8.1.0 Introduction

Kentucky Mountain Power, LLC is a subsidiary of EnviroPower, LLC formed to build the Kentucky Mountain Power Project (Project) located on a reclaimed mine site approximately 8 miles NE of Hazard, Kentucky. The Project will be a 2x260 MW circulating fluidized bed boiler plant supplying steam to a single 520_{net} MW turbine-generator. The Project will use a combination of waste-coal and run of mine coal from the local area. The Project has secured land, water, fuel and transmission capacity necessary for the



operation of the plant. Permitting for the Project is complete.

Water Supply for the facility will be supplied by a major regional water system to be constructed as a part of the power project. The water system will include an intake and pumping station located on the North Fork of the Kentucky River, a 22 mile water line, a 1.4 billion gallon water storage reservoir and a water treatment plant. The water supply system is sized to provide an additional 1,000,000 gallons per day, beyond the requirements for the power plant for the industrial park and residential use. There is a possibility that this additional capacity could be increased to 5,000,000 gallons per day. The water withdrawal permit for the plant limits the withdrawals from the Kentucky River during low flow periods. Water will be pumped from the river during high flow periods such that minimum river flows will be maintained.

The Project will include the development of a major industrial park in conjunction with the State of Kentucky and the surrounding counties. The industrial park will include approximately 800 acres designated for industrial development and 300 acres designated for a golf course.

Highway access to the site will be improved through a cooperative effort of Kentucky Mountain Power, LLC and the State of Kentucky and Knott County. The State of Kentucky will be constructing a new intersection on Highway 80 and a heavy haul bridge from the new intersection across Ball Fork Hollow. Kentucky Mountain Power, LLC will excavate the roadbed and prepare a heavy haul road from the bridge to the plant site and the industrial park.

The Project will interconnect with the American Electric Power 138,000 volt transmission system at a new switching station located on the power plant property. The switching station and the transmission lines and transmission line upgrades will be constructed by Davis H. Elliott Construction Company and American Electric Power. Once the switching station and transmission lines are completed they will be owned and operated by American Electric Power.

Natural Gas for the project will be provided by Equitable Energy, LLC. Equitable will construct a 6 inch gas main from their transmission system to the Kentucky Mountain Power site.

8.2.0 Description of the Facility

Project Location

The site of the project is located in Knott County Kentucky approximately 8 miles N.E. of Hazard, Kentucky. The location is the site of the Starfire mine, the largest strip mine in the Eastern USA. KMP has, in place, a lease for 4000 acres on the site for the construction of the plant as well as the industrial park and golf course. The plant will be located on a 195 acre portion of the site known as Potato Knob

The Project is expected to have a commercial operation date of May 2006.

The Project will be interconnected to the American Electric Power (AEP) 138KV transmission system at two locations, the Beaver Creek substation and the Hazard Substation. The Project is located in the East Central Area Reliability council area (ECAR). Via the AEP transmission system the Project can access the Mid-American Interconnected Network (MAIN) and the Mid-Continent Area Power Pool (MAPP) and TVA.

Fuel Supply

Given an expected average annual operation of the Plant of approximately 8,132 hours per year, the average annual fuel usage for the Project is estimated at 3.9 million tons/year at an average heating value of 5,306 Btu/Lb).

The Project is located on, and adjacent to, substantial waste coal deposits. Fuel will be supplied primarily by an affiliated company, EnviroFuels, that has begun entering into arrangements including leases and access services agreements on specific sites that contain over 46.9 million tons of waste coal. Primary fuel for the Plant will be comprised of at least 65% waste coal and no more than 35% raw run of mine coal. The current fuel plan identifies sufficient waste coal and low BTU mined coal to fuel the Plant for at least 30 years assuming an annual fuel need of approximately 3.9 million tons per year. EP, through EnviroFuels, has at least 20 years of this fuel under its control. The controlled coal is a combination of: (i) multiple long-term waste coal and low BTU mined coal supply agreements (delivered to Plant site), (ii) multiple waste coal access and removal contracts, and (iii) low-BTU mined coal leases. The latter two categories require removal and mining, respectively, by EP or third party contract mining operators under contract to EP.

Project Design

The Kentucky Mountain Power design will be a 2x260 MW configuration with two circulating fluidized bed boilers providing steam to a single 520 MW_{net} steam turbine-generator. The fuel supply to the Project will be a combination of waste coal and run of mine coal. The plant is expected to have a heat rate of 9790 BTU/Net KWHr and operate at an annual capacity factor of 92%.. Emissions from the plant will be controlled both within the CFB boiler, by an SNCR and an add-on Flash Dryer Absorber. The project will also include the auxiliary systems necessary

for the storage preparation of the run of mine coal and gob for use in the boilers, storage and preparation of the limestone sorbent, removal and ultimate disposal of the ash and other functions typical of a power plant of this magnitude.

Gross Plant Output	585 MW
Net Plant Output	520 MW
Main Steam Flow at Turbine Inlet	1,933,223
Main Steam Pressure at Turbine Inlet	2400
Turbine Heat Rate	7433 btu/kwhr
Boiler Efficiency	81.7%

Key design and operating data is outlined in the following table:

Each of the plant systems is discussed in more detail in the following;

Fuel Handling

Fuel for the plant will be received by truck. Fuel delivery is intended to occur primarily during the daylight hours. As the fuel enters the plant there will be a scale house with scales for both incoming and outgoing trucks. In addition, there will be an auger sampling system for sampling individual trucks on a random basis. There will be separate receiving systems for gob and for run-of-mine coal. At the receiving area the fuel will be reduced in size from a maximum of 12" x 12" to approximately 4" x 0" by a primary crushing system. This crushed coal will be stacked out into a covered storage area containing 44,000 tons of fuel. From the covered storage area the fuel will be reclaimed by an automatic portal reclaimer. From the portal reclaimer the fuel will be transported to the secondary crushing facility. In this facility the fuel will be screened on a Bivitech 3/8" x 0" screen with larger material being crushed two 700 T/Hr, Penn Crusher "Coalpactors" and discharged on the final belt. Fine waste coal, silt, will be added to the process at this point. The fines will be stored in a two day covered storage area. From the storage area the fines will be loaded by a front-end loader into a 300 T/Hr. breaker and shreader. This material will then cross a 2" scalping screen. The resulting product from the silt system will combine with the material from the secondary crushing and be transported to a tripper system feeding the boiler fuel silos.

Boiler Systems

The boiler system will consist of two circulating fluidized bed boilers with superheat and reheat. Below is a schematic drawing of a single CFB boiler. While this representation is not arranged exactly like Kentucky Mountain Power it is representative. Each boiler will be capable of sustaining the plant at over half the net output. The boiler systems will include natural gas startup burners. There will be four fuel silos for each boiler, each silo receiving the same quality fuel. Two feeders will withdraw fuel from each silo (for a total of 8 fuel feed points) and convey it to the front wall of the boiler to fuel feed chutes. The plant will be capable of full load on the worst case fuel with one feeder out of service. Limestone will be introduced into the same fuel feed chute from a pneumatic limestone transport system. Primary air will be introduced into the boiler via nozzles in the boiler operating floor with secondary air entering through ports located in the boiler walls. The boilers will have pendant superheater surface. There will be three cyclones on each boiler. The cyclones will be refractory lined. The boiler back pass will include primary and secondary superheaters, reheaters Air heating will occur in a and economizer. conventional Lungstrom regenerative airpreheater. Final sulfur removal will occur in a dry scrubber system followed by a baghouse. Centrifugal induced draft fans will discharge into separate flues located inside common chimney.

Final reheat will occur in a fluid bed heat exchanger through which a portion of the bed ash will be circulated.



Fluid bed ash coolers (FBAC) will be used for bottom ash cooling before transport by the bottom ash removal system. There will be two FBACs per boiler. Each capable of handling 80% of the total projected bottom ash flow on the worst case fuel. There will be two ash transport lines from each FBAC each capable of handling 100% of the discharge from the FBAC. Heating surface in each fluid bed ash cooler will include economizer surface as well as closed cooling water surface.

Emissions Control Equipment

The Project will be designed and built as one of the cleanest coal-fired generation facilities in the United States. The PSD, Title V and Phase II Acid Rain permit to construct, permit number V-00-045, was issued by the Kentucky Division for air quality on May 4, 2001.

The plant will use Best Available Control Technology (BACT) consisting of the circulating fluidized bed boiler (CFB), a flash dryer absorber scrubber (FDA), a fabric filter system (baghouse) and a selective non-catalytic reactor.

Limestone Handling

The raw limestone will be 2" x 0" stone delivered to the plant by highway trucks. The limestone will be dumped into a covered storage area with a capacity of 10,000 tons. The stone will be loaded into the limestone handling and processing system by front-end loader. There will be two limestone pulverizers, Raymond pendulum type, each capable of producing 80 tons per hour.

Natural gas will be used to heat input air to the pulverizers for drying the limestone. It is expected that limestone preparation will typically be done on a 12 hours per day basis.

Finished limestone will be pneumatically conveyed from the pulverizers to the finished limestone storage silos, located adjacent to the fuel storage silos. There will be two finished limestone silos per boiler. Each silo will feed, via a rotary valve, to a pneumatic limestone transport system. Each limestone transport system will feed to four of the eight front wall limestone/fuel feed points. Each limestone feed system (IE: four feed points) will be capable of supplying 100% of each boiler's limestone consumption on the worst case fuel.

Turbine Systems

The output of each boiler, superheated steam and reheat steam will be headered together to supply a single steam turbine/generator (TG). The steam turbine will be a four cylinder; one single flow high pressure turbine; one double flow intermediate pressure turbine and two double flow low pressure turbines rated at a main steam flow of 1,933,223 lbs./hr., 2400psi 1000°F/1000°F. The generator will be a single 660 MVA hydrogen cooled generator with a gross output of 585 MW at 22KV. Operating backpressure will be 2.25"hg.

The turbine will also be provided with a 20% bypass system to facilitate startup and placing individual boilers on and off line.

Circulating Water System

There will be two 50% vertical circulating water pumps supplying the circulating water system. Cooling towers will be multi-cell mechanical draft wooden towers with PVC fill.

Balance of Plant

There will be a single feedwater and condensate system feeding to both boilers. There will be 5 low pressure feedwater heaters and two high pressure feedwater heaters.

Redundancy in the condensate and feedwater systems will be accomplished through the use of uninstalled spares. There will be two 50% (one per boiler) condensate pumps, two 50% (one per boiler) barrel type boiler feedwater pumps.

Air will be supplied by two 100% screw type air compressors.

Water Supply System

The Kentucky Mountain Power approach to supplying water to the plant will have significant benefit to the surrounding communities. The lack of potable water is a continuing problem in Eastern Kentucky.

Under a long-term water facilities agreement, the Project will contract with US Filter, a whollyowned subsidiary of Vivendi Environment, S.A., to construct and to operate the water supply system over a 20-year period to supply water to the site and take and treat waste water discharges.

The Kentucky Division of Water issued Water Withdrawal permit numbers 1478 on March 30, 2001, which authorizes the withdrawal of water from the North Fork of the Kentucky River and the Lick Branch Fresh Water Impoundment. Under the water withdrawal permit the project will be limited in the amount of water that can be withdrawn from the river as shown in the following table. In no case will the plant be allowed to withdraw water from the river if that withdrawal would reduce the river flow to 20.0 cubic feet per second or less.

Jan.	10.0 MGD	April	14.4 MGD	July	5.8 MGD	Oct.	6.0 MGD
Feb.	14.4 MGD	May	14.4 MGD	Aug.	5.6 MGD	Nov.	9.8 MGD
Mar.	14.4 MGD	June	9.3 MGD	Sept.	2.4 MGD	Dec.	12.6 MGD

The Department of Army Corps of Engineers issued a Section 404 permit under Nationwide Permit Number 12 on June 21, 2001 for construction of a water intake structure in the North Fork of the Kentucky River. This permit also includes the water pipeline extending from the North Fork of the Kentucky River to the Project site. The Section 401 Water Quality Certification issued by the Kentucky Division of Water is also incorporated into Nationwide Permit Number 12.

A pumping station will be constructed on the banks of the North Fork of the Kentucky River. From the pumping station a 22 mile, 30 inch in diameter, ductile iron water line will be constructed to the plant. The water line will terminate at a 1.4 billion gallon water reservoir located adjacent to the plant site. The water system is designed to provide the power plant water needs as well as potable water to surrounding residents and to a regional industrial park located on property donated by the project to the State of Kentucky and local counties.

Electrical Transmission System

The power generated by the Kentucky Mountain Power project will be sent to the Kentucky Power high voltage transmission system via a new switching station to be constructed on the plant property. Davis H. Elliott Construction Company and American Electric Power will construct the switching station and approximately 40 miles of 138KV transmission line from the plant site to existing substations. Once completed the switching station and transmission lines will be owned by American Electric Power.

The transmission lines will provide a means to move the power generated by the project to the power markets in the Midwest and East. The power generated by KMP and placed on the Kentucky Power grid in eastern Kentucky will also relieve transmission line congestion in the region reducing line losses by approximately 40 MW, providing 40 MW of additional electricity on the national grid at absolutely no environmental impact or cost to consumers.

State of Kentucky Support

Industrial Park

The Project will donate to the State of Kentucky a total of 1250 acres of land located on the Starfire site adjacent to the power plant. The State intends to use this land to develop an industrial park and golf course. As part of the industrial park development the State has committed to construct a new heavy haul bridge and road from Kentucky highway 80 to the plant site. The Project will be responsible for a portion of the excavation for the road while the State and County will be responsible for the bridge construction and finish grading and paving of the road.



Date: May 31, 2002 File: 986-02\18\Drawings\Large Scale Map\Powerlines.dwg

8.3.0 Property Description

The plant site is located at 37°25'21"N and 83°06'52" W. Included with this assessment is a detailed aerial photograph showing property features.

8.3.1. Surrounding Land Use

The Kentucky Mountain Power project site is on property that has been and continues to be operated by the Starfire Mining Company as a surface coal mine. This mine has the distinction of being the largest surface mine in the eastern USA.

The adjacent properties to the Kentucky Mountain Power, LLC leasehold boundary are all permitted for surface mining, except for a single parcel located to the northeast of the property. This parcel is owned by Appalachian Realty, a coal minerals company. It is expected that this parcel will be permitted for mining activities in the future.

8.3.2. The Legal Boundaries of the Proposed Site

The plant location lies within an area of 4000 acres that Kentucky Mountain Power, LLC holds under lease from Appalachian Realty Company. A copy of the lease is included in the Appendixes. Within the leased area Kentucky Mountain Power, LLC has options to purchase from Appalachian Realty approximately 1993 acres. This acreage includes 195 acres surrounding the power plant proper which is the "site" as defined in SB 257, 544 acres at the ash disposal area and 106 acres at the water storage reservoir area (with an additional 62 acres under option from Vera Salyer for the water storage reservoir) and approximately 1150 acres for the industrial park, golf course and road. The optioned properties indicated on the attached aerial photograph. Copies of the property descriptions are included in the appendixes.

8.3.3. Proposed Access Control to the Site

Access to the property will be via the new heavy haul road and bridge from Highway 80. The road from Highway 80 to the power plant proper boundary will be a public county road. The location of this road is detailed on the site drawing.

At the entrance to the power plant there will be a security building manned 12 hours per day with security cameras and cardkey access during the off hours and weekends. Only authorized personnel will be allowed to enter the plant property.

The power plant facility will be completely surrounded by a cyclone wire fence, a minimum of six feet high topped with barbed wire. Around the outer boundary of the plant property will be a three-strand barbed wire fence.

The ash disposal area and the water supply reservoir will be surrounded by cyclone wire fences, a minimum of six feet high topped with barbed wire. Access to these areas will be through locked gates. There will be no public roads to access these areas.

8.3.4. Location of Facility Buildings, Transmission Lines and other Structures

There will be a number of major buildings erected as part of the project. These buildings are listed below

- Boiler Building
- Turbine Building
- Baghouse Buildings
- Coal Crushing Building
- Limestone Crushing Building
- Administration Building
- Warehouse Building
- Maintenance Shop Building
- Security Building
- Coal Truck Dump Hoppers
- Limestone Truck Dump Hoppers
- Water Treatment Building

Each of these buildings is located on the site assessment map.

8.3.5. Location of and use of access ways, internal roads and railroads

There will be a number of roads within the plant. These roads will provide access for the fuel deliveries, limestone deliveries and general plant access. The roads are indicated on the detailed plant drawing.

There will be no rail access to the plant site.

8.3.6. Existing and Proposed Utilities to Service the Facility

Electric distribution lines and a gas collection system presently exist on the plant site. These existing utilities will be relocated as part of the project construction.

Proposed utilities to support the project include electric switchyard and transmission lines, high pressure gas line and water supply system. These utilities are discussed in more detail in other sections of this document.

8.3.7. Compliance with Applicable Setback Requirements

Under the new portion of KRS 278, Section 3, the setback requirements are as follows;

- (2) "... the exhaust stack of the proposed facility is at least one thousand (1000) feet from the property boundary of any adjoining property owner and two thousand (2000) feet from any residential neighborhood, school, hospital or nursing home facility."
- (5) "If the merchant electric generating station is proposed to be located on a site of a former coal processing plant in the Commonwealth where the electric generating facility will utilize on-site waste coal as a fuel source, then the one thousand (1000) foot property boundary requirement of subsection (2) of this section shall not be applicable."

The plant location is within 600 feet of the purchased property boundary and over 1000 feet from the leased property boundary. There are no residential neighborhoods, schools, hospitals or nursing facilities within 2000 feet of this location. The nearest neighbor is approximately 13,000 feet from the power plant site.

The power plant is located completely within the unincorporated area of Knott County. A portions of the water storage reservoir will be located in Perry county. There is no applicable Planning and Zoning Commission with jurisdiction over these locations.

8.4.0 Scenic Compatibility of Power Plant

Introduction

Pursuant to KRS 278, determination of scenic compatibility of a new power plant is to be assessed prior to the construction of any new power plant. The presumption of the assessment is to determine any negative visual impact to adjacent environments being used by inhabitants or visitors of those adjacent areas. The primary focus of this portion of the site assessment will be to ascertain visual qualities of the existing environment/land uses and any negative impacts created by the power plant construction

While the statutes do not recommend a specific methodology, the basis of this assessment will incorporate practical and pragmatic applications of visual analysis' to the extent of determining visual impacts. To this end, this assessment will determine if the power plant;

- > Can be seen from critical locations or views
- > Has any negative impact to the existing viewshed

This determination will be made through a series of viewshed profiling assessments from areas having the most potential for negative visual impacts of the proposed power plant. A study of area land uses has been made to determine potential negative views to the power plant. For the basis of this assessment, the scenic viewshed analysis will be developed visual units that have been selected as being typical for the area Persons visiting the area, via transportation routes, inhabitants of the area and sensitive environments of the area have been selected as visual units to be assessed for negative impacts of the power plant.

Project Description

The proposed power plant has been sited in a relatively benign area due to its size and scale. This deliberate siting works well for the contextural setting of the power plant The plant will occupy approximately 195 acres of ground and will be located for ease of access and site specific uses for auxiliary needs of the operation of the power plant In profile the power plant will occupy an area that is approximately 450 feet in length. The tallest portion of the power plant is the stack that will be approximately 450 feet in height. The main portion of the plant, the generating area will be just over 200 feet in height. In addition to the power plant, a refuse ash disposal area will be created over the life of the plant on an adjacent area of the site. The proposed refuse area will be contoured to the land and will reach a proposed elevation of approximately 1700 msl. The refuse area will be reclaimed with natural ground cover, in context with the adjacent mined areas

The power plant will be located on a relatively high area, known as Potato Knob, at an approximate elevation of 1400 msl. Through the development of the plant site,

approximately 25 to 30 feet of the plateau will be removed The highest elevation of the plant, the stack will be at an elevation of approximately 1850 This will be the critical benchmark elevation for the visual/scenic assessment

The power plant and its auxiliary operations are being developed on a reclaimed strip mine site and is surrounded by an active mining operation and reclaimed mine areas. The active mine operations create extensive disturbance in a visual context to the surrounding landscape with the spoil piles and excavated areas. Previous sections of this site assessment further describe the specific nature of the facility and the surrounding environments

Scenic Assessment

The scenic assessment will be developed utilizing impact models for adjacent land uses that potentially could be impacted the greatest. For the purpose of this assessment it will be assumed that the power plant will not have any negative impact to the immediately adjacent mining land use. In relative terms, the mining operation can be considered as a landscape disruption in itself and potentially is far less visually acceptable than the proposed power plant

Having assessed the area, there are three land use areas (visual units) that will potentially be negatively impacted by the visibility of the power plant,

- Route 80 to the south of the power plant and a primary east west transportation corridor of the region Route 80 is selected as a modeling unit because travelers using route 80 may be impacted by any negative visibility of the power plant Route 80 is just over 4 miles in a straight visual line of site to the power plant Two points on Route 80 will be assessed for visual impact
- Robinson Forest Wildlife Management Area to the north of the proposed power plant and is a natural forest area utilized by the University of Kentucky for the study of forestry and wildlife resources Critical areas of activity that are used for study, demonstration and recreational uses within Robinson Forest will be assessed along a visual line of site that ranges from approximately 2.5 miles to just under 4 miles Three points within Robinson Forest will be assessed for visual impact
- Residential community along Buck Fork Branch approximately three miles to the southwest of the power plant site Compatibility issues of a power plant and residential land uses led to the selection of this area as a visual unit to be assessed One line of site assessment will be made to this area

These three land use areas surround the power plant and represent a full radial viewshed from the proposed power plant As a conservative approach to this assessment, it is assumed there are no environmental obstructions between the referenced visual units and the proposed power plant other than topographic and elevational changes Thus the assessment will rely solely on a topographic model for determining negative impact A topographic obstruction to a line of sight between the visual unit and the proposed power plant will negate visibility, thus eliminating a negative impact. For the purpose of this assessment, the highest elevation of the proposed power plant has been used for the line of sight profile

A straight line "profile" will be simulated between the power plant and the critical land use/visual unit This profile will reflect the visual obstructions in the form of topographic land features A line of sight profile has been projected on each topographic profile that will reflect obstructions to the line of sight

Exhibit 'A' illustrates the regional Land Use/Viewshed Environment context of the power plant to the selected visual units assessed for scenic incompatibility. The radial assessment extends approximately four miles from the proposed power plant site. These selected visual units are well representative of areas that could be visually impacted from a scenic context by the power plant.

Exhibit 'B' illustrates the line of sight/topographic profiles between each selected visual unit and the proposed power plant An intersection of the line of sight profile and a topographic profile line represent a visual obstruction between the power plant and the visual unit





EXHIBIT 'A' Viewshed Environment



ROUTE BD Robinson Forest to EnviroPower











Conclusions

This assessment will conclude negative scenic impact if the power plant becomes a dominate visual part of the landscape within the surrounding area of the power plant Should visual obstructions occur between selected and representative land uses of the area, is will be concluded that no negative scenic or visual impact occurs

The line of sight/topographic profiles between Route 80 and Buck Fork Branch illustrate significant topographic obstructions It is concluded that the power plant cannot be seen between these selected model points and thus there will be no negative scenic impact to the south and west of the power plant

The line of sight profiles between the selected model points within Robinson Forest illustrate marginal obstruction between the power plant. In these profiles, because of no conclusive evidence from the profiling, other environmental factors should be considered Other environmental factors would include density of land cover such as significant tree growth, atmospheric conditions that would impact range of visibility and the scale of the power plant in the context of the entire environment. Considering that Robinson Forest has a very dense tree and vegetation cover, there are over 150 days of precipitation in the area creating atmospheric obstructions and the single vertical inclusion of the power plant stack approximately four miles from the critical activity areas in Robinson Forest, the potential for other environmental obstructions and minimization of visual impacts is high. It is the conclusion of this assessment that there will be no negative scenic impact of the power plant to Robinson Forest.

Having assessed a representative sampling of visual units within the area of the power plant and determining no negative visual impacts, it is the conclusion of this portion of the Site Assessment the Scenic Qualities of the area will not be compromised because of the development of the proposed power plant

Scenic Assessment Prepared By

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