70 percent of maximum and one chamber of the ESP shut down. This shall be a separate test and only particulate is required to be tested. This testing shall be conducted one time during initial compliance testing. If the unit fails to meet emission limits for particulate additional testing shall be required.
8. Tests shall be conducted with the boiler operation over 90 percent of permitted capacity for each fuel or combination of fuels and while burning 100 percent bark, 100 percent natural gas, and 50 percent bark-50 percent natural gas.
9. NPI shall submit test results to the ADPC&E within two weeks of receipt of results from the testing firms, or within 45 days of the date of the tests if performed by NPI.
10. NPI shall use only natural gas or bark to fire the No. 3 Power Boiler. No other fuels shall be used.
11. Test results may, at the discretion of the ADPC&E, be used to determine violations of emission limits or conditions of this permit.

No. 3 Lime Kiln

12. The No. 3 Lime Kiln shall use only natural gas or fuel oil as fuel. If fuel oil is used it shall be No. 6 fuel oil with a sulfur content not to exceed 2 percent.
13. NPI shall notify the ADPC&E, in writing, prior to using fuel oil to fire the No. 3 Lime Kiln.
14. No noncondensable TRS gases shall be incinerated in the No. 3 Lime Kiln.
15. When maintenance is required on the ESP there shall be no bypass of the unit. For situations where the kiln is not shut down for ESP maintenance, one chamber of the ESP shall be isolated. Kiln operation shall be limited to 70 percent of full load rating. NPI shall notify ADPC&E within 24 hours of any ESP maintenance which requires one chamber being removed from service. NPI shall not exceed the limit for particulates shown in Table I while on one chamber.
16. NPI shall notify ADPC&E, in writing, within 30 days of bringing the No. 3 Lime Kiln on-line.
17. Within 120 days from the date the No. 3 Lime Kiln comes on-line, NPI shall test for the following pollutants:

| Pollutant | Test Method |
|--------------------|--|
| 1. TSP | USEPA Method 5 |
| 2. SO ₂ | USEPA Method 6 |
| 3. NO _x | USEPA Method 7 |
| 4. CO | USEPA Method 10 |
| 5. TRS | USEPA Method 16A or USEPA Method 16 |

18. NPI shall conduct the tests required in Section 17 for the No. 3 Lime Kiln fired both with natural gas and No. 6 fuel oil. A separate test run shall be conducted for each fuel.
19. NPI shall conduct a separate test for particulates with the No. 3 Lime Kiln at 70 percent of full load and one chamber of the ESP shut down. This shall be a separate test and only particulate is required to be tested. This shall be done for both natural gas and fuel oil. This testing shall be conducted one time during initial compliance testing. If the unit fails to meet emission limits for particulate additional testing shall be required.
20. The No. 3 Lime Kiln shall be tested with the No. 3 Lime Kiln operating at greater than 90 percent of permitted capacity.

21. NPI shall submit both sets of test results to the ADPC&E within two weeks of receipt of results from the testing firms, or within 45 days of the date of the tests if performed by NPI.
22. Should the No. 3 Lime Kiln test results show that NPI fails to meet the limits shown in Table I for SO₂ NPI shall within 60 days submit a schedule for the expeditious retrofitting of the No. 3 Lime Kiln with a scrubber designed to reduce SO₂ emissions to within the permitted limit.
23. Test data and continuous emission monitoring (CEM) data may, at the discretion of the ADPC&E, be used to determine violations of emission limits or conditions of this permit.
24. Certification of continuous emission monitoring equipment as required by 40 CFR 60, Appendix B shall be completed within 120 days of start-up.
25. 45 days following the completion of the testing required by Specific Conditions 6 and 17 and the certification of the CEM's through the Performance Specification Testing as required by Specific Condition 24, NPI shall provide the ADPC&E with the results of the performance demonstrations.
26. In addition to the CEM's required by 40 CFR 60, Subparts D and Db, NPI shall install, operate, and maintain a continuous emission monitor for the measurement of sulfur dioxide emissions from Power Boiler No. 3. This instrument shall conform fully with all aspects of 40 CFR 60, Subpart A and Appendix B, and all Conditions of this permit.

TABLE I
Allowable Emission Rates

| SN | Source | Pollutant | lb/hr | lb/MMBTU |
|----|--------------------|-----------|-------|----------|
| 01 | No. 3 Power Boiler | PM | 19.75 | 0.025* |
| | | SO2 | 62.0 | 0.1@ |
| | | NOx | 237.0 | 0.30& |
| | | CO | 276.5 | 0.35@ |
| | | NMVOC | 21.3 | 0.027@ |

| SN | Source | Pollutant | Limit |
|----|-----------------|---|--|
| 02 | No. 3 Lime Kiln | (All limits are for fuel oil or natural gas except where noted) | |
| | | PM | 0.034 GR/DSCF (GAS-FIRED)* 0.067 GR/DSCF (OIL-FIRED)* |
| | | SO2 | 0.727 lb/Ton CaO (13.3 lb/hr)@ |
| | | NOx | 3.63 lb/Ton CaO (66.5 lb/hr)@ |
| | | CO | 3.0 lb/Ton CaO (55 lb/hr)@ |
| | TRS | 8 ppmv (dry basis) corrected to 10% O2 & | |

* Less than NSPS Limit for this Pollutant
& Equal to NSPS Limit for this Pollutant
@ No NSPS Limit for this Pollutant