

MINUTES OF THE HOUSE COMMITTEE ON UTILITIES.

The meeting was called to order by Chairman Carl D. Holmes at 9:08 a.m. on February 1, 2000 in Room 522-S of the Capitol.

All members were present.

Committee staff present: Lynne Holt, Legislative Research Department
Mary Torrence, Revisor of Statutes
Jo Cook, Committee Secretary

Conferees appearing before the committee: Mark Doljac, Kansas Corporation Commission
Jim Ludwig, Western Resources, Inc.
Burton Crawford, Kansas City Power & Light

Others attending: See Attached Guest List

Chairman Holmes asked if there were any bill introductions.

Rep. Alldritt requested that the committee introduce a bill that would put a tax on cell phones primarily to provide enhanced service for the state. Rep. Alldritt moved that the committee introduce this bill. Rep. O'Brien seconded the motion. Motion carried.

Rep. Sloan requested a bill be introduced on the construction work in progress to allow the property to go into the rate base before it's used and useful. Rep. Sloan moved that the committee introduce this bill. Rep. Loyd seconded the motion. Motion carried.

Chairman Holmes stated the committee would work HB 2597 either tomorrow or the next day.

HB 2657 - Corporation commission hearings on siting of electric transmission lines
and
Sub for Sub SB 257 - Repeal of electric transmission line siting act

Chairman Holmes announced the hearings on HB 2657 and Sub for Sub SB 257 would be held jointly.

Mark Doljac, Senior Utility Engineer and Rate Analyst for the Kansas Corporation Commission, presented testimony in support of HB 2657 and did not oppose Sub for Sub SB 257 (Attachment 1). Mr. Doljac stated that Sub for Sub SB 257 would essentially eliminate the requirement that the Commission provide a siting permit to an electric utility proposing to construct an electric transmission line 230 kilovolt or greater that is at least five miles long. He stated that even without the formal requirements of the Electric Transmission Line Siting Act, the KCC would still conduct a limited review of new electric supply line proposals under the EL application process and affected landowners and customers would have the ability to request a formal investigation. HB 2657 was submitted to the Committee at the request of the KCC. Mr. Doljac indicated that if the Committee does decide to keep the present electric Transmission Lines Siting Act, the intent of HB 2657 was to provide adequate time for review and notification and to clarify the types of hearings and notification requirements.

Jim Ludwig, Senior Director of Regulatory Affairs for Western Resources, testified in support of Sub for Sub SB 257 and in opposition to HB 2657 (Attachment 2). Mr. Ludwig explained that Sub for Sub SB 257 would reduce uncertainties of line construction and reduce siting costs and delays. He stated that enacting this bill would not give utilities 'carte blanche' to locate transmission lines anywhere they please without public comment or protection and that the KCC would retain a significant level of oversight even if the transmission siting provisions are repealed. Mr. Ludwig stated that HB 2657 would amend the electric transmission line siting act in two substantial ways. First by doubling the amount of time the KCC has to set

CONTINUATION SHEET

MINUTES OF THE HOUSE COMMITTEE ON UTILITIES in Room 522-S on February 1, 2000 at 9:08 a.m.

a time for a public hearing on an application and second by allowing the KCC to hold an evidentiary hearing on a transmission line siting application.

Mr. Burton Crawford, Kansas City Power and Light, presented testimony in opposition to **HB 2657** and in support of **Sub for Sub SB 257**. He stated that **SB 257** eased the restrictions on building transmission in the state. He also stated he concurred with everything Mr. Jim Ludwig stated in his testimony. He explained that we were entering a time in this industry where transmission is becoming much more important, referencing FERC's order 888, that opened up the transmission system to other users of the system. Additional transmission constraints are now being seen that were not there in the earlier days when the system was used essentially for the native retail customers. Now FERC Order 2000 requires transmission owners to join RTO's (Regional Transmission Operators), formerly ISO (Independent System Operator). It is in the best interest of the citizen's of Kansas and the utilities themselves to be able to build transmission lines to support the new environment. Regarding **HB 2657**, Kansas City Power and Light is in opposition to making transmission siting more difficult in the state. He stated that should the committee decide to move forward with **Sub for Sub SB 257**, they are requesting that the evidentiary hearing process that is being added have a time limit placed on it. Their recommendation is to have the hearing process be completed within 90 days.

The conferees responded to questions from Rep. Loyd, Rep. McClure, Rep. Alldritt, Rep. Sloan, Rep. Holmes and Rep. Dahl.

Chairman Holmes drew the attention of the committee to a copy of an article from the January 13, 2000 *Wall Street Journal* entitled "Electric Power Grids' Reliability Erodes" (Attachment 3) and a copy of the Summary of the 'Interim Report of the US Department of Energy's Power Outage Study Team' - Findings from the Summer of 1999 (Attachment 4). These items were provided by Bruce Graham, Vice President of Member Services and External Affairs for the Kansas Electric Power Cooperative, Inc.

Rep. Loyd moved to approve the minutes of the January 18, January 19, and January 20 meetings and Rep. Long seconded the motion. Motion carried.

Meeting was adjourned at 10:23 a.m.

Next meeting will be Wednesday, February 2, 2000 at 9:00 a.m.

HOUSE UTILITIES COMMITTEE GUEST LIST

DATE: February 1, 2000

NAME	REPRESENTING
BURTON CRAWFORD	KCPCL
JC Long	UtiliCorp United
Anne Tymeson	KCC
Gary Dawdy	KCC
Kyle Clem	KCC
Patrick Werle	KCP
ED SCHAUB	WESTERN RESOURCES
John C. Bottenberg	Western Resources
Whitney Damm	Empire District Electric Co
Wayne Kitchen	Western Resources
WALKER HENDRIX	CURB
Doug Lawrence	KCC
WILLIAM BAKER	Kansas Farm Bureau
Derek Katz	KFB
Sandy Braden	Micell Caches & Assoc.

BEFORE THE HOUSE UTILITIES COMMITTEE

PRESENTATION OF THE

KANSAS CORPORATION COMMISSION ON

HOUSE BILL NO. 2657 AND SUBSTITUTE SUBSTITUTE SENATE BILL NO. 257

Thank you, Mr. Chairman and members of the Committee. I am Mark Doljac, Senior Utility Engineer and Rate Analyst for the Kansas Corporation Commission (KCC or Commission), and I appear today on behalf of the KCC. The KCC has proposed HB 2657 and does not oppose Substitute for Substitute for SB 257. My purpose here today is to provide information to assist you in considering either of these proposals.

Substitute for Substitute for SB257

This proposal would essentially eliminate the requirement that the Commission provide a siting permit to an electric utility proposing to construct an electric transmission line 230 kilovolts or greater that is at least five miles long. The issue the Committee must decide is whether a formal proceeding for large electric transmission lines is in the public interest. While the Commission takes a neutral position on this proposal, I would like to discuss how the Commission currently treats electric supply lines, regardless of whether they meet the definition of a transmission line provided in the present Electric Transmission Siting Act.

First, through its electric line (EL) application process, the Commission currently requires utilities to obtain approval for all new electric transmission and distribution lines longer than ½ mile. For these lines, pursuant to Commission regulations, the utility must coordinate with other utilities and provide an application to the Commission. The application must include detailed information on voltage, conductor size, estimated cost, and certify that the line meets the

HOUSE UTILITIES

DATE: 2-1-00

ATTACHMENT 1

requirements of the effective edition of the National Electric Safety Code. Second, if a utility is building an electric supply line through another utility's retail service territory, it must obtain a certificate for transmission rights only. This certificate authorizes construction and operation, but restricts the owning utility from providing retail service from the line. Third, affected landowners, customers, or other utilities have the option of filing a formal complaint at the Commission asking it to review the proposed line. In conclusion, it is important to understand that even without the formal requirements of the Electric Transmission Line Siting Act, the KCC would still conduct a limited review of new electric supply line proposals under the EL application process, and affected landowners and customers would have the ability to request a formal investigation.

HB 2657

HB 2657 was submitted by the KCC for your consideration. The Commission recognizes that this Committee must ultimately decide whether to keep the formal transmission line siting requirements as you consider Substitute Substitute SB 257. However, if the Committee does decide to keep the present Electric Transmission Lines Siting Act, the intent of the proposed changes is to provide adequate time for review and notification, and to clarify the types of hearings and the notification requirements.

Currently, the statute requires the KCC to hold a public hearing within 60 days of receipt of the application. This is roughly eight weeks and is a challenge both for the review and the notification requirements. Consider that the KCC would receive the application and its staff (Staff) would begin its review of it, taking one to two weeks. Generally during this investigation, questions are forwarded to the company asking them to provide additional information about the

proposal. Often, it is reasonable to expect the applicant will need 10 days to two weeks to respond. Upon review of the answers, the Staff will often have another round of questions to clarify the applicant's responses and to provide enough detail for its analysis. At this point, five to six weeks of the period have elapsed. To allow the company an opportunity to respond to Staff's testimony, Staff is generally required to file its testimony two weeks before the hearing. Additionally, since the siting act requires a determination on the reasonableness of the location of the applicant's proposed line, the Staff considers it wise to conduct a field investigation of the proposed route to determine whether the location is reasonable in lieu of practical alternatives. Depending on the magnitude of the project, a thorough field investigation could require from two days to two weeks. The present siting act leaves little or no time for detailed analysis or thorough investigation. While these tasks by themselves present a challenge to Staff, imagine how any other party wishing to formally intervene in the proceeding would compound that challenge. The party would notice the application and would formally request to intervene. The Commission must then decide whether or not to grant intervention, something the applicant may protest. Finally, the party may be granted intervention status three to four weeks after the application is filed, allowing the intervening party almost no time for a meaningful investigation and analysis.

The short time period also presents a challenge for the notification requirements. According to the present statute, the Commission must publish notification of the public hearing in local newspapers once a week for three consecutive weeks, with the last publication no sooner than five days before the hearing. In addition, written notice must be served via certified mail upon each landowner not less than 20 days before the hearing. Procedurally, this requires the

Commission to immediately establish a procedural schedule soon after the application is filed in order to draft and publish a notice. If this Committee believes the Electric Transmission Siting Act is needed, extending the time frame from 60 to 120 days will allow the Commission to perform a more thorough investigation and allow other interested parties a better chance to provide meaningful intervention.

Other proposed changes are intended to clarify the difference between public hearing and evidentiary hearing. Public meetings that are held by the Commissioners at various locations to hear and record comments by the public are often referred to as public hearings. As you are aware, the Commission also has evidentiary hearings, formal proceedings where the Commission considers evidence and expert testimony provided under cross-examination by witnesses for the applicant, Staff, CURB and other interveners. As it is currently stated in the siting act and other statutes related to Commission proceedings, a public hearing may be construed to be either an evidentiary hearing or a public meeting by the Commissioners. The purpose of this change is specifically to require the Commission to have a public meeting (commonly referred to as a public hearing) in one or more of the counties affected by the transmission line and, if needed, to hold an evidentiary hearing at a time and place designated by the Commission. Because public meetings are informal and allow any member of the public to make comments to the Commission on the record, it makes sense for these to be held at a location near the proposed transmission line. Because evidentiary hearings are formal proceedings involving expert witnesses and attorneys of the parties, it may be more efficient to hold those proceedings either in the Commission's offices or at similar facilities agreed upon by participants. In addition, a proceeding could go uncontested, thus not requiring an evidentiary proceeding. This

modification would assure that the affected public has an opportunity to conveniently voice their concerns on record, and would also give the Commission flexibility to efficiently conduct any necessary evidentiary proceedings.

The final suggested change is to allow the Commission to order the applicant to publish the required notice rather than the current language which states the Commission shall publish the notification. This is another practical change in the language that makes it consistent with existing practice. Currently, when a utility is required to provide a public notice, the KCC Staff and the utility together draft the notice and agree upon publication sites. Then it is the utility's responsibility to adequately publish the notice. This change will make the language consistent with actual practice.

In conclusion, I wish to reiterate that the KCC does not oppose Substitute Substitute SB 257. However, if the Committee does not approve this bill, the Commission wishes that the Committee consider its proposal in HB 2657. On behalf of the KCC, I wish to thank the Committee for the opportunity to provide this testimony, and for your time and consideration.

Testimony
before the
HOUSE UTILITIES COMMITTEE

by
Jim Ludwig, Senior Director, Regulatory Affairs
Western Resources
February 1, 2000

Chairman Holmes and members of the Committee:

Western Resources supports Substitute for Substitute for SB 257. Western Resources opposes HB 2657.

Sub for Sub SB 257

This bill would repeal most provisions of the Electric Transmission Siting Act. Electric utilities would no longer need to obtain a siting permit from the KCC and no siting permit would be required prior to exercising rights of eminent domain. The definition of transmission lines has been changed from those more than five miles long and at or above 230 KV to all lines used for the bulk transfer of electricity. The bill leaves in place the act's requirement for utilities to restore land to the condition which existed prior to construction.

This bill would reduce uncertainties of line construction and reduce siting costs and delays.

We believe there is a consensus that construction of new generation plants in Kansas should be encouraged. Generation by itself isn't useful without transmission lines. As we build more generation to meet our customers' needs, we may also need to build or at least upgrade transmission lines. Enacting this bill would complement incentives to build new generation.

Enacting this bill would not give utilities "carte blanche" to locate transmission lines anywhere they please without public comment or protection.

The KCC would retain a significant level of oversight, even if the transmission siting provisions were repealed as proposed under Sub for Sub SB 257:

- The KCC may initiate, on its own or upon someone else's request, investigations in the context of complaint dockets. In the event of a proposal to build transmission lines, the KCC could initiate an investigation, or a landowner who felt aggrieved could ask the KCC to initiate an investigation. The statutes regarding the KCC's authority to conduct complaint dockets are not changed by Sub for Sub SB 257.
- If an electric utility is planning to build transmission lines outside its retail service territories (e.g., to interconnect two of its non-contiguous territories), the utility must

acquire a certificate from the KCC to acquire transmission rights-of-way.

- Electric utilities must obtain an Electric Line (EL) Permit from the KCC before building transmission lines.

The list below is not exhaustive, but it is fairly representative of non-KCC regulatory oversight:

- Any transmission line construction that disturbs more than one acre of land triggers environmental agency involvement. This effectively means all transmission construction requires environmental evaluation and some type of oversight.
- Any transmission construction in an environmentally sensitive area (wetlands, endangered species, historic preservation, etc.) requires an environmental evaluation and non-impairment plan.
- The Kansas Department of Agriculture, KDHE and the Army Corps of Engineers become involved when a new transmission line crosses a stream or navigable river.
- The Kansas Department of Transportation and/or the Federal Department of Transportation become involved when transmission lines cross highways or run adjacent to them along public rights-of-way.
- Many townships, counties, and cities require permits for constructing transmission lines.
- Transmission line construction near airports triggers FAA involvement.

We encourage the committee to support Sub for Sub SB257.

HB 2657

Western Resources opposes HB 2657. If the committee approves Sub for Sub SB 257, HB 2657 would be moot.

HB 2657 would amend the electric transmission line siting act in two substantial ways.

First, it would **double** the amount of time the KCC has to set a time for a public hearing on a transmission line siting application from 60 days to 120 days.

State agency administrative processes already take much too long to complete. We oppose drawing out transmission line siting proceedings. Kansas needs generation plants, and may need additional or upgraded transmission lines to move electricity for current loads and possibly prepare for more open electricity markets. This is no time to start prolonging regulatory proceedings. If anything, most regulatory proceedings should be shortened or eliminated.

The FERC has recently issued a policy order encouraging the development of regional transmission organizations (RTOs). This policy would have an RTO determine when new transmission construction is needed, and the RTO would have authority to require electric utilities to build transmission lines. HB 2657, by adding delays, could put utilities in untenable "catch-22's" between conflicting regulatory jurisdictions.

Second, HB 2657 would also explicitly allow the KCC to hold an evidentiary hearing on transmission line siting applications.

We are opposed to adding more proceedings. Transmission line siting applications are already subject to public hearings. In our experience in the regulatory and legal areas, the opportunity to hold more hearings almost always results in more hearings, whether they are needed or not. I have already mentioned the authority of the KCC to initiate investigations on their own initiative or in response to a complaint. These investigations can result in evidentiary hearings, if necessary.

If the problem the bill is intended to address is the requirement to publish three consecutive public notices in advance of a public hearing within the current 60 day time frame, then it would be preferable to reduce the number of required, duplicate notices. Instead of the current proposed changes addressed in HB 2657, KSA 66-1179 could simply be altered to require only a single instance of required publication. This would reduce the cost to the applicant (and ultimately the customer) and assure that the current 60 day time frame could easily be met. All potentially affected landowners are individually notified in writing, separately from public notices.

We oppose HB 2657, and urge the committee to support Sub for Sub SB 257 instead.

Electric-Power Grids' Reliability Erodes

Energy Department Cites Demands of Economy, Utilities' Deregulation

By JOHN J. FIALKA

Staff Reporter of THE WALL STREET JOURNAL
 WASHINGTON—Power demands imposed by a booming economy and a loss of coordination capabilities due to utility deregulation have “considerably eroded” the reliability of North America’s electricity-supply system during peak usage periods, the Energy Department said.

A study of eight “power reliability events” last summer, which included power outages and voltage fluctuations, suggests that the problem may be even worse this summer. That is because utilities and the government haven’t made the system upgrades needed to prevent regional power grids from breaking down. Meanwhile, the report says, responsibility for planning to deal with outages “has become blurred.”

The study, conducted for the Energy Department by a panel of 19 federal, state and academic experts, notes that deregulation efforts under way in 25 states have made it harder for system operators to respond to periods of peak demands. While much of the deregulation debate has centered on ways to trade electricity, the study notes that little attention has been paid to fixing aging distribution systems that aren’t large enough to bear the new interregional traffic.

Electricity Can’t Be Stored

Unlike other commodities, which respond to the laws of supply and demand, electricity can’t be stored, the study notes, adding that regional systems that break down can result in a commodity that, re-

Powerful Problems

Last summer’s major electricity outages and brownouts

OUTAGE AREA	DATE
New England	June 7 and 8
New York City	July 6 and 7
Long Island, N.Y.	July 3-8
Mid-Atlantic area	July 6 and 19
New Jersey	July 5-8
Delmarva Peninsula	July 6
Chicago	July 30-Aug. 12

Source: U.S. Department of Energy

ardless of price, “might not be deliverable at all.”

The report says that some of last summer’s problems were aggravated by record-high temperatures that made unreliable the power-demand forecasts used by the industry to prepare for emergencies.

While the economy is increasing demand for electricity, maintenance of generating and distribution capacity has declined in some areas, the study says. Utilities aren’t being given adequate guidance by regulators “to provide an acceptable level of reliability.”

Effects of Deregulation

Gary Neale, chairman of the North American Electric Reliability Council, a group made up of the utilities that use the power grids to distribute electricity, said the study provides more evidence that reforms are needed to minimize the adverse effects of deregulation.

He said the council supports pending legislation that would turn its voluntary association into a new government-backed entity called the North American Reliability Organization, which would have power to enforce rules in much the same way as

stock exchanges can discipline their members. “We need to have government support to make sure that everyone adheres to the same standards” by this summer, he said.

The reports cites a near “voltage collapse” last July in the grid that provides electricity to New Jersey, Delaware, the District of Columbia and parts of Pennsylvania, Maryland and Virginia, partly because some utilities in the area didn’t cut back generation to increase reserve capacity. Partly because of deregulation, there were no market incentives to pull back from running at full capacity, the study asserts.

More Sensitive to Outages

Kenneth Linder, an energy-delivery expert at the Edison Electric Institute, a trade association, said the report’s message is disturbing because increasing reliance on electronic gear, such as computers and software, makes the economy much more sensitive to power outages and fluctuations.

The interconnected electricity grids that serve the U.S. and Canada were built with relatively small regional interconnections under a set of voluntary controls that allow utilities to back up other systems in periods of high demand. “New market conditions” created by deregulation, the study notes, have made such power shifts “inordinately complex and time consuming.”

It describes a “generation deficiency” in New England last June that “could have been devastating” because system operators in New York and Ontario had difficulty wheeling enough power in to handle the shortfall.

A power outage in New York City on July 6 and 7 was caused in part by changing power demands’ having made older forecasts of power needs unreliable. According to the study, it also exposed the fact that utilities are finding it increasingly difficult to detect overloaded cables.

HOUSE UTILITIES

DATE: 2-1-00

ATTACHMENT 3

**INTERIM REPORT OF THE
U.S. DEPARTMENT OF
ENERGY'S POWER
OUTAGE STUDY TEAM**

FINDINGS FROM THE SUMMER OF 1999

January 2000

HOUSE UTILITIES

DATE: 2-1-00

ATTACHMENT 4

Summary

The electric power industry is in the midst of evolutionary change. The reliability events during the summer of 1999 (i.e., outages in New York City, Long Island, New Jersey, the Delmarva [Delaware-Maryland-Virginia] Peninsula, the South-Central States, and Chicago and nonoutage power disturbances in New England and the Mid-Atlantic area) demonstrate that the necessary operating practices, regulatory policies, and technological tools for dealing with the changes are not yet in place to assure an acceptable level of reliability. In a restructured environment, generation technologies and prices are a matter of private choice, yet the reliability of the delivery system benefits everyone. The operation of the electric system is more difficult to coordinate in a competitive environment, where a much larger number of parties are participating.

In April 1996, Federal Energy Regulatory Commission (FERC) Orders 888 and 889 constituted a major step in the restructuring of the electric power industry. By November 1, 1999, 24 states had either enacted restructuring legislation or issued comprehensive regulatory orders on restructuring.¹ Most of the remaining states are considering restructuring initiatives. This change is driven by the desire to save the consumer money, which would result from the greater efficiency induced by competition.

Unfortunately, the development of reliability management reforms, tools, technologies, and operating procedures has lagged behind economic reforms in the electric industry. This lag has been particularly troublesome during this transition period, while new market participants and system operators are learning to work together. In anticipation of competitive markets, some utilities have adopted a strategy of cost cutting that involves reduced spending on reliability. In addition, responsibility for reliability management has been disaggregated to multiple institutions, with utilities, independent system operators, independent power producers, customers, and markets all playing a role. The overall effect has been that the infrastructure for reliability assurance has been considerably eroded.

Moreover, historical levels of electric reliability may not be adequate for the future. The quality of electric power and the assurance that it will always be available are increasingly important in a society that is ever more dependent on electricity. Indeed, our health, safety, and economic strength all depend on a reliable supply of electricity.

Power outages are not unique to the summer of 1999. Although electric reliability in the United States has historically been as good as or better than it is anywhere else in the world, sections of the country experienced some serious outages in the past and will

¹ According to the U.S. Department of Energy, Energy Information Administration.

continue to experience them in the future. A significant increase in electricity use and new demands on system operators, especially during times of peak demand, are stressing the electric system. Given the complexity of an electric system capable of supplying power to more than 260 million people in the world's strongest economy, it is not technically possible or economically advisable to seek perfect reliability. However, POST members believe that there is significant room for improvement, and that the new reliability challenges brought on by industry restructuring itself need to be addressed.

The POST investigation of the summer of 1999 power disturbances revealed that some were very similar to events that had occurred in the past. Thus, many of the team's findings are similar to those from investigations of past outages. For example, the unforeseen and dramatic voltage declines experienced in the mid-Atlantic area on July 6 and 19, caused in part by the movement of large amounts of power through the area, were very similar to the problems that occurred in the Northeast in the winter of 1994 and in the Northeast in July and August of 1996. The problem is not that we have not learned from past outages. Rather, it is that in many instances, we have not taken the necessary steps to design and implement the solutions.

The POST findings, drawn from the facts and evidence gathered during the team's investigation of last summer's major power outages and nonoutage power disturbances, are grouped into the following five topical areas:

1. **Transition to Competitive Energy Service Markets.** While energy markets have developed to the point where suppliers can respond to market signals, the same cannot be said for customers. Customers see only the average cost of electricity and therefore lack the incentive to reduce their use of power during times of shortages or to install on-site generation. This lack of demand elasticity results in emergency calls for public conservation and, in extreme cases, inadequate supplies to serve loads. A second point is the fact that market rules are still evolving, and market participants do not have a lot of experience in dealing with system emergencies. This may hinder the ability of system operators to respond to emergencies.
2. **Regulatory Policy for Reliable Transmission and Distribution.** The POST investigations found that the aging infrastructure and increased demand for power have strained many transmission and distribution systems to the point of interrupting service. In many cases, state and federal regulatory policies are not providing adequate incentives for utilities to maintain and upgrade facilities to provide an acceptable level of reliability.
3. **Information Resources.** System operators and engineering staff need accurate and timely information in order to make proper planning decisions, react to system emergencies, and conduct event analyses. The POST found that in many cases, load forecasting techniques were inadequate and information on equipment status and condition was unavailable. In addition, data need to be assimilated and integrated into the decision process. The necessary tools for

collecting and integrating real-time information need to be funded, developed, tested, and implemented to aid operations in the competitive market.

4. **Operations Management and Emergency Response.** As restructuring of the electric industry proceeds, system operations have become much more complex. In this new environment, system operators need improved tools and flexibility to anticipate events and prevent small emergencies from becoming bigger ones. The POST found that contracts, maintenance schedules, and equipment/system design sometimes limited an operator's flexibility to respond to an emergency. In some cases, clear and properly designed protocols for notifying officials during emergencies were not available.
5. **Reliability Metrics, Planning, and Tracking.** Electric reliability is not just a measure of the number of customers that experience an outage. It includes the ability of a system to avert or recover from an outage. The level of reliability clearly depends on the redundancy of the system and the availability of generation reserves. These resources exist at a sufficient level when there is good long-term planning. The POST found that responsibility for comprehensive planning has become blurred during the electric power industry's transition, and, consequently, planning has been inadequate.

Table S.1 is a matrix summarizing the specific findings of the POST. The matrix categorizes the POST findings in one or two of the five topical areas that will be the subject of stakeholder workshops. These workshops will help the POST develop its recommendations to the Secretary of Energy.