

**BEFORE THE STATE CORPORATION COMMISSION
OF THE STATE OF KANSAS**

**DIRECT TESTIMONY
OF
CAROLINE A. WILLIAMS
WESTAR ENERGY**

DOCKET NO. 08-WSEE-1041-RTS

I. INTRODUCTION

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Q. PLEASE STATE YOUR NAME AND BUSINESS ADDRESS.

A. Caroline A. Williams, 100 N. Broadway, Suite 800, Wichita, KS
67201.

Q. BY WHOM AND IN WHAT CAPACITY ARE YOU EMPLOYED?

A. Westar Energy, Inc., Vice President, Distribution, Power Delivery.

**Q. PLEASE DESCRIBE YOUR EDUCATIONAL BACKGROUND
AND PROFESSIONAL EXPERIENCE.**

A. I received a BS degree in Human Resources in 1998 and an MS
degree in Organizational Development in 2003 from Friends
University. I began my career with Kansas Gas and Electric
Company (KG&E) in 1975. Positions I have held include Manager,
Customer Services, Manager, Walk-In Services, Manager, Training

1 Services, Manager, Customer Relations, Director, Customer
2 Account Services, Executive Director, Customer Service, and Vice
3 President, Customer Service. I assumed the position of Vice
4 President, Distribution Power Delivery in 2006.

5 **Q. WHAT IS THE PURPOSE OF YOUR TESTIMONY?**

6 A. My testimony: (a) describes Westar's power restoration after the
7 December 2007 ice storm; (b) describes Westar's efforts to provide
8 reliable power to our customers; (c) discusses the challenges we
9 are addressing to continue to provide reliable service; and (d)
10 outlines the need to increase funding for additional tree trimming.

11 **II. 2007 ICE STORM**

12 **Q. PLEASE PROVIDE AN OVERVIEW OF CONDITIONS AS THEY**
13 **UNFOLDED IN THE EARLY DAYS OF THE ICE STORM.**

14 A. Early Sunday morning on December 9, 2007, freezing rain from a
15 major winter storm system hit Southeast Kansas. A second wave
16 of freezing rain from the storm system began to affect a broad area
17 encompassing South Central, North Central and Northeast Kansas.
18 Storm related outages first appeared in the Pittsburg and Parsons
19 areas on Sunday. This was followed by outages stretching from
20 the Kansas-Oklahoma border north to the Nebraska border and
21 east to the Missouri border. Fortunately, the heaviest concentration
22 of freezing rain did not hit the Wichita or Johnson County areas.
23 Otherwise, the number of customer outages would have been

1 higher and recovery efforts likely would have been extended.
2 Nevertheless, electricity service was interrupted to more than 30%
3 of our customers.

4 **Q. WOULD YOU PLEASE DESCRIBE THE EFFORTS TO RESTORE**
5 **POWER TO CUSTOMERS?**

6 A. Yes. Prior to Sunday, December 9, 2007, we knew that a major
7 storm was developing that could affect much of our service territory
8 and the state of Kansas. What we did not know at that time was
9 the exact path of the storm. The first wave hit Pittsburg and
10 Parsons in Southeast Kansas. A second wave was developing with
11 the likelihood it would hit additional areas of our service territory.

12 Anticipating the second wave, we decided on Sunday
13 afternoon to activate Westar's Crisis Center. Crews were
14 dispatched from Wichita and Shawnee, Kansas, to Southeast
15 Kansas to assist in restoration efforts there while the crews in North
16 Central and Northeast Kansas were held in standby awaiting the
17 developing second wave. In addition, from the Crisis Center, we
18 began efforts to contact suppliers, contractors and other utilities to
19 provide assistance if the storm effects were severe. Westar and
20 other utilities in our area are members of the Midwest Mutual
21 Assistance Organization – a group of utilities that voluntarily assist
22 their peers in restoring service after major storms or other
23 disasters. Due to the path of the initial wave of the storm on

1 Saturday and Sunday, we could not call upon the Oklahoma utilities
2 as their service areas suffered severe damage. Other Midwestern
3 utilities were not releasing their crews until the storm passed their
4 service areas.

5 As the second wave of the storm intensified on Monday, the
6 breadth of the impacted area became more apparent. Our crews
7 and available contractors were struggling to keep up with the
8 situation, recognizing that it would likely get worse. The storm
9 swept through the service territory and by Tuesday morning, we
10 had nearly 120,000 customers without service. On Tuesday and
11 Wednesday, contract crews from other areas were arriving in large
12 numbers – the first to arrive were largely tree trimming line
13 clearance crews followed by line worker crews. Damage
14 assessment continued for most of the week. Restoration efforts
15 were focused on the critical components needed to restore service
16 to the largest number of customers. Typically, this means that
17 transmission lines and/or substations will receive the greatest initial
18 focus. We then concentrate on primary distribution circuits, then
19 secondary distribution circuits, and finally service lines and street
20 light circuits.

21 Restoration progressed throughout the week and into the
22 early part of the second week. We had nearly 4,300 individuals,
23 including company employees, other utilities' personnel, utility

1 contractors and tree trimming line clearance contractors assisting in
2 restoration efforts during the storm. The assistance came from 20
3 states (plus Kansas) – most of them in the Midwest but also
4 including North Carolina and Wyoming. Near the end of the
5 restoration efforts, remaining customers still without electric service
6 were often at the end of two or more miles of distribution line that
7 needed to be totally rebuilt in order to connect a few customers.

8 Ice storms, by their nature, cause difficult and hazardous
9 working conditions for our crews. The extreme working conditions
10 required extra effort for crews to perform their work efficiently and
11 safely. The daily normal shift was 16 hours. In many cases, we
12 hired contractors to provide track vehicles to tow or push our line
13 trucks through muddy fields to reach the areas in need of
14 restoration.

15 **Q. CAN YOU COMPARE THIS 2007 ICE STORM TO THE 2005 ICE**
16 **STORM?**

17 A. Yes. I have attached as Exhibit CAW-1, Westar Energy December
18 2007 Ice Storm Presentation. Included in this exhibit, is a
19 comparison of the 2005 ice storm to the 2007 ice storm. Page 11
20 in the exhibit lists the system elements that were affected by the
21 storms. Page 18 details the number of personnel by type that
22 assisted in the restoration efforts.

1 **Q. PLEASE POINT OUT MAJOR DIFFERENCES BETWEEN THE**
2 **2005 ICE STORM AND THE 2007 ICE STORM.**

3 A. First, the 2007 storm impacted a larger, more rural area. The 2005
4 ice storm impacted a 50-mile radius around and including Wichita.
5 By contrast, the 2007 ice storm covered several thousand square
6 miles (approximately 30 miles wide by 150 miles long) of rural
7 Kansas served by Westar. The large affected area and rural nature
8 of the 2007 storm brought challenges not seen in the 2005 storm in
9 the form of staging crews to perform work, arranging lodging and
10 warm meals and handling the logistical requirements of assuring
11 the availability of adequate material to perform the tasks necessary
12 to restore service over a very broad area.

13 Second, the 2007 storm caused more damage to our
14 transmission system than the 2005 storm and, in particular,
15 substantial damage to our 34.5 kV lines.

16 Third, there were fewer service lines (services) in need of
17 repair but more poles were replaced in the 2007 storm than in the
18 2005 storm. Finally, the number of hours worked in the restoration
19 effort in 2007 (531,121 hours) exceeded the 2005 storm (372,000
20 hours) even though the number of customers impacted in the 2005
21 storm was greater. All of this is a reflection of the larger and more
22 rural character of the impacted area in 2007

1 **Q. YOU REFERENCED THE OPENING OF WESTAR’S CRISIS**
2 **CENTER. PLEASE DESCRIBE THE CRISIS CENTER AND THE**
3 **ROLE IT PLAYS IN RESTORING SERVICE DURING MAJOR**
4 **STORMS.**

5 A. The Crisis Center becomes the operational command center during
6 major storms. For the 2007 storm, it was located at our general
7 office in Topeka. The Crisis Center is staffed to coordinate major
8 restoration efforts and provide support services to field personnel.
9 Certain Westar personnel are tasked to locate and arrange for tree
10 trimming line crews, line worker crews, and materials, including
11 poles and conductors, necessary for the restoration effort. Others
12 coordinate damage assessment activities and coordinate and
13 arrange for crew requirements, including lodging and meals. Still
14 others coordinate communications with the media, governmental
15 agencies including the KCC, the Governor’s office and the state
16 Emergency Operations Center. To coordinate the communication
17 between Westar and the State, we had a representative from the
18 State Emergency Office located in the Westar Crisis Center.
19 Additionally, a Westar Energy representative was located at the
20 State Emergency Operations Center for the duration of the storm.
21 During the 2007 ice storm, the Director, Reliability and Resource
22 Scheduling managed the Crisis Center, with the assistance of the

1 Director, Distribution/Substations Construction. Once activated, the
2 Crisis Center is staffed 24 hours a day for as long as necessary.

3 **III. DISTRIBUTION POWER DELIVERY**

4 **Q. WHAT OBJECTIVES UNDERLIE WESTAR'S DISTRIBUTION**
5 **POWER DELIVERY INITIATIVES?**

6 A. As a KCC-certificated retail electric public utility, Westar has a
7 responsibility to provide safe and reliable service to our customers.
8 The Mission, Vision and Values of Westar Energy provide direction
9 to our Distribution Power Delivery initiatives. Our Mission
10 Statement says, "Westar Energy provides safe, reliable, high
11 quality electric service at a reasonable cost to all customers." Our
12 goal in Distribution Power Delivery is to provide reliable electric
13 service to our customers and to do so efficiently. We understand
14 that customers depend on us to provide electricity for comfort in
15 their homes and energy to power their businesses.

16 **Q. HOW DO YOU MEASURE WESTAR'S PERFORMANCE IN**
17 **PROVIDING RELIABLE ELECTRIC SERVICE TO CUSTOMERS?**

18 A. We utilize various metrics common to electric utility companies.
19 Two industry-wide metrics are System Average Interruption
20 Duration Index (SAIDI) and System Average Interruption Frequency
21 Index (SAIFI). SAIDI reflects the time, measured in minutes, that
22 customers on average are interrupted during the reporting period.
23 It is calculated by dividing the sum of customer minutes of

1 interruption by the total number of customers served. SAIFI reflects
2 the average frequency of sustained interruptions per customer
3 during the reporting period. It is calculated by dividing the total
4 number of sustained customer interruptions by the total number of
5 customers served.

6 **Q. HAS WESTAR IMPROVED RELIABILITY AS MEASURED BY**
7 **THESE TWO METRICS?**

8 A. Yes. In 2001 and 2002, Westar's reliability performance as
9 measured by SAIDI and SAIFI were in the third and fourth quartile
10 respectively, compared with other investor-owned utilities. Year-
11 end 2007 performance had improved to high second quartile
12 performance for SAIDI and high third quartile performance for
13 SAIFI. Figures 1 and 2 below show the significant improvement in
14 our SAIDI and SAIFI performance over the 2001 to 2007 period.
15 This represents a reduction from 2001 to 2007 of 29.1% in
16 customer minutes of interruption (39.6 million fewer customer
17 minutes of interruption) and 34.6% in customers interrupted
18 (370,000 fewer customers interrupted).

FIGURE 1

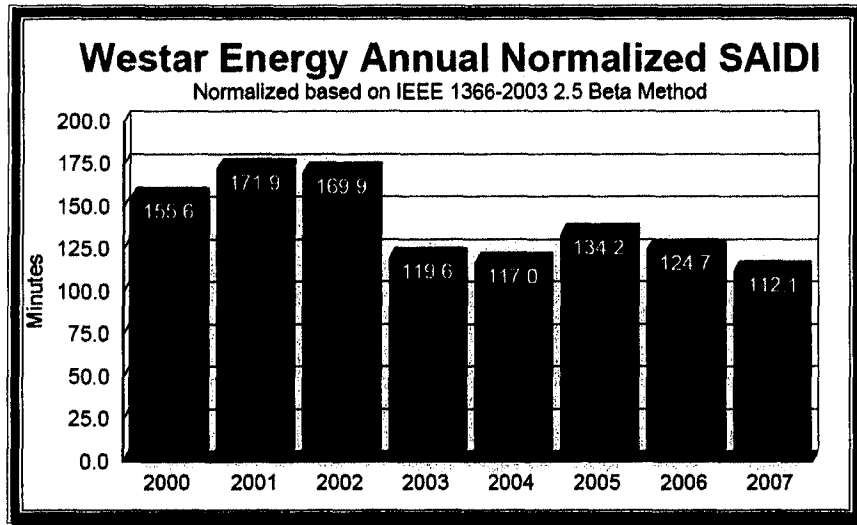
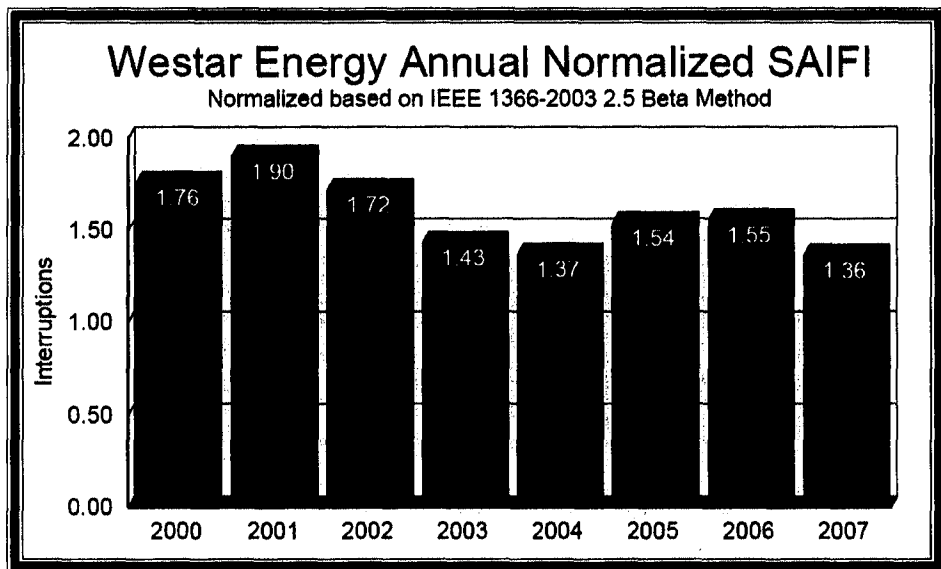


FIGURE 2



- 1 Q. WHAT HAS WESTAR DONE TO IMPROVE RELIABILITY OF
2 ELECTRIC SERVICE IT PROVIDES?

1 A. Two important programs contributed to our success in improving
2 SAIDI and SAIFI. They were 1) continued emphasis on vegetation
3 management, primarily tree-trimming, see Exhibit CAW-2,
4 Distribution Vegetation Management Program and 2) identifying
5 and targeting our worst performing areas for improvement.

6 In 2004, we embarked on a five-year Reliability Strategic
7 Plan. The initial phase of the Plan focused on:

- 8 • Upgrading coordination on selected circuits;
- 9 • Completing visual and infrared inspections and
10 subsequent repairs on the worst performing circuits with
11 the highest incidences of equipment failure;
- 12 • Installing remote-controlled mid-circuit reclosers; and
- 13 • Completing a wide range of specific activities to improve
14 reliability on the 100 worst performing circuits.

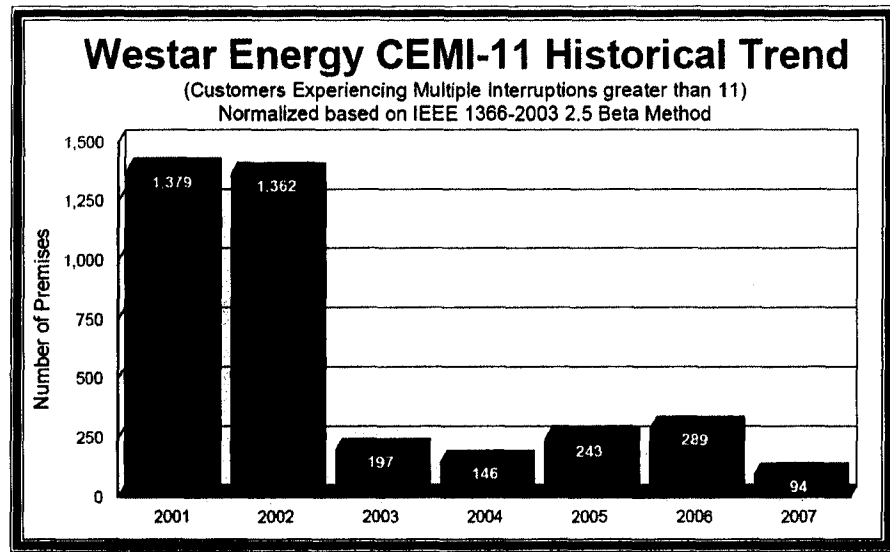
15 These measures and our continued focus on vegetation
16 management have been the primary components of our reliability
17 efforts over the last five years.

18 **Q. ARE THERE OTHER MEASURES YOU USE TO DETERMINE**
19 **THE RELIABILITY OF WESTAR'S SERVICE?**

20 A. Yes. Another metric we track is CEMI (Customers Experiencing
21 Multiple Interruptions). In 2001, Westar had more than 1,300
22 customers who experienced more than 11 sustained interruptions
23 in a 12-month period (CEMI-11). By year-end 2007, we reduced

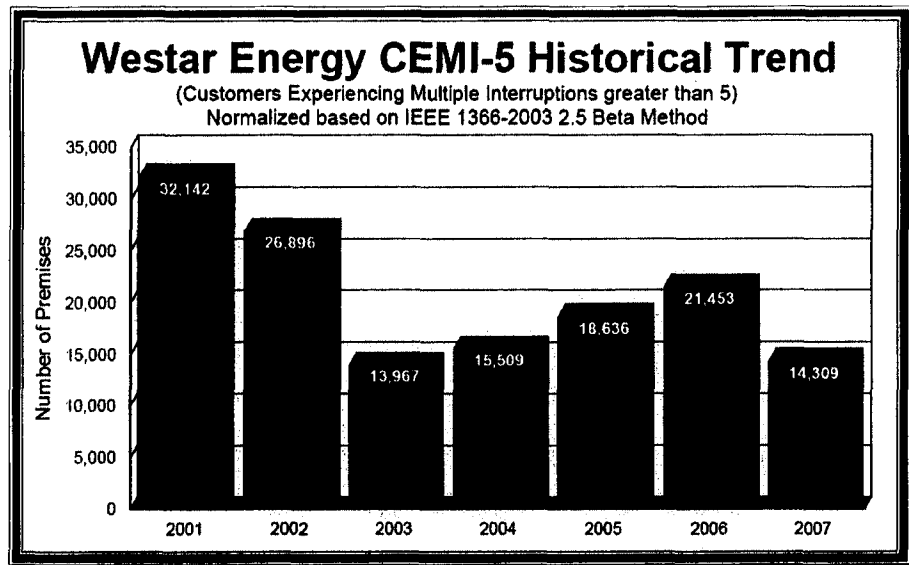
1 that number to fewer than 100 customers. Figure 3 shows the
2 CEMI-11 improvement from 2001 to 2007. We believe this success
3 is a direct result of our vegetation management effort and the focus
4 on improving the worst performing areas.

FIGURE 3



5 As a consequence of reducing the CEMI-11 number of
6 customers, we then shifted our primary measurement standard to
7 CEMI-9, customers experiencing more than nine sustained outages
8 in a year and directed our reliability programs toward reducing that
9 number. Now, the increased focus is moving toward eliminating
10 multiple interruptions for the CEMI-5, customers experiencing more
11 than five sustained outages. The results of this effort are shown in
12 Figure 4. At year-end 2007, CEMI-5 was reduced to 2.2% of the
13 customers served from a level of over 5.0% at year-end 2001.

FIGURE 4



1 **Q. HAVE YOU IMPLEMENTED OTHER PROGRAMS TO PROVIDE**
2 **MORE RELIABLE SERVICE?**

3 A. Yes. We continue to review and implement changes to our
4 management process. In late 2006 and early 2007, we reorganized
5 Distribution Power Delivery to better utilize the talents of our
6 people. We modified our processes and procedures to gain
7 efficiencies.

8 Historically, our organizational structure was divided into
9 self-contained divisions that took care of all the work from the
10 smallest service order to the largest major feeder line construction
11 job, including planning and contracting functions. This vertical
12 approach has been commonly practiced in the utility industry.
13 However, we believed we could achieve efficiencies by
14 reorganizing into three major functional areas: Division operations

1 devoted to local customer response, outage restoration, and minor
2 maintenance and repair; centralized engineering, construction, and
3 maintenance focusing on designing and managing major
4 construction and maintenance projects; and reliability and resource
5 scheduling, concentrating on company-wide reliability and
6 infrastructure strategy, and resource acquisition and scheduling.
7 These functional groups work interdependently, concentrating on
8 their particular focus while cooperating and collaborating on
9 common consistent goals.

10 This organizational approach has been successful. By
11 concentrating customer service efforts in the divisions without the
12 distraction of major project management, we created efficiencies
13 with our use of company resources and redirected those resources
14 to reliability improvements. The reorganization allowed us to
15 complete our customer and system responsibilities and improve our
16 SAIDI, SAIFI, and CEMI reliability statistics. Additionally, we are
17 reviewing new information systems that have the potential of
18 improving our overall efficiencies.

19 **Q. YOU STATED THE RELIABILITY PLAN WAS A FIVE-YEAR**
20 **PLAN. WHAT ARE THE CHALLENGES WESTAR FACES IN**
21 **MAINTAINING THE MOMENTUM ACHIEVED IN IMPROVING**
22 **SEVICE RELIABILITY?**

1 A. We face many challenges to continue the momentum we have
2 achieved under our Reliability Strategic Plan and reorganization
3 efforts. Vegetation Management continues to be a challenge.
4 Also, Westar, like many electric utilities across the nation, faces the
5 challenges presented by aging equipment and infrastructure.

6 **Q. HOW DOES WESTAR PLAN ON MEETING THOSE**
7 **CHALLENGES?**

8 A. We believe the primary focus should continue to be vegetation
9 management. We are now in year 11 of our vegetation
10 management program and our desire is to be on a four-year
11 urban/five-year rural program that is an Electric Utility Industry best
12 practice. Currently, our pruning efforts remove four years of
13 vegetation re-growth on urban circuits and five years of vegetation
14 re-growth on rural circuits. At our current program levels, it would
15 take 13 years before all circuits are completed. Our vegetation
16 management program work plan is prioritized based on customers
17 affected by tree outages and public safety.

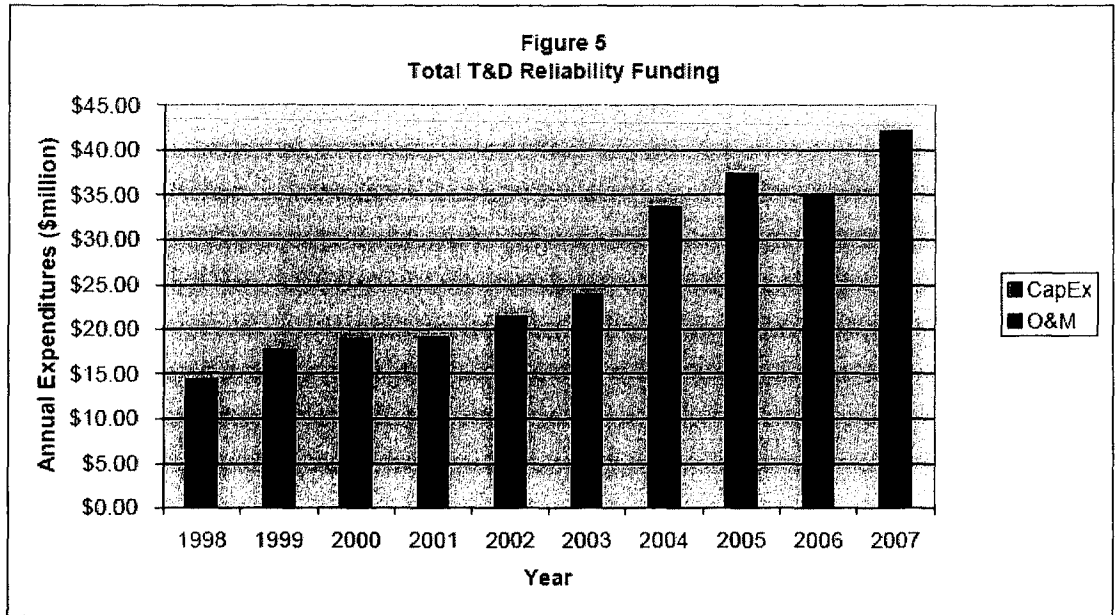
18 Prospectively, a key feature of Westar's reliability programs
19 will be to reduce the stress on facilities that results from repeated
20 physical contact and electrical faults, typically caused by trees and
21 the wildlife living in them. Our goal is to achieve a more industry-
22 common routine cycle for line clearance. By doing so, we believe
23 we can ultimately reduce ongoing costs for vegetation management

1 over the long-term. But it will take a substantial additional
2 investment in the next few years.

3 Regarding aging infrastructure, we will continue with the four
4 initiatives in our Reliability Strategic Plan implemented in 2004.
5 Our first obligation was to show we could structure programs and
6 implement processes to focus our people on reliability with the end
7 result of better customer service. We have done that. We want to
8 continue this momentum, but it will be essential that we have
9 adequate financial resources to do so.

10 **Q. HOW MUCH DOES WESTAR SPEND TO PROVIDE RELIABLE**
11 **SERVICE TO ITS ELECTRIC CUSTOMERS?**

12 A. Westar spent a total of \$42.1 million in 2007 on all facets of our
13 reliability improvement plans. See Figure 5 below. The largest item
14 was for distribution maintenance-related tree trimming with
15 annualized expenditures of \$18.7 million. In addition, we spent
16 approximately \$5.9 million in transmission maintenance-related tree
17 trimming last year. Even with this level of spending we are not
18 where we want to be in providing reliable service or where we
19 believe our customers want us to be in providing reliable service.



1 **Q. YOU MENTIONED MOVING TO A FOUR-YEAR URBAN/FIVE-**
 2 **YEAR RURAL PROGRAM FOR VEGETATION MANAGEMENT.**
 3 **HOW ARE YOU PROPOSING TO ACHIEVE THIS ENHANCED**
 4 **PROGRAM?**

5 A. I am proposing and sponsoring an adjustment to permit Westar to
 6 move initially toward a seven-year urban/eight-year rural line
 7 clearance plan. We believe that this will allow us to transition to a
 8 future four-year urban/five-year rural tree-trimming program. We
 9 believe that with additional funding, the vegetation management
 10 Program can achieve a seven-year urban/eight-year rural line
 11 clearance plan. This will require an additional \$10.1 million per
 12 year over 2007 expenditures sustained for eight years. This figure
 13 includes an inflation adjustment of \$0.6 million (2008 dollars) and
 14 \$9.5 of new funding.

1 A four-year urban/five-year rural program would require an
2 additional \$23.7 million per year annualized for five years, including
3 an inflation adjustment of \$0.6 million (2008 dollars) and \$23.1
4 million required to fund this plan over the 2007 expenditures. That
5 approach would require Westar to double the number of line
6 clearance contractors in a short period of time and may not be
7 realistic or achievable.

8 The benefit of a four-year urban/five-year rural program is
9 that after the first cycle is complete, expenditures would return to
10 2007 levels adjusted for inflation. The seven-year urban/eight-year
11 rural plan would require us to remain at elevated crew strength due
12 to the additional three years of tree growth over a four-year
13 urban/five-year rural program. Another benefit of a four-year
14 urban/five-year rural program is that our customers will see
15 improved service reliability more quickly than under a seven-year
16 urban/eight-year rural plan. We will work with the Commission Staff
17 to report progress on the seven-year urban/eight-year rural plan
18 from initiation through completion. I respectfully urge the
19 Commission to approve this funding to implement this vegetation
20 management program. Again, we should reiterate the importance
21 of vegetation management and its relationship with aging
22 equipment, infrastructure strategy and public safety.

1 **Q. WHY IS IT IMPORTANT TO ACHIEVE A SEVEN-YEAR**
2 **URBAN/EIGHT-YEAR RURAL TREE TRIMMING PLAN?**

3 A. As mentioned above, we are in year 11 of an effort to maintain
4 proper line clearance from vegetation. Achieving and maintaining
5 line clearance improves system reliability by reducing outages
6 caused by trees and animals. Moreover, after the last two ice
7 storms, customers on circuits that had recently been cleared of
8 vegetation experienced fewer sustained interruptions and the
9 interruptions that did occur were shorter in duration. The circuits
10 that were not cleared sustained heavy damage from trees falling
11 from the weight of the ice, which lengthened the customers'
12 interruption duration and significantly increased the cost of
13 restoration.

14 Circuits that have been properly cleared of vegetation have
15 very few tree outages and the outages that occur are mostly from
16 tree breakage from outside of the clearance zone. Additionally, the
17 incidences of animal-caused outages have been shown to be
18 reduced to about 25% of the pre-trimming levels.

19 **Q. HOW WILL YOUR PROGRAM AFFECT WESTAR'S**
20 **OPERATIONS?**

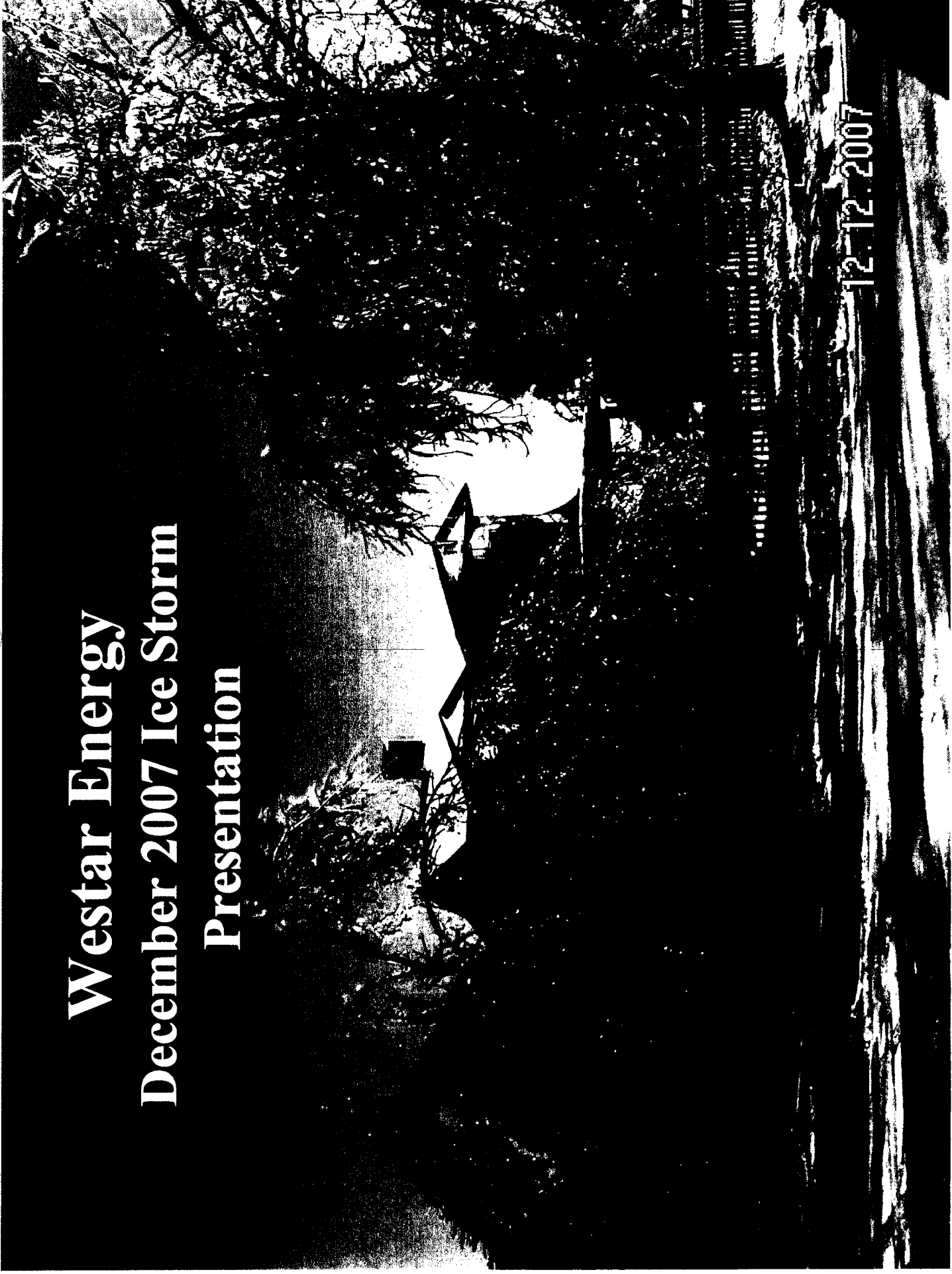
21 A. When the enhanced program for which we are requesting funding
22 is completed, service reliability will be significantly increased and

1 chances of the general public contacting the electric lines will be
2 significantly reduced.

3 As I previously discussed, we face the challenge of aging
4 infrastructure. The first course of action to tackle this issue is to
5 have a robust vegetation management program. Sometimes
6 outages that appear to be caused by equipment failure are in fact
7 caused by repeated contact between tree limbs and lines or other
8 equipment. Once we are on a more robust vegetation
9 management program, the “true” infrastructure issues will be more
10 identifiable and repairable. With this information we can plan a
11 systematic strategy to address the remaining reliability challenges.

12 **Q. THANK YOU.**

Westar Energy December 2007 Ice Storm Presentation



12-12-2007

Storm Overview

- ★ December 9th 2:00 A.M. – First wave hits SE Kansas region.
 - ★ SE KS crews along with Wichita, Newton, El Dorado, Ark City, Shawnee and contractor crews started restoration efforts.
- ★ December 10th 6:00 P.M. – Second wave hits all other regions of the company.
- ★ December 20th – All customers that could receive power are restored.

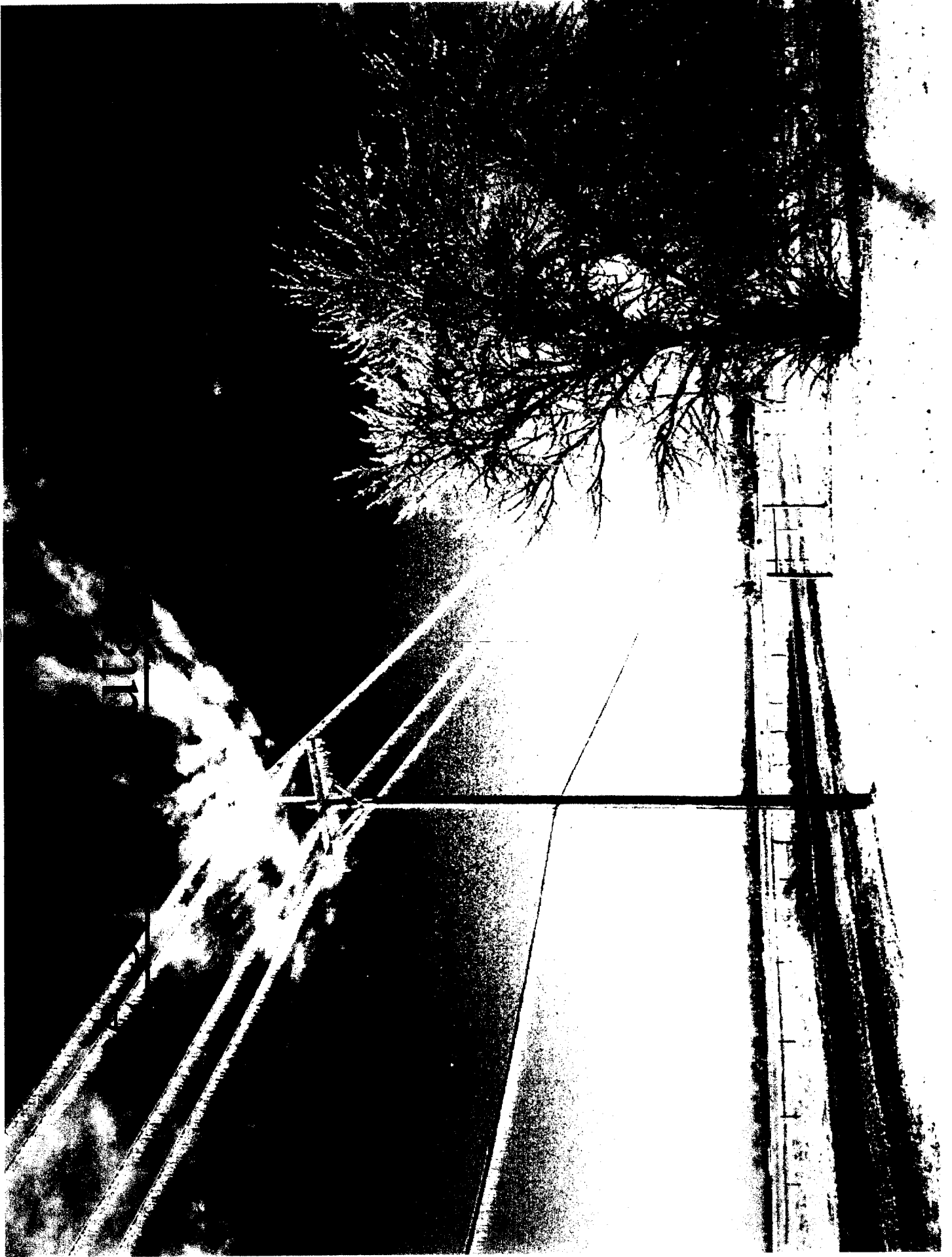
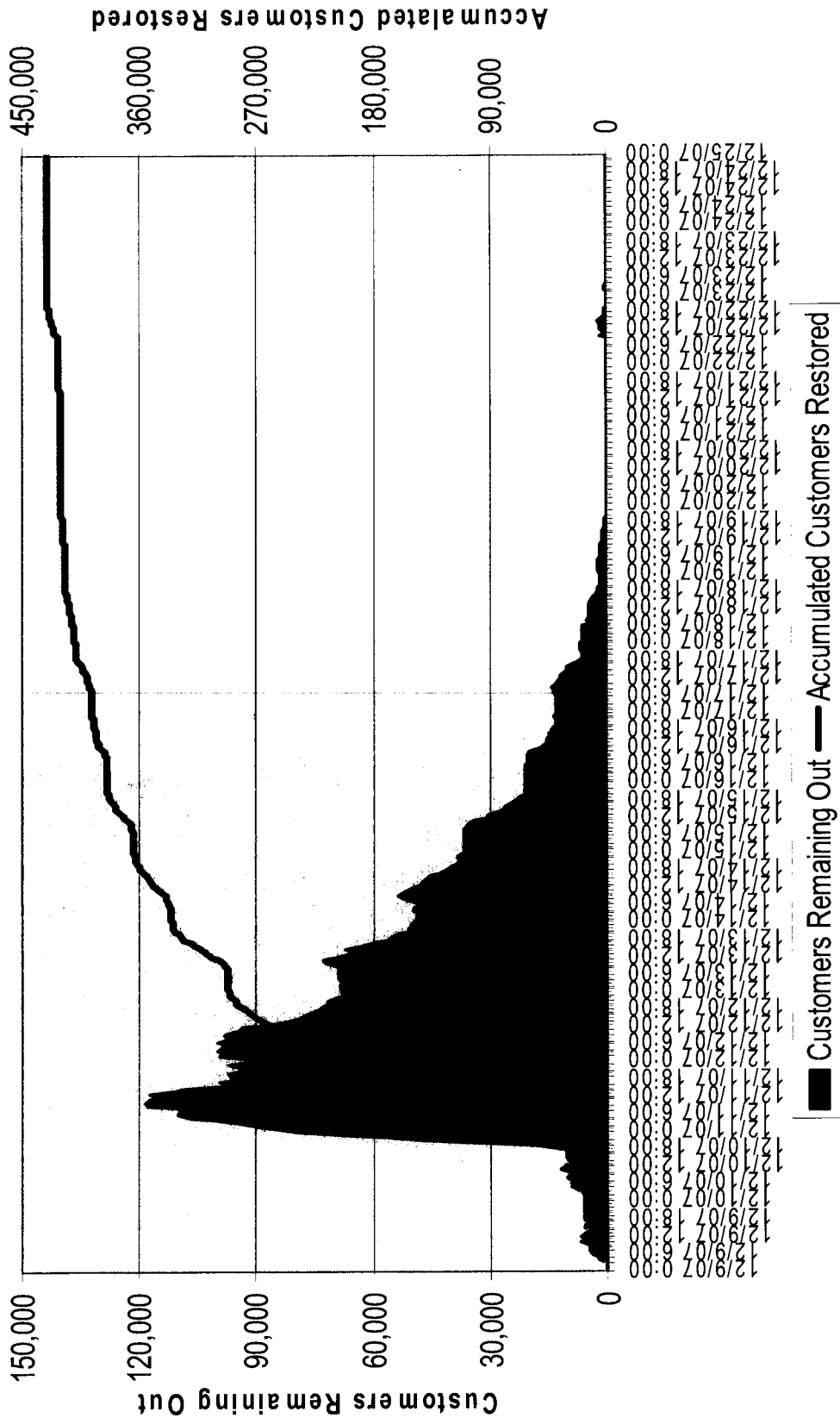


Exhibit CAW-1

Kansas: 12/11/2007 1-Day Observed Precipitation.



December 2007 Ice Storm Total Customers Restored & Customers Remaining Out, All Westar



Customers Out (over 5 minutes) between 12/9/2007 and 12/17/2007

Serving Office Name	Serving Office Customers	Unique Customers Out	Customers-Interrupted	Unique percent Out
HIAWATHA, KS	4,173	4,128	10,259	98.9%
ABILENE, KS	8,642	8,482	22,796	98.1%
JUNCTION CITY, KS	11,222	10,014	17,319	89.2%
MANHATTAN, KS	30,936	26,696	70,572	86.3%
ATCHISON, KS	10,501	8,440	18,783	80.4%
MARYSVILLE, KS	7,626	6,120	12,416	80.3%
PITTSBURG, KS	16,076	12,553	34,679	78.1%
HUTCHINSON, KS	27,602	20,660	44,822	74.8%
SALINA, KS	28,612	19,946	43,872	69.7%
LEAVENWORTH, KS	21,114	7,663	16,079	36.3%
TOPEKA, KS	87,867	30,641	55,879	34.9%
ARKANSAS CITY, KS	10,398	3,141	3,421	30.2%
LAWRENCE, KS	47,283	12,001	15,157	25.4%
OLATHE, KS	37,349	7,996	10,421	21.4%
EMPORIA, KS	24,968	5,179	8,705	20.7%
NEWTON, KS	19,388	3,699	6,709	19.1%
PARSONS, KS	9,305	1,709	6,940	18.4%
EL DORADO, KS	13,747	1,885	2,132	13.7%
WICHITA, KS	224,482	12,794	13,622	5.7%
INDEPENDENCE, KS	11,930	242	243	2.0%
CHERRYVALE, KS	1,484	16	16	1.1%
FT. SCOTT, KS	6,382	3	3	0.0%
HUMBOLDT, KS	5,023	2	2	0.0%
Grand Total	666,110	204,010	414,847	30.6%

note: "Unique Customers Out" and "Unique Percent Out" +/- 2%





Exhibit CAW-1



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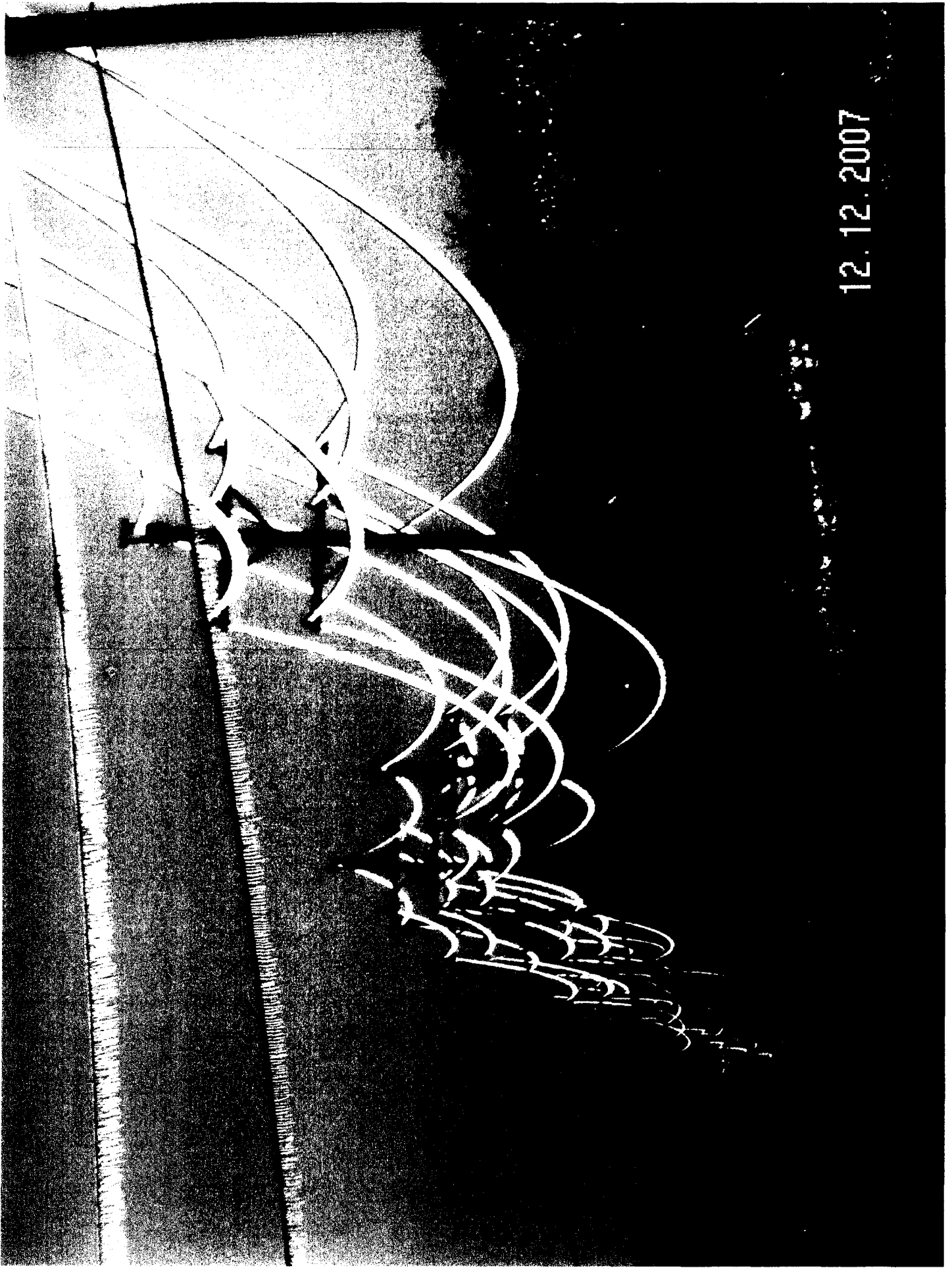


Exhibit CAW-1

January '05 & December '07

Ice Storm Comparisons

<u>Affected system elements:</u>	<u>2005</u>	<u>2007</u>
– Transmission circuits	20	82
– Substation equipment failures	5	3
– Distribution circuits	231	560
– Primary/secondary spans down	5,000	7,872
– Services repaired	27,429	17,965
– Poles replaced	982	2,090
• Transmission	0	29
– Laterals refused	3,000	1,684
– Transformers refused	5,600	3,717
– Transformers replaced	499	165
Hours worked	372,000	531,121



12.12.2007

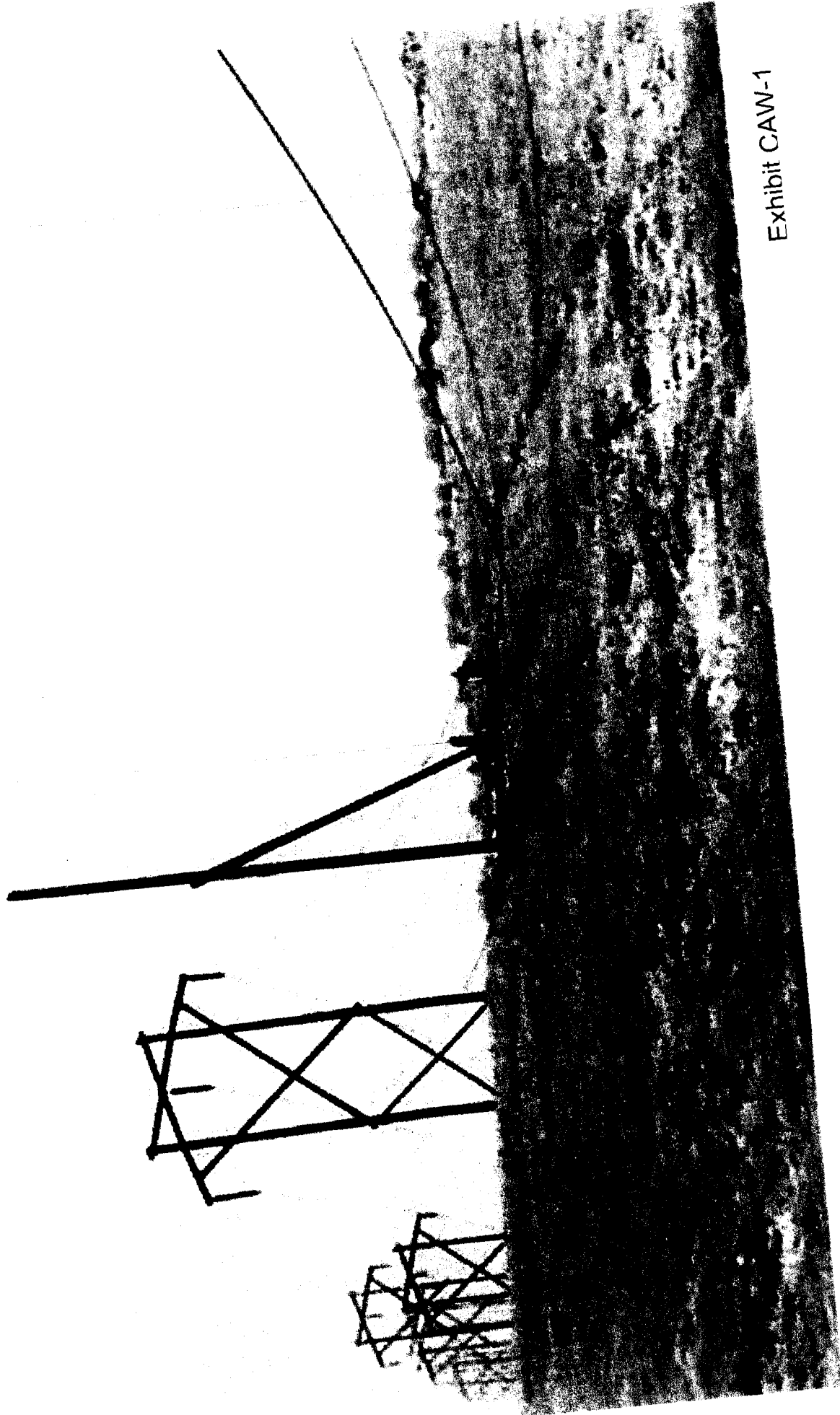


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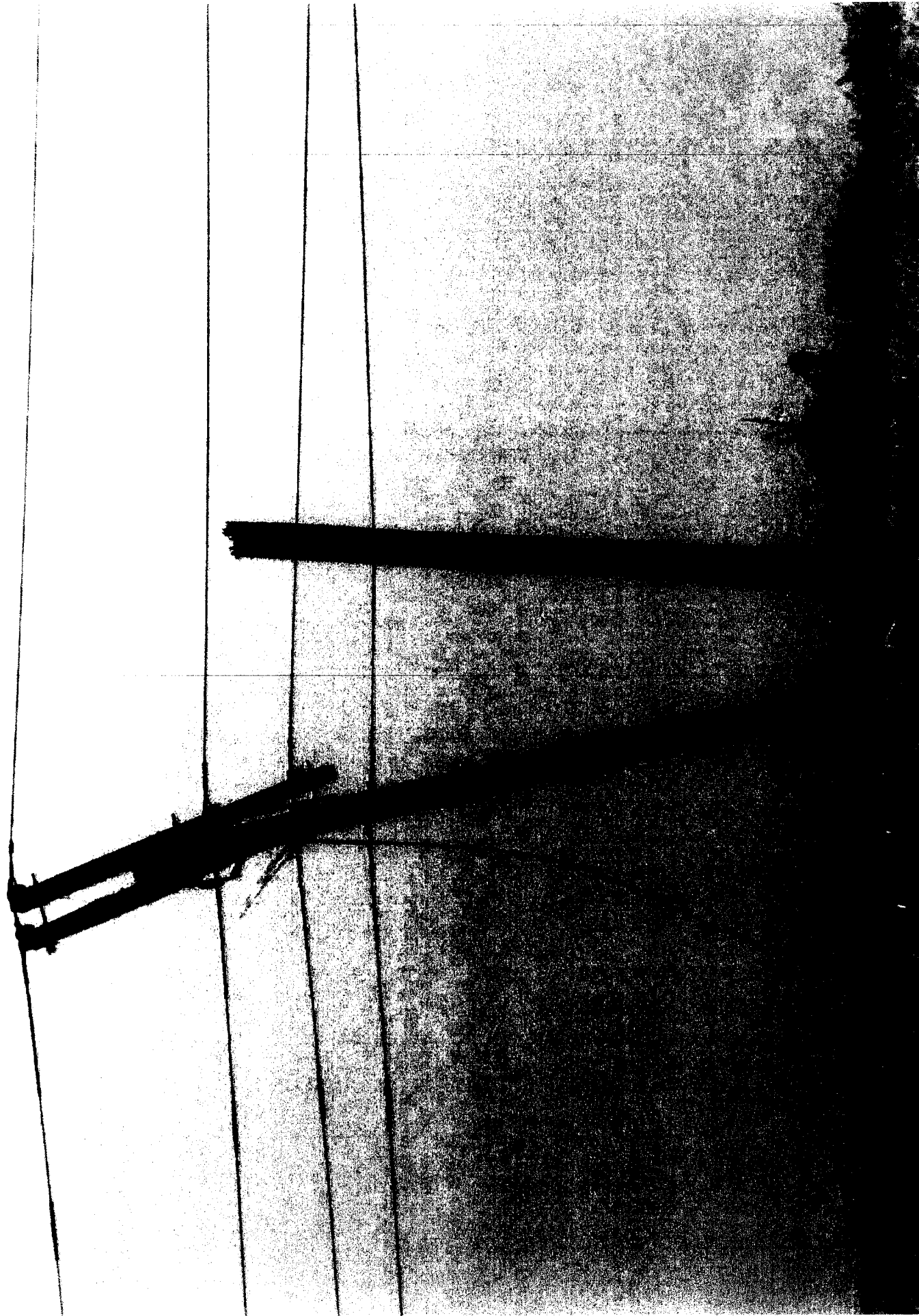




Exhibit CAW-1





Exhibit CAW-1

January '05 & December '07

Ice Storm Comparisons

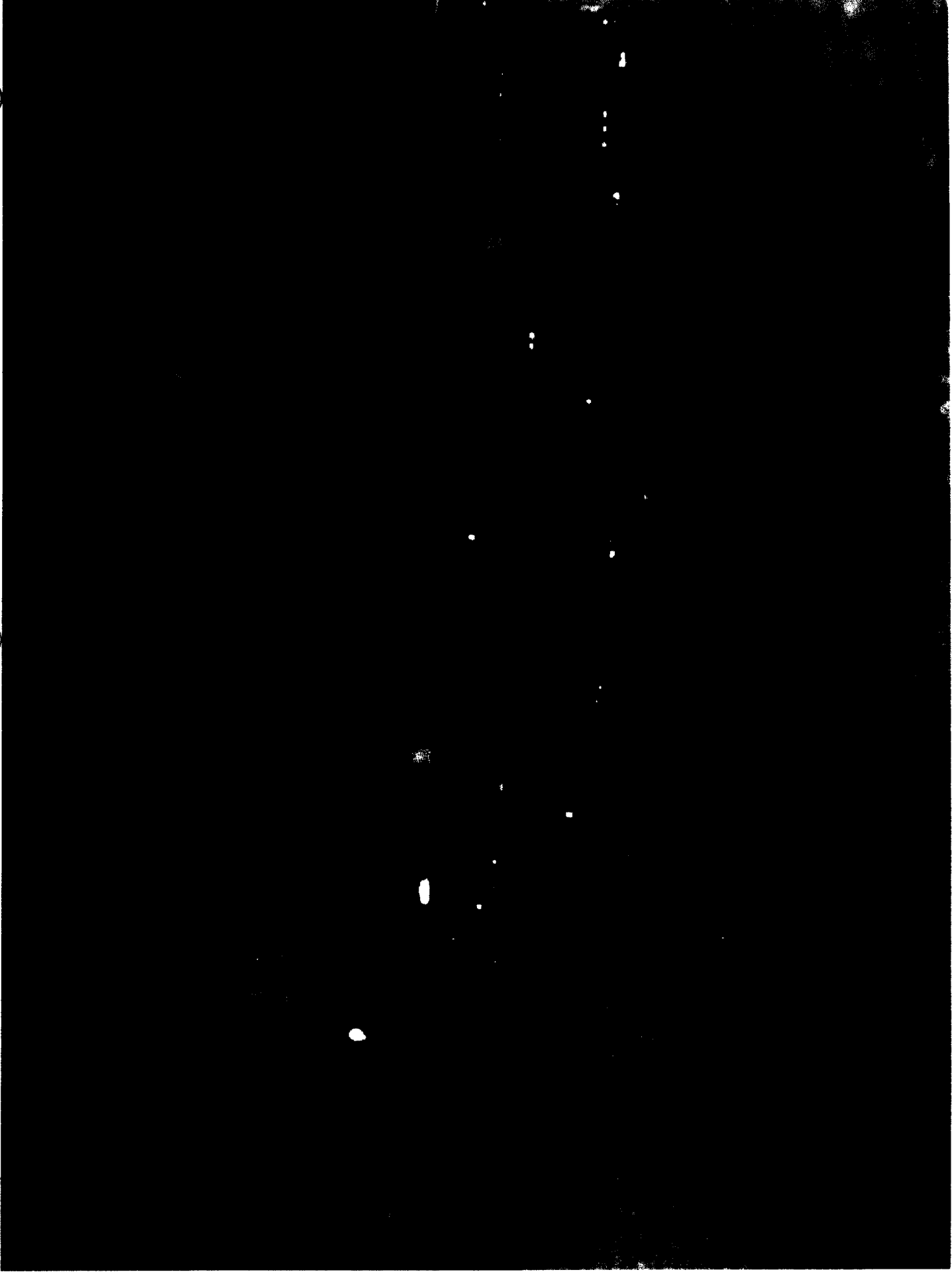
<p>2005 Ice Storm</p> <p>Involved 3,513 workers</p> <p>976 Westar employees</p> <ul style="list-style-type: none">- Line Personnel - 324- Contact Center - 112- Dispatch - 39- Support - 380- Management - 108- Retirees - 13 <p>1,361 line personnel</p> <p>1,176 line clearance</p>	<p>2007 Ice Storm</p> <p>Involved 4,297 workers</p> <p>1,048 Westar employees</p> <ul style="list-style-type: none">- Line Personnel - 326- Contact Center - 107- Dispatch - 39- Support - 440- Management - 133- Retirees - 3 <p>1,995 line personnel</p> <p>1,254 line clearance</p>
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Ice Storm 2005 Aid came from 17 states:

Nebraska, Texas, Missouri, Oklahoma, Colorado, Kentucky, Tennessee, West Virginia, New Mexico, Wyoming, Illinois, Iowa, Indiana, South Dakota, Minnesota, Michigan and Louisiana

Ice Storm 2007 Aid came from 20 states:

Nebraska, Texas, Missouri, Oklahoma, Colorado, Kentucky, Tennessee, New Mexico, Wyoming, Illinois, Iowa, Indiana, South Dakota, Minnesota, Michigan, Louisiana, Alabama, North Carolina, Ohio, and Wisconsin



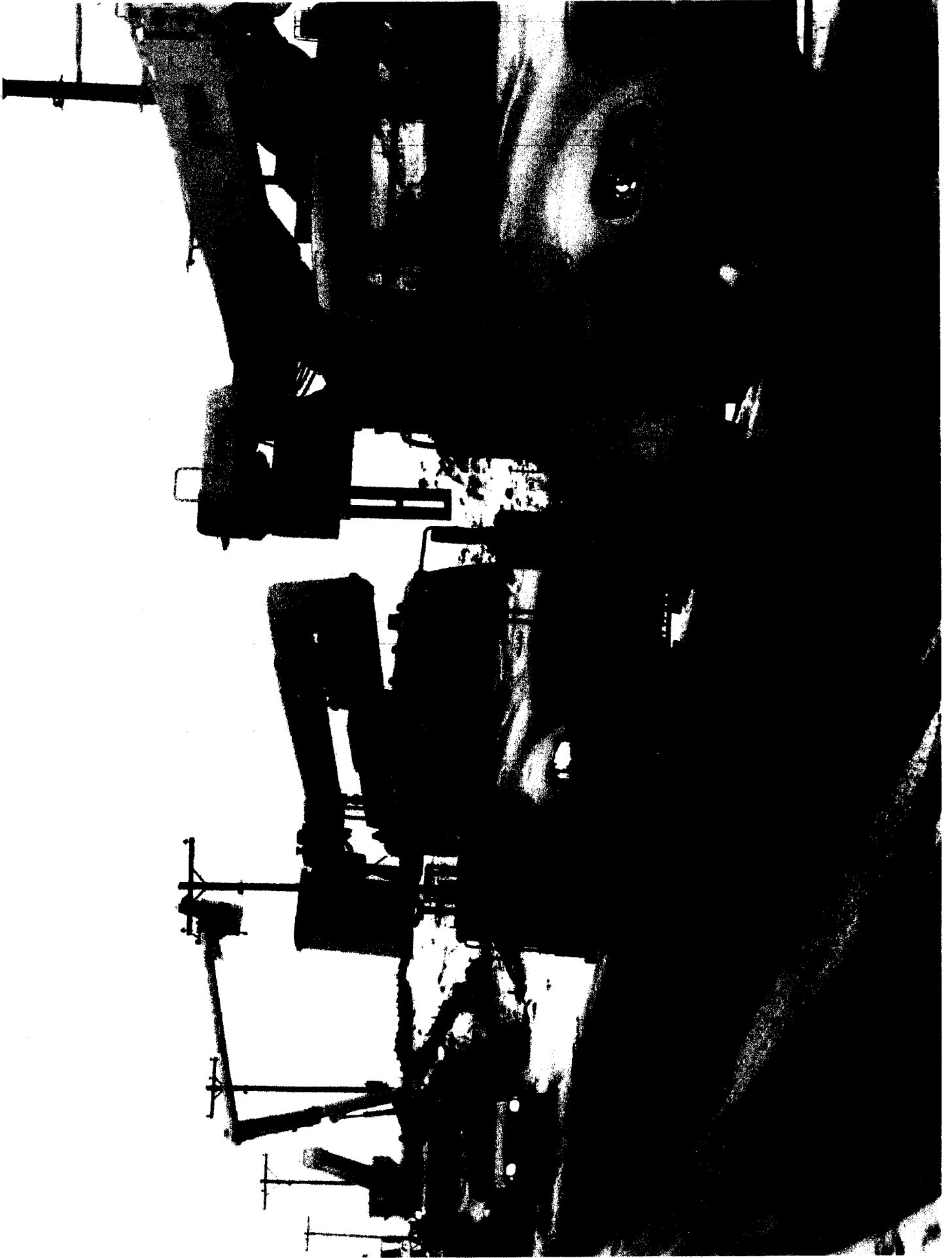


Exhibit CAW-1

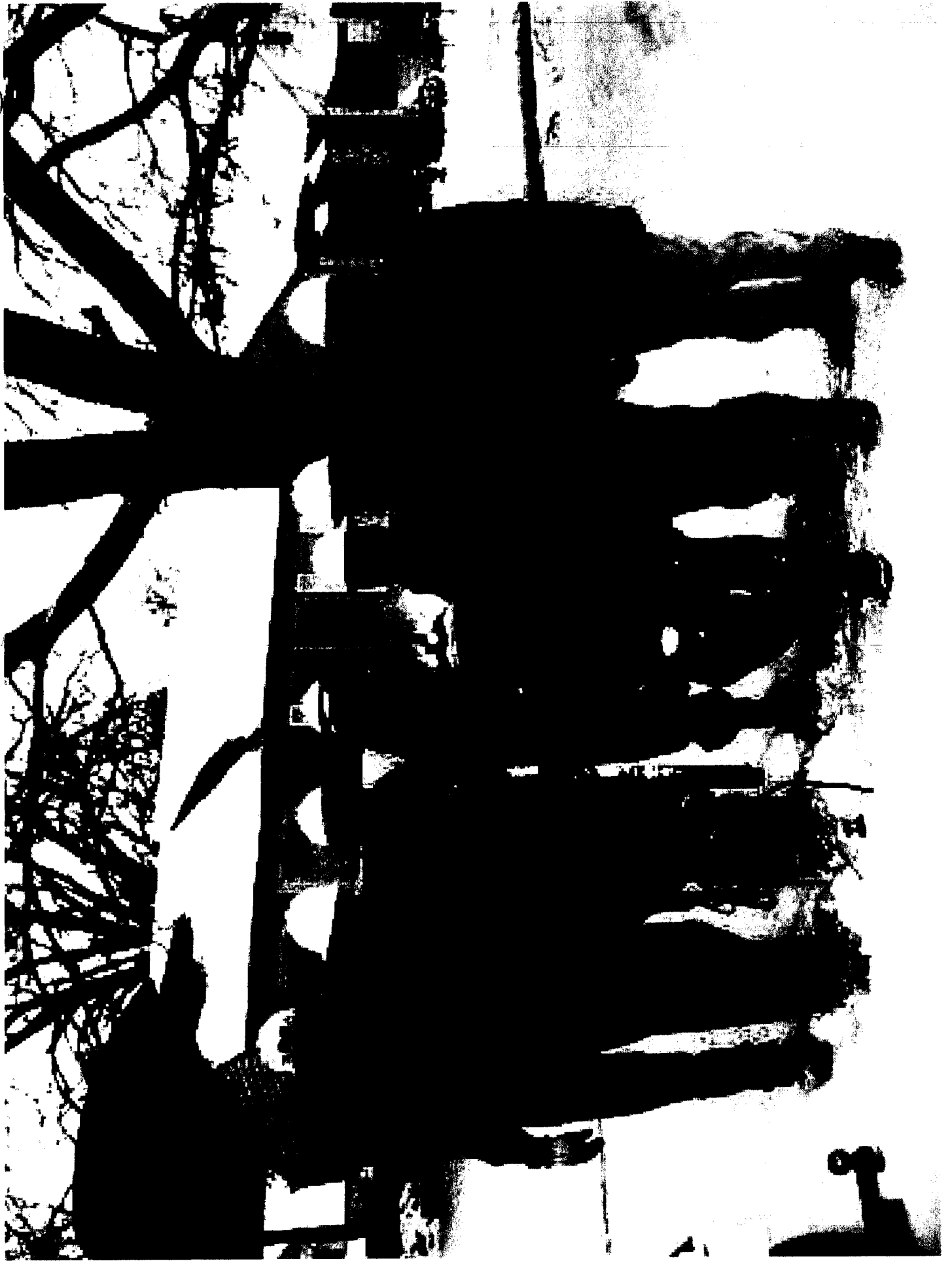
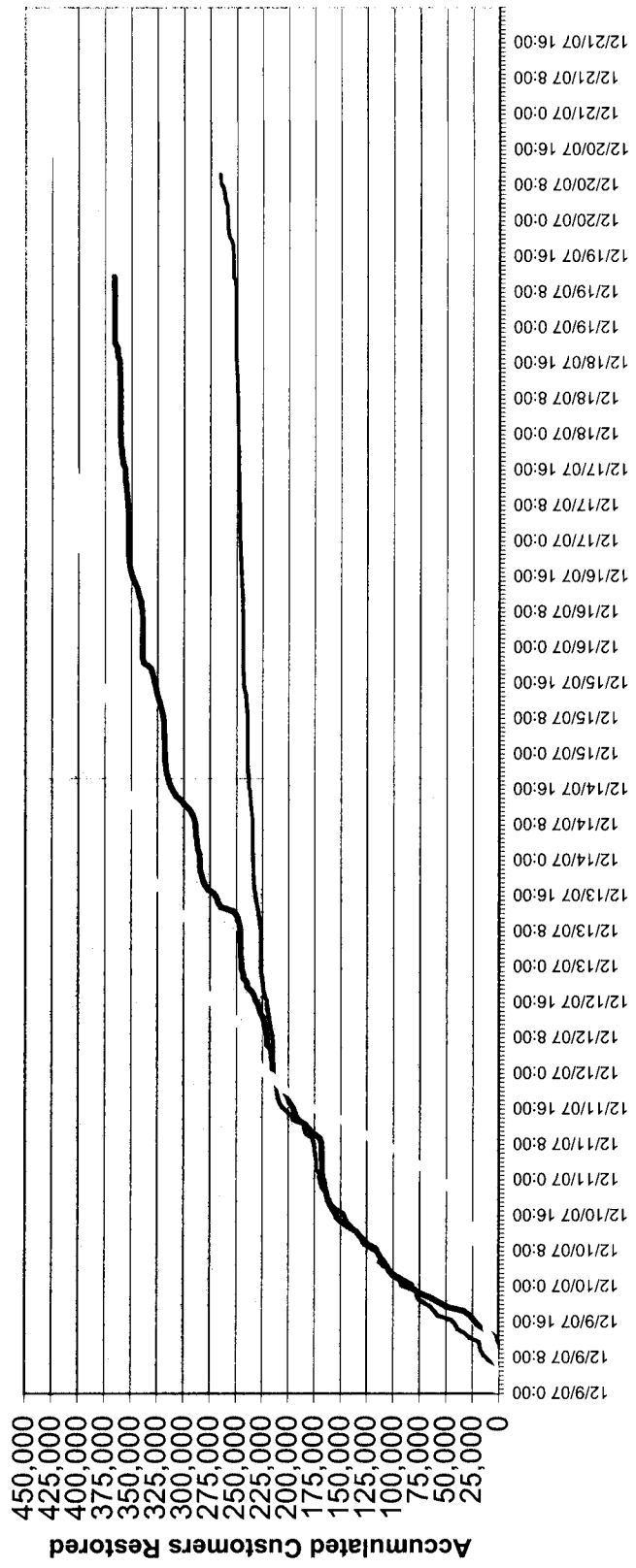


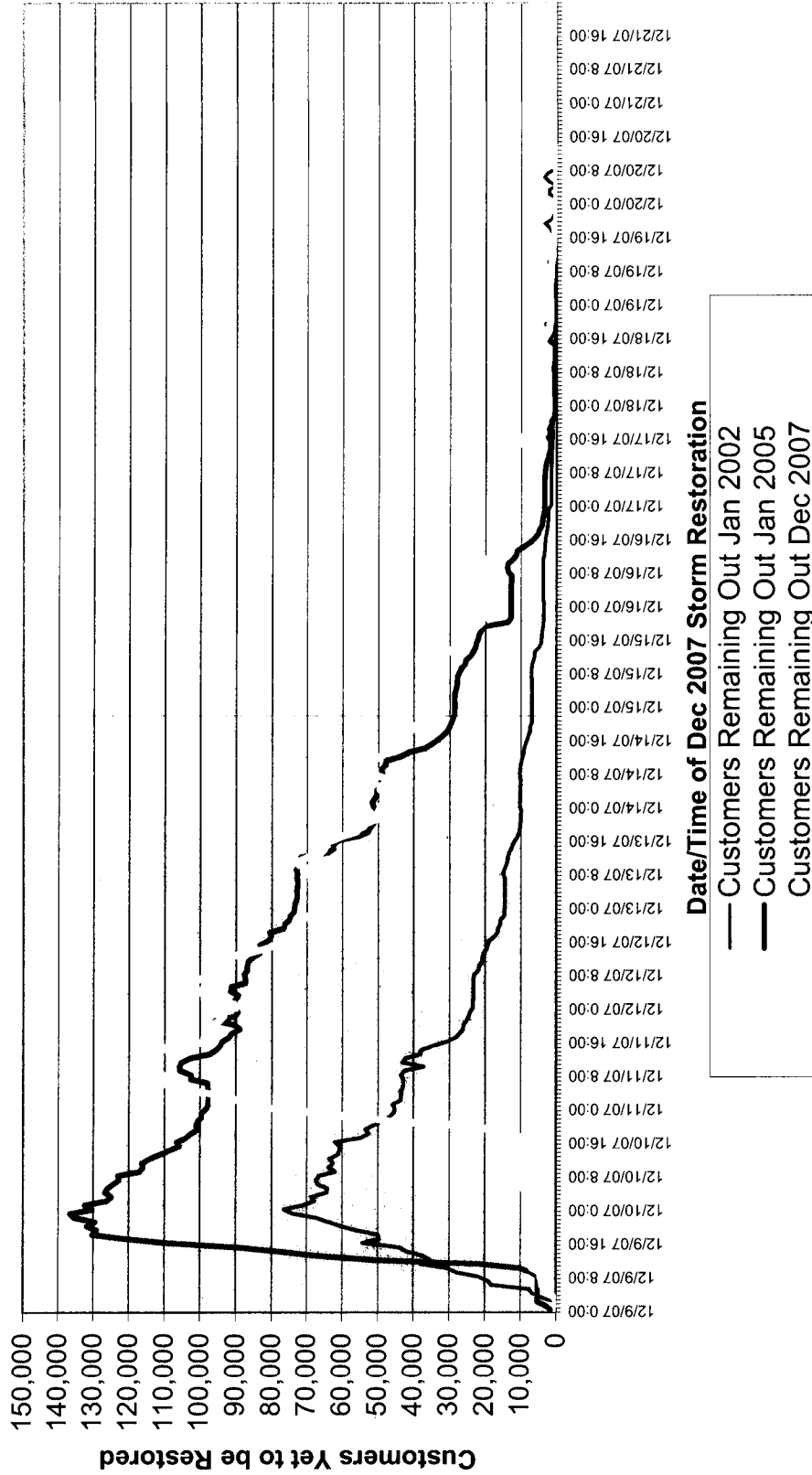
Exhibit CAW-1

Restoration Progress, Past/Current Storms

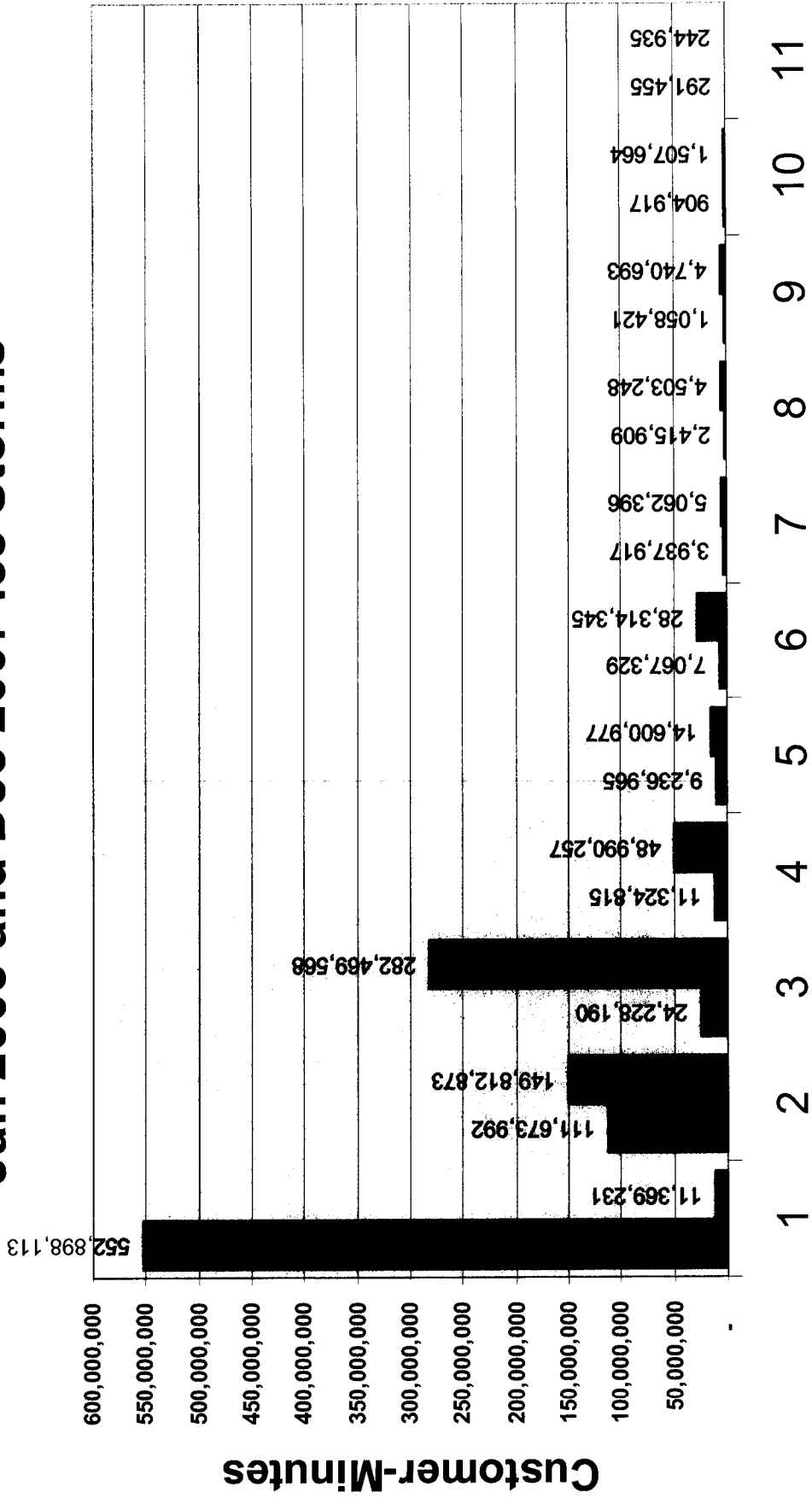


— Restoration Jan 2002 — Restoration Jan 2005 — Restoration Dec 2007

Restoration Progress, Past/Current Storms



Compare Daily CMI, Jan 2005 and Dec 2007 Ice Storms

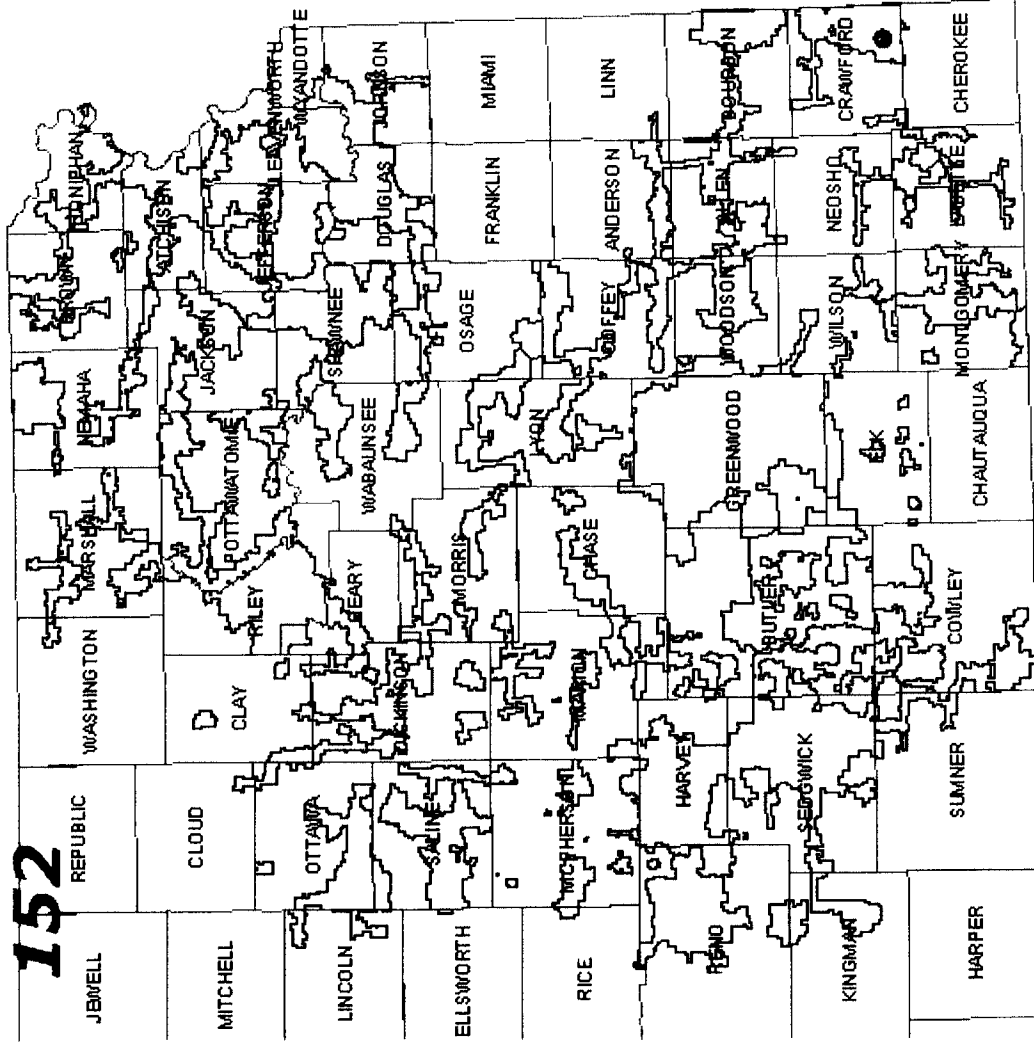


Day Into Storm

■ January 2005 Storm Daily CMI ■ December 2007 Storm Daily CMI

Thank you for all of
your support during the
worst storm in Westar
Energy history!!!

5As of: 12/9/2007 2:30:00 AM
152
44-HUDS,152

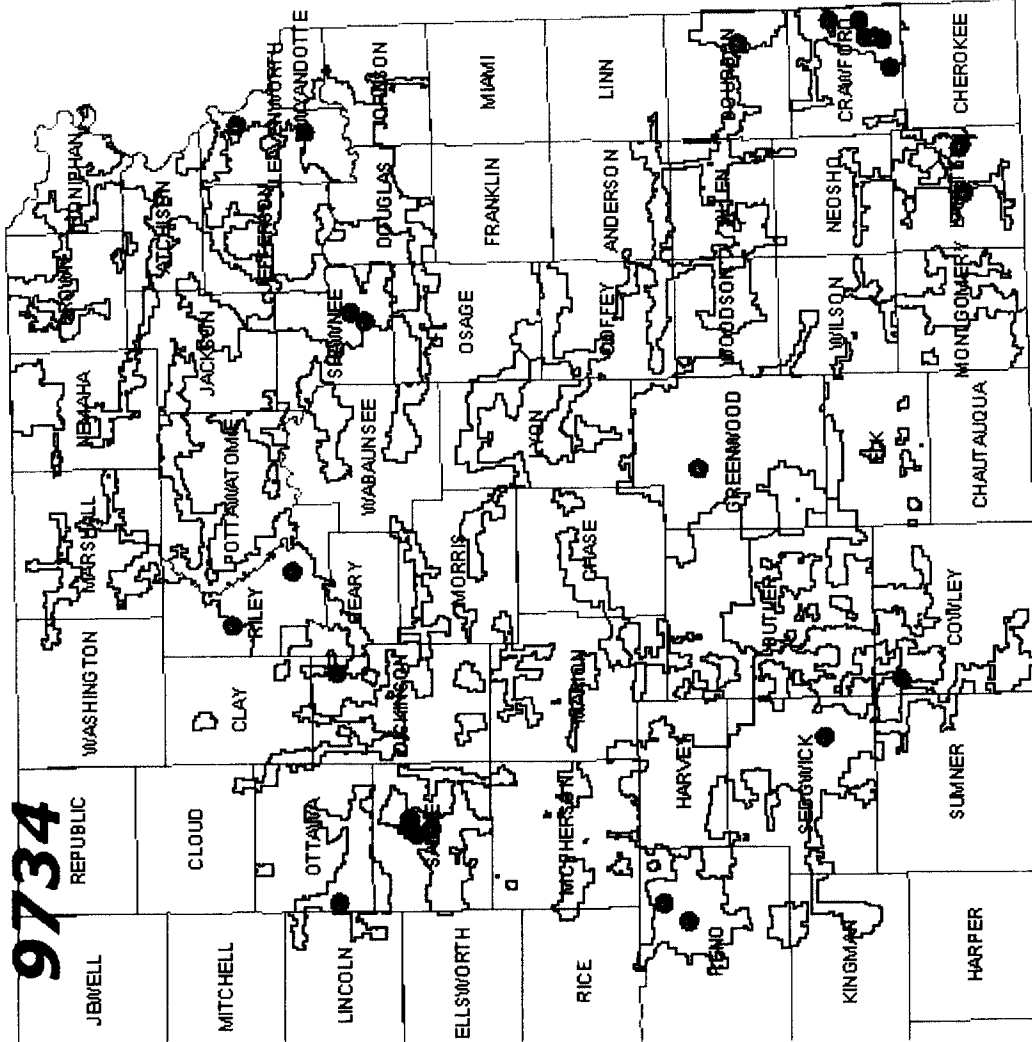


84As of: 12/10/2007 6:00:00 PM
9734

Storm Summary Mode
list reflects only

over 50 customers out per circuit

- 14-SPRU,1389
- 19-43LO,363
- 24-WRD,1274
- 29-NSTR,952
- 29-SMOK,618
- 43-ALTA,533
- 44-BAKE,1063
- 44-HUDS,1314
- 44-MULB,438
- 44-PITT,1597



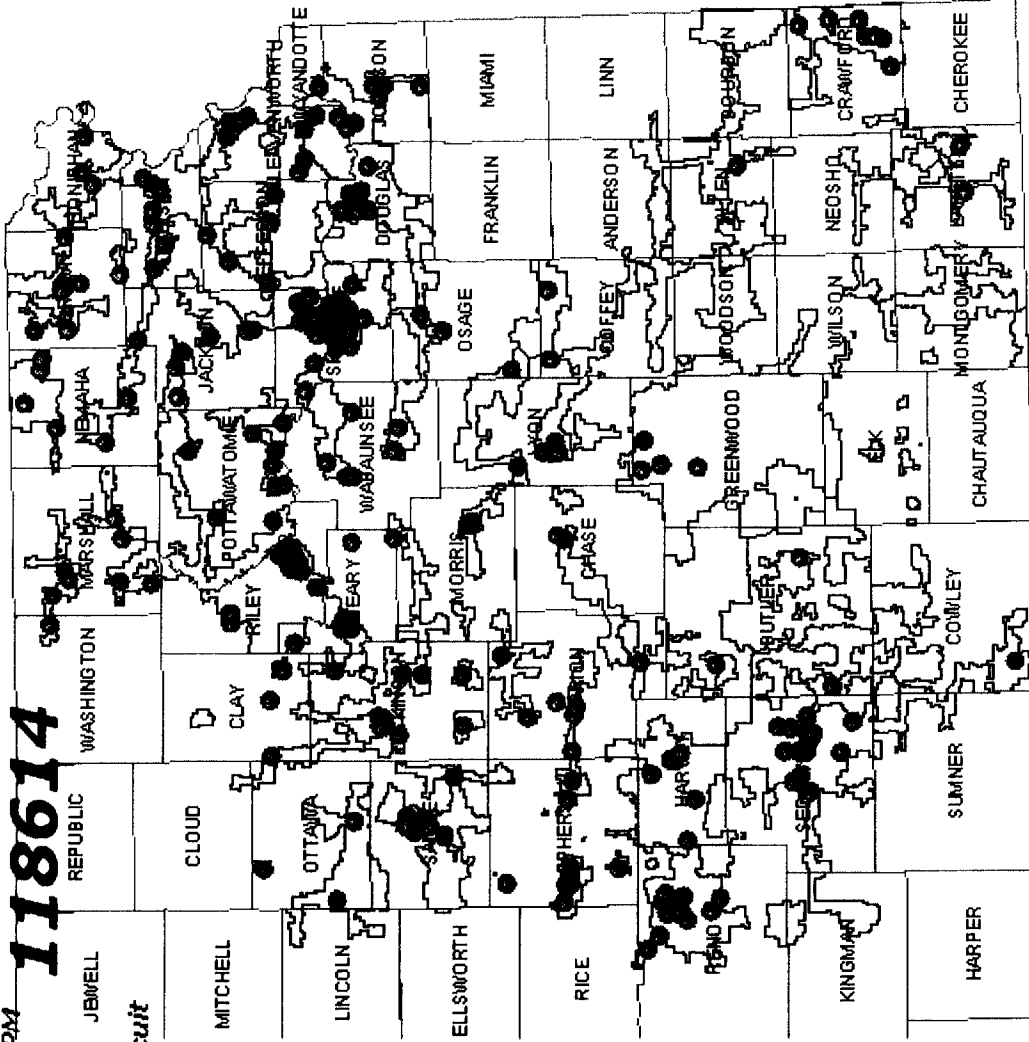
121As of: 12/11/2007 12:30:00 PM
118614

118614

You-have-to-be-kidding Mode
list reflects only

over 1000 customers out per circuit

- 09-COUN,1348
- 14-HALL,1024
- 14-NWLE,1070
- 14-SPRU,5122
- 16-PARA,2053
- 17-SO10,1120
- 18-17FL,2368
- 18-41CA,2526
- 18-QUIN,1121
- 19-14LO,1357
- 19-SVAN,2728
- 19-48LO,1688
- 19-CITI,1147
- 19-DAVI,2090
- 19-MDOW,2234
- 24-EMAN,4536
- 24-KSU,4864
- 24-MATT,4008
- 24-SOGD,1042
- 24-STAG,1238
- 24-WILD,10297
- 25-JUNC,1177
- 25-NWJC,1100
- 25-WJC,2413
- 26-WMLD,1117
- 29-2PRE,3283
- 29-NSIR,1709
- 29-SGAT,2715



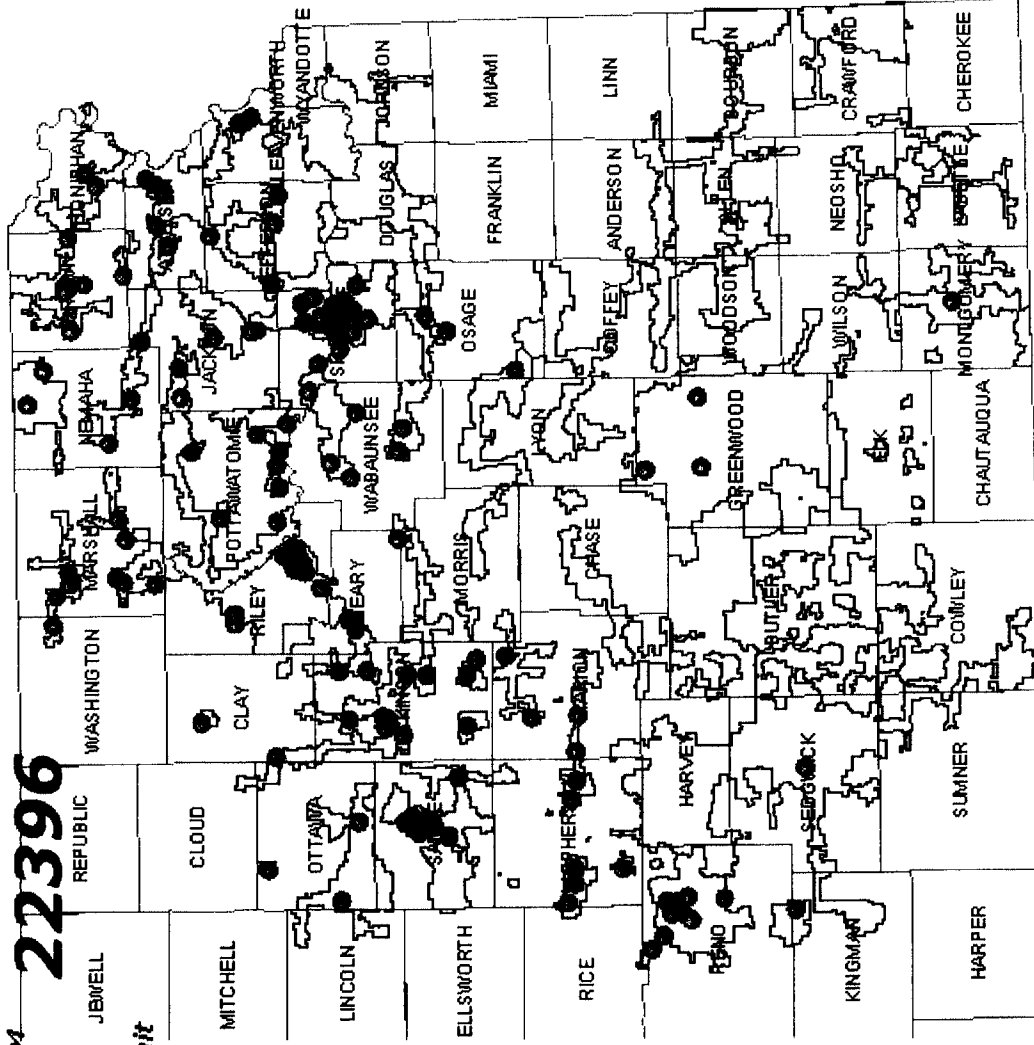
328As of: 12/15/2007 8:00:00 PM
22396

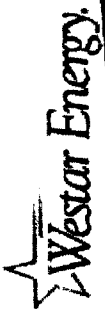
22396

Storm Summary Mode
list reflects only

over 500 customers out per circuit

- 16-OSKA,1115
- 18-17FL,667
- 24-EMAN,1122
- 24-KSU,1051
- 24-MATT,1506
- 24-WILD,1831
- 24-WSDE,506
- 25-WJC,1132
- 26-ONGA,694
- 26-WMLD,549
- 29-CRFD,719
- 31-LSPR,582



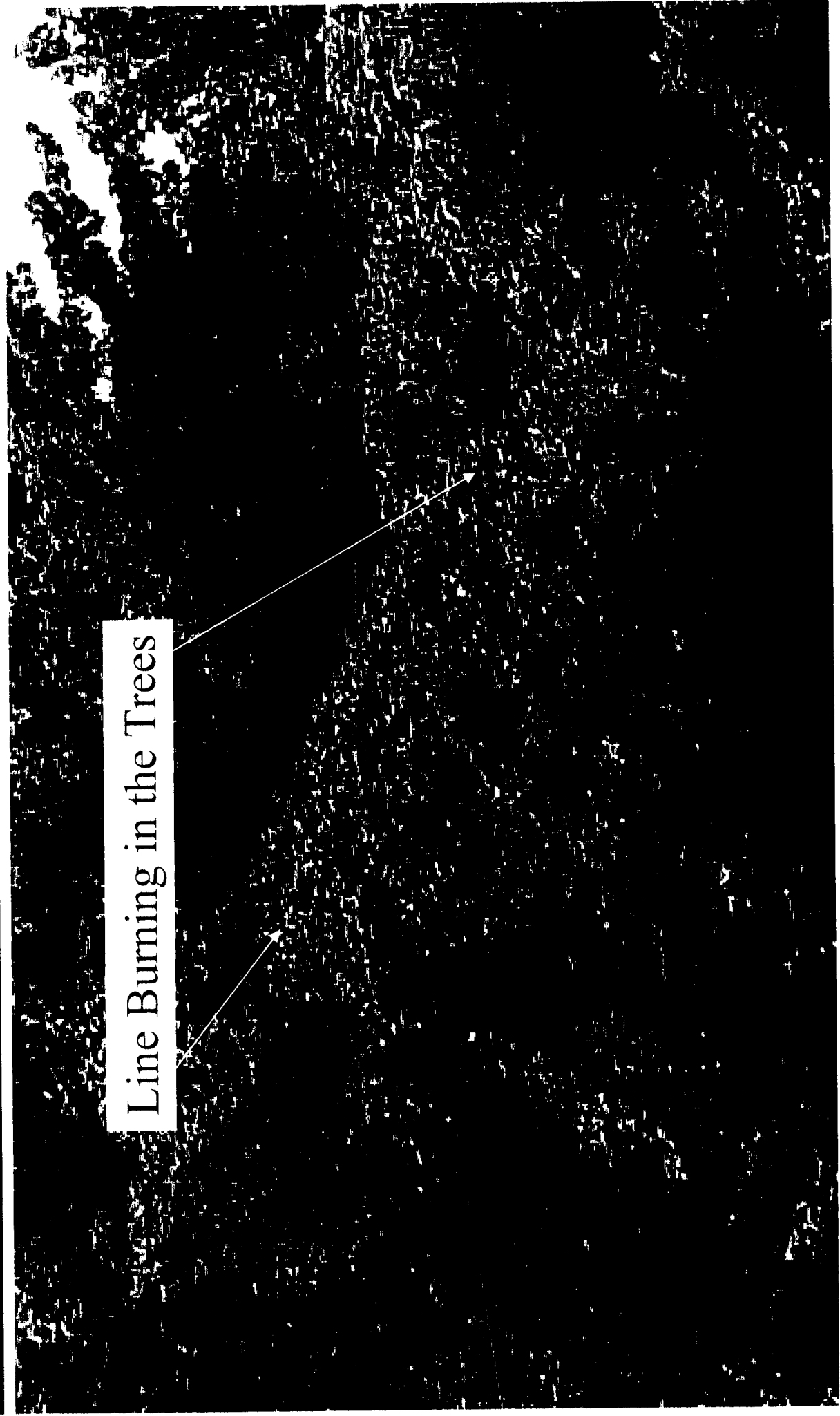
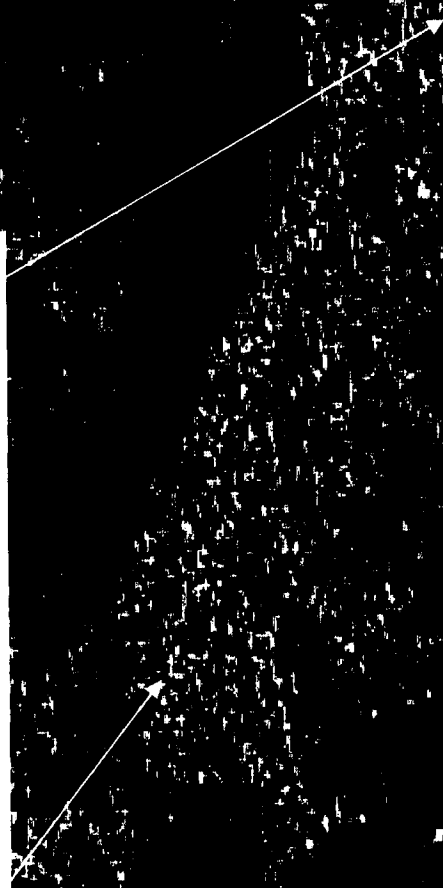


Vegetation Management

Westar Energy Distribution Vegetation Management Program

Exhibit CAW-2

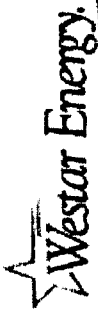
Line Burning in the Trees





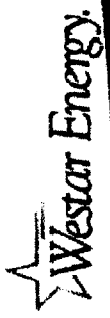
Safety

- Line clearance work is required to ensure that Westar Energy can provide safe and reliable service.
- Westar Energy complies with all nationally recognized standards and procedures.
 - ◆ Safety Standards
 - ◆ Work Methods

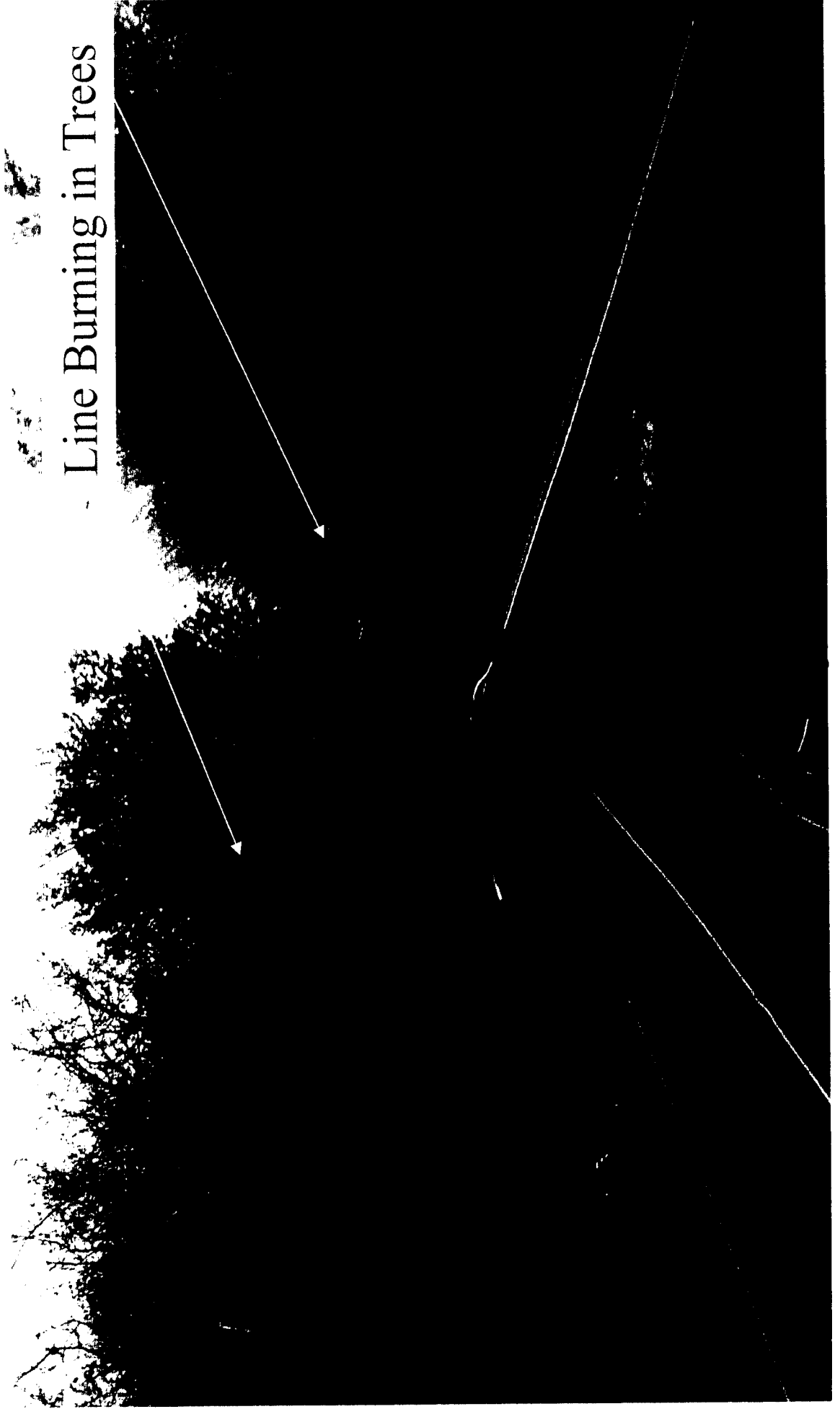


Distribution Line Reliability

- Improved system reliability for all customers, including residential:
 - ◆ Life support customers
 - ◆ Elderly and homebound customers
 - ◆ Home-based businesses
- Tree-related outages are significantly reduced
- Light bulb flicker is reduced
- Animal-related outages are reduced to about 25% of pre-trimming levels
- Lightning-related outages are also reduced



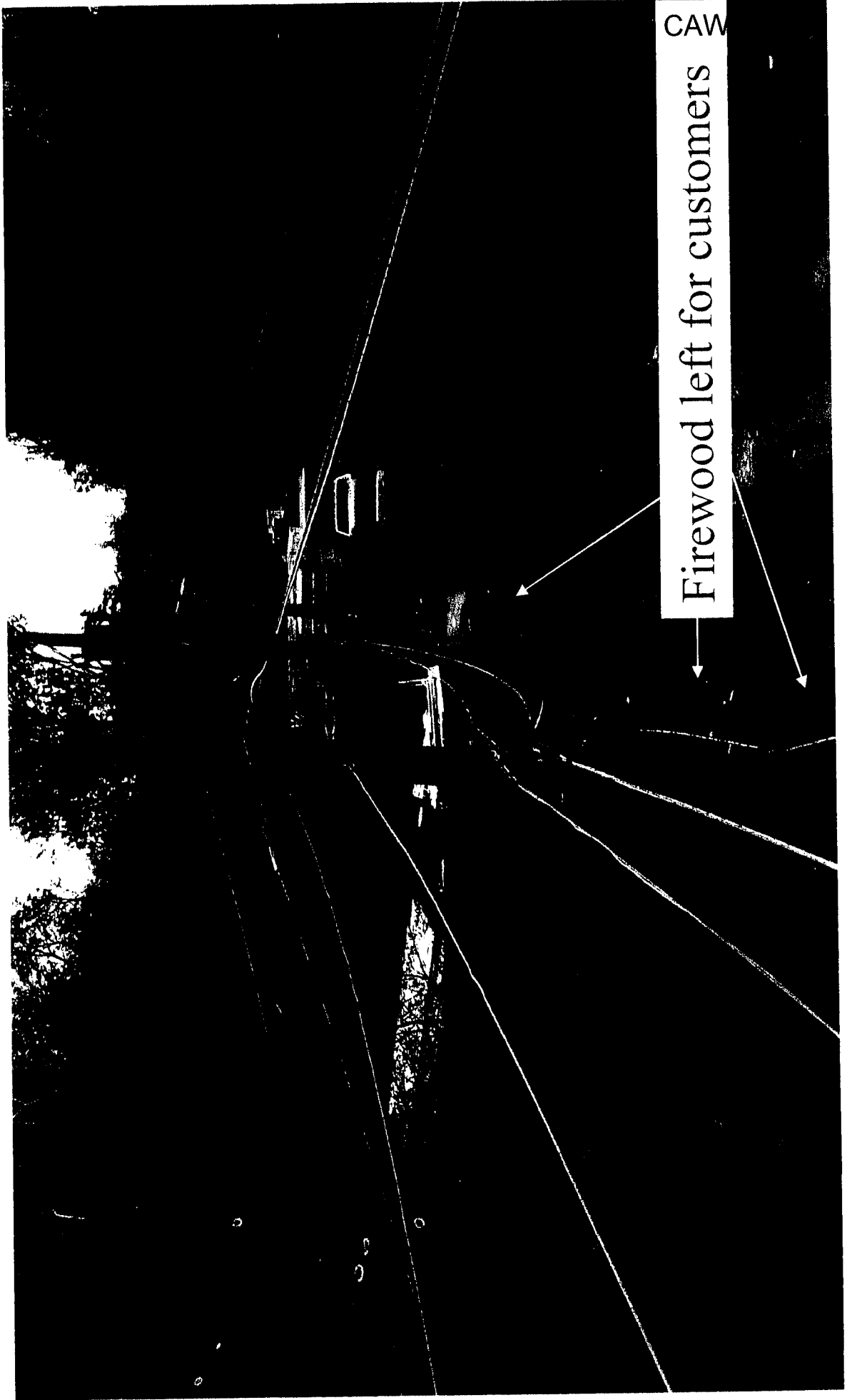
Distribution Line Easement - Before



Line Burning in Trees



Distribution Line Easement - After



- **ANSI A 300, Part 1 - Tree Care Operations: Trees, Shrubs, and other Woody Plant Maintenance**
- **Work is prioritized by outages. The area with the highest number of outages is first.**
- **Customers are notified of upcoming line clearance work in advance. We will talk to resident, if available, or leave a contact number at each property.**

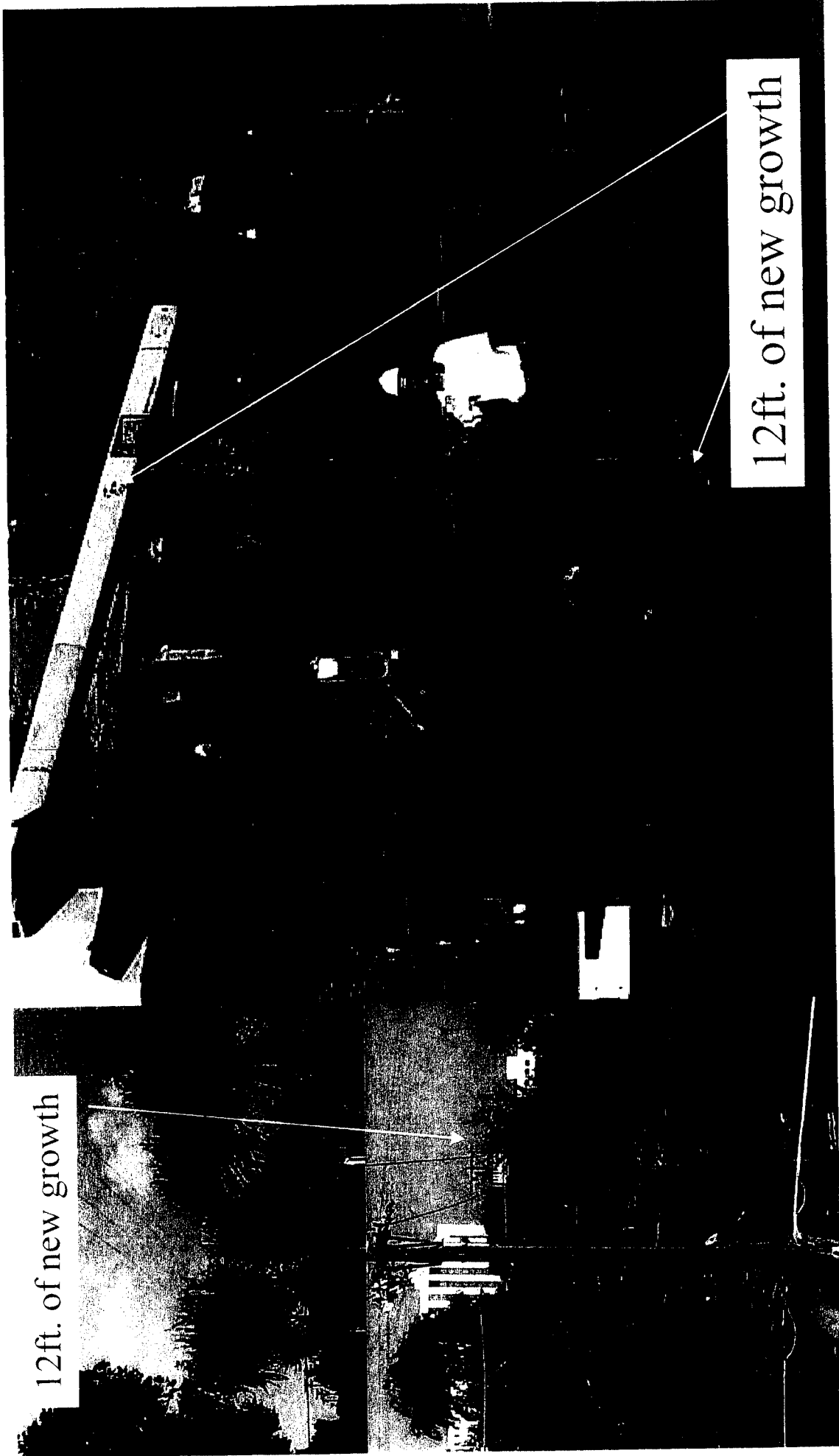
- Small trees (brush) are removed without permission of landowner.
- Tall-growing trees under the electric lines will be marked and removed unless tree owner wants them to remain.
- Crews will leave firewood adjacent to the easement
- Trees adjacent to the line are pruned for a minimum of 4 years (urban) 5 years (rural) of **re-growth** clearance
- Crews clean up the work area and remove the tree cuttings from the property.



Re-Growth in One Year

12ft. of new growth

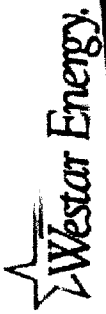
12ft. of new growth



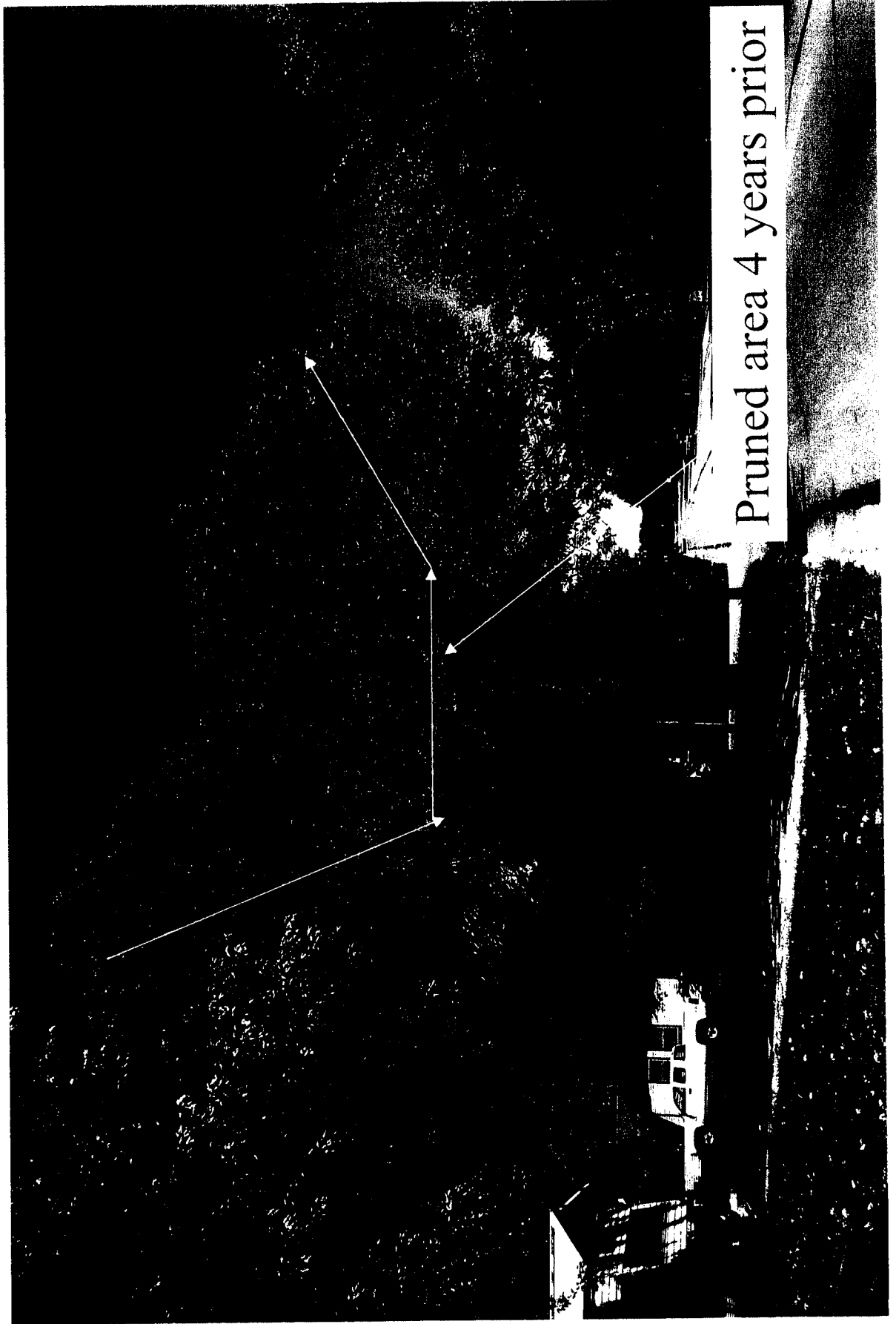


Line Clearance Update

- Since 1998
 - ◆ % of Overhead Circuits Completed 80%
 - ◆ % of Overhead Circuit Miles Completed 73%
 - ◆ Number of Trees Pruned 2,484,171
 - ◆ Number of Trees Removed 1,841,392
 - ◆ Current Pace Trims Entire System in about 13 yrs.



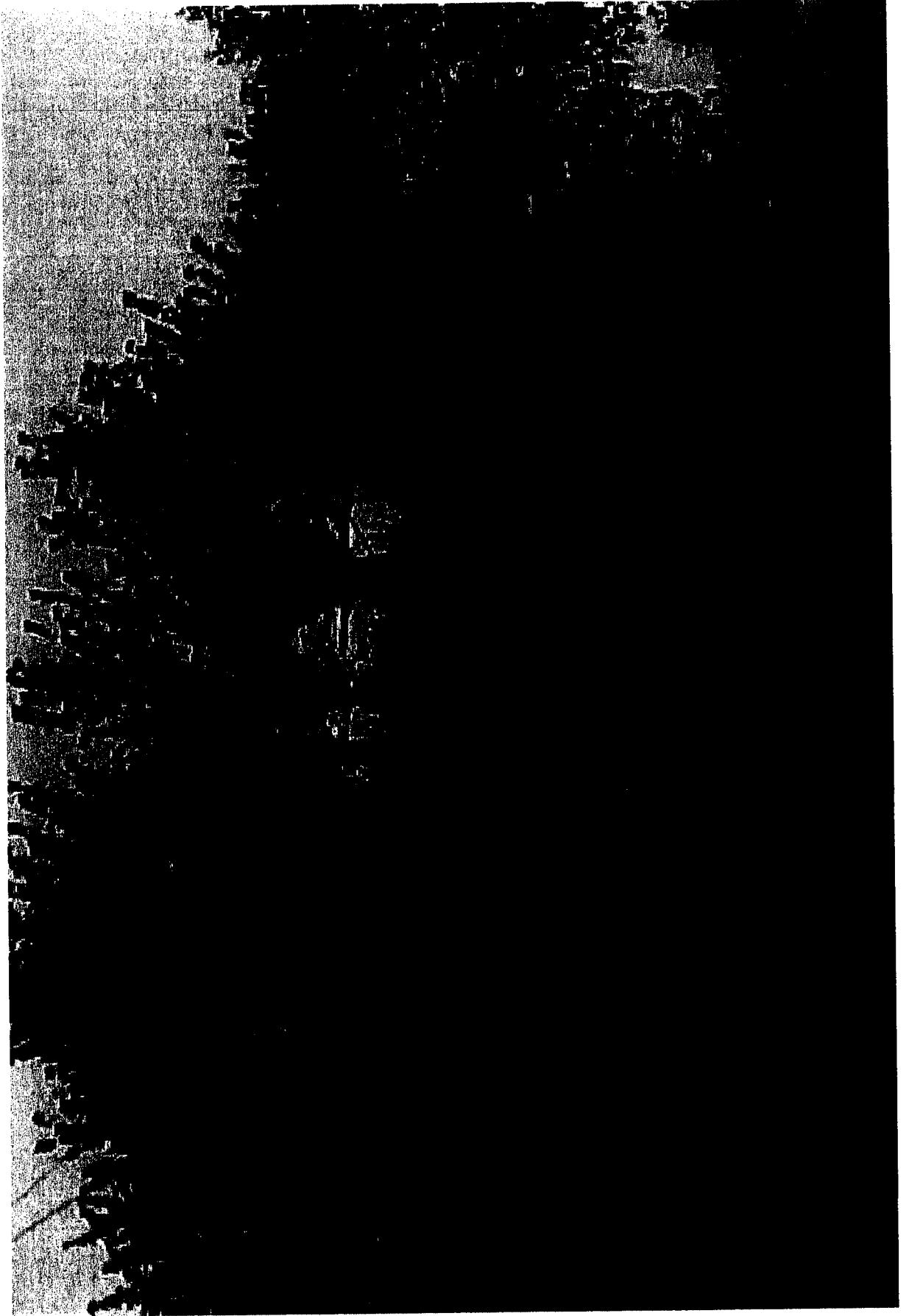
Four Years of Re-Growth



Pruned area 4 years prior



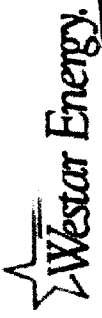
Tree Burning in 3 Phase Line





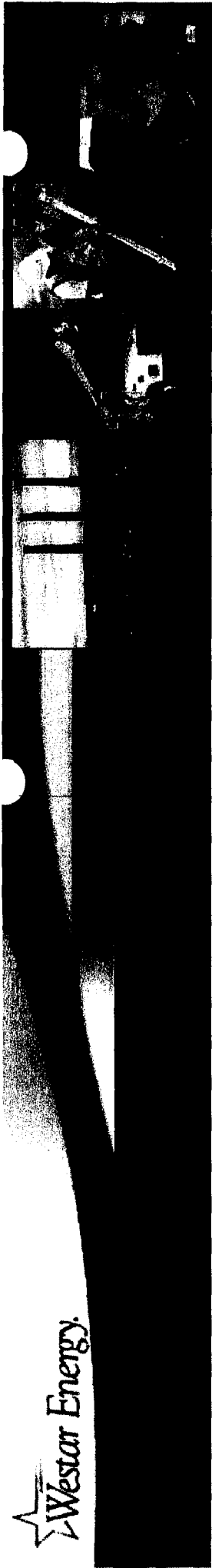
Reliability Program

- Outage Management System tracks outages experienced by customers
- Computer program identifies problem areas
- Threshold - 10 outages in prior 12 months
- Program alerts management of outages
- Work is performed to reduce/eliminate future outages

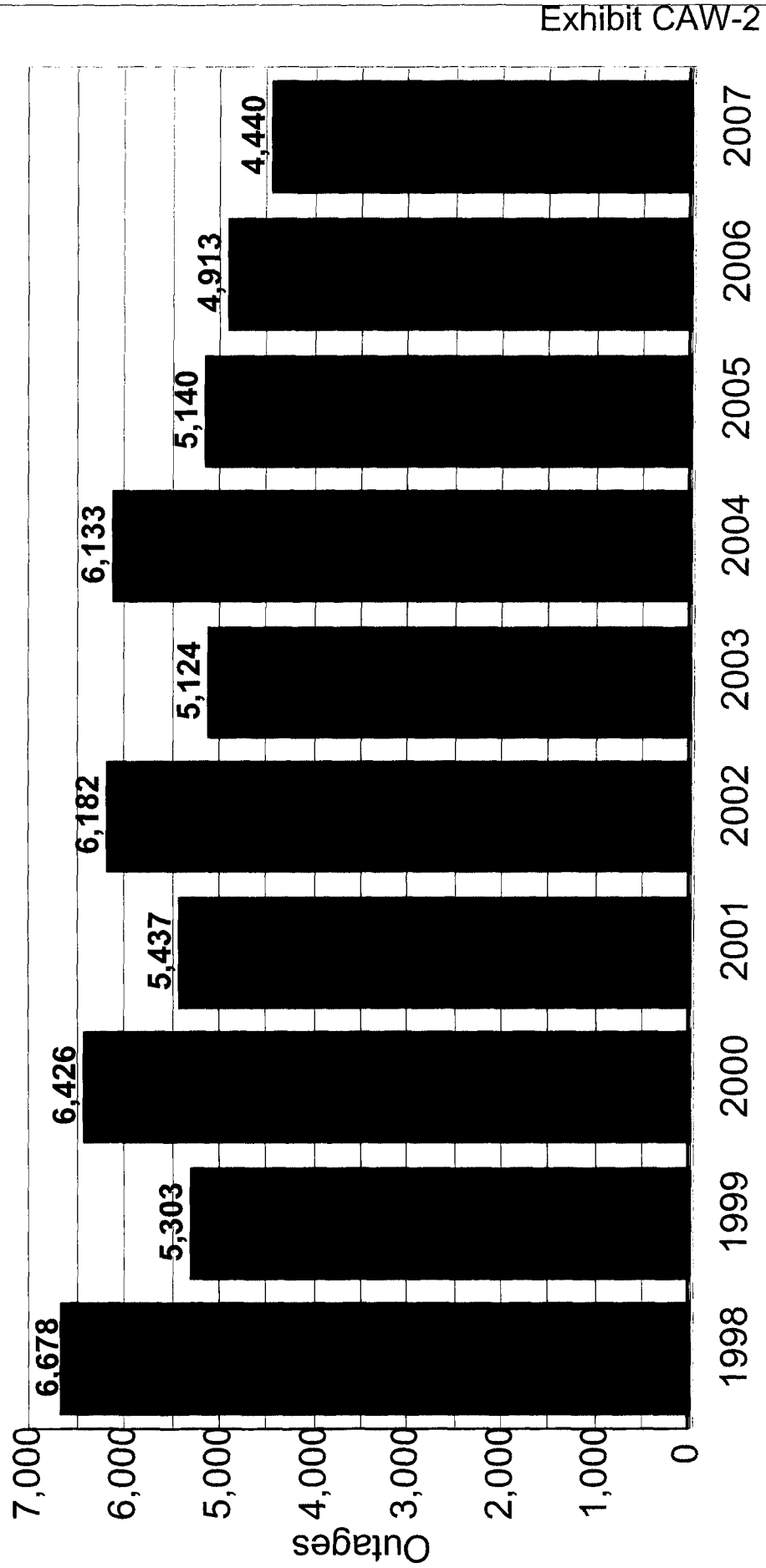


Partnerships and Interfaces

- Planning, Educating and Working in the Neighborhoods
 - ◆ Presentations to city leaders, city employees responsible for street trees and tree boards
 - ◆ Presentations to neighborhood associations
 - ◆ Tree owner meetings
- “The Right Tree in the Right Place”
 - ◆ Brochure sent out to all customers once a year.



Normalized Tree Outages By Year





Westar Energy Line Clearance Program

- Awarded the Tree Line USA Utility designation every year since 1999.
- Awarded by The National Arbor Day Foundation for:
 - ◆ Quality tree care
 - ◆ Annual worker training
 - ◆ Tree planting and public education