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**TAB 12**

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PSC Request 12

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**EAST KENTUCKY POWER COOPERATIVE, INC.**  
**PSC CASE NO. 2000-079**  
**INFORMATION REQUEST RESPONSE**

**PUBLIC SERVICE COMMISSION REQUEST DATED 6/1/00**  
**REQUEST 12**

**RESPONSIBLE PERSON:** Dwight Lockwood  
**COMPANY:** Kentucky Pioneer Energy  
(responding for East Kentucky Power Cooperative)

**Request 12.** Describe the type of purification system for the produced gas.

**Response 12.** Detailed design and final selection of the syngas purification system will occur in the early stages of engineering and construction after project financing. Major components of this system would typically include sulfur removal and recovery in excess of 99% as well as other conventional processing steps to prepare the syngas for use as a fuel.

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**TAB 13**

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EAST KENTUCKY POWER COOPERATIVE, INC.

PSC CASE NO. 2000-079

INFORMATION REQUEST RESPONSE

PUBLIC SERVICE COMMISSION REQUEST DATED 6/1/00

REQUEST 13

RESPONSIBLE PERSON: Dwight Lockwood

COMPANY: Kentucky Pioneer Energy

(responding for East Kentucky Power Cooperative)

**Request 13.** What is the estimated gas yield in Btu's gas per unit weight of coal and unit weight of solid waste?

**Response 13.** Syngas production is not normally measured relative to components, but rather of briquette feed. However, if one assumes a 50/50 blend of Coal/RDF the briquette will have a heating value (HHV) of approximately 10,000 Btu/lb of briquette feed. The BGL gasifier has a conversion efficiency of approximately 92%. Therefore, syngas yield will be approximately 9200 Btu/lb of briquette feed.

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**TAB 14**

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EAST KENTUCKY POWER COOPERATIVE, INC.  
PSC CASE NO. 2000-079  
INFORMATION REQUEST RESPONSE

PUBLIC SERVICE COMMISSION REQUEST DATED 6/1/00  
REQUEST 14

RESPONSIBLE PERSON: Dwight Lockwood  
COMPANY: Kentucky Pioneer Energy  
(responding for East Kentucky Power Cooperative)

**Request 14.** What is the estimated annual operating cost of the plant?

**Response 14.** Annual Operating Expenses for fuel and other consumables will be governed by final contracts for those materials. Specific Operating Expenses for the Integrated Gasification Combined Cycle (IGCC) facility are business confidential and therefore not available.

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**TAB 15**

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**EAST KENTUCKY POWER COOPERATIVE, INC.**  
PSC CASE NO. 2000-079  
INFORMATION REQUEST RESPONSE

PUBLIC SERVICE COMMISSION REQUEST DATED 6/1/00  
REQUEST 15

RESPONSIBLE PERSON: Dwight Lockwood  
COMPANY: Kentucky Pioneer Energy  
(responding for East Kentucky Power Cooperative)

Request 15. Explain the type of process that will be used for coal gasification.

Response 15. BGL gasification is oxygen blown, fixed bed slagging technology operating at approximately 350 psig. Each of the four planned refractory lined reactors have an internal diameter of 12 feet, are water jacket cooled and have reaction zone temperatures at a nominal 3200°F. Briquettes are fed through a lock-hopper at the top and descend by gravity in countercurrent flow to the rising syngas. The syngas, therefore, causes the vaporization of moisture and volatilization of light hydrocarbons from the briquettes. Instead of ash going to landfill disposal from a conventional coal power plant, the ash content of fuel briquettes is produced as solid inert vitrified frit from the bottom of the gasifier through a quench and lock-hopper. Vitrified frit, also known as synthetic aggregate, is inert, non-leaching and viable for sale as road paving material.



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**TAB 16**

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EAST KENTUCKY POWER COOPERATIVE, INC.

PSC CASE NO. 2000-079

INFORMATION REQUEST RESPONSE

PUBLIC SERVICE COMMISSION REQUEST DATED 6/1/00

REQUEST 16

RESPONSIBLE PERSON: Dwight Lockwood

COMPANY: Kentucky Pioneer Energy

(responding for East Kentucky Power Cooperative)

Request 16. Provide the operating manual, if available.

Response 16. An operating manual for the plant, consisting of a library of volumes, will be developed after detailed design and during construction.

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**TAB 17**