



SOUTHWEST GAS CORPORATION

**2011 Winter Outage
Southern Arizona**

**WRGC Workshop
Tempe, Az.**

August 24, 2011

OUTLINE

- Southwest Gas overview
- Factors leading up to the outage
- Managing the outage
- Lessons learned
- Future challenges



Causes of the Outages

- Extreme cold weather from Arizona thru Texas
- Well freeze-offs, gas processing plant shutdowns, and supply basin underperformance
- Peak gas demand by customers in Texas, New Mexico, and Arizona
- Pipeline demands exceeded available supplies
- Impaired pipeline operating pressures



Gas and Electricity Losses

- Production lost (compared to 10 day average)
 - 5.6 bcf nationally (approximately 10% of total)
 - 1.0 bcf in the three basins pertinent to Arizona
- Rockies and basins across Texas and into Louisiana lost remainder
- More than 50 Texas power plants offline
- Gas burn for electric generation 4% above prior year peak in Texas

Advanced Warning

- Weather forecast for Arizona cities
- 24 hour monitoring of gas system
 - Interstate pipeline
 - Local distribution system
- Routine pipeline communications 2/2/2011
 - SOC warning 7:24 am MST
 - COC emergency 11:52 am MST
- None of these meant outages were certain; however, SAZ EOC opened to monitor system

Emergency Plan

- SWG Emergency Plan Manual
 - Actions for low pressure situation
 - Curtailment plan
 - Isolation plans
 - Service restoration
- So. AZ Division
Winter Operations
Guide
 - Dictates
Division preparation

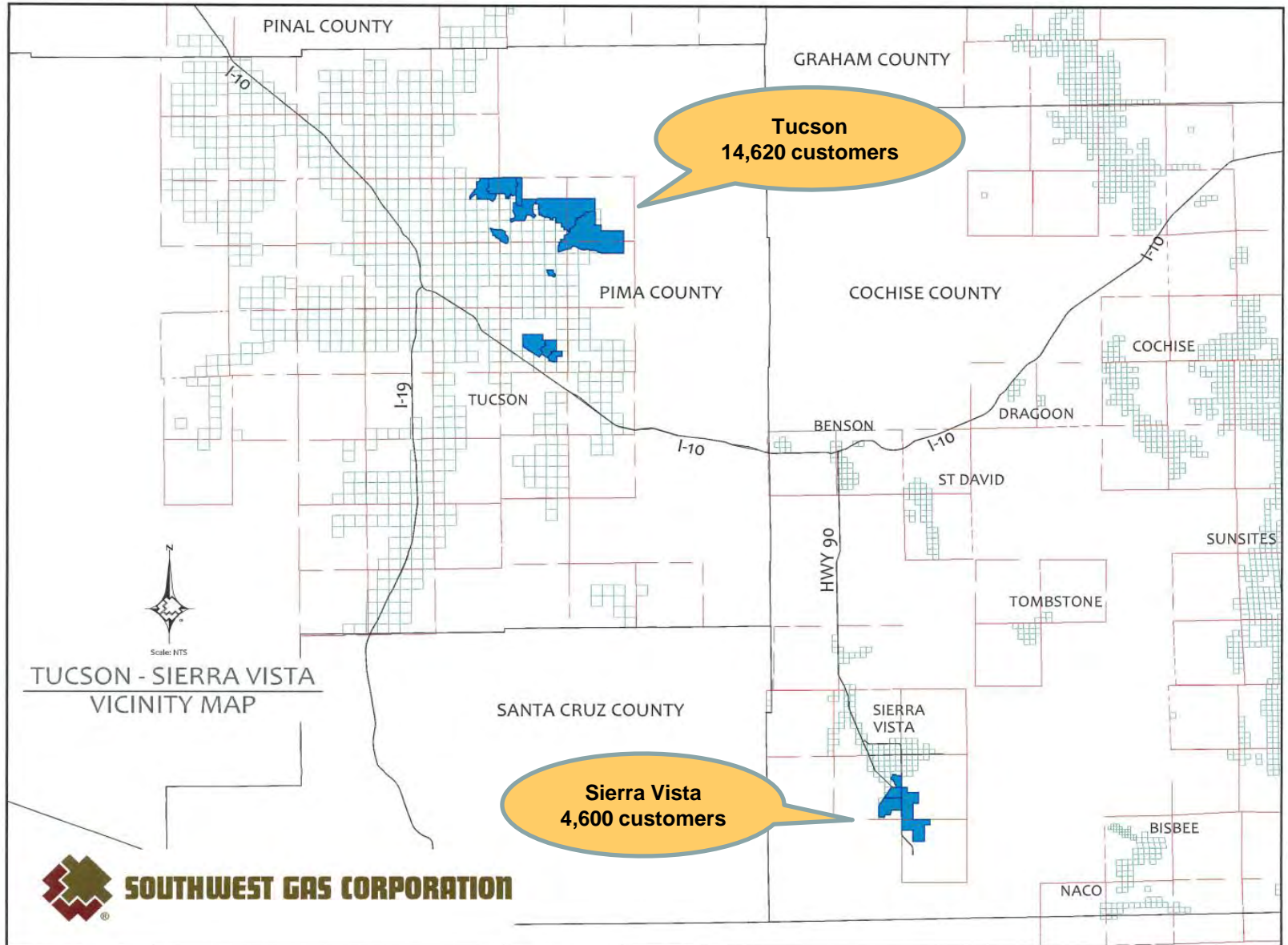


February 3 Outages

- Customer Outage reports
 - 6:57 a.m. Sierra Vista
 - 7:47 a.m. Tucson
- Effected Areas Identified
 - Isolation Plan implemented for Tucson and Sierra Vista
 - Isolation Valves off, Regulations Stations secured and all 19,200 meters turned off
 - Completed with local employees and qualified contractors.
- Mutual Assistance Review –
 - Called for service crews from Central Arizona, Southern Nevada, and Southern California
 - Estimated 3.5 relites per hour/per technician – total employees – 185



February 3 Customer Outages



Customer Service Restoration February 4, 2011

- Restoration effort began as supply operating pressures increased
- Regulation stations were re-energized, purge plan activated, and relight efforts began
- Once restoration efforts began, first service restoration attempt completed within 2.5 days
 - 7:00 a.m.–10:00 p.m. shift
 - Sierra Vista command,
Foothills East command,
Foothills West command,
Rita Ranch command



Customer Service Restoration Sector Assignments

- Regulator Stations
- Purge Operations
- Relight Operations
- Communications
 - Internal
 - External
- Crew Accommodations
 - Lodging
 - Meals – Field and Ops Center
- Customers
 - Liaison – Red Cross



Customer Communication

- Issued news releases on February 3rd
- Initiated or responded to 435 media contacts
- Multiple daily website updates throughout the course of the outage
- Expanded Call Center hours, including weekend operation
- Pima County Office of Emergency Management
 - Participated in three PCOEM news conferences
 - Supported Emergency Operation Center
 - Made reverse 911 calls in affected areas of Tucson.



Post-Outage Review

- Customers
- Media
- State Commission
- Politicians
- Operations



Lessons Learned

- Use of Technology
 - Relight order automation
 - Outage Management System – customer access
 - Map interface between FieldSmart & Customer Service System



Lessons Learned, cont.

- Internal Communications
 - Enhance companywide communication process
 - Create communication templates for talking points
 - Notify departments outside local division of major incidents
 - Institute EOC liaison between Operations & Communications
 - Communication approval protocols
 - Too many people were on the approval list

Lessons Learned, cont.

- External Communications
 - Expand methods of mass communication
 - Take advantage of Social Media
 - Improve website Content Management System for more local control
 - Website links to Outage Management System
 - Reduce multiple levels of approval required
 - Review and refine criteria for customer PURPA classifications
 - Automate notification to transportation customers
 - Create electronic bulletin board to post notices

Future Challenges

- Technology repository
- Workforce of the future?
- Evolving customer expectations





"My wife and I have lived through hurricanes, earthquakes, and two political uprising. Stuff happens. It's what you do afterward that counts. We could not have been more pleased with how Southwest Gas employees handled this unfortunate situation."

~ John Harris, SWG customer

Questions?

