

Final Y2K Report

December 10, 1999

**Prepared by
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Staff of the Colorado Public Utilities Commission**

Information in this document is designated as a Year 2000 Readiness Disclosure pursuant to federal law.

Summary

Jurisdictional electric, telecommunications, and natural gas utilities have taken every foreseeable, reasonable, and prudent action possible to be ready for the Year 2000 (Y2K) date transition. Each utility has looked at each system and component and then implemented repair and testing procedures accordingly. To provide a second level of defense, the utilities implemented contingency planning measures.

While utility service can never be guaranteed, the risks of Y2K-related disruptions due to utility system malfunction, interruption of critical services provided by others, or other unforeseen problems have been addressed. Staff will continue to work with utilities, the Governor's Task Force and the Colorado Office of Emergency Management to provide assurance that reliable utility service will be provided through the transition to the Year 2000. These utilities and government agencies cannot do it alone. The general public must do its part to ensure a smooth transition.

Staff recommends that the following guidelines be implemented to minimize Y2K risks:

- **Do not pick up the phone to see if it is working.** If you pick up the receiver to test for dial tone, the phone system reserves a portion of its limited capacity for your call to be placed.
- **Do not make unnecessary calls.** If unnecessary calls are made, capacity may not be available for emergency calls.
- **Do not dial 9-1-1 to see if it works.** You should never dial 9-1-1 in non-emergency situations. It would also be a good idea to have a list of seven- or ten-digit police, fire, and emergency medical phone numbers in case the 9-1-1 system is busy.
- **Do not use portable generators in an unsafe manner.** Consumers who have generators must be aware of their many responsibilities, including electrical connection codes, fuel storage requirements, and carbon monoxide and fire danger concerns.
- **Do prepare responsibly.** Stockpiling supplies in the last week of the year could cause a run on banks, grocery stores, and gas stations, which could contribute to civil unrest.
- **Do keep in mind that utility service can be disrupted at any time due to storms or mechanical failure.** Customers with critical service needs should prepare as they would to be prepared for outages from a winter storm. Preparedness guidelines are available from the American Red Cross. (See Attachment 1.)

Introduction

This report is the second and Final Y2K Report issued by the Colorado Public Utilities Commission (Commission) Staff, providing information about the Y2K preparedness of jurisdictional utilities. The first Staff report entitled “Interim Y2K Report” provided information

about utility preparedness as of March 24, 1999. This first document provided details about Commission actions, utility remediation, and contingency planning. Information about industry and regulatory Y2K oversight also was provided. The basics of how utility systems are impacted by Y2K, and utility actions taken to address the problem were also discussed in detail. These basic concepts are not addressed to that level of detail in this Final Y2K Report. Information received to date has affirmed the validity of the information presented in the first report. The reader is encouraged to review the Interim Y2K Report, available on the PUC website at <http://www.dora.state.co.us/puc/y2k.htm>.

Staff's Investigation

Staff's Y2K investigation began in April of 1998. The investigation required utilities to demonstrate that they were adequately addressing Y2K issues early in the process. Under the direction of the Commissioners, Staff required utilities to submit action plans and timelines detailing the remediation and contingency planning measures. This approach worked very well for two reasons. First, the reporting verified that all jurisdictional utilities understood and documented the work to be done early in the process. This enabled the utilities to adjust work schedules and budgets when necessary. Second, the method complimented, but was not redundant to, industry readiness surveys that were being established in the later part of 1998. Staff used information from the initial utility reporting, industry readiness surveys, government and other focus groups, and individual contact with specific utilities as the basis for this Final Y2K Report. A list of Y2K web sites is shown as Attachment 1.

Analysis of Utility Segments

Electric Power – General

Electric power is the primary Y2K concern for utility service because nearly all aspects of society depend directly or indirectly on power. Therefore, a large portion of Staff's investigation focused on electric power. Specifically, Staff centered its investigation on operators of generation and grid control because these are the areas where power is most susceptible to Y2K problems. The Interim Y2K Report contains a thorough discussion of electric system operation and potential Y2K impact.

Electric Power – Rural Electric Cooperatives/Municipal Utilities

The Commission fully regulates only one of the 25 Rural Electric Cooperatives (RECs) in Colorado. San Miguel Power Association, Inc., is on the National Rural Electric Cooperative Association (NRECA)'s "honor roll" list of RECs that are Y2K ready. This list is a part of the November 18, 1999 NERC report (discussed in Electric Power -- Y2K Readiness, below).

RECs do not perform any grid control or generation balancing. As such, most REC system components are not affected by Y2K problems. Staff's investigation found that distribution components are not affected by Y2K in nearly all cases. Also, the few components that were found to be affected by Y2K would not have caused service disruptions under Y2K failure. NRECA confirmed these findings in a presentation at the Western Conference of Public Service Commissioners on June 16, 1999.

Further, the grid would not be jeopardized if a distribution component failed. Utilities can correct such problems through standard repair procedures.

NRECA’s analysis is consistent with Staff’s investigation findings and affirms the Staff focus on generation and grid control.

Similarly, most municipal electric utilities do not operate grid control systems or substantial generation equipment, and can be expected to have Y2K issues similar to those of the RECs discussed above. The Commission has very limited jurisdiction over municipal utilities. Major municipal power providers are included in the North American Electric Reliability Council (NERC) Y2K oversight, as discussed below.

Electric Power – Y2K Readiness

NERC is the lead agency in Y2K oversight of electric utilities. NERC monitored the progress of the electric utilities and provided status reports on a quarterly basis.

In its August 31, 1999 report, NERC rated most utilities in the nation as “ready (R),” with the remaining utilities listed as “ready with a few limited exceptions (RE).” NERC then issued its November 18, 1999 report. This final NERC report found that nearly all utilities in the nation are Y2K ready, including all Colorado grid/generation operators. The August and November NERC readiness listings for Colorado grid/generator operators are as follows:

UTILITY	August 3, 1999 Report	November 18, 1999 Report
Colorado Springs Utilities	RE	R
Nebraska Public Power District	R	R
New Century Energies (Public Service Company)	R	R
Platte River Power Authority	*	R
Tri-State Generation and Transmission Association	RE	R
Utilicorp United (WestPlains Energy)	R	R
Western Area Power Administration	RE	R

* Not Listed

Since utilities voluntarily provided status reports, NERC performed independent Y2K reviews to verify the accuracy of the utilities’ reports. NERC randomly selected 36 of the 296

utilities to independently evaluate. Thirty-two of these evaluations were available for the November 18th report. NERC's independent review demonstrated that the NERC Y2K survey information is valid and provides a balanced view of electric utility Y2K status because 27 reports were consistent with their actual state of Y2K readiness, only 2 overstated their readiness, and 3 understated their readiness.

NERC did not select New Century Energies (NCE), the parent of Public Service Company of Colorado, to be independently reviewed. However, NCE independently hired a consultant to perform a similar review of its Y2K readiness. This consultant assessed NCE for Y2K preparedness, and found it to be at or above the industry standards established by NERC. These positive reports are particularly important since Public Service Company is the predominant grid and generation operator in Colorado.

Electric Power – September 9, 1999 Drill

On September 9, 1999, NERC sponsored an electric industry drill. NERC developed this drill as a dress rehearsal of the operating plans that are to be in place for the transition to January 1, 2000. All critical personnel were in place, and backup communications and operational control procedures were tested. The NERC drill included failure scenarios to rehearse internal utility operations and external coordination with other utilities. NERC's summary of the September 9th drill is as follows:

Three major objectives were identified to guide development, implementation, and evaluation of the drill:

1. Demonstrate the ability to effectively deploy resources and perform operating and administrative procedures related to the transition from December 31, 1999 to January 1, 2000.

2. Demonstrate, under simulated conditions of a loss of one or more primary voice or data communications systems, the ability to effectively use backup voice communication systems in support of reliable electric operations;

3. Demonstrate, under simulated Y2K conditions, the ability to effectively deploy (deployment could be simulated) elements of Y2K contingency response plans.

A full report on the drill has been delivered to DOE. The report indicates that more than 20,000 people across the United States and Canada participated in the drill at over 500 electric utilities and 1,000 facilities (control centers, power plants, and substations). Control center operators, power plant operators, substation technicians, computer technicians, and many others performed their roles in the drill as they will on December 31.

A diverse mix of contingencies and activities were simulated during the drill including:

- Loss of [grid operations] EMS/SCADA/data communications
- Use of backup control centers
- Testing black start units and walking through restoration procedures
- Some systems operating with extra generating reserves
- Simulating communications failures and backup voice systems with field personnel, power plants, control areas, and security coordinators
- Simulating loss of load, generation, and transmission
- Simulating loss of transmission reservation and scheduling systems
- Simulating loss of computer systems
- Utilities setting up emergency operations centers, storm centers, customer service centers, and media information centers
- Communicating with emergency management services.

Staff observed the drill from the Public Service Company of Colorado control center. All drill objectives were met, and NERC developed a list of “lessons learned,” most of which relate to backup radio use. NERC reported that no actual Y2K or 9/9/99 problems occurred during the conduct of the drill, and all systems worked as planned. A detailed analysis of the September 9th drill is available on the NERC website--see Attachment 1.

The Western Systems Coordinating Council (WSCC), the region of NERC that oversees the Western Grid, designed and implemented grid operating procedures and contingency plans for

the date rollover. WSCC also developed drill scenarios that were used in the September 9th drill to rehearse these contingency plans. As a final step, WSCC required all grid operators to submit their internal contingency plans to verify that the utility contingency plans were consistent with the grid operating plans.

Electric Power – Risk Assessment

As stated in the Interim Y2K Report, Staff assessed the utilities' plans and their progress towards completion of those plans to determine the overall risk of service interruption from Y2K problems. At that time, Staff found that utilities were adequately addressing the problem, but that substantial work remained.

Staff provided its assessment of the electric industry in the Interim Y2K Report as follows:

Some short-duration interruptions may occur. Individual malfunctions of distribution or transmission equipment could interrupt service in a particular area. Difficulties with grid control or generation may require temporary service interruptions to preserve system balance. Rotating blackouts may also be used to limit system load if generation or transmission capacity is substantially impacted. Under the worst-case scenario of loss of the entire Western Grid, complete system restoration would likely take at least 12 hours. Utilities are establishing detailed system restoration procedures, personnel plans and operational methodologies through the contingency planning process. Specific conditions affecting possible grid restoration time requirements cannot be predicted. Nevertheless, under reasonable worst-case scenarios, grid restoration would likely be complete in 12 to 24 hours. If other unforeseen problems occur, credible worst-case scenario analysis indicates that grid restoration may take 24 to 48 hours. After planned remediation work is complete and contingency plans are in place, there will be a moderate risk of minor electric service interruption and a small risk of loss of the entire grid.

Though this overall risk assessment remains valid, Staff is pleased to report that many electric Y2K risk factors have been reduced since April 1999 when this initial assessment was made. These reduced Y2K risk factors are as follows:

- Y2K remediation work is complete. Electric utilities completed nearly all system work by July 1999, and have since addressed the few exceptions that remained. No significant time overruns or additional problems were encountered.
- Critical transition dates, including 1/1/1999, 4/9/1999, and 9/9/1999 passed without any indication of difficulty. As stated in the Interim Y2K Report, these dates provide a foreshadowing of the date rollover of 1/1/2000.
- Many generating plants are currently operating with the clocks rolled forward, as if the date change had already occurred.
- Utilities found that fewer systems were affected by Y2K than were initially anticipated. Utilities and vendors thoroughly investigated and tested critical systems, revealing that very few components are affected by Y2K.
- Components found to be “affected” by Y2K would not cause a service disruption in many cases.. Often the components would continue to function even if the date rollover failed or was incorrect. This lower number of potential disruptions is particularly important, because initial Y2K questions raised the fear that utilities could be overwhelmed by a large number of simultaneous failures. Utility operators can maintain service through many malfunctions if they can identify the individual problems and implement alternate procedures.
- Though utilities have gone to great lengths to locate and correct all possible Y2K problems, they also have implemented and rehearsed contingency plans to address

internal problems that were missed, or interruption of external services. Additional personnel will be located throughout the systems on the date rollover to manually operate equipment that malfunctions, to provide backup (radio) communications and control if system control functions fail, and to provide additional security. Generation redundancy will be increased, and most operating personnel are prohibited from taking vacations over critical dates. These contingency plans are a key component in preventing unforeseen problems from causing outages.

Though these factors substantially reduce the risk of electricity failure due to Y2K problems, service disruptions are always possible. Civil unrest, extreme weather, or other events beyond utility control could cause disruptions in utility service.

Telecommunications – Remediation and Testing

Staff primarily focused on Y2K calling functionality in the telecommunications sector. The Public Switched Telephone Network (PSTN) is highly computerized. Therefore, the telecommunications industry implemented a comprehensive program to correct and test switch hardware and software. The multi-level remediation and testing program is complete, with results as follows:

1. **Vendor Testing.** Vendors designed and tested switch equipment and software. Vendors have completed Y2K software upgrading and testing.
2. **Utility Testing.** Large utilities tested switch software upgrades before implementation. Large utilities have completed the Y2K testing of switch software upgrades.
3. **Intra-Network Testing.** Major utilities combined their resources through the Telco Year 2000 Forum to test intra-network Y2K. The Forum members represent 90 percent of the

access lines in the United States. The Forum completed its testing in December of 1998 and reports that of 1,914 test cases, 6 Y2K anomalies were discovered and corrected.

4. **Inter-Network Testing.** The Alliance for Telecommunication Industry Solutions performed inter-network testing between local exchange carriers and inter-exchange carriers. This testing is complete, and discovered no Y2K anomalies.
5. **International.** The International Telecommunications Union has completed its international testing. It found no Y2K anomalies.

The Interim Y2K Report provides a thorough discussion of the Y2K implications on the PSTN.

Telecommunications – Completion Status

The Federal Communications Commission (FCC) and the Network Reliability and Interoperability Council (NRIC) have maintained a close watch over the Y2K completion status of the large, Regional Bell Operating Companies (RBOCs) that provide local service to the vast majority of customers in the United States. On October 20, 1999, NRIC issued the following report:

As of September 1999, 100 percent of the switches, network elements and supporting software systems in the U.S. Public Switched Telephone Network (PSTN), owned by large, Local Exchange Carriers (LECs) and large, long distance Inter-Exchange Carriers (IXCs), have been made Y2K ready.

However, the FCC and NRIC have raised concerns about the Y2K preparedness of small independent telephone companies. At the time of the Interim Y2K Report, Staff found that independent companies were taking appropriate actions to address the Y2K issue. Since FCC/NRIC did not include the independents in their readiness surveys, Staff issued a final Y2K

readiness survey to local telephone companies in November of 1999. There are 32 incumbent local exchange carriers in Colorado. Results of the survey are as follows:

- All critical elements of the Public Switched Telephone Network are Y2K ready for each of the 32 companies in Colorado.
- All other critical systems are ready for each of the 32 companies in Colorado.
- Contingency plans are in place for each of the 32 companies in Colorado.

The survey questions and a summary of the responses are shown as Attachments 2 and 3. CenturyTel and U S West Communications also provided narrative descriptions that are shown as Attachments 4 and 5.

Natural Gas

As stated in the Interim Y2K Report, gas services have the least risk of Y2K failure compared to other utility services, for the following reasons:

- Nearly all gas compression facilities move gas from the wellhead to distribution systems by using gas for fuel.
- Compressor stations have natural gas powered backup generators where power is required for system operation.
- Computer controls on the individual compressor units typically have manual override functionality.
- Compressor station operators can maintain a given set of operating parameters (*i.e.*, discharge pressure) without dispatch control if communications systems fail.

- Line pack in the piping systems can absorb momentary compression outages, and the system is not subject to the instability or instantaneous control problems associated with the electric grid.
- Utility investigations revealed that extremely few components are susceptible to Y2K failures.
- At the distribution level, “substation” type equipment and end-use metering equipment is designed to avoid widespread outages under power or control system failure. Electronic metering or other data failures could occur. However, these failures will not disrupt distribution service.

Since the initial investigation confirmed that gas distribution equipment does not have components that could cause service disruptions due to computer, power, or communications failure, Staffed focused further investigation on the transmission, compression, and dispatch control functions.

The American Gas Association and the Interstate Natural Gas Association of America performed industry Y2K readiness surveys. Results are available through their websites, as listed in Attachment 1.

In addition to the national Y2K readiness surveys and initial reporting requested as a part of Staff’s investigation, Staff maintained contact with the major gas transmission providers in Colorado to verify that Y2K issues are adequately addressed. Through this information, Staff confirmed that Colorado gas utilities are ready for Y2K.

Intangible Impacts

Colorado utilities have invested tens of millions of dollars to address Y2K issues. In addition to preventing Y2K failure as we transition into the Year 2000, this top-to-bottom system review provides intangible benefits that are worth mentioning.

First, utilities thoroughly investigated all critical systems and equipment. A few examples of non-Y2K problems that were found include degraded backup batteries and essential equipment that was not connected to backup power systems at critical sites.

The utilities also made gains in contingency planning. Utilities reviewed emergency operating procedures in detail as a part of the Y2K effort. For example, electric utilities thoroughly reviewed and updated black-start procedures. These procedures, which are necessary to re-start the system if the entire grid is lost, have never been implemented in the western United States. Y2K provided a heightened awareness of emergency procedures and an atmosphere of cooperation, enabling a top-to-bottom review of such procedures.

Finally, utilities held countless brainstorming sessions internally, and with external parties such as other utilities, fuel providers, industry groups, emergency preparedness agencies, government oversight agencies, and the public in general. Y2K provided a unique opportunity to build relationships and enhance understanding among the many interdependent entities. Overall system reliability has been strengthened through these processes.

Remaining Areas of Concern

Public reaction is the largest remaining area of concern. Civil disturbances, customer-initiated service disruptions, or extraordinary usage patterns can impact utility service reliability.

Telephone capacity is a primary issue. Phone companies are predicting record calling at midnight after the date rollover. Because systems are designed for only a percentage of phones to

be in use at the same time, capacity may not be available for all calls. To minimize the impacts of this capacity constraint, Staff recommends that businesses and individual consumers avoid making unnecessary phone calls for two hours before and after midnight of the date rollover so that capacity will be available for emergency calls. Of course, Staff recognizes that it may be necessary to maintain contact with individuals who depend on external care or who could otherwise be at risk from Y2K failure. Further, consumers should not pick up the phone to see if it is working because the phone system reserves capacity for your call to be placed when the handset is lifted.

These capacity constraints could be in the form of a noticeable delay from when you lift the handset until you hear dial tone, or you could get a busy signal after dialing. A small percentage of large customer phone systems could also have Y2K problems if the systems were not properly upgraded, but individual residential phones should be unaffected.

9-1-1 systems could also experience an unusually large number of calls, many of which may be non-emergencies. Delayed call answering or emergency service response could result from a large calling volume. First, and foremost, consumers should not call 9-1-1 to see if the system works. 9-1-1 should never be called in non-emergency situations. It is also a good idea for consumers to have a list of seven- or ten-digit police, fire, and emergency medical phone numbers in case the 9-1-1 system is busy.

Consumer power source switching is another area of concern.. If large power users switch themselves from the grid to backup generation, load fluctuations could impact utility system stability. Utilities have contacted large customers that have standby generation to coordinate system operation.

The improper connection of consumer generators can also cause safety and utility operational problems. Consumers who have generators must be aware of their many responsibilities, including electrical connection codes, fuel storage requirements, and carbon monoxide and fire danger concerns.

Finally, last-minute consumer hoarding could contribute to civil unrest. A run on banks, gas stations, and supermarkets in the last week of December could contribute to a negative public reaction. Such disturbances could make it difficult for utilities to react to system problems. Any non-Y2K related utility disruption at or near the end of the year could easily be mistaken for the beginning of a widespread Y2K failure. From time to time, utility systems fail, and problems near the date rollover should not be assumed to be Y2K related without specific verification.

Governor's Office of Emergency Management

As a precautionary measure, the Governor's Office of Emergency Management (OEM) will activate the Emergency Operations Center through the date rollover. The OEM has standard procedures in place to maintain contact with critical emergency services agencies throughout the state, through normal telecommunications paths and through backup radio equipment. Staff will assist the OEM through the transition into the new year as a part of its response coordination team. For this event, the OEM will perform the following tasks:

- Act as a liaison for local governments and other state agencies
- Act as a liaison between the Governor and the Federal Emergency Management Agency (FEMA, representative for the President of the United States)
- Coordinate priorities and prepare situation reports
- Act as lead agency for Colorado with regard to federal Y2K reporting.

Conclusion

Utilities have taken appropriate steps to prepare for the Y2K date transition. Each utility has painstakingly looked at each system and component, then implemented repair and testing procedures accordingly. Utilities then implemented contingency planning measures to provide a second level of defense. Businesses and individual consumers should be prepared for the Y2K event in the same manner that they should be prepared for utility service interruptions due to a winter storm. Guidelines are available from the American Red Cross or the President's Council-- see Attachment 1.

While utility service can never be guaranteed, the risks of Y2K-related disruptions due to utility system malfunction, interruption of critical services provided by others, or other unforeseen problems have been thoroughly addressed. Staff will continue to work with utilities, the Governor's Task Force and the Colorado Office of Emergency Management to provide assurance that reliable utility service will be provided through the transition into the next century.

This Final Y2K Report and the Interim Y2K Report are available on the PUC's website:
<http://www.dora.state.co.us/puc/y2k.htm>.

Y2K Websites

Alliance for Telecommunications Industry Solutions	http://www.atis.org
American Gas Association	http://www.aga.org
American Red Cross	http://www.redcross.org
City of Colorado Springs	http://www.csu.org/
Colorado Public Utilities Commission	http://www.dora.state.co.us/puc/y2k.htm
Federal Communications Commission	http://www.fcc.gov/year2000/
Federal Energy Regulatory Commission	http://www.ferc.fed.us/fercy2k/y2k.htm
Governor's Task Force on 2000 Readiness	http://www.state.co.us/ [Year 2000/index]
Interstate National Gas Association of America	http://www.ingaa.org
National Association. of Regulatory Utility Commissioners	http://www.naruc.org/ [Comm&Subcomm Pages/y2k task force]
National Communications System	http://www.ncs.gov/
National Regulatory Research Institute	http://www.nrri.ohio-state.edu
Network Reliability and Interoperability Council	http://www.nric.org
North American Electric Reliability Council	http://www.nerc.com/~y2k/y2k.html
Nuclear Regulatory Commission	http://www.nrc.gov/NRC/NEWS/year2000.html
Platte River Power Authority	http://www.prpa.org/y2k.htm
President's Council on Year 2000 Conversion	http://www.y2k.gov/
Public Service Company of Colorado	http://www.psc.com/y2k/default.htm
Securities Exchange Commission	http://www.sec.gov/news/home2000.htm
Small Business Administration	http://www.sba.gov/y2k
Telco Year 2000 Forum	http://www.telcoyear2000.org
Tri-state Generation and Transmission Assn.	http://www.tristategt.org
U S West	http://www.uswest.com/com/customers/year2000
Western Area Power Administration	http://www.wapa.gov/cso/y2k/y2k.htm
WestPlains/People's	http://www.utilicorp.com
NARUC Y2K Website link page	http://www.naruc.org/ [y2k links]

To: Telecommunications Utilities (ILEC's)

From: Bob Bergman, Staff Engineer

Date: November 15, 1999

**RE: Year 2000 Problem
Completion Status**

As you are aware, we issued a Y2K information request in August of 1998. All LECs provided the requested information stating their plans for remediation and contingency planning work. As a final step in the process, we are now requesting that you provide completion status of this Y2K remediation and contingency planning work.

Attached is a one-page questionnaire. Please fill out the form (with additional information if necessary) and e-mail or fax it back to me

by Monday, November 22, 1999

e-mail: bob.bergman@dora.state.co.us

fax: 303-894-2065

If you cannot provide the information by the date requested, or if you have any other questions, please call me at 303-894-2000 x 374.

Thank you for your prompt attention to this matter.

Local Exchange Carrier Y2K Survey – Due 11/22/99

Company Name _____

Date _____

Name of person responding _____

Phone _____

1. Have you completed all necessary Y2K remediation work on critical equipment associated with the Public Switched Network?

Yes

No

If no, please state what work remains, and when it will be completed

2. Have you completed all necessary Y2K remediation work on all other critical systems and equipment?

Yes

No

If no, please state what work remains, and when it will be completed

3. Are contingency plans in place? (Consistent with your response to our inquiry of August 25, 1998.)

Yes

No

If no, please state what work remains, and when it will be completed

Audit 3 – Telecom ILEC Status

Responses Due 11/22/99

Telecom (ILEC):	Date Received	In Compliance?
Agate Mutual	12/02/99	Yes
Big Sandy	11/16/99	Yes
Bijou	11/17/99	Yes
Blanca	11/16/99	Yes
CenturyTel	11/22/99	Yes*
Columbine	11/17/99	Yes
Delta County	11/22/99	Yes
Dubois	11/18/99	Yes
Eastern Slope	11/16/99	Yes
El Paso County	11/16/99	Yes
Farmer's Telephone	11/17/99	Yes
Great Plains	11/16/99	Yes
Haxtun	11/16/99	Yes
JED Enterprises (Pine)	11/16/99	Yes
Nucla-Naturita	11/17/99	Yes
Nunn	11/16/99	Yes
Peetz	11/16/99	Yes
Phillips	11/19/99	Yes
Pioneer	11/17/99	Yes
Plains	11/17/99	Yes
Rico	11/16/99	Yes
Roggen	11/16/99	Yes
Rye	11/30/99	Yes
S & T Telephone	11/22/99	Yes
South Park	11/30/99	Yes
Stoneham	11/17/99	Yes
Strasburg	11/21/99	Yes
Sunflower	11/30/99	Yes
Union	11/16/99	Yes
U S West	11/22/99	Yes**
Wiggins	11/16/99	Yes
Willard	11/16/99	Yes

* Narrative description also provided. See Attachment 4.

**Narrative description also provided. See Attachment 5.

**Excerpt from Form 10-Q
For Third Quarter 1999 Filed By CenturyTel, Inc.**

YEAR 2000 READINESS DISCLOSURE

The Year 2000 issue concerns the inability of computer systems and certain other equipment to properly recognize and process data that uses two digits rather than four to designate particular years. CenturyTel has implemented a Year 2000 Project Plan ("the Plan") to assess whether its systems that process date sensitive information will perform satisfactorily leading up to and beyond January 1, 2000. The goal of the Plan is to correct, prior to January 1, 2000, Year 2000-related problems with critical systems, the failure of which could reasonably be expected to have a material adverse effect on CenturyTel's operations. The Plan was designed to (i) identify critical system elements that require date code remediation, (ii) remediate all such systems, and (iii) selectively test the remediated systems.

All phases of the Plan have been materially completed as of early fourth quarter 1999. As discussed further below, CenturyTel believes the Plan has sufficiently identified, remediated and selectively tested critical CenturyTel-owned systems. However, because CenturyTel relies upon third parties for the delivery of critical services and because not all CenturyTel-owned remediated systems have been or will be tested under the Plan, there can be no assurance that all critical systems will properly function subsequent to December 31, 1999. CenturyTel will continue its Year 2000 monitoring efforts throughout the remainder of 1999.

The identification phase of the Plan identified Year 2000 issues in the following critical CenturyTel-owned systems: (i) switching and transmission hardware and software used by CenturyTel to route and deliver telephone calls; (ii) network support systems, including customer service systems; and (iii) billing and collection systems used by CenturyTel to invoice and process most of its customer payments. In addition, CenturyTel (i) receives critical services from providers of utilities and other services to facilities that house employees and switching, transmission and other equipment and (ii) is dependent upon outside vendors for, among other things, the provision of critical network components and cellular billing services. CenturyTel is also critically reliant upon the systems of other telecommunication carriers with which CenturyTel's systems interconnect for the routing and delivery of telephone calls. CenturyTel has also identified potential Year 2000-related liability with respect to telephone equipment manufactured by unaffiliated parties that CenturyTel has sold or leased to its customers ("Customer Premises Equipment" or "CPE").

Based on the critical systems issues identified by the Plan, CenturyTel has undertaken the following steps with respect to CenturyTel-owned systems, third-party vendors, other telecommunications carriers, and CPE customers:

- CenturyTel has remediated all identified Year 2000 deficiencies in CenturyTel-owned switching, transmission, billing and collection and other critical systems through the revision or replacement of current system components. Selective testing and verification of remediated CenturyTel-owned systems has been completed. Due to the large number of system components requiring remediation, CenturyTel has not and will not test every remediated system, but will rely upon the results of selective testing to determine the effectiveness of remediation efforts. Testing results were not verified by third parties. CenturyTel believes, however, that the remediation and testing undertaken under the Plan has sufficiently addressed Year 2000 deficiencies in CenturyTel-owned critical systems.
- With respect to critical services provided by utilities and other third parties, CenturyTel contacted all such suppliers during 1998. Thus far, a majority of those suppliers contacted have responded that their systems and service delivery mechanisms are Year 2000 compliant or can be made so through currently available modifications. CenturyTel plans to continue monitoring all third-party remediation efforts and to make contingency plans for the delivery of such services as necessary.
- CenturyTel has received certain assurances from industry trade data and governmental reports regarding the year 2000 readiness of major telecommunications companies with which CenturyTel's switching systems interconnect. During 1999, CenturyTel made specific inquiries with these and other telecommunication carriers to determine their compliance status. These carriers have informed CenturyTel that they believe they will be Year 2000 ready by year's-end, although there can be no assurance to this effect.
- Finally, CenturyTel has obtained Year 2000 compliance information from CPE manufacturers and has provided and will continue to provide this information to CenturyTel's CPE customers through year-end 1999. CenturyTel continues to work with its customers to identify Year 2000 problems in CPE. However, there can be no assurance that these efforts will be successful in preventing or reducing Year 2000-related claims.

While CenturyTel currently believes that it has remediated and selectively tested CenturyTel-owned critical systems sufficiently to minimize any detrimental effect on its operations as a result of Year 2000 problems, there can be no assurance to this effect. Failure by CenturyTel to effectively remediate its systems, or the failure of critical vendors and suppliers and other telecommunications carriers to remediate affected systems, could have a material adverse impact on CenturyTel's business, financial condition, results of operations and prospects. Because the impact of Year 2000 issues on CenturyTel is materially dependent on the mitigation efforts of parties outside CenturyTel's control, CenturyTel cannot assess with certainty the

magnitude of any such potential adverse impact. However, CenturyTel believes that the most reasonably likely worst case scenario of the failure by CenturyTel, its suppliers or other telecommunications carriers with which CenturyTel interconnects to resolve Year 2000 issues would be an inability by CenturyTel (i) to provide telecommunications services to CenturyTel's customers, (ii) to route and deliver telephone calls originating from or terminating with other telecommunications carriers, (iii) to timely and accurately process service requests and (iv) to timely and accurately bill its customers. In addition to lost earnings, these failures could also result in loss of customers due to service interruptions and billing errors, substantial claims by customers and increased expenses associated with stabilizing operations and executing mitigation plans.

Contingency planning to maintain and restore service in the event of natural disasters, power failures and systems-related problems is a routine part of CenturyTel's operations. CenturyTel believes that such contingency plans will assist CenturyTel in responding to the failure by outside service providers to successfully address Year 2000 issues. In addition, in connection with implementation of the Plan CenturyTel has identified alternate vendors and service providers and manual alternatives to system operations. These Year 2000-specific contingency plans are materially complete, but their review and development will continue throughout 1999.

In connection with implementing the Plan, CenturyTel incurred costs of \$4.2 million during 1998 (none of which was related to hardware costs or other capital items) and \$23.8 million during the first nine months of 1999 (\$16.6 million of which was related to hardware costs and other capital items). CenturyTel has approximately \$6.9 million remaining in its Plan budget (of which \$4.5 million relates to hardware costs) which will be used to fund any additional Year 2000 projects identified during the remainder of 1999. Some portion of the remaining Plan budget may be used to pay for hardware costs and other capital items incurred under the Plan, but CenturyTel believes that substantially all such costs have been identified and incurred. All costs will be expensed as incurred, except for hardware and other items that should be capitalized in accordance with generally accepted accounting principles. Some of the costs represent ongoing investment in systems upgrades, the timing of which has been accelerated in order to facilitate Year 2000 compliance. In some instances, such upgrades will position CenturyTel to provide more and better-quality services to its customers than they currently receive. CenturyTel expects to fund these costs with cash provided by operations.

Cost estimates and statements of CenturyTel's plans and expectations discussed above are forward-looking statements that are derived using numerous assumptions of future events, many of which are outside CenturyTel's control, including the availability and future cost of trained personnel and various other resources. Given the complexity of these issues and possible unidentified risks, actual results may vary materially from those anticipated and discussed above. Specific factors that might cause such differences include the failure of CenturyTel's selective testing or other initiatives to identify and remediate all Year 2000-related problems, the success of Year 2000 remedial efforts of third parties, and similar uncertainties.

U S WEST

Contingency Planning Overview

This document is intended to update you of U S WEST's efforts to minimize the impact of the Year 2000 date change as it relates to our business. We would like to share this Year 2000 information with you to keep you informed of our commitment to maintain service integrity and network reliability. We also want you to know that U S WEST is working hard to enable a smooth transition as we enter the new millennium.

Introduction to Contingency Planning at U S WEST

At U S WEST, contingency planning continues to be a significant part of our Year 2000 activities. Responding to emergencies is nothing new to U S WEST. We are called on to respond swiftly and effectively to a variety of emergency situations across our 14-state region. Tornadoes, floods, blizzards, forest fires, ice storms, and the eruption of Mount Saint Helens are a few of the natural disasters we have responded to.

Over the years, U S WEST has formalized its disaster recovery and business continuity planning process. We have teams of planners who are specialists in this field. Although we recognize the unique challenge of the Year 2000 date change, we are leveraging and building upon the rich skills and experiences of our seasoned contingency planners in addressing this issue.

Hundreds of contingency-specific documents are being updated and written across the company to give U S WEST direction in its Year 2000 contingency planning. These plans are based on the unique needs of each business unit. Due to the scope of this effort, a formal all-encompassing contingency document is neither practical nor feasible due to size.

Rather, we want to provide you with an overview of our contingency planning efforts to enrich your understanding of U S WEST's commitment to continue to offer the highest quality of products and services to our customers as we enter the next millennium.

This document will address the following large-scale contingency planning activities:

- Corporate Year 2000 risk scenarios and enhanced business continuity plans
- 56-Hour Plans—a full weekend of validation
- Year 2000 Command Center

Corporate Year 2000 Risk Scenarios and Enhanced Business Continuity Plans

A primary Year 2000 contingency strategy of U S WEST is to leverage contingency-specific resources that have been in place for several years. U S WEST will continue to use its best efforts to adapt existing business continuity and disaster recovery plans to address critical Year 2000 risk scenarios.

To identify the highest priority Year 2000 risk scenarios, U S WEST involved subject matter experts from a variety of business units in addition to reviewing information gathered by industry sources like the Network Reliability and Interoperability Council (NRIC) and Telco Year 2000 Forum members. These experts brainstormed possible large-scale risks related to the Year 2000 and tried to gauge how they may affect our business. After identifying a multitude of Year 2000 risks, these experts chose those they believed to have the greatest potential impact to the company.

Once identified, these scenarios became the Year 2000 benchmarks that existing business continuity plans are being compared against. Each business unit is using its best efforts to consider the potential impact of each scenario on its operations, critical processes, and business components. In addition to the risk scenarios chosen by our experts, each business unit is encouraged to take into account other scenarios that may apply to its specific business functions.

In order to develop comprehensive contingencies, our experts were asked to address the time frame and potential impacts to individual business units and company as a whole should the scenario come to pass.

We have completed the process of enhancing our business continuity plans to address Year 2000 risks. In so doing, U S WEST took pro-active steps to plan ahead and prepare for the potential effects of the Year 2000 as it related to our business.

56-Hour Plans

U S WEST intends to take advantage of the 56-hour period from Friday night midnight, December 31, 1999 through Monday morning 8:00 a.m., January 3, 2000 to validate that our critical business processes are working properly and running smoothly. At U S WEST, we refer to the highly detailed scripts used to validate normal business activities over the millennium weekend as 56-Hour Plans.

U S WEST has divided the company along business lines into sixteen business units and each business unit has appointed planners to develop an integrated script of activities that will be followed to validate business processes during this time period. Should Year 2000 errors occur during the 56-hour period, our modified business continuity plans will be invoked as needed.

In addition, Information Technologies will develop and direct an overall 56-Hour Plan that will verify the integrity of business processes that require interdepartmental cooperation and support.

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December 10, 1999
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As business units follow their individual 56-Hour Plans over the millennium weekend, best efforts will be used to report their status to U S WEST's Year 2000 Communication and Command Center. Their status will be tracked and shared, as needed, by personnel within the Year 2000 Communication and Command Center.

While developing their respective 56-Hour Plans, the business units are using best efforts to address the following:

- Measures of success and expected high level achievements.
- Business data on what has occurred in the past during the December 31 – January 3 period to use as a benchmark in planning.
- Scope (facilities, infrastructure, business components and business processes involved in the plan).
- The operational environment (facilities, equipment, procedures, etc.) required for 56-Hour activities.
- Staffing requirements to perform and respond to the business activities and scripts (including suppliers, service providers, and vendor representatives if required).
- Customer service expectations and plans to accommodate them.
- Performing as many get-ready activities as possible in the days prior to January 1, 2000 (i.e., backing up data, completing business cycles early, running all required reports, preparing for alternate processing capabilities, etc.).
- Shutting down systems and activities that do not have to be operational over the millennium weekend and bringing them on-line at a time when they can be validated.
- Detailed operational scripts, checklists, and expected results - which components to bring up, to what extent, by whom, which transactions to test, and in what order - beginning after midnight, January 1, 2000.
- Coordination of interface points with other business units and processes.
- Information on validating transactions between the 3 time zones (Central, Mountain, and Pacific) within our operations area.
- Communications, problem management, and progress tracking procedures – both internally and with the Year 2000 Communications and Command Center structure.
- Linkage with business continuity plans should they need to be invoked.

Year 2000 Communication and Command Center

Our objective is for U S WEST's Year 2000 Communication and Command Center to serve as the central collection point of summarized U S WEST-wide business status information for the period from December 27, 1999 through January 10, 2000.

In addition to developing individual 56-Hour Plans, each business unit will support its own command center that will track the unit's status while validation teams follow its 56-Hour Plan. Each business unit will report its status at the same time and on an ongoing basis to a central clearinghouse for information, the Year 2000 Communication and Command Center. As the Year 2000 Communication and Command Center gathers information from each of the business units, it will be summarized and posted as necessary to keep various internal audiences informed of U S WEST's Year 2000 progress.

In addition, U S WEST will use its best efforts to share appropriate status information with Telco Year 2000 Forum members and external audiences as necessary. Likewise, information that comes to U S WEST from these audiences will be disseminated to the business units as required.

The following is a list of general responsibilities that U S WEST is using its best efforts to address while determining the roles and responsibilities of the Year 2000 Communication Center:

- Understand requirements and courses of action prior to collecting, posting, and communicating 56-Hour Plan summary results and general U S WEST Year 2000 status.
- Collect 56-Hour Plan validation summaries and general business status information from each Business Unit.
- Collect significant 56-Hour Plan incidents from each Business Unit.
- Monitor that the communications and status collection process between Business Unit representatives in the Year 2000 Communications Center and their associated Business Units are running smoothly.
- Post overall U S WEST 56-Hour Plan status summary information and key business indicators for each business area and business process (e.g., percent completed, behind/ahead of schedule, number of critical issues, status of 24x7 call centers, customer service status, etc.).
- Provide periodic status summary updates to the appropriate internal U S WEST people/groups.
- Coordinate issues between Business Units as necessary.
- Review, collect, and disseminate to the appropriate Business Units Year 2000 status information from outside sources (e.g., Telco Year 2000 Forum, national and international databases, CNN, etc.).
- Post significant events (progress and problems) to U S WEST's incident and status database.
- Collect overall business status information and forward to the Communications group for packaging and further distribution.
- Provide onsite Year 2000 business status reviews with corporate leaders.
- Provide accurate and timely corporate status information to support a smooth turnover of shift responsibilities.
- Communicate corporate level decisions to Business Units.

In addition, the following are activities that will be considered to interface with national and international entities and data sources (such as Telco Year 2000 Forum Representatives):

- Understand requirements and courses of action before exchanging Year 2000 information with other entities.
- Hold periodic conference calls with Telco Year 2000 Forum members to share status information on common issues.
- Perform inquiries against other industry Year 2000 status sources (e.g., electrical, financial, international telecommunications, critical vendors, etc.).

In addition, the following are activities that will be considered to communicate with U S WEST employees, customers and stakeholders:

- Understand requirements and courses of action prior to packaging, communicating, and broadcasting U S WEST Year 2000 status and results.
- Prepare and update communiqués on the status of U S WEST business operations.
- Provide periodic status summary updates to the appropriate internal U S WEST people/groups.
- Utilize public relations, public policy, and public affairs personnel at a variety of locations to provide information and handle inquiries at the state and local level (e.g., cities, counties, governmental agencies, etc.).
- Pass communiqués to public relations and public policy groups at external locations in order to provide a consistent Year 2000 status message to external interests having a need to know.
- Provide 1-800, voice recorder, or similar customer and employee information capabilities.