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December 8, 2014

Jeff Derouen
Executive Director
Public Service Commission
P.O. Box 615
Frankfort, KY 40602

Re: Application of SunCoke Energy South Shore LLC for a Certificate to Construct a Merchant Electric Generating Facility and Non-Regulated Electric Transmission Line
Case No. 2014-00162

Dear Mr. Derouen:

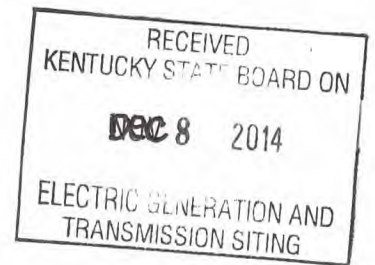
Enclosed for filing is the Review and Evaluation of SunCoke Energy South Shore LLC Siting Assessment Report, authored by BBC Research & Consulting. Please note this report was filed in both electronic and paper formats.

Sincerely,

A handwritten signature in black ink, appearing to read "AAC", with a long horizontal flourish extending to the right.

Aaron Ann Cole
Staff Attorney

Enclosure
cc: Parties of Record



Review and Evaluation of SunCoke Energy South Shore LLC Siting Assessment Report

Report

December 5, 2014

Review and Evaluation of SunCoke Energy South Shore LLC Siting Assessment Report

Prepared for

Kentucky State Board on Electrical Generation and Transmission Siting
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Frankfort, Kentucky 40602

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SECTION A.

General Statement

SECTION A.

General Statement

This document provides a review of the Site Assessment Report (SAR) for the proposed SunCoke Energy merchant electric generating facility and non-regulated electric transmission line submitted to the Kentucky State Board on Electrical Generation and Transmission Siting (the “Board”). SunCoke Energy South Shore LLC (referred to herein as “SESS” for consistency with the acronym used in the applicant’s reports) submitted an administratively complete document titled “Application for a Certificate to Construct a Merchant Electric Generating Facility and Non-Regulated Electric Transmission Line” (the “application”) to the Board on October 24, 2014. The SAR and supporting documents and reports were included with the application. SESS has submitted the SAR to support its application for a certificate to construct a merchant electric generating facility in Greenup County under KRS 278.700 *et seq.* (the Act), passed by the General Assembly of the Commonwealth of Kentucky in 2002. Board staff retained BBC Research & Consulting (BBC) to perform this review.

Provisions of the Act Establishing the SAR Review Process

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 attached to the Kentucky Public Service Commission (PSC) for administrative purposes.

The Act created the application process and, within the process, a series of steps for preparing and submitting this report:

- The applicant files for a construction certificate and pays the fees. KRS 278.706.
- The applicant submits required items, including an SAR. KRS 278.706 & KRS 278.708.
- If it wishes, the Board may hire a consultant to review the SAR and provide recommendations about the adequacy of the information and proposed mitigation measures. KRS 278.708.
- The consultant must deliver the final report so the Board can meet its own statutory decision deadline — 120 days or 180 days from receipt of an administratively complete application, depending upon whether the Board will hold a hearing. KRS 278.710.

SAR Review Methodology

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

- Reviewed BBC's prior SAR reviews prepared for the Board, including reviews of proposed Kentucky Mountain Power, LG&E Energy Corporation, and ecoPower projects;
- Reviewed the contents of the site assessment and application;
- Identified additional information we considered useful for a thorough review, and submitted questions to the applicant;
- Conducted the required site visit, including obtaining oral and written information supplied by the applicant, over a period of two days in November 2014;
- 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 Board 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. Board staff has provided review and guidance in this context.

At this point in the planning process, SESS has not finalized a number of details related to construction and operation of the plant. The SAR, and this review, are based on the best available information at this time. BBC is also assisting the Board, through assigned staff from the Public Service Commission, in developing supplemental data requests that will be submitted to SESS and may provide additional clarification prior to the Board's hearing on this matter. BBC's review attempts to bracket and otherwise incorporate these uncertainties and to ensure, through appropriate mitigation measures, that they do not create undue siting impacts later.

SECTION B.

Executive Summary

SECTION B.

Executive Summary

This report documents the evaluation of a Site Assessment Report (SAR) in compliance with KRS 278.704 and KRS 278.708. The Kentucky State Board on Electrical Generation and Transmission Siting (the “Board”) received an application from SunCoke Energy South Shore LLC (SESS or applicant) for approval to construct a coke plant with an integrated merchant electric generating facility in Greenup County, Kentucky, on October 24, 2014. Board staff retained BBC Research & Consulting (BBC), a Denver-based firm, to review the SAR. BBC was directed by Board 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 278.708 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 proposed SESS facility 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. The proposed SESS coke plant and generating facility would be located along the Ohio River in Greenup County, approximately two miles east of the City of South Shore. Conclusions with respect to other descriptive elements of the facility follow:

- **Surrounding land use** — The proposed site is located on a site between U.S. Highway 23 and the Ohio River consisting of approximately 265 acres. Adjacent land uses include the MarkWest Siloam Kentucky Plant, which produces natural gas and natural gas-related products, to the west and the Graf Brothers Flooring and Lumber operation to the east. There are two isolated residential properties located north of U.S. Highway 23 in relatively close proximity to the proposed plant. Five residential neighborhoods are located within two miles of the proposed facility. All but one of these neighborhoods (Sand Hill – which is located immediately across U.S. Highway 23 to the south) are likely to be buffered from potential visual or other impacts due to a combination of distance, intervening industrial facilities and existing trees and vegetation.
- **Proposed access control and security** — The SAR provides an abbreviated description of proposed access control and security during operations. This description was verbally enhanced by the applicant during BBC’s site visit, and further written information has been requested through an information request during the SAR review process.

- **Utilities** — The SAR indicates that electric and natural gas service to the site will be provided by large utility providers – Kentucky Power and Columbia Gas, respectively – that should not have difficulty in meeting the needs of the proposed plant. Water and wastewater services will be provided by the City of South Shore. The City has recently completed upgrades to its wastewater system and continues to upgrade its water system, which was recently acquired from a former private owner. The City appears to be able to meet the sanitary needs of plant employees for water and wastewater service. SESS proposes to develop a raw water intake system from the Ohio River for plant cooling needs and a system for discharging used cooling water to the river. SESS also mentions that the City of South Shore water system would provide a backup supply for cooling and other plant needs.
- **Setback requirements** — There are no local setback requirements for the site. The site meets the requirement in KRS 278.704 (2) that the proposed exhaust stack is at least 2,000 feet from any residential neighborhood, school, hospital, or nursing home facility. The site does not meet the requirement that the stack is at least 1,000 feet from any adjoining property owner. A portion of the Graf Brothers Flooring and Lumber operation lies within 1,000 feet of the proposed location for the stack.

Language in the SAR suggests that the final stack of the coke plant may not technically be an exhaust stack, but SESS applied the statutes as though it would be considered an exhaust stack in order to ensure full compliance with the statutes. SESS has applied for a deviation from the setback requirements under KRS 278.74(4) and Board approval of the proposed facility would be contingent on granting that deviation.

- **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 are addressed. Noise levels are briefly addressed and then evaluated more fully in a subsequent section of the SAR. These materials appear to meet the informational requirements identified in KRS 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 that supports the visual impact assessment of the proposed SESS facility. The SAR provides line of site profiles from the isolated, residential homes north of U.S. Highway 23 and from one of the homes south of the highway in Sand Hill. The SAR also provides conceptual representations of what the facility would look like from two locations along U.S. Highway 23 to the east and west of the proposed site. The SAR did not address stack or on-site lighting, but SESS indicated their intention to minimize nighttime lighting subject to safety and security requirements — including FAA regulations.

In general, BBC concurs with SESS's statements that the proposed facility would not be incompatible with its surroundings from a scenic standpoint. This assessment reflects both the existing industrial uses adjacent to the facility to the east and west and the general prevalence of heavy industry (including power plants, other coke plants, chemical facilities and other operations) along this portion of the Ohio River. The proposed, non-regulated transmission line would likely be visible from numerous areas to the east and west as it crosses the Ohio River, but such crossings are again not uncommon in this region.

Apart from the two isolated residences closest to the proposed facility (one of which appears to be screened from view of the stack by nearby trees), BBC believes the proposed plant would be most visible from the Sand Hill neighborhood directly south of the proposed site. This is due to both that neighborhood's close proximity and its slightly higher elevation. Retaining as much of the existing tree and brush screen along U.S. Highway 23 as possible and supplementing remaining vegetation with a new green belt as discussed in the SAR, could help reduce the facility's visual impact.

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 development and operation of the proposed SESS facility. The SAR does not include a formal study regarding potential effects on local property values from the proposed facility. However, SESS states that the facility is anticipated to have a "marginal but positive effect on community property values." This statement appears to be based on:

- The project's location in an industrial setting;
- The "appropriate" selection of this site;
- The setback distance from U.S. Highway 23; and
- The anticipated economic benefits for the nearby community.

During our interviews and site visit, community leaders indicated that they had not heard concerns about adverse impacts on local property values from residents in the community. For the most part, local residents appear to be positively disposed toward the proposed facility, primarily due to the sorts of potential economic benefits that SESS described in the SAR.

At least one resident in that neighborhood has raised questions about potential odors from the facility. While odors are not an issue that is identified in the Kentucky statutes regarding the siting of merchant power plants, if the plant were to emit odors that are noticeable in the surrounding community, it could affect residential properties in the immediate vicinity. Based on BBC's review of the descriptions of SunCoke's process for making coke in new plants such as the proposed SESS facility, we suspect that local concerns about potential odors may be based on experience with older coke facilities (such as the plant that once operated in New Boston, Ohio, on the other side of the river).

The properties immediately adjacent to the proposed site (to the east and west) are used for industrial purposes. The value of these properties should not be adversely affected by the proposed SESS facility as long as the construction and operation of the SESS facility does not impact the viability and profitability of the neighboring industrial facilities. The only apparent concern in this regard is potential short-term disruption at the Graf Brothers facility due to traffic congestion along Johnson Lane (discussed later).

The proposed facility would increase the industrial character of the surroundings for the two isolated residences north of U.S. Highway 23 and for the Sand Hill neighborhood south of the highway. While this change, by itself, could have a marginal adverse effect on the values of those properties, that effect may be more than offset by upward pressure on home values from the potential increase in demand for housing due to the proximity to the SESS facility.

Expected Noise from Construction and Operation

In response to this SAR requirement, the applicant submitted a noise study of SunCoke's recently developed facility at Middletown, Ohio (Exhibit H1 of the SAR) conducted by Pekron Consulting. The SAR relies on the findings from the Middletown, Ohio, report, along with qualitative comparisons of the Ohio location to the proposed Kentucky site, to reach the following conclusion:

"Similar to the Middletown site, it can be assumed that the noise levels generated at the proposed SESS site would not pose a negative contributing effect upon the noise levels within the surrounding properties."¹

SESS representatives indicated that the most noticeable noise from operation of the proposed facility may be the "whistles" or alarms that occur when the coke furnaces are opened for removal of the coke product and recharging of the coal supply. The loudest component of the proposed operation would likely be the steam turbine generator (STG), but that component would be contained within a building under the proposed development plan.²

The three prior merchant generating facility SARs that BBC has reviewed for the Board have each included more formal noise studies specific to their proposed sites. We recognize the actual noise data provided in the SAR from a similar, existing SunCoke operation may provide more accurate information on the noises that would be generated by construction and operations of the proposed facility in Kentucky than a modeled noise assessment. However, we are uncertain about the transferability of the conclusions from the Middletown, Ohio, report to the proposed location in Kentucky because the SAR does not provide any baseline data on existing noise levels at the Kentucky site. If the background noise levels near the Kentucky site (particularly in the Sand Hill neighborhood that would be the receptor area of greatest potential concern) are as high or higher than the background noise levels near the plant in Middletown (as SESS has hypothesized), there is likely to be little cause for concern regarding noise impacts. However, if

¹ SAR, page 8.

² BBC meeting with David Schwake, SunCoke Energy Director of Business Development North Americas and Kevin Bailey, Environmental Scientist for URS Corporation (consultant to SESS), November 2, 2014.

the background noise levels near the Kentucky site are lower than they are near the Middletown site, noise impacts could be a greater concern.

Impacts on Transportation

The proposed site was selected, in part, because of its direct access to three forms of transportation – via river barge, railroad and road.

During ongoing operations, coal for the coke plant would arrive via river barge at a coal barge unloading facility to be constructed at the site on the Ohio River. Produced coke would be transported from the site using the CSX rail line. Workers, vendors, trucked supplies, and materials would access the site via road. During construction, some large equipment and material loads may be transported to the site via barge, but most equipment and material would likely arrive via truck. Modifications to the rail facilities would not be completed in time to use the railroad to transport construction equipment and supplies. SESS has not estimated the number of truck trips that would be required to transport the necessary materials and equipment to the site during the construction period. The workforce of 500 or 600 construction employees would, of course, access the site via road.

One of the key challenges associated with the site is the limited existing access via road. At present, the site must be accessed via Johnson Lane, a relatively narrow road that intersects U.S. Highway 23 to the southeast of the proposed SESS plant. Johnson Lane is currently used primarily by the Graf Brothers Flooring and Lumber operation and is heavily used by trucks entering from U.S. Highway 23 with logs and leaving to the highway with finished products. North of the CSX rail line, Johnson Lane is also used by truck traffic between various facilities within the Graf Brothers operation.

SESS has developed plans to try to mitigate potential road access problems. First, SESS plans to develop a new access to U.S. Highway 23 west of Johnson Lane that would bring construction employees to a parking lot to be built on the southern portion of the site. This plan eliminates the use of Johnson Lane by construction workers commuting to the site.

Second, SESS has been working with Greenup County on plans to build a bypass around the lower portion of Johnson Lane (from north of the CSX line to the northeastern entrance to the SESS site). The County Road Engineer estimates that this portion of Johnson Lane currently receives about two to three times as much traffic from the Graf Brothers operation as the southern portion of the Lane between the CSX rail line and U.S. Highway 23.

Third, SESS plans to work with KYDOT on developing a permanent vehicular overpass spanning the CSX line from the new entrance to the site (west of Johnson Lane) to the completed plant that would provide the primary road access for ongoing operations.

Recommendations

In general, the proposed SESS site appears to have been well selected in terms of both SESS's operations and local impacts and community acceptance. There are several areas, however, where deficiencies in the information provided in the SAR prevent BBC from being able to render definitive conclusions regarding certain topics specified in the Kentucky statutes.

Additional information needed from the applicant. BBC, together with the PSC staff acting on behalf of the Board in regard to this application, has requested the following additional information from SESS:

- **A more complete, written description of proposed access control during construction and operations.** As described in Section C, SESS representatives were able to verbally describe anticipated access control at an additional level of detail that BBC believes would satisfy the Board, but this description should be documented in written form.
- **An additional conceptual view of the proposed facility from the Sand Hill neighborhood.** As discussed in Section C, BBC believes the Sand Hill community, directly south of the proposed site on the other side of U.S. Highway 23, has the greatest potential to be affected among the five neighborhoods within two miles of the proposed facility. A conceptual view of the facility (similar to those shown in Exhibit H2 of the SAR) from that neighborhood would be useful in helping the Board assess compatibility with the proposed facility's scenic surroundings.
- **Information regarding potential odors from the site.** As discussed further in Section C, at least one resident in the nearby community of Sand Hill has raised concern about potential odors from the facility. BBC believes this concern may stem from experience with older coke plants and may not be an issue with the latest technology now used by SunCoke, but we believe SESS should address this concern in writing.
- **Existing noise data for the area near the site and interpretation of Middletown, Ohio, noise results in the Kentucky site context.** As noted earlier in this section, and in more detail in Section C, BBC believes that data on existing noise levels in the Sand Hill community directly south of the proposed site, together with further interpretation of the noise results from the Middletown, Ohio, facility study are necessary in order to adequately assess potential noise impacts from the Kentucky site.
- **Projections of daily average and peak day truck traffic using Johnson Lane during construction.** One of the key challenges of this site is the limited, existing road access from U.S. Highway 23. SESS has developed creative strategies to improve road access and minimize conflicts with other users, as summarized earlier in this section and discussed further in Section C of this report. However, potential conflicts may still occur, particularly in regard to the construction truck traffic along the southern portion of Johnson Lane (between the rail line crossing and U.S. Highway 23). Projections of the volume of truck traffic in this area would further clarify the potential for conflict and could assist in working with the adjacent landowner to minimize conflicts.

Mitigation recommendations. SESS has proposed the following mitigation measures in their SAR (Section 6.0):

- SESS designated a site in an established industrial park to decrease the effect of the project on an area less compatible with the project;

- SESS would provide a green belt around portions of the Project Site to achieve two objectives: provide a visual barrier to the local area and reduce the noise levels generated;
- SESS has considered potential impacts to wildlife and jurisdictional waters in its site design and has taken steps to minimize potential impacts by locating all transmission structures outside of wetland areas;
- SESS has assessed the potential for effects on the cultural resources of the area. In response, it has taken steps to minimize impacts to sensitive areas near the Ohio River by restricting site activities to defined minimal corridor areas;
- The SESS site has been designed such that facility buildings and operations are set back approximately 1,400 feet from the U.S. 23 entrance; and
- SESS would paint project structures a neutral color, excluding markings which may be obligatory by OSHA, the Federal Aviation Administration (FAA) and/or Kentucky Airport Zoning Commission (KAZC) or to otherwise protect the safety of employees.

BBC supports the foregoing mitigation identified by SESS. We also recommend the following additional mitigation measures to minimize the impacts of the proposed facility:

- If SESS expects to rely on the City of South Shore to provide backup water supply for cooling or other plant purposes beyond employee sanitary needs, it should provide additional information to the City regarding the magnitude of these potential demands and the potential frequency and duration of these needs.
- Minimizing night time lighting (subject to FAA and other regulatory requirements and plant safety needs) would help to minimize the facility's visual impact. Modern industrial lighting technologies are now available that can minimize light trespass and sky glow, such as LED lights which focus concentrated lighting downward on target areas.
- In order to minimize conflicts along the existing road access to the site, and improve access control at the site, BBC supports SESS's plans to:
 - Develop a new road access to a construction employee parking lot located on the southern end of the site and a vehicular overpass over the railroad to allow road access to the operational plant from west of Johnson Lane; and
 - Develop a bypass around the lower (northern) portion of Johnson Lane for the same purposes.
- In this same context, we recommend that SESS work with the adjacent landowner (Graf Brothers Flooring and Lumber) to schedule delivery of large loads along Johnson Lane during nighttime hours or as necessary to help minimize conflicts along this narrow roadway.

Additional mitigation may be necessary, depending on the additional information provided by the applicant in response to the information deficiencies identified previously.

Subject to review of the additional information needs identified earlier in this section, and to the Siting Board's decision on whether to grant SESS a deviation from setback requirements identified in KRS 278.704 (2), BBC recommends that the Board approve the application for a certificate to construct based upon the siting considerations addressed in this review. This recommendation presumes that the project is developed as described in the applicant's SAR and supplemental information, and that the mitigation measures above are implemented appropriately. Based upon the information available to BBC at the time of this report and if these presumptions are correct, there are unlikely to be significant unmitigated impacts from construction and operation of the SESS project regarding scenic compatibility, property values, noise or traffic.

SECTION C.

Findings and Conclusions

SECTION C.

Findings and Conclusions

This section provides detailed review and evaluation of each element of the SAR as prescribed 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; and
5. Impacts on Transportation.

Although the Board will likely consider economic impacts 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 the 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 the proposed SESS facility, along with other information BBC was able to gather about the project and its impacts. Finally, BBC draws its own conclusions about the project's potential 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 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 Sections 1.0 through 1.9 of the SAR. Other related or supplementary information comes from various other sections of the SAR and application.

Overview of proposed facility. While not specifically required by the Kentucky statutes, Sections 1.0 and 1.1 of the SAR provide a useful overview of the proposed facility and SESS's reasons for selecting the proposed site. This information is particularly important in this particular application because of the unusual nature of the proposed facility. While the SESS facility is subject to review and approval by the Board because it would generate electricity that would be sold to customers outside of Kentucky (and hence can be considered a merchant power plant), the primary purpose of the facility is to produce coke for sale to industrial customers producing iron and steel. Electricity generation is essentially a byproduct of the particular coke-making process used by SESS.

As described in Section 1.0 of the SAR, the nature of the plant complicates the application of the Kentucky statutes governing the Board's review of merchant power plants. For example, the merchant power plant aspect of the SESS plant does not have an independent footprint from the overall heat recovery coke plant. As stated in Section 1.0, SESS also believes that the final stack for the coke plant is technically not an "exhaust stack" as referenced in KRS 278.704, since no fuel is direct fired for electricity generation. However, for purposes of its SAR, SESS has defined the location of the merchant generating facility based on its planned location for the central steam turbine generator (STG) within the coke plant and has treated the final stack for the coke plant as an exhaust stack.¹ (In this review of SESS's SAR, BBC has adopted the same conventions in these regards.)

As part of the proposed project, SESS would also construct a 138 kV, non-regulated transmission line to transport the produced power to a substation directly across the Ohio River in New Boston, Ohio. As described in the SAR, about 0.7 miles of the line would be located in Kentucky, entirely on the proposed site property.

¹ SAR, page 1-2.

Surrounding land uses. Section 1.2 of the SAR describes the site as approximately 250 acres² and notes that it is currently used for agricultural purposes and is bordered by industrial neighbors to the east and west. The northern boundary of the site is the Ohio River. The site is bordered to the south by U.S. Highway 23. Figure 4 from that document (which is reproduced on the following page as Figure C-1 of this report) provides an aerial overview of the site and surrounding area, including the names of owners of adjacent and nearby properties.

As described in the SAR, there are two, isolated residential properties in relatively close proximity to the southeastern portion of the site. One of these structures is within 2,000 feet of the proposed STG location, while the other is about 2,200 feet from the STG location.³ There is also an existing residential structure, not currently inhabited, located on the former Hooker Chemical site, located east of the northern portion of the site and north of the Graf Brothers operation.

As noted in the SAR, Kentucky statutes define a residential neighborhood as a populated area of five or more acres, containing at least one residential structure per acre.⁴ As such, the nearest residential neighborhood to the proposed site is the unincorporated community directly across U.S. Highway 23 to the south of the site. The SAR notes that there are five residential neighborhoods within two miles of the proposed STG.⁵

The nearest schools are approximately 1.7 miles from the STG (in the town of South Shore). There are no hospitals, nursing homes, public or private parks in Kentucky within two miles of the STG.⁶

² Note that the recent property survey included in Exhibit A of the main volume of the SESS Application (not the SAR) indicates a combined area of 265 acres for the site. SESS has informed BBC that the survey reflects a different assumption regarding the low water line of the Ohio River than the previous estimate of 250 acres.

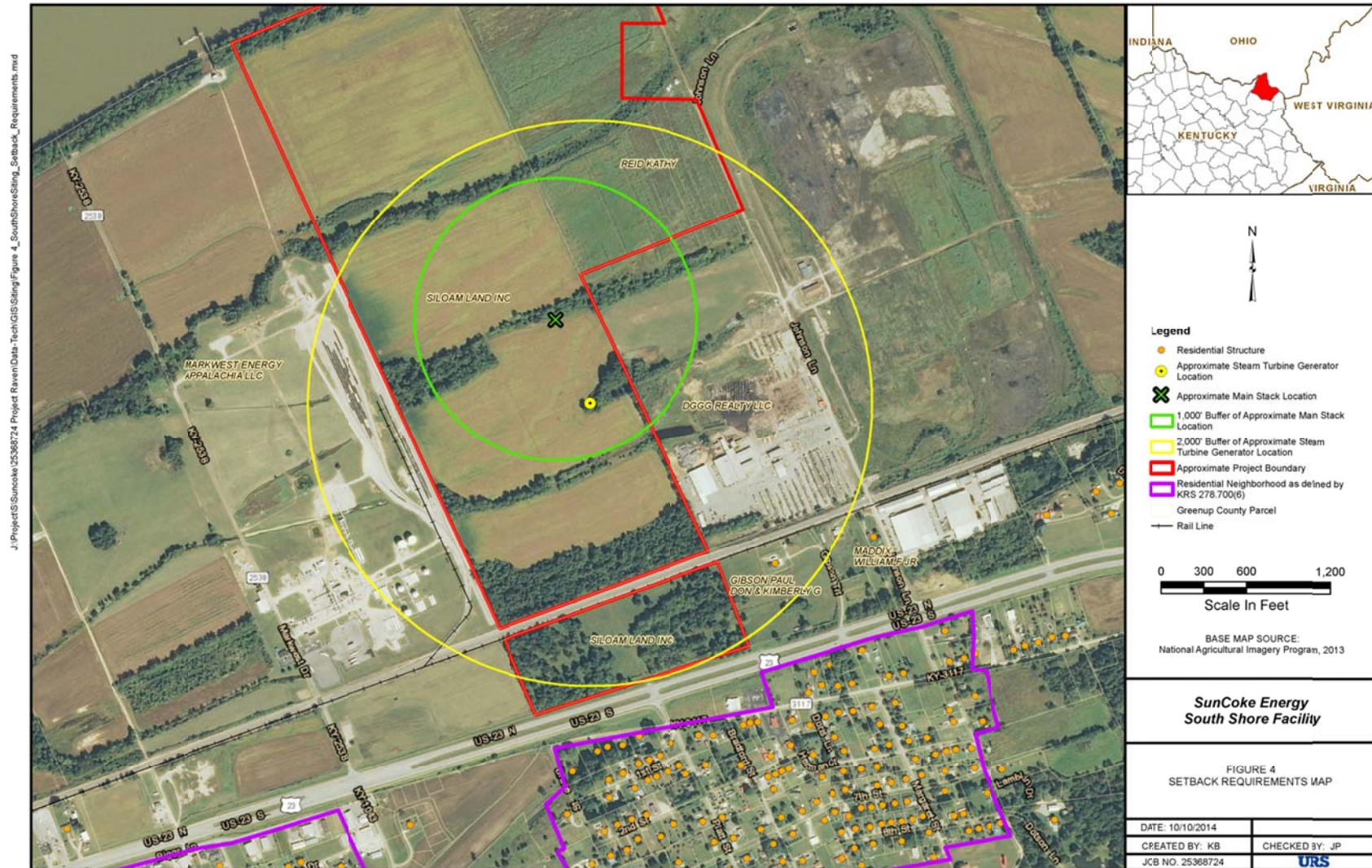
³ SAR, page 3.

⁴ KRS 278.700(6)

⁵ SAR, page 3.

⁶ SAR, page 3.

Figure C-1.
Proposed site and surroundings



Source: SESS Siting Application, Figure 4.

Legal boundaries. Section 1.3 of the SAR provides a narrative description of the property ownership and use. The section does not provide a legal description of the property boundaries, but references Exhibit A – a property survey map contained in the main volume of the application (not the SAR) – which does provide a legal description of the relevant parcels.

Access control. Section 1.4 of the SAR provides a brief description of access control and security for the site during operations, indicating that the site would be fenced and monitored at all times, with access allowed for employees, delivery trucks, documented visitors, utility providers, and vendors/contractors. Neither this section, nor other information elsewhere in the SAR, discusses access control during construction.

Location of buildings, transmission lines and other structures. Section 1.5 of the SAR references several figures in the application which depict various features of the proposed site including:

- **Figure 3 – Plant Layout Map.** This figure (which is labeled as “Preliminary Site Layout Ovens at Power Island” within the figure and does not show the figure number, provides a relatively detailed depiction of the relative locations of the components of the site, including the coke ovens, turbine building, cooling tower, emission control equipment and the main stack – as well as other buildings and equipment.
- **Figure 5 – Two-mile Vicinity Site Map.** This figure is actually most relevant in terms of surrounding land uses (described earlier in this report and the SAR) and does not actually relate to the location of proposed buildings and other improvements.
- **Figure 6 – Radial Tie Line Route and One-Mile Vicinity Plan.** This figure depicts the route of the proposed, non-regulated transmission line through the site to the river, crossing the river and traversing a portion of New Boston, Ohio en route to the substation connection. It also shows the extent of a one-mile radius from the proposed line.
- **Figure 7 – Radial Tie Line Plan and Profile Sheets.** This figure, which includes two pages, does not show the figure number and is labeled “SunCoke Energy, South Shore Plant, 138kV Radial Tie Line. The first of the two pages shows most of the line, beginning at the terminus at the Ohio substation, but cuts off a small portion of the southern end of the line (within the proposed site). The second page shows the detail for the southern end of the line within the site.

Location and use of access ways, internal roads and railways. This section of the report simply indicates that the site would be accessed from U.S. Highway 23, and by the existing CSX railroad line that bisects the southern portion of the site. More information on road and rail access is provided in Section 5.0 Road, Rail and Fugitive Dust and is discussed later in this report.

Existing or proposed utilities. Section 1.7 of the SAR identifies the utility providers for the proposed project as Kentucky Power (electric), South Shore Water Works Company (water), City of South Shore (wastewater) and Columbia Gas (natural gas). Potable water supply from the City of South Shore (which bought the South Shore Water Works Company within the past couple of

years)⁷ would be used for employee sanitary purposes and as a backup source for facility cooling needs.

The SAR also provides a discussion of the anticipated cooling water intake structure from the Ohio River which SESS would construct to provide the primary water supply for facility cooling needs. SESS would also obtain permits and develop a system to discharge cooling water to the Ohio River, as also discussed in this section. Wastewater flows to the South Shore wastewater system would be limited to employee sanitary use.

Compliance with applicable setback requirements. In BBC's interview with the County Judge Executive for Greenup County, we confirmed that the facility would not be located in a jurisdiction that has established setback requirements, as stated in Section 1.8 of the application,

The SAR provides a somewhat confusing discussion that indicates that since the facility would not be located on the site of a former coal processing plant, and would not use onsite coal as a fuel source, it is unclear whether the statement in KRS 278.706(2)(e) regarding a 1,000 foot setback requirement for the exhaust stack and a 2,000 foot requirement for all proposed facilities used for electric generation applies to the project.

While the Siting Board's legal counsel will determine the specific application of Kentucky statutes to the proposed facility, BBC believes the most relevant setback requirements in this instance are found in KRS 278.704(2), which is also referenced in the SAR. In this regard, the SAR states that all proposed structures or facilities used for generation of electricity are located more than 2,000 feet from any residential neighborhoods, schools, hospitals, or nursing home facilities ..."⁸

Along with identifying the 2,000 foot setback requirement for specific land uses addressed in the preceding paragraph, KRS 278.704(2) also states that "no person shall commence to construct a merchant electric generating facility unless the exhaust stack of the proposed facility is at least one thousand (1,000) feet from the property boundary of any adjoining property owner ..."⁹ In this regard, the SAR appears to suggest that the final stack of the coke plant may not technically be an exhaust stack, but that SESS has applied the statutes as though it would be considered an exhaust stack in order to ensure full compliance with the statutes.¹⁰ The SAR notes that the proposed stack location is within 1,000 feet of one adjacent property owner – specifically referring to the property owned by DGGG Realty where the Graf Brothers Flooring and Lumber operation is located.

As noted in the SAR, the Siting Board has the authority to grant a deviation from the setback requirements and the SAR indicates that SESS intends file a separate motion requesting such a

⁷ BBC interview with Cheryl Moore, Mayor of South Shore, November 13, 2014.

⁸ SAR, page 6.

⁹ KRS 278.704(2).

¹⁰ SAR, page 6.

deviation. The SAR also notes that the arguments in favor of allowing a deviation include the facts that the adjacent property within the 1,000 foot radius is an industrial facility, the property owners have been aware of the proposed SESS facility for several years, and the main stack of the coke plant may not technically be an exhaust stack, as referenced in the statutes.

Evaluation of noise levels. The noise assessment provided by the applicant is found in Section 1.9 and Exhibit H-1 of the SAR. BBC presents its evaluation of the applicant's noise information later in this 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 and local officials. BBC also visited the proposed plant site, the surrounding area, and the area near another SunCoke facility located in Haverhill, Ohio, approximately 15 miles upstream (southeast) of the proposed South Shore, Kentucky site. The following discussion focuses on the elements of the facility description and site development plan that the study team believed warranted further examination.

Surrounding land uses. During the site visit, the study team also visited nearby areas and took a number of photos to help put the proposed site into additional context. The locations from which all photos in this report were taken are shown at the end of this report section in Figures C-10 and C-11.

As indicated in the SAR, the properties immediately adjacent to the proposed site include the MarkWest plant (to the west) which produces natural gas and natural gas liquids through refining processes (shown in Figure C-2, below) and the Graf Brothers Flooring and Lumber operation (to the east). To the northeast (north of the Graf Brothers operation), the site is also bordered by the former Hooker Chemical site, which is currently vacant.

Figure C-2.
MarkWest Siloam Kentucky Plant



Source: BBC Research & Consulting, November 2014. Photo taken with Sony DSC-HX5V, normal focal length.

Figure C-3 depicts the residential property closest to the proposed SESS facility (one of the two, isolated residential properties southeast of the site). A portion of the Graf Brothers operation can be seen behind the residence.

Figure C-3.
Nearest home, adjacent to southeast corner of proposed site



Source: BBC Research & Consulting, November 2014. Photo taken with Sony DSC-HX5V, medium telephoto focal length.

As noted in the SAR, there are five residential neighborhoods within two miles of the proposed location for the STG. However, four of these neighborhoods are located at some distance upstream or downstream from the proposed site. These neighborhoods are buffered from the proposed site by a combination of the existing MarkWest and Graf Brothers industrial operations and by extensive vegetation on the properties between U.S. Highway 23 and the Ohio River.

The nearest residential neighborhood to the proposed site, and the one with the most potential to be affected by development of the proposed SESS facility, is the unincorporated community directly across U.S. Highway 23 to the south of the site. This community is known locally as Sand Hill. Figure C-4, on the following page, provides a view of the portion of this community that is closest to the proposed main entrance to the SESS facility. The photo is taken from the direction of the proposed site but approximately 100 feet south of U.S. Highway 23, 300 feet south of the southern border of the proposed site, about 2,300 feet south of the proposed STG location, and approximately 2,800 feet south of the proposed main stack location.

Figure C-4.
Nearest neighborhood from direction of proposed site, approximately 300 feet south of site border and 2,300 feet south of proposed steam turbine generator



Source: BBC Research & Consulting, November 2014. Photo taken with Sony DSC-HX5V, wide angle focal length.

Legal boundaries. BBC believes that the legal descriptions of the parcels that comprise the proposed site, found in Exhibit A of the main SESS application volume, meet the Kentucky statutory requirements. Technically, however, this information is not contained in the SAR though it is incorporated by reference.

Access control. Based on BBC's prior experience in performing several SAR reviews for the Siting Board, we believe the Board may wish to have more information regarding access control than is provided in the SAR. As noted previously, the SAR does not address access control during construction and provides only a brief summary of access control measures during project operations.

During the site visit, BBC met with SESS representatives to discuss access control and other issues. The SESS representatives indicated that access control during construction and operations is very important to the company for obvious reasons, which include avoiding disruption, damage, or theft. The company representatives were able to verbally describe a more complete picture of SESS's plans for access control at the site.

During construction, SESS plans to develop an employee parking lot on the southern portion of the site, which is separated from the main site (where project facilities would be located) by the CSX rail line. Employees would access the main site via a footbridge over the railroad (to be constructed); a secure and monitored gate would control access at the northern end of the footbridge. All employees would be required to carry identification badges which would be checked by security. Vendors and equipment suppliers would access the site from Johnson Lane, which would also have a secure and monitored entrance.

During operations, there would be vehicular access for employees entering the site from U.S. Highway 23 via a new overpass that would be constructed across the CSX rail line. The new overpass would be to the east of the proposed footbridge to be used during construction. Once again, access would be controlled on the north side of the rail line and employees would carry identification badges to proceed through monitored gates to the proposed plant.¹¹

BBC also discussed access control and security with the Greenup County Judge Executive. Since the proposed site is located in an unincorporated area, the county would have primary responsibility for law enforcement. The Judge Executive indicated the county has extensive experience with similar industrial facilities and does not have particular or specific concerns regarding security or access control at the proposed site.¹²

Location of buildings, transmission lines and other structures. BBC believes the SAR provides sufficient information and graphical representation of proposed locations of buildings, transmission line and other structures.

Location and use of access ways, internal roads and railways. While there is a more complete discussion of road and rail access in Section 5.0 of the SAR, there is no real discussion in the SAR regarding internal roads and access ways for the proposed site. Figure 2 from the SAR (which is not numbered in the document, but is entitled “Preliminary Site Layout”) appears to offer the clearest depiction of anticipated roads within the proposed site and the roads connecting the site to Johnson Lane and U.S. Highway 23.

Utilities. As discussed earlier, the SAR provides a clear description of anticipated utility service provision to the proposed facility. Two of the anticipated utility providers, Kentucky Power and Columbia Gas, are large scale utilities that are unlikely to face substantial challenges in serving the utility needs of the proposed plant.

The BBC team met with the Mayor of South Shore to discuss water and wastewater service to the proposed facility. South Shore purchased the former South Shore Water Works Company in June 2013 and has been making extensive renovations and improvements to the system. They are also pursuing an effort to tie their system into Garrison Water (a nearby water provider) to provide backup and emergency capabilities. The South Shore water system currently serves

¹¹ BBC meeting with David Schwake, SunCoke Energy Director of Business Development North Americas and Kevin Bailey, Environmental Scientist for URS Corporation (consultant to SESS), November 2, 2014.

¹² BBC Interview with Greenup County Judge Executive Robert Carpenter, November 12, 2014.

about 2,200 customers (many of whom are outside of the city boundaries), and the mayor believes the system would have sufficient capacity to meet the sanitary needs of the approximately 100 to 120 employee operating work force at the proposed plant.¹³

The City of South Shore also recently undertook renovations to its wastewater system, primarily to reduce inflows and infiltration. As a result of that project, they now have approximately 60% available capacity in their wastewater system and can readily accommodate the sanitary wastewater needs of the workforce at the proposed plant.¹⁴

Compliance with applicable setback requirements. As discussed earlier, the SAR indicates that the proposed project does not comply with the setback requirements identified in KRS 278.704 since the proposed stack location is less than 1,000 feet from adjacent properties. The only property within 1,000 feet of the proposed stack location is Graf Brothers Flooring and Lumber.

BBC had a brief discussion with one of the owners of the Graf Brothers operation (Greg Graf) during our visit to the site and vicinity. Mr. Graf expressed concerns about the potential effects on his business from construction traffic on Johnson Lane.¹⁵ This issue is discussed in more detail later in this report.

As noted previously, the Siting Board has the authority to grant a deviation from the setback requirements under KRS 278.704(4) if it determines that the proposed facility is designed to meet the goals of other KRS statutes (identified in KRS 278.704(4)).

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. The proposed SESS facility differs from previous merchant electric generation facility proposals examined by the Siting Board because power production is a byproduct of the plant's primary purpose to make coke for iron and steel foundries. This raises potential legal questions such as whether or not the final stack of the coke plant is technically an "exhaust stack" as discussed in Kentucky statutes and how to precisely define the location of the merchant generating facility within an integrated coke plant operation.
- The legal boundaries of the proposed site are not actually contained within the SAR, but this is largely a technicality since they are provided in the main volume of SESS's application and incorporated by reference in the SAR.

¹³ BBC interview with South Shore Mayor Cheryl Moore, November 13, 2014,

¹⁴ Ibid.

¹⁵ BBC conversation with Greg Graf, owner of Graf Brothers Flooring and Lumber, November 12, 2014.

- The SAR does not provide sufficient information regarding access control, particularly during construction. However, SESS does have more specific plans to control access during construction and operations, and these plans were stated to BBC during a personal interview with SESS's representative.
- Approval from the Board would be contingent on granting SESS a deviation from the setback requirements described in KRS 278.704(2) relating to the distance between the exhaust stack for a proposed merchant electric generating facility and the nearest property owner.

Recommended mitigation. BBC recommends the following mitigation measures in regard to this portion of the Kentucky statutory requirements (KRS 278.708(3)(a)):

- SESS should provide a more detailed written plan for access control during construction and operation than is currently included in the SAR. The plans and measures SESS told BBC it intends to implement appear adequate, but they should be documented.
- If SESS anticipates it may on occasion require water service from the City of South Shore to meet cooling needs or other plant needs beyond employee sanitary uses, SESS should provide the City of South Shore with further information regarding the magnitude and potential frequency and duration of those potential needs to help the City be prepared to provide the necessary supply.

Compatibility with Scenic Surroundings

This section of the SAR review addresses the compatibility of proposed SESS facility 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. 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 within the viewshed of the project's structures or emissions.¹⁶

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.

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. Local regulations especially focus on screening of facilities from public view and the effects of glare from outdoor lighting upon adjacent property.

In this instance, the visual impact evaluation followed the third, and least formal, of the three approaches listed above. The selected approach is appropriate given that there is no formal visual resource system, nor are there local ordinances related to visual impacts, in effect for the area surrounding the proposed plant. The primary project features under consideration for scenic compatibility are the project structures, any of the project appurtenances, project lighting and the stack plumes.

Applicant's Submittal

In compliance with KRS 278.708, the applicant completed an evaluation of the scenic compatibility of the project with the surrounding area through a visual assessment. This evaluation is set forth in Section 2.0 of the SAR. The purpose of this evaluation was to determine the degree to which the project would visually impact the surrounding area. In addition, SESS has also conducted various public involvement activities to inform the community about the proposed project and to receive feedback, including a public meeting held in South Shore on July 18, 2014.¹⁷

¹⁶ The viewshed is defined as an area of land, water, or other part of the environment visible to the eye from a vantage point. Conversely, the vantage point is presumed to be visible from locations within the viewshed.

¹⁷ SunCoke Energy South Shore LLC Application to the KY State Board on Electric Generation and Transmission Siting, Page 16.

Visual assessment. SESS's visual assessment approach focused on evaluating scenic compatibility from U.S. Highway 23 as the site is approached from the west or the east, and from the closest residences to the proposed facility. The methodology consisted of the following components:

- Reiteration of the description of land uses in proximity to the site and the location of the closest residences (similar to the information provided earlier in the SAR in Section 1.2);
- Development of line of site profiles from four nearby residential parcels, including the two isolated residences closest to the proposed facility (discussed previously), one of the closest residences in Sand Hill and a residence in another neighborhood further to the west;
- Conceptual representations of what the facility would look like from two locations along U.S. Highway 23 to the east and west of the proposed site; and
- Reference to Figures 6 and 7 of the SAR, which show a one mile radius surrounding the proposed non-regulated transmission line and provide information on the structure of the proposed line and its route.

In the SAR, SESS primarily focuses on the visual impact of the stack, which would be by far the tallest and most visible element of the facility, and of the transmission line.

As stated in the SAR, the line of site profiles (provided in Exhibit H3) indicate that the proposed stack would likely be visible from three of the four nearest residences. The closest residence to the southeast would appear to be screened from a view of the stack by nearby trees. The two conceptual representations of the facility's appearance from southeast and southwest of the facility on U.S. Highway 23 indicate that the facility would also be clearly visible from those locations.

Figure C-5, reproduced from Exhibit H2 of the SAR, shows the conceptual view of the facility from the southeast along U.S. Highway 23, near the intersection with Johnson Lane.

Figure C-5.
Conceptual view of proposed SESS facility from U.S. Highway 23 southeast of site



Source: SAR, Exhibit H2.

Figure C-6, also reproduced from Exhibit H2 of the SAR, shows the conceptual view of the facility from the southwest along U.S. Highway 23, approximately 4,000 feet from the STG. This view includes the existing MarkWest facility, which lies at somewhat closer range.

Figure C-6.
Conceptual view of proposed SESS facility from U.S. Highway 23 southwest of site



Source: SAR, Exhibit H2.

This section of the SAR also provides SESS's conclusions that:

- "... the character of the existing viewsheds for the surrounding residences would not be substantially changed by the construction of the coke plant and merchant electric generating facility, as each viewshed currently includes the MarkWest and Graf Brothers industrial properties."¹⁸
- "Due to the existing surrounding property use and electrical transmission lines, the view of the project is likely to be no more intrusive than the existing industrial structures surrounding the Project Site from the vantage points of these two locations."¹⁹

The scenic compatibility section of the SAR concludes with a discussion of SESS's plans to install a "green belt" of trees and landscaping, which would surround the plant and further reduce

¹⁸ SAR, page 9.

¹⁹ SAR, pages 9 and 10. Refers to conceptual viewshed locations along U.S. Highway 23.

visual impacts. Exhibit H4 provides examples of green belt planning for another SunCoke facility at Middletown, Ohio.

Supplemental Investigations, Research and Analysis

As noted earlier, BBC traveled the surrounding area during our visit to the site, took a number of photographs of the area and site from various locations, and visited a nearby SunCoke facility in Haverhill, Ohio. We also discussed visual impact considerations with SESS representatives during our visit.

During the site visit and meeting with SESS representatives, BBC requested that SESS supplement the SAR's two conceptual views of the facility from U.S. Highway 23 (shown previously) with another conceptual view from the closest residential neighborhood in Sandy Hill. As noted earlier, we believe that the other four neighborhoods located within two miles of the proposed facility would be substantially buffered from visual (or other) impacts by a combination of distance, existing trees and vegetation, and the existing industrial facilities to the east and west.

During the discussions, we confirmed with SESS that the stack for the proposed facility would be approximately 210 feet tall, about 2½ times the height of the tallest existing structures at the MarkWest facility. We also discussed lighting and paint color schemes. SESS representatives indicated that the stack lighting would be dictated by existing regulatory requirements (e.g. FAA regulations) and that all facilities would be painted in neutral colors to minimize their visual impact. The site is expected to be less illuminated at night than the existing MarkWest facility to the west. There would be no visible "smoke plume" from the stack, though steam would be visible from the stack (and from "quenching" facilities) during periods of cold weather.

Although SunCoke's existing coke plant at Haverhill, Ohio was constructed with a somewhat different design than the proposed plant near South Shore, the photograph of the Haverhill plant shown in Figure C-7 may provide additional context regarding the general visual aspects of this type of facility.

Figure C-7.
View of SunCoke's Haverhill Ohio facility



Source: BBC Research & Consulting, November 2014. Photo taken with Sony DSC-HX5V, medium telephoto focal length.

During the site visit with SESS representatives, BBC noted that the site is currently well screened from U.S. Highway 23 (and partly screened from the higher Sand Hill residential community to the south) by existing lines of trees and brush. Company representatives indicated they would be amenable to retaining as much of the existing vegetation as possible (as a possible alternative green belt to help screen the site) but that some of the vegetation would have to be removed in clearing and leveling the site or to improve visibility from the new road access that would be constructed.

BBC's interviews with community leaders, including several individuals who had attended the community meeting hosted by SESS in July, did not indicate that visual impacts or scenic compatibility appear to be major concerns for local residents. Apart from the existing industrial facilities already adjacent to the site on the east and west, large industrial operations along the Ohio River are not uncommon in this part of Kentucky (or across the river in Ohio).

Conclusions and Recommendations

In general, BBC concurs with SESS's statements that the proposed facility would not be incompatible with its surroundings from a scenic standpoint. This assessment reflects both the existing industrial uses adjacent to the facility to the east and west and the general prevalence of

heavy industry (including power plants, other coke plants, chemical facilities and other operations) along this portion of the Ohio River.

As noted previously, we believe that four of the five neighborhoods within two miles of the proposed site would be fairly well buffered from scenic impacts by intervening vegetation, topography and industrial operations. The proposed transmission line would likely be visible from some or all of these areas as it crosses the Ohio River, but such crossings are again not uncommon in this region.

Apart from the two isolated residences closest to the proposed facility (one of which appears to be screened from view of the stack by nearby trees), BBC does believe the proposed plant would be most visible from the Sand Hill neighborhood directly south of the proposed site. This is due to both that neighborhood's close proximity and its slightly higher elevation (as shown in the third of the four line of site profiles included in Exhibit H3 of the SAR, developed from Greenup County Parcel # 100-20-01-046.00). Retaining as much of the existing tree and brush screen along U.S. Highway 23 as possible and supplementing remaining vegetation with a new green belt as discussed in the SAR, could help reduce the facility's visual impact.

Recommended mitigation. BBC recommends the following mitigation measures in regard to this portion of the Kentucky statutory requirements (KRS 278.708(3)(b)):

- The study team agrees with SESS's proposal to develop a green belt around the proposed facility (particularly between the facility and Sand Hill), and suggests that SESS retain as much existing vegetation as possible.
- While not specifically mentioned in the SAR, minimizing night time lighting (subject to FAA and other regulatory requirements) and painting plant facilities in neutral colors would also help to minimize the facility's visual impact. Modern industrial lighting technologies are now available that can minimize light trespass and sky glow, such as LED lights which focus concentrated lighting downward on specific work areas. The lighting plan for the facility would, however, need to meet plant safety needs and OSHA requirements.

Potential Changes in Property Values for Adjacent Property Owners

Potential Issues and Standard Assessment Approaches

Development of new power plants 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. 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:

- 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 facility 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.

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.

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.

For example, one study investigated the effect newly opened power plants had on property values in neighborhoods located within five miles of the plant. The study included 60 power plants—several of which were located in Kentucky and the surrounding states. The study found that housing values decreased by 3 to 5 percent between 1990 and 2000 in these neighborhoods compared to neighborhoods located further away from the plant. Another study of 262 undesirable or “noxious” facilities located across the country, including 92 coal, natural gas or oil fired power plants (of which two were in the East South Central region that includes Kentucky), illustrates this effect. Power plants were found to significantly decrease property values in the

communities where they are located. The literature also includes numerous studies of the effect of electric transmission lines upon property values.

The standard statistical technique for evaluating the potential effects of an environmental amenity (such as beach frontage) or a 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 and Vukina, 1997), beaches (Pompe and Rinehart, 1995), airports, and electric power plants (Blomquist, 1973).

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 property value impacts are local in scope. However, the effect of power plants and other facilities on property values has been shown to extend well beyond the site. 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.

Information Provided in the Applicant's SAR

Section 3.0 of the SAR summarizes the SESS's conclusions regarding potential changes in adjacent property values from the siting of the proposed project. Much of this section focuses on the potential local economic benefits from the project that would result from employment of more than 600 construction workers over a 24 to 27 month period and ongoing employment of 100 to 120 operational employees at the facility. The SAR notes that operational payroll is projected at approximately \$9 million per year (or about \$75,000 to \$90,000 per job, on average) and contrasts these high paying jobs with the average per capita income in Greenup County of less than \$36,000 per year.²⁰

The SAR does not include a formal study regarding potential effects on local property values from the proposed facility. However, SESS states that the facility is anticipated to have a

²⁰ SAR, page 11.

“marginal but positive effect on community property values.”²¹ This statement appears to be based on:

- the project’s location in an industrial setting,
- the “appropriate” selection of this site,
- the setback distance from US 23, and
- the aforementioned potential economic benefits for the nearby community.

Supplemental Investigations, Research and Analysis

During BBC’s site visit and meetings with SESS representatives and community leaders in the surrounding area, we inquired further regarding possible effects on local property values.

SESS representatives confirmed that they had not conducted any further analysis of potential effects on property values than was provided in the SAR. In response to our questions, the company representatives indicated they were not aware of any adverse effects on local property values following the development of other, recent SunCoke facilities at locations such as Middletown, Ohio.²²

During our interviews, community leaders indicated that they had not heard concerns about adverse impacts on local property values from residents in the community. For the most part, local residents appear to be positively disposed toward the proposed facility, primarily due to the sorts of potential economic benefits that SESS described in the SAR.

One of the community leaders interviewed by BBC, who lives in Sand Hill, did mention that at least one resident in that neighborhood has raised questions about potential odors from the facility.²³ While odors are not an issue that is identified in the Kentucky statutes regarding the siting of merchant power plants, if the plant were to emit odors that are noticeable in the surrounding community, it could affect residential properties in the immediate vicinity.

As noted previously, Graf Brothers Flooring and Lumber has expressed concerns about potential impacts on their business from traffic congestion along Johnson Lane during construction of the proposed SESS facility. While this issue is discussed further later in our report, it is relevant here because commercial and industrial properties are typically valued on an income basis. If the proposed SESS facility did have an adverse effect on the income and profitability of the Graf Brothers operation, it could also affect the value of their property.

²¹ Ibid.

²² BBC meeting with David Schwake, SunCoke Energy Director of Business Development North Americas and Kevin Bailey, Environmental Scientist for URS Corporation (consultant to SESS), November 2, 2014.

²³ BBC interview with State Representative (and Sand Hill resident) Tonya Pullin, November 13, 2014.

Conclusions and Recommendations

Based upon review of the applicant's SAR, and subsequent information obtained during our visit to the site and surrounding areas, we reach the following conclusions concerning the potential changes in property values for adjacent property owners:

- The properties immediately adjacent to the proposed site (to the east and west) are used for industrial purposes. The value of these properties should not be adversely affected by the proposed SESS facility as long as the construction and operation of the SESS facility does not impact the viability and profitability of the neighboring industrial facilities. The only apparent concern in this regard is potential short-term disruption at the Graf Brothers facility due to traffic congestion along Johnson Lane (discussed later).
- The proposed facility would increase the industrial character of the surroundings for the two isolated residences north of U.S. Highway 23 and for the Sand Hill neighborhood south of the highway. While this change, by itself, could have a marginal adverse effect on the values of those properties, that effect may be more than offset by upward pressure on home values from the potential increase in demand for housing due to the proximity to the SESS facility.
- Based on BBC's review of the descriptions of SunCoke's process for making coke in new plants such as the proposed SESS facility, we suspect that local concerns about potential odors may be based on experience with older coke facilities (such as the plant that once operated in New Boston, Ohio, on the other side of the river). However, it would be useful to get confirmation from SESS that the plant is not expected to emit a noticeable odor.

Recommended mitigation. The SAR does not specify any particular mitigation measures related to impacts on adjacent or nearby property values. As suggested in interviews with community leaders, it is possible that the net effects on regional property values could be positive, with gains due to the additional economic stimulus created by plant construction and operation outweighing any possible localized reductions in value in closest proximity to the plant site.

BBC does recommend that the Board obtain further information from SESS regarding potential odors from facility operations. Such information could help confirm that odors from the plant would not have an adverse effect on nearby property values and help allay local concerns.

Expected Noise from Construction and Operation

This section evaluates the studies and conclusions discussed in the SAR concerning peak and average noise levels associated with construction and operation of the proposed SESS facility. This component of the SAR is identified in 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;
- Time of day during which peak noises are anticipated;
- 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. 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. In the instance of the proposed SESS project, potential noise issues stem from the construction and operation activities.

Applicant's Submittal

In response to this SAR requirement, the applicant submitted a noise study of SunCoke's recently developed facility at Middletown, Ohio (Exhibit H1 of the SAR) conducted by Pekron Consulting. Section 1.9 of the SAR summarizes the findings of this study.

The study consisted for the following elements:

- Noise monitoring during construction of the Middletown plant in January 2011 from seven receptor locations. Six of the seven locations were around the perimeter of the plant, one location was within the site.
- Noise monitoring during operations of the Middletown plant in September 2012. Noise was monitored at a number of locations within the plant and, most relevant to the SAR, at seven locations along the perimeter of the plant.

While the noise study provides data on measured noise levels and some written assessment of the construction noise levels relative to background noise from other sources, it generally does not provide much interpretation of the data. In particular, the two page letter regarding

operational noise levels focuses on employee safety and OSHA requirements and provides little or no interpretation regarding noise levels that are experienced by the surrounding community.

The SAR itself, however, provides some further interpretation of the noise monitoring results. Referring to the Middletown noise monitoring results, Section 1.9 of the SAR states “This study indicated that background noise levels related to traffic and other area activities matched or were higher than those from the facility.”²⁴

Section 1.9 of the SAR further provides SESS’s assessment that:

- Both the Graf Brothers operation and the MarkWest operation that border the site currently produce relatively high levels of noise;
- There is currently a high level of noise in the area due to the traffic volume along U.S. Highway 23 and the operations of the CSX railroad;
- The Middletown facility is closer to the roadway than the proposed SESS facility; and
- Both the Middletown facility and the proposed SESS site have topography that suppresses the noise that would be generated at the plant site.

Section 1.9 concludes that “Similar to the Middletown site, it can be assumed that the noise levels generated at the proposed SESS site would not pose a negative contributing effect upon the noise levels within the surrounding properties.”²⁵

Supplemental Investigations, Research and Analysis

During BBC’s site visit, we confirmed with the Greenup County Judge Executive that the county noise ordinance applies only to homes or residences. Kentucky State statutes do include language addressing noise impacts in a general fashion:

“No person shall emit beyond the boundaries of his property or from any moving vehicle any noise that unreasonably interferes with the enjoyment of life or with any lawful business or activity in contravention of any rule or regulation adopted by the cabinet.”²⁶

During our meeting with SESS representatives, BBC confirmed that SESS has not conducted any baseline noise monitoring at the proposed Kentucky site.²⁷ Although BBC spent only a few hours in the Sand Hill neighborhood across U.S. Highway 23 from the proposed site, we did not observe the area to be particularly noisy. At times, traffic along the highway was audible, but not intrusive. From the highway itself, it was possible to hear sounds associated with trucks and

²⁴ SAR, page 8.

²⁵ Ibid.

²⁶ KRS 224.30-050.

²⁷ BBC meeting with David Schwake, SunCoke Energy Director of Business Development North Americas and Kevin Bailey, Environmental Scientist for URS Corporation (consultant to SESS), November 2, 2014.

other activity at the Graf Brothers operation and some sound (primarily flaring) from the MarkWest facility.

SESS representatives indicated that the most noticeable noise from operation of the proposed facility may be the “whistles” or alarms that occur when the coke furnaces are opened for removal of the coke product and recharging of the coal supply. The loudest component of the proposed operation would likely be the STG, but that component would be contained within a building under the proposed development plan.²⁸

Conclusions and Recommendations

This review of SESS’s SAR is the fourth review of a site assessment report for a proposed merchant power plant in Kentucky that BBC has undertaken for the Siting Board.²⁹ This is the first time in our experience with these reviews that the applicant has not provided a formal noise modeling study of the proposed facility for the Board’s review and evaluation.

BBC recognizes the actual noise data provided in the SAR from a similar, existing SunCoke operation may provide more accurate information on the noises that would be generated by construction and operations of the proposed facility in Kentucky than a modeled noise assessment. Our concern, however, is that it is difficult if not impossible to apply the results and conclusions from the noise monitoring at the Middletown, Ohio, location to the proposed location in Kentucky without any baseline data on existing noise levels at the Kentucky site. If the background noise levels near the Kentucky site (particularly in the Sand Hill neighborhood that would be the receptor area of greatest potential concern) are as high or higher than the background noise levels near the plant in Middletown (as SESS has hypothesized), there is likely to be little cause for concern regarding noise impacts. However, if the background noise levels near the Kentucky site are lower than they are near the Middletown site, noise impacts could be an issue.

Recommended mitigation. As described above, it is uncertain from the SAR whether or not there could be substantial noise impacts from the proposed facility that would warrant further mitigation.

During our discussion with SESS’s representatives, we were informed that the opening of the coke ovens (and corresponding “whistles” or alarms) would occur primarily, though not always entirely, during day time hours.³⁰ To the extent that this operating plan would limit the occurrence of the potentially most noticeable operational noise during evening and nighttime hours, it should help reduce potential noise impacts within the nearby community.

²⁸ Ibid.

²⁹ Prior BBC reviews of merchant power plant SARs for the Siting Board include Kentucky Mountain Power (2002), Trimble County Unit 2 (2005), and ecoPower (2010).

³⁰ BBC meeting with David Schwake, SunCoke Energy Director of Business Development North Americas and Kevin Bailey, Environmental Scientist for URS Corporation (consultant to SESS), November 2, 2014.

Impacts on Transportation

This portion of the SAR review examines the impacts of the proposed SESS facility on road and rail transportation. 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 new 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, would 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

Road and rail traffic impact-related information specific to the construction and operation of the proposed facility is provided in Section 5.0 of the applicant's SAR. Additional information regarding discussions with CSX and planning for the proposed facility's use of road and railroad transportation is included in Exhibit H5.

Section 5.0 notes a number of important transportation considerations:

- The CSX rail line would be used to transport the coke product from the proposed facility to SESS's customers. SESS has been working closely with CSX for several years to plan the necessary rail layout within the site (as documented in Exhibit H).
- SESS has also been working with the Kentucky Department of Transportation (KYDOT) and Greenup County for several years in regard to road access issues.
- 500 or more workers are expected to be involved in construction of the proposed facility.

- While this would increase traffic along U.S. Highway 23, it is a relatively modest increase compared to the existing average daily traffic of 11,800 vehicles.
- Construction vehicles and heavy equipment would utilize Johnson Lane during construction.
- Construction workers would park in a lot to be constructed on the southern portion of the site and would access the plant construction area via a footbridge over the CSX line.
- During operations, the smaller operating work force (100 to 120 employees) would access the site from a new entrance and vehicular bridge to be constructed over the CSX line, west of Johnson Lane.
- SESS would work with KYDOT on temporary signaling and other appropriate traffic controls along U.S. Highway 23 during construction.

Supplemental Investigations, Research and Analysis

BBC discussed transportation issues with SESS representatives during the site visit and during out interviews with community leaders. We also conducted follow-up interviews with the Greenup County Road Engineer and KYDOT representatives.

Overview of facility transportation requirements. The proposed site was selected, in part, because of its direct access to three forms of transportation – via river barge, railroad and road.

During ongoing operations, coal for the coke plant would arrive via river barge at a coal barge unloading facility to be constructed at the site on the Ohio River. Produced coke would be transported from the site using the CSX rail line. Workers and vendors, and trucked supplies and materials, would access the site via road.

During construction, some large equipment and material loads may be transported to the site via barge, but most equipment and material would likely arrive via truck. Modifications to the rail facilities would not be completed in time to use the railroad to transport construction equipment and supplies. SESS has not estimated the number of truck trips that would be required to transport the necessary materials and equipment to the site during the construction period.³¹ The workforce of 500 or 600 construction employees would, of course, access the site via road.

Plans to modify and improve road access to the site. One of the key challenges associated with the site is the limited existing access via road. At present, the site must be accessed via Johnson Lane, a relatively narrow road that intersects U.S. Highway 23 to the southeast of the proposed SESS plant. Johnson Lane is currently used primarily by the Graf Brothers Flooring and Lumber operation and is heavily used by trucks entering from U.S. Highway 23 with logs and leaving to the highway with finished products. North of the CSX rail line, Johnson Lane is also used by truck traffic between various facilities within the Graf Brothers operation. As noted earlier in this

³¹ BBC meeting with David Schwake, SunCoke Energy Director of Business Development North Americas and Kevin Bailey, Environmental Scientist for URS Corporation (consultant to SESS), November 2, 2014.

report, one of the owners of Graf Brothers spoke with BBC during our site visit about his concerns regarding the potential impacts on his business from SESS construction traffic on Johnson Lane.

Figure C-8 provides a view looking north along Johnson Lane from U.S. Highway 23.

Figure C-8.
View north along Johnson Lane from U.S. Highway 23



Source: BBC Research & Consulting, November 2014. Photo taken with Sony DSC-HX5V, wide angle focal length.

SESS is aware of these issues and has developed plans to try to mitigate potential problems. First, SESS plans to develop a new access to U.S. Highway 23 west of Johnson Lane that would bring construction employees to a parking lot to be built on the southern portion of the site. The employees would then enter the actual plant construction area via a footbridge over the CSX rail line. This plan eliminates the use of Johnson Lane by construction workers commuting to the site.³² The approximate location of the new entrance to the site is shown in Figure C-9, on the following page.

³² *Ibid.*

Second, SESS has been working with Greenup County on plans to build a bypass around the lower portion of Johnson Lane (from north of the CSX line to the northeastern entrance to the SESS site). The County Road Engineer estimates that this portion of Johnson Lane currently receives about two to three times as much traffic from the Graf Brothers operation as the southern portion of the Lane between the CSX rail line and U.S. Highway 23. Bypassing the lower portion of Johnson Lane should help reduce potential traffic conflicts between SESS construction deliveries and Graf Brothers trucks and vehicles.³³ While the bypass would not alleviate potential congestion on the southern portion of Johnson Lane (between the CSX rail line and U.S. Highway 23), SESS representatives indicated during our site visit that most large construction equipment deliveries would likely be scheduled to occur during the nighttime hours.³⁴ Such scheduling would likely further reduce potential traffic conflicts between SESS construction and Graf Brothers operations.

Third, SESS plans to work with KYDOT on developing a permanent vehicular overpass spanning the CSX line from the new entrance to the site (west of Johnson Lane) to the completed plant that would provide the primary road access for ongoing operations. BBC's interview with the Chief District Engineer for KYDOT confirmed those discussions, but indicated the improvements would require the legislature to approve the project and provide funding in the highway department's six-year plan.³⁵

³³ BBC interview with Greenup County Road Supervisor Joe Taylor, November 19, 2014.

³⁴ BBC meeting with David Schwake, SunCoke Energy Director of Business Development North Americas and Kevin Bailey, Environmental Scientist for URS Corporation (consultant to SESS), November 2, 2014.

³⁵ BBC interview with Bart Bryant, Kentucky Department of Highways District 9, November 19, 2014.

Figure C-9.
Approximate location of planned main access from U.S. Highway 23



Source: BBC Research & Consulting, November 2014. Photo taken with Sony DSC-HX5V, wide angle focal length.

Conclusions and Recommendations

The site's access to river and rail transportation reduces potential impacts on the road system from future operations. SESS appears to have done considerable advance planning with CSX for the necessary improvements to facilitate rail service to the site.

The limited existing access to the site from U.S. Highway 23 is a substantial challenge, particularly because the only road access at present utilizes a narrow road (Johnson Lane) that is heavily used by the adjacent industrial facility.

SESS has developed plans that would mitigate much of the impact from construction and operations on Johnson Lane. However, the portion of the Lane from the CSX rail line south to U.S. Highway 23 appears likely to be a continuing bottleneck during construction. Given physical constraints posed by existing buildings and the grade crossing of the rail line in this area, it does not appear this stretch of the road could be readily widened or bypassed.

Recommended mitigation. The study team supports the plans that SESS has proposed to improve road access to the site and mitigate potential traffic problems. In particular,

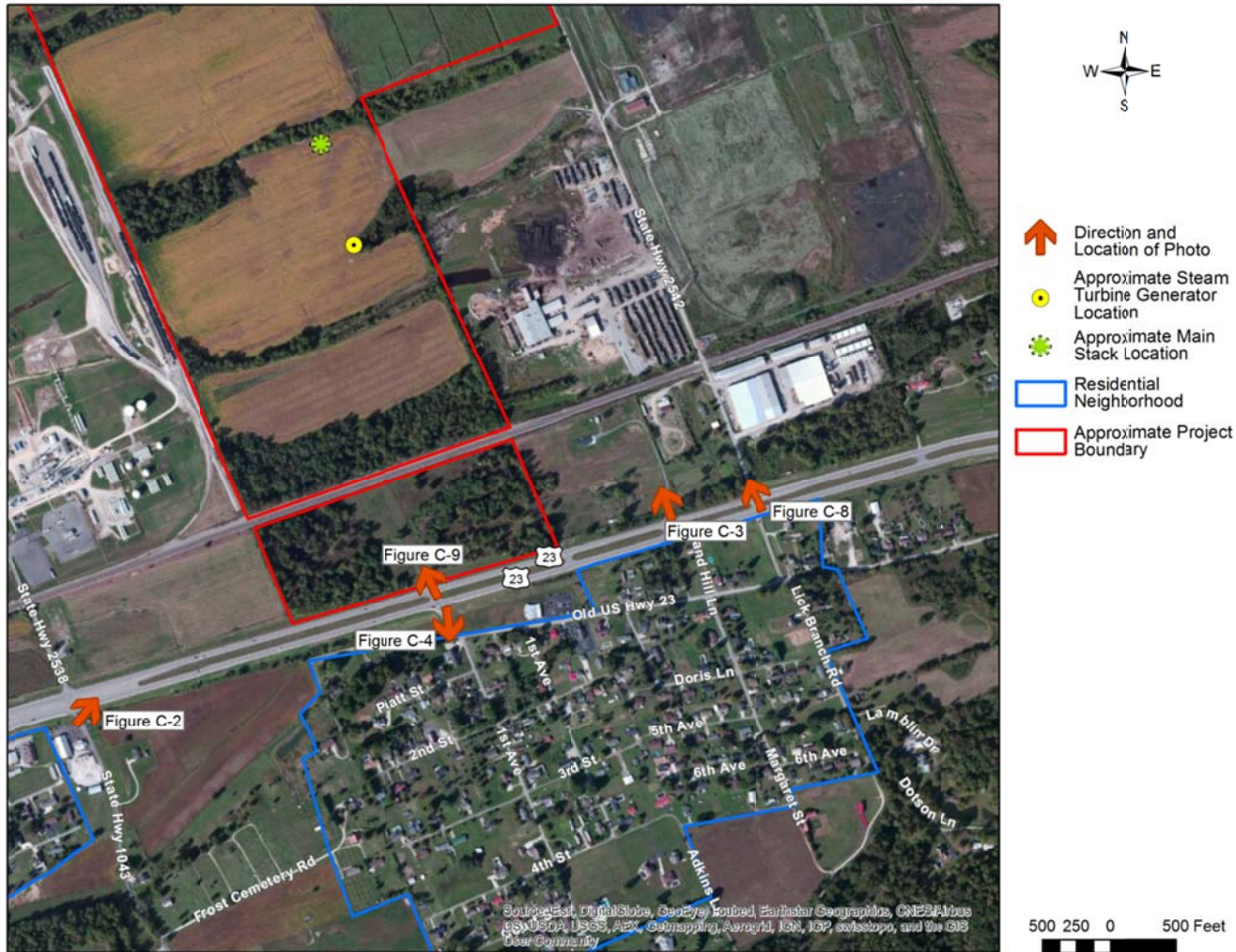
- Developing a new road access to the site (west of Johnson Lane) and requiring construction workers to use this access, parking lot and footbridge to access the site.
- Working with the county to develop the proposed bypass for the lower (northern) portion of Johnson Lane to minimize conflicts with the neighboring industrial operation.
- Scheduling heavy construction equipment deliveries during nighttime hours as far as possible to further minimize traffic conflicts.
- Working with KYDOT to develop the permanent vehicular overpass for ongoing operations.

In addition, we suggest that SESS should develop projections of peak and average daily truck traffic that would use Johnson Lane during construction. These projections can assist in communicating with the Graf Brothers and coordinating efforts to minimize conflicts on that roadway during the construction period.

Location and Direction of BBC Photos Used in this SAR Review

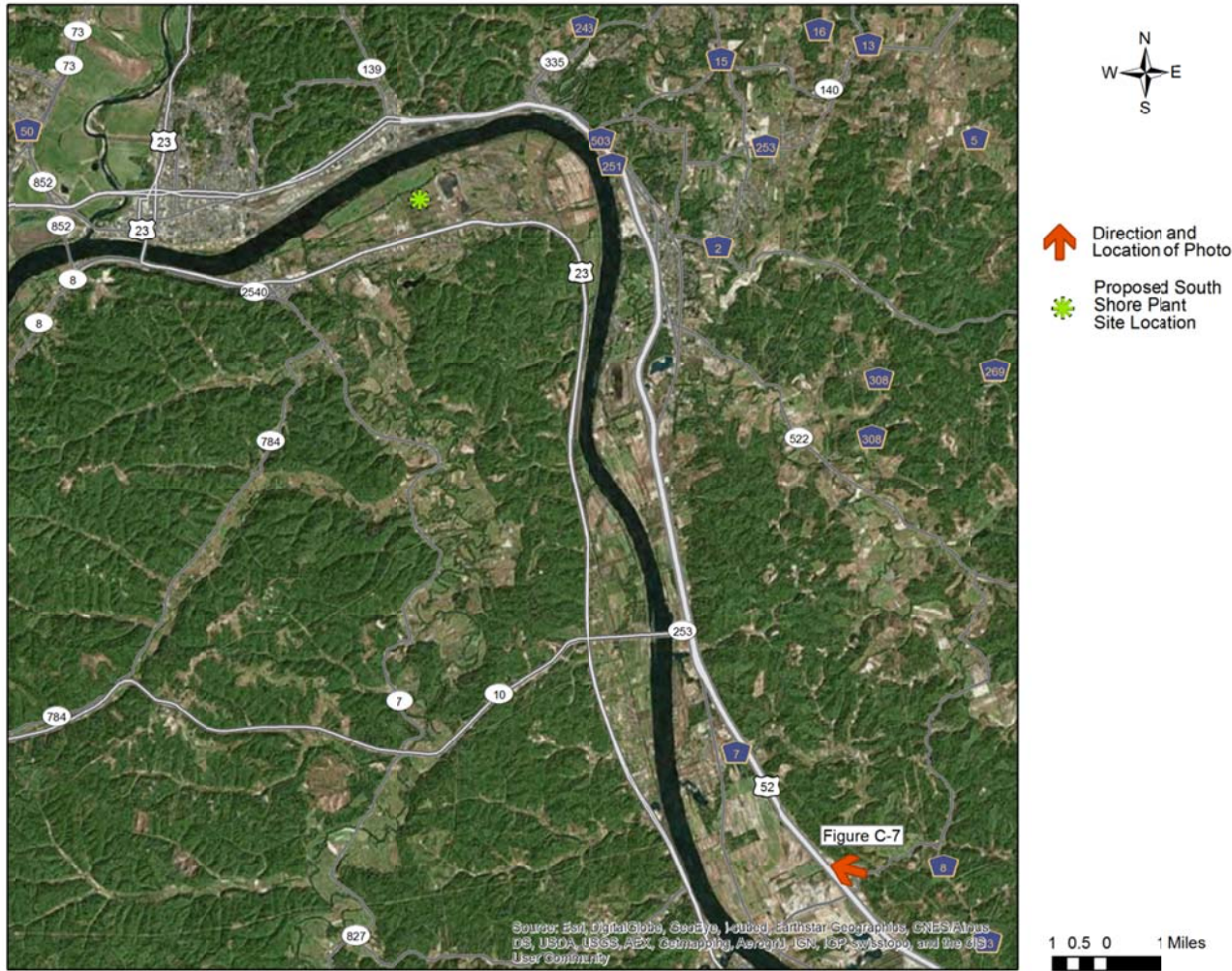
Figures C-10 and C-11, on the following pages, show the location and direction of the photos taken by the BBC team during our site visit that are included in this SAR review. The conceptual views of the proposed SESS facility shown in Figures C-5 and C-6 were reproduced from images included SESS's SAR. For the locations and directions of those images, see exhibit H2 in the SAR.

Figure C-10.
Photo Locations and Directions in Proximity to Proposed Plant Site



Source: BBC Research & Consulting.

Figure C-11.
Photo Location and Direction Taken of SunCoke Haverhill Plant



Source: BBC Research & Consulting.