Written Testimony for the Record

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For the

Board of Directors

Tennessee Valley Authority

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Mr. Chairman, members of the Tennessee Valley Authority board, my name is Mark David Goss. I am chairman of the Kentucky Public Service Commission. I am pleased to be here today to present to you, on behalf of the Kentucky PSC, information about Kentucky's electric transmission infrastructure and to discuss with you the question of how TVA's facilities fit into the broader picture of the electric transmission needs of Kentucky and the region.

With me today are Commissioner Greg Coker and several members of our senior staff.

Your presence today in Hopkinsville carries a significance that extends beyond the topic at hand. The willingness of the new TVA board to venture into the field to listen to the views and concerns of its stakeholders sends a powerful signal that you are determined to open new and expanded lines of communication and improve cooperation between the TVA and states, utilities and other entities.

This is not to suggest that we have not worked closely in the past. Just in the past two years, the TVA has been a participant in two studies in which the Kentucky PSC examined the reliability of our state's transmission, evaluated our electric infrastructure and assessed our future needs. We greatly appreciated the information and technical expertise the TVA was able to bring to those efforts. We certainly look forward to strengthening our relationship with the TVA as we move forward to meet the challenges of the 21st Century.

My purpose today is to provide you with a broad overview of Kentucky's electric transmission infrastructure; to describe our planning processes for meeting both transmission and generation needs in the future; to summarize our recent evaluations of our electric transmission grid; to discuss some of the issues we see on the horizon; and finally, to convey our views on the question of transmission access within the TVA system.

Kentucky's electric infrastructure developed along the same lines as most of the nation. Utilities developed first in our urban centers as vertically integrated entities – with their own generation, transmission and distribution infrastructure. Electricity later was extended into rural areas by investor-owned utilities and through the creation of rural electric cooperatives, which in turn were served by generation and transmission cooperatives or the TVA.

The Kentucky Public Service Commission was created in 1934. In addition to regulating the rates and services of electric utilities, the PSC determines their service territories and certifies the construction of power plants and major transmission lines. The PSC also plays a major role in the siting of merchant generation facilities and their associated transmission lines.

Like many of the states to our south and southeast, Kentucky has continued to regulate electric utilities as vertically integrated entities. This has served the Commonwealth and its citizens very well. We have, for a number of years, enjoyed some of the lowest electric rates in the nation. In fact, for at least the past three years, Kentucky's electric rates have been the very lowest.

At present, there is no movement within Kentucky for significant changes in the way our electric industry is structured and regulated. Particularly in light of the experience of some other states, the prevailing sentiment in Kentucky appears to be "if it's not broken, don't fix it."

However, we are well aware that we cannot isolate or insulate ourselves from broader trends in the electric industry and in power markets. While we may retain our regulatory structure, we must be prepared to adapt our electric infrastructure to reflect not only the circumstances in neighboring states, but in our region and in the nation as a whole.

As originally developed, the transmission grid reflected the vertical structure of both the investor-owned and cooperative utilities. It was designed simply to deliver power from the generating facility to the native load end user. Subsequently, interconnections between neighboring utilities were created, both to improve reliability and to allow transfer of power if a utility required assistance in serving its load. As we all know, those interconnections are now serving a purpose for which they were never intended, wheeling power over long distances.

As the electric market has been transformed at both the federal level and in many states, the use of the transmission grid for these power relays has increased. In an effort to promote more robust wholesale markets, generation and transmission have been decoupled from distribution and access to the transmission system has been opened. While these steps have had the desired effect, the transmission infrastructure itself has not been strengthened to keep pace with the increased demands being placed upon it.

In the geography of electric transmission, Kentucky once again finds itself a border state. In the summer, power flows through Kentucky from north to south, as generation in the Midwest helps to meet the seasonal peaks created by millions of air conditioners in the Southeast. Conversely, in winter, power from the Southeast flows north, helping to heat the Midwest. While Kentucky's transmission infrastructure is generally quite robust, we have identified a number of constraints with respect to these large-scale north-to-south and south-to-north transfers. Clearly, these constraints will need to be addressed in the near future.

That need may require some changes in the way in which Kentucky and its regulated utilities plan for the future.

Our current planning process is focused on serving native load. Every three years, regulated utilities submit, and the PSC reviews, Integrated Resource

Plans. These spell out what additional generation and transmission facilities will be necessary to meet the needs of a utility's present and future customers.

As facilities become necessary, utilities apply to the PSC for Certificates of Public Convenience and Necessity, or CPCNs. A utility proposing to construct new generating capacity is expected to demonstrate that it has adequately weighed all options, including off-system purchases from other utilities or contractual arrangements with independent power producers. The PSC's goal is to ensure that native load customers will be provided with reliable power at the lowest feasible long-term cost.

Until two years ago, utilities were not required to obtain certification for new transmission lines. The Kentucky General Assembly in 2004 enacted legislation requiring certificates for lines with capacities of 138 kilovolts or more and a mile or more in length. The legislation seeks to accomplish two goals – greater public involvement in decisions on where new transmission should be built, and prevention of a wasteful duplication of facilities.

I am pleased to report that thus far the law has worked as intended. Public participation in process has been extensive and, more importantly, has yielded information that has proven helpful to both the PSC and to utilities. In planning new transmission, utilities now are looking first at whether to upgrade existing lines or co-locate them on existing easements, thus avoiding duplication and minimizing the environmental and visual impacts of transmission facilities.

The law also is serving as a catalyst for the development of a Kentucky-specific transmission siting model that will be derived from the Electric Power Research Institute model developed in Georgia. Utilities, environmental groups, historic preservationists and other have come together to help develop what we believe will become an extremely valuable tool for determining where future transmission lines should be located.

Our transmission certification efforts are focused on lines serving customers within Kentucky. But we recognize that national energy policy is increasingly focused on the need to strengthen interstate transmission capabilities and will consider the interstate benefits of the process. While the process of implementing the federal Energy Policy Act of 2005 is still in its early stages, we have seen nothing thus far to suggest that Kentucky's transmission siting process will not mesh well with measures taken at the national level to improve reliability. Kentucky's transmission certification process is working well, so we do not anticipate that the provision allowing designation of National Interest Electric Transmission Corridors will be invoked here. However, it does serve as a potentially important backstop to the state process.

Kentucky's strengthening economy has led to increased demand for power in recent years. Our utilities have responded by building, or planning to build, several major baseload generation facilities.

East Kentucky Power Cooperative (EKPC), whose load will increase significantly in 2008 when the Warren County Rural Electric Cooperative Corp. joins its system, last year began operating a 250-megawatt circulating fluidized bed (CFB) unit at its Spurlock station in Mason County. It was the first new baseload unit built in Kentucky in 15 years. Construction on a second CFB unit is underway at Spurlock, and EKPC has a request pending for a certificate for a third CFB unit, this one at its Smith station in Clark County.

Louisville Gas & Electric Co. (LG&E) and Kentucky Utilities Co. (KU) have received a certificate to construct a 750-megawatt pulverized coal unit at LG&E's Trimble County station. This will more than double the baseload capacity at Trimble. As with the first unit at Trimble, one-fourth of the new unit will be owned by and supply power to the Illinois and Indiana municipal power agencies.

The boom in construction of regulated generation is in contrast to the situation with independent power producers in Kentucky. In the late 1990s, there were as many as 30 merchant facilities proposed in Kentucky, some of them designed to take advantage of our abundant coal resources, but the majority located to take advantages of intersections of the natural gas pipeline and electric transmission networks. Thus far, only three of these facilities, all fueled by natural gas, have been built – all before the year 2000 – and only two of those have become operational.

When the interest in merchant power was at its peak, Kentucky placed a moratorium on construction of new facilities in order to evaluate their potential effects on both the electric transmission grid and the overall economy and environment. The PSC conducted an administrative proceeding that examined the effect on the transmission grid, finding that, in the aggregate, the proposed facilities would create potential capacity problems. The results of the study are in the final report in the PSC Administrative Case Number 387.

The Kentucky General Assembly also tackled the issue. In 2002, the legislature passed a law establishing the Kentucky State Board on Electric Generation and Transmission Siting. The Siting Board is empowered to examine the effects of proposed merchant power plants, and associated transmission lines, on the transmission grid, as well as economic impacts and environmental impacts not covered by permits required from other agencies.

The membership of the board includes all three PSC commissioners, the secretaries of our environmental and economic development cabinets and two members selected from the local community for each specific case. As chairman of the PSC, I also chair the Siting Board. Staff support is provided by the PSC staff.

Since the Siting Board began operations in late 2002, it has considered five applications. All have been granted conditional approval, although two have yet to fulfill the conditions that would enable them to proceed. Of the other three, one – Peabody Energy's Thoroughbred project in Muhlenberg County - is entangled in protracted legal challenges to its air emission permit and another, the Kentucky Mountain Power project near Hazard, has yet to break ground. The only merchant project that seems assured of proceeding at this point is the municipally-owned one-fourth of the second unit at LG&E's Trimble County station, which was required to receive a construction certificate through the Siting Board.

Transmission growth has been driven both by load growth and by the need to provide capacity to move power from the planned new generation. Several of the transmission projects have generated considerable public interest and controversy, notably the 90-mile line EKPC needs to build in order to serve Warren RECC and an LG&E/KU project that will move power from the new Trimble unit to a rapidly growing area south of Louisville.

As I noted above, the PSC has in recent years conducted two extensive studies of Kentucky's transmission grid. As I also noted, the TVA has been an active and important participant in both these efforts.

The first study was conducted in the wake of the August 2004 blackout, which cascaded through much of the area to our north and northeast. Fortunately, Kentucky was not affected. The PSC's study sought to answer two major questions – is there a potential for such a cascading blackout in our state and, if so, under what circumstances might it occur.

All of the regulated utilities in the state, as well as the TVA other non-regulated entities, provided detailed data on their infrastructure and operating conditions. Those data were used by consultants retained by the PSC to construct a

computer model that ultimately ran through hundreds of thousands of possible combinations of infrastructure failures, overloads and other potential system stressors.

The second study recently conducted by the PSC was an outgrowth of Governor Ernie Fletcher's initiative to develop a comprehensive energy policy for Kentucky. The task force recommended that a study be done to evaluate Kentucky's future electric infrastructure needs. By executive order, Governor Fletcher assigned that task to the PSC. The result was Administrative Case 2005-00090, which again collected information from all of the regulated utilities, as well as the TVA and others not under PSC jurisdiction. Representatives of the industrial consumer community, environmental groups and others also participated.

The conclusions of this most recent study were consistent with those of the earlier examinations. It concluded that Kentucky is well positioned to meet the needs of its native load customers, but faces some challenges with respect to the flow of large blocks of power through the state. The study suggested that more interconnections across the Kentucky grid could provide greater stability for these types of transfers, improve reliability and make it more practical for Kentucky utilities to engage in off-system sales and for merchant power facilities to locate in Kentucky.

The future architecture of Kentucky's electric transmission infrastructure also is subject to a number of external forces. For example, studies by the Midwest Independent System Operator have identified a number of interconnection needs. Determining what new interstate transmission facilities should be built is a question that all parties – the PSC, regulated utilities, the TVA and regional transmission organizations – will need to work together to resolve.

As we in Kentucky well know, the picture is still a bit murky with respect to which utilities will belong to which regional transmission organizations, who will bear overall responsibility for ensuring electric system reliability, and who will have

overall control of grid operations. These too are areas in which dialogue and cooperation will be essential if we are to attain the highest degree of stability and reliability.

While every state and utility is entitled, even obligated, to protect the interests of its consumers, there must be a recognition of the fact that we operate in an environment in which we are all connected to each other. As long as the potential exists for one entity's problems becoming everyone's problems, we must be prepared to set aside parochial concerns to address common concerns in an equitable and reasonable manner.

Which brings me, then, to today's central question: Should TVA continue to provide transmission access on its system to customers who leave the TVA for another wholesale supplier? Mr. Chairman and members of the TVA board, our answer, in short, is "yes."

We believe that continued access to the TVA system offers several advantages:

- It is Kentucky's policy to avoid the wasteful duplication of facilities, because it is not the best use of utility resources, because it can place unnecessary burdens on landowners and because it creates needless visual clutter on our landscape. Allowing departing TVA customers access to TVA transmission could reduce or perhaps even eliminate the need to construct new facilities.
- Where new transmission facilities are necessary, interconnection can produce enhanced reliability for all parties by creating loops that provide alternate paths for power in the event of infrastructure failure.
- Continued access to the TVA system also can provide enhanced interconnections that would potentially allow the sharing of reserve margins between TVA and neighboring utilities, thus reducing the need for new generation in order to meet those reserve margins in the future. For example, TVA's peak usage is in the summer, while East Kentucky Power

Cooperative's usage peaks in the winter, which creates a favorable scenario for sharing of generation reserves.

A final question I think bears addressing in this forum is the issue of overall transmission system capability in the event of increased large-scale power transfers across Kentucky. There are several aspects to that issue, among them:

- Is there sufficient transmission, particularly interconnections, to handle the increased power flows through Kentucky that might result from increased transfers of power across Kentucky from south to north, as well as in the opposite direction? As you can see from the attached map, the number of interconnections is limited. But of greater importance is the fact that only a few of those interconnections are high voltage, which limits the transfer capacity of the system. Several studies conducted by the PSC in recent years found that transmission constraints already exist for large scale transfers across Kentucky. Those are potential points of instability under current market conditions. An increase in large-scale transfers across Kentucky has the potential to exacerbate the situation. Therefore, transmission capacity must be addressed in advance of any substantial increase in interstate transfers across Kentucky.
- What will be the impacts on transmission owned by utilities in Kentucky, particularly if wholesale power flows increase? How will capacity be allocated in order to protect native load?
- How will the cost of transmission upgrades be allocated?

Before any large-scale changes occur in the structure of the regional wholesale electric market, there must be a thorough examination of the implications of such a move by all of the affected parties.

Mr. Chairman, members of the board, thank you again for the opportunity to be here today. I commend you again for reaching out in this manner and I would be pleased to welcome you again to Kentucky at the earliest opportunity.

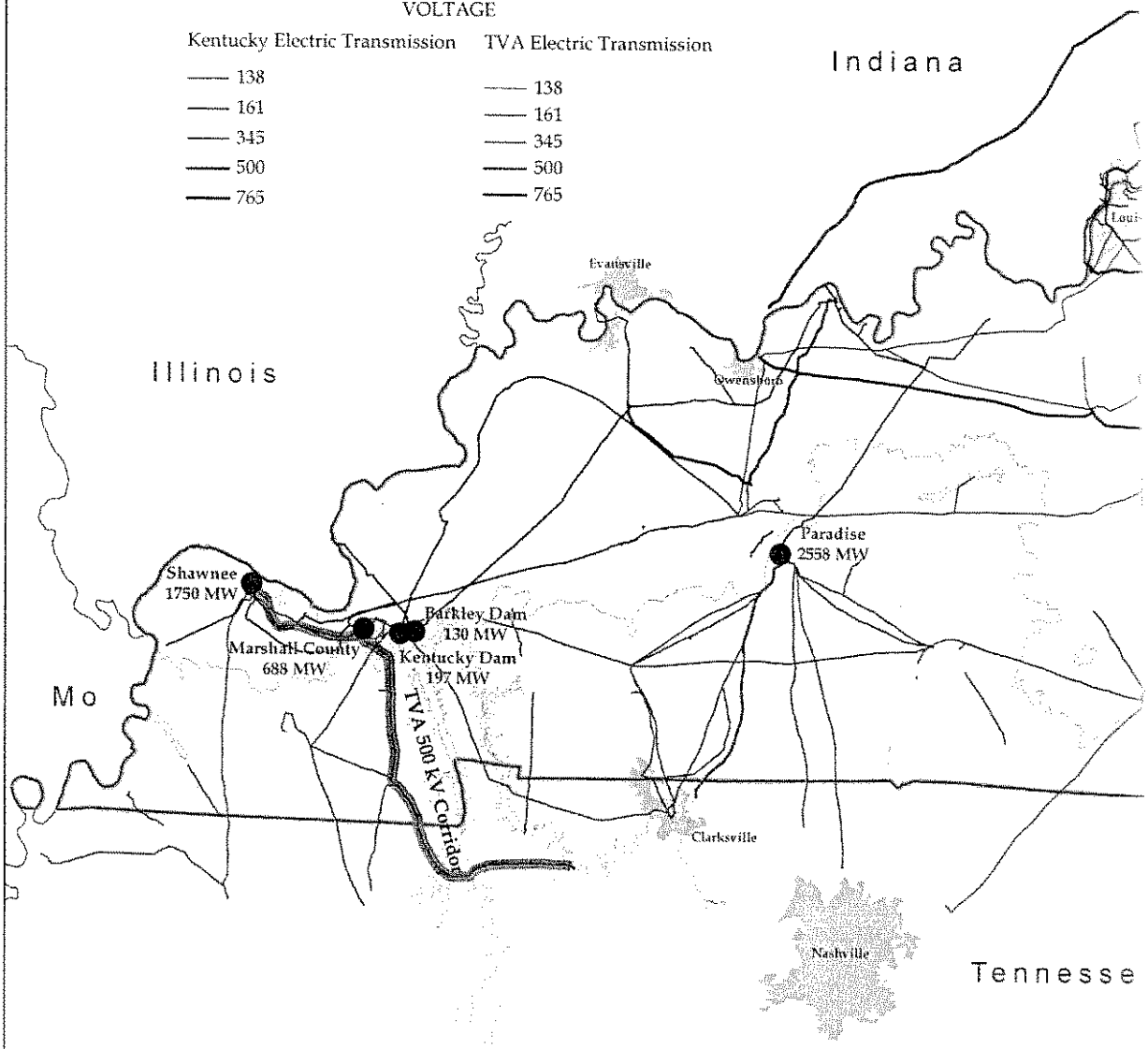
Kentucky Regulated Electri

LEGEND

- Urban Area
- Kentucky Electric Utilities Service Area
- TVA Electric Service Area
- TVA Interconnection in Kentucky
  - 161 kV or Greater
  - with Generating Facility
- North/South Extra High Voltage (EHV) Corridors

VOLTAGE

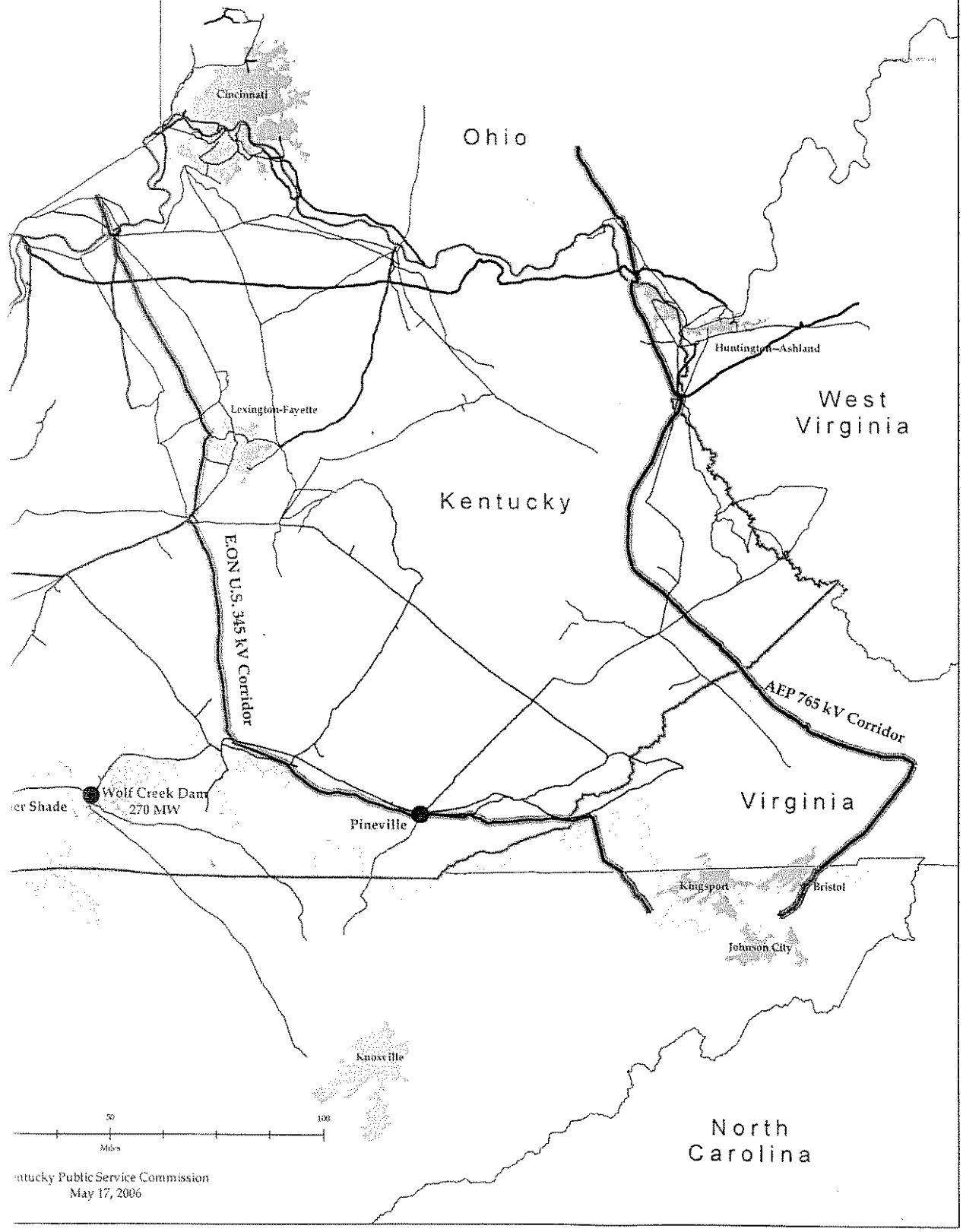
Kentucky Electric Transmission	TVA Electric Transmission
138	138
161	161
345	345
500	500
765	765



Electric transmission lines were collected by the Kentucky Public Service Commission (PSC) in 2003 from AEP, BGEC, Cinergy, EKPC, and LG&E Energy. Data for TVA were compiled from the USGS Quadrangles and a 1984 Kentucky Economic Development map. In 2006 the PSC collected 69kV and above lines from Warren RECC and municipal utilities

The user should understand that since September 11, 2001, location data of critical utility structures is considered sensitive information for security reasons. Users shall not publish this map or any part of it on the World Wide Web. Users shall not redistribute this map to others, but shall refer requests by others for such information to the Kentucky Public Service Commission. The user shall give credit to the Kentucky Public Service Commission (PSC). The user must abide by the following data disclaimer: All information within the product is believed accurate but is not guaranteed without error. While attempts have been made to insure the correctness of the information presented, neither the Kentucky Public Service Commission nor any party involved in the creation and compilation of the data guarantees their accuracy, completeness, or suitability for a particular use. All critical information should be independently verified

ilities and TVA Transmission System



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