BEFORE THE ILLINOIS POLLUTION CONTROL BOARD

IN THE MATTER OF:	)	
PROPOSED AMENDMENTS TO 35 Ill. ADM. CODE 217,	)	R01-16
SUBPART V, ELECTRIC POWER GENERATION	)	(Rulemaking- Air)

TESTIMONY OF BERKLEY L. MOORE

Introduction

My name is Berkley L. Moore. I am a licensed Professional Engineer in Illinois, and since 1970, I have been employed as an Environmental Protection Engineer or as an Environmental Protection Specialist in the Illinois Environmental Protection Agency's (Agency) Bureau of Air.

I have a Bachelor of Science degree majoring in Chemical Engineering, which I received from Grove City College in Pennsylvania, and have completed all the course work for a Master's in Environmental Engineering from Southern Illinois University.

The purpose of my testimony today is to discuss the technical aspects, Section by Section, of the Agency's Part 217, Subpart V, Electric Power Generation, proposal for regulating the emissions of nitrogen oxides (NOx).

Section 217.700

Section 217.700 simply states that the purpose of Subpart V is to control NOx emissions during the May 1 through September 30 control period, beginning in the year 2003. Control of NOx during the control period will have the effect of reducing ambient concentrations of ozone because it is the chemical reaction of NOx, in the presence of heat and sunlight, with volatile organic compounds that are also emitted to the

atmosphere, which is the primary mechanism leading to the formation of ozone in the lower atmosphere.

The May 1- September 30 dates denominating the control period are, of course, dates that encompass the period of most intense sunlight during the year. The year of applicability is 2003.

Section 217.702 Severability

This section simply states that if any section, subsection or clause of Subpart V is found invalid, such finding shall not affect the validity of any of those portions of Subpart V not found invalid.

Section 217.704 Applicability

This section sets forth the type of emission unit to which Subpart V applies. It is written to apply to all fossil fuel-fired stationary boilers, combustion turbines or combined cycle systems that serve a generator with a nameplate capacity exceeding 25 megawatts of electricity, if such electricity is sold. This section excludes the non-EGUs listed in Appendix D to Subpart W, which was filed with the Board on July 11, 2000, and docketed as R01-9. Subpart V also applies to any fossil fuel-fired unit with a maximum design heat input of greater than 250 mmbtu/hr if the unit has the potential to use more than 50% of the potential electrical output capacity of the unit.

Subsection (a) provides that if the generator served by these emission units exceeds a capacity of 25 megawatts of electricity for sale, the unit is subject to Subpart V, unless the unit is located at a source listed in Appendix D to Part 217 of the Board's air pollution regulations. The sources listed in Appendix D are sources whose primary business is not the production of electricity, and that are not being modeled at the

proposed Subpart V NOx emission rate in the Agency's attainment demonstration for the Metro-East/St. Louis ozone nonattainment area.

Subsection (b) applies to emission units commencing operation after January 1, 1999, and provides the method to determine whether a large (more than 250 million Btu per hour heat capacity) unit is designed primarily for the production of electricity rather than to provide steam or heat for process emission units. The 0.0488 factor by which a unit's heat input is to be multiplied to determine the primary purpose of the unit is based on standard conversion factors relating British thermal units to watts, the fact that only one-third of a unit's heat input is ordinarily converted into electricity, and that if a generator requires more than one-half of the unit's heat input to generate electricity at full capacity, the emission unit's primary purpose must be for the production of electricity.

Two sources indicated that there should be a low emitter exemption for units with low (5%) capacity factors that burn natural gas or oil. The concern appears to be the higher cost of requiring controls and continuous emissions monitors for units that operate infrequently. Units with such low capacity factors are usually peaking units. As I noted earlier, the proposal already excludes smaller units (those serving a generator with a nameplate capacity that is 25 MWe or less.

The Agency believes it is reasonable for the proposal to include large units with a low capacity factor.

Section 217.706 Emission Limitations

This section would limit NOx emissions from affected units to 0.25 lbs/mmbtu, as well as to any more stringent limit that might also apply. The Subpart V limit of 0.25

lb/mmbtu must be achieved by each individual unit, or alternatively by participating in an averaging demonstration via the provisions of Section 217.708.

Section 217.708 NOx Averaging

This section applies only to those emission units listed in Appendix F to Subpart W, and to any unit at Soyland Power that commenced commercial operation before January 1, 2000. Units listed in Appendix F are units that commenced commercial operation before 1996. Therefore, units that commenced commercial operation after this date, and units at Soyland Power that commenced commercial operation after January 1, 2000, will have to meet the 0.25 lb/mmbtu limit on an individual basis.

The units to which Section 217.708 applies, however, will be able to meet the Subpart V limit in a more cost-effective manner "averaging" their emissions rates with other units under Section 217.708. The mathematical representation of the averaging formula is given in subsection (b).

A simple illustration of the subsection (b) formula is to consider two boilers each of 1,500 million Btu per hour heat input capacity. If one of those boilers had an average control period NOx emissions rate of 0.15 lb/mmbtu, and the other an average control period emissions rate of 0.35 lb/mmbtu, then taken together their average emissions rate would be (0.15 + 0.35)/2 or 0.25 lb/mmbtu, just sufficient to meet compliance. Use of the 217.708(b) formula would give the same result, and more importantly, would give a correct result regardless of any varying heat inputs of the units or number of units in the averaging plan.

Subsection (c) provides that emission averaging must be conducted via federally enforceable permit conditions, and subsection (d) allows each unit to be included only

once in a NOx averaging demonstration during a control period. This latter provision is designed so as to prevent "double counting" of over-complying emission units, i.e., the difference in allowable and actual emissions from each averaging unit can be used only one time by other under-complying units.

Subsection (e) requires compliance by averaging to be demonstrated within two months of the end of the control period, while subsection (f) provides that should compliance not be demonstrated by averaging, each unit participating in the averaging demonstration shall be treated as though it were attempting to comply on an individual basis. Thus overcomplying units would be deemed to be in full compliance, while undercomplying units would be deemed to fall short by the actual magnitude of their undercompliance.

Section 217.710 Monitoring

This section requires affected units to demonstrate compliance with NOx emission limits by using continuous emissions monitors that meet the requirements of 40 CFR part 75, Subpart B. There is an exemption in subsection (b), however, allowing oil or gas-fired peaking units to use the emissions estimations protocol of 40 CFR part 75, Subpart E. This emissions protocol provides that other kinds of monitoring systems may be used, so long as they can be shown to be of equivalent precision, reliability, accessibility, and timeliness.

Thus, this section imposes on affected units identical monitoring requirements to those imposed by the proposed Part 217, Subpart W regulations that would apply to the same affected units and that are currently before the Board, but for the fact that Subpart V monitoring will be required approximately a year earlier, and that such monitoring will

entail an additional calculation step, i.e., that of determining emissions in pounds per million Btu.

Section 217.712 Reporting and Recordkeeping

This section requires affected units to comply with the recordkeeping and reporting requirements of 40 CFR part 75, but only insofar as these requirements are related to NOx emissions during the control period; to certify that the report is true and accurate; to show that the unit complies with a control season average NOx emissions rate not exceeding 0.25 lb/mmbtu, either individually or as part of an averaging demonstration; to keep and maintain for five years all records and data necessary to demonstrate such compliance; and to have such records and data available for submittal to the Agency within 30 days of any written request by the Agency. These records and data must by available or submitted by November 30 of each year beginning in 2003.

STATE OF ILLINOIS)
) SS.
COUNTY OF COOK)

PROOF OF SERVICE

I, the undersigned, on oath state that I have served the attached Testimony of Robert J. Kaleel, Dennis Lawler, Yoginder Mahajan and Berkley L. Moore upon the person to whom it is directed, by placing in an envelope addressed to:

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SEE ATTACHED SERVICE LIST

and mailing it by Overnight Mail from Springfield, Illinois on November 16, 2000, with sufficient postage affixed.

Cynthia Sims

SUBSCRIBED AND SWORN TO BEFORE ME

this 16th day of November, 2000

Mary M. Anderson
Notary Public

OFFICIAL SEAL
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