

## STATEMENT OF CONSIDERATIONS

REQUEST BY CONSOL ENERGY, INC., FOR AN ADVANCE WAIVER OF DOMESTIC AND FOREIGN INVENTION RIGHTS UNDER DOE COOPERATIVE AGREEMENT NO. DE-FC26-01NT41181; W(A)-02-053, CH-1123

The Petitioner, Consol Energy, Inc. (Consol), was awarded this cooperative agreement for the performance of work entitled, "Multi-Pollutant Emission Control: Pilot Plant Study for Reducing Hg, SO<sub>3</sub>, NO<sub>x</sub>, and CO<sub>2</sub> Emissions." The purpose of the cooperative agreement is to design, construct and operate a pilot plant operating on a slip stream of flue gas from a commercial coal fired power plant to develop a conceptual process to capture and remove mercury from the flue gas from coal-fired power plants. The technology to be developed is based upon the concepts of reducing the temperature of the flue gas beyond conventional temperatures (for example, to 220-240°F, rather than to 300-320°F) through the use of a heat exchanger (air preheater) or water sprays, causing the mercury compounds to be collected on the coal fly ash and allowing them to be removed with the fly ash in conventional particulate collection devices. The scope of work also includes an evaluation of mercury re-mobilization after capture with the fly ash, and evaluations of corrosion and equipment performance. In response to question 16, Consol states that Allegheny Energy Supply, LLC, is the owner of the host site for this demonstration.<sup>1</sup> This waiver is for inventions of Consol only.

The total estimated cost of the cooperative agreement is \$2,412,413, with the DOE share being \$1,826,539, or 75.7%, while the remaining cost share of 24.3%, or \$585,874, will be provided by Consol. The period of performance is thirty six (36) months, from September 1, 2001 through September 3, 2004.

In its response to question 5 of the attached waiver petition, Consol has described its technical competence in the field of mercury removal from flue gas. Consol has completed laboratory and pilot-plant testing to examine mercury removal with native fly ash in coal-fired flue gas via cooling of the flue gas. Consol has also completed laboratory and pilot-plant testing of methods to remove sulfur trioxide, a precursor to sulfuric acid, from flue gas from coal-fired furnaces. These two elements—flue gas cooling and control of sulfuric acid-- when combined correctly, form the heart of the process that is to be developed in this cooperative agreement. An invention disclosure has been submitted to Consol on the process to be developed. In addition, Consol has done previous developmental work on elements of the process to be developed under awards from the State of Illinois and the State of Ohio. Consol employees have given presentations on the technology as well. These competencies are detailed in response to question 5. Consol's response fully demonstrates its technical competency in the field of mercury removal from flue gas.

In its response to question 10 of the attached waiver petition, Consol states that there are numerous processes under development or being demonstrated that reduce mercury emissions from coal-fired furnaces. Most of these efforts are being funded by the U.S. DOE or US EPA. These efforts cover a wide variety of mercury control technologies, and therefore it is likely that numerous technologies will be available and that different technologies will be preferred for different power plants in a site-specific manner. Consol's new process will add to this technology and therefore grant of the waiver will have a positive effect on competition and market concentration.

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<sup>1</sup> Consol has granted Allegheny Energy Supply a paid-up, non-exclusive, revocable license to use any and all intellectual property results of the project. Currently there are no patent or patent applications covering the subject work.

The subject cooperative agreement will be modified to add the Patent Rights--Waiver clause in conformance with 10 CFR 784.12, wherein Consol has agreed to the provisions of 35 U.S.C §§ 202, 203, and 204. This waiver clause will also include a paragraph entitled U.S. Competitiveness, in which Consol agrees to substantial U. S. manufacture of subject inventions (attached hereto). Additionally, Consol agrees not to transfer subject inventions to any other entity unless that other entity agrees to these same requirements. The petitioner has further agreed to modification of the data clause of the subject cooperative agreement (48 C.F.R. 952.227-14) by adding paragraph (k), Alternative VI, concerning contractor licensing of data

Considering the foregoing, it is believed that granting the waiver will provide the Petitioner with the necessary incentive to invest resources in the commercialization of the results of the agreement in a fashion which will make the agreement's benefits available to the public in the shortest practicable time. In addition, it would appear that grant of the above requested waiver would not result in an adverse effect on competition nor result in excessive market concentration. Therefore, in view of the objectives and considerations set forth in 10 CFR 784, all of which have been considered, it is recommended that the requested waiver, as set forth above, be granted.

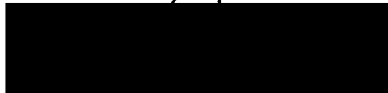


Mark P. Dvorscak  
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Intellectual Property Law Division

Date Jan 29, 2003

Based on the foregoing Statement of Considerations and the representations in the attached waiver petition, it is determined that the United States and the general public will best be served by a waiver of rights of the scope described above, and therefore the waiver is granted. This waiver shall not apply to any modification or extension of this agreement, where through such modification or extension, the purpose, scope, or cost of the agreement is substantially altered.

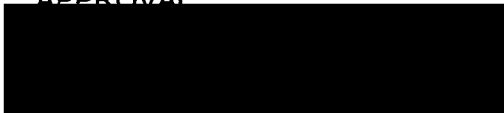
CONCURRENCE:



George Rudins  
Deputy Assistant Secretary  
Office of Fossil Energy  
Coal and Power Systems

Date: 4/11/03

APPROVAL:



Paul A. Gottlieb  
Assistant General Counsel  
for Technology Transfer and  
Intellectual Property

Date: 4-14-03

(t) U. S. COMPETITIVENESS The Contractor agrees that any products embodying any waived invention or produced through the use of any waived invention will be manufactured substantially in the United States unless the Contractor can show to the satisfaction of the DOE that it is not commercially feasible to do so. In the event the DOE agrees to foreign manufacture, there will be a requirement that the Government's support of the technology be recognized in some appropriate manner, e.g., recoupment of the Government's investment, etc. The Contractor agrees that it will not license, assign or otherwise transfer any waived invention to any entity unless that entity agrees to these same requirements. Should the Contractor or other such entity receiving rights in the invention undergo a change in ownership amounting to a controlling interest, then the waiver, assignment, license, or other transfer of rights in the waived invention is suspended until approved in writing by the DOE.