

US EPA ARCHIVE DOCUMENT



February 5, 1996
GEMDEC-96-0025

Mr. Arthur Fossa
Director, Division Of Air Resources
New York State Department of Environmental Conservation
50 Wolf Road
Albany, New York 12233

Re: Homer City Station XL Demonstration Project Proposal

Dear Mr. Fossa:

Enclosed for your information is a copy of an XL Demonstration Project Proposal. New York State Electric & Gas Corporation (NYSEG) and Pennsylvania Electric Company (Penelec) have submitted this proposal to the EPA for the Homer City Station located in Indiana County, Pennsylvania.

On May 23, 1995, the EPA published a Federal Register notice (60 Fed Reg. 27282) inviting the submittal of proposals to participate in the XL Program. The objective of the XL Program is to provide companies an opportunity to demonstrate alternative approaches to complying with environmental requirements in exchange for environmental and economic benefits. EPA approval of the proposed Homer City project would provide the owners an opportunity to demonstrate a highly cost-effective and environmentally beneficial way to generate electric energy at the station.

The proposed Homer City demonstration project would allow the owners to trade sulfur dioxide emissions between the station's new and existing units and thereby potentially realize fuel and operational cost savings. In return, the owners would agree to forego the opportunity to increase the stations's average annual emission rate to a level (2.37 lbs. of SO₂/mmBtu) consistent with the SO₂ attainment demonstration plan for the region. Instead, they would maintain station average annual emission rates at 2.00 lbs. of SO₂/mmBtu, the 1995 annualized average emission rate. Unit-specific 3-hour average SO₂ emission rate limitations also would be established at levels to protect and maintain the National Ambient Air Quality Standards for SO₂. Environmental safeguards and additional environmental benefits are discussed in our proposal, in detail.

Please feel free to contact me if you have any questions regarding this important project.

Sincerely yours,

James W. Rettberg, Manager
Environmental & Joint
Owned Stations

Enclosure

cc: C. Knopes - EPA
J. Rue - PaDEP

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F:1996/JWR/2.WP

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2/2/96

**HOMER CITY STATION
XL DEMONSTRATION PROJECT
PROPOSAL
SUPPLEMENT**

INTRODUCTION

On May 23, 1995, the U.S. Environmental Protection Agency (EPA) published a Federal Register notice inviting the submittal of proposals to participate in the XL Program. 60 Fed. Reg. 27282. The notice described the XL Program's objective as providing companies an opportunity to develop alternative approaches to complying with environmental requirements in exchange for achieving greater environmental benefits and cost savings. It also described the criteria for selecting XL Projects.

This is the proposal of New York State Electric & Gas Corporation (NYSEG) and Pennsylvania Electric Company (Penelec) (hereinafter Owners) to conduct the Homer City Station XL Demonstration Project (Project) at the Homer City Station (Station) located in Center Township, Indiana County, Pennsylvania. The Station is an 1,890 megawatt (MW) coal-fired steam electric generating station.¹ Units 1 and 2 (620 MW net each) began operations in 1969 and Unit 3 (650 MW net) began operation in 1977. NYSEG and Penelec each own 50 percent of the Station, and Penelec operates the Station. The Owners believe that approval of their Project would represent a highly cost-effective and environmentally beneficial approach to generating electric energy at the Homer City Station.

The Project would utilize an innovative regulatory approach for demonstrating the environmental and economic benefits of sulfur dioxide (SO₂) emissions trading between "existing"

¹ All net generating capacity figures are approximate.

(Units 1 and 2) and "new" (Unit 3) units at the Station.² As discussed in more detail below, the Owners propose to implement this approach in two phases. Phase I, which is addressed in this proposal, would be of limited duration (2 years) and would consist of two components. First, SO₂ emissions trading between existing and new units at the Station would be implemented in order to demonstrate the range of achievable operational flexibility improvements, fuels management efficiencies, and economic benefits that could result. Cost savings alone are estimated to be up to \$6.5 million annually.

As part of this effort, the Owners would agree to forego the opportunity to increase the Station's average annual emission rate to a level (2.37 lbs. of SO₂/mmBtu Station annual average) consistent with the SO₂ Attainment Demonstration Plan (Attainment Plan) for the Chestnut/Laurel Ridge Region. This would be equivalent to an annual increase of 26,472 tons of SO₂ at an 89% capacity factor. Instead, they would maintain Station average annual emission rates at 2.00 lbs. of SO₂/mmBtu, the 1995 annualized average emission rate. Unit specific 3-hour average SO₂ emission rate limitations (i.e. 2.77, 2.77, and 1.58 lbs. of SO₂/mmBtu for Units 1, 2, and 3, respectively) also would be established at levels to protect and maintain the National Ambient Air Quality Standards (NAAQS) for SO₂. In addition to maintaining the Station's SO₂ emissions well below the level allowed under the Attainment Plan, these steps would reduce the likelihood of installing an SO₂ scrubber at the Station. As a result, significant

² Pursuant to Section 111 of the Clean Air Act, EPA has established New Source Performance Standards (NSPS's) for various categories of air emission sources. In general, units constructed or modified after the date on which an applicable NSPS is proposed are considered "new" and subject to the NSPS; "existing" units are not subject to the NSPS. Unit 3 at the Homer City Station is a "new" unit and subject to the NSPS for fossil fuel-fired steam generators at 40 C.F.R. Part 60, Subpart D. Units 1 and 2 are "existing" units.

environmental effects associated with scrubber operation would be avoided, and natural resources would be preserved.

Second, the Owners would use Phase I as a unique opportunity to evaluate and report on the feasibility of instituting a Phase II proposal for further fuels management and operating measures that would provide additional economic, environmental and multi-media environmental benefits over a longer period of time. This would include an evaluation of the feasibility of achieving SO₂ emission rates below 1995 levels, reducing the Station's hazardous air pollutant emissions, eliminating other air pollutant sources at the Station and possibly consolidating to a one-product coal stockpile with attendant pollution reductions. The Owners also would evaluate the ability of the Project to support the local community by maintaining the viability of the local coal market through the continued use of locally-available (as opposed to increasingly more distant) coal supplies. The components of Phase II of the Homer City XL Project would be based on the results of Phase I and submitted for approval as part of a Phase I final report.

All this would be consistent with EPA's recent policies supporting market-based innovative environmental compliance programs and EPA's criteria for XL Projects. As shown below, the Homer City proposal satisfies all the relevant criteria for approval as an XL Project.

1. ENVIRONMENTAL RESULTS

a. Background

The development and implementation of the most environmentally sound and economically efficient approach to achieving compliance with SO₂ emission limitations has been a continuing effort

at the Station for almost two decades. The Owners anticipated that Units 1 and 2 would be subject to a limit of approximately 2.5 lbs. of SO₂/mmBtu based on SO₂ ambient air quality modeling studies conducted in the Chestnut/Laurel Ridge Region. An NSPS of 1.2 lbs. of SO₂/mmBtu applies to Unit 3.

In 1981, EPA granted the Homer City Station an Innovative Technology Waiver (46 Fed. Reg. 55975) pursuant to Section 111(j) of the Clean Air Act to demonstrate a new innovative technological system of achieving continuous reductions of SO₂ emissions from coal combustion in electric utility boilers. This innovative control system, known as the Multi-Stream Coal Cleaning System (MCCS), was a precombustion coal cleaning technique designed to produce a deep cleaned (low sulfur) coal and a middling (medium sulfur) coal by physically removing pyritic sulfur from local high sulfur coals. As a result of the Innovative Technology Waiver, the Owners were able to develop a coal cleaning facility capable of producing a coal to achieve the NSPS applicable to Unit 3 and a co-product capable of meeting an emissions rate substantially below State Implementation Plan (SIP) emissions limitation requirements for Units 1 and 2.

In 1990-91, due to rising organic sulfur levels in the local coals which prevented the facility from producing adequate quantities of compliance coal for Unit 3, the coal cleaning facility was converted to a single-quality coal facility. This necessitated the importation of coal processed off-site to maintain compliance with the NSPS limitation for Unit 3. The Owners, however, have continued to use the coal cleaning facility to process local coals to burn in Units 1 and 2. Based on opacity limitations and the anticipated 2.5 lbs. of SO₂/mmBtu limit, and the Owners' commitment to maintaining environmental quality, the Owners continued Unit 1 and 2 operations at the 2.5 lbs. of SO₂/mmBtu emissions level.

In 1994, new modeling data revealed that SO₂ emissions from Units 1 and 2 had been maintained at levels lower than required to protect and maintain ambient air quality standards. A committee had been formed in 1993 of the owners of the four major coal-fired steam electric generating stations³ operated by Penelec in the Chestnut/Laurel Ridge Region to develop an allocation strategy for the SO₂ emissions from each generating unit to demonstrate attainment of the NAAQS for SO₂. The strategy developed by the committee was based on the results of an ambient air quality dispersion modeling analysis of the region. The dispersion modeling protocol that delineates the ambient air quality attainment and maintenance strategy for the region, the Chestnut/Laurel Ridge SO₂ Attainment Plan, has been submitted to the Pennsylvania Department of Environmental Protection (PaDEP) for approval. The Attainment Plan would limit SO₂ emissions from the Homer City Station, as follows:

	Pennsylvania Present SIP Limits <u>(lbs. of SO₂/mmBtu)</u>	Chestnut/Laurel Ridge Attainment Plan <u>(lbs. of SO₂/mmBtu)</u>
Units 1&2	4.0*	3.1**
Unit 3	1.2**	1.2**

* Daily SO₂ limit with a 30-day running limit of 3.7 lbs. of SO₂/mmBtu.

** 3-hour block average. The Attainment Plan emission rate (3.1 lbs. of SO₂/mmBtu) was based on 1993 heat inputs for Units 1 and 2. Subsequent design changes have affected the heat inputs for these units --- with a corresponding change to an allowable emission rate of 2.96 lbs. of SO₂/mmBtu (3-hour limit), the rate used in this proposal.

In short, during this effort, the Owners determined that SO₂ attainment is demonstrated at an allowable emission rate of 2.96 lbs. of SO₂/mmBtu (3-hour limit) for Units 1 and 2; not 2.5 lbs. of

³ The four stations are all located within 25 miles of each other and have the following net generating capacities: Conemaugh Station (1,700 MW), Keystone Station (1,700 MW), Homer City Station (1,890 MW) and Seward Station (200 MW).

SO₂/mmBtu as thought previously. Put another way, by 1994, it had become clear that Unit 1 and 2 emission rates at the Station had been maintained at low levels for many years.

With the advent of the 1990 Acid Rain Amendments, a major new regulatory program under Title IV was established for the control of SO₂ emissions. The centerpiece of Title IV is a market-based program encompassing SO₂ emissions allowance allocations and trading provisions for SO₂ control at affected units. Under the second phase of the Title IV program, EPA will allocate a maximum nationwide total of 8.95 million tons per year of SO₂ allowances to affected units. Allowances may also be purchased from other affected units or from third parties. Affected units can emit SO₂ at any rate as long as the NAAQS for SO₂ are protected and maintained and annual emissions of SO₂ do not exceed the number of allowances held at the end of the year.

However, even with the enactment of the 1990 Clean Air Act Amendments, emissions trading at a stationary source consisting of a combination of "existing" units and "new" units cannot be used for compliance with the "command and control limits" (i.e., NSPS's and/or SIP emissions limitations) applicable to the individual emission units. Prior attempts by the Owners to obtain approval for this type of emissions trading, known as "bubbling," were unsuccessful due to EPA's position on the development of NSPS (see Exhibit 1). The Owners now propose to give up the opportunity to increase the Station's SO₂ emission rates from 1995 levels to levels allowed under the Attainment Plan in order to explore and demonstrate the range of environmental and economic benefits that would result from approval of their Project --- an alternative method to establish and implement SIP emissions limitations and NSPS at the Station.

b. Environmental Benefits

The Owners propose to demonstrate the feasibility of maintaining the Station's SO₂ emissions well below allowable levels through the implementation of emissions trading between the existing and new units at the Station, while also exploring and reporting on the feasibility of achieving additional economic, environmental and multi-media environmental benefits in the future. At the same time, approval of the Homer City XL Project would allow the Station to evaluate the feasibility of achieving increased flexibility in the procurement, management, and preparation of fuels and up to \$6.5 million in annual cost savings as a result of lowered fuel costs and more efficient energy production.

i. Phase I/SO₂ Emissions Trading

(a) Operational Restrictions

Phase I of the Project would consist of two components. First, SO₂ emissions trading between the Station's units will be established to demonstrate the range of achievable station operational flexibility improvements, fuels management efficiencies, and economic benefits that would result. The Owners propose to limit the Station's SO₂ emission rate (2.00 lbs. of SO₂/mmBtu annual average) to the annualized level calculated for 1995.⁴ This is 26,472 tons (15 percent) less than necessary to demonstrate attainment of the NAAQS for SO₂, as shown below:

⁴ Calculation of the 1995 annualized emission rate is based on the Station's performance during the first six months of 1995. During the second half of 1995, the Station began to modify the coal cleaning facility. The Owners believe that such modifications may enable the coal cleaning facility to consistently produce coal to fuel Units 1 and 2 to achieve Station SO₂ emission rates lower than the 1995 level discussed above. The feasibility of achieving this objective will be evaluated during Phase I.

	Chestnut/Laurel Ridge Attainment Plan Annualized Emissions ⁵ (Tons)	XL Demonstration Project Annualized Emissions ⁵ (Tons)
Unit 1	71,464	
Unit 2	71,464	
Unit 3	<u>29,351</u>	
	172,279	<u>145,807</u>

(b) Environmental Safeguards

Safeguards will be provided to ensure that benefits to the environment are achieved. An average annual emission rate for the Station, which is equivalent to 1995 annualized emission rates, will be established for determining whether the Project will maintain emissions at the level achieved in 1995. If annual emissions exceed the Station average annual emission rate of 2.00 lbs. of SO₂/mmBtu, the Owners will acquire and permanently retire three (3) Title IV allowances for every ton emitted above the standard. As shown in Exhibit 2, this would provide the Owners with a compelling economic incentive to meet the annual standard. It also would assure that the environment would benefit if the standard is not met.

As an additional environmental benefit, if annual emissions are below the Station average annual emission rate, the Owners propose to limit the emission reductions generated to 0.9 tons for every ton of actual reduction. Put another way, the environment would benefit by receiving 10 percent of any

⁵ Projected station emissions were calculated using EPA's acid rain annualization factor of .89 for 3-hour averages using a capacity factor of 89%, the maximum capacity factor anticipated by the Owners.

reduction achieved below 1995 levels. Emission reductions would be utilized in accordance with EPA/PaDEP emission trading or open market trading policies.

Unit-specific 3-hour average SO₂ emission rate limitations also will be established at a level to protect and maintain SO₂ ambient air quality standards. Under the Project, the Owners propose that Units 1 and 2 be subject to a 3-hour average limit of 2.77 lbs. of SO₂/mmBtu and that Unit 3 be subject to a 3-hour average limit of 1.58 lbs. of SO₂/mmBtu. Violation of these limits would be grounds for enforcement action.

(c) Pollution Prevention/Resource Conservation Opportunities

Under the terms of the proposed Project, the Unit 3 emission limitation and the Station annual standard will be achieved without the use of a scrubber, reducing the likelihood of needing an SO₂ scrubber to address escalating fuel costs for Unit 3. As a result, the following environmental benefits also would be derived:

- ▶ Avoidance of the discharge of approximately 43 million gallons/year of wastewater associated with the use of a scrubber. The need to construct additional wastewater treatment facilities to prevent the discharge of additional dissolved solids into local streams also would be avoided.
- ▶ Avoidance of limestone mining activities, preserving limestone resources, and avoidance of contamination associated with mining. The operation of a scrubber would require an estimated 130,000 tons/year of limestone.
- ▶ Conservation of local water resources. It is estimated that 371 million gallons/year of water would be required to operate the scrubber.

- ▶ Avoidance of energy consumption associated with the operation of an SO₂ scrubber system and contaminants from the generation of the additional electricity to replace the power necessary to operate the scrubber system. Emissions that would be avoided are estimated to be 39 tons/year of SO₂, 123 tons/year of NO_x and 50,000 tons/year of CO₂
- ▶ Avoidance of an estimated 53,000 tons/year in CO₂ emissions from the operation of an SO₂ scrubber system.
- ▶ Conservation of raw materials and avoidance of the environmental effects, including land-related construction impacts, associated with fabricating and installing an SO₂ scrubber system.
- ▶ Avoidance of the impacts associated with the disposal of approximately 236,000 tons/year of gypsum (10 percent moisture).
- ▶ Avoidance of truck miles to haul limestone and gypsum to and from the Station.

Finally, the establishment of SO₂ emissions trading at the Station will result in the reduction and/or elimination of off-site facilities currently used to blend compliance coal for Unit 3, with corresponding pollution reductions.

ii. Phase I/Multi-media Environmental Benefits Feasibility Evaluation

The Owners also would use Phase I as an opportunity to evaluate and report on the feasibility of instituting a Phase II proposal for further fuels management and operating measures that would provide additional economic, environmental and multi-media environmental benefits over a longer period of time.

First, the Owners would explore the feasibility of reducing the Station's average annual SO₂ emission rate below 1995 levels in the future. Every reduction of 0.01 lb. of SO₂/mmBtu achieved

below the 2.00 lbs. of SO₂/mmBtu average annual emission rate would represent a reduction of approximately 700 tons of SO₂/year. One aspect of this effort would be to evaluate the effect of modifications to the coal cleaning facility which are intended to increase the facility's coal cleaning efficiency, thereby increasing the number of possible sources of local coal to fuel Units 1 and 2. These modifications may enable the coal cleaning facility to produce fuel capable of fueling Units 1 and 2 to achieve lower SO₂ emission rates than in the past. In addition, they may allow the Station to reduce the opacity from Units 1 and 2 (as a result of lower ash content) and achieve corresponding reductions in hazardous air pollutants.

Finally, such modifications may enable the Station to eliminate the thermal dryers currently used in the coal cleaning process. Elimination of the Station's two thermal dryers would result in annual air emission reductions of up to 721 tons of SO₂, 152 tons of No_x, 66 tons of PM₁₀, and 12 tons of VOCs, as compared to 1994 levels. Phase I will be used to assess and report on the effect of the coal cleaning facility modifications on the facility's product and the feasibility of achieving these objectives.

In addition, the Owners will evaluate whether it would be feasible to use the same emission rate for all three units in order to consolidate to a one-product coal stockpile. As part of this effort, the Owners would identify the range of on-site and off-site environmental benefits that could result from establishing such a rate. Such multi-media environmental benefits could include reduced run-off from coal piles and reduced air emissions resulting from the decreased on-site truck traffic and idling time. Finally, during Phase I, the Owners will evaluate the extent to which the viability of the local coal market will be maintained by continuing to use locally-available (as opposed to increasingly more distant) coal supplies.

iii. Phase II

The components of Phase II of the Homer City XL Project will be determined during Phase I and will be submitted for approval as part of a Phase I final report not later than two years after initial project implementation. The Station would continue to operate under the terms of Phase I until Phase II is approved.

2. COST SAVINGS AND PAPERWORK REDUCTION

Approval of the Homer City Station XL Demonstration Project Proposal would demonstrate that market incentives may be used effectively to minimize the costs of meeting SIP limitations and NSPS. It also would enhance economic opportunities locally. In contrast, continuation of the “command and control” approach would preclude the use of lower cost environmental compliance strategies and would not provide incentives for the Owners to use their own expertise to advance pollution control techniques and technology. Finally, the Owners would investigate and document the environmental and economic benefits from expanding EPA’s existing emissions trading policy and market incentive programs to include trading between “new” and “existing” units.

The Project would explore and report on the feasibility of achieving the following savings and economic opportunities:

- ▶ Reduce costs by up to \$6.5 million per year by lowering fuel costs and achieving greater efficiency in energy production.
- ▶ Maintain the viability of the local coal market; also maintain and possibly increase the number of local coal mining jobs.

- ▶ Optimize the use of a coal cleaning facility to allow the continued use of local coals from the central Pennsylvania high sulfur region.
- ▶ Reduce and/or eliminate small and dispersed off-site facilities currently used to blend compliance coal for Unit 3.
- ▶ Reduce and/or eliminate permits and reports necessary for off-site facilities used to blend compliance coal for Unit 3.

3. STAKEHOLDER SUPPORT

The Owners have obtained substantial support for previous demonstration projects at the Station and anticipate continued support for the Project. For example, on November 13, 1981, at 46 Fed. Reg. 55975, EPA granted an Innovative Technology Waiver, pursuant to Section 111 (j) of the 1977 Clean Air Act, for the Station. The deep cleaned coal portion of the MCCS --- the innovative technological system --- was not producing enough coal to comply with the NSPS applicable to SO₂ emissions from Unit 3; additional time was required to complete modifications to the MCCS to produce sufficient quantities of deep cleaned coal to meet the NSPS. The waiver allowed SO₂ emissions from Unit 3 to exceed the NSPS for a limited period of time and under specific conditions, including a "combined" tonnage limitation for SO₂ emissions from the Station. Under the Innovative Technology Waiver total combined annual SO₂ emissions (262,258 tons) were lower than if each unit met its individually applicable SIP emission limitation or NSPS (276,150 tons).

EPA, PaDEP, the Pennsylvania legislative delegation, industry-wide organizations and local groups were supportive of the Owners' efforts during the innovative technology waiver process. EPA,

PaDEP, and EPRI continue to be supportive of recent environmentally-beneficial projects at Homer City Station, such as the Unit 1 and 2 Low NO_x Burners Demonstration Project. The Owners believe that all these organizations would support the Project and the Owners will reconfirm that continued support during the EPA screening process.

4. INNOVATION/MULTI-MEDIA POLLUTION PREVENTION

As explained above, under “Environmental Results,” during Phase I of the Project, the Station will explore the feasibility of instituting a variety of measures to achieve significant multi-media environmental benefits at the Station. This would be consistent with EPA's goals for a holistic approach to environmental protection. Specifically, Phase I of the Project will evaluate and document how an innovative control strategy for SO₂ emissions can control other air contaminants at the same source and/or prevent the generation of other pollutants in different environmental media.

5. TRANSFERABILITY

A successful Project would provide the basis for authorizing the use of alternative NSPS's or alternative methods of measuring NSPS compliance at all types of facilities subject to NSPS's, whether those facilities are comprised of “existing” and “new” units or only “new” units. The Project also will establish a record that a facility can demonstrate compliance with NSPS more flexibly, provided that overall facility emissions would be no greater than if current NSPS and SIP limitations were required for each individual unit.

6. FEASIBILITY

On-site operational experience and ambient air quality modeling at the Station during the Innovative Technology Waiver has shown that trading of SO₂ emissions between “existing” and “new” units does not affect regional NAAQS attainment and protects local coal mining jobs. The proposed Project has been designed to achieve all the environmental and economic benefits discussed above.

The Owners have successfully completed other demonstration projects during the past 25 years, including the Unit 1 and 2 Low NO_x Burners Demonstration Project and the MCCS Demonstration Project, in which EPA invested approximately six million dollars. The Owners have provided financial resources for the completion of many demonstration projects. They also have the resources necessary to successfully complete this Project.

7. MONITORING, REPORTING AND EVALUATION

The Owners will work with EPA and other stakeholders to develop clear objectives, requirements and methods for monitoring of the Project. This would include sampling and analysis of the coal cleaning facility product and continuous measurement of boiler emissions in accordance with 40 C.F.R. Part 75 (Acid Rain Continuous Emission Monitoring Requirements). At the end of year 1, the Owners would provide a preliminary report on:

- (1) Station emissions compared to the 2.00 lbs. of SO₂/mmBtu Station average annual emission rate.
- (2) Environmental benefits.

- (3) Cost savings.
- (4) The feasibility of achieving a Station average annual emission rate below 2.00 lbs. of SO₂/mmBtu.
- (5) The feasibility of reducing hazardous air pollutants and eliminating thermal dryers and their emissions through modifications to the coal cleaning facility.
- (6) The feasibility of establishing the same 3-hour average SO₂ emission rate for all three units and consolidating to a one-product coal stockpile, and the range of possible multi-media environmental benefits that would result.
- (7) The ability of the Station to maintain the viability of the local coal market through implementation of the proposed Project.

The Owners would complete their evaluation of these issues and prepare a final report containing operational/emission limitation proposals for Phase II. The final report, containing an evaluation of the feasibility of a Phase II demonstration, would be submitted not later than 2 years after initial project implementation.

8. SHIFTING OF RISK BURDEN

Consistent with Executive Order 12898, the Project will not result in any disproportionate shift of adverse human health or environmental effects to minority or low-income populations. Any change in environmental burden would result from a geographical shift of energy production to the Station. The additional energy produced by the Station as a result of the Project will replace electricity generated by other more costly facilities within the Owner's respective power pools. This shift of electrical

generation to the Station will be from less efficient facilities typically located closer to metropolitan areas that have a larger minority or low-income population segment than Indiana County, Pennsylvania. As a result of the Project, energy production at such facilities would be decreased or eliminated, resulting in environmental benefits to their surrounding areas, while still protecting the NAAQS for SO₂ in Indiana and Cambria Counties.

In addition, approval of the Project would have a positive economic effect on low-income populations. The Project will provide lower cost electricity to the consumer, with a net decrease in environmental effects. Electricity has become a basic human need, and as such, the cost of electricity has a substantial bearing on the disposable income of low-income populations. The substantial cost savings from the Project should result in a net positive effect on the quality of life of lower wage earners by raising their disposable incomes.

9. LEGAL MECHANISMS FOR IMPLEMENTING THE PROJECT

Three alternative legal mechanisms for implementing the proposed Project are outlined below. The conditions of each alternative would be similar, but the method of implementation would be different.

First, a consent decree among the Owners, EPA and PaDEP could be developed and used to prescribe the terms and conditions for the Project. A condition of the consent decree would be that Units 1, 2 and 3 comply with 3-hour average emission rate limitations of 2.77, 2.77, and 1.58 lbs. of SO₂/mmBtu, respectively. In addition, the consent decree would establish a 2.00 lbs. of SO₂/mmBtu Station average annual emission rate for evaluating whether the Station's annual SO₂ emissions achieve

1995 levels. If annual emissions are above the 2.00 lbs. of SO₂/mmBtu Station average annual emission rate, the consent decree would require that the Owners acquire and retire three (3) Title IV SO₂ allowances for every ton that is emitted over the Station average annual emission rate. If Station average annual emission rates are below the annual standard, the consent decree would limit the generation of emission reductions to 0.9 tons for every ton of actual reduction, with emission reductions to be utilized in accordance with EPA/PaDEP emission trading or open market trading policies.

A second alternative would be to establish a different methodology for determining Unit 3's compliance with the NSPS. This would be accomplished by authorizing, as part of the Final Project Agreement, a "compliance bubble" for the Station. Compliance with the NSPS would be measured by establishing 3-hour average emission rate limitations for each of the units (e.g., 2.77, 2.77, and 1.58 lbs. of SO₂/mmBtu for Units 1,2, and 3, respectively). In addition, a station average annual emission rate limitation for evaluating the Station's annual SO₂ emissions would be established, with safeguards, as described above. EPA previously used this type of approach when it authorized a bubble to determine the Central Illinois Public Service Company Newton Power Station's compliance with NSPS's. See 40 C.F.R. §§ 60.43(e), 60.46(h), and Part 60, App. G.

As a third alternative, EPA could establish, as part of the Final Project Agreement, an alternative NSPS for the Station pursuant to 40 C.F.R. Part 60. This standard would include unit-specific individual SO₂ emission rate limitations and a station average annual emission rate limitation, as described above. EPA used this type of approach when it granted the Innovative Technology Waiver to the Owners. See 46 Fed. Reg. 55975 (Nov. 13, 1981).

CONCLUSION

Phase I of the Homer City Station XL Demonstration Project will demonstrate and document the feasibility of achieving environmental and economic benefits by implementing SO₂ emissions trading between existing and new units at the Station. In addition to complying with unit-specific 3-hour average emission rate limitations to assure that SO₂ ambient air quality standards are maintained, the Owners would forego the opportunity to increase the Station's average annual SO₂ emission rate from the 1995 level to levels allowed under the Attainment Plan. At the same time, the Project would demonstrate the range of achievable station operational flexibility improvements, fuels management efficiencies, and economic benefits that could be achieved by implementing such an approach. It also would reduce the likelihood of installing an SO₂ scrubber at the Station and result in the avoidance of significant environmental effects and impacts on natural resources associated with scrubber operation. This is consistent with the 1990 amendments to the Clean Air Act, by further demonstrating the benefits of a market-based approach to air pollution control.

Additionally, Phase I of the Project will provide an opportunity to evaluate and report on the feasibility of achieving additional economic, environmental and multi-media environmental benefits in the future. Specifically, the Owners will explore the feasibility of achieving a Station average annual SO₂ emission rate below the 1995 level, decreasing hazardous air pollutant emissions, eliminating thermal dryer emissions and possibly consolidating to a one-product coal stockpile with the resulting multi-media environmental benefits. Importantly, conducting such an evaluation would not be possible without approval of the XL Project. Stated simply, the proposed Project represents the next logical step

in the development and implementation of the most cost-effective and environmentally beneficial approach to generating electricity at the Homer City Station.

VJB287C