

*Prevention of Catalyst Carryover in Three Phase Reactors*

There is renewed interest in F-T derived diesel fuels, produced in a stand alone facility or as part of a coal-fed Vision 21 co-production plant. To maximize the percentage of diesel fuel obtained, the catalyst would be designed to allow diesel range products to be the second largest portion of the product, while maximizing the production of wax. The wax would be further hydrocracked to diesel fuel in a separate step. Assuming that a three-phase slurry reactor would be chosen for the F-T process, there exists the problem of separating the wax from the molten catalyst-wax slurry as its level rises. The wax, of carbon number 20 to 70, is both the product and the slurry medium.

Grant applications are sought to develop operations, processes, or reactor configurations that maintain the necessary catalyst inventory in the reactor.

*Advanced Power Generation Cycles*

One of the most effective ways to reduce CO<sub>2</sub> and other emissions from coal-fired powerplants and to achieve the targets for the Vision 21 plant is to significantly increase the efficiency of power plants. New cycles are intended for combined cycle applications, that could increase the efficiency of powerplants to well over 45%.

Grant applications are being solicited for investigation and study of new cycles for power generation. Specific areas of study may include high temperature (~1,000F), high pressure (~2,400 psi) ammonia/water vapor/liquid thermodynamic properties at various volume ratios, validation of efficiency projects, alternative approaches to complex combined cycle evaluations for better matching of conventional and advanced technology processes, economics, and identification of barriers (corrosion and new materials investigations, heat transfer coefficients in two liquid mixtures for application in falling film heat exchangers), to commercialization. Any novel topping and bottoming cycles may be offered.

*Liquids From Coal*

The many advantages of using and handling liquid fuels and chemical feedstocks has driven research to produce these materials from low-cost, abundant coal. During most of this century, many processes have been developed and a few of these were commercialized at some point. With the advent of Vision 21 and the co-production concept, opportunities may

now exist for identification and development of novel liquefaction processes that would fit the modular design criterion and permit ready sequestration of CO<sub>2</sub>.

Grant applications are being solicited for investigation and study of new methods to produce value-added liquids from coal consistent with the Vision 21 concept.

**Awards**

DOE anticipates awarding financial assistance grants for each project selected. Approximately \$2.7 million will be available for the Program Solicitation. An estimated \$2.2 million is budgeted for the UCR Core Program and should provide funding for approximately one to three (1-3) financial assistance awards in each of the six focused areas of research. The maximum DOE funding for individual colleges/universities applications in the UCR Core Program varies according to the length of the proposed performance period as follows:

Performance period	Maximum funding
0-12 months .....	\$80,000
13-24 months .....	140,000
25-60 months .....	200,000

The maximum DOE funding for UCR Core Program joint applications is \$400,000 requiring a performance period of 36 months.

Approximately \$0.5 million is budgeted for the UCR Innovative Concepts Program and should provide support for approximately ten (10) financial assistance awards. The maximum DOE funding for UCR Innovative Concepts Program awards is \$50,000 with 12-month performance periods.

Issued in Pittsburgh, Pennsylvania on September 25, 1997.

**Richard D. Rogus,**

*Contracting Officer, Acquisition and Assistance Division.*

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**DEPARTMENT OF ENERGY**

**Office of Fossil Energy**

[Docket No. FE C&E 97-02—Certification Notice—155]

**Denver City Energy Associates, L.P.; Notice of Filing of Coal Capability Powerplant and Industrial Fuel Use Act**

**AGENCY:** Office of Fossil Energy, DOE.

**ACTION:** Notice of filing.

**SUMMARY:** On September 23, 1997, Denver City Energy Associates, L.P. submitted a coal capability self-certification pursuant to section 201 of the Powerplant and Industrial Fuel Use Act of 1978, as amended.

**ADDRESSES:** Copies of self-certification filings are available for public inspection, upon request, in the Office of Coal & Power Im/Ex, Fossil Energy, Room 3F-056, FE-27, Forrestal Building, 1000 Independence Avenue, S.W., Washington, D.C. 20585.

**FOR FURTHER INFORMATION CONTACT:** Ellen Russell at (202) 586-9624.

**SUPPLEMENTARY INFORMATION:** Title II of the Powerplant and Industrial Fuel Use Act of 1978 (FUA), as amended (42 U.S.C. 8301 *et seq.*), provides that no new baseload electric powerplant may be constructed or operated without the capability to use coal or another alternate fuel as a primary energy source. In order to meet the requirement of coal capability, the owner or operator of such facilities proposing to use natural gas or petroleum as its primary energy source shall certify, pursuant to FUA section 201(d), to the Secretary of Energy prior to construction, or prior to operation as a base load powerplant, that such powerplant has the capability to use coal or another alternate fuel. Such certification establishes compliance with section 201(a) as of the date filed with the Department of Energy. The Secretary is required to publish a notice in the **Federal Register** that a certification has been filed. The following owner/operator of the proposed new baseload powerplant has filed a self-certification in accordance with section 201(d).

*Owner:* Denver City Energy Associates, L.P.

*Operator:* Denver City Energy Associates, L.P.

*Location:* Amarillo, Texas.

*Plant Configuration:* combined-cycle.

*Capacity:* 489 megawatts.

*Fuel:* Natural gas.

*Purchasing Entities:* Golden Spread Electric Generating Cooperative, Inc. (GSE).

*In-Service Date:* Simple-cycle mode—Winter of 1998-99 Combined-cycle mode—Summer of 1999.

Issued in Washington, D.C., September 29, 1997.

**Anthony J. Como,**

*Director, Electric Power Regulation, Office of Coal & Power Im/Ex, Office of Coal & Power Systems, Office of Fossil Energy.*

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