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OZONE REDUCTION
IN
THE GREATER WAKE COUNTY AREA

An Application under Project XL
Submitted Jointly

by

The Weyerhaeuser
and
Carolina Power and Light
Companies
Moncure, North Carolina

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Introduction

This Project XL proposal is a joint project between the Weyerhaeuser Company, Carolina Power & Light Company and the State of North Carolina to reduce the emissions of ozone precursors and the formation of ozone in the greater Wake County area of North Carolina. This ozone reduction will be accomplished by way of a project at Weyerhaeuser's Moncure, North Carolina wood products manufacturing facility and the adjacent Carolina Power & Light steam power generating plant.

Weyerhaeuser is one of the world's largest forest products companies. The Company manufactures pulp, paper and wood products primarily from its 5 million acres of timberlands located across the United States and 17 million acres under license in Canada. Weyerhaeuser operates more than 100 manufacturing facilities and employs more than 39,000 people throughout the United States and Canada. Environmental protection is an integral part of our business, and our environmental policies and strategies reflect the concerns and interests of our customers, suppliers, employees, shareholders and local communities.

The Weyerhaeuser Moncure operation includes Microboard (particleboard) and Medium Density Fiberboard manufacturing facilities producing 170 million square feet per year of composite wood panel products utilized to produce furniture and cabinetry. This facility, located in Chatham County, North Carolina has been part of the North Carolina business community since 1971. The facility has approximately 300 employees with an annual economic contribution of over $43 million in North Carolina. As with other Weyerhaeuser wood products facilities, Moncure's long term environmental vision is the continuous improvement of processes and equipment that will achieve a minimum impact on the environment.

Carolina Power & Light Company provides electric power to approximately one million customers in eastern and western North Carolina and central South Carolina. Headquartered in Raleigh, Carolina Power & Light serves a 30,000-square-mile territory with a population of 3.5 million. Carolina Power & Light has 16 power plants which represent a flexible mix of fossil, nuclear and hydroelectric sources with a total generating capacity of 9,613 megawatts. Carolina Power & Light's strategic geographic location facilitates purchase and sale of power with many other electric utilities.

Carolina Power & Light's Cape Fear Steam Electric Plant is located directly adjacent to the Weyerhaeuser facility in Moncure, North Carolina.

Project Description

Approximately a year ago, Weyerhaeuser submitted a Prevention of Significant Deterioration (PSD) permit application to the state of North Carolina's Division of Environmental Management (DEM) proposing a major expansion of the Moncure wood products facility. Approval of this application was complicated because of the facility's location near the county line of Chatham and Wake counties. Wake County has recently been redesignated as an ozone attainment area. Despite this fact, ambient ozone concentrations in the area continue to

be relatively high. In addition, the greater Wake County area continues to experience rapid population growth. Consequently, this area is at risk of again becoming ozone non-attainment. Indeed, it is only through careful air quality management that the area is not currently in non-attainment.

During the approximately two-year effort by the State to have the area redesignated as in attainment for ozone, considerable use was made of and experience gained with the EPA-approved Urban Air Shed Model (UAM) program. This model estimates the formation of ozone over large domains (*e.g.*, almost the entire state) taking into account both biogenic and anthropogenic emission sources, including motor vehicles, as well as the meteorology of the domain. From that experience, it became apparent that ozone formation in the greater Wake County area is NO_x- limited. This means that the ambient concentrations of VOCs are relatively high as compared with NO_x, and that the reduction of VOCs will not, therefore, reduce ozone formation appreciably. In fact, the control of NO_x was inferred to be a more effective strategy to control ozone formation.

The Weyerhaeuser Moncure expansion would result in a significant increase in the emission of VOCs, which is a PSD regulated pollutant under the Clean Air Act. Therefore, the facility would be required to install the Best Available Control Technology (BACT) to abate the VOC emissions associated with the expansion, regardless of whether such controls would reduce ozone. The BACT technology selected for control of VOCs at Moncure would require the installation of incineration technology on the dryers and a biofilter on the press vent exhaust.

During the application review however, the engineering staff at the State correctly identified (*i*) that the reduction of VOCs from the Moncure facility would result in little if any measurable decrease in the ambient ozone concentration in the surrounding area and (*ii*) that incineration would actually produce small quantities of NO_x while destroying the VOCs, and that these NO_x emissions could contribute to an increase in the ambient ozone concentration. The staff was particularly concerned since previous UAM modeling had indicated the importance of NO_x in this part of the state for ozone formation. From the ensuing preliminary investigation, which included further simulations using the UAM, it became clear that the NO_x emissions from nearby existing sources combine with ambient VOCs to form ozone. Recognizing this fact, Carolina Power and Light (CP&L), which operates one of the NO_x sources near to Weyerhaeuser's Moncure facility, came to the State with a proposal to limit its NO_x emissions in lieu of less effective NO_x and VOC controls being contemplated at Weyerhaeuser's Moncure facility in an effort to reduce the formation of ozone in the Wake County area.

Under this Project XL proposal, Carolina Power & Light would commit to establishing and complying with a new limit on its NO_x emissions while being reimbursed by Weyerhaeuser for the equipment, installation, and operating costs associated with reducing the emissions.

Technical Basis for Emission Exchange

The proposed exchange of emission reductions between the Weyerhaeuser and CP&L companies is founded on the chemistry of ozone formation. Specifically, because ozone formation is complex and dependent on many variables, the possibility exists that no one air quality management strategy is optimal in different airsheds.

Very simply, ozone is formed in the troposphere through a series of chemical reactions involving the oxides of nitrogen[1].

$$NO_2 + h\nu \rightarrow NO + O \quad (1)$$

$$O + O_2 + M \rightarrow O_3 + M \quad (2)$$

where M is any molecule. These reactions lead to the formation of ozone. The ozone formed can also react with NO to form NO_2 via,

$$O_3 + NO \rightarrow NO_2 + O_2 \quad (3)$$

An equilibrium would be established without further consideration of atmospheric species. However, in the presence of other molecules, this equilibrium can be shifted towards the formation of ozone. In particular, organic molecules can contribute to this shift by providing other reaction pathways for the destruction of NO that do not involve ozone. For example,

$$RCHO + h\nu \rightarrow R\cdot + HCO\cdot \quad (4)$$

$$R\cdot + O_2 \rightarrow RO_2\cdot \quad (5)$$

$$RO_2\cdot + NO \rightarrow NO_2 + RO\cdot \quad (6)$$

This serves to decrease the destruction rate of ozone.

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[1]The description of ozone formation chemistry follows that given in any standard air quality text including *Atmospheric Chemistry and Physics of Air Pollution* by John H. Seinfeld, published by John Wiley, 1986.

The organic precursors in this system is represented by the organic molecule RCHO (an aldehyde) but it could be any of many different VOCs. Its reaction with sunlight to form R• is the initiation of a chain reaction which leads to the conversion of more than one molecule of NO to NO_2.

The importance of volatile organic compounds (VOCs) in contributing to the formation of ozone has been recognized for many years. More specifically, those VOCs were identified which, when broken down by sunlight via reaction (4), formed more reactive precursors to ozone. These *photochemically reactive* VOCs were then regulated under the Clean Air Act to manage ozone formation. While this approach was certainly effective, it has more recently be found that this approach is most effective in areas where the ambient ratio of VOCs to NO_x concentrations were relatively low. For example, in large metropolitan areas with a large population of motor vehicles and industrial activity, the reduction in VOCs appeared to be effective.

However, in less populated and less industrialized airsheds where the ratio of VOCs to NO_x is typically higher, it has been shown that the reduction of VOCs is less effective in reducing ozone formation. Under these conditions NO_x is consumed while an abundance of photochemically reactive VOCs remain. The production of ozone is limited by the amount of ambient NO_x. As a result, decreasing VOCs has little or no effect on the ambient ozone concentration while small changes in NO_x can affect ozone formation more significantly.

Thus, the relative ambient concentrations of VOCs and NO_x in an airshed is important in determining the effectiveness of controlling VOCs versus controlling NO_x. This means that since each airshed could exhibit a different ratio of VOCs to NO_x, each airshed should be considered individually to determine the most effective control strategy. The recognition of this fact has profound significance in the cost effectiveness of an air quality management strategy. For example, in an airshed with a large overabundance of VOCs due to local biogenic sources (*e.g.*, heavily wooded areas), the control of other anthropogenic VOCs such as gasoline vapors could have a relatively minor positive effect on the ambient ozone concentration in the urban area. However, the control of NO_x emissions from motor vehicles through an enhanced inspection and maintenance program and, perhaps, from a relatively small number of industrial sources could produce much greater reductions in ozone formation. In such a scenario, not only would the former strategy be less cost effective, but it would divert scarce resources from the ultimate solution.

The combined importance of the two groups of precursors, VOCs and NO_x, has been and continues to be a subject of much scientific study. Already researchers have postulated numerical (*e.g.*, the Carbon Bond model) and graphical (*e.g.*, EKMA) models of the relationship between the two groups. The latter can be used to illustrate in more quantitative terms the relative importance of VOCs and NO_x (see Figure 1). In this figure,

the isopleths of ozone are shown as a function of NO_x and VOC (in ppm carbon) concentrations. Noted in the figure is an estimate of the ratio of VOCs to NO_x in the Wake County area which is estimated to be as high as 80:1. Additionally, Wake County ambient ozone monitoring data indicates that the ozone maxima have been in the 100 to 115 ppb range during the summer months. This would correspond to a VOC concentration as indicated in the figure (*i.e.*, between 1.2 to 1.4 ppm VOC). In this part of the domain, it is clear that reductions in VOC by approximately 0.2 ppm would reduce ozone by less than 0.01 ppm. On the other hand, a reduction in NO_x of just 0.013 ppm would reduce ozone by more than 0.06 ppm. When the differential molecular weights of NO_2 and larger VOC molecules are considered, the difference in a ton to ton removal comparison is even larger.[2]

Based on these more qualitative studies, the State was asked by Weyerhaeuser and CP&L to consider the proposed emission reduction exchange between CP&L and Weyerhaeuser using the Urban Airshed Model (UAM). In these numerical simulations (using CB-4 as the chemical kinetic representation of ozone formation), the State used their existing 1999 projected inventory for the Wake county area with the expanded Weyerhaeuser facility as the base line. Two control scenarios were then considered, (*i*) the installation of regenerative catalytic oxidizers on the dryers and a biofilter on the press by Weyerhaeuser to reduce both VOC emissions by 1200 tpy and NO_x emissions by 160 tpy with the CP&L Cape fear plant uncontrolled and (*ii*) the NO_x emissions from the Cape Fear plant reduced by 700 tpy (corresponding to an emission limit of 0.47 lb NO_x/mmBtu for Unit 5). The results were then subtracted from the baseline to illustrate the relative effect.

The difference plots for June 16, 1999 show significant changes for a localized area surrounding the facilities. For the case of Weyerhaeuser controlling VOC emissions, shown in Figure 2, a slight ozone reduction in the Wake County area is predicted. Simulation of the case when NO_x emissions are reduced from CP&L, shown in Figure 3, show twice the environmental benefit to the air quality. The difference plots for June 17, 1999 show no significant changes in ozone formation for the case of Weyerhaeuser controlling VOC and, to a much smaller degree, NO_x emissions (Figure 4) but, again, show significant ozone reduction for a large portion of the Wake County area were CP&L to reduce the NO_x emissions (Figure 5). These results support the empirical arguments based on the EKMA plot.

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[2]The molecular weight of NO_2 is only 46, while that of pinene, the major constituent of the VOC effluent from a wood dryer is 136. Thus, a ton removed of NO_2 is equal to 43 lbmoles while a ton of pinene is only 15 lbmoles.

Regulatory Basis for the Emission Exchange

The preceding technical arguments indicate that the control of NO_x from the Cape Fear Plant would be more effective in reducing the ambient ozone concentration in the greater Wake County area than would the control of VOCs from the Weyerhaeuser facility. This Section discusses the regulatory basis under which such an exchange should be allowed.

Under the non-attainment NSR rules, inter-facility emission offsets are, in fact, required. The exchange of VOC emissions with NO_x emissions is provided for in Section 182 Subsection (f) of the Clean Air Act in non-attainment areas. In addition, the exchange of VOCs for NO_x is also allowed under open market trading provisions. Such an exchange of emission reduction is not specifically addressed in the PSD regulations for attainment areas.

PSD regulations would allow such an exchange if two assumptions could be made, (*i*) the two facilities would be considered as one, and (*ii*) ozone precursor-netting (of VOCs for NO_x) would be allowed. Both of these assumptions are discussed below.

The definition of *facility* under the PSD regulations require all three of the following to be true:

(a) The two facilities must be classified under the same SIC code,

(b) The two facilities must be on adjacent or contiguous property, *and*

(c) The two facilities must be under common ownership.

It should be recognized that adjacent or contiguous industrial facilities typically seek to disassociate themselves from their neighbors for the purposes of classification as a common facility due to the regulatory thresholds that would be applied to them.[3] Consequently, the regulations have provided considerable latitude for industries to remain separate. From an air quality management standpoint, however, the first requirement of identical SIC classification is clearly not important. The two latter requirements are important, however.[4] Clearly, when two facilities are on adjacent or contiguous property, their impact on the airshed should be considered together (as all of the emission sources in the airshed should).

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[3]For any of the regulatory requirements under the Clean Air Act, a facility's mass emission rate is used to determine applicability. When facilities are combined the total mass emission rate of each pollutant for both facilities are combined thereby bringing more regulatory requirements to bear than would if the facilities are considered separately.

[4]It should be noted that under the Section 112 of the Clean Air Act, the common SIC requirement was dropped from the facility definition.

The common ownership and the control associated with ownership similarly impacts the environment directly through the management of emissions.

The Weyerhaeuser Moncure facility is, in fact, adjacent the CP&L Cape Fear plant thus satisfying (b). The final requirement, that of common ownership, is also satisfied by the proposal in the sense that the State will *link* control of emissions of the VOCs from Weyerhaeuser to the emissions of NO_x from Cape Fear. The issuance of a new Air Quality Permit for the Cape Fear Plant will solidify this link. In this sense, control of the emissions is common. Thus, the Weyerhaeuser and CP&L facilities should be considered as one for the purposes of this proposed emission exchange.

If the Weyerhaeuser and CP&L facilities were considered as a *single* facility, a net-out between like pollutants would be allowed under the regulations as a means of avoiding PSD. In this case, reductions of NO_x emissions from the CP&L boilers would be equivalent to reductions in NO_x emissions from the Weyerhaeuser wood dryers. Thus, while such an exchange is not explicitly provided for in an attainment area, the contributions from both VOCs and NO_x in ozone formation is clearly recognized. It might be argued that Congress omitted NO_x /VOC equivalency under PSD because they did not intend to increase the regulation of NO_x in attainment areas.

Finally, an alternative view of this exchange would be that the control of NO_x from the Cape Fear plant could also be considered as BACT for ozone.

Regulatory Interface between Title I and Title IV

Under Title IV of the Clean Air Act, CP&L will reduce NO_x emissions from some of its boilers. CP&L believes that reductions required under Title IV are not coupled with reductions needed to achieve Title I goals including the emission exchange proposed herein. Therefore, any reductions made under Title I, such as those proposed under this project, could also be considered in achieving compliance under Title IV.

Nevertheless, CP&L has already identified the most cost-effective strategy to meet the requirements of Title IV under the NO_x averaging provisions of 40CFR76. These provisions allow CP&L to demonstrate compliance on a system wide basis rather than a unit-by-unit basis. The compliance plan is shown in Table I and is the result of a methodology designed to produce system compliance at the most economical cost. The basic elements of the methodology are:

1. Identification of the technical options for NO_x reduction at each facility and the costs of those options measured in $/ton of NO_x reduced.

2. Ranking of the options on an incremental cost basis ($/ton) beginning with the lowest

cost options.

3. Identifying the combinations of options that produces a level of reduction necessary to demonstrate compliance at the lowest cost.

The analyses indicate that the current plan will be sufficient to maintain compliance through 2010, even if the EPA lowers the Title IV Phase II limits to 0.45/0.38 lb/mmBtu. If the limits are not lowered, some of the planned modifications may even be deferred. The analysis indicates that modifications will not be required at Cape Fear through the 2010 planning period. In other words, *the proposed emission exchange would result in NO_x reductions beyond that required to comply with Title IV.*

Table I. CP&L 1996 NO_x Compliance Strategy

UNIT	(AVG 2000-2010) UNCONTROLLED RATE (lbs/mmBtu)	Proposed Title IV Limit	TECHNOLOGY	After Controls NO_x RATE	Tons NO_x REMOVED
ASH 1	1.06	0.45	Controls	0.41	4,562
ASH 2	0.89	0.45	Controls	0.36	3,503
LEE 3	0.93	0.45	Controls	0.33	3,942
MAY 1	0.62	0.45	Controls	0.32	7,073
ROB 1	0.67	0.38	Controls	0.51	763
ROX 1	1.34	0.45	Controls	0.38	13,192
ROX 2	0.64	0.38	Controls	0.23	9,033
ROX 3	1.45	0.45	Controls	0.44	25,570
ROX 4	0.54	0.45	Controls	0.33	4,763
SUT 3	1.20	0.45	Controls	0.51	7,130

Uncontrolled Emissions (tons per year) : 147,630
Tons Removed through Controls: 79,531
Tons per year of NO_x Emitted : 68,099

System Average Title IV Limit (lb/mmBtu): 0.43
System Average under Plan (lb/mmBtu): 0.41

The NO_x emissions of the remaining nine units on the CP&L system will not be modified under this strategy.

To summarize this result in the context of the management of North Carolina's air quality, this proposed emission exchange would not only produce a greater reduction of NO_x from the CP&L system and thereby reduce acid rain, but would also reduce NO_x emissions in an area where North Carolina needs it most to reduce ambient ozone concentrations. Again, these benefits to the air quality would not be achieved through Title IV alone.

The following discussion summarizes how this Project XL meets the EPA's Project XL criteria[5].

I. Environmental Results

The State of North Carolina and the greater Wake County area will benefit from improved air quality through the reduction of ozone formation under this proposal. In addition, the project will help to reduce the risk that the Wake County area will be re-designated as non-attainment for ozone. The State and Federal agencies will advance their organizational goals by assuring greater environmental protection at the same or a lower cost.

II. Cost Savings/Paperwork Reduction

Although the estimated capital and operating costs for VOC or NO_x controls are similar, this proposal will reduce ozone formation in the greater Wake County area to a greater extent. This will help maintain the region's ozone attainment status and continue to support the area's economic growth and development. In addition, reduction in ozone formation will improve the general air quality and reduce the adverse health impacts associated with "smog" during the summer season. Finally, maintaining the region's attainment status for ozone will avoid burdensome regulations for other manufacturing operations, service businesses and automobile owners.

III. Stakeholder Support

The staff of the North Carolina Air Quality Section, and in particular the Chief of the Section, Mr. Alan Klimek, have played an integral role in the development of this project and are supportive of it. In addition, Ms. Linda Rimer, Assistant Secretary for Environmental Protection of the North Carolina Department of Environment, Health and Natural Resources (DEHNR), has reviewed the proposal and supports it. The agency believes this innovative proposal will enhance environmental protection in the most cost effective manner, and should become a model of cooperation for other regions with elevated levels of natural VOCs similarly faced with the risk of becoming non-attainment for ozone. By so doing, the region will continue to be environmentally and economically vital and individual citizens might not face the prospect of expensive personal investments in automobile emissions systems and

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[5]These criteria were set forth in the May 23, 1995 edition of the Federal Register on page 27,287.

other costs associated with ozone non-attainment areas.

To fully explain this project and have critical input from the concerned public, Weyerhaeuser and CP&L propose to meet with environmental groups. Representatives from the North Carolina Environmental Defense Fund, the National Resource Defense Council and groups local to the Moncure area will be notified. Weyerhaeuser and CP&L will also hold an open meeting to discuss this Project XL application in detail.

IV. Innovation/Multi-Media Pollution Prevention

The responsible management of North Carolina's air quality, as with other natural resources, requires an understanding of manufacturing processes, the environment's assimilative capacity and the expectations of the public. In as much as these factors are constantly changing as a result of what is learned about these processes and their impact on the environment, management strategies should also change and evolve.

The North Carolina DEM is ahead of most state agencies in quantifying the cause and effect relationship between ozone formation and VOC and NO_x emissions, particularly for the greater Wake County area, which although in attainment, is an ozone sensitive region. This project affords North Carolina the flexibility to utilize the current understanding of ozone formation as a basis for making decisions that are in the interest of protecting the residents of Wake County.

As previously indicated, the control of VOCs and to a lesser extent NO_x from sources at Weyerhaeuser's facility in Moncure will be very expensive and provide little environmental benefit. The innovative strategy provided by this proposal applies resources, previously allocated by Weyerhaeuser for VOC control, to control NO_x emissions from a Carolina Power & Light facility. This is an innovative approach to air shed management aimed at preventing the formation of ozone. This project also demonstrates how a state environmental agency can focus on overall environmental benefits, rather than regulating individual constituents.

V. Transferability

The Ozone Reduction Project is transferable to other ozone sensitive air sheds having high natural VOC levels. The Ozone Reduction Project shows how companies and regulatory agencies can improve the environment by creating cooperative agreements to reduce critical emissions that would not otherwise be controlled. This project shows how to optimize environmental benefits from the targeted spending of resources for environmental control. The permitting approach for this project and knowledge gained from it are transferable to other situations where cooperation between different industries and government could result a greater environmental benefit than the traditional permitting approach.

VI. Feasibility

As was discussed above, there is clear language supporting this emission reduction exchange in the Clean Air Act. Crucial to the success of the proposal, however, is the actual ability of CP&L to reduce their NO_x emissions by the amount proposed. In addition, the State must be able to ensure that those reduction limits are met. The engineering staff of CP&L has evaluated the proposed reduction requirement of 700 tpy and has identified the appropriate technologies available in the market place that could be used to achieve that reduction. The retrofit of low NO_x burners on utility boilers is a proven technology to reduce NO_x emissions.

The extensive monitoring and record-keeping provisions of Title IV will also serve to ensure compliance with the permit limitation proposed for the Cape Fear plant through this project. This is discussed in greater detail in the Monitoring section below.

The Moncure facility is financially capable of making a commitment to this joint strategy between Weyerhaeuser and Carolina Power & Light for this Ozone Reduction Project.

VII. Monitoring, Reporting and Evaluation

The Carolina Power & Light Cape Fear Steam Electric Plant is equipped with continuous emissions monitoring systems (CEMS) on the boiler stacks. The monitors are designed to measure emissions gases including oxides of nitrogen (NO_x) in accordance with the requirements of 40CFR75. The monitors sample the stack exhaust gases using EPA Method 7E as described in 40CFR60, Appendix A. NO_x emission levels are reported each hour. In accordance with those regulations, an annual relative accuracy test audit is performed on each monitor.

VIII. Shifting of Risk Burden

This proposal should have lasting, tangible benefits to all the citizens of the greater Wake County area. By reducing NO_x, the region significantly improves its chances of staying in attainment for ozone; thereby allowing continued economic growth in the region, allowing the public to avoid costly personal investments in automobile emissions systems and other compliance costs, and guaranteeing a steady and reasonably priced supply of electricity. The small population in the immediate area near the Carolina Power & Light and Weyerhaeuser facilities should experience no increase in the level of non-criteria emissions as provided for under the North Carolina Air Toxics rules and should, in fact, enjoy significant benefits in the reduction of NO_x[6].

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[6]It should be noted that, in addition to its role as a precursor to ozone, NO_x is a criteria pollutant. Reductions in NO_x will benefit the air quality in the surrounding area by reducing the ambient concentration of NO_x.

The facility-wide emissions of North Carolina toxic air pollutants (TAPs) and the Federal hazardous air pollutants (HAPs) from the Weyerhaeuser facility will be lower after the expansion as illustrated in the following Table II.

Table II. Total HAPs and TAPs Emission Summary

	HAP	TAP	HAP/TAP
Current Baseline Emissions, tpy	1100	312.5	1100
Decreases associated with the Expansion and Project XL, tpy	92	101.5	92

IX. Moncure PSD History

The Moncure facility began operations in March 1971 under the ownership of Evans Products Company. The facility was subsequently purchased by Weyerhaeuser in September 1974 and continues to produce Medium Density Fiberboard (MDF) products in the original plant. In 1987, Weyerhaeuser added the Microboard plant to the Moncure facility. The Microboard plant addition was permitted by the State of North Carolina based on the available emission factors and information provided by Weyerhaeuser. In 1992, Weyerhaeuser notified the State that the emission factors previously used understated emissions from the Microboard plant. As a result, Weyerhaeuser and the State entered into a settlement agreement for Weyerhaeuser to re-permit the facility under a PSD submittal. Weyerhaeuser submitted the PSD permit for the Microboard plant in July of 1994. The PSD permit application submittal was designed to address the original Microboard permit issue as well as the expansion of the Microboard facility and a later phased expansion of the MDF facility.

In the Spring of 1995, the State of North Carolina DEM Air Quality Section met with Weyerhaeuser and other wood products manufacturers to discuss their concerns over ozone problems in North Carolina. At the meeting, the State discussed control strategies to minimize ozone formation. The State expressed a view that the VOC control strategy in the Weyerhaeuser permit application may not significantly improve the ozone problem in the State. Subsequently, the State asked Weyerhaeuser to investigate NO_x control strategies to reduce ozone which could be cost effectively implemented instead of the VOC controls proposed in the application submittal required by the settlement agreement. After looking at the available emissions data from the Moncure facility and the area, it became clear that the ozone issue could be better addressed by controlling NO_x emissions at the CP&L facility in lieu of controls at the Weyerhaeuser facility.

X. Moncure Project Timing

The Microboard facility will be expanded during September 1996 and is scheduled to be operational in October of the same year. The Air Quality permit issued by the State of North Carolina, allows the facility to operate during the winter of 1996 without controls to allow this proposal to be considered and implemented if successful. In no event, however, is the Moncure facility allowed to operate at the higher throughput levels beyond April 1997 unless either (*i*) CP&L has installed the necessary NO_x reduction equipment needed to meet their new NO_x limit (*i.e.*, the equivalent of 0.47 lb/mmBtu for Unit 5) or (*ii*) Weyerhaeuser installs the VOC incineration and biofilter equipment approved by the State as BACT. Because ozone formation depends so strongly on temperature, the ozone "season" is typically considered to last from May through September. It is for this reason that the State allowed the Microboard's operation during the winter months uncontrolled.

To allow sufficient time for CP&L to specify, purchase and install the NO_x reduction equipment required to meet the reduction of 700 tpy under this proposal, this Project XL application must be considered and approved no later than May 1, 1996.