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April 11, 2005

Mr. John A. Rogness III  
Manager, Management Audit Branch  
Public Service Commission, Commonwealth of Kentucky  
211 Sower Blvd.  
P.O. Box 615  
Frankfort, KY 40601

Re: BBC's Review of LG&E Energy Corporation Site Assessment Report for Proposed  
Trimble County Unit Number 2 in Trimble County, Kentucky

Dear John:

BBC's report, *Review and Evaluation of Trimble County Unit 2 Site Assessment Report*, accompanies this letter. We are first submitting the report in electronic, portable document format (PDF) in order to assure compliance with the filing deadlines established for this proceeding. We will also place twenty bound and one unbound copies into overnight mail to you later this week.

BBC looks forward to the forthcoming hearing on this matter. Please let us know if you have any questions regarding this report.

Sincerely,

A handwritten signature in black ink that reads 'Doug Jeavons'.

Doug Jeavons  
Managing Director  
BBC Research & Consulting

A handwritten signature in black ink that reads 'Ed Harvey'.

Ed Harvey  
Principal  
Harvey Economics

Report

Review and Evaluation of  
Trimble County Unit 2  
Site Assessment Report

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Report

April 11, 2005

## Review and Evaluation of Trimble County Unit 2 Site Assessment Report

Prepared for

Kentucky Public Service Commission and  
Kentucky State Board on Electrical Generation and Transmission Siting  
211 Sower Boulevard  
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## SECTION A. General Statement

This document provides a review of the Site Assessment Report (SAR) for the proposed Trimble County Unit 2 coal-fired electric generating plant (TC2) submitted to the Public Service Commission (PSC) and to be submitted later to the Kentucky State Board on Electrical Generation and Transmission (Board). The SAR was submitted by LG&E Energy Corporation <sup>1</sup>(LEC) to the Kentucky Public Service Commission (PSC). PSC staff retained BBC Research & Consulting (BBC) to perform this review. LEC has submitted the SAR to support LG&E's and KU's joint application for a site compatibility certificate under KRS 278.216 (the Act), passed by the General Assembly of the Commonwealth of Kentucky in 2003.

### Provisions of the Act Establishing the SAR Review Process

In 2002, the part of KRS 278 entitled "Electric Generation and Transmission Siting" defined a class of merchant power plants and required them to obtain construction certificates as a prerequisite to the commencement of actual construction activity. Those statutes also created the Board and gave it the authority to grant or deny construction certificates requested by individual applicants. The Board is an arm of the PSC for administrative purposes.

In 2003, the siting assessment reporting and review requirements for proposed new merchant power plants were extended to apply to construction of any new electric generating facilities capable of generating more than 10 megawatts.<sup>2</sup>

The Act created the application process and, within the process, a series of steps for preparing and submitting this report:<sup>3</sup>

- The applicant files for a construction certificate and pays the fees.
- The applicant submits required items, including an SAR.
- If it wishes, the PSC may hire a consultant to review the SAR and provide recommendations about the adequacy of the information and proposed mitigation measures.
- The consultant must deliver the final report so the PSC can meet its own statutory decision deadline — 90 days or 120 days from receipt of an administratively complete application, depending upon whether the PSC will hold a hearing.

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<sup>1</sup> Louisville Gas and Electric Company (LG&E) and Kentucky Utilities Company (KU), public utilities subject to the jurisdiction of the PSC, are subsidiaries of LEC.

<sup>2</sup> Kentucky Revised Statutes 278.216(1), effective June 24, 2003.

<sup>3</sup> The same process applies to the Board.

## SAR Review Methodology

BBC undertook the following tasks to review LEC's SAR and complete this report:

- Conducted a brief review of secondary data sources to obtain background information and geographic setting for TC2;
- Reviewed BBC's prior SAR review for the Board (regarding the Kentucky Mountain Power project) and other SAR reviews completed for the Board since that initial review;
- Upon receipt of the site assessment and application, reviewed its contents;
- Identified additional information we considered useful for a thorough review, and submitted questions to the applicant via the PSC;
- Conducted the required site visit, including obtaining oral and written information supplied by the applicant, over a period of two days in March 2005;
- Completed interviews and data collection with a number of outside sources as sourced in this document; and
- Compiled and incorporated all of the foregoing in the analysis.

## Report Format

This report is structured to be responsive to KRS 278 and our contract. It begins with this general statement that introduces the review. In Section B of the report, we present the executive summary. Section C offers detailed findings and conclusions of the study, and in Section D, we present the detailed recommendations concerning mitigation measures and future PSC actions.

## Certain Limitations

There are inherent limitations to any review process of documents such as the SAR. These must be understood in utilizing this report for decision-making purposes.

Based on previous experience with the SAR review process, BBC has exercised judgment in deciding what information is relevant and what level of detail is appropriate. This relates to project components, geographic extent of impacts and assessment methodology. PSC staff has provided review and guidance in this context.

At this point, LG&E has not selected a contractor to construct TC2 or developed final construction plans. The SAR, and this review, are based on the best available information at this time about future design and construction. BBC's review attempts to bracket and otherwise incorporate these uncertainties and ensure through appropriate mitigation measures that they do not create undue siting impacts later.

## SECTION B.

### Executive Summary

This report documents the evaluation of a Site Assessment Report (SAR) in compliance with KRS, Chapter 278.216 and KRS, Chapter 278.708. The Kentucky Public Service Commission (PSC) received a joint application from Louisville Gas and Electric Company (LG&E) and Kentucky Utilities (KU) for approval to construct a 750 MW super-critical pulverized coal-fired generating unit at the Trimble County Generating Station on December 17, 2004. The PSC staff retained BBC Research & Consulting (BBC), a Denver-based firm, to review the SAR. BBC was directed by PSC staff to review the SAR for adequacy, visit the site and conduct supplemental research where necessary and to provide recommendations about proposed mitigation measures. This is the summary of BBC's final report, which encompasses the SAR review, establishes standards for evaluation, summarizes information from the applicant, notes deficiencies, offers supplemental information and draws conclusions and recommendations related to mitigation. Issues outside the scope of KRS 278.216 and KRS 278.708 such as regional economic impact, electricity market or transmission system effects and broader environmental issues were not addressed in this engagement.

#### Description of the Proposed Facility/Site Development Plan

The SAR provides a description of the Trimble County Unit Number 2 (TC2) project in terms of surrounding land uses, legal boundaries, access control, utility service, setback requirements, visual impacts, impacts on surrounding property owners, noise levels and traffic impacts. TC2 is a proposed addition to the existing Trimble County Station, a partnership that includes LG&E and Kentucky Utilities, Indiana Municipal Power Agency (IMPA) and Illinois Municipal Electric Agency (IMEA). The station currently includes a 500 MW coal-fired generating unit and six combustion turbine peaking units, along with the many environmental and other components common to such a facility. The station is located along the Ohio River in Trimble County, approximately five miles west of the Town of Bedford.. Conclusions with respect to other descriptive elements of the facility follow:

- Surrounding land use — LG&E and its partners own approximately 2,200 acres including and surrounding the proposed location for TC2. LG&E defines the actual site of the Trimble County Station (including the areas where TC2 facilities will be located) as a 650 acre developed area which includes the current coal-fired generating unit, the combustion turbines and all ancillary facilities. The remainder of the LG&E and partner landholdings surrounding the site include a small nature preserve and essentially undeveloped bottomland and woodlands. The surrounding terrain and the Ohio River provide something of a buffer between the Trimble County Station and most nearby property owners, except to the south. Wisers Landing, the community south of Trimble County Station and closest to the proposed site, includes about 37 homes. The closest home in Wisers Landing is about 135 feet south of the southern boundary of the station and about 3,000 feet from the proposed location of TC2 facilities. Wisers Landing also has an active gravel mining quarry in its midst.
- Proposed access control and security — LG&E has experience with the challenges involved in providing access control and security during construction at the Trimble County

Station. During the past five years, LG&E managed overlapping efforts to construct an SCR for Trimble County Unit Number One and two of the six combustion turbines – employing a combined peak workforce of about 900 workers. Although the peak workforce for TC2 will be somewhat larger, the facilities and processes used previously to manage access and security appear generally adequate. LG&E plans to conduct a security assessment after construction plans are determined.

- Utilities — In general, existing utilities that currently service the Trimble County Station will continue to be used for TC2 with minor modifications.
- Setback requirements — The TC2 site meets all the setback requirements under KRS 278.708. There are no local setback requirements for the site.
- Other facility site development plan descriptions provided in the SAR — Legal boundaries; location of facility buildings, transmission lines, structures; location of access roads, internal roads and railways; compliance with applicable setbacks; and noise levels (addressed in a subsequent section of the SAR). These materials, as enhanced through information requests to LG&E during this SAR review and described later in this report, appear to meet the informational requirements identified in 278.708.

### Compatibility with Scenic Surroundings

Visual impact analysis commonly includes a description of the visual setting, visual features of the facility and its appurtenances, and an identification of places where humans might observe the facility or its components. These factors contribute to the evaluation of visual impacts and the facility’s compatibility with the existing setting.

The BBC team evaluated the methodology and the analyses performed in the SAR in support of the TC2 visual impact assessment. The methodology, data sources and execution of that methodology are appropriate and acceptable for this evaluation. Given the physical improvements planned at the Trimble County power plant site, the SAR correctly notes that the incremental visual effects of the new facilities will be minimal since their profiles are modest compared with the facilities already in place as part of TC1. Given the existing plant, TC2 is compatible with its scenic surroundings.

### Potential Changes in Property Values for Adjacent Property Owners

The central issue related to property values is whether or not, and to what extent, property values of other land owners will increase or decrease as a result of the TC2 development or any of its appurtenances. The statistical analysis and other information provided in the property value assessment in the SAR were not sufficient, by themselves, to support that report’s conclusion of no significant impacts. However, given the limited number of property sales in Trimble County, there is also no evidence that the existing facilities at Trimble County Station have had any statistically significant impact on nearby property values. More importantly, the BBC team is confident that the addition of TC2 to the existing Trimble County Station will not have any measurable effect on local property values. We reach this conclusion primarily because the addition of TC2 will have relatively little effect on the already existing visual and noise characteristics of the Trimble County Station, as described elsewhere in this study. This conclusion is reinforced by the views of knowledgeable sources in the local community.



## Expected Noise from Construction and Operation

The noise studies performed for LG&E as part of this SAR utilized appropriate methodology and applied that methodology correctly. The results of the noise survey appear to be credible and were confirmed during supplemental information gathering and field investigations. The noise modeling conducted for purposes of the SAR did not address construction or various intermittent activities such as steam blows.

The most important noise related issue associated with TC2 relates to steam blows. As many as two planned plus a number of unplanned steamblows occur each year with TC1. These are an inevitable aspect of steam generating plants and LG & E works to keep such steamblows to a minimum. Even so, there are likely to be more steamblows after TC2 goes into operation.

Noise levels during TC2 construction are unlikely to create a significant incremental effect over current noise levels at the plant site. If construction related traffic is focused on U.S. Highway 42 and State Highway 754, traffic related noise is likely to be manageable, although there is uncertainty given the substantial traffic volume increases that will occur during that four-year period.

## Impacts on Land-based Transportation

Development of a coal-fired power plant can raise a variety of potential traffic related issues. These issues may arise from the movement of construction workers and heavy and oversized loads during the construction process and added congestion during both construction and subsequent operations. All construction and operations related equipment, materials and personnel will be transported to the site via existing roads or by barge along the Ohio River. There are currently no plans to expand current, or construct new roads. There is no rail access to the site. Barge traffic related to TC2 will have essentially no impact on existing locks or other facilities.

Immediate access to the Trimble County Station is provided via three access roads from State Highway 1838 which, in turn, is accessed locally primarily through State Highways 754 (from Bedford, KY) and 625 (from Milton, KY). U.S. Highways 421 and 42 are the main arteries or rural primary routes that provide access to Trimble County. Local interviews indicated that construction related traffic was a significant concern. The concerns focus on State Highways 754 and 625; State Highway 1838, immediately in front of the power plant site is not an issue. State Highway 754 is viewed as too narrow and winding. State Highway 625 has similar issues and a bridge that is sub-standard because the road base is collapsing around the culverts. Local officials also voiced concern regarding the transportation schedules associated with the ammonia trucks accessing the plant.

## Recommendations

BBC has noted a number of deficiencies in the SAR within this review document. However, we believe that these deficiencies have been largely addressed through supplemental research and investigation, including additional information provided by the applicant. We believe that further studies would not modify the findings and conclusions, and therefore recommend that the applicant not be required to revise its initial SAR.

Specific mitigation measures set forth in Exhibit B-1, below, summarize BBC recommendations for TC2.

Exhibit B-1.  
Summary of Impacts and Recommended Mitigation

<i>SAR Criteria</i>	<i>Level of Impact/Deficiency</i>	<i>Recommended Mitigation</i>
Description of Facilities	Supplemented information adequate	None
Compatibility with Scenic Surroundings	Little or no impact relative to existing structures at Trimble County Station	Select colors and a lighting scheme for TC2 components that are consistent with the existing power plant
Property Values	No significant impact	None
Noise Impacts	Negligible effects, except for steam blows	Install silencers to limit noise from steam blows.  Enhance communication with nearby residents, consider implementing a telephone warning system for planned steam blows
Traffic Impacts	Cause for concern due to condition of roadways and major volume increases, especially during construction	Hire locally qualified construction workers, especially those familiar with local roads, to the extent possible.  Direct construction traffic to least impacting routes and times of the day  Communicate with local officials regarding ammonia truck deliveries  Seek to improve compliance of hauling contractors with local traffic laws  Monitor traffic issues during construction and take action as needed

These mitigation measures are discussed in Sections C and D of this review.

BBC recommends that the PSC approve the application for a certificate to construct based upon the siting considerations addressed in this review, assuming that the project is developed as described in the applicant's SAR and supplemental information, and that the mitigation measures above are implemented appropriately. If these assumptions are correct and based upon the information available to BBC in early 2005, there are unlikely to be significant unmitigated impacts from construction and operation of the TC2 project regarding scenic compatibility, property value, noise impacts or traffic.

## SECTION C.

# Findings and Conclusions

This section provides detailed review and evaluation of each element of the SAR as proscribed in Section 5 of KRS 278. It is organized into five subsections:

1. Description of Proposed Facility/Site Development Plan
2. Compatibility with Scenic Surroundings
3. Potential Changes in Property Values for Adjacent Property Owners
4. Expected Noise from Construction and Operation
5. Impacts on Transportation

Although the Commission will likely consider economic impacts, transmission and other issues in making its decision, these are beyond the present scope of our inquiry and so are not addressed here.

Within each subsection, BBC has followed a consistent pattern. First, BBC describes generally accepted assessment criteria or methodology necessary to evaluate impacts of a project of this nature. Secondly, we summarize what relevant information was included in the initial SAR. Thirdly, we describe supplemental information about Trimble County Unit Two (TC2), along with other information BBC was able to gather about the project and its impacts. Finally, BBC draws its own conclusions about TC2 impacts and recommended mitigation. We believe that this format transparently presents the basis for our conclusions and recommendations.

# Description of Proposed Facility/Site Development Plan

## Potential Issues and Standard Assessment Approaches

As required by KRS 278.708(3)(a), the SAR must contain the following information:

- Subsection 1—surrounding land uses for residential, commercial, agricultural and recreational purposes;
- Subsection 2—the legal boundaries of the proposed site;
- Subsection 3—proposed access control to the site;
- Subsection 4—the location of facility buildings, transmission lines and other structures;
- Subsection 5—location and use of access ways, internal roads and railways;
- Subsection 6—existing utilities to service the facility;
- Subsection 7—compliance with applicable setback requirements as provided under KRS 278.704(2), (3), and (5); and
- Subsection A-8—evaluation of the noise levels expected to be produced by the facility.

BBC found each of these required information items in the SAR and examined them. To some extent, the required elements of the description of the facility and site development plan specified in the legislation overlap with topic-specific evaluations also required in the statute. In particular, the statute calls for specific evaluations of impacts on nearby property values, traffic and noise levels. Both the applicant's SAR and the BBC team's evaluation provide further detail on these topics in subsequent sections.

## Information Provided in the Applicant's SAR

The required description of the proposed facility and site development plan is mainly set forth in Section 2 of the SAR. Other related or supplementary information comes from various other sections of the SAR.

Surrounding land uses. Section 2.1 of the SAR notes that the proposed site for TC2 is located along the Ohio River, about 5.6 miles west of the Town of Bedford, Kentucky. The proposed location for TC2 facilities is within the boundaries of the existing Trimble County Station power plant, which currently includes a 500 MW coal fired boiler and six simple cycle 150 MW combustion turbines.<sup>1</sup>

LEC<sup>2</sup>, along with their partners in the Trimble County Station, Indiana Municipal Power Agency (IMPA) and Illinois Municipal Electric Agency (IMEA), own approximately 2,200 acres including and

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<sup>1</sup> SAR, page 1 and page 4.

<sup>2</sup> LEC's regulated utilities, Louisville Gas and Electric (LG&E) and Kentucky Utilities (KU), will own the LEC share of TC2.

surrounding the proposed location for TC2.<sup>3</sup> LG&E defines the actual site of the Trimble County Station (including the areas where TC2 facilities will be located) as a 650 acre developed area which includes the current coal-fired generating unit, the combustion turbines and all ancillary facilities.<sup>4</sup> The remainder of the LG&E landholdings surrounding the site includes a small nature preserve and essentially undeveloped bottomland and woodlands.

As noted in Section 2.1 of the SAR, “the project site is bordered to the west by the Ohio River, to the north by agricultural land and to the east by a steep, wooded hillside.”<sup>5</sup> The small community of Wisers Landing is located south of the Trimble County Station.

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<sup>3</sup> SAR, Appendix A.

<sup>4</sup> SAR, Page 9.

<sup>5</sup> SAR, Page 4.

Legal boundaries. Appendix A of the SAR presents the legal description of the boundaries of the Trimble County Station. This description corresponds to the full 2,192 acre land area owned by LG&E and its partners in the station rather than the 650 acre area within those landholdings that LG&E has defined as the project site.

Access control. Section 2.3 of the SAR provides a very abbreviated description of access control and security for the site, indicating that the site is currently controlled with security fencing and manned security gates and that these controls would remain intact and be used during construction and operation. Additional information was requested from and provided by LG&E and is described later in this section.

Location of buildings, transmission lines and other structures. The applicant's SAR included two drawings, Figure 2-1 (page 7) and Figure 2-2 (page 9), that depict existing structures and facilities at the Trimble County Station and proposed new structures for TC2, respectively. The location of proposed transmission lines were not shown on the figures provided in the SAR.

The Trimble County Station was originally designed to accommodate multiple coal fired generating units. TC2 will make use of many existing facilities with little or no modification, including facility roads, material handling facilities, control and operations facilities and ash disposal facilities. TC2 will also use the existing stack and hyperbolic cooling tower. The existing coal fired unit, Trimble County Unit 1 (TC1), will be switched over to use a new mechanical cooling tower that will be constructed as part of the TC2 installation. Other significant new buildings will include the TC2 boiler and emission control structures.<sup>6</sup>

Location/use of access ways, internal roads and railways. Access to TC2 will be the same as existing access to the Trimble County Station. Road access is via Highway 1838, which runs along the eastern boundary of the plant site. Highway 1838 is reached from the south and east via Highway 754 out of Bedford. Access to Highway 1838 from the north, principally from the Town of Milton, is via Highway 625.<sup>7</sup> Internal roadways were depicted on Figure 2-1 and 2-2 of the applicant's SAR, referenced previously. There is no rail access to the site. Heavy materials and equipment, including coal and limestone deliveries and major components for the proposed TC2, are delivered via barge from the Ohio River.

Existing or proposed utilities. Section 2.6 of the SAR describes proposed utility arrangements. In essence, existing utilities that currently service the Trimble County Station will continue to be used for TC2 with minor modifications. A new oil/water separator will be installed and existing wastewater systems extended to maintain a "zero-discharge" facility. The SAR indicates that contractors will be responsible for their own water supplies and for wastewater disposal during construction.<sup>8</sup> The SAR did

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<sup>6</sup> SAR, Pages 9 and 10.

<sup>7</sup> SAR, Page 10.

<sup>8</sup> SAR, Page 6.

not describe sources of ongoing supplies for potable water after operations begin or sources of natural gas and electricity for plant operations.

Compliance with applicable setback requirements. The SAR indicates that TC2 will utilize the existing stack. This stack is located more than 1,000 feet from the nearest plant boundary and more than 2,000 feet from the nearest residence – thus complying with the setback requirements identified in KRS 278.704. The SAR indicates that “based on the information provided” there are no local setback requirements that apply to the project.<sup>9</sup>

Evaluation of noise levels. The noise assessment provided by the applicant is found in Section 5.0 of the SAR. BBC presents its assessment of the applicant’s noise information later in this section of the report.

### Supplemental Investigations, Research and Analysis

After reviewing the applicant's SAR, the BBC team sought to supplement the information provided in the SAR where necessary to more fully describe the proposed facility and site development plan. Interviews and additional data collection were conducted with the applicant, federal, state and local officials, and local residents. The study team visited the plant site and nearby communities, performing personal interviews with a host of individuals at the plant site and in Trimble County over a three day period. The following discussion focuses on the elements of the facility description and site development plan that the study team believed required further examination.

It should be noted that the study team confined its evaluation and related investigations to lands in Kentucky. Based upon direction from PSC staff, Indiana was considered outside the jurisdiction of review by the consultant and the State of Kentucky agencies.

Surrounding land uses. As observed during the site visit, the surrounding terrain and the Ohio River provide something of a buffer between the Trimble County Station and most nearby property owners, except to the south. There are approximately 13 properties owned by other parties within a distance of about one to two miles from the site to the north and east, and these are depicted in Exhibit C-2.<sup>10</sup> Most of these properties, however, are located on higher terrain and have only an obstructed view of the power plant, primarily the upper portions of the cooling tower and stack.

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<sup>9</sup> SAR, Page 6.

<sup>10</sup> LG&E, aerial photograph provided in Response to Initial Information Request of BBC Research & Consulting, Question 19, March 7, 2005.

boundary of the station and about 3,000 feet from the proposed location of TC2 facilities. There are approximately 37 homes located in Wises Landing.<sup>11</sup>

Wises Landing is a somewhat historic community originally developed around river-borne commerce along the Ohio River. Early in the last century, Wises Landing was one of the primary commercial centers in Trimble County.<sup>12</sup> Wises Landing has many fewer residents than it once did and, in addition to private homes and small farms, includes an active gravel quarrying operation that generates noise, dust, a scenic impact and substantial truck traffic through the community.<sup>13</sup>

Exhibit C-3.

Wises Landing from Southwestern Corner of Trimble County Station



Source: BBC Research & Consulting, 2005.

Legal boundaries. In response to BBC's request, LG&E also provided a map depicting the legal boundaries of the Trimble County station.

Access control. In our initial information request to LG&E and during the course of discussions with LG&E representatives during the study team's site visit, we requested further clarification and detail regarding the plans for access control and security during construction of TC2.

LG&E has experience with the challenges involved in providing access control and security during construction at the Trimble County Station. The existing coal-fired boiler, TC1, was built during the 1980s and commissioned in 1990. During 2000-2002, LG&E managed construction of a Selective Catalytic Reduction (SCR) facility for TC1 and overlapping construction of two of the combustion turbines located on site. Though the combined peak workforce for that effort of about 900 workers was smaller than the projected peak construction workforce for TC2 of almost 1,400, the isolated

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<sup>11</sup> LG&E, Response to Initial Information Request of BBC Research & Consulting, Question 17, March 7, 2005.

<sup>12</sup> Personal communication with Randy Stevens, Trimble County Judge Executive, March 29, 2005.

<sup>13</sup> BBC Research & Consulting, site visit, March 29, 2005.



construction worker parking lots and other security facilities appear adequate for the projected workforce for TC2.<sup>14</sup>

During normal operations, all personnel access and materials deliveries (except coal, limestone and heavy equipment delivered by barge) are processed through the manned, main gate of the Trimble County Station. Construction worker parking lots are outside of the secured area and access the site through separate gates adjacent to those lots. During TC2 construction, separate gates will be established to handle material and equipment deliveries. Site security will be handled by Moore Security, the company that currently provides security during normal operations, and the number of security staff is expected to fluctuate proportionally with the size of the construction workforce during the installation of TC2.<sup>15</sup>

LG&E also recognizes that additional physical security measures may be required and plans to conduct a security assessment after construction plans are determined. This assessment will include consideration of the potential need for additional cameras, identification cards and card access gates to supplement the security staff.<sup>16</sup>

The Trimble County Sheriff's department discussed the additional law enforcement challenges posed for a rural county by a major construction effort with many temporary workers. Close coordination between plant security and the Sheriff can enhance security and help mitigate any added burden on local law enforcement.

Location of buildings, transmission lines and other structures. In response to BBC's initial information request, LG&E provided a figure showing the route of existing and proposed transmission lines as they depart the existing switchyard at the southeast corner of the Trimble County Station and leave the site. During the site visit, LG&E provided an additional map, labeled "Trimble County – PSI Interconnection 345KV Line" that shows the route of the proposed new transmission line from the site to an interconnection with an existing 345 KV line located a couple of miles across the Ohio River in Indiana. This route would cross less than one mile of lands located in Kentucky before crossing the river. The route passes through the small area of agricultural land separating the station from Wisers Landing to the south.<sup>17</sup>

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<sup>14</sup> Personal communication with Scott Straight, Director of Project Engineering, LG&E, May 28, 2005.

<sup>15</sup> LG&E, Response to Initial Information Request of BBC Research & Consulting, Question 9, March 7, 2005.

<sup>16</sup> LG&E, Response to Initial Information Request of BBC Research & Consulting, Question 9, March 7, 2005.

<sup>17</sup> LG&E, Response to Initial Information Request of BBC Research & Consulting, Question 7, March 7, 2005 and *Trimble County – PSI Interconnection 345KV Line* (figure) provided by LG&E on March 28, 2005.

Utilities. The BBC team requested additional information on how utility services would be provided during construction and on the source of electric and gas supplies for plant operation.

Supplemental information provided by the applicant indicates that LG&E will provide “reasonable quantities” of potable, construction, service and demineralized water for use during construction. Potable water will be supplied from the plant’s existing interconnect to the Trimble County Water District. Non-potable supplies will be provided from existing wells on site and from the cooling water system used for TC1.

The construction contractor will be responsible for providing its own wastewater service via Port-O-Lets or, at their option, by connecting to the Trimble County Station’s existing wastewater treatment facility.

TC2 will not require natural gas service, instead relying on fuel oil as its secondary fuel source (as does TC1). Operational electricity will be provided from the unit’s auxiliary system, with reserve power provided from external supplies connected to the plant’s substation.<sup>18</sup>

Compliance with applicable setback requirements. The BBC team confirmed with the Trimble County Judge Executive that there are no county setback requirements that apply to TC2.<sup>19</sup>

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<sup>18</sup> LG&E, Response to Initial Information Request of BBC Research & Consulting, Question 8, March 7, 2005.

<sup>19</sup> Personal communication with Randy Stevens, Trimble County Judge Executive, March 29, 2005.

## Conclusions and Recommendations

Based upon review of the applicant's SAR, subsequent conversations with the applicant and additional data collected by the BBC team, we reach the following conclusions concerning the description of the facility and the proposed site development plan:

- The applicant has generally complied with the legislative requirements for describing the facility and site development plan.
- Security and access control appear adequate, especially given the applicant's previous experiences with construction of this size. The large temporary workforce may place an added burden on Trimble County law enforcement.
- This project meets or exceeds all setback requirements.

Recommended mitigation. No mitigation measures specific to the description of the facility or the site development plan are identified in the applicant's SAR. The BBC team suggests the following mitigation measure should be adopted:

- From the outset of construction, the Trimble County Station security team should have regular contact and share information about the construction workforce with the Trimble County Sheriff.

# Compatibility with Scenic Surroundings

This section of the SAR review addresses the compatibility of TC2 with the scenic surroundings. This component of the SAR is identified in KRS 278.708(3)(b).

## Standard Methodology and Issues for Scenic Studies

Various government agencies throughout the country employ visual assessment methodologies based on professionally accepted techniques. These techniques are fundamentally consistent in their approach to evaluating the elements of a project and its compatibility with existing landscapes and other surroundings.

An example of a visual assessment methodology in use by a state power plant siting agency is the methodology employed by the staff of the California Energy Commission.<sup>20</sup> In California siting assessments, the assessment of potential incompatibility between a project and its scenic surroundings focuses on project structures, such as smoke stacks. Typically, the assessment also addresses project lighting and the potential for visible cooling tower plumes.

A standard visual analysis generally proceeds in this sequence:

- Analysis of the project's visual setting;
- Identification of key observation points (KOP);
- Descriptions of visual characteristics of the project; and
- Evaluation of impacts to KOPs.

A KOP is a location where people may periodically or regularly visit, reside or work in the general viewshed vicinity of the project's structures or emissions.

In general practice, visual impact evaluations are conducted within one of three general frameworks, depending upon the relevant jurisdiction and its level of involvement at the project site. These are listed in order of structural formality:

- A formal visual resource or scenery management system, typically in effect only on federal lands, such as the U.S. Forest Service Scenery Management System or the U.S. Bureau of Land Management Visual Resource Management System;
- Locally applicable laws, ordinances, regulations or standards, where imposed by state or local governments; and
- The cultural context, including the influence of previous uses on the landscape and public attitudes toward the compatibility of various types of land use.

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<sup>20</sup> California Energy Commission. Energy Facility Licensing Process: Developers Guide of Practices & Procedures (staff report/draft) [online]. Document P700-00-007. November 2000 (revised December 7, 2000). Retrieved July 9, 2002, from [http://www.energy.ca.gov/siting/2000-12-07\\_700-00-007.PDF](http://www.energy.ca.gov/siting/2000-12-07_700-00-007.PDF).

Each framework, in its own way, embodies explicit or implicit consideration of some or all of the standard measures of visual impact: viewer exposure and sensitivity; relative project size, quality, visibility, exposure, contrast and dominance; and prevailing environmental characteristics, such as season and light conditions.<sup>21</sup> Local regulations especially focus on screening of facilities from public view<sup>22</sup> and the effects of glare from outdoor lighting upon adjacent property.<sup>23</sup>

The scenic compatibility evaluation for the TC2 project focuses on the new structures that will be built on the existing power plant site as a result of the TC2 addition. The evaluation also considered any project appurtenances, project lighting, exhaust plumes and traffic. A key consideration is that TC2 will be folded into an existing power plant site and its existing equipment.

### Applicant's Submittal

In compliance with KRS 278.216, the applicant completed an evaluation of the scenic compatibility of the project with the surrounding area through a visual assessment. The purpose of this analysis was to determine the degree to which the project's major equipment would visually impact the surrounding area.

The major new components on site will be a 750 MW boiler and a steam turbine generator, with the selective catalytic reduction unit (SCR) assumed to be appurtenant to the new boiler, and a new mechanical draft-cooling tower. The boiler and generator will be housed in two structures with a maximum height of 285 feet, while the draft-cooling tower will be approximately 45 feet high.

**Current Facilities.** The proposed facilities represent an expansion of an existing facility that is located on a 650 acre site along the Ohio River in Trimble County, Kentucky. The existing facility is located at an approximate elevation of 475 feet mean sea level (MSL). Visually significant structures already in existence at this site include a hyperbolic cooling tower (508 feet high, 983 feet MSL) and stack (760 feet high, 1235 MSL). Additional information regarding other characteristics of this equipment was not provided in the SAR.

The terrain east of the facility is characterized by elevation gains as high as 900 feet MSL and is densely covered with hardwood vegetation. Across the Ohio River, west of the facility, 250 foot bluffs run parallel to the River. Besides a picture of the view to the south of the facility (Figure 3-2 of the SAR), no information is provided with regard to the surrounding terrain due north or south of the facility.

**Assessment Approach.** Based on a review of topographic maps and visual inspection from the site, a set of seven Key Observation Points (KOPs) were identified. KOPs were selected as representative locations within each of the areas that were thought to be potentially impacted by the site. A map illustrating the location of each KOP relative to the project is provided as Figure 3-3 in the SAR.

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<sup>21</sup> See California Energy Commission, *op cit.*; U.S. Forest Service. *Landscape Aesthetics: A Handbook for Scenery Management*. Agriculture Handbook Number 701. 1995; U.S Bureau of Land Management. *Visual Resource Inventory*. BLM Handbook H-8410-1; and U.S. Bureau of Land Management. *Visual Resource Contrast Rating*. BLM Handbook H-8431-1.

<sup>22</sup> Douglas County (Washington) Code, Chapter 18.80 - Conditional Use.

<sup>23</sup> Georgia Department of Community Affairs. *Model Code: Alternatives to Conventional Zoning, Performance Standards for Off-Site Impacts* [online]. April 2002.

At each location, a topographic model was used to simulate a line of sight profile between the project and the KOP.<sup>24</sup> If there were no topographic obstructions identified for a profile, then the project was considered to be visible from that particular KOP. To be conservative, obstructions other than intervening topography were ignored in the analysis. Specifically, determination of a line of sight profile ignored features such as existing or potential vegetation.

Evaluation of the visual impact at each KOP was based on:

1. The “degree of contrast” or the perception and magnitude of the visual impact at each KOP. The degree of contrast at each KOP was categorized from “None” to “Strong” based on several factors including the distance from the KOP to the project, the project’s size/scale relative to other visible objects, and the color of the project relative to other visible objects.
2. The visual importance of each KOP. The KOPs were segregated into “Significant” and “Less Significant” categories based on criteria such as the landscape values and the number of people that would be impacted at each KOP.

Photographic simulation was used to determine the extent of the visual impacts at each KOP. Specifically, photographs of the existing view of the power plant were compared to simulated views of the power plant containing the proposed equipment.

Based on the analysis presented in the SAR, the Applicant concludes that the proposed project will result in minimal to no visual impacts on the surrounding scenery. As such, no mitigation regarding visual impacts was suggested.

### Supplemental Investigations, Research and Analysis

Supplemental investigations. On March 7, 2005, the BBC team submitted a supplemental information request to the Kentucky Public Service Commission and through them, to LG&E. In this request, the study team inquired about the availability of additional documents and underlying reports relating to the scenic compatibility section of the SAR. In a subsequent response, LG & E provided a copy of the John L. Carman report (undated) in a submittal to the BBC team dated April 7. That report confirmed the summary provided in the SAR..

In the March 7 request, the study team inquired as to the path of new power transmission lines away from the Trimble County plant. That map was provided, and it indicated that a transmission line would leave the plant and cross the Ohio River at a height above the water and river traffic.

In this same request, the applicant was asked whether any siting impact issues relating to construction or operation of TC1 have arisen in recent times. The applicant did not identify any visual impact issues in its response, but mentioned that a light beam from a windsock fixture disturbed a resident and it was subsequently redirected.

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<sup>24</sup> Line of site profiles were constructed using the elevations of the existing stack and hyperbolic cooling tower. As noted above, these structures are, and will be, the tallest structures on the site.

The study team interviewed a number of local officials and general citizens during its field trip to Trimble County during the last week of March, 2005. None of the local officials or any of the citizens mentioned scenic compatibility of the power plant as an issue or a concern.

During the field investigations, the study team drove extensively throughout Trimble County along highways, primary rural roads and secondary rural residential roads to experience the visual impacts of the power plant. The particular day of the trip, March 29, 2005, was clear and sunny with little vegetation on the trees; these were ideal conditions to note visual impacts. One picture, taken east of the power plant in the vicinity of State Highway 625, is shown in Exhibit C-5. Another photo was taken from Wisers Landing, a small community just downriver from the plant, shown in Exhibit C-6.

Exhibit C-5.  
TC Station from Nearby Property East



Exhibit C-6.  
Power Plant from Wisers Landing



The study team personally observed the visual effects and compatibility of the existing plant from different locations throughout Trimble County and from Indiana. The existing stack, plume and cooling tower were evident from most directions in the immediate vicinity of the plant until the height of the bluff and trees blocked the view of the plant. For example, the plant could not be observed from the Town of Bedford, which is approximately 5 miles to the east of the TC2 site.

Research and analysis. The BBC team evaluated the methodology and the analyses performed in the SAR in support of the TC2 visual impact assessment. The methodology, data sources and execution of that methodology are appropriate and acceptable for this evaluation. The SAR correctly describes the project setting and points out the visual effects of the existing facility. Given the physical improvements planned at the Trimble County power plant site, the report correctly notes that the incremental visual effects of the new facilities will be minimal since their profiles are modest compared with the facilities already there as part of TC1. The impacts associated with TC1 are outside the scope of this investigation, except insofar as cumulative effects, including incremental effects of TC2, become an issue. As far as scenic compatibility is concerned, this is not a relevant concern.

During the operation of TC1, the angle of a light bothered a Trimble County resident.<sup>25</sup> LG&E changed the angle of the light and the complaint was satisfied. No lighting modifications are contemplated for TC2.

Based upon discussions with LG&E staff on March 28, 2005, the plumes from the stack might be somewhat higher than the existing plumes, due to the cumulative effects of TC2. Neither the breadth nor opacity of the plume is likely to change according to LG&E officials. Since the TC1 plume is already visible in the area surrounding the plant site, a second, somewhat higher plume is assumed to cause a negligible impact.

The visual effects of traffic not addressed in the SAR will be most evident during the temporary construction period, lasting almost four years. Truck traffic and existing plant employee traffic is already evident along the existing roads, which are the likely routes from construction worker residences to the project site. Although traffic will increase substantially on a percentage basis, the visual impacts will be consistent with car and truck traffic that already utilizes those routes.

## Conclusions and Recommendations

Beyond the existing visual effects of TC1, the incremental visual changes and therefore the visual impacts, of TC2 are minimal. Given the existing plant, TC2 is compatible with its scenic surroundings. Traffic related scenic compatibility issues can be minimized if construction worker commuting focuses on State Highway 754 and U.S. Highways 42 or 421.

Recommended mitigation. The study team recommends selection of colors for the new power plant components that are consistent with the existing power plant and a lighting scheme that is unchanged from the current TC1 plant.

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<sup>25</sup> Interview with LG&E staff, March 28, 2005.



# Potential Changes in Property Values for Adjacent Property Owners

## Potential Issues and Standard Assessment Approaches

Development of a new coal-fired power plant can raise issues related to potential changes in property values for nearby property owners. These issues may arise from the widespread perception that a power plant and its ancillary facilities—such as ash disposal landfills, overhead electric transmission lines and electric transformer sites—may be “undesirable land uses” whose impacts are expected to be translated economically into negative effects on property values.<sup>26</sup> Studies also show that impacts may extend for some distance from the site, and possibly beyond the immediately adjacent properties.

Criteria for evaluating property values effects that reflect the concerns of a broad range of interested parties typically include these aspects of the issue:<sup>27</sup>

- Land use compatibility;
- Findings from other empirical studies; and
- Potential for effects to other than adjacent property owners.

Land use compatibility. State and local governments around the country use standards of land use compatibility to minimize the effect of industrial land uses, like power plants, upon nearby properties. KRS Chapter 278 incorporates setback requirements as its primary standard for buffering the siting of power plants. Land use compatibility, in the strict sense of legal use, and in the general sense of reasonably probable use for a given location and “neighborhood,” are also factors in a general appraiser’s judgment and analysis concerning the “highest and best use” of a property.

Other general issues are also considered to encourage facilities siting in compatible settings where negative effects would be minimal to the uses and values of nearby properties. In Wisconsin, for example, the Public Service Commission publishes this general definition of the range of potentially compatible sites for power plants:

Typically, active or vacant industrial lands may be more compatible and urban residential lands may be less compatible with power plants. Generally, sites that are more compatible with present and planned land uses are more desirable, as are those where the plant would comply with existing land use regulations.<sup>28</sup>

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<sup>26</sup> Farber, Stephen. Undesirable Facilities and Property Values: A Summary of Empirical Studies. *Ecological Economics* 24 (1998) 1-14.

<sup>27</sup> See the following document for a summary of criteria developed by the Power Plant Siting Collaborative covered in 1993 by the Public Service Commission of Wisconsin: PSC Overview Series: Common Power Plant Siting Criteria. Retrieved July 5, 2002, from <http://psc.wi.gov/consumer/electric/document/brochure/plntsitg.pdf>.

<sup>28</sup> Public Service Commission of Wisconsin. PSC Overview Series: Common Power Plant Siting Criteria. Retrieved July 5, 2002, from <http://psc.wi.gov/consumer/electric/document/brochure/plntsitg.pdf>.

General land use planning practice offers the option to adopt or negotiate for performance standards for outdoor lighting, noise, vibration, odor, smoke or particulate matter, and so forth to minimize off-site impacts to adjacent uses.<sup>29</sup>

Findings from empirical studies. Standard real estate appraisals are the most common type of empirical study used to evaluate potential changes to property values. The appraiser generally relies upon an examination of as many actual sales as possible of comparable properties in similar locations and with similar expectations for highest and best use.

Academic studies published in the land and environmental economics literature have used a variety of property value based analyses to estimate the actual effect of power plants and other “undesirable land uses” whose impacts may have translated economically into negative effects on adjacent property values. So called “undesirable” uses that have been studied in this fashion over time include nuclear and non-nuclear power generation; hazardous, toxic and nuclear waste disposal; conventional solid waste disposal; waste incineration; and hazardous industrial facilities.<sup>30</sup>

An example is a study of 262 undesirable or “noxious” facilities across the country, including 39 coal-fired power plants (of which 2 were in the East South Central region that includes Kentucky), illustrates this effect. Coal-fired power plants were found to significantly decrease property values and increase wages in the communities where they are located, with the combined implicit effect being negative.<sup>31</sup> The literature also includes numerous studies of the effect of electric transmission lines upon property values.<sup>32</sup>

The standard statistical technique for evaluating the potential effects of an environmental amenity (such as beach frontage) or disamenity (such as proximity to a hazardous waste site) is called hedonic pricing analysis. This technique recognizes that before one can evaluate the impact of an external characteristic on property values, the influences of other important value factors must be isolated and held constant using statistical techniques (e.g. multiple regression analysis). A hedonic pricing model treats the good in question (in this case local property values) as a bundle of amenities (size, aesthetic quality of property, access to local town, etc.) and disamenities (pollution, noise, etc.). Such a model is designed to isolate and quantify the implied effect on overall property value from each amenity or disamenity. Hedonic pricing models have been used to evaluate the impacts of many different factors contributing to the value of a piece of property. Examples include examining the effect of the proximity to hog farms (Palmquist, Roka

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<sup>29</sup> Georgia Department of Community Affairs. Model Code: Alternatives to Conventional Zoning. Retrieved July 5, 2002, from <http://www.dca.state.ga.us/planning/ModelCode/3-1PerformanceStandards.pdf>.

<sup>30</sup> Farber, Stephen. Op cit.

<sup>31</sup> Clark, David E. and Leslie A. Nieves. An Interregional Hedonic Analysis of Noxious Facility Impact on Local Wages and Property Values. *Journal of Environmental Economics and Management* 27 (1994) 235-253.

<sup>32</sup> Hamilton, Stanley W. and Gregory M. Schwann. Do High Voltage Transmission Lines Affect Property Value? *Land Economics* 71 (1995) 436-44.

and Vukina, 1997)<sup>33</sup>, beaches (Pompe and Rinehart, 1995)<sup>34</sup>, airports, and electric power plants (Blomquist, 1973).<sup>35</sup>

Hedonic models are statistically estimated using multiple regression analysis. However, hedonic studies are complex and require extensive statistical training and large amounts of data. Moreover, not all factors that influence a home's selling price can be measured, and housing markets vary greatly from one region to another.

Potential for more distant off-site effects. Most analyses of unwanted facilities are local in scope. However, the effect of such facilities has been shown to extend well beyond the site.<sup>36</sup> This has been shown in at least one study, where negative effects of a small power plant located within the city of Winnetka, Illinois, were significant out to a distance of 11,500 feet, or more than two miles.<sup>37</sup>

### Information Provided in the Applicant's SAR

The property value assessment in the SAR was performed by Black & Veatch on behalf of LG&E. There were essentially three parts to the assessment:

- Statistical analysis of data on 40 property sales in Trimble County, including four properties located within two miles of the Trimble County Station.
- Statistical analysis of data from the assessed value of 29 properties in Trimble County, including 20 properties within two miles of the project. Eighteen of these properties were indicated to be 0.1 mile from the project.
- Evaluation of the results of property value assessments included in the Thoroughbred Energy Campus Site Assessment Report previously filed with the Kentucky State Board on Electric Generation and Transmission Siting.<sup>38</sup>

Statistical analyses. In order to test the relationship between the Trimble County Station and local land properties, Black & Veatch collected information regarding local property sales and the assessed value of certain local properties. Two separate data sets were collected. The first included land that had been sold within Trimble County within the past 10 years, and includes the property's

- Sale price;
- Size;
- Date of sale; and

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<sup>33</sup> Palmquist, Raymond B., Fritz M. Roka and Tomislav Vukina. 1997. "Hog Operations, Environmental Effects, and Residential Property Values." *Land Economics* 73(1): 114-124.

<sup>34</sup> Pompe, Jeffrey J. and James R. Rinehart. 1995. "Beach Quality and the Enhancement of Recreational Property Values." *Journal of Leisure Research* 27(2): 143-154.

<sup>35</sup> Blomquist, Glenn. The Effect of Electric Utility Power Plant Location on Area Property Value. *Land Economics* 50 (1974) 97-100.

<sup>36</sup> Clark and Nieves. Op cit.

<sup>37</sup> Blomquist. Op cit.

<sup>38</sup> SAR, Section 4.

- A short description of the property.

In all, 40 properties are included in the dataset. The dataset also includes the distance from the project to the project, but no information was provided on how this distance was calculated.

A second data set was also analyzed by Black & Veatch. This data set differs from the first in that it contains properties that may or may not have sold in Trimble County, but which have been assessed by the Trimble County PVA. Many of the properties included in this data set were also in the previous set (although the properties sold for prices different than the assessed value).

In order to examine the Station's affect on local land prices, Black & Veatch performed two types of statistical analyses on each data set. The first tested the correlation between a property's distance from the Trimble County Station and that property's price (defined by Black & Veatch as price per square acre, after an adjustment for any existing structures on the property). A correlation coefficient measures the reliability of a correlation between two variables. A correlation coefficient equal to 1 implies that two variables have a perfectly positive relationship (that is, when one variable increases in value, the other also increases in value), while a correlation coefficient equal to -1 implies that two variables have a perfectly negative relationship (when one variable increases in value, the other decreases in value). A correlation coefficient of 0 implies that there is no linear relationship between two variables (a correlation coefficient of 0 does not imply that two variables are completely unrelated).

Black & Veatch also ran single variable regression analyses on property sales prices (and assessed property values) and the property's distance to the Station. In these models, the dependent variable was the value of a parcel of land (again defined as price per square acre) and the independent variable was the parcel of land's distance to the Station. The results of this regression analysis were then compared to a separate regression, in which property values were the dependent variable and the independent variable was the size of the property.

Based on these statistical analyses, Black & Veatch concluded that "there are much more important factors influencing property value than proximity to the Station" and "there is not a meaningful relationship between assessed value and distance from the Station ..."<sup>39</sup>

Prior studies. Black & Veatch reinforced their conclusion by citing two previously completed analyses that imply power plants actually have a positive influence on the value of surrounding properties; specifically, that "properties located adjacent to power plants tend to sell for more per acre than those that are not adjacent to power plants."<sup>40</sup>

### Supplemental Investigations, Research and Analysis

After reviewing the applicant's SAR, BBC concluded that the property value assessment conducted by Black & Veatch provided insufficient support for the conclusion that there would be no significant impact on nearby property values. The statistical techniques used in the Black & Veatch analysis – simple correlation analysis and single variable regression analysis – did not conform to the standard hedonic pricing model approach and, most importantly, were insufficient to isolate and control for the

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<sup>39</sup> SAR, Page 38 and 41.

<sup>40</sup> SAR, Page 43.

simultaneous influences of multiple factors in determining local property values. The citation of two previous power plant property value assessments that were also based on very small samples of property transactions (two sales and seven sales) as evidence that power plants generally have no adverse impact on nearby property values is not compelling. There are a number of much more extensive published studies on this issue that would not support that finding as a general conclusion.

To further investigate the potential effects of TC2 on nearby property values, BBC requested and obtained the original property value data set used by Black and Veatch in order to evaluate the data using a somewhat simplified hedonic pricing model. Recognizing that the very small number of available data points might well render such a model inconclusive, we also conducted interviews with individuals knowledgeable about the local property market.

BBC developed a simplistic hedonic pricing model using the data provided to us by Black & Veatch. This model takes the form:

$$P = f(l_1, l_2, \dots, l_n, t).$$

Where:

- P is the sale value of the property,
- The l's describe the property in terms of various potential influences on land value (e.g. distance to power plant, distance to nearest town, size, value of any existing structures).
- t is the year in which the property sold.

In comparison to previously published studies of the effects of proximity to power plants and other externalities on property values, the available data set in this case is much smaller and contains relatively little descriptive information on the properties involved other than their acreage, sales price, location and whether or not there were improvements on the land. Not surprisingly, the results of BBC's hedonic pricing analysis were inconclusive. The parameter describing the size of the lot size of the properties was the only variable in the model that was found to be statistically significant.

During the site visit, the BBC team also interviewed several individuals knowledgeable about Trimble County property markets. In particular, we conducted personal interviews with Glen Perkinson, the Trimble County Property Valuation Administrator, and Randy Stevens, the Judge Executive of Trimble County who was previously a practicing real estate agent. We also conducted a telephone interview with Rick Rand, owner of Rand Real Estate – the only realtor based in Trimble County.

Each of the three individuals the study team interviewed was in general agreement that the primary locational influences on property values in the county were river views (an environmental amenity) and proximity to Interstate Highway 71 (which increases accessibility to jobs in Louisville). The interviewees had mixed responses to the question of whether or not the existing power plant had any effect on nearby property values. Two of the three interviewees did not think there was any measurable effect, while the third individual believed that properties in Wisers Landing were likely worth 10 to 15 percent less than they would be in another, hypothetical location similarly situated along the river. However, that individual also noted that it is difficult to tell how much of any reduction in Wisers Landing property values can be attributed to the proximity of the power plant versus how much might be due to the location of the active gravel quarry in the midst of that community. All of the individuals interviewed,

however, were consistent in their views that the addition of another coal-fired unit to the existing power plant (with no new stack or high cooling tower) would have no effect on existing property values.<sup>41</sup>

## Conclusions and Recommendations

Based upon review of the applicant's SAR, additional analysis of the data used in that SAR and interviews with knowledgeable local sources, we reach the following conclusions concerning the potential changes in property values for adjacent property owners:

- The statistical analysis and other information provided in the property value assessment in the SAR were not sufficient, by themselves, to support the conclusion of no significant impacts. However, given the limited number of property sales in Trimble County, there is also no evidence that the existing facilities at Trimble County Station have had any statistically significant impact on nearby property values.
- More importantly, the BBC team is confident that the addition of TC2 to the existing Trimble County Station will not have any measurable effect on local property values. We reach this conclusion primarily because the addition of TC2 will have relatively little effect on the already existing visual and noise characteristics of the Trimble County Station, as described elsewhere in this study. This conclusion is reinforced by the views of knowledgeable sources in the local community, as described previously.

Recommended mitigation. No mitigation is recommended.

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<sup>41</sup> Personal communication with Randy Stevens, Trimble County Judge Executive; Rick Rand, Owner of Rand Real Estate; and Glen Perkinson, Trimble County PVA. March 29 and 30, 2005.

# Expected Noise from Construction and Operation

This section evaluates the studies and conclusions presented in the SAR concerning peak and average noise levels associated with TC2's construction and operation. This component of the SAR is identified in Section 5 of KRS 278.708(3)(d).

## Standard Methodology and Issues for Noise Studies

Various governmental agencies throughout the country employ noise assessment methodologies based on professionally accepted techniques. In evaluating the construction and operational stages of a project, these techniques are fundamentally consistent in that they seek to estimate the potential contribution to ambient noise levels at the site in terms of sensitive receptors. Generally, the assessment methodologies are meant to measure the increase in noise levels over the ambient conditions at residential and non-residential sensitive receptors.

A standard noise impact assessment focuses on several key factors:

- Identification of sensitive receptor sites;
- Existing local ambient noise levels;
- Estimated construction or operational noise intensities;
- Distances between noise sources and sensitive receptors;
- Noise created by transportation features such as conveyors, trucks and rail lines; and
- Calculation of the cumulative effect of the new noise sources when combined with the existing ambient noise level, recognizing that new noise sources contribute to the ambient noise level, but not in an additive way.

In jurisdictions where there are no legal thresholds of impact, the determination of the significance of ambient noise impacts must rely on measures of compatibility and acceptability that are drawn from theory, from research or standards enacted elsewhere, or from a subjective assessment of community preferences, based on any available indicators.<sup>42</sup> In Kentucky, the coal mining industry may provide relevant indicators of general public preferences about noise impacts. For example, by far the largest share of complaints about coal mining activity (42 percent) are attributed to blasting noise.<sup>43</sup>

In the instance of the TC2 project, noise issues stem from the construction activities and the “steam blows” which occur at plant startup following planned and unplanned outages. Noise from traffic is also considered.

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<sup>42</sup> See for example U.S. Department of Housing and Urban Development. The Noise Guidebook. No date, Figure 3, Land Use Compatibility Guidelines. (Available from the U.S. Government Printing Office.)

<sup>43</sup> 2000-2001 State of Kentucky's Environment: A Report on Environmental Trends and Conditions [online]. Published by The Kentucky Environmental Quality Commission, June 2001, p. 147.

## Applicant's Submittal

In compliance with SAR requirements, the applicants completed a study detailing the potential for impacts due to noise emissions associated with the construction and operation of the project. Information contained within the SAR included (1) a review of relevant acoustical terminology, (2) discussion on human response to noise, (3) review of relevant noise regulations, (4) description of the existing acoustical environment, (5) an evaluation of the noise emission associated with the operation and construction of the project, and (6) an overview of suggested mitigation.

**Methodology.** Absent any state, county, or local noise regulations, the SAR referenced guidelines established by the Environmental Protection Agency (EPA). Specifically, to protect public health and welfare the EPA has recommended constant sound thresholds of 55 dBA during daytime hours and 45 dBA during nighttime hours.<sup>44</sup> Measurements of existing sound levels were compared with anticipated noise levels from the project at locations at or surrounding the site. Figure 5-1 of the SAR details the location of each evaluation point relative to the project.

**Baseline noise levels.** Measurements of existing, baseline noise conditions were taken from six locations at or surrounding the current facility. In addition to noise associated with the operation of the current facilities, natural noises (e.g. birds, dogs, etc.) and occasional traffic also exist at each of the locations. Sound level measurements revealed that noise attributable to the current facility was, for the most part, only audible at the location due south of the facility in the Wisers Landing area.

**Anticipated noise levels associated with operation of the project.** To determine the impact of operating the project relative to current conditions, the applicant modeled the anticipated sound levels using noise prediction software, data collected in-house and data provided by the Edison Electric Institute. Modeling of the noise associated with the project specifically excluded those sounds associated with intermittent activities such as start-up, shut down, and other atypical operating conditions. A contour plot detailing the estimated facility noise emissions is provided as Figure 5-9 in the SAR. Comparisons with measurements of current background sound levels suggest that predicted facility noise emissions at measurement locations south and north of the plant (NML1 and NML2) are expected to be, at most, barely noticeable. The largest increase in background noise is expected to occur east of the plant (NML1), where an increase in background noise of up to 10dB is expected. However, even with this increase, the predicted facility noise emissions are below the 55 dBA established by the EPA. Based on these findings, the applicant concludes that “no significant impacts are expected to result from the construction or operation of Unit 2...”

**Mitigation.** No significant mitigation is proposed by the applicant. However, the applicant does indicate that efforts will be made to mitigate construction noise by use of “properly maintained equipment with engine mufflers and limiting construction activity to daytime hours.”

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<sup>44</sup> According to the applicant, these thresholds are suggested without consideration for economic or technical feasibility of implementation. As such, they contain a margin of safety which guarantees that, for noise levels below these, there is no reason to suspect that the general population will be at risk.



## Supplemental Investigations, Research and Analysis

In its March 7, 2005 supplemental information request, the study team inquired as to the availability of any underlying studies or additional data related to the noise assessment summarized in the SAR. The applicant responded that no separate studies or additional data were available.

In this same information request, the study team inquired about any site impact issues that were noted during construction and operation of TC1. The applicant indicated that noise from steam blows were a potential issue, but that the company conducted those start-up steam blows only during normal business hours. On March 28, 2005, the study team interviewed LG&E staff regarding noise related impacts. LG&E staff indicated that noise during the construction period would be typical of any construction project, such as the noise of cranes. They indicated that noise would not be excessive nor exceed the EPA thresholds. In response to questions about special noises during operations, LG&E staff acknowledged that steam blows create very loud, brief noise periods. A steam blow occurs as steam is emitted under very high pressure from the pipes in the plant following planned and unplanned outages. Steam blows typically last less than an hour and the planned steam blows occur during regular waking hours. Before a planned event, the company notifies the newspaper that a steam blow is going to occur. Unplanned outages, when the power plant must be shutdown unexpectedly, can occur at any time. Two planned steam blows occurred in 2004 and two have occurred in 2005, according to company officials.

The study team conducted field investigations on March 28 and 29, 2005, to personally observe noise impacts (among other issues) and to interview public officials and local citizens about plant related issues. The study team did not observe any unusual or excessive noises associated with the plant or related traffic during the field investigation. Several gypsum trucks were heard, but noise levels were not excessive. Noise in the vicinity of Wisers Landing comes largely from the quarry in the midst of the community and quarry-related trucks that circumnavigate Wisers Landing on a nearly continuous basis during daylight hours.

During interviews with local officials and citizens in Trimble County, steam blows were mentioned as a concern by a number of individuals. Interviewees sharing this view include a resident of Wisers Landing, a resident along State Highway 625 between Bedford and the plant and the County Executive, Randy Stevens. Harold Greene, a Bedford City Commissioner, indicated that the truck traffic through town created annoying noise levels although this comment might have been directed toward truck traffic sources besides those coming from the Trimble County power plant.<sup>45</sup>

Research and analysis. The noise studies performed for LG&E as part of this SAR utilized appropriate methodology and applied that methodology correctly. The results of the noise survey appear to be credible and were confirmed during supplemental information gathering and field investigations. The noise modeling conducted for purposes of the SAR did not address construction, but the study team concurs with LG&E staff that excessive noise is unlikely during the construction period at the plant site. Construction related traffic will represent a very large increase over existing traffic. This will mostly be automobile traffic, as large construction components will be delivered to the site via barge. If construction traffic migrates to State Highway 625, there might be greater sensitivity to traffic related noise during the construction period.

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<sup>45</sup> Personal communication with local residents and officials, March 29, 2005.

The noise modeling conducted for the SAR also excluded noises associated with various intermittent activities such as steam blows. Steam blows are an irritant to at least some Trimble County residents. One resident complained that you could not have a conversation with someone for the duration of the steam blow and that unexpected outages and subsequent steam blows would easily wake nearby residents. Steam blows, including planned and unplanned outages, occur as often as seven times per year, according to the memory of certain local residents. Although measurements were not provided by LG&E, the study team believes that the noise levels associated with steam blows are likely beyond the thresholds established by the EPA.

## Conclusions and Recommendations

Noise levels during TC2 construction are unlikely to create a significant incremental effect over current noise levels at the plant site. If construction related traffic is focused on U.S. Highway 42 and State Highway 754, traffic related noise is likely to be manageable, although there is uncertainty given the substantial activity increases that will occur during that four-year period.

The most important noise related issue associated with TC2 relates to steam blows. These are an inevitable aspect of proper steam generating plant operation. LG&E advertises in the newspaper to warn residents of planned outages and, of course, the company has no control over unplanned outages and every incentive to avoid them. The frequency of unplanned outages did not appear to be excessive. Even so, it is likely that, with the addition of TC2, steam blows may be twice as frequent as they are in 2005, possibly as high as 14 per year including unplanned outages.

Recommended mitigation. LG&E, through its contractors, should monitor the construction related traffic flows through Trimble County, staying attuned to complaints from local residents and officials. Traffic patterns that minimize the potential for complaints—probably focusing traffic on State Highway 754 and de-emphasizing traffic on State Highway 625—would be preferable. LG&E should also work with its contractors to time construction shifts to avoid peak traffic hours such as when school buses travel to and from schools.

For planned outages and related steam blows, LG&E should install silencers to dampen the resulting noise. LG&E might also consider offering Trimble County residents a telephone warning system in which a recording would automatically call interested residents a week before the steam blow and notify them of the expected timing. Newspaper advertisements should be continued.

# Impacts on Transportation

This portion of the SAR review examines the impacts of TC2 on road and river traffic. This also includes traffic effects, such as congestion, safety, fugitive dust, and degradation of the transportation infrastructure. This component of the SAR corresponds to KRS 278.708(3)(e).

## Potential Issues and Standard Assessment Approaches

Development of a coal-fired power plant can raise a variety of potential traffic related issues. These issues may arise from the movement of construction workers and heavy and oversized loads during the construction process and added congestion during both construction and subsequent operations.

Standard components of the evaluation of traffic related impacts include:

1. Identification of access methods, and a description and visual portrayal of primary access routes to the site during construction and during operation.
2. Description of baseline traffic conditions: existing traffic counts, road capacity and level of service and any major existing constraints (e.g., bridge weight limitations, etc.).
3. Identification of any special transportation requirements during construction (e.g., the need to reinforce or "ramp over" existing bridges, detours, temporary closures, etc.).
4. Projection of traffic volumes related to construction and operation.
5. Determination of whether the additional traffic, during construction and operation, will lead to congestion, changes in the level of service of the existing road network or additional road maintenance costs.

## Information Provided in the Applicant's SAR

Section 6 of the applicant's SAR provides traffic impact-related information specific to the construction and operation of the proposed facility. Data on existing traffic volumes was obtained from the Kentucky Transportation Cabinet (KTC) by John L. Carman and Associates for use in the scenic compatibility study. All equipment, materials and personnel will be transported to the site via existing roads or by barge along the Ohio River. There are currently no plans to expand current roads or construct new ones. The SAR does not indicate which roads will be used by construction workers to access the site.

Transportation via Roads. Immediate access to the Trimble County Station is provided via three access roads from State Highway 1838. Highway 1838 is a two-lane, non-divided highway, accessed locally primarily through State Highways 754 (from Bedford, KY) and 625 (from Milton, KY). U.S. Highways 421 and 42 are the main arteries or rural primary routes that provide access to Trimble County. No other roads are identified in the SAR.

The SAR focuses upon Highway 1838. The exhibit below provides a summary of the current traffic conditions for Highway 1838 as reported in the SAR.

Exhibit C-7.  
Current  
Traffic on  
Hwy 1838

<i>Highway</i>	<i>Average Daily Traffic</i>	<i>AM/ PM- Hourly Peak Traffic Volume</i>	<i>Hourly Traffic Capacity</i>
1838	725	68/79	3200

No information pertaining to current traffic conditions for the access roads, Highway 625, Highway 754, Highway 42 or Highway 421 is provided in the SAR.

Projection of traffic volumes related to construction. As stated in the SAR, peak construction related personnel traffic is estimated to result in 840 additional vehicle trips to and from the site. This figure was based on a peak construction workforce of 1,200 employees per month and a “rule-of-thumb” assumption that 30 percent of the construction personnel will carpool. Documentation in support of this “rule-of-thumb” was not provided, but based upon the study team experience, that ratio is reasonable. Truck traffic, consisting of deliveries of mechanical equipment, electrical equipment and supplies, concrete, and steel are estimated to result in an additional 27 trucks per day. Lastly, service and support vendors (e.g. delivery of portable restrooms, installing telephones, etc.) are estimated to result in an additional 30 site visits per day during peak manpower periods. No information is provided regarding the origin or destination of these vehicles.

Determination of transportation impacts from construction. From the projections in the preceding paragraph, during the peak manpower period it is assumed that an additional 900 construction related vehicles, including cars and trucks, will be entering and leaving the site per day. As a result, the total volume of traffic on Highway 1838 will increase from 725 vehicles per day to 2,525 or roughly 150 percent, according to the SAR.

Although it is anticipated that the majority of these trips will occur outside of the typical peak hour periods, a worst-case approach was adopted for analysis of construction related traffic impacts on peak hour traffic. Assuming that all construction related traffic occurs during peak hours of traffic, AM peak traffic will increase from 68 to 979 (1223%) vehicles per hour and PM traffic will increase from 79 to 979 (1039%) vehicles per hour. Citing a one-way capacity of 1,700 vehicles per hour, Black and Veatch conclude that construction related traffic will not result in any significant impacts to Highway 1838.

Analysis of the impacts associated with construction traffic was limited to Highway 1838. No information was provided in the SAR to address impacts to roads other than Highway 1838. In addition, no information was provided in the SAR to distinguish between the impacts of personnel and non-personnel vehicles.

Fugitive Dust and Road Degradation. The SAR discusses fugitive dust during construction. Since most roads on site are paved, fugitive dust should be minimal. Fugitive dust is not anticipated during operation.

Projection of traffic volumes related to Operation. Two sources of additional traffic associated with operation of the project were identified in the SAR. The plant currently employs 98 workers and plans to hire five additional employees prior to the completion of the project. The SAR does not indicate whether or not the hiring of these additional workers is related or unrelated to the project. It is anticipated that LG&E will employ an additional 37 personnel, making a total of 140, once Unit 2 goes on-line. In addition to plant personnel, material related truck deliveries are expected to double to 125 deliveries per day.

The resulting increase in traffic volumes is described on page 69 of the SAR as follows, “Traffic volumes during plant operation will increase by approximately 25 vehicles for personnel and 60 for truck deliveries entering and exiting the site.”

Determination of transportation impacts from operation. Similar to the above, a worst-case approach was taken to estimate the impacts associated with the operation of the project. Assuming that all trips occurred only during existing peak hours of traffic, total two-way traffic volume, upon completion of the project, will increase from 68 to 293 (230%) vehicles per hour during the AM peak and from 79 to 304 (185%) during the PM peak. The SAR concluded that, given the current capacity of Highway 1838, operations related traffic will have no negative impact to Highway 1838.

Analysis of the impacts associated with operational traffic was limited to Highway 1838. No information was provided in the SAR to address impacts to roads other than Highway 1838. In addition, no information was provided in the SAR to distinguish between the impacts of personnel and non-personnel vehicles.

Mitigation. The SAR suggests that road traffic during construction and operation will not exceed the capacity on Highway 1838, and therefore no mitigation will be needed. Fugitive dust will be minimized using dust suppression.

Barge Traffic. The SAR indicates that large components of the construction materials will be transported to the site by barge, including boiler components, steam turbine components and transformers. During operation, coal and limestone will be delivered to the site via barge using the existing unloading and conveyor system present on site. An additional three to five barges per week are anticipated during the construction peak and 40 barges per week during the operational phase. With both TC1 and TC2 in operation, the SAR suggests that total barge traffic to the site will be approximately 62 barges per week, which is minimal compared to existing barge traffic on the Ohio River.

### Supplemental Investigations, Research and Analysis

After reviewing the SAR, the study team sought to supplement the information provided in that report to more fully address the potential issues described at the outset of this section. In particular, the SAR was deficient in providing sufficient information pertaining to current conditions, traffic volume projections, and the potential impacts of the project on roads other than Highway 1838.

Supplemental investigations and interviews. When asked, LG&E indicated that it had done no research on highway capacities associated with Highways 754, 625, 421, and 42. Therefore, the study

team attempted to gather additional information pertaining to the project's likely impacts on those roads. This included identifying the origin of the traffic associated with the construction and operation of TC2.

LG&E indicated that construction workers during past construction projects at the site commuted from Louisville, La Grange, Carrollton and Madison, Indiana. The study team learned more about the historical construction workers' experience at the Trimble County site during its interview with LG&E officials on March 28. The most similar construction experience occurred during the 2000 to 2002 period when the SCR was built at the same time that a number of the combustion turbines were also under construction. A total of 900 construction workers were on-site at peak during that time. Workers performed 10 hour shifts, 6 days a week; approximately 30 percent of the workers were existing residents of the Louisville-Cincinnati region. An estimated 70 percent moved into the region for the duration of their activity at that the project. LG&E officials estimated three-quarters of the construction workers commuted to the site north on Interstate 71, exiting U.S. 42 at Sligo (exit 28) and then accessed the site via State Highway 754. An estimated one-quarter of the workforce came from either Carrollton, via U.S. 421 or Madison, across the bridge in Indiana. During this same interview, company officials acknowledged that truck traffic on Highway 754, and especially the speed of those trucks, have been issues.

From the supplemental information request to LG&E, dated March 7, 2005, the study team learned that coal and limestone would be put out to bid and its origin is unknown at this time. Major power plant components would come from outside the state of Kentucky. LG&E also confirmed that the barge traffic figures mentioned in the SAR were one-way trips and that total river traffic would be twice the numbers indicated since barges would return empty.

Interviews with local government officials indicated that construction related traffic was a significant concern.<sup>46</sup> The concerns focus on State Highways 754 and 625; State Highway 1838, immediately in front of the power plant site is not an issue. State Highway 754 is viewed as too narrow and winding.<sup>47</sup> Furthermore, it is anticipated that construction workers who are unfamiliar with these routes might go too fast, thereby increasing the likelihood of accidents. This problem will likely be compounded because existing traffic on this road is so light that existing residents will be unfamiliar with how to deal with such heavy traffic volumes. State Highway 625 has similar issues and a bridge which is sub-standard due to the road base collapsing around the culverts as shown in Exhibit C-8. Local officials also voiced concern regarding the transportation schedules associated with the ammonia trucks accessing the plant.

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<sup>46</sup> Interviews with Randy Stevens, Trimble County Judge Executive, Eddy Callis, Kentucky Highway Cabinet, Tim Coons, Trimble County Sheriff, and Harold Greene, Bedford City Commissioner, March 29, 2005.

<sup>47</sup> On the same day the study team interviewed Trimble County Judge Executive Randy Stevens, the Judge Executive was meeting with state officials from the Kentucky Transportation Cabinet to impress upon them the urgent need to obtain funding to improve shoulders and other aspects of Highway 754 and Highway 625.

Exhibit C-8.  
Corn Creek Bridge from State Highway 625



Research and additional analysis. Based on our interviews with LG&E and local officials, the study team concluded that Highway 754 is likely to serve as the primary local access route to Highway 1838 for the movement of materials and labor to the site during construction. Materials and labor originating outside of the immediate area (e.g. a five mile radius) will most likely utilize Highways 42 and 421 to arrive at Highway 754. The origin of the workers and materials used during construction will depend on local labor-supply conditions and the suppliers chosen by LG&E. The following provides additional analysis pertaining to Highways 754 and 625, which represent the primary areas of concern identified. Exhibit C-9 shows the road patterns and access to the Trimble County power plant site.

Highway 754. Average daily traffic volume on Highway 754 is estimated to be approximately 719 vehicles per day.<sup>48</sup> In a second location on Highway 754, traffic counts were similar. If three-quarters of peak construction related traffic were to travel on this road, the commuting workers, trucks and support vehicles would represent an additional 1,400 to 1,500 vehicles per day. At peak, TC2 construction would triple average daily traffic volume relative to current conditions.<sup>49</sup>

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<sup>48</sup> Internal traffic count data, Kentucky Transportation Cabinet, obtained March 29, 2005.

<sup>49</sup> Information obtained during interviews suggests that most construction related traffic will originate south of Trimble County, with perhaps 15 or 20 percent coming from Madison, Indiana.

Exhibit C-9.  
Trimble County Roads



Note: Not drawn to scale.  
Source: Kentucky Transportation Cabinet, 2005.

The capacity of this road is uncertain according the Kentucky Transportation Cabinet.<sup>50</sup> While the regional KTC office indicated that Highway 754 was “adequate” for this volume of traffic, they reiterated that it is a two-lane road with little or no shoulder in most places. Local road personnel consider this road the number one priority for improvement. In fact, of those interviewed, everyone was concerned to some extent about the impact of construction related traffic on this road.

Whereas the Kentucky Transportation Cabinet recognizes the need for improving this road, funds have been difficult to come by. An estimated \$20,000 to \$30,000 per year is currently being spent to create an additional one-foot shoulder at different points along Highway 754, but this process has been slow.

Highway 625. Local officials and Transportation Cabinet employees suggest discouraging traffic on State Highway 625. Traffic volumes along that route average about 750 vehicles per day in some locations down to 250 vehicles in others.<sup>51</sup> Traffic volumes would increase substantially if construction

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<sup>50</sup> Interview with Barry Sanders, Kentucky Transportation Cabinet, March 30, 2005.

<sup>51</sup> Internal traffic count data, Kentucky Transportation Cabinet, obtained March 30, 2005.



workers were to take that route. The key shortcoming is a defective bridge (described and illustrated above). Although the need for improvement is recognized, no funds have yet been set aside for that purpose.<sup>52</sup>

The Trimble County Sheriff indicated that both Highways 754 and 625 have experienced an abnormal number of accidents. However, information obtained from State Police records indicate less than two accidents per year for the past three years on State Highway 754 and ten accidents or less for the past three years on State Highway 625.<sup>53</sup> In spite of the relatively low number of accidents, after traveling these roads, the study team is concerned that commuting construction employees who are unfamiliar with these roads and anxious to get to work may elevate the safety risk.

Barge traffic. Plant related barge traffic was confirmed to be modest relative to total traffic volume on the Ohio River in the vicinity of the Trimble County plant.<sup>54</sup> The barge trips on the river are unlikely to create any traffic problems. Each of the two locks, upstream and downstream of the Trimble County plant, handles more than 50 million tons per year of cargo and both can handle 22 to 23 tows per day (one tow equals 15 barges). It takes an average of 45 minutes to pass through the 1,200 foot locks available at McAlpine and Markland (upstream and downstream of the Trimble County facility). In sum, no issues are foreseen related to barge traffic.

## Conclusions and Recommendations

There is cause for concern about the potential for significant impacts related to construction worker traffic in Trimble County. The combination of greatly increased traffic volumes at peak times, windy two lane roads, drivers unfamiliar with these roads, and speeds up to 55 miles per hour represent a potentially high risk circumstance. The level and focus of those risks and impacts are uncertain, but the issues of congestion, accidents, safety and road degradation must be recognized.

Recommended mitigation. LG&E can do much to minimize the impacts or risk of impacts associated with construction related traffic:

- LG&E should encourage its contractors to consider hiring locally qualified construction workers, where possible. At least some of these individuals will be familiar with local roads, reducing potential safety issues.
- LG&E and its contractors should work with the Trimble County Sheriff to direct construction related traffic to roads likely to create the least local impacts, probably U.S. 42 and State Highway 754.
- LG&E and its contractors should work with local officials to establish work hours that avoid peak traffic times and school related traffic.
- LG&E should work with the local sheriff to schedule ammonia truck deliveries that create the least risk of accidents and personal injuries.

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<sup>52</sup> Interview with Barry Sanders, Kentucky Transportation Cabinet, March 30, 2005.

<sup>53</sup> Internal information received from the Kentucky Transportation Cabinet, March 30, 2005.

<sup>54</sup> Interview with Rob Fuller, Chief of Operations, U.S. Army Corps of Engineers, Louisville District, March 30, 2005.

- LG&E should work with local officials and the gypsum company to make the gypsum truck drivers more responsive to local traffic laws.
- LG&E should closely monitor the construction traffic impacts throughout the construction period, working with local officials to take action, as needed, if problems arise.

## SECTION D. Recommendations

In this section, the study team presents recommendations concerning the proposed TC2 project, including recommendations for further mitigation measures. The BBC team provides specific recommendations on the elements of the SAR that the Commission might consider before arriving at a decision on LG&E's pending application for a construction certificate.

### Specific Mitigation Recommendations Related to SAR Elements

Based on the analysis and conclusions described in Section C, BBC recommends the following mitigation measures be implemented by the applicant.

Description of the proposed facility/site development plan. The following mitigation measures are recommended for this aspect of the statutory requirements:

1. As indicated in the SAR, the applicant should conduct a security assessment after construction plans are finalized. The applicant should also coordinate closely and share information with the Trimble County Sheriff's office before and during construction.
2. As indicated in the SAR and other documents prepared by the applicant, the applicant should use the existing stack for exhaust from TC2 as well as from the existing coal-fired unit, TC1, rather than constructing a new stack.

Compatibility with scenic surroundings. The following mitigation measures are recommended to address this potential issue:

3. Colors and lighting selected for the new power plant components should be consistent with the existing features of the Trimble County Station.

Potential changes in property values for adjacent property owners. The following mitigation measures are recommended for this aspect of the statutory requirements:

4. No mitigation is suggested for this element of the statutory requirements.

Expected noise from construction and operation. The following mitigation measures are recommended to address this potential issue:

5. LG&E should monitor construction-related traffic flows through Trimble County and encourage the use of routes that minimize noise and disruption for local residents – probably focusing traffic on Highway 754 and seeking to minimize additional traffic on Highway 625.
6. For planned outages and steamblows, LG&E should install silencers to dampen the resulting noise. LG&E might also consider developing a telephone warning system to notify

the nearest residents to the north and east (approximately 13 homes) and residents of Wises Landing (approximately 37 homes). Newspaper advertisements should also be continued.

Impacts on transportation. The following mitigation measures are recommended for this aspect of the statutory requirements:

7. The applicant should seek to direct traffic onto the least impacting routes and schedule construction shifts and deliveries to minimize additional traffic during school bus transit periods and commuting peaks.
8. LG&E should enhance communication with local officials regarding the timing and routes for ammonia truck deliveries.
9. The applicant should encourage hauling contractors to improve their compliance with local traffic laws.
10. Throughout the construction period, LG&E should closely monitor traffic issues and concerns that arise during construction and work with local officials to take action as needed.
11. LG&E should encourage its contractors to consider hiring locally qualified construction workers, where possible. At least some of these individuals will be familiar with local roads, reducing potential safety issues.

#### Overall Recommendations Concerning Siting Issues Related to the Proposed TC2 Project

After reviewing and evaluating the applicant's SAR, visiting the site and gathering additional information and conducting further analyses where necessary, the BBC team recommends the following concerning the siting aspects of the proposed TC2 project:

- A. While we have noted a few deficiencies in the SAR, we believe these deficiencies have been largely addressed in this report. We do not believe that additional data is likely to change the findings and conclusions or specific mitigation recommendations contained herein.
- B. Presuming the project is developed as specified in the applicant's SAR and the supplemental information provided by the applicant, and presuming that the mitigation recommendations provided herein are implemented by the applicant, we do not believe there will be significant unmitigated impacts from the development and operation of the TC2 project within the topic areas specified for the site assessment.