Approved: Carl Dean Holmes
Date 4-29-99

MINUTES OF THE HOUSE COMMITTEE ON UTILITIES.

The meeting was called to order by Chairman Carl Holmes at 9:06 a.m. on March 9, 1999 in Room 522-S of the Capitol.

All members were present except: Rep. Billie Vining

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

Conferees appearing before the committee: Jeff McClanahan, KCC
Mark Doljak, KCC
Dorothy Myrick, KCC
Dan Myers, KCC
Steve Miller, Sunflower Electric
Peggy Pistora, Southwestern Bell Telephone
Bud Park, Western Resources

Others attending: See Attached List

Lynne Holt, Principal Analyst for the Kansas Legislative Research Department, made a presentation on Y2K and how it pertains to utilities (Attachment 1).

Jeff McClanahan, Kansas Corporation Commission, presented a report on "The Ongoing Year 2000 Monitoring Efforts on the State's Utility Providers" by the Kansas Corporation Commission (Attachment 2). Also appearing from the commission were Mark Doljac, electric industry compliance; Dorothy Myrick, gas industry compliance; and Dan Myers, telecommunication industry compliance.

Steve Miller, Sunflower Electric Power Corporation's Senior Manager for External Affairs, provided comments on his company's Y2K efforts (Attachment 3).

Southwestern Bell Telephone's Peggy Pistora provided a Year 2000 Readiness Disclosure Statement (Attachment 4).

Bud Park, Y2K Project Office Manager for Western Resources, provided information on their Year 2000 Project Status as it applies to generation, transmission, distribution and support functions (Attachment 5).

Due to time constraints, additional conferees were asked to return tomorrow. Those conferees providing testimony today then responded to questions from the committee.

Meeting adjourned at 10:55 a.m.

Next meeting is Wednesday, March 10.

HOUSE UTILITIES COMMITTEE GUEST LIST

DATE: March 9, 1999

NAME	REPRESENTING
JC Long	UCU
Leslie Kaufman	Ks Farm Bureau
Dave Hatteberg	Western Resources
Dan O'Brien	Kaw Valley Electric Cooperative
Ken Hibbon	Kaw Valley Electric Cooperative
Bob Bowser	Kansas Electric Power Cooperative
James M. Ulte	Kansas Electric Cooperatives, Inc.
Dave Dittemore	KCC
Dorothy J Myrick	KCC
Mike Murray	Sprint
JEFF McCLANAHAN	KCC
Peggy Pistora	Southwestern Bell
Mike Scott	" "
MARK DOLJAC	KCC
BUD PARK	WESTERN RESOURCES

HOUSE UTILITIES COMMITTEE GUEST LIST

DATE: ______________________

NAME	REPRESENTING
Brenden Long	Kansas Electric Cooperatives
Don K Miles	Kansas Electric Cooperatives
ED SCHAUB	WESTERN RESOURCES
BRUCE GRAHAM	KEPCo
WALKER HENDRIX	CURB
Steve Miller	Sunflower Electric Power Corp.
Kim Gulley	LKM
Terry Humphrey	KTLA
Mark Schreiber	Guest Tom Sloan
Dan Myers	KCC
Tom Day	KCC

Y2K AND UTILITIES

Presentation for House and Senate Utilities Committees
March 9, 1999
Lynne Holt
Principal Analyst
Kansas Legislative Research Department

WHAT IS THE Y2K PROBLEM?

Y2K refers to a problem in computer software and embedded hardware systems which, without preventive actions now, could cause significant incapacities in essential systems.

(Source: Edison Electric Institute)

MAJOR POTENTIAL CAUSES FOR Y2K FAILURE

- Failure to recognize the correct year in transitioning from 99 to 00
- Expiration of an electronic "clock" that was referenced to measure time as the number of seconds from an initial start date, such as January 1, 1970, and which will expire on a certain date when the clock counter buffer is full
- Use of certain values, such as 99, to serve as placeholder with special meanings for programmers; hence the concern for 9/9/99. (National American Electric Reliability Council)

THE PRESIDENT'S COUNCIL ON YEAR 2000 CONVERSION

Coordinates the Federal Government's efforts to address Y2K problems

- Made up of 30 major Federal executive and regulatory agencies
- Council members formed working groups to focus on Y2K challenges in over 25 sector areas
  - Electric Industry Working Group Chair – Department of Energy; DOE requested NERC to coordinate efforts
  - Telecommunications Industry Working Group Chair – Federal Communications Commission
  - Oil and Gas Working Group Chair – Federal Energy Regulatory Commission

HOUSE UTILITIES

DATE: 3-9-99

ATTACHMENT 1

WHAT POTENTIAL Y2K PROBLEMS CONFRONT UTILITIES?

- Electric Industry
  - Generation – greatest exposure to Y2K problems
  - Transmission
  - Distribution – least exposure to Y2K problems

WHAT POTENTIAL Y2K PROBLEMS CONFRONT UTILITIES?

- Telecommunications Industry
  - Public Switched Network
    - Network elements – greatest risk of widespread failure
    - Operational support systems
    - Functional and business process applications – least risk of widespread failure
- Natural Gas Industry
- Gas pipeline operations

NORTH AMERICAN ELECTRIC RELIABILITY COUNCIL

Readiness Assessment Results – Fourth Quarter 1998 – Who reported?

- More than 704,017 MW (96%) of total estimated system peak load for North America
- More than 666,474 MW (92%) of non-nuclear generating capacity for North America
- 100 % of operational nuclear reactors (103 units at 66 facilities) reporting through the Nuclear Energy Institute

FINDINGS – ELECTRIC INDUSTRY

Averages of Reporting Organizations as of November 30, 1998

Y2K Program Phase	Ave.% Complete	Proj.Completion
Inventory	96%	August 1998
Assessment	82%	November 1998
Remediation/Testing	44%	June 1999

ANALYSIS OF NERC READINESS ASSESSMENT

- Most electric facilities necessary for reliable operation into the Year 2000 will have completed remediation and testing by the end of May 1999; they anticipate they will be Y2K ready by June 30, 1999
- A small number of facilities may be completed beyond the target because of a scheduled outage period, vendor supply restrictions, or other project planning considerations
- Some entities have been including items not essential to reliable electric operations going into the Year 2000

SENATE SPECIAL COMMITTEE ON THE YEAR 2000 TECHNOLOGY PROBLEM –ELECTRIC UTILITIES

Claims data presented in the NERC report do not seem to support optimistic tone – Other concerns:

- Complete power grid failure is highly unlikely but local or regional outages are possible.
- Overall Y2K remediation progress has been slow due to the industry's late start and the complexity of the power grids.
- The interconnectivity of the grids – outages in one part of a grid could affect power in other parts of the grid.

2/24/99

SENATE SPECIAL COMMITTEE ON THE YEAR 2000 TECHNOLOGY PROBLEM – ELECTRIC UTILITIES

Concerns continued

- The interrelationship of the electric power sector with other sectors - telecommunications, natural gas and oil supplies and pipelines, and rail transportation for coal supplies – requires close coordination. There is a need to step up efforts for electric utilities to engage in more meaningful contingency planning.
- Smaller and medium-sized distribution facilities may not have sufficient resources to tackle the problem.

SENATE SPECIAL COMMITTEE ON THE YEAR 2000 TECHNOLOGY PROBLEM – TELECOMMUNICATIONS

Network Reliability and Interoperability Council's Preliminary Assessments

- Majority of the industry is on target to meet its self-imposed goal of Y2K readiness by June 1999
- Small telephone companies tend to lag 10-15 percent behind larger LECs in fixing Y2K problems
- The LECs participating in NRIC (approx. 99 percent of all the switched access lines in the U.S.) were projecting to have completed 76 percent of their Y2K renovations by December 1998.
- The three major long distance carriers (AT&T, MCI, and Sprint) are projected to have reached 81 percent readiness by December 1998.

1/14/99

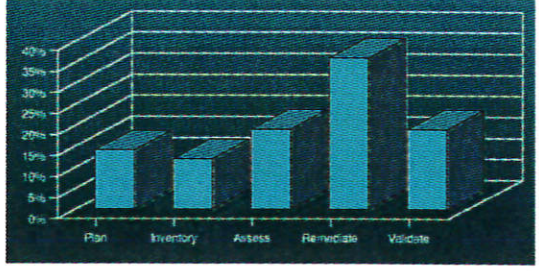
SENATE SPECIAL COMMITTEE ON THE YEAR 2000 TECHNOLOGY PROBLEM – GAS AND OIL INDUSTRIES

FERC Assessment – September 1998

- Survey sent to over 8,000 oil and gas companies. Less than 10% (638) companies responded
- 45 % of companies responding indicated they were in assessment phase or earlier for business systems
- 60 % in assessment phase or earlier for embedded systems
- Committee concerned many companies will not complete Y2K remediation efforts in time

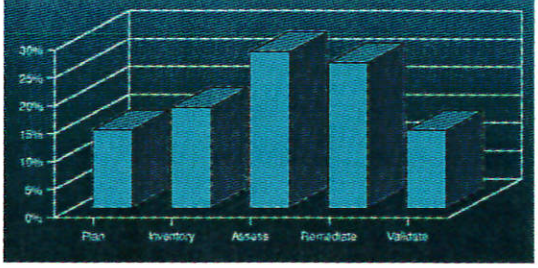
FERC ASSESSMENT - OIL/GAS

Business Information Systems & Assoc. Software – September 1998



FERC ASSESSMENT - OIL/GAS

Embedded Systems – September 1998



AMERICAN GAS ASSOCIATION SURVEY

Survey of Members – September 1998

- Responding LDCs indicated 80 % were in remediation and validation for software systems and close to 70 % for embedded systems.
- Approximately 1 % of embedded systems need Y2K remediation and replacement

OBSERVATIONS

- **Most of the information at the national and state levels, by necessity, relies on self-reporting**
- **Interdependency is an issue. Examples:**
  - Power companies rely on railroads to deliver coal for generation;
  - Power companies rely on the nation's power grids;
  - Pipeline companies rely on small electric companies to supply energy to compressor stations;
  - Telecommunications systems are the "nerve center" of electric networks.

OBSERVATIONS CONTINUED

- **There are constraints with testing on live networks, such as telecommunications. Testing has been done on electric power plant (Nova Scotia Power)**
- **Impact of Y2K noncompliance in other countries, e.g., global telecommunications**

REPORT TO THE LEGISLATURE

ON

THE ONGOING YEAR 2000 MONITORING EFFORTS ON THE STATE'S UTILITY PROVIDERS

BY

THE KANSAS CORPORATION COMMISSION

HOUSE UTILITIES

DATE: 3-9-99

ATTACHMENT 2

This document is designed to provide information on the ongoing efforts by the state's utility providers and the Kansas Corporation Commission in dealing with the Year 2000, or Y2K, problem. This document covers the following areas:

- President's Council on Year 2000 Conversion
- The Kansas Corporation Commission's Role in Monitoring Year 2000 Compliance Efforts
- List of Initial and Current Monitoring Actions Undertaken by Kansas Corporation Commission and Staff
- List of Actions Undertaken for Non-Jurisdictional Utilities
- Public Information Efforts by the Kansas Corporation Commission and the state's utility providers
- Summary of Year 2000 Monitoring Reports Submitted by Jurisdictional Utilities

  Exhibit A - Electric

  Exhibit B - Gas

  Exhibit C - Telecommunications

The President's Council on Year 2000 Conversion

The President's Council on Year 2000 Conversion is responsible for coordinating the Federal Government's efforts to address the Year 2000 problem. The Council is made up of more than 30 major Federal executive and regulatory agencies.

The Council determined early on that it was to have a special focus on assessing Year 2000 preparations in key infrastructure areas that Americans depend upon for vital services. The Council therefore developed working groups to assess the Year 2000 readiness in key areas. In the areas this report is concerned with, the Council has designated the Department of Energy to chair the Energy Working Group and the Federal Communications Commission to chair the Telecommunications Working Group.

The Council has also determined that the Federal executive and regulatory agencies should work closely with industry trade associations in order to promote action on the Year 2000 problem and to offer federal support to public and private sector organizations.

A general overview of the Year 2000 assessment methodology undertaken by the Energy Working Group and the Telecommunications Working Group is as follows:

Energy Working Group

As stated previously, the Energy Working Group is chaired by the Department of Energy (DOE). However, the Energy Working Group is comprised of two subgroups: an Electricity Subgroup chaired by the DOE, and an Oil and Gas Subgroup, chaired by the Federal Energy Regulatory Commission. Both groups include all relevant federal agencies to facilitate industry preparation for the Year 2000. The assessment methods initiated by each subgroup is as follows:

Electricity Subgroup:

The DOE has asked the North American Electric Reliability Council (NERC) to coordinate the industry's Y2K response and provide periodic reports to the Department. NERC is the entity which sets the technical reliability criteria for the nation's power grids. Other industry trade organizations that are partnering with NERC include the American Public Power Association (municipal utilities), the National Rural Electric Cooperatives Association (electric cooperatives), the Edison Electric Institute (investor-owned utilities), and the Nuclear Energy Institute (nuclear power issues).

In addition, the Federal Government has direct regulatory authority over the nation's nuclear power plants through the oversight of the Nuclear Regulatory Commission (NRC). The NRC is pursuing a comprehensive program to ensure that utilities operating nuclear power plants will remediate any Y2K problems before January 1, 2000. The NRC is a reporting member to the Energy Working Group.

Oil and Gas Subgroup:

The oil and gas sector does not have a single organization which spans the entire oil and gas industry. Consequently, the Federal Energy Regulatory Commission (FERC) solicited the help of the numerous industry trade organizations. These organizations collaboratively developed a Y2K readiness survey that is being conducted throughout all segments of the oil and gas industries. The industry organizations selected three trade associations to serve as the umbrella organizations to conduct the Y2K readiness surveys. The three organizations selected are the American Petroleum Institute (API), the Natural Gas Council (NGC), and the Gas Industry Standards Board (GISB). The umbrella organizations will compile and aggregate survey results and provide the results to FERC quarterly.

Telecommunications Working Group

The Federal Communications Commission's organizational structure contains five operating bureaus (Common Carrier Bureau, Wireless Telecommunications Bureau, Mass Media Bureau, Cable Services Bureau and International Bureau). According to the FCC, the Common Carrier Bureau staff is meeting, on a continuing basis, with telecommunications common carriers, manufacturers, and other interested parties on Y2K issues. In addition, the FCC has asked the Network Reliability and Interoperability Council (NRIC) to address Year 2000 issues as part of its general mission. The NRIC is comprised of FCC staff and representatives from major telecommunications service and equipment providers.

The FCC's Year 2000 site does mention any surveys or questionnaires. In addition, the Y2K information available through the FCC web site is broad based and does not provide a common reporting theme as do the surveys developed in the Energy Working Group.

Fortunately, the National Association of Regulatory Utility Commissioners (NARUC) has completed an informal collaboration with the FCC's Y2K task force. The result of the collaboration is a reporting template designed to assist State and Federal Agencies with telecommunications Y2K assessments. This template is formatted in a similar manner to the surveys developed in the Energy Working Group.

The Kansas Corporation Commission's Role in Monitoring Year 2000 Technological Problems

In order to determine the Commission's appropriate role in assessing the Year 2000 readiness of the state's utility providers, Staff has analyzed the methodologies implemented by the President's Council on Year 2000 Conversion. In addition, Staff has researched the methods other states have utilized to determine Year 2000 compliance status among their utilities. The result of Staff's analysis has been to initiate a monitoring process. Some of the reasons for initiating a monitoring methodology, as opposed to an audit type methodology, are as follows:

- The Year 2000 problem is one where the interests and concerns of utility management, utility shareholders, ratepayers and regulatory bodies are all aligned. Utilities have strong incentives to resolve the Y2K problem, as it has the potential to negatively impact utilities financially and legally, as well as harm relations with their customers.

- Staff's research of the President's Council on Year 2000 Conversion indicated that a monitoring process would be best. The lead trade associations recommended utilizing the industry standard reports they had developed to monitor Y2K progress. The rationale behind the trade associations' recommendations was that standard reports reduced regulatory reporting

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workload. This reduced workload allows utilities to continue to focus on remediating the Y2K bug, as opposed to allocating needed resources to assist the Commission in an intensive investigation or audit. In addition, a monitoring approach also prevents Year 2000 resources from being utilized for any legal objections or litigation filed in opposition to a more intrusive approach by the Commission.

- Staff's research of other states methodologies had limited results. At the time Staff was conducting its analysis, very few states had initiated a formal Y2K project. The states that had initiated a formal program utilized some type of monitoring report as their means of assessing Y2K readiness.

- Staff does not have the technical expertise or adequate staffing to conduct a Year 2000 compliance audit. In addition, consultants for such an audit are prohibitively expensive and difficult to find.

List of Initial and Current Monitoring Actions Undertaken by Kansas Corporation Commission and Staff

The monitoring actions undertaken by the KCC are as follows:

Initial Actions

- On December 10, 1997, an initial survey was submitted to all certificated utilities in the State of Kansas. Due to the poor response rate a second request was sent on April 24, 1998, to all utilities that had not responded. A report on the results of the survey was issued to the Commission on March 25, 1998. Approximately 48% of electric and gas companies responded and 19% of telecommunications companies responded.

- On July 14, 1998, a request for internal memos and reports was submitted to utilities within the state. By September 1998, the response rate was approximately 16%.

Current Actions

- On October 5, 1998, Staff submitted a motion to the Commission which requested a general investigation into the problems associated with Year 2000. Staff's decision to open a formal docket was primarily based on the poor response rate from the two previous requests for information. The motion included only KCC jurisdictional utilities (electric, gas and telecommunications) except long distance carriers. Staff excluded long distance carriers because (1) they are subject to FCC oversight (2) there are approximately 450 certificated carriers in the State of

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Kansas, and (3) most of the long distance carriers are not facilities based.

- On November 19, 1998, an order granting Staff's motion was approved. The order granted Staff the authority to perform the following:

  1. Prepare questions to assess Year 2000 awareness.

  2. Raise any additional questions which are necessary in the course of the investigation.

  3. Adopt industry standard report templates for the electric and telecommunications industry. Adopt a modified industry template for the natural gas industry.

  4. Require jurisdictional utilities to answer the adopted industry standard templates and file an initial report on January 1, 1999 (this deadline was subsequently extended to February 5).

  5. Require each utility to file similar quarterly reports. These reports are due in March, June, September and December of 1999.

  6. Prepare a Year 2000 Readiness Disclosure Statement form to be completed by each utility. The completed form will disclose either that a utility is Y2K ready or when a utility is projecting readiness.

List of Actions Undertaken for Non-Jurisdictional Utilities

Staff actions undertaken to either provide information or gather information from non-jurisdictional utilities are as follows:

- Staff submitted a letter to interstate gas pipeline transporters requesting information on their Y2K remediation efforts. To date, two out of eight pipeline companies have responded. The companies that responded did so with a form letter.

- A letter was submitted to non-jurisdictional electric cooperatives. The letter urged the cooperatives to participate in the Y2K information gathering process established by the North American Electric Reliability Council (NERC) and National Rural Electric Cooperative Association (NRECA). In addition, the letter provided state and federal resources available to the cooperatives.

- Staff is indirectly working with non-jurisdictional municipal systems by

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participating in the local government outreach process established by the Department of Administration. Staff is represented on the Year 2000 Outreach Steering Committee which is assisting in the guidance of this process. In addition, Staff has assisted Mr. Don Heiman, Chief Information Technology Officer, Executive Branch, in facilitating utility industry meetings related to the outreach process.

Public Information Efforts by the Kansas Corporation Commission and the State's Utility Providers

Providing the general public with reliable information regarding utilities' progress is an important component in the KCC's Year 2000 role. Over the past several months, the Y2K progress reports (templates) on utilities' remediation efforts were developed at the federal level in a coordinated effort by national trade associations and federal regulatory bodies. As noted earlier, the KCC adopted these reports to ease the reporting burden on utilities. With the initial reports now being submitted to the KCC, Staff has begun to define methods which can be utilized to provide the information to the general public. The reporting methods either in place or being considered are as follows:

- Staff has developed a draft of Y2K information to be posted to the KCC's web site. The draft provides much of the same information contained in this report. In addition, the KCC web site will be linked to the State of Kansas' web site for ease of reference. The KCC web site is in the final stages of review and should be posted in March.

- Several utilities currently have company specific information regarding Y2K efforts available on their web sites. Staff anticipates encouraging each utility with a web site to post Y2K information.

- Staff will be issuing a request for information to each jurisdictional utility included in the November 19, 1998, Order. The request will seek to determine the following:

    1. What methods each utility has utilized to provide information to the public.

    2. The types of information each utility has provided to the public.

    3. Any additional steps which are currently planned to inform the public.

    4. What additional methods would the utility suggest for informing the public.

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Staff will evaluate the information gained from the request and develop suggested methods to provide information to the public. Staff would then notify the utilities of these methods. If a utility does not issue some type of public information in one or more of the suggested methods, Staff might intervene and request an order to require the utility to inform the public of its Year 2000 compliance efforts.

Aggregated Reports for Kansas Corporation Commission Jurisdictional Utilities

Exhibit A - Electric

Exhibit B - Gas

Exhibit C - Telecommunications

Each of the three aggregated reports noted as Exhibits A through C attached after this section follow a frequently cited analytical process for assessing the Year 2000 problem. The process contains five phases defined as follows:

Inventory Phase This step consists of performing a complete inventory of all computer software, hardware and other related components including embedded chips.

Assessment Phase This step attempts to determine whether or not the systems or components identified in the inventory phase will be able to process information in a consistent manner before and after the rollover to Year 2000.

Remediation Phase This step involves completing an upgrade or replacement of the systems or components identified in the assessment phase.

Unit Testing Phase Once systems or components are remediated, they must be tested in order to determine if all Y2K problems have been solved. Typically, individual systems or components are evaluated utilizing a range of dates and formal testing methodologies.

Integrated System Testing Systems and components are tested together in their operating environment.

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EXHIBIT A - ELECTRIC

ELECTRIC INDUSTRY Y2K COMPLIANCE REPORT RESULTS

As of February 25, 1999, the Commission has received completed NERC Year 2000 Readiness Assessment questionnaires from 18 of the 26 electric entities identified in the Commission's November 19, 1998 Order Granting Staff Motion to Open Year 2000 Investigation. Staff is disappointed with this 69-percent response rate, and is presently contacting those electric utilities that have not complied with the initial reporting requirements in the Order. If Staff's informal communications do not result in full compliance, more formal measures may be taken. However, Staff is encouraged that the respondents represent greater than 99 percent of the aggregated entities' peak demand, and roughly 100 percent of the aggregated generation capacity. Generally, entities that have not complied with the Order are smaller utilities. In fact, all but one of those not responding have a peak demand less than 50 megawatts (MW), and all have a generation capacity less than 40 MW. Among the classifications of electric utilities, the response rate has been lowest for municipal systems (i.e., 50 percent).

A summary of the results of the responses received is provided below. Staff presents the information on the basis of weighted averages of either utility peak demand or generation capacity, whichever is appropriate. By presenting the results in this manner, one may judge the extent to which regional electric demand and capacity are affected.

Y2K Readiness Assessment

The extent to which respondents have developed Y2K plans is provided in Figure 1. (Figures appear at the end of this section.) By the fourth quarter of 1998 (4Q98), of the electric respondents, 92 percent of the aggregated electric demand is supplied by a utility that has a written Y2K plan.

Figure 2 provides information on the overall status of the aggregated Y2K readiness programs, with responses weighted according to peak demand. The results indicate that, for those responding, 98 percent of Y2K system inventory work, 50 percent of system assessment work, and 34 percent of the system remediation and testing work on mission-critical systems are complete. Based on the results, respondents on the whole are behind the schedule recommended by the North American Electric Reliability Council (NERC), which had set forth the following recommended deadlines for the electric industry[1]:

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[1]North American Electric Reliability Council (NERC), *Preparing the Electric Power Systems of North America for Transition to the Year 2000: A Status Report and Work Plan*, September 17, 1998, p. 25, and *Preparing the Electric Power Systems of North America for Transition to the Year 2000: A Status Report and Work Plan, Fourth Quarter 1998*, January 11, 1999, p. 19

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Table 1. Completion Dates Recommended by NERC for Mission Critical Systems / Components

Y2K Program Phase	Completion Date
Inventory	Immediately, as of 9/17/98
Assessment	10/31/98
Remediation / Testing	5/31/99
Y2K Readiness Status	6/30/99

Furthermore, results indicate that respondents are performing somewhat behind the national average represented by the NERC results for 4Q98.[2]

Figure 3 provides the respondent's capacity-weighted average results for completion of mission-critical systems within all generation facilities. Included are the following systems:

- Fuel supply and handling systems
- Boiler control and feed systems
- Turbine/generator systems
- Balance of plant water and steam systems
- Water treatment systems
- Environmental systems
- Plant electrical systems, power supplies, switchyard under plant control
- Data acquisition and communications systems
- Unit and station protection systems and relays
- Nuclear reactor control systems, safe shutdown systems, and fuel storage systems

Figure 4 provides the respondent's demand-weighted average results for the state of completion of mission-critical systems within energy management facilities. Included are the following systems:

- Control center computer systems
- Data acquisition subsystems
- UPS systems
- Voice and data communication systems
- Remote terminal units (RTUs)
- Metering equipment systems (for tie lines)
- Backup control centers

[2]Ibid., *Fourth Quarter 1998*, January 11, 1999, p. 13.

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Figure 5 provides the respondent's demand-weighted average results for the state of completion of mission-critical systems within telecommunications systems. Included are the following systems:

- Telephone switches and key systems
- Microwave systems
- Mobile radio systems
- SCADA radio
- Data WAN/LANs including networking equipment
- Modems
- Network equipment
- Fiber systems
- Leased lines
- Power line carrier systems
- Satellite systems
- Telecommunications management systems

Figure 6 provides the respondent's demand-weighted average results for completion of mission-critical systems within substation controls, system protection and distribution systems. Transmission and distribution systems are included here.

Figure 7 provides the respondent's demand-weighted average results for completion of mission-critical business information systems. Among these are the following:

- Customer information systems
- Call center systems
- Financial and cost management systems
- Plant maintenance systems
- Work management systems
- Geographical information systems
- Accounts payable
- Purchasing
- Inventory
- Electronic data exchange systems
- Fixed assets systems
- Facility operating systems

Table 2 summarizes the weighted average results for the percentage completion of each mission critical area for each quarter:

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Table 2. Estimated Percentage Completion of Mission-Critical Systems by Application

Weighted Average Results of Kansas Electric Industry Respondents

Application	3Q98	4Q98	1Q99	2Q99	3Q99	4Q99
Generation Facilities	15	27	46	70	93	100
EMS Facilities	36	56	88	96	100	100
Telecommunications Systems	54	58	95	95	99	99
Substation Controls, System Protection and Distribution	83	85	93	96	99	99
Business Information Systems	49	72	84	96	100	100

In summary, the transmission and distribution systems (i.e., substations controls, system protection and distribution) of the respondents on the whole appear to be nearly Y2K ready by 4Q98. Business information systems are about 72 percent complete, and EMS and telecommunications are better than 55 percent complete. The respondents collectively indicated that these systems should be nearly ready by the June 30, 1999 deadline recommended by the NERC. However, Staff has concerns with the amount of progress that the respondents anticipate during 1Q99 on completing EMS and telecommunication systems, as both appear ambitious.

Staff notes that respondents anticipate being nearly complete with all mission-critical systems by the end of 3Q99. Percent completion figures for 4Q99 reflect Staff's conservative treatment of incomplete responses. For the purposes of this report, where a company has failed to provide information in its survey, Staff has assumed that the company will be zero-percent complete. Staff has contacted the company concerned about the importance of providing this information, and Staff's policy on treatment of these numbers in developing this aggregated report.

Finally, Staff notes that generation facilities were only 27 percent complete, and are not expected to be completed until after NERC's recommended deadline (i.e., only 70 percent complete by 2Q99). Follow up with some Y2K program managers indicated that some of the remediation and testing will be purposely deferred, as some of the generation facilities are scheduled for plant maintenance after June 30. In many cases, plant component testing and remediation is logically performed more efficiently while plants are off line. Respondents anticipate being ready by the end of 4Q99.

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Operational Preparedness Plans

According to NERC, test results provided by 4Q99 continue to indicate that Y2K failures do not appear to be the kind that would cause properly remediated electric facilities to trip out of service. Despite this, NERC recognizes the severe consequences of wide-spread or extended outages, however improbable. Therefore, NERC is taking an active role in the development of contingency plans to assure that any problems that may occur will not result in a loss of customers. NERC has developed a guide to Y2K contingency planning and preparations, with the goal of mitigating operating risks to reliable service during the transition dates and beyond. Furthermore, NERC is coordinating contingency plans and preparations at the interconnection and interregional levels. NERC will review planning and preparation efforts across all ten regional reliability councils, including the Southwest Power Pool. The regional reliability councils will coordinate efforts within their regions, and with adjacent regions. Utilities operating generation, transmission or distribution facilities will participate in this regional coordination.[3]

NERC recognizes that contingency planning efforts are unique to each entity, yet it requires coordination at the regional, interregional, and interconnection levels. NERC indicates that its Operating Committee, through its Security Coordinator Subcommittee, will facilitate this coordination process. NERC has provided the following contingency planning milestones:[4]

Table 3. NERC Contingency Planning Milestones

Date	Action
December 31, 1998	First draft of regional and operating entity contingency plans available to NERC and regions (e.g., Southwest Power Pool) for review
January 25-26, 1999	NERC review of draft contingency plans
January 27, 1999	Contingency planning coordination meeting
April 8-9, 1999	First industry-coordinated Y2K readiness drill
June 30, 1999	Second draft of regional and operating entity contingency plans available to NERC and regions for review
September 8-9, 1999	Second industry-coordinated Y2K readiness drill

More details on NERC's contingency plan coordination may be found in its January 11, 1999 status report and work plan.

At the State of Kansas level, Figure 8 indicates the respondent's status of contingency

[3]Ibid., pp. 43-44.

[4]Ibid., *A Status Report and Work Plan: Fourth Quarter 1998*, January 11, 1999, p. 47.

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2-13

plans at 4Q98. According to NERC, "Electric service providers will face some risks from Y2K and should have written plans in place to deal with credible scenarios."[5] The figure illustrates the extent of respondents' preparedness as of 4Q98. One added note, all but one of the respondents (94 percent) indicated that their contingency plans account for potential breakdowns in their supply chain (99 percent when demand-weighted).

Conclusions

At the national level, NERC reports that, with 44 percent of mission-critical components tested, transition through critical Y2K rollover dates is expected to have minimal impact on electrical operations in North America. NERC enjoys nearly universal participation in its assessment process, with 98 percent of electrical systems in the United States and Canada. NERC is actively involved in contingency planning and coordination to assure reliability during transition dates. NERC's analysis of 4Q98 data indicates that, on average, the electric industry is close to, but slightly lagging the target of mission-critical facilities being Y2K ready by June 30, 1999. Some facilities will be completed beyond this date due to a scheduled outage period or other project considerations, which partly explains this lag. Also, NERC has found that some respondents have included items not essential to sustained reliable operations during transition dates. With further investigation, NERC has concluded that nearly all electrical systems necessary will have been declared Y2K ready by June 30, 1999. One area of concern is the limited ability to test external voice and data communications, since the operation of the electric systems is highly dependent on external service providers for these services. However, the industry has been assured that these services will be reliable through rollover periods. Furthermore, a significant amount of contingency planning and testing is being devoted to communications. Finally, NERC reports that the distribution systems are generally the least dependent on computers and electronics, and consequently the least susceptible to Y2K problems.[6]

At the level of Commission oversight, Staff is disappointed by the level of response from the electric industry (i.e., 69 percent). However, Staff is encouraged that larger electric utilities have generally responded, and the vast majority of electric demand and capacity in the region are represented by respondents. Staff's analysis of its responses are generally consistent with NERC's reports. Levels of completion on Y2K assessment are provided in Table 2 above.

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[5]Ibid., *A Status Report and Work Plan*, September 17, 1998, p. 26.

[6]Ibid., *A Status Report and Work Plan: Fourth Quarter 1998*, January 11, 1999.

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2-14

Figure 1. Kansas Electric Industry Status of Written Y2k Plan
Based on Demand-Weighted Average of Respondents

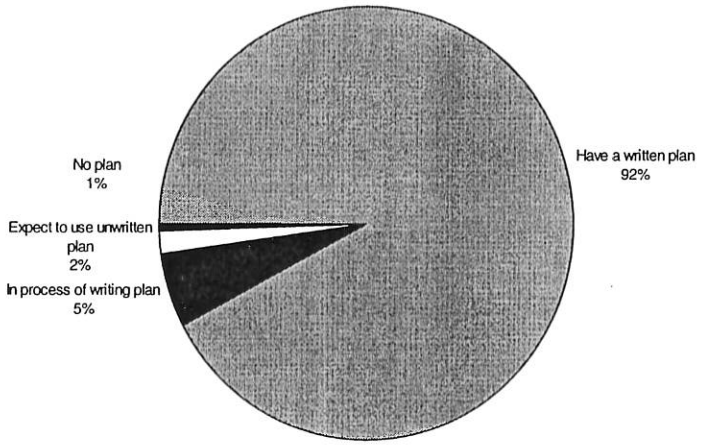

Figure 2. Kansas Electric Industry Overall Status of Y2k Readiness Programs
Percent of Mission-Critical Items Complete, 4Q98
Based on Demand-Weighted Average of Respondents

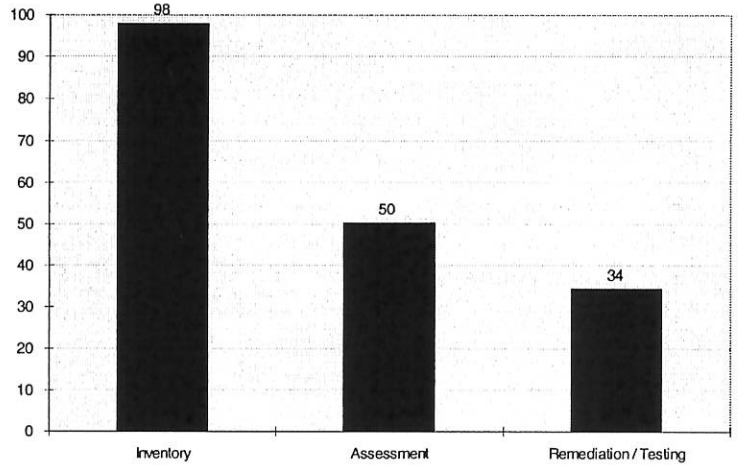

Figure 3. Generation Facilities
Percent of Mission-Critical Systems Complete by Quarter
Based on Capacity-Weighted Average of Respondents

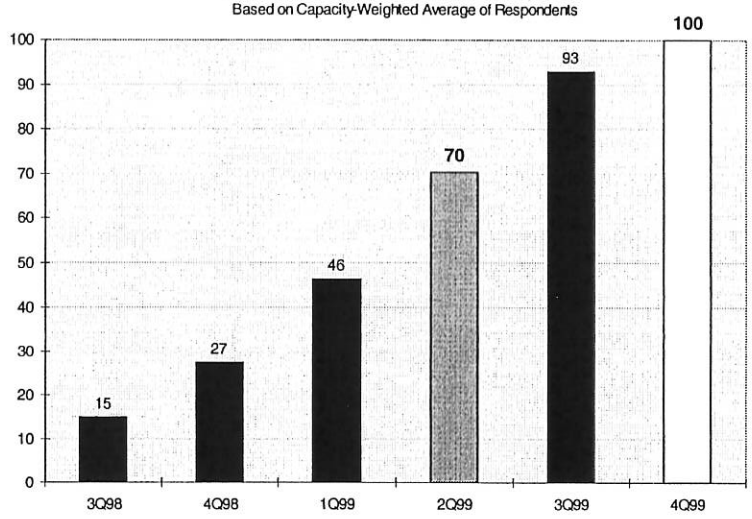

Figure 4. Energy Management Facilities (EMS and SCADA)
Percent of Mission-Critical Systems Complete
Based on Demand-Weighted Average of Respondents

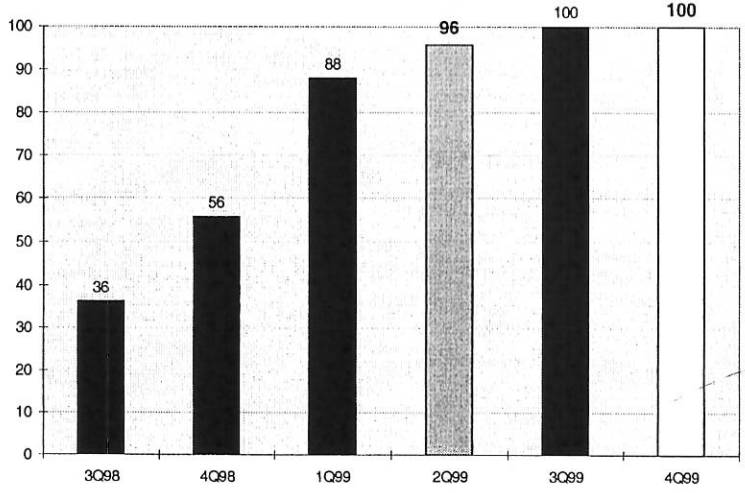

Figure 5. Telecommunications Systems
Percent of Mission-Critical Systems Complete
Based on Demand-Weighted Average of Respondents

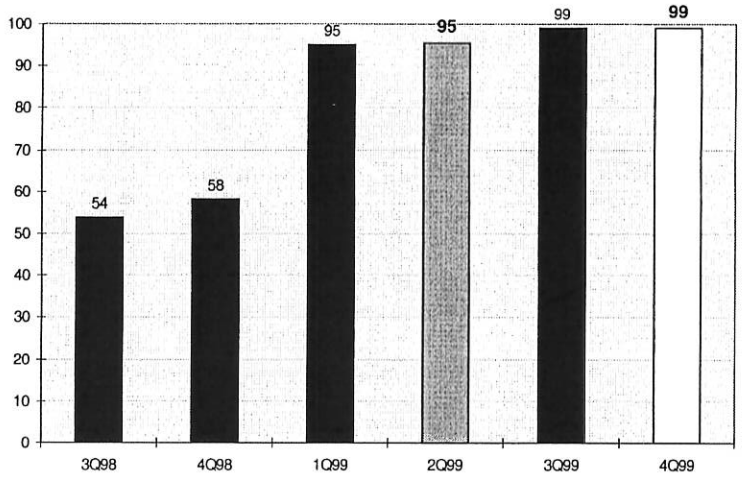

Figure 6. Substation Controls, System Protection and Distibution
Percent of Mission-Critical Systems Complete
Based on Demand-Weighted Average of the Respondents

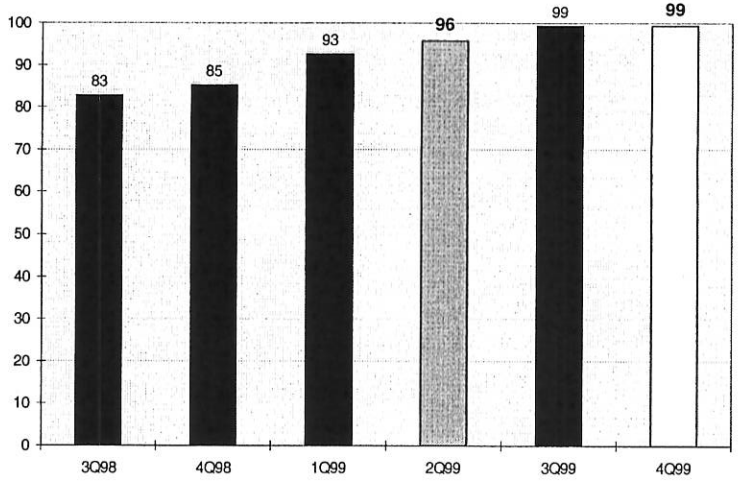

Figure 7. Business Informations Systems
Percent of Mission-Critical Systems Complete
Based on Demand-Weighted Average of Respondents

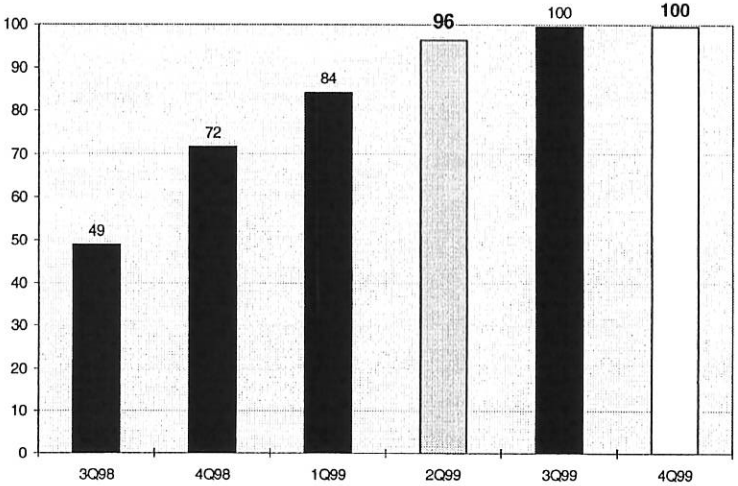

Figure 8. Kansas Electric Industry Status of Operational Preparedness Plans
Based on Weighted Average of Respondents

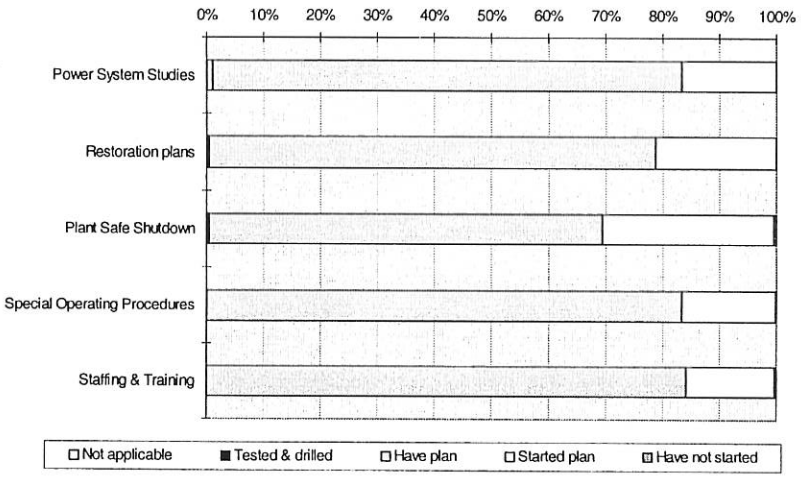

EXHIBIT B - GAS

2-18
2-17

Natural Gas Industry
Y2K Compliance Report Results

Introduction

In an effort to determine the preparedness of natural gas utilities in the State, the Kansas Corporation Commission opened a multi-industry general investigation into problems associated with the Year 2000 technology issues. While business and operational systems are important to a utility, the safe and reliable flow of gas are mission critical and must be the top priority of companies.

Y2K surveys were sent to 30 jurisdictional gas companies. Four of these companies are either intrastate pipelines or marketing companies which do not have distribution facilities to serve customers. Initially, the reporting deadline was January 1, 1999. However, some companies requested additional time to complete the survey and the deadline was extended to February 5, 1999. Overall, 15 gas companies (50%) have reported on their Y2K readiness. Staff is in the process of informally contacting those companies who have not yet responded and urging them to complete the survey. If necessary, a more formal approach will be used to require the company's response or let them explain why the Commission should exempt them from reporting. The Commission will continue to monitor Y2K readiness by requiring quarterly reports through 1999.

On the national level, energy industry members of the Oil and Gas Energy Working Group of the President's Council on Year 2000 Conversion developed a survey which was directed at those companies with operations that can influence the reliability of the U.S. energy systems, directly or indirectly. Under the coordination of the Natural Gas Council and the Energy Working Group, this survey was distributed by industry trade associations to their memberships. This survey was also used as a starting point for the development of the natural gas survey sent to Kansas companies by the KCC.

Y2K Readiness Assessment

Annual Reports for 1997 indicate that the 26 Local Distribution Companies (LDCs) serving Kansas customers had combined sales of over 147 million Mcf. Only 12 of these companies have responded to the Commission's request for Y2K information. Yet, these 12 companies represent 96% of total annual retail and wholesale sales. See Charts 1 and 2 on page 2.

Typically, smaller companies have experienced more difficulty in completing the surveys. Seventy-one percent of the companies not responding to the survey have annual sales less than 70,000 Mcf. This low response rate makes it difficult to determine the overall level of the small company's Y2K readiness efforts. In addition, municipal gas companies who have responded to the survey indicate that most of the questions concerning operational equipment were not applicable to their systems.

Although the response rate is lower than expected, it parallels the results achieved on the national

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level where 155 surveys were sent to LDCs and 70 surveys (45%) were returned. This represented approximately 50% of total gas volume of investor-owned distribution companies.

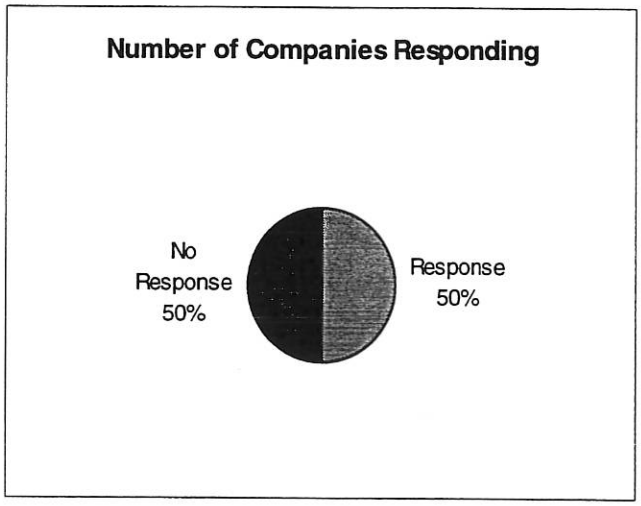

Chart 1

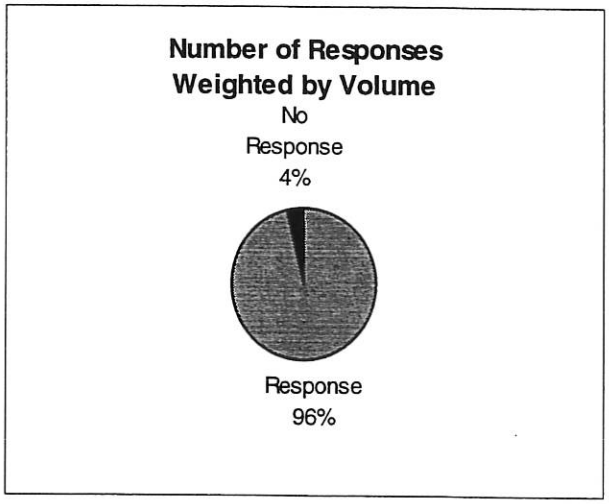

Chart 2

The surveys consisted of two parts: Section A, covering general information about the status of Y2K plans; and Section B a survey on Y2K actions and estimated completition dates. In Section B, companies were asked to report on five phases of Y2K planning (inventory, assessment, remediation, unit testing and system testing) for various systems and equipment.

• Storage Fields	Compressor control and flow calculations
• Gas Control	SCADA transmitters, flow computers and gas control computers
• Metering	Correcting devices, transmit devices and handheld and mobile units
• Gas Management	Electronic bulletin boards and internet services
• Operations	Instrument calibration systems, data logger and regulatory tracking systems
• Facilities	Security, energy management and HVAC systems

Survey results, which are direct reports from jurisdictional gas companies present an optimistic assessment of readiness. Local distribution companies, intrastate pipelines and jurisdictional marketing companies show 97% completion in the inventory phase and 75% completion in the assessment phase of Y2K readiness.

Because there is such a wide variance in the size and type of jurisdictional gas companies, a summary of the overall results for LDCs, weighted by annual sales, is shown on Table 1. This method of presenting the survey results provides a more meaningful way to evaluate the overall

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effect on Kansas gas energy consumers.

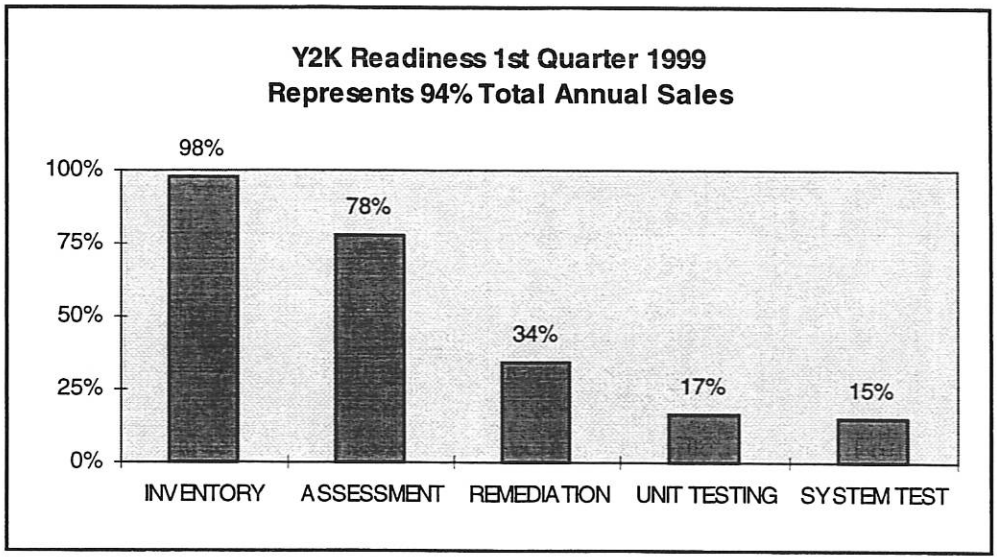
Table 1
Y2K Readiness - 1st Quarter 1999
Weighted by Annual Sales

	Inventory	Assessment	Remediation	Unit Testing	SystemTest
Storage Fields	100%	59%	12%	7%	0%
Gas Control	100%	68%	32%	10%	10%
Metering	98%	95%	47%	4%	1%
Gas Management	100%	69%	43%	22%	9%
Operations	94%	82%	47%	29%	29%
Facilities	94 %	86%	48%	20%	20%
Overall	98%	77%	38%	15%	11%

Table 1 shows that, weighted by company sales, the inventory phase is 98% complete and the assessment phase is approximately 77% complete. Most companies expect to finish the assessment phase by March 1999. With inventory and assessment nearly complete, remediation efforts have increased. At the time of the survey, only about 38% of the remediation was complete. Yet, most companies are comfortable projecting a completion date of mid-1999 for remediation and testing.

The state's largest LDCs have annual sales volumes ranging from 12,000,000 to 99,000,000 Mcf and represent more than 94% of total combined annual sales for the 30 companies surveyed. Chart 3 shows the weighted percent completion for inventory, assessment, remediation, and testing phases reported by these utilities.

Chart 3



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Eighty-five percent of all respondents who specified a time line for Y2K compliance expect to be ready by July 1999. This compares favorably with national reports of 84% for software systems and 80% for embedded systems.

Y2K Actions, Status, and Project Approach

The larger companies indicate that they have been working on Y2K issues for more than two years. Smaller utilities, including municipals, started working on Y2K issues about a year ago. Corporate expenses budgeted for Y2K compliance amount to over $14 million. However, not all of this has been allocated for Kansas utilities since several parent companies are multi-state. Six of the responding companies reported less than $25,000 budgeted for Y2K issues and most of them considered upgrading systems, software, and equipment to be part of normal business improvement.

Completion of inventory, assessment and remediation is scheduled for the second and third quarter of 1999 for the following types of equipment and systems.

- Computer operations
- Telecommunications
- Meter reading
- Metering and regulation
- SCADA
- Remote telemetry
- Facilities

Many of the larger companies are associated with industry groups or associations such as the Natural Gas Council, American Gas Association, American Petroleum Institute, Gas Processors Association, etc. The respondents are participating in meetings and seminars these organizations sponsor to share information regarding the Y2K problem. However, the smaller companies are more limited in their sources for information. They do not directly participate in sharing information with these organizations and must rely on printed materials, Internet connections, suppliers, etc.

Critical Service Providers

When asked to identify other companies whose lack of compliance may affect the operation of the respondent, these industries were mentioned most often:

- Electric power
- Telecommunications
- Gas suppliers
- Gathering systems
- Interstate/intrastate pipelines

Based on preliminary assessment, testing and documentation, the utilities are reasonably confident that full operation of their integrated systems will occur after critical date change-over events for 9/9/1999, 1/1/2000 and 2/29/2000.

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Public Information and Customer Relations

Some of the utilities have already begun a program of customer contact for critical needs customers and large volume customers. In addition, they have contacted the public through newsletters and presentations to organizations. The methods of customer contact will be stepped up in 1999 with additional meetings, bill inserts, letters to customers, etc.

Companies indicate that they are planning additional staff to man call centers. Plans are in place for larger utilities to implement one or more of the following:

- Increase staff for anticipated high-volume situations
- Issue a moratorium on absences for field service personnel for one week prior and one week after January 1, 1999
- Increase the number of Customer Service Representatives to improve customer contact

Many of the smaller utilities do not perceive any problems with Y2K and do not have plans to contact customers or make changes in personnel.

Contingency Plans

In order to mitigate the risk associated with transportation and delivery of natural gas to customers, most companies are developing contingency plans. These plans are expected to be completed prior to mid-1999 and contain best case and worst case scenarios. Worst case scenarios take into account the company's ability to receive and deliver gas and communicate with customers.

Categories of temporary failures both internal and external to the company are also taken into consideration. These include:

- Potential system and equipment failures
- Temporary electric power and communication failure
- Slow or temporary inability to get parts
- National transportation system problems

Since most of the contingency plans are not complete, they have not been tested. Limited testing will be conducted to the best ability of the company, especially in the areas of alternate communication facilities/equipment.

Gas industries have backup power for critical distribution and storage operations. Most of the operations also have manual overrides for system equipment. Compressors use natural gas for power and some of the companies have diesel or gas generators for backup to corporate headquarters.

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2-22

Despite efforts to be Y2K compliant by the end of 1999, there can be no assurance that all material risks related to Y2K issues can be adequately identified and controlled before the end of the year. The probability of complete system failure is expected to be very low.

Conclusion

Preliminary survey results indicate that the largest natural gas utilities in the state are on track with their Y2K efforts. While much remains to be done, the utilities have made substantial progress in implementing their Y2K plans. Future quarterly reports (due in March, June, September and December) should continue to show progress toward Year 2000 compliance. All of the utilities who are currently developing contingency plans expect to have the plans completed and tested by July 1999.

There is some concern over the low response rate of the municipal LDCs and what that might mean for customers in small cities or remote geographical areas. Only two of the cities responding to the survey are developing a contingency plan and neither has indicated that they will test their plan. Staff plans additional contact with the municipal utilities to try and increase the response rate.

Y2K compliance reports for Kansas companies closely parallel national reports. During the Press Conference on Status of Natural Gas & Oil Industries Preparing for Y2K, the American Gas Association (AGA) stated that they believe utilities will be successful in remediating mission-critical Y2K issues and will be able to deliver gas in a safe and reliable fashion. AGA's position is that the industry is relatively low-tech, has manual overrides as a backup for most operations, and is experienced in partial or temporary shutdowns when natural disasters occur and thus has established emergency response and backup procedures in place.

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EXHIBIT C - TELECOMMUNICATIONS

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224

Telecommunication Industry Y2K Compliance Results

Introduction

As of February 11, 1999, the Commission has received completed Status Reports from 66% (27 of 41) of the Local Exchange Carriers (LECs) operating in Kansas. Staff is currently in the process of contacting those utilities that have not responded. If, after being contacted, a utility still does not file a report, Staff will pursue a more formal means of requiring the utility to file.

Since four of the five largest LECs, (and seven of the top ten), were included in the initial response, 96.9% of the total access lines in the state are represented. A summary of the results of the responses received are reported below. The data is presented using weighted averages based on the number of access lines.

The telecommunications Status Reports and Questionnaires requested that LECs report on five areas of their business operations. The five areas are:

1. Network Elements (Switches, Routers, 911 systems, System Signaling 7, etc.)
2. Support Systems (Billing, Service Orders, Trouble Reporting, Installation & Repair, etc.)
3. Auxiliary Systems (Payroll, Human Resources, Building Security, etc.)
4. Vendor Systems (Equipment Ordering, Supplies, Installation, and Construction)
5. Contingency Plans

Within each of the five measured areas of business operations, (except Contingency Plans) five milestones were included:

1. Inventory
2. Assessment
3. Remediation
4. Unit Testing
5. Integrated System Testing

Each local exchange company was asked to provide the percentage of completion for each of the five business operations shown above. If an operation was less than 100 percent complete, the LEC was requested to provide an estimate of how much of the operation was complete, and what month the operation would be fully completed. Unfortunately, most LECs have not included many of the requested completion dates for items still to be done. Therefore, any analysis of estimated completion dates for the business operations is not possible at this time. It is anticipated that more complete information on completion dates will be filed with the first quarter status reports. (The LECs are required to update and report the completion percentages

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and dates at the end of each quarter throughout 1999.)

Additionally, each LEC was requested to complete a questionnaire, or survey, that provided more details on the overall Y2K assessment and remediation process. Because of the short lead time given for completing and filing the questionnaires, and because of Staff's request that the status reports be given priority, the questionnaires are slow in being filed. Therefore, there is not enough meaningful data on hand to provide a summary of answers to the questions posed in the survey. Again, Staff is contacting the appropriate utilities and requesting that the surveys be filed with the first quarter status reports, so that a summary can be compiled.

Readiness Assessment

Figures 1 through 4 (which appear at the end of this report) are bar charts that depict the percentage completion for each of the four main business operations, and for each of the five milestones. A review of the charts shows that, on average, Inventory is 92.6% complete; Assessment efforts are 93.4% finished; Remediation is 69.3% completed; Unit Testing is completed at the rate of 67.8%; and System Testing is reported at 46.8% complete. The final bar chart, Figure 5, reflects the milestone averages for the aggregated business operations data.

Weighted results for different areas of operations: includes Inventory, Assessment, Remediation, Unit Testing, and Integrated System Testing.

Results of Kansas Telecommunications Respondents to Year 2000 Status Report
Weighted Averages by Access Lines (96.9% of Total Access Lines Represented)
Estimated % Complete of Milestones by Business Operation

	Inventory	Assessment	Remediation	Unit Testing	System Test
Network Elements	96.5%	96.5%	95.6%	90.3%	89.2%
Support Systems	95.7%	95.7%	94.0%	93.3%	52.2%
Auxiliary Systems	96.6%	95.9%	85.5%	85.8%	44.8%
Vendor Systems	85.8%	85.8%	2.2%	1.8%	1.1%
Contingency Plans	88.6%	N/A	N/A	N/A	N/A
Average	92.6%	93.4%	69.3%	67.8%	46.8%

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2-28

Operational Preparedness Plans

Of the 27 companies who filed reports, only nine of the companies indicated that contingency plans were in place. However, since the two largest companies in the state reported that contingency plans were available, almost 90% of the access lines are represented. The actual number is possibly higher than reported, since it is probable that many of the smaller LECs have plans, but they may not be committed to paper, or the plans may simply replicate the contingency plans already in place for natural disasters, such as tornadoes and floods. Staff expects this percentage to rise sharply as Staff contacts individual companies to gather more information and provide more guidance on planning efforts.

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Figure 1. Network Elements. (Percent Complete)

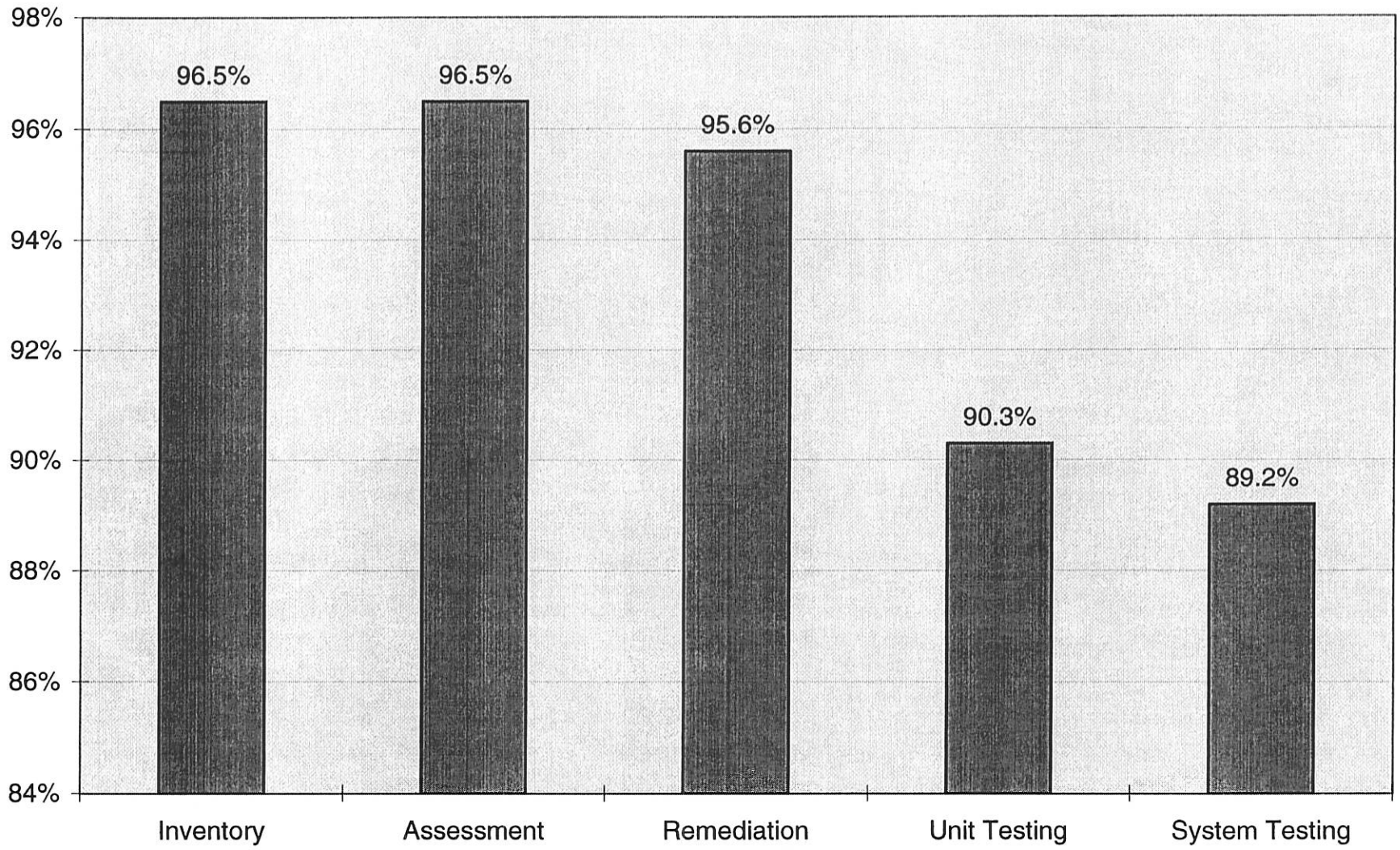

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Figure 2. Support Systems (Percent Complete)

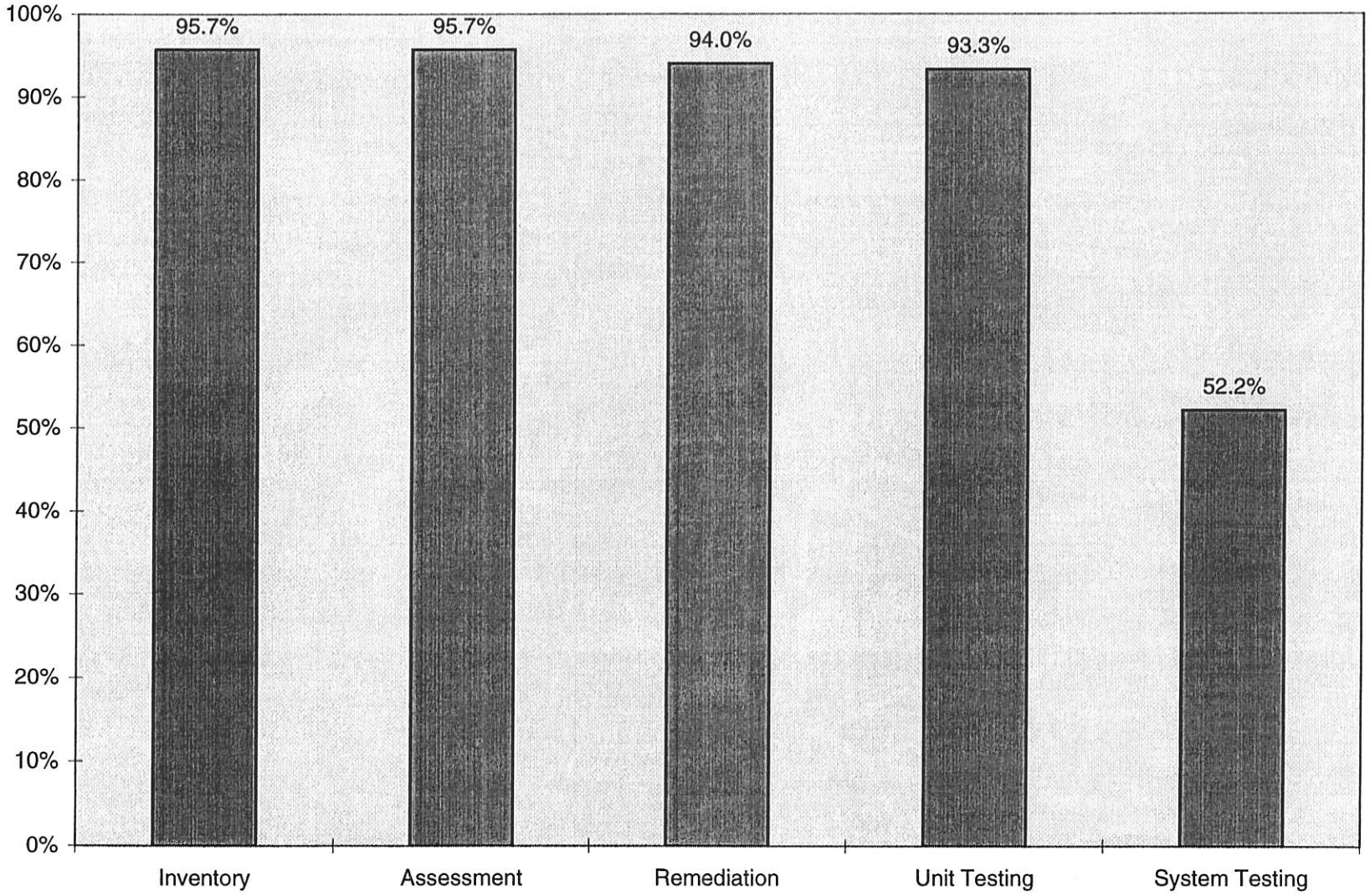

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Figure 3. Auxiliary Systems (Percent Complete)

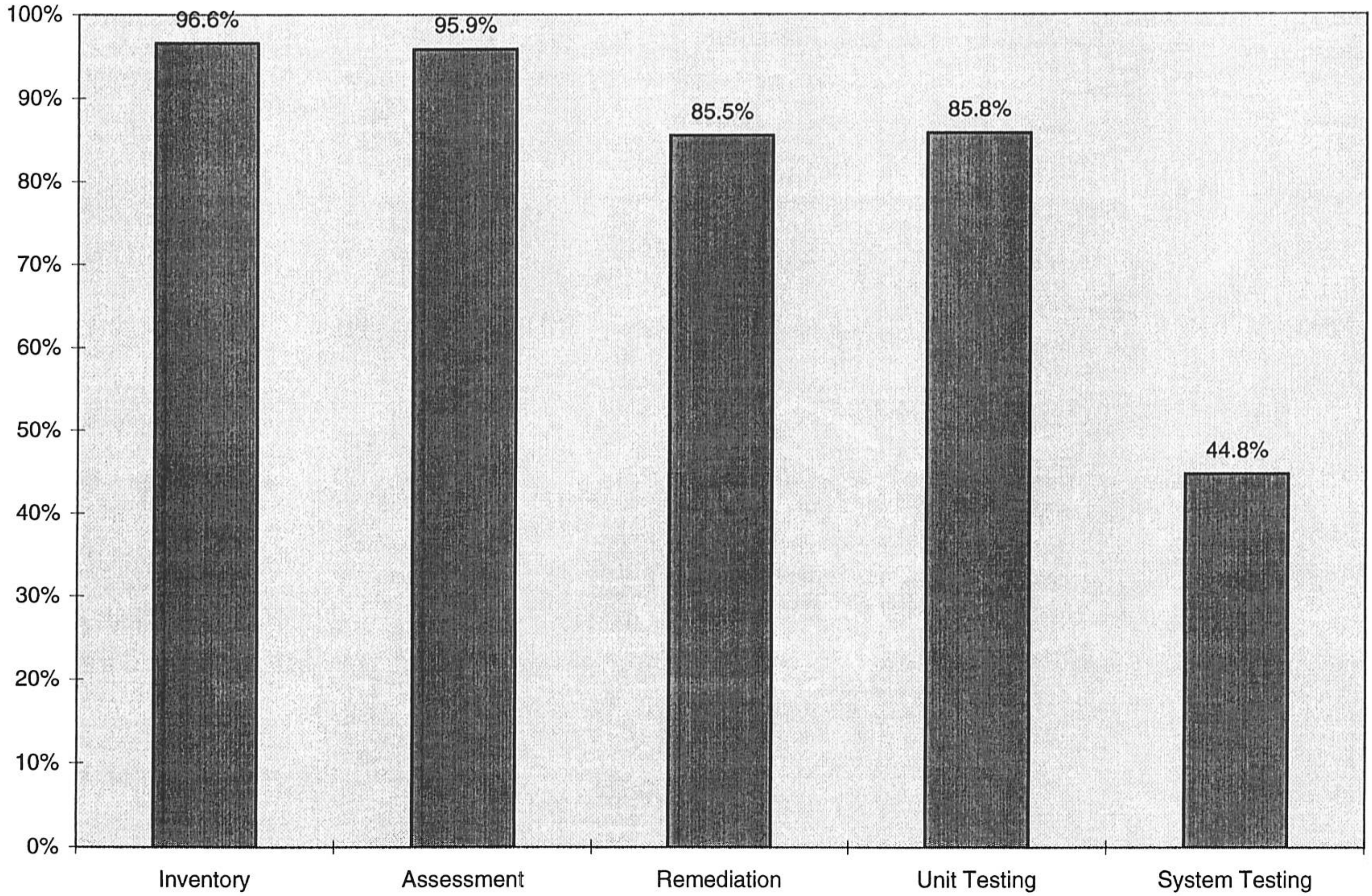

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Figure 4. Vendor Systems (Percent Complete)

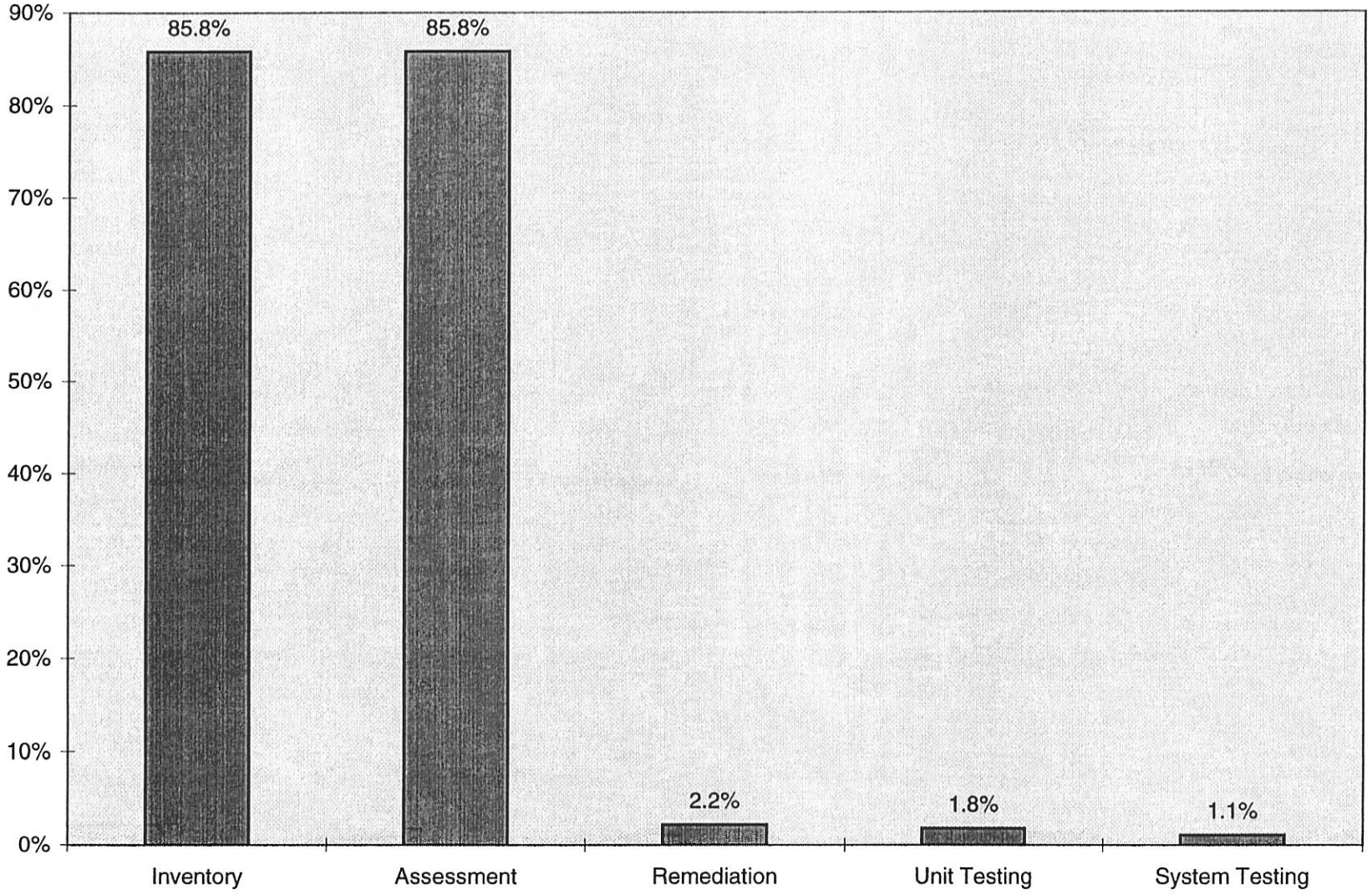

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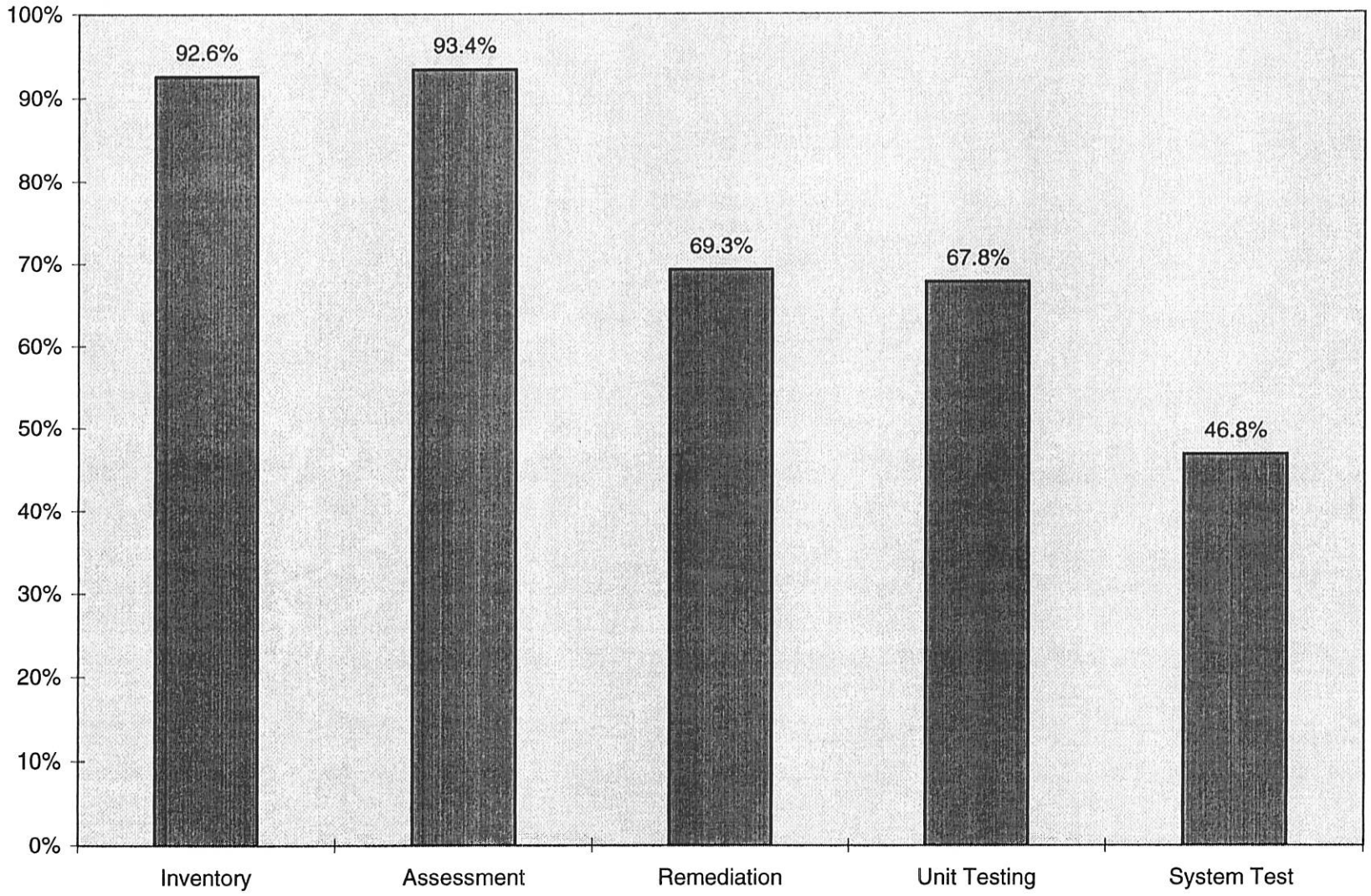
Figure 5. Overall Status of All Programs (Per Cent Complete)



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TESTIMONY SUBMITTED TO
THE HOUSE UTILITIES COMMITTEE

By

SUNFLOWER ELECTRIC POWER CORPORATION

March 9, 1999

COMMENTS ON Y2K ISSUES

Thank you, Mr. Chairman and members of the Committee, for providing Sunflower time to share our thoughts with you on this subject. My name is Steve Miller. I serve as Sunflower's Senior Manager, External Affairs.

Sunflower Electric Power Corporation is a generation and transmission cooperative serving the western third of Kansas. We began working on our Year 2000 (Y2K) concerns in June of 1997 and are committed to resolving these issues well in advance of December 31, 1999. In addition to our internal work, we have spent many, many hours with our vendors discussing their equipment and developing data regarding Y2K compliance.

Each Sunflower location has an internal team working on Y2K issues. At the Holcomb Generating Station, our team is directed by Brad Schimke, Sunflower's Senior Manager, Power Production. Other participants on this team include our Generation Engineering Manager; a Control Systems Coordinator; and Holcomb's lead Computer Systems Analyst. Other staff is available to assist this team whenever needed.

Noman Williams, Sunflower's Transmission Services Manager, directs the Y2K efforts at our Garden City facilities. Noman's team includes a Transmission Engineer whose primary responsibility is for our SCADA (System Control And Data Acquisition) system, our Telecommunications Supervisor; our Substation Supervisor, and Garden City's lead Computer Systems Analyst. This group's primary focus is the transmission, communications and SCADA system issues.

HOUSE UTILITIES
DATE: 3-9-99
ATTACHMENT 3

Sunflower Electric Power Corporation
Comments on Y2K Issues

The headquarters facility, which is home to our corporate computer systems, is located in Hays, Kansas. Jerry Herman, Sunflower's Information Systems Manager, is directing this Y2K effort along with his support staff. All of these groups report to Jim Hanks, our Vice President of Administration. Jim is also located in Hays and coordinates our efforts on a company-wide basis.

The Sunflower Board of Directors receives routine updates from our Y2K group and is keenly aware of the issues regarding Y2K. Each of these Sunflower Directors also serve on their local distribution cooperative Board. As you know, these cooperatives that own Sunflower face many of these same issues at the local level.

Just what is the Y2K Bug? The Y2K bug results from a programming convention for the designation of a date as MMDDYY in the United States and DDMMYY in other parts of the world. This convention has been used extensively since the earliest days of computer programming and now affects numerous software programs and electronic devices, including some of those used in electric power systems. The bug becomes apparent as we transition from the year 1999 to 2000, when computers and electronic chips read the year as 00.

The most obvious outcome is that computer programs and electronic devices could interpret 1/1/2000 as 1/1/1900, causing problems for any applications that depend on time or dates. Testing has shown that the Y2K bug is actually much more complex than this simple explanation because a variety of problems can occur with date interpretation. The problems are not restricted to a single date change at midnight December 31, 1999. Date-related anomalies may occur at 9/9/99, 2/29/00 and up to a dozen other dates. Although there are many known types of Y2K failures, the three dominant ones are:

- Failure to recognize the correct year in transitioning from 99 to 00.

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- Expiration of an electronic "clock" that was referenced to measure time as the number of seconds from an initial start date, such as January 1, 1970, and which will expire on a certain date when the clock counter buffer is full.

- Use of certain values, such as 99, to serve as placeholders with special meanings for programmers, hence the concerns for 1/1/99 and 9/9/99.

How did something that is so obviously a major problem today come to happen? Common wisdom is that programmers in the early days of computers were thoughtfully saving precious memory space by using two digits for the year. A more likely explanation is that programmers were simply carrying forward a common practice in everyday life of depicting a date as MMDDYY. Because most computer applications (then as well as today) are not date sensitive, programmers were simply denoting a date in the same manner it would be written or viewed by a human. If anything, use of the MMDDYY (or DDMMYY) format saved on the amount of programming code needed to convert the date to any format other than the one in which it would be displayed.

So who's in charge of leading the electric industry's challenge to become Y2K compliant? The North American Electric Reliablity Council (NERC) has been charged by the Department of Energy to coordinate the industry's efforts to resolve Y2K issues. NERC's membership is broad-based and focused on electric system reliability, making NERC a good choice to lead a coordinated effort to resolve Y2K issues. However, NERC has historically been focused on reliability of bulk electric systems. The inclusion of distribution systems significantly raises the coordination requirements from about 200 entities operating bulk electric systems to nearly 3,200 total organizations.

To address these issues, NERC has requested and received full cooperation from several industry trade associations with close ties to various sectors of the industry. I

have attached a listing of the prominent organizations that are involved with NERC in this process.

Sunflower is fully cooperating with NERC's Y2K readiness assessment and files quarterly assessment reports. These reports are also provided to the Kansas Corporation Commission as part of Commission Docket No. 99-GIMX-241-GII. Sunflower also anticipates participating in NERC's April 9, 1999 Y2K operations drill.

A comprehensive listing of NERC and electric industry Y2K materials can be found at the NERC's web site located at http://www.nerc.com/~Y2K/Y2K.html.

So, what is Sunflower Electric doing to mitigate its potential for Y2K problems? As previously noted we have formed an in-house Y2K taskforce to identify and assess potential Y2K problems. Sunflower's Y2K remediation and testing methodology is based on a careful, conservative approach to assessing Y2K sensitive units and systems individually. We believe that many Y2K remediation and testing programs have become almost a technical witch-hunt to find whatever combination or combinations are necessary to cause a system to fail. Our approach is not based on finding which system can be made to fail, but rather based on which systems are critical to the safe operation of the electrical system and our assessment of the sensitivity of these systems to the Y2K phenomena.

Sunflower's assessment of potential Y2K problems is essentially complete. During this process, Sunflower identified three systems that are currently not Y2K compliant. The computer system associated with Sunflower's scrubber operations was found not to be compliant. Simply setting the clock back some 20 years has eliminated the problem because we expect to replace this control system within the next few years.

3-4

Additionally, the operating systems associated with Sunflower's SCADA-EMS (System Control And Data Acquisition – Energy Management System) and CEMS (Continuous Emissions Management System) systems are not Y2K compliant. The SCADA-EMS operating system is scheduled to be upgraded by May 1999 and the CEMS operating system is scheduled to be upgraded in the 3rd quarter of 1999.

Our teams have worked closely with one another to develop contingency plans we will implement regardless of the condition of the electrical system on December 31. For instance, we intend to have personnel physically located in each of our major substations to manually operate vital equipment to maintain or restore service if required. We will have extra food and clothing on hand to protect these workers if we are also facing some sort of a winter blizzard or if the vehicles we're driving fail to operate properly. This is but one of many strategies we will implement to maintain our high quality of service. Our Board is expected to approve this comprehensive plan at its next Board meeting in March.

In summary, Sunflower recognizes the seriousness of potential Y2K problems to the economy of our nation. While we question any company that can state proof positive that there will be no Y2K issues, I can say that Sunflower is dedicated to making every effort to be Y2K compliant by October 1999. Thank you Mr. Chairman for allowing Sunflower to share this information with the Committee.

ATTACHMENT 1
ORGANIZATIONS ASSISTING NERCE WITH Y2K ISSUES

American Public Power Association — APPA's membership includes many state, county, and municipal electricity service providers. APPA is coordinating information sharing and surveys of its members, as well as smaller nonmember public power utilities. APPA is assisting NERC in the industry-wide readiness review of electric distribution systems.

Canadian Electricity Association — CEA is assisting NERC by coordinating efforts in Canada, particularly to address the readiness of electric distribution systems and Canadian nuclear facilities. CEA also is serving as an interface to Canadian government agencies.

Edison Electric Institute — EEI, representing investor-owned utilities, has established a program to address Y2K technical, regulatory, and liability issues. EEI is supporting the industry's Y2K coordination efforts by facilitating Y2K manager forums, addressing legal issues, and reviewing the readiness of utility business information systems. EEI also is assisting in the readiness review of electric distribution systems.

Electric Power Research Institute — The EPRI Y2K embedded systems program focuses on the technical and project management issues relating to achieving Y2K readiness. While the program deals mainly with the electric power industry, the program includes efforts in the areas of natural gas pipelines and telecommunications.

Electric Power Supply Association — EPSA is providing coordination among its members, which include independent power producers and other power generating entities.

3-16

National Rural Electric Cooperative Association — NRECA is coordinating Y2K readiness assessments and information sharing among its membership, which includes about 900 rural electric systems, including generation and transmission cooperatives and power distribution cooperatives. NRECA is working closely with APPA and EEI to provide NERC an assessment of the Y2K readiness of distribution systems in the United States.

Nuclear Energy Institute — NEI is coordinating the assessment of Y2K readiness of U.S. nuclear facilities.

SBC's Year 2000 (Y2K) Project

Peggy Pistora

March 9, 1999

Year 2000 Readiness Disclosure Statement of SBC

SBC Y2K Resources

- Spending $3M per week--$148M to date
- More than 3,000 hours per day
- 56 organizational coordinators designated
- 400 dedicated employees on Y2K
- Monthly meetings & updates to CEO

HOUSE UTILITIES

DATE: 3-9-99

ATTACHMENT 4

The Network

Year 2000 upgrades are tested multiple times

- Guest testing at the supplier's location
- Monitoring the supplier's testing
- Conducting lab, unit and interoperability testing
- Participating in the National Year 2000 Telco Forum interoperability testing
- Participating in interoperability testing of local and long distance networks through ATIS (Alliance for Telecommunications Industry Solutions)

SBC Project Timeline

		Targeted Completion Date	
Timeline	**Status**	**1st qtr 99**	**2nd qtr 99**
Inventory	Complete		
Assessment	Complete		
Hardware/ Software Fixes	Complete		
Software Testing	Underway	✓	
Hardware/ Network Testing	Underway		✓
Y2K Ready	6/30/99		✓

Progress Report (as of January 1999)

Major Project Elements	Quantity	Progress
Overall Project		88% Complete
Lines of Code	300 million	98% Fixed 91% Tested
Central Office Switches	1,100	76% Completed
Personal Computers	117,000	88% Ready
Vendor Products	13,000	100% inventoried and assessed
Building Facilities	6,800	99% Ready

The Bottom Line

- Will calls go through? Yes!
- Will 911 service work? Yes!
- Will I be properly billed? Yes!
- Equipment - Check with manufacturer

Web Site
http://www.sbc.com/year2000

- **Website includes:**
  - Switch Readiness Look-up Tool
  - Project Overview
  - Frequently Asked Questions
  - Progress Report
  - Wireless Information

Questions?

Western Resources Year 2000 Project Status Update

Generation, Transmission, Distribution and Support Functions

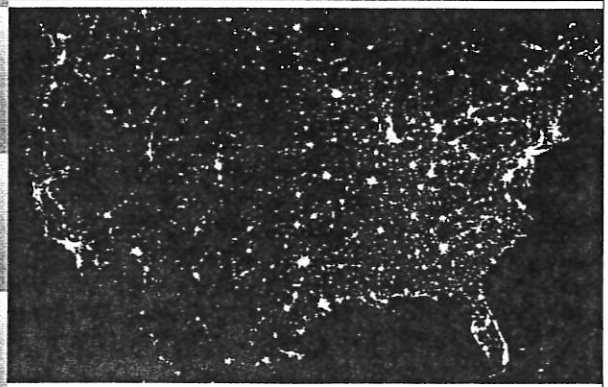
March 9, 1999

Topics of Discussion

- Areas of Focus
- Y2K Process
- Critical Systems
- EPRI, EEI, NERC Involvement
- Project Status
- Summary

Primary Area of Focus

Keeping this...



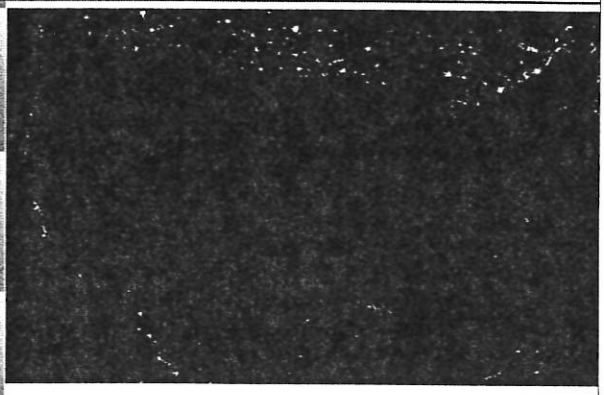
HOUSE UTILITIES

DATE: 3-9-99

ATTACHMENT 5

Primary Area of Focus

...from becoming this!



Areas of Focus

- Generation
- Transmission
- Distribution
- Support Services
  - Fleet
  - Supply Chain
  - Facilities
  - Telecommunications
  - Information Technology

Y2K Process

- Awareness
- Inventory
  - Database for tracking inventory and Y2K status
- Assessment
  - Internal
  - Vendor inquiries
- Remediation
  - Replace or upgrade equipment or software
- Testing
  - Perform testing according to procedure recommended by vendor

Y2K Process (continued)

- Clean Management
  - Develop clean management policy to ensure that systems deemed Y2K compliant are not contaminated with non-compliant hardware or software modifications after they have been certified compliant
- Contingency Planning
  - Contingency plans developed for all systems and processes identified as critical
- Frequent meetings and monthly reports submitted to the corporate Y2K project office and executive management

Critical Systems

- Generation, Transmission and Distribution protection, control and metering equipment
- Energy Management System (EMS)
- Remote Terminal Units (RTUs)
- Information Technology
- Telecommunications
- Vehicles
- Facilities
- Supply Chain

Generation, Transmission and Distribution Protection, Control and Metering Equipment

- Equipment includes: unit and breaker controls, protective relays, reclosers, regulator controls, meters, etc.
- 95% of this equipment in the field is electromechanical (no microprocessor and therefore not Y2K affected)
- Testing to date has found no Y2K issues that affect the proper operation of the devices
- Itron and MV90 meter systems are non-compliant
  - Compliant software releases available first quarter 1999

Energy Management System (EMS)

- Monitors and controls generation, transmission and distribution facilities
- Current system non-compliant
- New system has satisfactorily completed factory Y2K test
- New system is installed in Wichita and undergoing additional Y2K testing
- Scheduled cutover first quarter 1999

Remote Terminal Units (RTUs)

- Field system that collects data, controls devices and responds to data requests from the EMS
- Typically located in substations and power plants
- Approximately 270 RTUs in operation company-wide
- Majority are not Y2K affected
- Testing of those with the potential of a Y2K problem has found no Y2K issues

Telecommunications

- Telephone system
  - Compliant
- Fiber optic System
  - Compliant
- Mobile radio system (most critical)
  - Compliant
- Newbridge digital network
  - Compliant
- Digital microwave
  - Compliant
- Working closely with service providers to insure compliance

Vehicles, Facilities, Materials and IT

- Vehicles
  - No non-compliant vehicles have been identified
  - Fleet management system found to be non-compliant. Identified as critical system to MIS. Modifications will be made to bring the system into compliance first quarter 1999
- Facilities
  - Security system found to be non-compliant Scheduled to be replaced 1Q 1999
- Supply Chain
  - Compliant
- Information Technology
  - Compliant

Contingency Planning

- Plans for each area have been developed
- Next steps
  - Identify and document all Y2K Site/function coordinators
  - Identify and document all Y2K coordinators for the cities that we serve
  - Identify and document all Y2K coordinators for our major suppliers
  - Identify and document top Y2K management team
  - Identify and setup Y2K Crisis facility
  - Determine staffing plan for December 31,1999
  - Assemble and distribute Y2K Contingency Plans
  - Develop and implement training

EPRI, EEI, NERC Involvement

- We are participating in the EPRI Y2K target for generation, transmission and distribution
- Collaborative effort with utilities from across the nation
- Attend two meetings a year that feature presentations from industry experts and utility partners
- Database created from participants that contains inventory, assessment and testing information for all participants to use
- Participation in EEI and NERC Y2K activities

Project Status

- Awareness - complete
- Inventory - complete
- Assessment - 99% complete
  - Waiting on a small number of vendor responses
  - All non-critical items
  - Target first quarter 1999 completion
- Remediation - 95% complete
  - Target second quarter 1999 completion
- Testing - 85% complete
  - Target second quarter 1999 completion
  - Continuous follow-up testing

Project Status (continued)

- Contingency Planning - 98% complete
  - Target second quarter 1999 completion
- Clean Management - 50% complete
  - Target second quarter 1999 completion
- Y2K Ready - June 30, 1999

Summary

- A great deal of time and effort has been dedicated to the Y2K project
- Senior management has been directly involved in the effort and has provided all of the resources required to bring all systems, equipment and resources into compliance
- EPRI involvement has been beneficial and has shown us that we are among the leaders in the industry with regard to the Y2K effort
- We expect to be ready well before 1/1/2000
- We expect to provide continuous service to our customers
- WWW.WSTNRES.COM
- WWW.NERC.COM