KEYNOTE ADDRESS

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It is a pleasure to participate in the Third Symposium on the Environmental Aspects of Fuel Conversion Technology. I would like to thank John Burchard and Robert Hangebrauck for their kind invitation, and I hope I can make some remarks relevant to the important work you are engaged in. Since many of you are concerned with environmental pollution from various fuel conversion technologies, I think it might be relevant if I would discuss the recently signed into law Clean Air Amendments of 1977.

These Amendments supercede the Clean Air Amendments of 1970. At the time the 1970 Amendments were enacted into law, this was considered the most significant piece of environmental legislation in the United States' history. The 1977 Amendments build upon the 1970 Amendments and in many ways supplement or strengthen the earlier legislation. At the outset, I should point out the complexity of this new law and the fact that EPA is only now attempting to interpret this legislation. In many ways our EPA Air Programs Office is the equivalent of a biblical scholar, attempting to understand and interpret the Clean Air Amendments as the scholar would the Bible.

Although I will attempt to summarize some of the more important aspects of this new law, with emphasis on those provisions that relate to energy sources, I strongly suggest you carefully read the Act for yourselves.

The Amendments are divided into four titles. Title I concerns itself primarily with stationary sources, Title II provides guidance on mobile pollution sources, and Titles III and IV are more in the miscellaneous category. I would like to discuss several of the important Sections in Title I relating to stationary sources. Specifically, I would like to summarize what the new Act says regarding new source standards of performance (Section 109), the standards for hazardous air pollutants (Section 110), unregulated pollutants (Section 120), prevention of significant deterioration (Section 127), and nonattainment areas (Section 129).

New Source Standards of Performance (Section 109)

This section amends the existing Section 111 and expands the concept of setting technologically based standards for the control of air pollution from new pollution sources.

The section requires that major new sources use the best technological continuous emission controls to meet new source standards of performance. Essentially this eliminates the use of intermittent or alternative control measures and the use of low sulfur fuel as an acceptable control approach. Specifically, this section states that the best adequately demonstrated technology, (including pre-combustion cleaning or treatment of fuels) is to be the basis of the standard. It requires the Administrator to take into account energy requirements in determining which technologies have been adequately demonstrated. Also, the Administrator must consider nonair quality, health, and environmental impacts in making the determination.

This section activates a timetable for the consideration of setting standards for additional sources of air pollution. Specifically, the Amendments allow one year for additional listing of sources and at least one-quarter of the standards must be promulgated at the end of the second year of listing, at least three-quarters by the end of the fourth year of listing. The Administrator is also asked to consider the adequacy of existing new source performance standards at least every four years. The implication of this is that as the control technology improves, standards should be tightened.

Guidance is provided for the setting of new source performance standards specifically for fossil fuel-fired boilers. The Act calls for present standards to be revised and to include a percentage emission reduction in pollution from untreated fuel as well as a standard of performance. In calculating the percentage reduction requirement, the Administrator is authorized to give credit for accepted mine mouth and other precombustion fuel cleaning processes,

whether they occur at, or are achieved by, the source of by another party.

Waiver for Technology Innovation (Section 109)

The Amendments provide a mechanism for the Administrator to grant waivers of up to 7 years after the date on which the first waiver is granted or 4 years after commencement of operation, from Federal new source performance standards to permit a source to use innovative continuous emission control technology.

In order to grant such a variance, the Administrator must find:

1. A substantial likelihood that the new technology will achieve greater emission reduction than that required under the new source performance standard, or equivalent reduction at lower economic, energy, or environmental costs;
2. The new technology will not cause or contribute to an unreasonable risk to public health, welfare, or safety;
3. The governor of the state in which the source requesting variance is located consents to the waiver;
4. The waiver will not prevent the attainment or maintenance of any national ambient air quality standard;
5. The proposed system has not been adequately demonstrated; and
6. In determining the substantial likelihood of a new system achieving greater emission reduction, the Administrator must take into account any previous failures of the system.

Hazardous Design Standards (Section 110)

This provision amends the old Section 112 of the existing law to allow the specification of design, equipment, or operational standards for the control of the source of hazardous emissions, where an emission limitation is not possible or feasible.

Unregulated Pollutants (Section 120)

EPA has 1 year to determine whether cadmium, arsenic, and polycyclic organic matter (2 years for radioactive pollutants) cause or contribute to air pollution and endanger public health, before regulating them under this act. Also, within 1 year the Administrator must consider the promulgation of a short term NO_2 ambient air quality standard for a period not to exceed 3 hours.

Prevention of Significant Deterioration (Section 127)

The Clean Air Amendments of 1970 activated a schedule that aimed at improving air quality in polluted areas so that health and welfare were protected. However, the Act did not contain a provision for protecting airsheds that were not beyond those pollution levels considered detrimental to health and welfare. The Amendments of 1977 add an important provision for the prevention of significant air quality deterioration in areas where pollution levels are lower than existing standards. This provision defines three air quality categories. Class 1 allows only a small increment of additional pollution; Classes 2 and 3 allow corresponding greater amounts of pollution. The Act classifies the following as mandatory Class 1 Federal areas:

1. International parks;
2. Wilderness areas (in access of 5000 acres);
3. National memorial parks (in excess of 5000 acres); and
4. National parks (in excess of 6000 acres).

Initially all other areas are considered Class 2 areas. However, states can in certain circumstances redesignate such areas as Class 1 or as the less restrictive Class 3 category.

This section delineates allowable increments of pollution above baseline concentration for each of the three classes for sulfur dioxide and particulates. Within 2 years, states must submit plans establishing increments or other means of preventing significant deterioration from the other criteria pollutions, namely: nitrogen oxides, hydrocarbons, carbon monoxide, and oxidants. EPA must approve the plan within 4 months if it meets applicable requirements; otherwise EPA must propose a plan for the rejected state within 4 months of

the disapproval. States may exempt certain emissions such as those from facilities converting from oil or gas to coal, natural gas curtailments, temporary construction, and foreign sources from being counted against the increment.

In order to protect Class 1 areas which could be affected, no major emitting facility can be constructed without a permit establishing emission limitations. Extensive studies will be required in order for permits to be issued for major emitting facilities that could affect Class 1 areas. For example, the EPA must: require an analysis of the ambient air quality, climate and meteorology, terrain, soils and vegetation, and visibility at the site of the proposed major emitting facility; and in the area potentially affected by the emissions from such a facility for each pollutant regulated under this act, determine the degree of the continuous emission reduction which could be achieved by such a facility.

Requirements for Nonattainment Areas (Section 129)

Another area that was not dealt with in the 1970 Amendments was the question of siting new plants in nonattainment areas, i.e., those areas that are polluted above those levels being necessary to protect health and welfare. What the new legislation does is essentially validate the offset policy published by EPA in December, 1976. In order to issue a permit to a major new source in a nonattainment area, the state must show that total emissions from all sources in the region will be sufficiently less than the total emissions allowed for existing sources prior to the construction of the major new source. Thus the baseline for calculating offsets is the total emissions allowed in the implementation plan without taking the new source into consideration. As a condition for permitting major new stationary sources to locate in nonattainment areas, the states are required to have approved revised implementation plants. The plans must provide for attainment of primary ambient standards (health-related standards) no later than December 31, 1982, although attainment can be delayed until December 31, 1987 with respect to photochemical oxidants and carbon monoxide. The State Implementation Plan (SIP) must, among other things, provide for utilizing "all reasonably available control measures as expeditiously as practicable." It must also specifically identify and quantify all emissions which will result from the construction and operation of a major new or modified stationary source. The SIP revision must include a permit program for stationary sources to allow a source-by-source or area-wide tradeoff policy; new sources must achieve "lowest achievable emission rate." reflecting the most stringent emission limitation that is contained in the SIP of any state for such class or category of source, or the most stringent emission limitation that is achieved in practice, whichever is more stringent.

In conclusion, I have attempted to give you a flavor for the content, importance, and the complexity of this new legislation. Even now the EPA lawyers and technical people are trying to interpret this intricate piece of legislation. Although it is too early to quantify the impact of the law, it is clear to me that the effect of this legislation will be far-reaching and will be a major factor in influencing the development and utilization of emerging energy technologies.

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